Hawaiian Electric Company, Inc. • PO Box 2750 • Honolulu, HI 96840-0001

Darcy L. Endo-Omoto
Vice President
Government & Community Affairs

May 15, 2009

The Honorable Chairman and Members of the
Public Utilities Commission of the State of Hawaii
Kekuanaoa Building, First Floor
465 South King Street
Honolulu, Hawaii 96813

FILED
2009 MAY 15 P 4: 21
PUBLIC UTILITIES COMMISSION

Dear Commissioners:

Subject: Docket No. 2008-0083
HECO 2009 Test Year Rate Case – Stipulated Settlement Letter

This letter documents certain agreements between Hawaiian Electric Company, Inc. ("HECO" or "Company"), the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs ("Consumer Advocate") and the Department of Defense ("DOD") (collectively referred to as the "Parties") regarding matters in this proceeding. Exhibit 1 documents the agreements reached by the Parties on the issues in this proceeding. The Parties have agreed on all but two issues: 1) what is the appropriate test year expense for informational advertising, and 2) what is the appropriate return on common equity for the test year. The Parties agree that these issues should be addressed in an evidentiary hearing. Exhibit 1 describes these issues in greater detail.

The agreements set forth in Exhibit 1 are for the purpose of simplifying and expediting this proceeding, and represent a negotiated compromise of the matters agreed upon, and do not constitute an admission by any party with respect to any of the matters agreed upon herein. The Parties expressly reserve their right to take different positions regarding the matters agreed to herein in other proceedings.

The Parties agree that the rate changes specifically set forth in this Stipulated Settlement result in just and reasonable rates for HECO's regulated electric operations. The Parties shall support and defend this Stipulated Settlement before the Commission. If the Commission adopts an order approving all material terms of this Stipulation, the Parties will also support and defend the Commission's order before any court or regulatory agency in which the order may be at issue. If the Commission does not issue an order adopting all material terms of this Stipulated Settlement, any or all of the Parties may withdraw from this Stipulation, and such Party or Parties may pursue their respective positions on HECO's

application without prejudice. For the purposes of this Stipulated Settlement, whether a term is material shall be left to the discretion of the Party choosing to withdraw from the Stipulation.

By *Order Amending Stipulated Procedural Order*, filed January 21, 2009, the Commission approved HECO's request to amend the Schedule of Proceedings in the Stipulated Procedural Order that was approved, with modifications, by the Commission on January 15, 2009. The remaining steps in the schedule include:

1. Statement of Probable Entitlement and Proposed Interim Decision and Order
2. HECO Rebuttal Testimonies, Exhibits and Workpapers
3. Consumer Advocate and DOD Rebuttal Information Requests ("RIRs") to HECO
4. Interim Decision and Order
5. HECO's Responses to Consumer Advocate and DOD RIRs
6. Prehearing Conference
7. Evidentiary Hearing
8. Simultaneous Opening Briefs by Parties
9. Simultaneous Reply Briefs by Parties

The Parties agree that HECO will supplement the record with the information provided to the Consumer Advocate and the DOD during the settlement discussions to support the agreements set forth in Exhibit 1 of this settlement letter, to the extent that such agreement relied upon the information provided by HECO.

Under §91-9(d) of the Hawaii Revised Statutes: "Any procedure in a contested case may be modified or waived by stipulation of the parties and informal disposition may be made of any contested case by stipulation, agreed settlement, consent order, or default." As a result of this settlement, the Parties: 1) agree that the written testimonies (and exhibits, workpapers, updates and responses to information requests related to such testimonies and updates) of all witnesses in this docket, with the exception of those witnesses who will be testifying on the two contested issues, may be submitted without the witnesses appearing at an evidentiary hearing, and 2) acknowledge that all identified witnesses are subject to call at the discretion of the Commission, and witnesses called by the Commission shall be subject to cross-examination upon any testimony provided at the call of the Commission. The Parties also agree to waive their rights to (a) present further evidence on the settled issues, except as provided herein and (b) conduct cross-examination of the witnesses who are not testifying on the contested issues. This waiver shall not apply where a Party deems it to be necessary to respond to evidence or argument resulting from the examination of witnesses or questions asked by the Commission.

The Parties agree that the amount of the Interim Rate Increase to which HECO is probably entitled under §269-16(d) of the Hawaii Revised Statutes is $79,820,000 over

revenues at current effective rates.[1] The Parties also agree that the final rates set in Docket No. 2006-0386 may impact revenues at current effective rates, and that the amount of the stipulated interim rate increase will be adjusted to take into account any such changes.

The Parties agree that (1) this letter may be executed in one or more counterparts, each of which will be deemed to be an original copy of this letter and all of which, when taken together, will be deemed to constitute one and the same letter and (2) facsimile signatures may be used in place of original signatures on this letter.

Sincerely,

Darcy L. Endo-Omoto
Vice President
Government & Community Affairs

Enclosure

cc: Division of Consumer Advocacy
Department of Defense

Concurred:

Catherine P. Awakuni
Executive Director
Division of Consumer Advocacy
Department of Commerce and Consumer Affairs

James N. McCormick, Esq.
Associate Counsel
Department of Defense

[1] Revenues at current effective rates are revenues from base rates, revenues from the energy cost adjustment clause and revenues from the interim rate increase that went into effect on November 1, 2008 in HECO's 2007 test year rate case, Docket No. 2006-0386.

revenues at current effective rates.[1] The Parties also agree that the final rates set in Docket No. 2006-0386 may impact revenues at current effective rates, and that the amount of the stipulated interim rate increase will be adjusted to take into account any such changes.

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Sincerely,

Darcy L. Endo-Omoto
Vice President
Government & Community Affairs

Enclosure

cc: Division of Consumer Advocacy
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Concurred:

Catherine P. Awakuni
Executive Director
Division of Consumer Advocacy
Department of Commerce and Consumer Affairs

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Associate Counsel
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DOCKET NO. 2008-0083
HECO 2009 TEST YEAR RATE CASE

AGREEMENTS REACHED BETWEEN

HECO, THE CONSUMER ADVOCATE, AND THE DEPARTMENT OF DEFENSE

INTRODUCTION

In its direct testimony, Hawaiian Electric Company, Inc. ("HECO" or "Company") proposed a step increase for the Campbell Industrial Park ("CIP") Combustion Turbine Unit 1 ("CT-1") which is equal to the difference between the revenue requirement reflecting the full annualized cost of the CIP CT-1 (with the net investment of the CIP CT-1 in both the beginning and end of test year balances) and the revenue requirement exclusive of the cost of the CIP CT-1. The Company requested that the CIP CT-1 step increase become effective on the in-service date of the new unit, which is scheduled for July 31, 2009 (HECO-101, p. 4). The Company further stated that if the Commission does not approve the CIP CT-1 step increase, the interim increase (and effectively the final increase) should be based on the "base case" which includes the 2009 CIP CT-1 plant additions on an average basis (net of deferred income taxes) in the end of test year rate base balance but not in the beginning of test year rate base balance (HECO-101, p. 3, footnote 2). As explained below, for purposes of settlement, the Parties[1] in this proceeding agree that the test year revenue increase and revenue requirement for this proceeding will be based on the base case with average rate base treatment of CIP CT-1. Because of their stated opposition to annualized treatment of CIP CT-1 and the HECO-proposed step increase, the Consumer Advocate and the DOD utilized the base case shown in Attachment 7 of the HECO T-23 Rate Case Update as the starting point for their test year calculations and adjustments (CA-T-1, p. 7; DOD T-1, p. 4). Hence, many of the adjustments explained in this document are in relation to HECO's test year estimates reflected in Attachment 7 of the HECO T-23 Rate Case Update.

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[1] The "Parties" in this proceeding are HECO, the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs ("the Consumer Advocate") and the Department of Defense ("DOD").

REVENUE DECOUPLING

1. Revenue Balancing Account

   In its Rate Case Update, the Company proposed a revenue decoupling mechanism to be effective upon issuance of an interim decision and order in the HECO 2009 rate case.

   HECO also submitted a proposed tariff in the response to CA-IR-277 in this rate case that would establish a revenue balancing account ("RBA") that would remove the linkage between electric revenues and sales, effective on the date of the interim decision and order. HECO T-22 Attachment 1 is a revision to the RBA tariff to conform with agreements reached between the Consumer Advocate and the Hawaiian Electric Companies in the decoupling proceeding, as reflected in the Joint Final Statement of Position of the HECO Companies and the Consumer Advocate filed May 11, 2009 in Docket No. 2008-0274. This would implement the provision in paragraph 1 of Section 28 of the Energy Agreement among the State of Hawaii, Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs, and the Hawaiian Electric Companies ("Energy Agreement") which states: "The revenues of the utility will be fully decoupled from sales/revenues beginning with the interim decision in the 2009 Hawaiian Electric Company Rate Case (most likely in the summer of 2009)." The Company stated, however, that if the Commission does not accept the proposal to establish a revenue balancing account in this proceeding, HECO should be allowed to revise its 2009 test year estimates according to the sales forecast reduction. (See Rate Case Update, HECO T-1, pages 8 to 11.)

   The Joint Decoupling Proposal submitted by the HECO Companies and the Consumer Advocate in the decoupling proceeding includes a sales decoupling mechanism, which will be implemented through the RBA and a Revenue Adjustment Mechanism (or "RAM"). The proposal is to implement sales decoupling through the attached RBA tariff at the time of the interim increase. All parties in the decoupling docket appear to be in agreement that sales decoupling should be implemented. The RBA approved as part of the final decision would be conformed to the sales decoupling mechanism ultimately approved by the Commission in the decoupling docket. There is no proposal to implement the RAM as part of the interim rate changes approved by the Commission, and the RAM would not be implemented until the Commission concludes its review and approval process in the decoupling docket.

   Although the Consumer Advocate's testimonies did not address whether a revenue balancing account should be approved in this proceeding, the Consumer Advocate agreed in the decoupling proceeding (Docket No. 2008-0274) that "...the initial sales decoupling mechanism would begin with the establishment of Authorized Base Revenues, which would be equal to the revenue requirements approved by the Commission in its interim decision and orders for HECO's 2009 test year general rate case proceeding and MECO's and HELCO's 2009 or 2010 test year general rate case proceedings" (Joint Final Statement of Position of the HECO Companies and Consumer Advocate, page 11).

For purposes of settlement, the Parties agree that the Commission should allow HECO to establish a revenue balancing account as described in its Rate Case Updates to be effective on the date of the interim decision and order in this proceeding.

SALES FORECAST AND REVENUES

2. Sales and Number of Customers
The following table reflects the test year sales and average customer count projections as set forth by HECO, the Consumer Advocate, and the DOD in written testimony.

2009 Test Year Estimate			
	Average Customer Count	GWh Sales	Source
HECO – Direct	296,210	7,657.8	HECO T-2, page 1; HECO-201.
Rate Case Update	296,210	7,484.7	Rate Case Update, HECO T-2, pages 1 & 6.
Consumer Advocate	296,210	7,484.7	CA-T-1, pages 44-45; CA-101, Schedule C-1.
DOD	296,210	7,657.8	DOD-T-1, pages 9-10.

In direct testimony, HECO's test year 2009 estimate of electric sales was 7,657,800,000 kWh, with 296,210 average customers, based on its March 2008 sales update. See HECO T-2, page 1; and HECO-201.

In its December 2008 rate case update, HECO continued to use the test year 2009 electric sales estimate of 7,657,800,000 kWh, with 296,210 average customers, although its September 2008 sales update reflected 2009 sales of 7,484,700,000 kWh, and 296,210 average customers. The September 2008 sales update reflected lowered sales expectations and an increasingly pessimistic economic outlook. Actual sales for 2008 through August 2008 were lower than anticipated in the March 2008 sales update. The September 2008 sales update for test year 2009 reflected the expectations for lower 2008 and 2009 sales, the continuation of high electricity prices, and a rapidly slowing global economy. See Rate Case Update, HECO T-2, pages 1 and 6. HECO did not propose recognition of its reduced September 2008 sales forecast for 2009 because of its expectation that the proposed revenue balancing account, as set forth in Attachment 1 to Rate Case Update, HECO T-1, would provide an opportunity to recover any reduced sales not reflected in the test year forecast.

The Consumer Advocate in its direct testimony proposed to use the HECO Rate Case Update test year electric sales of 7,484,700,000 kWh and average number of customers of 296,210. See CA-T-1, pages 44 to 45; CA-101, Schedule 1. The Consumer Advocate's position is that the best available forecast of test year sales should be used to establish the

rate case revenue requirement, so that decoupling adjustments, if decoupling is approved in this proceeding, are zero-based to the extent possible. See CA-T-1, page 43.

The DOD used HECO's direct testimony estimate of test year electric sales of 7,657,800,000 kWh and average number of customers of 296,210, rather than the updated September reduced sales forecast. In its direct testimony, the DOD did not expressly address test year sales and average number of customers. However, in developing its estimated impact on revenue requirements resulting from DOD's recommended adjustments to operating income and rate base, the DOD began with HECO's updated base case request for a revenue increase of $90.666 million at current effective rates as reflected in HECO's T-23 update, Attachment 7, which is based on HECO's direct testimony test year estimate of electric sales of 7,657,800,000 kWh and average number of customers of 296,210. See DOD T-1, pages 9 to 10. The DOD made no further adjustment to the higher test year electric sales reflected in the Attachment 7 starting point.

Settlement 2009 Test Year Estimate		
Average Customer Count	GWH Sales	Source
296,210	7,484.7	Rate Case Update, HECO T-2, page 1 and 6; CA-T-1, pages 44-45; CA-101, Schedule C-1.

The Parties agree, for settlement purposes, to reflect the lower estimated test year 2009 electric sales of 7,484,700,000 kWh, and average number of customers of 296,210, based on HECO's September 2008 sales update, and December 2008 fuel prices.

ELECTRIC SALES REVENUES

3. Electric Sales Revenues at Present, Currently-Effective, and Proposed Rates
The test year electric sales revenues are derived by multiplying the test year sales projections for each rate schedule by the present tariff rates, current effective rates (including the interim rate increase for the test year 2007 rate case) and proposed tariff rates. The revenues at present rates and currently effective rates also include the revenues derived from application of the Energy Cost Adjustment Clause ("ECAC") factor to reflect the monies collected to recover changes in fuel cost from the amount that was recognized in HECO's last rate case proceeding. HECO's test year revenues at proposed rates are designed to recover its calculated revenue requirement for the test year, as derived from HECO's proposed test year rate base, return on rate base and expenses.

As noted previously, HECO proposed rate step increase treatment for the CIP CT-1 costs in its Direct Testimony. The table below reflects HECO's electric sales revenues at current effective, present and proposed rates for the base case, interim step without CIP CT-1 ("CT-1") and full cost for CT-1 as presented in direct testimony.

Electric Sales Revenues HECO 2009 Test Year Estimate – Direct Testimony ($ thousands)					
Base Case		Interim (w/o CT-1)		CT-1 Full Cost	
Current Effective	Proposed	Current Effective	Proposed	Current Effective	Proposed
$1,862,287.6	$1,947,368.0	$1,862,287.6	$1,935,254.0	$1,862,287.6	$1,959,179.0
Present Revenues	Proposed	Present Revenues	Proposed	Present Revenues	Proposed
$1,785,018.9	$1,947,368.0	$1,785,018.9	$1,935,254.0	$1,785,018.9	$1,959,179.0

Source: HECO T-3, pages 2 to 3; HECO-303.

In HECO's rate case update, the Company proposed a number of different revenue requirement scenarios that are summarized in Attachment 1 of Rate Case Update, T-23. In these scenarios, the level of proposed revenues for the test year varies depending upon how certain ratemaking issues are treated. For example, the following electric sales revenues are relevant to the scenario excluding the Hawaii Clean Energy Initiative ("HCEI") Implementation Studies expenses and the reduction in electric sales.

Electric Sales Revenues HECO 2009 Test Year Estimate Rate Case Update HECO T-23 ($ thousands)					
Without HCEI Implementation Studies and Without Sales Reduction					
Base Case Att.4		Interim (w/o CT-1) Att.3 & 6		CT-1 Full Cost Att.2 & 5	
Current Effective	Proposed	Current Effective	Proposed	Current Effective	Proposed
$1,861,751	$1,949,854	$1,861,751	$1,937,637	$1,861,751	$1,961,664
Present	Proposed	Present	Proposed	Present	Proposed
1,784,962	$1,949,854	$1,784,962	$1,937,637	$1,784,962	$1,961,664

Source: Rate Case Update, HECO T-23, Attachments 1, 2, 3, 4, 5, and 6.

HECO alternatively proposed the following electric sales revenues at current effective rates <u>for the base case</u> should the Commission disallow recovery of the HCEI Implementation Studies expenses through the Renewable Energy Infrastructure Program/Clean Energy Infrastructure ("REIP/CEI") Surcharge and include such expenses within the revenue requirement. In addition, if the Commission also decides not to incorporate the sales forecast reduction, the revenue impacts are shown below. (See Rate Case Update, HECO T-23, pages 2 to 3, Attachments 7 and 8.)

Electric Sales Revenues HECO 2009 Test Year Estimate Rate Case Update ($ thousands)		
Base Case – with HCEI Implementation Studies in Base Rates		
No Sales Reduction Att.7	With Sales Reduction Att.8	
Current Effective Rates	Current Effective Rates	Source
$1,861,751	$1,811,261	Rate Case Update, HECO T-23, Attachments 7 and 8.
Proposed Rates	Proposed Rates	
$1,952,303	$1,913,265	Rate Case Update, HECO T-23, Attachments 7 and 8.

In its written testimony, the Consumer Advocate recommended test year 2009 electric sales revenues at current effective rates of $1,322,435,000, or $539,316,000 lower, than HECO's test year 2009 electric sales revenues of $1,861,751,000 for its updated base case without sales reduction, with wind studies. See CA-101, Schedule C, page 1; Rate Case Update, HECO T-23, Attachment 7, page 1. The Consumer Advocate's lower recommended sales revenue amount results from two ratemaking adjustments to: (1) recognize the updated lower sales forecast prepared by HECO in its Updates (CA-101, Schedule C-1) and (2) to adjust for ECAC impacts arising from lower fuel prices (CA-101, Schedule C-3).

Electric Sales Revenues Consumer Advocate 2009 Test Year Estimate ($ thousands)		
	Current Effective Rates	Source
HECO Update	$1,861,751	Rate Case Update, HECO T-23, Attachment 7, page 1
CA adjustment for lower sales	$50, 490	CA-101, Schedule C-1
CA adjustment for lower fuel prices	$488,826	CA-101, Schedule C-3
CA Electric Sales Revenue	$1,322,435	CA-101, Schedule C, page 1

The Consumer Advocate's direct testimony included electric sales revenues at current effective rates of $1,322,435,000, based on HECO's September 2008 sales update. See CA-T-1, page 46; CA-101, Schedule C, page 1. The Consumer Advocate proposed a reduction of $50,490,000 in electric sales revenue due to lower electric sales. See CA-101, Schedule C-1. The Consumer Advocate also proposed a reduction of $488,826,000 due to lower fuel prices. See CA-101, Schedule C-3. The Consumer Advocate's test year 2009 electric sales revenues, at current effective rates, including its proposed adjustments was $1,322,435,000. See CA-101, Schedule C, page 1.

The DOD's testimony focused on adjustments to HECO's proposed rate increase, and did not expressly address electric sales revenue, since the DOD did not propose any adjustments to HECO revenues at present rates or at current effective rates. However, since the DOD based its test year 2009 adjustments on Rate Case Update, HECO T-23, Attachment 7, the DOD indirectly based its test year estimates on electric sales revenue at current effective rates of $1,861,751,000, which amount was not reduced to the September 2008 lower sales projection for the test year.

The Parties agree to test year 2009 electric sales revenues at current effective rates of $1,291,619,000, based on HECO September 2008 electric sales forecast update of 7,484,700,000 kWh, and December 2008 fuel prices. This revised estimate of test year 2009 electric sales revenues at current effective rates also includes the effect of the adjustments to Schedule J, Schedule PS, and Schedule PP described in HECO's response to CA-IR-285 and is based on an Energy Cost Adjustment factor of 0.152 cents per kWh described below in the section "ECAC Revenues". The result is a 2009 test year electric sales revenue at current effective rates of $1,291,619,000 as shown in the table below.

Test Year 2009 Estimated Electric Sales Revenue, in $000s

	Base Revenue	Energy Cost Adjustment	Revenue at Present Rates	2007 Interim Rate Increase	Revenue at Current Effective Rates
	(A)	(B)	[C]=(A)+(B)	(D)	(E)=[C]+(D)
Rates					
Sched R	$372,926.3	$3,083.5	$376,009.8	$26,440.5	$402,450.3
Sched G	$74,291.0	$571.7	$74,862.7	$5,207.8	$80,070.5
Sched H	$5,271.7	$50.3	$5,322.0	$380.1	$5,702.1
Sched J	$326,658.9	$3,101.2	$329,760.1	$19,370.9	$349,131.0
Sched PP	$270,851.5	$2,953.8	$273,805.3	$12,322.4	$286,127.7
Sched PS	$125,723.8	$1,293.2	$127,017.0	$9,346.3	$136,363.3
Sched PT	$23,126.3	$266.1	$23,392.4	$1,512.5	$24,904.9
Sched F	$6,354.8	$57.0	$6,411.8	$456.9	$6,868.7
	$1,205,204.3	$11,376.8	$1,216,581.1	$75,037.4	$1,291,618.5

Source: See HECO T-3, Attachments 1 and 2, Final Settlement

The Parties also agree to test year 2009 electric sales revenues at proposed rates of $1,371,318,000, as calculated by the Company's revenue requirements model and based on the overall results of this settlement agreement.

Electric Sales Revenues Settlement 2009 Test Year Estimate ($ thousands)		
Current Effective	Proposed	Increase
$1,291,619	$1,371,318	$79,699

As a result of these settlements, the Parties agree on the electric sales revenues at proposed rates of $1,371,318,000. (See Statement of Probable Entitlement, page 1 of Exhibit 1.)

OTHER OPERATING REVENUES

4. Other Operating Revenues at Current Effective and Proposed Rates
HECO's estimated test year 2009 other operating revenues, including the gain on sale of land, at current effective, present and proposed rates for the base case are reflected in the following table, as presented in direct testimony.

Other Operating Revenues, including Gain on Sale of Land HECO 2009 Test Year Estimate – Direct Testimony ($ thousands)		
Base Case	Interim (w/o CT-1)	CT-1 Full Cost
Current Effective Rates	Current Effective Rates	Current Effective Rates
$5,102	$5,102	$5,102
Present Rates	Present Rates	Present Rates
$5,034	$5,034	$5,034
Proposed Rates	Proposed Rates	Proposed Rates
$5,211	$5,200	$5,222

Source: HECO T-3, page 6; HECO-301.

Other operating revenues vary among scenarios because late payment charges are a function of and are calculated as a percentage of electric sales revenues. See HECO T-3, page 6. The increase in proposed rate revenues is also due to the proposed increase in the returned payment charge. HECO did not revise its 2009 test year estimates for other operating revenues in its rate case update.

In its direct testimony, the Consumer Advocate recommended the following other operating revenues for the 2009 test year.

Other Operating Revenues, Including Gain on Sale of Land Consumer Advocate 2009 Test Year Estimate ($ thousands)			
HECO Direct Testimony at Current Effective Rates	Consumer Advocate's Proposed Adjustment	Consumer Advocate's Proposed Test Year Estimate at Current Effective Rates	Source
$5,102	$121	$5,223	CA-101, Schedule C, page 1

The Consumer Advocate's adjustments were based on: (1) a decrease in late payment charge estimates by $45,000 as a result of lower sales, and (2) an increase in revenues of $166,000 for non-sales electric utility charges, for a net adjustment of $121,000. See CA-T-1, pages 48 to 50 and CA-101, Schedules C-1 and C-2. The Consumer Advocate also supported HECO's proposed increase in the returned payment charge from $16 to $22. See CA-T-5, page 56. The DOD did not propose any adjustments to the Company's test year estimate. See DOD-111.

During settlement discussions, HECO agreed to the Consumer Advocate's 2008 transaction volume methodology (see CA-T-1, pages 47 to 48) rather than its own five-year (2003-2007) average for calculation of service establishment charges, field collection charges and returned payment charges (see HECO T-9, page 30). HECO corrected the present tariff charge for returned check fees from the $18 shown in CA-101, Schedule C-2 that was used by the Consumer Advocate, to $16, which was approved in Docket No. 04-0113 in Decision and Order No. 24171 filed on May 1, 2008. See HECO T-9, page 30. This correction reduced the Consumer Advocate's revenue adjustment for returned payment charges in CA-101, Schedule C-2, line 5, by $6,000, from $53,000 to $47,000, and the total other operating revenues by the same amount, from $166,000 to $160,000 at current effective rates. The Consumer Advocate acknowledged HECO's acceptance of its methodology and accepts HECO's correction to the returned payment charge rate of $16.

The Consumer Advocate reduced the test year estimate for other operating revenues in CA-101, Schedule C-1 – specifically, late payment charges – based on the lower sales scenario in HECO's rate case update HECO T-23, Attachment 8. However, the Consumer Advocate did not include an estimate of late payment charge reductions associated with the additional revenue reductions proposed in CA-101, Schedule C-3. There would be a further reduction in late payment charges due to the Company's further reduction of electric sales revenues shown in HECO T-3 Attachment 1. The resulting late payment charge reduction associated with the electric sales revenue reduction from the Company's electric sales revenue estimate of $1,811,260,500 at current effective rates in the HECO T-23 Rate Case Update, Attachment 8 (see also column B, line 10 of Schedule C-1 of CA-101) to $1,291,618,500 in HECO T-3 Attachment 1 of this Final

Settlement is $462,000 (i.e., ($1,811,260,500 - $1,291,618,500) x 0.089% late payment charge factor).

Therefore, the total adjustment for other operating revenues of ($347,000) at current effective rates is based on the following:

1) a $45,000 reduction in late payment charges attributed to lower sales in HECO's rate case update HECO T-23, Attachment 8 [($1,811,261,000 – $1,861,751,000) x .00089]
2) a $166,000 increase in miscellaneous revenues to due higher transaction volumes (See CA-101, Schedule C-2)
3) a $6,000 decrease in miscellaneous revenues due to a correction in the returned payment charge fee from $18 to $16, i.e., ($16 – $18) x 2,916. (See CA-101, Schedule C-2)
4) a $462,000 reduction in late payment charges due to the Consumer Advocate's proposed sales reductions associated with the additional revenue reductions proposed in CA-101, Schedule C-3. [(1,811,260,500 – 1,291,618,500) x 0.00089]

The Consumer Advocate and the DOD did not propose any adjustment to HECO's test year 2009 estimate of $615,000 for gain on sale of land and therefore it remained unchanged. See CA-101, Schedule C and DOD-111.

The table below reflects the Parties' agreement on HECO's 2009 test year other operating revenues.

Other Operating Revenues, including the Gain on Sale of Land Settlement Test Year Estimate ($ thousands)			
	Test Year Estimate at Current Effective Rates	Total Adjustments	Adjusted Test Year Estimate at Current Effective Rates
Other Operating Revenues	$4,487	($347)	$4,140
Gain on Sale of Land	615	--	615
TOTAL	$5,102	($347)	$4,755

Other operating revenues at proposed rates would depend on the level of electric sales revenues since the late payment charges would be equal to electric sales revenues at proposed rates multiplied by the factor of 0.089%. Further, the $6 proposed increase in the returned payment charge multiplied by the agreed upon 2008 transaction volume of 8,523 shown in CA-101, Schedule C-2 would also increase other operating revenues at proposed rates. The increase in other operating revenues at proposed rates, given an

increase in electric sales revenues of $79,699,000 at proposed rates as shown in the previous section would be calculated as follows:

Increase in electric sales revenues	$79,699,000	
Times late payment charge factor	0.00089	
Increase in late payment charges		$71,000
2008 transaction volume	8,523	
Increase in late payment charge	$6.00	
Increase in late payment charges		$51,000
Total Increase in Other Operating Revenues		$122,000
Other Operating Revenues at Current Effective Rates		$4,140,000
Other Operating Revenues at Proposed Rates		$4,262,000

For purposes of settlement, the Parties agree that other operating revenues at proposed rates for the 2009 test year are $4,262,000.

EXPENSES

FUEL AND PURCHASED POWER EXPENSE AND RESULTING ECAC REVENUES AT PRESENT RATES AND COMPLIANCE WITH ACT 162

5. The table below reflects the test year fuel oil, fuel-related and purchased power expense projections set forth by HECO, the Consumer Advocate and the DOD. The amounts reflect the results of a production simulation model used by HECO and the Consumer Advocate to determine the optimal dispatch of available generation to meet HECO's 2009 test year energy requirements.

($ thousands)				
	HECO Direct Testimony	Information Only * HECO Rate Case Update With Sales Reduction	Consumer Advocate DT Position	DOD DT Position**
Fuel Expense				
Fuel Oil Expense	$809,058	$776,579	$444,697	
Fuel Related Expense	$7,596	$7,454	$7,164	
Total Fuel Expense	$816,654	$784,033	$451,861	$816,654
Source	HECO-401	Rate Case Update HECO T-4, Page 2	CA-201	DOD-104
Purchased Power Expense				
Energy Payment	$369,123	$366,938	$250,268	
Firm Capacity Payments	$107,932	$107,881	$107,881	
Total Purchased Power Expense	$477,055	$474,819	$358,148	$477,055
Source	HECO-601	Rate Case Update, HECO T-6, Page 4	CA-201	DOD-104

* For information only. Not used for revenue requirement purposes, except as illustrated in the Rate Case Update, HECO T-23, Attachment 8 filed on December 22, 2008.
** Also see HECO/DOD-IR-108.

6. Fuel Expense: Fuel Oil Expense and Fuel Related Expenses
The Company's test year estimate for fuel expense was $816,654,000 in direct testimony and included $809,058,000 of fuel oil expense and $7,596,000 of fuel-related expense. (See HECO T-4, page 4 and HECO-401.) The test year sales were based on the Company's March 2008 Sales Update as provided in HECO T-2. The test year fuel prices for low sulfur fuel oil ("LSFO") and diesel were based on actual April 2008 contract prices, and the price for biodiesel was based on an estimate of the April 2008 price as if deliveries had commenced under the Imperium Biodiesel Supply contract. (See HECO T-5, page 6.)

In the HECO T-4 Rate Case Update, filed on November 26, 2008, the Company included information on the impact on fuel expense using the (1) September 2008 Sales and Peak Forecast which projected lower sales for the 2009 test year, and (2) correction to the biodiesel fuel price estimate. However, HECO did not include the impact of the sales forecast reduction in its revenue requirement except as illustrated in the Rate Case Update, HECO T-23, Attachment 8 filed on December 22, 2008.

The DOD did not propose any adjustments to the Company's fuel expense of $816,654,000 and purchased power expense of $477,055,000 as proposed in HECO's direct testimony. (See DOD-104.)

a. Consumer Advocate: Production Simulation

The Consumer Advocate used the P-Month production simulation model to independently test the reasonableness of HECO's fuel and purchased power projections. (See CA-T-2, page 22.)

The Consumer Advocate also used the inputs from the Company's HECO T-4 Rate Case Update, filed November 26, 2008, to benchmark its production simulation model results against HECO's production simulation results. (See CA-T-2, page 23.) Although several generating units and purchased power resources were dispatched differently, the Consumer Advocate's production simulation results were similar to HECO's results. The small differences in energy generated by HECO's generating units were considered negligible. (See CA-T-2, page 24.)

To independently estimate fuel and purchased power costs associated with the Consumer Advocate's position, the Consumer Advocate prepared a production simulation using December 2008 fuel prices (including $62.97/bbl for Kalaeloa) and reduced the test year Hoku Solar energy purchase based on an in-service date of July 1, 2009. (See CA-T-2, pages 6, 19 and 25.) The Consumer Advocate also ran CIP CT-1 as a peaking unit instead of a low capacity factor cycling units as modeled by HECO. (See CA-T-2, page 26.)

Based on the results of its production simulation as described above and the use of December 2008 contract fuel prices, the Consumer Advocate proposed the following adjustments:

- a $32,621,000 reduction to fuel expense and a $2,236,000 reduction to purchased power expense to reflect the lower sales forecast for 2009 as shown in CA-101, Schedule C-1.
- an additional $332,172,000 reduction to fuel expense and $116,671,000 reduction to purchased power expense as shown in CA-101, Schedule C-3.
- a $13,303,000 reduction to fuel inventory to reflect December 2008 actuals as shown in CA-101, Schedule B, page 2, Adjustment B-1.
- a $23,092,000 reduction to fuel inventory as shown in CA-101, Schedule B-4, page 2, Adjustment B-4.

b. HECO April 2009 Update Production Simulation

For settlement discussions, HECO reran its production simulation and agreed to use (1) the lower sales for the 2009 test year as reflected in HECO's September 2008 Sales and Peak Forecast, (2) an in-service date of July 1, 2009 for Hoku Solar, and (3) December 2008 fuel prices. The results of HECO's April 24, 2009 ("April 2009

Update") production simulation run, including updated exhibits and workpapers supporting HECO's revised fuel oil expenses, fuel related expenses, fuel prices, fuel inventory and purchased power expenses were provided to the Consumer Advocate and the DOD on April 30, 2009. See HECO T-4, Attachment 3, and HECO T-5, Attachment 3, April 2009 Update, Final Settlement attached hereto.

Using HECO's April 2009 Update assumptions for (1) Kalaeloa's fuel price, (2) avoided cost energy rates, (3) HPower energy rate and (4) AES availability (kWh) for the months of October through December 2008, the Consumer Advocate independently reran another production simulation in May 2009. Based on its review, the Consumer Advocate found its May 2009 Update and HECO's April 2009 Update production simulation results to be comparable and reasonable. According to the Consumer Advocate, the differences between the production simulation results represented a difference of approximately 0.008% of estimated test year fuel and purchased power expenses. As a result, the Consumer Advocate acknowledged HECO's April 2009 Update test year fuel expense, purchased power expense, sales heat rates, fuel inventory and ECA factor at current effective rates as reasonable, and acceptable for purposes of setting rates in this proceeding.

For purposes of settlement, the Parties agree to use HECO's April 2009 Update production simulation results and accept HECO's April 2009 Update 2009 test year total fuel expense, purchased power expense, sales heat rates, fuel inventory and ECA Factor at current effective rates.

The Parties agree that the Company's 2009 test year total fuel expense, including fuel oil and fuel-related expense, should be $438,348,000 as summarized below:

	Settlement 2009 Test Year Estimate ($ thousands)	Source
Fuel Oil Expense	$431,206	HECO T-4 Attachment 1, page 1, April 2009 Update, Final Settlement, and HECO T-5, Attachment 1, pages 1 & 4, April 2009 Update, Final Settlement
Fuel Related Expense	$7,142	
Total Fuel Expense	$438,348	

Details supporting HECO's April 2009 Update production simulation results, including HECO's fuel expense and generation efficiency are provided as HECO T-4, Attachments 1 and 2, April 2009 Update, Final Settlement attached hereto. Additional details supporting HECO's updated fuel prices, fuel oil and fuel related expenses and fuel inventory are provided in HECO T-5, Attachments 1 and 2, April 2009 Update, Final Settlement.

7. Purchased Power Expense

As noted in paragraph 6 above, the Parties agree to use the results of HECO's April 2009 Update production simulation and accept HECO's April 2009 Update purchased power expense of $346,467,000 for the 2009 test year.

	Settlement 2009 Test Year Estimate ($ thousands)	Source
Energy Payments	$238,646	HECO T-6, Attachment 2, Page 1, April 2009 Update, Final Settlement
Firm Capacity Payments	$107,821	
Total Purchased Power Expense	$346,467	

Exhibits and workpapers supporting HECO's April 2009 Update purchased power expense are provided as HECO T-6, Attachments 1 and 2, April 2009 Update, Final Settlement.

8. ECAC Revenues

Energy Cost Adjustment Factor and Compliance with Act 162

In its direct testimony, the Company calculated an Energy Cost Adjustment Factor ("ECAF") of 7.221 cents per kWh at current effective rates and at present rates and an ECAF of 0.000 cents per kWh at proposed rates for the 2009 test year (HECO-1033). The changes in the Company's fuel oil and fuel related inspection costs, trucking costs, and purchased energy costs from the total fuel costs embedded in base rates are recovered through the ECAC. The Company proposed to include the recovery of changes in fuel additive costs through the ECAC (fuel additive costs are proposed to be embedded in base rates) and to include a weighted efficiency factor (sales heat rate) in its ECAC calculations (in the same manner as HELCO proposed in Docket No. 05-0315, MECO proposed in Docket No. 2006-0387 and HECO proposed in Docket No. 2006-0386), based on fixed efficiency factors for LSFO, diesel, biodiesel and "other" generating units. Because DG units are generally more efficient than other generating units, the Company proposed not to apply a fixed efficiency factor to DG fuel and transportation costs (HECO T-10, page 69). The Company proposed the following efficiency factors at proposed rates in its direct testimony (HECO-1037):

LSFO:	0.011092 mbtu/kwh
Diesel:	0.024358 mbtu/kwh
Biodiesel:	0.022909 mbtu/kwh
Other plants:	0.011185 mbtu/kwh
Weighted average:	0.011185 mbtu/kwh

With respect to Act 162, HECO stated that its ECAC complies with the statutory requirements of Act 162 and the current level of ECAC fuel price risk-sharing is

appropriate, and that no change is necessary to the current ECAC risk-sharing approach (HECO T-10, page 70 to79).

In CA-T-1, the Consumer Advocate did not object to the continuation of the ECAC to provide HECO with full recovery of changes in energy costs (CA-T-1 pages 51 to 52). In CA-T-2, the Consumer Advocate calculated an ECAF of 0.571 cents per kWh at current effective rates based on its production simulation results for the 2009 test year which incorporated the September 2008 sales forecast reduction and December 2008 fuel prices as described above. The DOD did not object to HECO's ECAC proposals (DOD-300, page 26).

As explained above, HECO agreed with certain production simulation assumptions proposed by the Consumer Advocate but proposed to use a December 2008 fuel price for Kalaeloa. HECO recalculated the ECAF based on the lower sales forecast and December 2008 fuel prices (including Kalaeloa). The resulting ECAF was 0.152 cents per kWh at current effective and present rates which when applied to 7,484.7 gWh yielded ECAC revenues of $11,376,800 at current effective and present rates as shown in HECO T-3, Attachment 1, page 1, column B. The ECAF at proposed rates was 0.000 cents per kWh. See Final Settlement, HECO T-10, Attachment 1, page 1.

The Consumer Advocate acknowledged that HECO's recalculated ECAFs were reasonable and accepts them for purposes of setting rates in this proceeding.

The Parties agree that the ECAF at current effective and present rates is 0.152 cents per kWh, 0.000 cents per kWh at proposed rates, and the sales heat rates used in the ECAF as fixed efficiency factors at proposed rates are:

LSFO:	0.011114 mbtu/kwh
Diesel:	0.024582 mbtu/kwh
Biodiesel:	0.016762 mbtu/kwh
Other plants:	0.011184 mbtu/kwh
Weighted average:	0.011184 mbtu/kwh

See HECO T-10, Attachment 1, page 9, Final Settlement.

O&M EXPENSES

9. Vehicle Fuel On-Cost Expense

HECO's test year estimate of vehicle fuel costs (which also includes miscellaneous lube, oil and grease costs) in direct testimony as shown in CA-IR-2 HECO T-8 Attachment 14A is $1,413,888. The vehicle fuel costs are included as part of the vehicle charges that are cleared through the vehicle on-cost, of which 61.62% of the vehicle charges or $871,000 are cleared to expense accounts (vehicle fuel on-cost expense). In response to CA-IR-387, the Company re-calculated the vehicle fuel costs of $1,332,918, based on a

three-year historical average of fuel costs, of which $821,000 ($1,332,918 x 61.62%) are cleared as vehicle fuel on-cost expense. The resulting adjustment is a reduction of O&M expense of $50,000 ($871,000 - $821,000) and is allocated to the O&M expense block of accounts as shown in response to CA-IR-387.

To fully respond to CA-IR-387, the Company also re-calculated the vehicle fuel costs of $979,559, based on current fuel prices as of March 23, 2009, of which $603,000 ($979,559 x 61.62%) are cleared as vehicle fuel on-cost expense. The adjustment is a reduction of O&M expense of $268,000 ($871,000 - $603,000) and is allocated to the various O&M expense block of accounts as shown in response to CA-IR-387.

In CA-T-3 page 53, the Consumer Advocate proposed a reduction of $50,000, based on the 3-year historical average of the vehicle fuel costs (CA-T-3, page 53; CA-101, Schedule C-16, column E). In DOD T-1, page 24, the DOD proposed a reduction to the vehicle on-cost expense by $268,000, based on fuel prices as of March 23, 2009, citing the recession in its selection, rather than the three-year average fuel costs. DOD believed that a three year average of 2006-2008 fuel costs would not be representative of fuel costs for a 2009 test year.

The Company disagreed with the DOD. By applying fuel prices in a single point in time does not provide a reasonable estimate of the test year vehicle fuel costs. A more reasonable estimate would be based on an average fuel price over a period of time.

The Company agreed with the Consumer Advocate's downward adjustment of $50,000. DOD did not agree with the Consumer Advocate's adjustment that was based on three years of historical fuel prices during which time fuel prices were substantially higher. DOD reiterated support for its originally proposed adjustment, based on current prices, and suggested during settlement discussions as a compromise from prices at a single recent date, that an average of recent months in the 2009 test year be used as more representative of fuel prices being experienced during the 2009 test year. For settlement purposes, a downward adjustment of $50,000 will be applied to the test year estimate of vehicle fuel cost. However, the DOD reserves its right to pursue its stated position in other proceedings before the Commission.

10. General Inflation Factor

In direct testimony, HECO T-17 pages 22 to 23, the Company explained the use of a general inflation factor in developing non-labor O&M expense estimates for the 2009 budget only when specific known cost indices for non-labor costs were not available. The Consumer Advocate, in their direct testimony (see CA-T-3, page 49 to 51), opposed the use of the inflation factor and recommended the general inflation factor be set at zero resulting in a $190,000 decrease in non-labor O&M expenses (see CA-101, Schedule C-16). The Company does not agree that the use of a general inflation factor should not be permitted in instances where the Company's budgeting process does not have specific known cost indices or estimates, but it does accept the Consumer Advocate's recommendation to reduce the 2009 non-labor O&M expense estimates by $190,000.

The DOD in their direct testimony (see DOD T-1, page 23) recommended the general inflation factor be removed, citing more recent versions of the Blue Chip Economic Indicators and the California Public Utilities Commission's Escalation Memorandum show the CPI to be negative for 2009. The DOD, in DOD-113, identifies a proposed elimination of $7,802,000, which was taken from HECO-1708. However, HECO-1708 identified the $7,802,000 as costs that represent the total 2009 O&M non-labor expense estimate that was derived using the 2.5% general inflation factor (i.e., both estimated costs of $7,612,000 and $190,000 due to a 2.5% inflator). (See CA-101, Schedule C-16, column (C) and (D).) HECO does not agree with the DOD's proposed $7,802,000 decrease, but accepts a reduction of $190,000 in 2009 non-labor O&M expenses which equates to zeroing out the general inflation factor for 2009 for purposes of reaching settlement.

For purposes of settlement the Parties accepted the Consumer Advocate's adjustment to reduce the 2009 non-labor O&M expense estimates by $190,000.

11. Outside Services Relating to Certain Renewable Energy and Energy Efficiency Expenses
In connection with the Hawaii Clean Energy Initiative, the *Energy Agreement among the State of Hawaii, Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs, and the Hawaiian Electric Companies* ("Energy Agreement") was executed on October 20, 2008. Among other things, the Energy Agreement called for the integration of substantial amounts of clean, renewable energy (particularly wind energy) onto Hawaiian Electric's grid and to base the design and development of a neighbor island wind plant(s), undersea cable systems and on-island infrastructure on the results of a set of HCEI Implementation Studies. In its Rate Case Update, HECO identified a test year estimate of $2,220,000 of outside services costs for the HCEI Implementation Studies but proposed to recover those costs through the Renewable Energy Infrastructure Program/Clean Energy Infrastructure ("REIP/CEI") Surcharge, which was proposed and pending a Commission decision in Docket No. 2007-0416.[2] The Company also stated that if it does not recover the cost of the HCEI Implementation Studies through the REIP/CEI Surcharge, it should be allowed to recover this cost through base rates approved in this rate case. (See Rate Case Update, HECO T-1, pages 11 to 15).

In its testimony, the Consumer Advocate stated its concern that there was an absence of detailed specification or any limits placed upon the costs that are to be afforded separate surcharge recovery and, without any boundaries regarding what kinds of consulting costs should be considered recoverable in the REIP/CEI Surcharge, the Company may

[2] Section 29 of the HCEI Agreement called for a Clean Energy Infrastructure ("CEI") Surcharge. The CEI Surcharge is equivalent to the REIP Surcharge that the HECO Companies proposed in Docket No. 2007-0416. On November 28, 2009, the HECO Companies and the Consumer Advocate filed a letter agreeing that the REIP Surcharge proposed in Docket No. 2007-0416 is substantially similar to the CEI Surcharge and that the REIP Surcharge satisfies the HCEI Agreement provision that the implementation procedure of the CEIS recovery mechanism be submitted for Commission approval by November 30, 2008. Because HECO considers the REIP and CEI surcharges to be one and the same, this document refers to this surcharge as the "REIP/CEI Surcharge."

over-recover its total cost to provide services (CA-T-1, pages 27 and 28). The Consumer Advocate addressed what it characterized as HCEI Implementation activities in its C-101, Schedules C-4 and C-20[3]that reflected adjustments for outside services' costs related to: 1) the costs of obtaining Commission approval (e.g., legal and regulatory support services) for the Company to begin the implementation of certain HCEI initiatives; and 2) what the Consumer Advocate regarded as HCEI-related Research and Development ("R&D") studies. The breakdown of these costs follows:

CA Schedule	Description	Costs for Obtaining Approval ($000)	Costs for R&D Studies ($000)	Total Cost ($000)
C-4	HCEI Implementation Studies (aka "Big Wind Studies"	$0	$2,220	$2,220
C-4	PV Host Program	$200	$0	$200
C-4	Biofuel Agriculture Crop	$0	$50	$ 50
C-4	Biofuel Co-Firing Project	$0	$649	$649
C-4	Oahu Electric System Analysis	$0	$677	$677
	TOTAL for Schedule C-4	**$200**	**$3,596**	**$3,796**
C-20	AMI T&D Outside Svcs	$507	$0	$507
C-20	AMI R&D	$0	$611	$611
	TOTAL for Schedule C-20	**$507**	**$611**	**$1,118**
	GRAND TOTAL	**$707**	**$4,207**	**$4,914**

In its direct testimonies, the DOD did not propose any adjustments for the HCEI Implementation Studies.

a. Outside Services Costs for PUC Proceedings

There are three anticipated Commission proceedings for which HECO will incur outside services expenses that were included in the HECO Rate Case Update: the PV Host Program, the AMI Application and the Feed-In Tariff Investigative Docket. The Consumer Advocate proposed to include the PV Host Program costs in its HCEI Implementation Study adjustment (CA-101, Schedule C-4) to defer such costs for REI/CEI surcharge recovery, and proposed similar treatment for the AMI test year costs (CA-101, Schedule C-20). For the Feed-In Tariff matter, the Consumer Advocate allowed the proposed costs, less an allocation to MECO and HELCO, over a two-year proposed amortization period (CA-101, Schedule C-23).

[3] CA-T-3, pages 72 to 74, discusses Schedule C-20 and the recoverability of AMI related outside services costs and R&D costs through the CEI Surcharge or through a separate AMI Surcharge mechanism, if one is implemented by the Commission in Docket No. 2008-0303. At page 75, CA-T-3 indicated that a multi-year amortization may be appropriate in the alternative.

In settlement discussions, HECO maintained that the costs of obtaining approval for the AMI and PV Host projects and participating in the proceedings (similar to the costs incurred for the FIT proceeding) are normal, on-going costs of doing business as a regulated utility. HECO pointed out that the level of participation in Commission proceedings has increased in 2009, due in significant part to the initiation of proceedings as a result of the Energy Agreement, but anticipated that the level of participation was likely to remain high over the next year as well. To mitigate the impact of the costs of participating in the proceedings on test year revenue requirements and for purposes of reaching a global settlement, HECO proposed to amortize the identified test year outside services costs for the two AMI and PV Host project proceedings over two years. This was the same treatment that the Company proposed for the costs of a pricing consultant for the decoupling docket, as discussed in the rate case update, HECO T-11, pages 5 to 6, and the feed-in tariff ("FIT") consultant costs (see CA-101, Schedule C-23, page 1, and discussion below of C-23).

The amortization period is based on the time period between the 2009 test year rate case and HECO's next rate case anticipated to be based on a 2011 test year, as proposed by the HECO Companies in the decoupling proceeding, Docket No. 2008-0274. The outside services costs for PUC proceedings and the agreement of the Parties for settlement purposes is as follows:

1) PV Host Program: In the Rate Case Update, HECO T-7, page 45, the Company included $200,000 of outside services costs in the test year for the development of the PV Host Program. In its response to CA-IR-296, the Company stated that HECO's share of the PV Host Program outside services costs amounted to $160,000, 80% of the $200,000. Thus as agreed by the Parties, $40,000 was removed for the MECO and HELCO share of costs and the remaining $160,000 will be amortized over two years with a total reduction of $120,000 to the test year ($40,000 + ($160,000/2)).

2) AMI legal, regulatory, and outside consulting costs: The test year requirement for legal, regulatory, and outside consulting costs for the AMI project of $507,000 is described in direct testimony, HECO T-8, pages 52 and 54, updated in Rate Case Update, HECO T-8, page 5, and further described in the Company's response to CA-IR-178, page 4. For settlement purposes, the Parties agreed that, the AMI legal, regulatory, and outside consulting costs are to be amortized over two years, for a reduction of $253,000 ($507,000/ 2).

3) FIT Consultant Costs: In the Rate Case Update, HECO T-11, page 5, the Company added $115,000 ($230,000 ÷ 2 years amortization) to support the Companies' effort in its participation in Docket No. 2008-0273, the FIT Investigative docket. However, HECO's portion of these costs is $92,000 ($230,000 x 80%=$184,000 ÷ 2 years) or 80% of the total amount (see the Company's response to CA-IR-343, pages 4 to 5). The Consumer Advocate proposed to reduce the FIT consultant costs for the portion of the costs for HELCO and MECO (CA T-3 page 90). The Company has accepted

the Consumer Advocate's proposal of a reduction of $23,000 to the test year (CA-101, Schedule C-23). The DOD has not objected to the resolution of this issue.

The total amount of the proposed adjustments agreed to by the Parties is a reduction of $396,000 to the test year for outside services costs for PUC proceedings as summarized below:

- PV Host Program – HECO only – amortized over 2 years $80,000
- PV Host Program – MECO & HELCO Costs Removed $40,000
- AMI Legal & Regulatory – amortized over 2 years $253,000
- FIT Legal & Regulatory – MECO & HELCO Costs Removed $23,000
- Total Reduction $396,000

b. HCEI-Related R&D Costs

In settlement discussions the Consumer Advocate and Company agreed that both the HCEI Implementation Studies (aka "Big Wind Studies") and the Oahu Electric System Analysis (CA-101, Schedule C-4, lines 1 and 6) should be recovered through the REIP/CEI Surcharge as proposed in Docket No. 2007-0416[4]. Thus, the test year is reduced by $2,220,000 for the Big Wind Studies and $677,000 for the Oahu Electric System Analysis study.

However, HECO asserts that R&D is an on-going expense year after year and that it should be able to recover in base rates an amount that is commensurate with total expenses in past years.[5] As a result, the Parties have agreed that for purposes of settlement, the R&D costs of $50,000 for the biofuel agriculture crop research expenses and $649,000 for the biofuel co-firing project expenses remain in the test year for recovery in the Company's base rates.

For settlement purposes, the Consumer Advocate concurred with HECO's proposed $2,220,000 reduction and HECO concurred with the Consumer Advocate's proposed $677,000 reduction as noted above.[6] However, the Consumer Advocate observed that the $611,000 of AMI R&D expense in the A&G Account 930.2 that is discussed above is comprised of $488,000 for outside services and $123,000 for Tower Gateway Base ("TGB") Station lease rental. For settlement purposes, the Consumer Advocate proposed that the consulting costs of $488,000 should also be amortized over a two year period with the total TGB lease remaining in the test year O&M expense. This proposal is also accepted by the Company for settlement purposes. The DOD has not objected to the resolution of this issue. More discussion of the R&D expenses proposed to be removed

[4] See discussion in Rate Case Update, HECO T-7, pages 2 to 3.

[5] The Energy Agreement includes references to much of the Hawaiian Electric Companies' on-going renewable energy and energy efficiency efforts (such as the Renewable Energy RFP), as well as new commitments made by the Companies in the Agreement. In recent years, HECO's R&D efforts have been targeted at enhancing its ability to add renewable energy to its system. For example, the biofuel testing included in HECO's 2009 expenses is the latest phase of HECO's R&D biofuel testing activities, which were discussed in the 2007 test year rate case (as were HECO's R&D activities that related to AMI, and its efforts to support local agriculture related biofuels).

by the Consumer Advocate is found in the "Administrative and General (A&G) Expenses" section below.

In summary, the total amount for HCEI-Related R&D costs that are removed from the test year is:

• Big Wind Studies – CEIS recovery	$2,220,000
• Oahu Electric System Analysis – CEIS recovery	677,000
• AMI R&D – ½ of consulting costs	244,000
Total Reduction	$3,141,000

12. Vacancy Rate and Labor Expense Adjustment

The primary driver of the rate case update was the Energy Agreement which described the actions required to make Hawaii energy independent and still recognized the need to maintain the financial health of the HECO Companies to achieve this objective. In order to implement the initiatives described in the Energy Agreement, HECO planned to fill an additional thirteen (13) positions which were added to the test year and described in the rate case update (Rate Case Update, HECO T-1, pages 15 to 21, and HECO responses to CA-IR-278 and CA-IR-355). The Energy Agreement has had comparatively larger impacts than changes experienced in other recent rate case proceedings – it has required a number of regulatory proceedings with short time frames which will tax the resources of all parties involved. To facilitate as much as reasonably possible the processing of these proceedings (including this rate case) and to minimize the issues regarding labor expenses in this rate case, the Company proposed a one-time downward adjustment of $1,729,000 for labor expenses, employee benefits, and payroll taxes for the test year as discussed in the Rate Case Update, HECO T-1, pages 23 to 24, and Rate Case Update, HECO T-15, page 15, and calculated in Rate Case Update, HECO T-15, Attachment 6. This reduction was based on a 2.37 percent vacancy rate for the Company, excluding the Power Supply process area, which was estimated using the multivariate regression methodology (Rate Case Update, HECO T-15, Attachment 6, pages 1 to 3) and data that was available at that time.

The Consumer Advocate, in its direct testimony, expressed reservations with the Company's regression results and proposed a 2.7 percent vacancy rate representing a midpoint range between the Consumer Advocate's calculation of the 2008 vacancy rate of 3.06 percent and the Company's estimate of 2.37 percent (CA T-3, pages 35 to 38 and 40 to 42). Also, the Consumer Advocate proposed excluding only the Maintenance Division of the Power Supply Department from the employee counts (CA T-1, page 69), rather than the entire Power Supply process area. The Consumer Advocate's proposal translated to a reduction of $2,645,000 in total labor expense, payroll tax, and employee benefits adjustments from the test year and represented an additional $916,000 reduction from HECO's initial labor adjustment (CA-101, Schedule C-13).

In DOD T-1, pages 28 to 31, the DOD proposed a vacancy rate of 3.3 percent, based on a review of the average quarterly 3.35 percent vacancy rate for 2008 (with 10/31/08 used in place of 12/31/08) and the average vacancy rate of all data points from June 30, 2007

through October 31, 2008 of 3.27%. This translated to a labor expense, payroll tax, and employee benefits reduction to the test year of $2,414,000 for the Company, excluding the Power Supply process area (see DOD-120).

To settle the issues in the proceeding, the Company proposed a 2.68 percent vacancy rate, excluding the Operating Division as well as the Maintenance Division of the Power Supply process area,[7] which is accepted by the Consumer Advocate and DOD to reach global settlement. The Company's revised vacancy rate is derived from an estimated regression function, using additional employee count information for the period from January 2007 through March 2009, submitted in the Company's response to CA-IR-354, filed on January 29, 2009, supplemented on May 5, 2009. The Company's proposal excluded the Operating Division since it must still expend labor expense by incurring overtime to provide round-the-clock coverage or near round-the-clock coverage and operations of the various generating plants (further discussion regarding the duties and responsibilities of the Operating Division is found on HECO T-7, pages 52 to 53), regardless of the vacancy rate it experiences.

The results of HECO's revised vacancy rate estimate translated to a total labor adjustment of $2,521,000, $792,000 more than the Company's initial estimate (see HECO T-15, Attachment 1, Final Settlement). The allocation to the various block of accounts is presented below. The matrix below also summarizes the differences between the Company's most recent estimate and the Consumer Advocate's and DOD's direct testimonies' proposed amounts.

[7] The RAs excluded for purposes of calculating the vacancy rate and the labor adjustment are: PIL, PIM, PIN, PIT, PIX, PIZ, PIH, PIK, PIO, PIW, and PIY. See HECO T-7, Attachment 3, Final Settlement for further discussion and support for the exclusion of these RAs.

SUMMARY OF ADJUSTMENT ATTRIBUTED
TO A REDUCTION IN HEADCOUNT - REVISED
(Production (w/o Ops & Maint Div), T&D, Customer Acct.,
Customer Svc and A&G) ($000)

Block of Accounts	2009 Labor Forecast	Labor Expense	Payroll Tax	Employee Benefits	Proposed HECO Adjustments	CA's/DOD's Adjustments
Production (w/o Maint. and Ops RAs)	6,799	(182)	(15)	(95)	(292)	(704)/(0)
Transmission	5,068	(136)	(11)	(71)	(218)	(190)/(236)
Distribution	12,717	(341)	(28)	(178)	(547)	(475)/(592)
Customer Accounts	8,102	(217)	(18)	(113)	(348)	(303)/(376)
Customer Service	3,470	(93)	(8)	(48)	(149)	(130)/(162)
Administrative & General	22,517	(603)	(50)	(314)	(967)	(843)/(1,047)
Total Revised Reductions	58,673	(1,572)	(130)	(819)	(2,521)	(2,645)/(2,414)
Consumer Advocate's Proposal (CA-101, Schedule C-13)		(1,909)	(157)	(580)	(2,645)	
Difference		337	27	(239)	124	
DOD's Proposal (DOD-120)		(1,712)	(143)	(559)	(2,414)	
Difference		140	13	(260)	(107)	

A significant amount of the additional reduction to the test year expense for this headcount adjustment is due to HECO's updated estimate of employee benefit expenses per employee, which increases test year cost for employee benefits, especially pensions. The Consumer Advocate proposed to incorporate into base rates the increase in net periodic pension cost ("NPPC") and net periodic benefit cost ("NPBC") for postretirement benefits other than pensions ("OPEB") as presented in the Company's response to DOD-IR-104, as supplemented on 3/20/09. This additional expense increased the estimated employee benefits cost per person from $14,700 (as initially applied by the Company and Consumer Advocate) to $23,400 per covered employee (see HECO T-15, Attachment 1, Final Settlement, page 2). See below in the "Administrative and General (A&G) Expenses" section for further discussion of the change to the employee benefits cost in the test year period may be found.

13. Merit Salary Reduction

In direct testimony HECO T-13, page 47 and HECO T-17, pages 21 to 22, the Company explained how the merit salaries were determined for the 2009 test year.

Given the current economic environment, and in the interest of reaching a global settlement in this proceeding, the Company proposed to lower the O&M labor expenses for merit employees for 2009 by $532,000. The Consumer Advocate and the DOD agreed to the reduction. See HECO T-13 Attachment 1, Final Settlement, for the calculation of the $532,000 adjustment. A summary of the adjustment amounts by block of account is shown in the table below.

Block of Accounts	O&M Labor Expense Reduction ($ thousands)
Production	($128)
Transmission	($42)
Distribution	($80)
Customer Accounts	($27)
Customer Service	($37)
Administrative and General	($218)
Total	($532)

14. CIS O&M Expense and Rate Base Impact

HECO T-9 direct testimony, pages 15 to 21, describes the planned implementation of the new Customer Information System ("CIS") in May 2009. In the direct testimony, test year expenses were assumed to be deferred to the CIS regulatory asset balance in the first five months of the test year until placement into service, with additional "Post Go-Live" expenses to be incurred during the remainder of the test year for activities such as training throughout the Company, report design and development, and other deployment activities. The test year also reflected the incurrence of software maintenance costs and amortization of the regulatory asset over the seven months of the test year after placement into service. Other test year expenses related to the new CIS were assumed to be recorded to operational accounts with the return of Customer Service employees, who had been dedicated to the CIS replacement project, to their normal activities. In the Rate Case Update, HECO T-9, pages 1 to 2, the test year was increased for the cost of six additional temporary meter readers, of which four would replace the regular employees assigned to perform additional testing of the CIS at a cost of $235,200 (see HECO response to CA-IR-396b). The Company also assumed that, with the implementation of the CIS, the outsourcing of the bill print, interactive voice response ("IVR"), and interactive web response ("IWR") functions would begin and reflected the associated expense impacts of these new outsourced functions in the test year.

However, since the rate case update, the Company has determined that there is little likelihood of completing CIS during the test year and the test year estimate should be revised to reflect the delay of the implementation date. As a result, the test year O&M expenses associated with the new CIS, including those related to the outsourcing of the bill print, IVR, and IWR functions are reversed, while expenses to continue to operate and maintain the existing CIS were added back. In response to CA-IR-323, further revised in response to CA-IR-396, Attachment 4, the Company provided quantification of the impacts of the delay of the implementation of CIS. The Consumer Advocate

accepted most of the Company's proposed net cost reversal amounts as discussed in CA-T-1, pages 94 to 98, and reflected in CA-101, Schedule C-9 for expenses and in CA-101, Schedule B-3 for rate base.[8] DOD in its direct testimony also accepted the Company's reversal amounts as discussed in DOD T-1, pages 22 to 23, and reflected in DOD-108 and DOD-112.[9] Because the removal of the CIS expenses of $4,290,000 was not reflected by block of account in the Company's responses to CA-IR-323 and CA-IR-396, the Consumer Advocate and DOD reflected the expense adjustments differently. The Company has since developed the expense adjustments by block of account which is provided as HECO T-9, Attachment 2, Final Settlement, and is summarized below.

Summary of Changes to the HECO 2009 Test Year Due to the Delay in the CIS In-Service Date (in Thousands)

1	Total Net Change to Test Year O&M Expenses	
	Power Production Expenses	($80)
	Transmission & Distribution Expenses	($2)
	Customer Accounts Expenses	($3,741)
	Customer Service Expenses	($22)
	Administrative & General Expenses	($445)
	Total Expenses	**($4,290)**
2	**Total Net Change to Taxes Other Than Income**	**($18)**
3	**Total Net Change to Rate Base**	**($11,713)**

As the Consumer Advocate indicates, (1) some of the problems leading to delay of the CIS project have been the subject of previous CIS Notification Filings made by HECO in Docket No. 04-0268 (in which the project was approved),[10] (2) HECO is considering its options under the software vendor (Peace) contract, including termination, and (3) HECO has asserted that Peace is in breach of the contract.[11] Subsequent to the filing of its IR responses, HECO has informed the Commission and Consumer Advocate in Docket No. 04-0268 that it is evaluating a recovery plan developed with Peace to complete

[8] The Consumer Advocate's adjustment did not reflect an increase in ADIT of $306,000 (see the Company's response to CA-IR-396, Attachment).

[9] The DOD's adjustment in DOD-112 did not include the reversal of $235,200 of outside services costs for four of the temporary meter readers that were added in the Rate Case Update, HECO T-9, (see above discussion) and described in the Company's response to CA-IR-396. Also, DOD-108 did not reflect the updated ADIT test year increase of $306,000 (see the Company's response to CA-IR-396).

[10] Further information has been submitted in response to IRs in this proceeding.

[11] HECO responses to CA-IR-109, CA-IR-110 and CA-IR-323(a).

installation of CIS using the Peace software, and is also reviewing its options to complete a new CIS if its contract with Peace is terminated.

In their testimonies, the Consumer Advocate and DOD noted that ratepayers should ultimately be responsible for only the reasonable and prudently incurred costs required to efficiently manage and complete the CIS replacement project and, after the CIS project is either completed, abandoned or restructured and HECO has exhausted its remedies with Peace and any other responsible parties, the Commission should formally review the CIS amounts submitted for recovery by HECO. HECO agrees that the Commission should formally review the CIS cost amounts submitted for recovery by HECO after the CIS project is completed.

PRODUCTION O&M EXPENSES

15. Production O&M Expenses

The test year Production O&M Expense proposed by HECO in its direct testimony and Rate Case Update were as follows:

HECO 2009 Test Year Estimate Base Case Without Sales Reduction, With Wind Studies Included in Rate Case Update ($ thousands)			
	HECO Direct Testimony	HECO Rate Case Update	Adjustment
Operations	$32,400	$35,529	$3,129
Maintenance	$47,991	$48,038	$47
Total Production O&M Expense	$80,391	$83,567	$3,176
Source	HECO-701	Rate Case Update, HECO T-7, Attachment 1, Page 1	Rate Case Update, HECO T-7, Attachment 1, Page 5
Prod Materials Inventory	$8,809	$8,809	$0
Source	HECO-703	HECO-703	

HECO's 2009 test year Production O&M Expense was estimated at $80,391,000 in direct testimony (HECO T-7) which was increased by $3,176,000 to an updated amount of $83,567,000 (Rate Case Update, HECO T-7, Attachment 1.)

HECO's proposed average 2009 test year Production Materials Inventory was $8,809,000 in direct testimony as shown in HECO T-7, page 113 and HECO-703 and no adjustment was made to Production Materials Inventory in the Rate Case Update, HECO T-7 filed on December 12, 2008.

In direct testimony, the Consumer Advocate proposed the following Production O&M Expense.

Consumer Advocate 2009 Test Year Estimate Base Case Without Sales Reduction, With Wind Studies Included ($ thousands)			
	Direct	Total Proposed Adjustments	Source
Prod O&M Expense	$78,042	($5,525)	CA-101, Sch. C, page 1

The Consumer Advocate reduced HECO's 2009 test year update estimate for Production O&M Expense from $83,567,000 to $78,042,000 for a total reduction of $5,525,000. (See CA-101, Schedule C, page 1.) The Consumer Advocate proposed the following eight adjustments:

- removal of $3,119,000 for the HCEI Study and HCEI related research and development ("R&D") expenses to be recovered through the Clean Energy Initiative Surcharge (formerly REIP surcharge) mechanism. (See CA-101, Schedule C-4, page 1, excluding $677,000 of the adjustment recorded as A&G expenses for Oahu Electric System Analysis.)
- reduction of $86,000 in emission fees based on an update for lower [GWh] sales. (See CA-101, Schedule C-5, page 1.)
- $222,000 expense reduction to reflect one-half of the estimated savings from the Reverse Osmosis Water utilization at Kahe Power Plant. (See CA-T-1, pages 78 to 79 and CA-101, Schedule C-6, page 1.)
- $1,372,000 reduction to the Production discretionary station maintenance budget, from $4,654,000 to $3,282,000, the amount equal to the annual average of the recorded expenses for similar work from 2006 to 2008. (See CA-101, Schedule C-7, page 1.)
- a reduction of $217,000 to restate estimated outside services training expenses within HECO's power supply process area forecast to a three year average of historical spending as shown in HECO's response to CA-IR-305, Attachment 2. (See CA-101, Schedule C-8, page 1.)
- $508,000 reduction to production labor expense as shown in CA-101, Schedule C-13.
- $8,000 increase to normalize the historical allowance for abandoned project costs. (CA-101, See Schedule C, page 3, Adjustment C-15, and CA-T-3, page 43.)
- $9,000 reduction to Production O&M expense to eliminate the effect of the general inflation factor HECO employed in quantifying the 2009 non-fuel, non-labor expense forecast. (See CA-101, Schedule C, page 3, Adjustment C-16. See also HECO T-17, page 17 to 23 for general discussion of HECO's budget process and rate case forecast.)

In direct testimony, the DOD recommended the following Production O&M Expense estimates for the test year.

DOD 2009 Test Year Estimate Base Case Without Sales Reduction, With Wind Studies Included ($ thousands)			
	Direct	Total Proposed Adjustments	Source
Prod O&M Expense	$83,450	($117)	DOD-104, page 1

The DOD reduced HECO's 2009 test year update estimate for Production O&M Expense from $83,567,000 to $83,450,000 for a total reduction of $117,000. (See DOD-104, page 1.) The DOD proposed the following three adjustments:

- $32,000 reduction due to the general inflation factor
- $40,000 reduction in the vehicle fuel on-cost expense
- $45,000 reduction in emission fees

For purposes of settlement, the Parties have reached agreement on the Production O&M expense adjustments, proposed by the Consumer Advocate and the DOD, either accepting or revising each adjustment as described in greater detail below.

In addition, as part of the settlement negotiations, HECO reduced its Production O&M expenses by $105,000 as stated in the Company's responses to the Consumer Advocates information requests:

- $49,000 from Production Operations non-labor expense for CIP CT-1 Waste Water Treatment Chemicals as stated in HECO's response to CA-IR-297;
- $42,000 from Production Operations non-labor expense for CIP CT-1 Boiler Water Treatment as stated in HECO's response to CA-IR-297;
- $14,000 from Production Operations non-labor expense for CIP CT-1 Demin/Evap Chemicals as stated in HECO's response to CA-IR-468.

Also, $80,000 of CIS expenses and $1,000 of IRP Planning expenses allocated to Production O&M expense were removed as described in the sections on CIS O&M Expense and Rate Base Impact and Integrated Resource Planning/CESP in A&G Expense.

Lastly, as noted in the Merit Salary Reduction section above, HECO has proposed a labor expense reduction to Production O&M expense of $128,000.

As a result of the settlement negotiations, the Parties agree to a revised Production O&M test year estimate of $78,973,000 or $4,594,000 less than what HECO proposed in its Rate Case Update, HECO T-7 filed on December 12, 2008.

HECO 2009 Test Year Estimate Settlement – Base Case With Wind Studies Deferred for CEIS Recovery ($ thousands)			
	HECO Rate Case Update	Settlement	Adjustment
Operations	$35,529	$32,562	($2,967)
Maintenance	$48,038	$46,411	($1,627)
Total Production O&M Expense	$83,567	$78,973	($4,594)
Source	Rate Case Update, HECO T-7, Attachment 1, Page 1	HECO T-7, Attachment 1, Final Settlement	HECO T-7, Attachment 1, Final Settlement

See HECO T-7, Attachment 1, Final Settlement attached hereto for a reconciliation of the $83,567,000 Production O&M Expense as proposed in Rate Case Update, HECO T-7 to the settlement amount of $78,973,000.

a. HCEI Implementation Studies – PV Host Program Outside Consulting Charges

In Rate Case Update, HECO T-7, pages 1 to 21, HECO proposed an increase adjustment of $2,220,000 for the estimated costs in 2009 for outside services for the Hawaii Clean Energy Initiative ("HCEI") Implementation Studies. HECO proposed recovery of these expenses through the Renewable Energy Infrastructure Program ("REIP") Surcharge as proposed in Docket No. 2007-0416. (See Rate Case Update, HECO T-7, pages 2 to 3.) Also, in Rate Case Update HECO T-7, page 45, the Company proposed a $200,000 HCEI Solar outside services adjustment to support the development of the PV Host program, prepare the filing to the Commission, and provide assistance to evaluate the applications from customers to participate in the pilot PV Host Program. In the Company's response to CA-IR-296, HECO indicated that its share of the PV Host outside services cost was $160,000.

In CA-T-1, the Consumer Advocate proposed a negative adjustment of $3,119,000 to Production O&M Expense for the HCEI Study and HCEI related research and development ("R&D") expenses to be recovered through the Clean Energy Initiative Surcharge (formerly REIP surcharge) mechanism. (See CA-101, Schedule C-4, page 1.) This adjustment included (1) HECO's $2,220,000 adjustment for HCEI Implementation Study outside services, (2) $200,000 of HCEI Solar Outside Services for the PV Host Project, (3) $50,000 of biofuel agriculture crop research expenses and (4) $649,000 of biofuel co-firing project expenses.

For purposes of settlement, the Consumer Advocate accepts HECO's proposal to retain *(1) $50,000 of biofuel agriculture crop research expenses, and (2) $649,000 of biofuel* co-firing project expenses or a total of $699,000 of research and development ("R&D") expenses in Production O&M Expense. During settlement negotiations, HECO explained that a base level of R&D was an on-going expense year after year and the Company should be able to recover in rates an amount that is commensurate with total expenses in past years. (See section on Administrative and General Expenses for further discussion

on R&D expenses.) In return, HECO agrees to remove $2,220,000 of HCEI Implementation Study outside services costs and $200,000 of the HCEI Solar Outside Services expenses for the PV Host Project or a total of $2,420,000 from the 2009 test year estimate for recovery through the pending CEIS mechanism. See also section "HCEI Outside Services Costs for PUC Proceedings" above.

b. Emission Fee Update for Lower Sales

The Consumer Advocate proposed a reduction of $86,000, from $958,000 to $872,000 to the Production O&M non-labor expense for emission fees based on an update for lower [GWh] sales. The Consumer Advocate's calculation was provided in CA-101, Schedule C-5 and was based upon HECO's response to CA-IR-298. In concept, HECO agreed with the Consumer Advocate's proposed adjustment but offered a counter proposal increasing emission fees by $134,000, from $958,000 to $1,092,000, due to the passing of Senate Bill No. 1260 during the 2009 legislative session, which removed the "four thousand ton/year cap" in emission fees. See HECO T-7, Attachments 2, 2A, and 2B, Final Settlement attached hereto for the Company's response to the Consumer Advocate's adjustment. As shown on DOD-127, DOD had proposed an adjustment to reduce emission fees by $45,000 based on the removal of a "contingency" factor and an analysis of historical budget-to-actual information.

For purposes of settlement, the Consumer Advocate and DOD accept HECO's $134,000 adjustment increasing emission fees for the recently enacted legislation.

c. Kahe RO Water Supply Savings

As stated in the Company's response to CA-IR-198, the reverse osmosis ("RO") water conversion project O&M cost impact was estimated in Docket No. 05-0146 (response to CA-IR-26, page 42) with an annual O&M savings of $444,184. This cost impact was not considered in the development of HECO's 2009 test year estimates for Other Production O&M Expense.

The Consumer Advocate proposed a negative adjustment of $222,000 to Production O&M Expense to reflect one-half of the estimated savings from the RO Water utilization. (See CA-T-1, pages 78 to 79 and CA-101, Schedule C-6, page 1.)

For purposes of settlement, HECO accepts the Consumer Advocate's $222,000 adjustment reducing Production O&M expense.

d. Normalization of Discretionary Station Maintenance

The Consumer Advocate proposed an adjustment of $1,372,000 to reduce the Production discretionary maintenance budget to $3,282,000, an amount equal to the annual average of the recorded expenses for similar work from 2006 to 2008. (See CA-101, Schedule C-7, page 1.) The Consumer Advocate asserted that the variability in actual spending on individually expensive projects (CA-T-1, page 83) as well as HECO's ability to budget for station maintenance project costs and then defer actual expenditures further supports

the need to normalize this category of Production O&M expenses in the manner proposed by the Consumer Advocate (CA-T-1, page 86).

During settlement discussions, HECO proposed an alternative to the Consumer Advocate's adjustment which allowed the normalization of three year station maintenance project expense, while retaining the non-discretionary spending for Asset Optimization. HECO's counter proposal was to reduce the negative adjustment proposed by the Consumer Advocate by $586,000, from $1,372,000 to $786,000.

The Consumer Advocate did not believe that the proposed special treatment for "Asset Optimization" was needed and maintained that the $3.3 million proposed by the Consumer Advocate was more than was actually spent by HECO in 5 of the last 6 years. As part of the overall settlement of the issues impacting the test year revenue requirements, the Company accepts the Consumer Advocate's $1,372,000 adjustment reducing Production O&M expense.

e. Training Cost Outside Services

The Consumer Advocate proposed a reduction of $217,000 from $403,000 to $186,000 to restate HECO's estimated test year outside services training expenses within the power supply process area forecast to a three year average of historical actual spending as shown in HECO's response to CA-IR-305, Attachment 2. (See CA-101, Schedule C-8, page 1.)

For purposes of settlement, HECO accepts the Consumer Advocate's $217,000 negative adjustment.

f. Payroll and Benefits

The Consumer Advocate proposed a labor reduction of $508,000 to the Production Labor Expense as shown in CA-101, Schedule C-13. The Consumer Advocate's position was that only Production Maintenance Division responsibility areas ("RA") PIL, PIM, PIN, PIT, PIX, and PIZ should be excluded from the vacancy calculation to derive their proposed Production Labor Expense Adjustment. HECO agreed that labor expenses for the Production Maintenance Division RAs should be excluded. However, as explained in HECO T-7, Attachment 3, Final Settlement attached hereto, the Company proposed that the labor expenses for Production Operating Division RAs (PIH, PIK, PIO, PIW, and PIY) be excluded as well. HECO proposed the adjustment to the Production O&M Labor be reduced by $326,000, from $508,000 to $182,000. For further discussion, see section on Vacancy Rate and Labor Expense Adjustment and HECO T-15, Attachment 1, page1, Final Settlement.

As explained in the section on Vacancy Rate and Labor Expense Adjustment above the Consumer Advocate accepted HECO's adjustment.

g. Abandoned Projects Normalization

In CA-T-3, the Consumer Advocate proposed an $8,000 adjustment to Production O&M expenses to normalize the historical allowance for abandoned project costs. (See Schedule C, Adjustment C-15, page 2 and CA-T-3, page 43.) For purposes of settlement, HECO accepts the Consumer Advocate's adjustment. See section on Administrative and General Expenses for further discussion on Abandoned Project Costs.

h. General Inflation

The Consumer Advocate proposed a negative adjustment of $9,000 to Production O&M expense to eliminate the effect of the general inflation factor HECO employed in quantifying the 2009 non-fuel, non-labor expense forecast. (See HECO T-17, pages 17 to 23 for general discussion of HECO's budget process and rate case forecast.) The adjustment also revised vehicle fuel costs to reflect historical average fuel prices, instead of the higher costs HECO included in the 2009 test year forecast. (See CA-T-3, page 49 and CA-101, Schedule C-16, page 1.)

The DOD proposed a $32,000 reduction in Production Maintenance expenses for the removal of the general inflation factor as shown on DOD-113.

For purposes of settlement, HECO accepts the Consumer Advocate's downward adjustment of $9,000 to Production O&M expense.

i. DOD-Vehicle Fuel Cost

The DOD proposed a $40,000 reduction to Production O&M expense for the vehicle on-cost expense based on fuel prices as of March 23, 2009 as shown on DOD-115. The Company did not accept the DOD's adjustment. See section on Vehicle Fuel On-Cost Expense provided above.

j. DOD - Emission Fees

The DOD proposed in DOD T-1, pages 41 to 42, and DOD-127, a negative adjustment to the Production Labor Expense of $45,000 for Emission Fees, from $958,000 to $913,000. The DOD stated that the reduction of $45,000 should be reflected to remove a "contingency" which, historically, has contributed to HECO's over-projections of this cost. For purposes of settlement, the Parties agreed to accept HECO's $134,000 increase for emission fees based on recently enacted legislation.

TRANSMISSION AND DISTRIBUTION (T&D) O&M EXPENSES

16. T&D O&M expenses include labor and non-labor items incurred in the operation and maintenance of HECO's T&D system. These items are recorded in the following accounts as defined by the National Regulatory Commission ("NARUC") Uniform System of Accounts for Classes A and B Electric Utilities:

560-567	-	Transmission Operation Expenses
568-573	-	Transmission Maintenance Expenses
580-589	-	Distribution Operation Expenses
590-598	-	Distribution Maintenance Expenses

(See HECO T-8, page 23.)

HECO's total test year T&D O&M expense estimates as reflected in direct testimony and in its rate case update are as follows:

T&D O&M Expenses HECO 2009 Test Year Estimate ($ thousands)				
	Transmission	Distribution	Total	Source
Direct Testimony	$13,967	$30,493	$44,460	HECO-802
Adjustment	$83	$325	$408	Rate Case Update, HECO T-8, page 11
Rate Case Update Prior to Labor Adjustment	$14,050	$30,818	$44,868	Rate Case Update, HECO T-8, page 11
Labor Adjustment	($120)	($302)	($422)	Rate Case Update, HECO T-15, Attachment 6, page 5
Revised T&D O&M Expenses	$13,930	$30,516	$44,446	Rate Case Update, HECO T-23, Attachment 7, page 1

In direct testimony, T&D O&M expenses totaled $44,460,000 which was increased by $408,000 in the Rate Case Update to a total or $44,868,000. The additional O&M expenses added in the Rate Case Update were due to an increase in seven positions (with staggered hiring throughout the test year) in the Energy Delivery Process Area for an additional $328,800 (see Rate Case Update, HECO T-8, Attachment 2) and additional outside services costs of $80,260 for an AMI management consultant (see Rate Case Update, HECO T-8, Attachment 2). Five of the seven positions are needed to establish an Asset Management Group in the System Operation department consisting of a Manager, two Directors and two asset management program managers (Rate Case Update, HECO T-8, page 7). The other two positions are for a Senior Construction Manager (Rate Case Update, HECO T-8, page 2) and a Resource Planner (Rate Case Update, HECO T-8, page 3). This amount was reduced by $120,000 and $302,000 for transmission and distribution expenses, respectively, for the labor adjustment proposed in the Rate Case Update, HECO T-15, Attachment 6, page 5, based on an estimated HECO test year vacancy rate of 2.37% (see Rate Case Update, HECO T-15, Attachment 6, pages 1 to 4 for discussion of the vacancy rate and pages 8 to 9 for the calculation of the vacancy rate). This reduced the test year T&D O&M expenses to $44,446,000.

In its direct testimony, the Consumer Advocate proposed the following T&D O&M expense projections.

T&D O&M Expenses Consumer Advocate Test Year Estimate($ thousands)				
	Transmission	Distribution	Total	Source
Direct Testimony	$13,849	$29,722	$43,571	CA-101, Schedule C, page 1
Total Adjustments from HECO Revised T&D O&M Expenses	($81)	($793)	($874)	CA-101, Schedule C, page 4

The Consumer Advocate proposed the following adjustments to HECO's test year T&D O&M expenses:

- an adjustment of ($58,000) for Payroll & Benefits (see discussion in CA-T-3, pages 33 to 42 and CA-101, Schedule C-13, page 1). Further discussion of this issue may be found above in the section titled "Vacancy Rate and Labor Expense Adjustment";
- an adjustment of ($89,000) for Abandoned Projects Normalization (see discussion in CA-T-3, page 43 to 48 and calculation in CA-101, Schedule C-15, page 1 and CA-101, Schedule C, page 3);
- an adjustment of ($187,000) to reduce the impact of the general inflation factor from 2.5% to 0% in the test year and an adjustment of ($33,000) for vehicle fuel inflation for a total reduction of $220,000 (see discussion in CA-T-3, pages 49 to 53 and calculation in CA-101, Schedule C-16, page 1). The $33,000 reduction for vehicle fuel inflation was based on the Consumer Advocate's acceptance of the Company's updated vehicle fuel estimate as provided by the Company in response to CA-IR-387, Attachment 1 (see CA-T-3, page 53 for further discussion); and
- an adjustment of ($507,000) to remove AMI outside services costs for legal and regulatory support of the AMI filing to be recovered through CEIS (see discussion in CA-T-3, pages 72 to 75 and CA-101, Schedule C-20, page 1).

In its direct testimony, the DOD recommended the following T&D O&M expense projections:

T&D O&M Expenses DOD 2009 Test Year Estimate ($ thousands)				
	Transmission	Distribution	Total	Source
Direct Testimony	$11,647	$24,740	$36,387	DOD-104, page 1
Total Adjustments from HECO Revised T&D O&M Expenses	($2,283)	($5,775)	($8,058)	DOD-104, page 1

The following adjustments to HECO's test year estimate for T&D O&M expenses were as follows:

- an adjustment to transmission and distribution expenses of ($2,154,000) and ($5,489,000), respectively, for a total reduction of $7,643,000 to remove the impact of the test year general inflation factor of 2.5% (see discussion in DOD T-1, pages 23 to 24 and DOD-113). Further discussion of this issue may be found above in the "General Inflation Factor" section;
- an adjustment for ($62,000) and ($118,000) to transmission and distribution O&M expenses, respectively, to reduce Vehicle Fuel Costs using current prices (see discussion on DOD T-1, page 24, and DOD-115); and
- an adjustment for Work Force Vacancies of ($67,000) and ($168,000) to transmission and distribution O&M expenses, respectively, based on an estimated 3.3% vacancy rate (see discussion on DOD T-1, pages 28 to 31 and DOD-120).

For purposes of settlement, HECO, the Consumer Advocate and the DOD have reached agreement on the above adjustments, as described in greater detail below. The result is a 2009 test year total T&D O&M expense of $43,704,000 as shown below.

T&D O&M Expenses Settlement 2009 Test Year Estimate ($ thousands)			
Transmission	Distribution	Total	Source
$13,859	$29,845	$43,704	HECO T-8, Attachment 1, Final Settlement

a. Payroll & Benefits

As noted above, the Company proposed a labor adjustment of ($422,000) to T&D O&M expenses based on a vacancy rate of 2.37% in the Rate Case Update. However, based on data provided in response to CA-IR-354, filed on January 29, 2009, supplemented on May 5, 2009, the Company has revised its vacancy rate to 2.68% which translates to an additional adjustment of ($16,000) and ($39,000) to transmission and distribution O&M expenses (see HECO T-15, Attachment 1, Final Settlement), respectively, from the Company's prior adjustment in the Rate Case Update. Further discussion may be found above in the section titled "Vacancy Rate and Labor Expense Adjustment." The Consumer Advocate and DOD have agreed to the Company's additional T&D labor expense adjustment for purposes of settling issues in this proceeding.

b. Abandoned Projects Normalization

HECO's test year estimate as shown in HECO-1119 for abandoned project costs is $172,000. The estimate is based on an average of the actual abandoned project costs for 2003 through 2007 (5 year average). The Consumer Advocate proposed a reduction of $79,000 which included an adjustment of ($89,000) to T&D O&M expenses to reflect an average of the actual abandoned projects cost for 2004-2007 (4 year average) (CA T-3,

pages 43 to 48). To settle the issues in this proceeding, the Company accepts the Consumer Advocate's adjustment of $89,000 to T&D O&M expenses.

c. General Inflation Factor

As noted above in the section titled "General Inflation Factor", the Company has accepted the Consumer Advocate's and DOD's recommendation to reduce the 2009 non-labor O&M expenses due to the use of the general inflation factor. Thus, transmission and distribution O&M expenses are reduced by $53,000 and $134,000 (see CA-101, Schedule C-16, page 1), respectively, as proposed by the Consumer Advocate.

d. Motor Vehicle Fuel Adjustment

In CA-101, Schedule C-16, the Consumer Advocate proposed a reduction of $33,000 to T&D O&M Expenses (column labeled "Motor Vehicle Fuel Adjustment") and, in DOD-115, DOD proposed a reduction of $180,000 for this issue (labeled "Vehicle Fuel Cost". For purposes of settlement, the Parties have agreed to the Company's updated vehicle fuel estimate as provided in the Company's response to CA-IR-387, Attachment 1, reducing transmission and distribution expenses by $11,000 and $22,000, respectively. Further discussion is found in the"Vehicle Fuel On-Cost Expenses" section above.

e. Advanced Metering Infrastructure (AMI) – Legal and Consulting Services

The AMI legal and consulting services are discussed in the "HCEI Implementation Studies – Outside Services Costs" section above. As described in that section, in CA-T-3, page 75, the Consumer Advocate proposed that these outside services costs be removed from the test year and recovered through CEIS, or alternatively, be recovered through a multi-year amortization (see CA-T-3, page 75). The Company has accepted the Consumer Advocate's recommendation for a multi-year amortization. A two-year amortization of the AMI outside services costs, based on the Company's anticipated filing of a 2011 test year as proposed in the on-going decoupling proceeding, Docket No. 2008-0274, reduces T&D O&M expenses by $253,000 ($507,000 ÷ 2).

f. Merit Salary Reduction

As noted above in the section titled "Merit Salary Reduction," HECO proposed a labor expense reduction to transmission and distribution O&M expenses of $43,000 and $80,000, respectively. The Parties agree with HECO's additional reduction.

g. CIS O&M Expenses and Rate Base Impact

As noted above in the section titled "CIS O&M Expenses and Rate Base Impact", the CIS O&M expenses that were removed from the test year, as provided by the Company in its response to CA-IR- 396, Attachment 4, were identified by block of account. Thus the adjustment to transmission and distribution O&M expenses netted to a total of ($2,000), from an increase of $52,000 in transmission expenses and a reduction of $54,000 in distribution expenses (see HECO T-9, Attachment 2, Final Settlement).

CUSTOMER ACCOUNTS EXPENSES

17. Customer Accounts expenses are those expenses primarily related to providing, managing and maintaining services and information for customer accounts services and customer account management. The type of activities associated with Customer Accounts expenses (and that are performed by the Company's Customer Service Department) include: (1) receiving and responding to customer calls and requests; (2) processing customer requests to start, change or terminate service; (3) meter reading; (4) field service and field investigations; (5) monthly billing (calculation and physical rendering); (6) collecting and processing of payments; (7) managing delinquent accounts; and (8) maintaining customer records. See HECO T-9, pages 4 to 5. The costs for these activities are recorded in Account Nos. 901, 902, and 903. In addition, Customer Accounts expenses include the Allowance for Uncollectible Accounts (i.e., Account No. 904) as described further in a separate section below.

Test year Customer Accounts expenses, excluding Allowance for Uncollectible Accounts Expenses, were estimated at $15,954,000 in HECO's direct testimony. See HECO-901, page 1. The Company's test year estimate, excluding uncollectible expense, increased to $16,297,000 according to the Rate Case Update filed on December 8, 2008. See Rate Case Update HECO T-23, Attachment 7. The total test year Customer Accounts expense estimates as reflected in HECO's direct testimony and rate case update are as follows:

Customer Accounts Expenses HECO 2009 Test Year Estimate ($ thousands)				
	Customer Accounts Excluding Uncollectibles	Uncollectible Expense	Total Customer Accounts	Source
Direct	$15,954	$1,339[12]	$17,293	HECO-901, page 1
Adjustment	$535	--	$535	Rate Case Update HECO T-9, page 8
Labor Adjustment	($192)	--	($192)	Rate Case Update HECO T-15, Att. 6, p. 5
Rate Case Update	$16,297	$1,339	$17,636	Rate Case Update HECO T-23, Att. 7

One of the major projects for Customer Accounts during the 2009 test year was the implementation of the new CIS to maintain customer records and perform monthly billings. The purchase and implementation of a new CIS was approved by the Commission in Decision and Order No. 21798 dated May 3, 2005 in Docket No. 04-0268, and at the time of the Company's rate case filing the new system was

[12] The Uncollectible Accounts expenses proposed in HECO-901 are presented in alternative amounts coinciding with the Company's proposed step increase treatment of CIP CT-1, with separate interim and base rate increases.

targeted to be completed and in-service in May 2009. See HECO T-9, pages 15 to 18. However, since filing the rate case update, HECO has determined that it is unlikely that the implementation of CIS will be completed in the test year, and has summarized the impacts of the delay of the implementation of CIS on the 2009 test year in its responses to CA-IR-323 and CA-IR-396. The net effect of removing the CIS project is ($4,290,000) in reduced test year expenses and ($11,713,000) in the test year average rate base. See the response to CA-IR-396. For a more detailed explanation of the net impact on test year expenses and rate base, please refer to the section "CIS O&M Expense and Rate Base Impact".

In its direct testimony, the Consumer Advocate recommended the following Customer Accounts expense projections and adjustments:

Customer Accounts Expenses Consumer Advocate 2009 Test Year Estimate ($ thousands)				
	Customer Accounts Excluding Uncollectibles	Uncollectible Expense	Total Customer Accounts	Source
CA Direct	$12,953	$951	$13,904	CA-101, Sch. C
Total Adjustments	($3,344)	($388)	($3,732)	CA-101, Sch. C

The Consumer Advocate proposed the following adjustments to HECO's Customer Accounts test year estimates:

- an adjustment of ($3,313,000) for CIS project removal from the test year (see CA-T-1, pages 94 to 97 and CA-101, Schedule C-9);
- an adjustment of ($27,000) for additional labor expense adjustments (see CA-T-1, page 92, CA T-3, pages 33 to 42 and CA-101, Schedules C-1 and C-13);
- an adjustment of ($4,000) for general inflation (see CA-T-3, pages 49 to 53 and CA-101, Schedule C-16); and
- adjustments of ($37,000) and ($351,000) in uncollectibles attributed to revised sales revenues (see CA-T-1, pages 45 to 46 and CA-101, Schedule C-1and CA-T-1, pages 98 to 100 and CA-101, Schedule C-10).

In its direct testimony, the DOD recommended the following Customer Accounts expense projections and adjustments:

Customer Accounts Expenses DOD 2009 Test Year Estimate ($ thousands)				
	Customer Accounts Excluding Uncollectibles	Uncollectible Expense	Total Customer Accounts	Source
Direct	$12,114	$1,339	$13,453	DOD-104, p. 1
Total Adjustments	($4,183)	--	($4,183)	DOD-104, p. 1

The DOD proposed the following adjustments to HECO's test year estimates for Customer Accounts expenses:

- an adjustment of ($4,055,000) to remove CIS costs (see DOD T-1 pages 22 to 23 and DOD-112);
- an adjustment of ($22,000) to reduce vehicle fuel costs (see DOD T-1 pages 24 and DOD-115); and
- an adjustment of ($106,000) for additional labor expense adjustments (see DOD T-1 pages 28 to 31 and DOD-120).

For purposes of settlement, HECO and the Parties have reached agreement on all the above Customer Accounts expense adjustments, as described further below.

a. CIS Project

As noted above and in the section, "CIS O&M Expense and Rate Base Impact," HECO reversed CIS expenses from its test year. According to HECO T-9, Attachment 2 of this Final Settlement, Customer Accounts expenses reversed for this project is ($3,741,000).

b. General Inflation Factor and Motor Vehicle Fuel Expense

As noted in the sections "General Inflation Factor" and "Vehicle Fuel On-Cost Expense" above, HECO accepted the Consumer Advocate's recommendation to reduce O&M expenses by a total of $241,000. Of the total, the adjustment for Customer Accounts is ($4,000). See CA-101, Schedule C-16.

c. Payroll & Benefits

As noted in the table above describing HECO's Customer Accounts expense adjustments in its rate case update, HECO initially proposed labor expense adjustments of ($192,000) in its rate case update. However, during settlement discussions, HECO proposed additional labor expense adjustments, of which Customer Accounts labor expenses were further reduced by $25,000. See HECO T-15, Attachment 1, page 1 of this Final Settlement (using the 2.68% vacancy rate) and the section "Vacancy Rate and Labor Expense Adjustment" above.

d. Merit Salary Reduction

As noted in the section "Merit Salary Reduction," HECO proposed a Customer Accounts labor expense reduction of $27,000.

For a discussion on the uncollectibles expense, refer to the section "Allowance for Uncollectible Accounts Expenses" following.

The result is a 2009 test year Customer Accounts expense total of $13,802,000 as shown in the table below.

Customer Accounts Expense Settlement 2009 Test Year Estimate ($ thousands)		
Customer Accounts Excluding Uncollectibles	Uncollectibles Expense	Total Customer Accounts
$12,500	$1,302	$13,802

ALLOWANCE FOR UNCOLLECTIBLE ACCOUNTS EXPENSES

18. In its direct testimony and its rate case update, HECO's test year allowance for uncollectible accounts was estimated to be $1,339,000 for the base case at current effective rates (HECO T-23 rate case update, Attachment 7). The uncollectible accounts expense proposed by HECO is based on a percentage ratio of electric sales revenue method over a five-year time series. In its rate case update, HECO retained the same uncollectibles factor of 0.0719 percent used in its direct testimony despite the fact that there were recent significant increases in the percent net write-offs ranging from 0.095 percent in September 2008 to 0.099 percent in November 2008 (HECO T-9 rate case update supplemental filing, page 1). In its response to CA-IR-389, HECO stated that, "(a)lthough the Company has not revised the uncollectibles factor used to derive its uncollectibles test year estimates, the economic factors contributing to lower sales are also expected to contribute to a higher uncollectibles factor, as recorded uncollectibles expenses in 2008 indicate. The recorded uncollectibles accounts expense recorded in account 904 in 2008 was $3,646,452 compared to the 2009 test year estimate of $1,339,000 at current effective rates (without the sales forecast reduction)." In the last rate case, the Parties agreed to a fixed amount as an uncollectible expense (HECO T-9, page 26).

The Consumer Advocate in its direct testimony proposed to adopt HECO's uncollectible ratio to adjust uncollectible expenses for the 2009 test year, so as to correspond with HECO's lower GWH sales volume forecast and the Consumer Advocate's recalculated revenues (CA-T-1, pages 99 to 100). Applying HECO's 0.0719 percent uncollectibles factor to the Consumer Advocate's lower sales revenue estimate yields a test year uncollectible expense of $951,000 for a difference of ($388,000) from the Company's proposal (CA-101, Schedule C) or ($351,000) from revised sales revenues (CA-101, Schedule C-10). The DOD did not adjust the uncollectible expense account except through the inclusion of a provision for uncollectibles in the gross revenue conversion factor on DOD-102.

During settlement discussions, HECO provided updated, recorded write-off percentages for October 2008 through March 2009, monthly 2008 and January through March 2009 NARUC Account 904 uncollectibles information, and other five-year percent write-off time series for periods of similar economic downturns. See HECO T-9, Attachment 1 of this Final Settlement. The information shows a higher uncollectible expense amount than that proposed by both the Company and the Consumer Advocate.

As a compromise of this issue as part of a broader settlement, the Consumer Advocate agreed to reverse its CA-101, Schedule C-10 uncollectible expense adjustment, effectively returning uncollectibles to the amount originally proposed by the Company after taking into account its lower sales forecast. See HECO T-23 rate case update, Attachment 8, with sales reduction, and CA-101, Schedule C-1.

A significant part of this compromise is an agreement to not include any uncollectible "factor" to be applied to the rate increase awarded in this rate case proceeding. In its direct testimony on CA-T-1, page 100, the Consumer Advocate proposed that the uncollectibles factor should not be included in its Gross Revenue Conversion Factor on Schedule A-1. The Consumer Advocate stated that because the Revenue Adjustment Mechanism ("RAM") that is proposed and pending review and approval in the decoupling docket (Docket No. 2008-0274) would increase the uncollectibles expense for the post test year using a forecasted GDPPI, such that including an uncollectible ratio in the Gross Revenue Conversion Factor would be inappropriate. The Company does agree that, because the $1,302,000 of uncollectibles is intended to serve as a fixed amount included in the test year revenue requirement and not a function of the revenues multiplied by the uncollectibles factor, the exclusion of uncollectibles from the Gross Revenue Conversion Factor is appropriate.

CUSTOMER SERVICE EXPENSES

19. Customer service expenses include costs for activities incurred by the Company primarily related to responding to customer requests and inquiries, and providing educational information on, among other things, energy conservation, renewable energy, and electrical safety. The NARUC customer service accounts include:

    - Account 909, supervision – customer service expense,
    - Account 910, customer assistance expense,
    - Account 911, informational advertising expense,
    - Account 912, miscellaneous customer service expense.

    The test year customer service expenses proposed by HECO in its direct testimony and rate case update are as follows:

Customer Service Expenses HECO 2009 Test Year Estimate ($ thousands)			
Direct	Adjustment	Update	Source
$7,007	($10)	$6,997	HECO T-10 at 1; HECO T-10 Update at 1; HECO T-15 Update, Attachment 6, page 5

Test year customer service expenses were estimated at $7,007,000 in direct testimony (HECO T-10 at 1), which was increased by $72,000 (Rate Case Update, HECO T-10 at 1) and decreased by $82,000 for a labor adjustment based on a test year vacancy rate of 2.37% (Rate Case Update, HECO T-15, Attachment 6, page 5), resulting in net decrease of $10,000 or a Rate Case Update amount of $6,997,000.

In its direct testimony, the Consumer Advocate proposed the following customer service expenses:

Customer Service Expenses Consumer Advocate 2009 Test Year Estimate ($ thousands)			
HECO Update	Total Proposed Adjustments	CA Direct	Source
$6,997	($1,325)	$5,672	CA-101, Schedule C, page 4, line 12, column K

The Consumer Advocate proposed the following three adjustments to HECO's test year estimate for customer service expenses:

- a negative adjustment to base DSM expense of $539,000 (see CA-T-1, pages 104 to 113, and CA-101, Schedule C-11);
- a negative adjustment to payroll and benefits expense of $12,000 (CA-101, Schedule C-13);
- a negative adjustment to advertising expense of $774,000 (see CA-T-1, pages 114 to 118, and CA-101, Schedule C-21).

In its direct testimony, the DOD proposed to reduce customer service expense by $230,000 as shown on DOD-104, DOD-111, DOD-115, DOD-117, and DOD-120.

a. Base DSM Expense

The Consumer Advocate proposed to reduce HECO's test year base DSM expense by $539,000 based on the anticipated transfer of EE programs to the third party PBF Administrator (CA-T-1 at 104). The $539,000 amount was calculated by applying a 22.71% factor (CA-101, Schedule C-11, line 13) to HECO's projected test year total DSM expenses of $2,374,000 (HECO-1014, lines 13, 17, and 18). The 22.71% factor is the average of 2007 and 2008 recorded percent of EE base DSM expense to EE base

DSM expense plus load management and other programs (CA-T-1, pages 109 to 111; CA-101, Schedule C-11, line 13).

During settlement discussions, HECO maintained that:

- For DSM-related administration expense, the 11.70% in CA-101, Schedule C-11, line 12, in the 2008 column, is the more appropriate factor to use in lieu of the 22.71%. Given that several positions included in the actual 2007 DSM energy efficiency program labor expense of $380,000 were already transferred into incremental expense per the 2007 HECO Rate Case Settlement as proposed by the Consumer Advocate and agreed to by HECO (see CA-IR-405, page 7, revised 4/3/09, note **), causing the 2007 percentage to not be reflective of the test year. Also, HECO explained that the percentage factor should only be applied to administration expenses, and that the costs associated with RDLC, CIDLC, SSP, and DPP should be excluded;
- HECO conceded that the RDLC and CIDLC evaluation costs of $111,000 (HECO T-10 Update, page 17) and $118,000 (HECO-1019), respectively, should be amortized over two years since these evaluations will only occur once before the next rate case in 2011; and
- The SBDLC program advertising/marketing and materials & miscellaneous expense of $332,920 (HECO-1019) should also be reduced by 50%, to reflect that implementation is now expected beginning in only the second half of the test year.

Given the above, the agreed-upon revised adjustment should be ($345,000) as shown below:

(1) 11.70% x $546,000[13] (HECO-1014) =		$ 63,900
(2) RDLC evaluation (HECO T-10 Update at 17)	$111,000	
CIDLC evaluation (HECO-1019)	118,000	
Total RDLC and CIDLC evaluation	$229,000	
Amortize Over two Years	÷2 years	114,500
(3) Reduce SBDLC program advertising/marketing and materials & miscellaneous expense $332,920 x 50% =		166,460
Total negative adjustment		$344,860
Rounded		($345,000)

The Consumer Advocate accepts this revised adjustment.

[13] The Consumer Advocate proposed to apply the 22.71% to $2,374,000, which consists of 2009 test year estimates for CIDLC, RDLC, SSP, and DPP program expenses of $1,609,000, and DSM-related expenses (Administration and ITS) of $765,000 (see HECO-1014). HECO's methodology makes negative adjustments to CIDLC, RDLC, and SBDLC (a program element of CIDLC) as shown in item (2) and (3), and applied a 11.7% to DSM-related Administration expense of $546,000. ITS expense is a fixed HECO cost allocated to the DSM programs, and should not be adjusted.

b. Payroll and Benefits Expense

As noted above, the Company proposed a labor adjustment of ($82,000) to Customer Service expenses based on a vacancy rate of 2.37% in the Rate Case Update. The Consumer Advocate proposed a further adjustment of ($12,000) to Customer Service expenses as part of its overall adjustment to payroll and benefit expenses based on a test year vacancy rate of 2.7% (CA-101, Schedule C-13). However, based on data provided in response to CA-IR-354, filed on January 29, 2009, and supplemented on May 5, 2009, the Company has revised its vacancy rate to 2.68% which translates to an additional adjustment of ($11,000) to Customer Service expenses (see HECO T-15, Attachment 1, Final Settlement) from the Company's prior adjustment in the Rate Case Update. Further discussion may be found above in the section titled "Vacancy Rate and Labor Expense Adjustment." The Consumer Advocate and DOD agree to the Company's additional Customer Service labor expense adjustment for purposes of settling issues in this proceeding.

c. Informational Advertising

HECO proposed 2009 test year Information Advertising expense of $1,148,000, to include television, radio and print advertising and collateral materials to more aggressively inform customers about energy efficiency and conservation measures. (HECO T-10, page 52) The Consumer Advocate proposed to reduce test year informational advertising expense by $774,000 to focus Commission attention on this issue and to seek clarification of the Commission's intentions regarding any continuation of HECO-provided conservation advertising. The Consumer Advocate noted that the Commission denied HECO's request to continue the Residential Customer Energy Awareness ("RCEA") Program in its order regarding continuation of the RCEA Program (Order dated November 14, 2008, Docket No. 2007-0341, *Regarding HECO's Annual Program Modification and Evaluation Report,* filed September 30, 2008, at 2, 9, 10, and 12). Given the Commission's denial of HECO's requested continuation of RCEA funding, the Consumer Advocate's adjustment is to provide an alternative level of utility expense for advertising, based upon historical spending by HECO, so as to not have ratepayers separately fund a replacement for RCEA through HECO's base rates (CA-T-1 at 114 to 118). The $774,000 adjustment was derived by averaging utility (non-DSM) advertising using the 2006, 2007, and 2008 recorded amounts (CA-IR-416 at 2, utility advertising line). See CA-101, Schedule C-21.

During settlement discussions, the Parties were not able to settle this issue. The Consumer Advocate and HECO agree that this issue should be addressed at the evidentiary hearing scheduled for August 2009, which will allow the Commission an opportunity to consider and decide this issue. For the purposes of the interim decision and order, the Consumer Advocate and HECO agree to reflect the Consumer Advocate's proposed reduction of $774,000.

d. Customer Information System Removal

As noted above in the section "CIS O&M Expense and Rate Base Impact," HECO reversed CIS expenses from its test year. According to HECO T-9, Attachment 2, Final Settlement, the Customer Service expenses reversed for this project total $22,000.

e. Integrated Resource Planning/CESP

The Consumer Advocate proposed to reduce test year non-labor expense for IRP/CESP by $62,000 by averaging 2006, 2007, and 2008 recorded amounts (CA-T-1 at 113 to 114; CA-101, Schedule C-12) and allocated the full amount to A&G non-labor expenses. The Customer Service non-labor negative adjustment of $24,000 is from the allocation of the $62,000. See A&G section for the allocation of the negative adjustment of $62,000 to be applied to Customer Service non-labor expenses.

f. Merit Salary Reduction

In direct testimony HECO T-13, page 47 and HECO T-17, pages 21 to 22, the Company explained how the merit salaries were determined for the 2009 test year.
Given the current economic environment, and in the interest of reaching a global settlement in this proceeding, the Company proposed to lower the Customer Service labor expenses for merit employees for 2009 by $37,000. The Consumer Advocate and the DOD agree to the reduction. (See HECO T-13 Attachment 1, Final Settlement, and "Merit Salary Reduction" section above).

As a result of the settlement discussions and the additional negative merit salary adjustment, the Parties have reached agreement on all Customer Service adjustments (except for informational advertising). The result is a 2009 test year total Customer Service expense of $5,784,000 as follows, which includes the Consumer Advocate's negative adjustment of $774,000 for informational advertising.

Changes	($ thousands)	Source
HECO Update	$6,997	HECO T-10 Update at 1
Base DSM Adjustment	($345)	See discussion a. above.
Payroll & Benefits Expense	($11)	HECO T-15, Attachment 1, Final Settlement
CIS Removal	($22)	HECO T-9, Attachment 2, Final Settlement
IRP/CESP	($24)	See discussion e. above.
Merit Salary Reduction	($37)	HECO T-13, Attachment 1, Final Settlement
Settlement Agreement Amount	$5,784	

ADMINISTRATIVE AND GENERAL (A&G) EXPENSES

20. A&G expenses represent a diverse group of expenses including operating expenses not provided for in other functional areas and expenses which represent the total Company costs for certain specific items (e.g., property insurance costs included in account no. 924). The types of expenses provided for in A&G expenses include (1) administrative and general labor; (2) office supplies and expenses; (3) outside services for legal and other consulting services; (4) property insurance; (5) injuries and damages; (6) employee benefits; (7) regulatory commission expenses; (8) institutional/goodwill advertising; (9) miscellaneous general expenses including community service activities, company memberships, research and development, preferred stock and long-term debt expenses, and directors' fees and expenses; (10) rent expense; and (11) maintenance expense.

In direct testimony, the Company's unadjusted estimate ("base case") of total A&G O&M expenses for test year 2009 was $76,708,000 (HECO-1101, page 1). Subsequently, in the HECO T-11 Rate Case Update filed on December 9, 2008, the Company increased its test year expense estimate by $1,942,000 to $78,650,000 (HECO T-11 Attachment 1, page 1). In addition, in the HECO T-15 Rate Case Update filed on December 12, 2008 (revised 12/17/08), as part of the Company's employee headcount reduction and labor expense adjustment total of $(1,729,000), A&G O&M expense was reduced by $534,000 due to the labor expense reduction and was reduced by $397,000 due to the employee benefits reduction (HECO T-15, Attachment 6, page 5). As a result, the updated A&G O&M base case expense amount of $77,719,000 is reflected in the Company's HECO T-23 Rate Case Update filed on December 22, 2008 (HECO T-23, Attachments 4, 7 & 8, page 1; see also HECO T-23, page 3). See the table below for an illustration of these amounts.

A&G O&M Expense Base Case HECO 2009 Test Year Estimate ($ thousands)				
	Direct	Adjustment	Update	Source
Administrative	$31,422	$170	$31,592	HECO-1101; RC Upd. T-11 Att. 1, p. 1
Outside Service	$2,666	$0	$2,666	HECO-1101; RC Upd. T-11 Att. 1, p. 1
Insurance	$10,254	$0	$10,254	HECO-1101; RC Upd. T-11 Att. 1, p. 1
Employee Benefits	$23,407	$364	$23,771	HECO-1101; RC Upd. T-11 Att. 1, p. 1
Miscellaneous	$8,960	$1,408	$10,368	HECO-1101; RC Upd. T-11 Att. 1, p. 1
Total A&G Expense	$76,708	$1,942	$78,650	HECO-1101; RC Upd. T-11 Att. 1, p. 1
Labor Expense	$0	$(534)	$(534)	RC Upd. T-15 Att. 6, p.5

Reduction				
Employee Benefits Adjustment on Labor Expense Reduction	$0	$(397)	$(397)	RC Upd. T-15 Att. 6, p.5
Total A&G Expense – Adjusted for Labor Expense Reduction	$76,708	$1,011	$77,719	HECO-2303; HECO-2306; HECO-WP-2303; HECO-WP-2306; RC Upd. T-23 Att. 4, 7 & 8, p.1

Totals may not add due to rounding.

In direct testimony, the Consumer Advocate recommended a test year expense estimate of $89,239,000 (CA-101, Schedule C, page 1), an increase of $11,520,000 from the Company's HECO T-23 Attachment 7 estimate of $77,719,000.

The recommendation proposed by the Consumer Advocate in Direct Testimony is comprised of the following eleven adjustments:

- an adjustment of ($677,000) to remove A&G research and development expense related to the Oahu Electric System Analysis study (see CA-T-3, pages 81 to 86, and CA-101, Schedule C-4);
- an adjustment of ($62,000) to reduce Integrated Resource Planning/Clean Energy Scenario Planning non-labor expense by normalizing IRP Planning expenses based upon an updated three-year average of actual spending (see CA-T-1, pages 113 to 114, and CA-101, Schedule C-12);
- an adjustment of ($257,000) for Payroll & Benefits (see discussion in CA-T-3, pages 33 to 42 and CA-101, Schedule C, page 3; see also Schedule C-13). Further discussion of this issue may be found in the section titled "Vacancy Rate and Labor Expense Adjustment";
- an adjustment of $14,057,000 to recognize revised actuarial estimates that increased 2009 NPPC and NPBC (CA-101, Schedule C-14, line 7; see also CA-T-3, pages 21 to 32);
- an adjustment of $2,000 to normalize Abandoned Project Costs (CA-101, Schedule C-15; see also CA T-3 pages 43 to 48);
- an adjustment of ($3,000) to reduce the impact of the general inflation factor from 2.5% to 0.0% in the test year and an adjustment of ($5,000) for vehicle fuel on-cost expense for a total reduction of ($8,000) (see discussion in CA-T-3, pages 49 to 53 and calculation in CA-101, Schedule C-16, page 1). The $5,000 reduction for vehicle fuel was based on the Consumer Advocate's acceptance of the Company's updated vehicle fuel estimate as provided by the Company in response to CA-IR-387, Attachment 1 (see CA-T-3, page 53 for further discussion). Refer to the General Inflation Factor and Vehicle Fuel On-Cost Expense sections for further discussion;

- an adjustment of ($581,000) to reduce the office lease expense by allowing only the months in which four new leases would be in effect during 2009 (see CA-T-3, pages 53 to 60, and CA-101, Schedule C-17);
- an adjustment of ($269,000) to reduce A&G maintenance expense by first removing $145,000 which is to be capitalized in 2009 and then averaging 2006 to 2008 recorded amounts, and the revised 2009 test year estimate (after the removal of the $145,000) for nonrecurring general plant maintenance expense recorded to A&G expense account 932 (see CA-T-3, pages 60 to 63, and CA-101, Schedule C-18);
- an adjustment of ($50,000) to disallow certain International Financial Reporting Standards ("IFRS") consultant fees (see CA-101, Schedule C-19; and CA T-3 pages 64 to 68);
- an adjustment of ($611,000) to remove all AMI R&D costs (provided these costs could be recovered through the REIP/CEIS Surcharge or through a separate AMI surcharge mechanism) (see CA-T-3, pages 68 to 80, and CA-101, Schedule C-20); and
- an adjustment of ($23,000) to allocate Feed-in Tariff outside services costs between HECO, HELCO and MECO, as provided by HECO in HECO's response to CA-IR-343 (see CA T-3 pages 90 to 92; and C-101, Schedule C-23).

In its written testimony, the DOD recommended a test year expense estimate of $76,145,000 (DOD-104, page 1, line 13), a decrease of $1,574,000 from the Company's HECO T-23 Attachment 7 estimate of $77,719,000 (DOD-111, page 1, line 13).

The DOD proposed the following eight adjustments to reduce HECO's test year estimate for A&G expenses:

- an adjustment to A&G expenses of ($114,000) to remove the impact of the test year general inflation factor of 2.5% (see discussion in DOD T-1, pages 23 to 24 and DOD-113). Further discussion of this issue may be found in the General Inflation Factor section;
- an adjustment of ($145,000) to reduce A&G maintenance expense for the Ward Base Yard Project (see DOD-T-1, page 24, and DOD-114);
- an adjustment of ($23,000) to reduce vehicle fuel cost as a result of using current 2009 test year fuel prices as of March 23, 2009 (DOD T-1, page 24; DOD-115);
- an adjustment of ($181,000) to community service activities expense (see DOD-T-1, page 25, and DOD-117) (this adjustment was posted as a reduction to customer service expense as shown on DOD-111);
- an adjustment of ($297,000) for Work Force Vacancies to A&G O&M expenses based on a 3.3% vacancy rate (DOD T-1, page 31; see also DOD-120). Further discussion on this issue may be found in the section titled "Vacancy Rate and Labor Expense Adjustment";

- an adjustment of ($790,000) to normalize A&G R&D expense (see DOD-T-1, pages 36 to 38, and DOD-122);
- an adjustment of ($67,000) to reduce by two-thirds HECO's 2009 budget for studying IFRS (DOD T-1, page 39 to 41; DOD-125); and
- an adjustment of ($138,000) to reduce office lease expense (see DOD-T-1, page 41, and DOD-126).

For purposes of settlement, the Parties have reached agreement on all A&G adjustments. In addition, as described in the Merit Salary Reduction section of this agreement, the Company proposed an additional A&G O&M expense reduction of $218,000, which was discussed with the Consumer Advocate and the DOD. As a result, the Parties agree to a revised test year estimate of $88,948,000, which is $11,229,000 more than HECO's T-23 Rate Case Update Attachment 7.

A&G O&M Expense, Base Case ($ thousands)			
HECO Update (RC Upd. T-23 Att. 4, 7 & 8, p.1)	DOD Direct (DOD-104, line 13)	Consumer Advocate Direct (CA-101, Schedule C, p. 1)	Settlement
$77,719	$76,145	$89,239	$88,948

a. A&G R&D (CA-101, Schedules C-4 and C-20)

Schedule C-4 (Oahu Electric System Analysis) and Schedule C-20 (AMI) are related and include both production and A&G NARUC blocks. These adjustments by the Consumer Advocate are addressed in the subsection b. in the section entitled "Outside Services Relating to Certain Renewable Energy and Energy Efficiency Expenses" above. The DOD's adjustment to A&G R&D expense is also discussed in that same section.

As noted earlier in the discussion of R&D expenses for renewable energy and energy efficiency, R&D is an on-going expense year after year and HECO should be able to recover some amount in base rates.

During settlement discussions with the Consumer Advocate and the DOD, the Company presented an updated HECO-1406 (updated March 30, 2009). (See HECO T-14, Attachment 1, Final Settlement.) This updated HECO-1406 (1) removed EPRI dues, and (2) removed the Oahu System Analysis study. With these two components removed, HECO T-14, Attachment 1, Final Settlement, shows that the remaining 2009 R&D estimated expense of $1,646,000 is very close to the 2007 actual R&D expense of $1,660,000 and the 2008 R&D expense of $1,647,000.

For the purposes of settlement, the Parties agree as follows regarding A&G R&D expenses:

(1) Recover the $677,000 Oahu System Analysis study via the REIP/CEI Surcharge, as proposed by the Consumer Advocate in C-4.
(2) Separate the $611,000 included in AMI R&D expenses between outside services of $488,000 and $123,000 for Tower Gateway Base Station lease rental, as set

forth in the response to CA-IR-158 page 5. Amortize the $488,000 over two years and keep the $123,000 lease rental intact. Thus the amount of AMI R&D expenses included in A&G expense to remain in base rates is $367,000 ($488,000 ÷ 2 years + $123,000).

With these agreements, the final settlement adjustment is a reduction of $921,000 ($677,000 + $244,000). This results in a settlement amount for A&G R&D expenses of $3,059,000, which consists of EPRI dues of $1,657,000 and R&D expenses of $1,402,000 (see HECO T-14, Attachment 1, Final Settlement).

b. CIS Implementation Costs (CA-101, Schedule C-9)
As noted in the section titled "CIS O&M Expenses and Rate Base Impact", the CIS O&M expenses that were removed from the test year, as provided by the Company in its response to CA-IR-396, Attachment 4, were identified by block of account. Thus, the adjustment to A&G O&M expenses is a reduction of $445,000 (see HECO T-9, Attachment 2, Final Settlement).

c. Integrated Resource Planning/CESP (CA-101, Schedule C-12)
The Consumer Advocate proposed to reduce test year non-labor expense for IRP/CESP by $62,000 by averaging 2006, 2007, and 2008 recorded amounts (CA-T-1, pages 113 to 114; CA-101, Schedule C-12). The Consumer Advocate proposed the entire negative adjustment of $62,000 be applied to A&G O&M expenses. DOD has not taken a position on this adjustment.

HECO accepts the Consumer Advocate's proposed adjustment amount of a reduction of $62,000 and clarifies that the adjustment amount should be allocated as follows:[14]

Production O&M	($ 1,000)
Customer Service O&M	(24,000)
A&G O&M	(37,000)
Total Negative Adjustment	($62,000)

d. Payroll and Benefits (CA-101, Schedule C-13)
The Company proposed a labor adjustment of ($534,000) and a benefits adjustment of ($397,000) to A&G expenses based on a vacancy rate of 2.37% in the Rate Case Update. Both the Consumer Advocate (2.7%) and DOD (3.3%) presented alternative vacancy rate recommendations. However, based on data provided in response to CA-IR-354, filed on January 29, 2009, and supplemented on May 5, 2009, the Company revised its vacancy rate to 2.68%, which translates to an additional adjustment of ($69,000) to A&G O&M labor expense (see HECO T-15, Attachment 1, Final Settlement). Further discussion may be found in the section titled "Vacancy Rate and Labor Expense Adjustment." The Consumer Advocate and DOD have agreed to the Company's additional payroll

[14] HECO's allocation of the Consumer Advocate's proposed adjustment amount of $62,000 is consistent with HECO-1030,

adjustment for purposes of settling issues in this proceeding. In addition, based on the revised vacancy rate, the associated reduction to employee benefits expense is $422,000, which results in a total reduction of $491,000 (excluding payroll tax effects) to the A&G block of accounts (see HECO T-15, Attachment 1, Final Settlement). Please see the discussion at m. below for the Merit Salary Reduction adjustment.

e. Pension/OPEB Costs and Regulatory Accounting (CA-101, Schedule C-14)
In the March 20 and April 3, 2009 supplemental responses to DOD-IR-104, the Company updated the pension and postretirement estimates, attributing the amounts for NPPC and NPBC primarily to the reduction in plan assets and a decrease in the expected return component of the NPPC and NPBC. In CA-101, Schedule C-14, line 7, the Consumer Advocate proposed an adjustment of $14,057,000, to recognize the updated 2009 NPPC and NPBC, quantified by HECO's actuarial consultant Watson Wyatt Worldwide. The Consumer Advocate's adjustment included the NPPC and NPBC increases in base rates rather than capturing the pension and OPEB cost increases in the tracking mechanisms for future rate recognition (CA-T-3, pages 24 to 25). Of particular note, the Consumer Advocate's testimony stated that, "The bottom line is that the higher amount of NPPC included in current rates serves to reduce ratepayer exposure to a substantially higher Regulatory Asset amortization in the next rate case" (CA-T-3, page 30, original emphasis). The Company agreed with the Consumer Advocate's position to include the NPPC and NPBC increases in base rates rather than capturing the pension and OPEB cost increases in the tracking mechanisms for future rate recognition.

The Company however, proposed to correct the Total Other Postretirement Benefits amount by removing an additional $19,000 of the increased executive life program (post retirement) costs to simplify and limit the issues in this rate case (see HECO T-13, Attachment 2, Final Settlement).

In addition, in order to properly calculate the updated estimate of employee benefit expenses per employee, the Company incorporated the impact of the increased NPPC and NPBC in the Total Employee Benefits amount. As shown below, the amount of Employee Benefits Charged to O&M is $37,813,000. This amount was used to derive the updated employee benefit cost per employee of about $23,000 for the overall labor adjustment as further discussed in the Vacancy Rate and Labor Adjustment section.

Allocation to O&M Expense ($ thousands)	Source: Rate Case Update, HECO T-13, Attachment 1	Source: HECO T-13, Attachment 2, Final Settlement
Total Employee Benefits (before transfer)	$33,287 ($21,106 + $12,181)	$52,952 ($40,771 + $12,181)
Employee Benefits Transfer	$(9,516)	$(15,139)
Employee Benefits Charged to O&M	$23,771	$37,813
O&M %	71.41%	71.41%

As a result of the above corrections, the Company proposed an adjustment of $14,042,000 (HECO T-13, Attachment 2, line 24, Final Settlement) to recognize a revised 2009 NPPC and NPBC, which is $15,000 less than the Consumer Advocate's Schedule C-14 adjustment amount of $14,057,000.

In DOD-121, the DOD, proposed a pension expense of $14,623,000, and an OPEB expense of $3,853,000, the same amounts that HECO used in its Direct Testimony (DOD-121, lines 1, 2), which was mainly for simplicity purposes and also because DOD had concerns regarding the large increase in NPPC. (DOD T-1, page 36.) In settlement discussions among the Parties, the following points were reiterated to emphasize the impact of both a declining economy as well as an improving economy. The Consumer Advocate's testimony stated that, "The dramatic decline in the financial markets in the last half of 2008 was a key driver in the reduction in plan assets and increase in NPPC" (CA-T-3, page 27). However, the Consumer Advocate also described the converse picture, stating that, "As the financial markets reverse course, the value of pension plan assets should improve and should translate into downward pressure on future calculations of NPPC, all else remaining constant" (CA-T-3, page 28). Furthermore, the Consumer Advocate stated that "the pension tracking mechanism has the intended effect of balancing NPPC in Rates with Actual NPPC over time" (CA-T-3, page 28).

As previously noted, the Company agrees with the Consumer Advocate's position to include the NPPC and NPBC increases in base rates rather than capturing the pension and OPEB cost increases in the tracking mechanisms for future rate recognition, and as such, accepted the Consumer Advocate's proposal, subject to the minor correction noted above. For purposes of a global settlement, the Parties agree to a pension and OPEB expense adjustment amount of $14,042,000.

f. Abandoned Projects Normalization (CA-101, Schedule C-15)

HECO's test year estimate as shown in HECO-1119 for abandoned project costs is $172,000. The estimate is based on an average of the actual abandoned project costs for 2003 through 2007 (5 year average). The Consumer Advocate proposed a total reduction of $79,000 to reflect an average of the actual abandoned projects cost for 2004 through 2007 (4 year average) (CA T-3, pages 43 to 48). The total reduction of $79,000 is allocated by O&M expense block of accounts (CA-101, Schedule C, page 3). To settle

the issue in this proceeding, the Company accepted the Consumer Advocate's adjustment of $79,000.

The portion of the Abandoned Project Costs adjustment allocated to A&G expense results in an increase in expense of $2,000.

g. General Inflation Factor and Revised Vehicle Fuel Forecast (CA-101, Schedule C-16)
As noted in the section titled "General Inflation Factor", the Company has accepted the Consumer Advocate's and DOD's recommendations to reduce the 2009 non-labor O&M expenses due the use of the general inflation factor. Thus A&G O&M expense is reduced by $3,000. As a result, the general inflation factor and revised vehicle fuel forecast adjustment allocated to A&G expense is a reduction of $8,000 (refer to section "Vehicle Fuel On-Cost Expense" for further discussion).

h. Office Lease (CA-101, Schedule C-17)
The Consumer Advocate proposed to reduce test year office lease expense by $581,000 by disallowing the annualization of new leases executed or expected to be executed during the test year, and by including only those months in which the four new leases' payments would be in effect during the 2009 test year (CA-T-3, pages 53 to 60; CA-101, Schedule C-17).

The DOD proposed to reduce test year office lease expense by $138,000 based on updated information provided by HECO in response to DOD-IR-124 and CA-IR-344 Revised March 31, 2009 (DOD T-1, page 41; DOD-126).

The Parties agree to accept the Consumer Advocate's inclusion of only those months in which the four new leases' payments would be in effect during the test year but correct Schedule C-17's column C to reflect the lease rent rates for the four new leases as shown in the Company's revised to CA-IR-344, Attachment 2 (revised March 31, 2009), for the Waterhouse 105/106, Waterhouse 401/402/403, 445/461 Cooke Street, and CPP 21st Floor leases. This reduces the test year office lease expense by $477,000 (see HECO T-14, Attachment 2, Final Settlement).

i. A&G Maintenance (CA-101, Schedule C-18)
The Consumer Advocate proposed to reduce A&G maintenance expense by $269,000, first by removing $145,000 which is to be capitalized (CA-IR-348 response, part a) and then averaging 2006 to 2008 recorded amounts and the revised 2009 test year estimate (after removal of the 145,000 to be capitalized) for nonrecurring general maintenance expense recorded to account 932 (CA-T-3, pages 60 to 63; CA-101, Schedule C-18).

The DOD proposed to reduce A&G maintenance expense by $145,000 by removing $145,000 which is to be capitalized (CA-IR-348 response, part a). (DOD T-1, page 24; DOD-114).

During settlement discussions, HECO offered to (1) use the same methodology which derived the Rate Case Update amount of $969,000 (CA-IR-348 response, page 3), and (2) remove the $145,000 which is to be capitalized. The two changes would result in a revised test year estimate of $824,000, a net reduction of $145,000.

The Consumer Advocate does not agree with the methodology employed by HECO nor accept the DOD's position to only reduce A&G maintenance expense by removing the $145,000 which is to be capitalized. Solely for purposes of this rate case and for settlement purposes only, the Consumer Advocate accepts HECO's offer and agrees to a reduction of $145,000. This results in a test year estimate of $824,000 for settlement purposes. DOD accepts the reduction of $145,000 and the resulting test year estimate of $824,000 for settlement purposes.

j. International Financial Reporting Standards ("IFRS") Consultant Costs`
(CA-101, Schedule C-19 and DOD-125)

With the issuance from the Securities and Exchange Commission ("SEC") of a proposed "Roadmap" to phase in a mandatory transition from U.S. Generally Accepted Accounting Principles ("GAAP") to IFRS, in the Rate Case Update HECO T-11 page 5, the Company projected $100,000 of consultant costs to begin the conversion process to IFRS. The Consumer Advocate proposed to reduce the IFRS consultant costs by $50,000 (CA T-3, pages 64 to 68) to reflect, in part, an allocation of costs to HELCO and MECO and to recognize that the conversion may not proceed on the announced expedited schedule. To settle the issue in this proceeding, the Company accepted the Consumer Advocate's adjustment of $50,000.

In DOD T-1, pages 39 to 41, the DOD proposed to reduce the IFRS consultant cost by $67,000, or two-thirds of the cost, indicating that there is a lack of a contract, the failure to allocate costs, and that the costs could be reasonably deferred due to the potential transition date being years away and the possibility that the transition could be postponed.

The Company disagrees with the DOD's proposal to only include one-third of the costs for HECO in the test year. HECO will begin to incur costs related to transition to IFRS. In the interest of settlement, the Company and the DOD accept the Consumer Advocate's adjustment.

k. A&G R&D (AMI Schedule C-20)

Please see the discussion at a. above for the adjustment in AMI R&D expenses.

l. Feed In Tariff ("FIT") Consultant Costs Adjustment (CA-101, Schedule C-23)

The Consumer Advocate proposed to reduce the FIT consultant costs by $23,000, for the portion of the costs for HELCO and MECO (CA-T-3 page 90) as reflected in the Company's response to CA-IR-343. The Parties agree with the Consumer Advocate's proposal of a reduction of $23,000 to the test year. For further discussion, refer to the "HCEI Outside Services Costs for PUC Proceedings section above."

m. Merit Salary Reduction

The merit salary reduction adjustment allocated to A&G O&M expense is a reduction of $218,000. Refer to the Merit Salary Reduction section above for further discussion.

n. Community Services Expense (DOD T-1, page 25, DOD-117)

The DOD proposed a negative adjustment of $181,000 to community service activities expense by allowing only 50% of the test year estimate. The DOD questioned whether such expenses are necessary for the provision of safe and reliable electric services, and whether such activities tend to promote goodwill for the Company and enhance its image in the community (see DOD-T-1, page 25; DOD-117).

The Consumer Advocate has not taken a position in this issue.

In direct testimony, HECO T-14, page 7, the Company stated that it has already removed Aloha United Way ("AUW") and Community Action Group ("CAG") expense items previously disallowed by the Commission in Docket Nos. 6531 and 6998, HECO's 1990 and 1992 test year rate cases. In the response to CA-IR-151, the Company provided a detailed breakdown of the activities and expense items which comprise the test year's estimate. In the response to CA-IR-152, HECO provided a copy of the Corporate Sustainability Report. HECO disagrees with the DOD's assertions above. Consumer and business community awareness and education on energy conservation, and electric safety and outage prevention play a key role in reinforcing efforts by the Company through mass market advertising and marketing campaigns. Participating in community services provides the Company face-to-face, front line opportunities to reinforce the messages through its advertisement campaigns. These activities also provide the consumer and business community an interactive experience rather than a one-way receive only message through advertising. This is even more important in light the state's efforts to achieve the goals and objectives of the Energy Agreement, and consumer and business community awareness and education will help these groups understand the overall goals and objectives of achieving energy independence and increasing usage of renewable energy resources. In all of the community programs and activities the Company participates in, employee volunteers are used to minimize the out-of-pocket expenses incurred. As such, the Company proposed not to reduce the test year amount of $361,000.

For purposes of settlement only, the DOD agrees to HECO's test year amount of $361,000, but reserves the right to take a different position in future rate cases and makes clear that it is not conceding its position on this issue in future proceedings.

As of result of the settlement discussions, the Parties have reached agreements on all A&G adjustments. This results in a test year total A&G expense of $88,948,000 as follows.

Adjustments	($ thousands)	Source
HECO Update	$77,719	HECO-2303; HECO-2306; HECO-WP-2303; HECO-WP-2306; RC Upd. T-23 Att. 4, 7 & 8, p.1
A&G R&D – Oahu Electric System Analysis	($677)[15]	See discussion a. above.
CIS System Removal	($445)	HECO T-9, Attachment 2, Final Settlement
Integrated Resource Planning/CESP	($37)	See discussion c. above.
Payroll and Benefits	($491)	HECO T-15, Attachment 1, Final Settlement
Pension/OPEB Costs and Regulatory Accounting	$14,042	HECO T-13, Attachment 2, Final Settlement
Abandoned Projects Normalization	$2	CA-101, Schedule C, page 3; Schedule C-15
General Inflation and Revised Vehicle Fuel Forecast	($8)	CA-101, Schedule C-16; CA-IR-387
Office Lease	($477)	HECO T-14, Attachment 2, Final Settlement
A&G Maintenance	($145)	See discussion i. above and DOD-114
IFRS Consultant Costs	($50)	CA-101, Schedule C-19
A&G R&D - AMI	($244)	See discussion a. above
Feed in Tariff	($23)	CA-101, Schedule C-23
Merit Salary Reduction	($218)	HECO T-13, Attachment 1, Final Settlement
Community Services	($0)	See discussion n. above
Settlement Amount	$88,948	

DEPRECIATION AND AMORTIZATION EXPENSE

21. Depreciation expense was determined by calculating the test year depreciation accrual and then adjusting this amount for (1) depreciation accrued on vehicles, (2) amortization of Contribution in Aid of Construction ("CIAC"), (3) amortization of federal investment

[15] The Parties agree to remove $677,000 of Oahu Electric System Analysis R&D expense from base rates and recover this expense via the REIP/CEI Surcharge.

tax credit, and (4) amortization of net regulatory assets. The net amount after these four adjustments represented the test year depreciation expense.

Accumulated depreciation represents the cumulative total of annual depreciation accrual amounts, after adjustments for retired assets, including: (1) estimated plant retirements, (2) estimated salvage value for plant retirements, and (3) estimated cost of removal of plant retirements.

The Company's test year estimate for depreciation expense was $83,183,000 at direct testimony (HECO T-14 at 50) and was updated with a decrease of $217,000 to $82,966,000 (Rate Case Update, HECO T-14 at 1 and 15, filed December 2, 2008). HECO's test year estimate for accumulated depreciation was $1,313,247,000 at direct testimony (HECO T-14 at 53) and was updated with a decrease of $146,000 to $1,313,101,000 (Rate Case Update, HECO-T-14 at 1 and 16).

Depreciation and Amortization Expense Accumulated Depreciation HECO 2009 Test Year Estimate ($ thousands)				
	Direct	Adjustment	Update	Source
Depreciation & Amortization Expense	$83,183	($217)	$82,966	HECO T-14 at 50; Rate Case Update, HECO T-14 at 1 and 15.
Accumulated Depreciation	$1,313,247	($146)	$1,313,101	HECO T-14 at 53; Rate Case Update, HECO T-14 at 1 and 16.

In its direct testimony, the Consumer Advocate proposed the following depreciation and amortization expense and no changes to the Company's updated accumulated depreciation for the test year.

Depreciation and Amortization Expense Accumulated Depreciation Consumer Advocate 2009 Test Year Estimate ($ thousands)				
	HECO Update	Total Proposed Adjustments	CA Direct	Source
Deprec & Amort Exp	$82,966	($3,174)	$79,792	CA-T-1 at 94-98, CA-T-3 at 86 to 89, and CA-101, Schedules C-9 and C-22
Accumulated Depreciation	$1,313,101	$0	$1,313,101	N/A

The Consumer Advocate proposed the following three adjustments to HECO's test year estimate:

- a negative adjustment of $977,000 to "amortization of regulatory asset" expense due to the removal of CIS from the instant rate case (see CA-T-1, pages 94 to 98 and CA-101, Schedule C-9);
- a negative adjustment of $273,000 to "depreciation and amortization" expense due to using recorded December 31, 2008 balances (see CA-T-3, pages 86 to 89 and CA-101, Schedule C-22).
- a negative adjustment of $1,924,000 to "additional amortization – net unrecovered" expense due to the expiration of a vintage amortization in September 2009 (see CA-T-3, pages 86 to 89 and CA-101, Schedule C-22, note "c");

In its direct testimony, the DOD proposed the following Depreciation and Amortization expenses and Accumulated Depreciation for the 2009 test year.

Depreciation and Amortization Expenses Accumulated Depreciation DOD Test Year Estimate ($ thousands)				
	HECO Update	Total Proposed Adjustments	DOD Direct	Source
Deprec & Amort Exp	$82,966	($3,023)	$79,943	DOD-T-1 at 24 to 25 and 27 to 28; and DOD-116 & 119
Accumulated Depreciation	$1,313,101	$0	$1,313,101	N/A

The DOD proposed the following two adjustments to HECO's test year estimate:

- a negative adjustment to "depreciation and amortization" expense of $2,198,000 due to using recorded December 31, 2008 balances (see DOD T-1, pages 27 to 28 and DOD-119).
- a negative adjustment of $825,000 to reschedule a vintage amortization that was expiring in 2009 (see DOD T-1, pages 24 to 25 and DOD-116).

a. Amortization of Regulatory Asset

The Consumer Advocate proposed a negative adjustment of $977,000 to "amortization of regulatory asset" expense due to the removal of CIS from the instant rate case (CA-T-1, pages 94 to 98, CA-101, Schedule C-9). HECO developed the expense adjustments by block of account (which excludes depreciation and amortization accounts from being adjusted). See "CIS O&M Expense and Rate Base Impact" section above, and HECO T-9, Attachment 2, Final Settlement. The DOD made adjustments to remove CIS cost from the instant rate case on DOD-106 and DOD-112. See "CIS O&M Expense and Rate Base Impact" section above, and HECO T-9, Attachment 2, Final Settlement.

HECO and the Consumer Advocate have agreed to the expense adjustment be block of account for the removal of CIS from this rate case. See "CIS O&M Expense and Rate Base Impact" section.

b. Depreciation Expense and Expiring Amortization

The Consumer Advocate proposed (1) a negative adjustment of $273,000 to "depreciation and amortization" expense from using actual recorded 2008 year-end plant in service balances, and (2) a negative adjustment of $1,924,000 to "additional amortization – net unrecovered" expense due to the expiration of a vintage amortization in September 2009 (CA-T-3, pages 86 to 89 and CA-101, Schedule C-22, note "c").[16] The rationale for the exclusion of the $1,924,000 is stated on CA-T-1, page 88 "...While it is true that that this amortization will be recorded for eight (8) months of the 2009 test year, it is equally true that the amortization will terminate in August 2009." The DOD proposed a negative adjustment of $825,000 to Depreciation and Amortization expense by amortizing the expired amortization amount of $1,924,000 over two years until HECO's next rate case in 2011 (DOD T-1 at 24 to 25 and DOD-116).[17] The DOD also proposed a negative adjustment of $2,198,000 to "depreciation and amortization" expense based on using year end 2008 plant balances (DOD T-1, pages 27 to 28 and DOD-119).

HECO proposed to accept the Consumer Advocate's negative adjustment of $273,000 to "depreciation and amortization" expense from using actual recorded 2008 year-end plant in service balances, and the DOD's negative adjustment of $825,000 to "additional amortization – net unrecovered" expense by amortizing the expired amortization amount of $1,924,000 over two years until HECO's next rate case in 2011.

DOD-119 inadvertently included the negative adjustment of $1,924,000 for "additional amortization –net unrecovered" expense, when DOD-116 has already made this negative adjustment. During settlement discussions and in response to HECO/DOD-IR-103, the DOD explained that: "The intention of the DOD adjustments was not to double count an adjustment for depreciation and amortization expense, but rather to reflect a normal, going-forward level of 2009 depreciation and amortization that would not entail ratepayers overpaying for an expiring amortization" and "if there is a double-count between Exhibits DOD-116 and DOD-119 as HECO seems to allege, DOD would prefer

[16] As stated in HECO T-14, pages 51 to 52, on March 1, 2004, HECO and the Consumer Advocate filed a Settlement Agreement for purposes of simplifying and expediting the proceeding with respect to HECO's request for Commission approval to change its depreciation rates and approval of a procedure change to vintage amortization accounting for certain accounts. By Decision and Order No. 21331, in Docket No. 02-0391, the Commission approved the Settlement Agreement and authorized amortization for certain assets over a 5-year period beginning September 4, 2004. The plant account balances subject to vintage amortization are separated and were identified in HECO's response to CA-IR-418. In this response, HECO also corrected the "additional amortization – net unrecovered" expense for the test year from $1,924,000 to $2,198,000.

[17] DOD-116 amortized the corrected "additional amortization – net unrecovered" expense of $2,198,000 over two years, then subtracted the original test year estimate of $1,924,000 to derive the negative adjustment of $825,000.

to keep the adjustment shown on DOD-119 and hold the adjustment shown on DOD-116 as a secondary alternative recommendation.

The Company maintained that DOD's treatment of the "additional amortization – net unrecovered" expense is reasonable and is consistent with the Consumer Advocate's treatment in C-17 where the actual number of months in 2009 that HECO actually pays the four new leases' month rents are included in the test year estimate.

The Parties agree to accept HECO's counter-proposal of (1) a negative adjustment of $273,000 to "depreciation and amortization" expense from using actual recorded 2008 year-end plant in service balances, and (2) a negative adjustment of $825,000 to "additional amortization – net unrecovered" expense by amortizing the expired amortization amount over two years until HECO's next rate case in 2011.

For purposes of settlement, HECO, the Consumer Advocate and the DOD have reached agreement on all of the above adjustments. The result is a 2009 test year total Depreciation and Amortization expense of $81,868,000 and Accumulated Depreciation of $1,313,101,000 as shown in the table below.

	Settlement Agreement of Parties 2009 Test Year Estimate ($ thousands)	Source
Depreciation and Amortization Expense	$81,868	See discussion above.
Accumulated Depreciation	$1,313,101	HECO T-14 at 53; Rate Case Update, HECO T-14 at 1 and 16.

TAXES OTHER THAN INCOME TAXES

22. Taxes Other Than Income Taxes are taxes related either to utility revenue or to payroll. The taxes related to utility revenue include the State Public Service Company ("PSC") tax, the State Public Utility fee and the County Franchise Royalty tax. The taxes related to payroll include the Federal Insurance Contribution Act and Medicare ("FICA/Medicare") taxes, the Federal Unemployment ("FUTA") tax and the State Unemployment ("SUTA") tax.

    In its direct testimony and Rate Case Update, the Company proposed a test year estimate for taxes other than income taxes at current effective rates and proposed rates, as follows:

Taxes Other Than Income Taxes ($ thousands)				
	Direct		Rate Case Update	
	At Current Effective Rates	At Proposed Rates	At Current Effective Rates	At Proposed Rates
PSC Tax	$109,781	$114,791	$109,749	$115,081
Public Utility Fee	9,327	9,753	9,324	9,777
Franchise Tax	46,524	48,649	46,510	48,772
Payroll Tax	7,333	7,333	7,284	7,284
Total	$172,965	$180,526	$172,867	$180,914

Source: Direct – HECO-WP-2303 page 6.
Rate Case Update – HECO T-23 Attachment 7, page 6.

a. Revenue Tax

The Company's direct testimony revenue taxes at current effective rates and at proposed rates are $165,632,000 and $173,193,000, respectively.

The Company's Rate Case Update revenue taxes at current effective rates and at proposed rates are $165,583,000 and $173,630,000, respectively.

In the Consumer Advocate's direct testimony, the Consumer Advocate recommended a reduction to HECO's Rate Case Update estimate for revenue tax by $4,484,000 (CA-101 Schedule C-1) to correspond with the proposed adjustment of a reduction of revenues due to the lower sales forecast. In addition, the Consumer Advocate reduced revenue tax by $42,432,000 (CA-101 Schedule C-3) to correspond with the proposed adjustment to fuel and purchased energy expenses, which affects the test year ECAC revenues.

The Parties have agreed that revenue taxes must be re-calculated to conform to the resolution of all other issues herein.

b. Payroll Taxes

The Company's direct testimony payroll tax at current effective rates and at proposed rates is $7,333,000.

The Company's Rate Case Update payroll tax at current effective rates and at proposed rates is $7,284,000.

In the Consumer Advocate's direct testimony, the Consumer Advocate recommended reducing payroll tax by $18,000 (CA-101 Schedule C-9) to remove costs related to the Customer Information System and reducing payroll tax by $55,000 (CA-101 Schedule C-13) to adjust for the vacancy rate adjustment. Refer to the CIS Removal and Vacancy Rate Labor Expense Adjustment above for further discussion.

In the DOD's direct testimony, the DOD recommended reducing payroll tax by $18,000 (DOD-111) to remove costs related to the Customer Information System. The DOD also recommended reducing payroll tax by $16,000 (DOD-124) related to the FUTA surtax extension. However, DOD agreed to withdraw the FUTA surtax adjustment since it resulted from misinterpretation of an IR response and was immaterial to HECO's revenue requirement. (See HECO/DOD-IR-107.)

The following table summarizes taxes other than income taxes at current effective rates and proposed rates:

Taxes Other Than Income Taxes ($ thousands)		
	Settlement	
	At Current Effective Rates	At Proposed Rates
PSC Tax	$76,179	$80,876
Public Utility Fee	6,472	6,871
Franchise Tax	32,258	34,250
Payroll Tax	7,194	7,194
Total	$122,103	$129,191

Source: Statement of Probable Entitlement, page 6 of Exhibit 1.

INCOME TAX EXPENSES

23. In its direct testimony and Rate Case Update, the Company proposed test year estimates for Income Taxes at current effective rates and proposed rates as follows:

Income Taxes ($ thousands)				
	Direct		Rate Case Update	
	At Current Effective Rates	At Proposed Rates	At Current Effective Rates	At Proposed Rates
Income Tax	$22,648	$52,829	$20,743	$52,864

Source: Direct – HECO-2303 page 1.
Rate Case Update - HECO T-23 Attachment 7, page 1.

a. Income Taxes – R&D Credit Income Tax

HECO's Rate Case Update excluded the R&D credit in its income tax calculations. Upon further review, HECO changed its position and is now recommending inclusion of the R&D credit in the test year computation of income taxes (Refer to CA-IR-360 and CA-IR-423), which has the effect of decreasing income tax expense by $215,000.

In their direct testimonies, the Consumer Advocate and DOD proposed an adjustment of a negative $215,000 to include the R&D credit in income taxes (CA-101 Schedule C-24; DOD-123).

b. Income Taxes – Interest Synchronization

In Decision and Order No. 24171, filed in Docket No. 04-0113 (HECO's 2005 test year rate case), the Commission adopted the interest synchronization method in determining the interest expense deduction in the income tax calculations.

The Consumer Advocate calculated the interest expense deduction utilizing the interest synchronization method (CA-101 Schedule C-25). Interest synchronization calculations are based on the average rate base and weighted cost of debt. To the extent that the average rate base proposed by the Consumer Advocate is different from the Rate Case Update, the Consumer Advocate's interest deduction differs from HECO's deduction, resulting in a different income tax expense.

The DOD calculated the interest expense deduction utilizing the interest synchronization method (DOD-118). Interest synchronization calculations are based on the average rate base and weighted cost of debt. To the extent that the average rate base and weighted cost of debt proposed by the DOD are different from the Rate Case Update, the income tax impact differs.

The Parties agree that income taxes must be recalculated to recognize adjusted revenues, expenses, synchronized interest (rate base and cost of capital) integrating the results of all adjustments agreed upon by the Parties. Using all of the information set forth herein, the test year income taxes at current and proposed rates are as follows:

Income Taxes ($ thousands)		
Settlement		
	At Current Effective Rates	At Proposed Rates
Income Tax	$15,914	$44,213

Source: Statement of Probable Entitlement, page 1 of Exhibit 1.

RATE BASE

24. Rate base represents the net investment that is used or useful for public utility purposes and that has been funded by the Company's investors. (See HECO T-18, page 2.) HECO calculated an average rate base by dividing the sum of the estimated 2008 and 2009 year-end balances for each component of rate base by two.

Investments in assets include all investments necessary to provide reliable electric service to HECO's customers. In direct testimony, HECO's investments in assets consisted of

the following components: (1) net cost of plant in service, (2) property held for future use, (3) fuel inventory, (4) materials and supplies inventory, (5) unamortized net Statements of Financial Accounting Standards ("SFAS") No. 109 regulatory asset, (6) unamortized system development costs, (7) reverse osmosis ("RO") water pipeline regulatory asset, (8) asset retirement obligation ("ARO") regulatory asset and (9) working cash. (See HECO T-18, page 4.)

Funds from non-investors are funds that are invested in assets to provide reliable electric service that are from sources other than investors. In direct testimony, funds from non-investors consisted of the following components: (1) unamortized contributions in aid of construction ("CIAC"), (2) customer advances for construction, (3) customer deposits, (4) accumulated deferred income taxes ("ADIT"), (5) unamortized investment tax credits ("ITC"), (6) unamortized gain on sales, (7) pension regulatory liability, and (8) OPEB regulatory liability. (See HECO T-18, page 38.)

The following table summarizes the estimated 2009 test year average rate base at current effective rates and base case for HECO's direct testimony (column A), HECO's rate case update (column B), the Consumer Advocate's direct testimony (column C), and the settlement agreement (column D).

2009 Test Year Average Rate Base
Base Case, Current Effective Rates

($000's)	(A) HECO T-18 Direct Testimony	(B) HECO T-18 Rate Case Update	(C) CA T-3 Direct Testimony	(D) Settlement
Source:	HECO-1801(C)	Rate Case Update HECO T-23 Att. 7, Page 3	CA-101 Schedule B	Statement of Probable Entitlement
INVESTMENT IN ASSETS SERVING CUSTOMERS				
Net Plant in Service	1,469,005	1,474,183	1,470,531	1,470,532
Prop. Held for Future Use	2,331	2,331	2,331	2,331
Fuel Inventory	82,683	82,683	46,288	45,005
Mat'l. & Supply Inventories	16,015	16,105	16,203	16,203
Unamort. Net SFAS 109 Reg. Asset	61,310	60,524	60,236	60,236
Unamort. Sys Dev Costs	17,452	17,644	6,311	6,310
RO Water Pipeline Reg. Asset	3,183	3,183	3,183	3,183
ARO Regulatory Asset	13	13	11	11
FUNDS FROM NON-INVESTORS				
Unamort. CIAC	(178,410)	(181,756)	(181,066)	(181,066)
Customer Advances	(848)	(848)	(878)	(877)
Customer Deposits	(7,695)	(8,244)	(8,391)	(8,391)
ADIT	(135,277)	(132,671)	(134,123)	(144,531)

Unamort. ITC	(32,831)	(33,838)	(33,758)	(29,376)
Unamort. Gain on Sales	(1,055)	(1,055)	(1,046)	(1,046)
Pension Reg. Asset (Liability)	(2,746)	(2,746)	202	202
OPEB Reg. Asset (Liability)	(700)	(700)	(605)	(605)
WORKING CASH				
Working Cash at Current Effective Rates	40,971	41,055	14,806	15,480
Change in Rate Base - Working Cash	(766)	(815)	(915)	(719)
Average Rate Base at Proposed Rates	1,332,636	1,334,958	1,259,321	1,252,882

In direct testimony, HECO T-18, the Company estimated the test year average rate base at proposed rates using the base case scenario at $1,332,636,000 (see HECO-1801(c) and HECO-WP-2306, page 3). Subsequently, this estimate was updated to $1,334,958,000 (see Rate Case Update, HECO T-23, Attachment 7, page 3 and Rate Case Update, HECO T-18, page 9), to reflect updates to rate base components primarily driven by the requirements and commitments specified in the Energy Agreement. This average rate base estimate reflects the base case scenario with the inclusion of the HCEI Implementation Studies and excludes the Company's updated sales forecast reduction.

In its direct testimony, the Consumer Advocate recommended a test year average rate base at proposed rates of $1,259,321,000 (see CA-101 Schedule B). The Consumer Advocate accepted the Company's test year average rate base estimate except for seven items:

1) reflection of December 2008 actuals (see Rate Base Update – 2008 Actuals section below);
2) revision to the regulatory asset (liability) of the pension tracking mechanism (see the Regulatory Assets section below);
3) the reversal of CIS test year impacts (see the CIS O&M Expense and Rate Base Impacts section above);
4) adjustment to fuel inventory (see the Fuel Inventory section below);
5) adjustment to the working cash estimate (see the Working Cash section below);
6) adjustment to update the 2009 ADIT ending balance (see the ADIT section below); and an
7) adjustment to the ADIT reserves (see the ADIT section below).

As shown on DOD-106, the DOD proposed the following two adjustments to rate base:

1) reflection of December 2008 actuals (see Rate Base Update – 2008 Actuals section below); and
2) reversal of CIS test year impacts (see the CIS O&M Expense and Rate Base Impacts section above).

The DOD also described concerns with the calculation of working cash (see the Working Cash section below) and the need to update the 12/31/09 ADIT balance to recognize 2009 bonus tax depreciation (see the ADIT section below).

Based on the discussion contained in the paragraphs below, the Parties have reached agreement on each of these differences. As a result of these settlements, the Parties agree on the average rate base at proposed rates of $1,252,882,000. (See Statement of Probable Entitlement, page 1 of Exhibit 1.)

25. Rate Base Update - 2008 Actuals - HECO considered updating the 2008 year-end balances to reflect year-end actuals, and to update 2009 changes to the balances, once the year-end actuals became available. However, HECO was asked by the Consumer Advocate, and the Company agreed, to update these amounts prior to the end of 2008 to provide the Parties with more opportunity to review the updates. (See DOD-IR-94, Supplement 3/9/09.) Thus, HECO's rate base estimate reflects the 2008 year-end estimates proposed in the Rate Case Update. The Consumer Advocate proposed a decrease of $16,370,000 (see CA-101, Schedule B-1) and the DOD proposed a decrease of $16,551,000 (see DOD-107) to reflect actual December 2008 amounts. The Consumer Advocate disagreed with the Company's interpretation of the request for an early update and conveyed its intention to reflect actual 2008 year-end balances consistent with prior HECO rate cases. The Company did not agree with using the 2008 year-end actuals as the beginning balance in calculating the average rate base without an opportunity to also update its 2009 end of year balance. But, for purposes of settlement, the Company agreed to include the adjustments resulting from the introduction of 2008 year-end actuals as identified in CA-101, Schedule B-1 except for the fuel inventory adjustment (CA-101, Schedule B-1, line 3). The Company reran its production simulation and reflects that estimated fuel inventory adjustment. Refer to the Fuel Inventory section below for further discussion.

26. Regulatory Assets (Liability) – NPPC vs. NPPC in Rates and Regulatory Assets (Liability) – NPBC vs. NPBC in Rates - The Company provided more current pension and OPEB information in supplemental responses to DOD-IR-101 (3/20/09 and 3/30/09) and DOD-IR-104 (3/20/09 and 4/3/09). The Consumer Advocate recalculated the regulatory Assets (Liability) - NPPC vs. NPPC in Rates and Regulatory Assets (Liability) – NPBC vs. NPBC in Rates proposed by HECO based on the tracking mechanisms for Pension and OPEB and utilizing the updated NPPC and NPBC for 2009. However, there were differences in the amortization amounts proposed by HECO and the Consumer Advocate due to the assumption on the commencement of amortization in 2009.

    Regulatory Assets (Liability) – NPPC vs. NPPC in Rates
    HECO's average regulatory liability for the test year as shown in HECO-1124 is $2,746,000. Based on updated pension expense estimates for 2009 received from the Company's actuary, Watson Wyatt Worldwide, which reflected the pension plan asset values as of December 31, 2008, the Company provided a calculation of the Regulatory Asset – NPPC vs. NPPC in rates assuming the NPPC in rates would be reset in mid-2009,

and assuming a full year amortization of the regulatory liability balance as of the end of 2008, as shown in column 3.

($000's)	(1) Direct and Rate Case Update	(2)=(3)-(1) HECO Adjustment	(3) HECO Adjusted	(4)=(5)-(1) Consumer Advocate Adjustment	(5) Consumer Advocate's Position	(6) DOD's Position
Balance 12/31/07	$ 0	$ 0	$ 0		$ 0	$ 0
2008						
NPPC in rates vs. NPPC for 2008	(3,051)		(3,051)		(3,051)	(3,051)
Balance 12/31/08	$(3,051)	0	$(3,051)		$(3,051)	$(3,051)
2009 Test Year						
Amortization – 2008	610		610	(305)	305	610
Amortization – 2009	0		0	(689)	(689)	0
NPPC in rates vs. NPPC for 2009	0	6,889	6,889	6,889	6,889	0
Balance 12/31/09	$(2,441)	$6,889	$4,448	$5,895	$3,454	$(2,441)
Average	$(2,746)	$3,445	$ 699	$2,948	$ 202	$(2,746)

The Consumer Advocate's proposed average rate base adjustment is $2,948,000 (CA-101, Schedule B-2, line 3). The Consumer Advocate's position includes both the regulatory liability resulting from the last rate case and the new regulatory asset created as a result of the difference between the NPPC in rates vs. the actual NPPC for the first half of 2009, and amortizing the estimated balance of the regulatory asset/liability amounts as of mid-2009 (the estimated date of an interim decision in this proceeding) over five years. The Consumer Advocate's estimate amortizes in 2009 six months of the annual amortization of the 2008 NPPC in rates vs. NPPC regulatory liability ($(3,051,000) ÷ 5 years x 6/12) and six months of the annual amortization of the 2009 NPPC in rates vs. NPPC ($6,889,000 ÷ 5 years x 6/12). (Also, see CA-101, Schedule C-14, line 4 and footnote c.)

To settle the issue of this proceeding, the Parties agree with the Consumer Advocate's position to amortize the estimated balance of the net regulatory asset as of mid-2009 over five years and to increase the average net regulatory asset by $2,948,000.
This results in an agreed to Regulatory Asset – NPPC vs NPPC in Rates average balance of $202,000.

Regulatory Assets (Liability) – NPBC vs. NPBC in Rates
HECO's average regulatory liability for the test year as shown in HECO-1125 is $(700,000). Based on updated OPEB estimates for 2009 received from the Company's actuary, Watson Wyatt Worldwide, which reflected the OPEB plan asset values as of

December 31, 2008, the Company provided a calculation of the Regulatory Liability – NPBC vs. NPBC in rates assuming the NPBC in rates would be reset in mid-2009, and assuming a full year amortization of the regulatory liability balance as of the end of 2008, as shown in column 3.

($000's)	(1) Direct and Rate Case Update	(2) HECO Adjustment	(3)= (1)-(2) HECO Adjusted	(4)= (5)-(1) Consumer Advocate Adjustment	(5) Consumer Advocate's Position	(6) DOD's Position
Balance 12/31/07	0	0	0		0	0
2008						
NPBC in rates vs. NPBC for 2008	(777)		(777)		(777)	(777)
Balance 12/31/08	(777)	0	(777)		(777)	(777)
2009 Test Year						
Amortization – 2008	155		155	(77)	78	155
Amortization – 2009	0		0	(30)	(30)	0
NPBC in rates vs. NPBC for 2009	0	297	297	296	296	0
Balance 12/31/09	(622)	297	(325)	(189)	(433)	(622)
Average	(700)	149	(551)	(95)	(605)	(700)

The Consumer Advocate's proposed average rate base adjustment is $95,000(CA-101, Schedule B-2, line 6). The Consumer Advocate's position includes both the regulatory liability resulting from the last rate case and the new regulatory asset created as a result of the difference between the NPBC in rates vs. the actual NPBC for the first half of 2009, and amortizing the estimated balance of the regulatory asset/liability amounts as of mid-2009 (the estimated date of an interim decision in this proceeding) over five years. The Consumer Advocate's estimate amortizes in 2009 six months of the annual amortization of the 2008 NPBC in rates vs. NPBC ($(777,000) ÷ 5 years x 6/12) and also 6 months of the annual amortization of the 2009 NPBC in rates vs. NPBC ($296,000 ÷ 5 years x 6/12). (Also, see CA-101, Schedule C-14, line 4 and footnote c.)

For purposes of settlement, the Parties agree with the Consumer Advocate's position to amortize the estimated balance of the regulatory liability as of mid-2009 over five years (i.e., reflecting 6 months of the annual amortization of the 2008 NPBC in rates vs. NPBC and also 6 months of the annual amortization of the 2009 NPBC in rates vs. NPBC) and decrease the average net regulatory liability by $95,000.
This results in an agreed to Regulatory Liability – NPBC vs NPBC in Rates average balance of $605,000.

INVESTMENTS IN ASSETS SERVICING CUSTOMERS

27. Net Cost of Plant in Service
As described above in Rate Base Update – 2008 Actuals, for purposes of settlement, HECO agreed to include the adjustments resulting from the introduction of 2008 year-end actuals as identified in CA-101, Schedule B-1. This results in an agreed to average Net Cost of Plant in Service for the 2009 test year of $1,470,532,000.

28. Fuel Inventory
The test year average fuel inventory balance presented in direct testimony was $82,683,000, as shown on HECO-505. See HECO T-5, page 33. In HECO's Rate Case Update, HECO T-23, Attachment 7, filed on December 22, 2008, for revenue requirement purposes, the average fuel inventory balance remained at $82,683,000.

As described in the section on Fuel Oil Expense and Fuel Related Expense in subparagraph 4 above, the Consumer Advocate proposed a $13,303,000 reduction to fuel inventory to reflect December 2008 year end actuals and another $23,092,000 reduction using the lower December 2008 fuel prices. See CA-101, Schedule B, Schedule B-2 and CA-101, Schedule B-4, respectively. Similarly, the DOD proposed a $13,303,000 reduction to fuel inventory to reflect December 2008 year end actuals. See *DOD-103*.

For purposes of settlement, the Parties agreed to accept HECO's April 2009 Update production simulation results, including HECO's December 2008 fuel prices, and the Company's updated average fuel inventory balance of $45,005,000 for the 2009 test year. See HECO T-5 April 2009 Update, Attachment 1, Page 8 for calculations.

29. Material & Supply Inventories
As described above, for purposes of settlement, HECO agreed to include the adjustments resulting from the introduction of 2008 year-end actuals as identified in CA-101, Schedule B-1. This results in an agreed to an average materials & supply inventories for the 2009 test year of $16,203,000. A breakdown of the allocation between production and T&D was determined by applying the 2008 year-end actuals from Attachment 2 of HECO's response to CA-IR-455 (see HECO T-18, Attachment 1, page 2) to the materials & supply inventory calculation (see HECO T-18, Attachment 1, page 1), results in a 2009 average $8,205,000 adjusted production inventory and $7,998,000 adjusted T&D inventory.

30. Unamortized Net SFAS 109 Regulatory Asset
The test year estimate of SFAS 109 Regulatory Asset ("Reg Asset") average balance presented in direct testimony was $61,310,000, as shown on HECO-1606, page 2. See HECO T-16, page 18. In the Rate Case Update, the CWIP Equity Ongoing was updated due to the revised 2008 and 2009 estimates of AFUDC as shown in HECO T-16, Attachments 5 and 6. See Rate Case Update HECO T-16, page 2.

($000's)	Direct Base Case	Rate Case Update	CA Direct	Settlement
Beginning Balance	58,598	58,041	58,041	58,041
Adjust for Actual 2008 balance			(288)	(288)
Revised Beginning Balance	58,598	58,041	57,753	57,753
Amortization	(2,173)	(2,169)	(2,169)	(2,169)
Additions	7,596	7,134	7,134	7,134
Ending Balance	64,021	63,006	62,718	62,718
Average Balance	61,310	60,524	60,236	60,236

Source: HECO Direct – HECO-1606, page 2.
HECO Rate Case Update – HECO T-16, Att. 5, page 1.
CA Direct – CA-101, Schedule B, page 1.
HECO Settlement – CA-IR-359 revised.

The Consumer Advocate adjusted the SFAS 109 Reg Asset average balance in two steps by a reduction of $144,000 (288,000 x 38.91%) to update for the actual 12/31/08 balance (see CA-101, Schedule B-1) and an identical adjustment to average rate base to update for the same SFAS 109 Reg Asset adjustment carried forward to the 12/31/09 balance (CA-101, Schedule B-6).

The DOD adjusted the SFAS 109 Reg Asset for the 12/31/08 actual balance by $228,000 and adjusted the average balance by $144,000 (see DOD-106, page 1). As indicated above, the $288,000 adjustment is an adjustment to both the beginning and ending test year balances and therefore the impact to average rate base should be a decrease of $288,000.

The Parties agree with the Consumer Advocate's average balance of $60,236,000.

31. Unamortized System Development Costs

The test year estimate of unamortized system development average balance presented in direct testimony was $17,452,000, as shown on HECO-1117. See T-11, page 54. In the Rate Case Update the end of the test year balance was updated to reflect an updated deferred project costs for the HR suite project and the resulting updated amortization expense for the year for the project. See Rate Case Update T-11 page 6. See HECO T-11, Attachment 8 for summary balance.

The Consumer Advocate adjusted the Unamortized System development costs by $58,000 to update actual 2008 balance (see CA-101, Schedule B-1) and removed the CIS amount of $11,392,000 (see CA-101, Schedule B-3). Refer to Rate Base-2008 Actual discussed and Reversal of CIS test year impacts for CIS removal above for further discussion.

The Parties agree with the actual 2008 balance as the beginning balance and the CIS removal. For settlement purposes, the company foregoes an update to the 2009 balance to account for the 2008 actual balance. The difference of $1,000 is due to rounding. This results in an agreed to Unamortized System Development Cost average balance of $6,310,000.

32. ARO Regulatory Asset
As described above in Rate Base Update – 2008 Actuals, for purposes of settlement, HECO agreed to include the adjustments resulting from the introduction of 2008 year-end actuals as identified in CA-101, Schedule B-1. This results in an agreed to average ARO Regulatory Asset for the 2009 test year of $11,000.

FUNDS FROM NON-INVESTORS

33. Unamortized CIAC
As described above in Rate Base Update – 2008 Actuals, for purposes of settlement, HECO agreed to include the adjustments resulting from the introduction of 2008 year-end actuals as identified in CA-101, Schedule B-1. This results in an agreed to average Unamortized CIAC for the 2009 test year of $181,066,000.

34. Customer Advances
As described above in Rate Base Update – 2008 Actuals, for purposes of settlement, HECO agreed to include the adjustments resulting from the introduction of 2008 year-end actuals as identified in CA-101, Schedule B-1. This results in an agreed to average Customer Advances for the 2009 test year of $877,000.

35. Customer Deposits
As described above in Rate Base Update – 2008 Actuals, for purposes of settlement, HECO agreed to include the adjustments resulting from the introduction of 2008 year-end actuals as identified in CA-101, Schedule B-1. This results in an agreed to average Customer Deposits for the 2009 test year of $8,391,000.

36. ADIT
The Company's average ADIT for the Rate Case Update was $132,671,000, shown in HECO-T-16 Attachment 4, page 1.

($000's)	Direct Base Case	Rate Case Update	CA Direct	Settlement
Beginning Balance	134,450	132,241	132,241	132,241
Adjust for Actual 2008 balance			269	269
Revised Beginning Balance	134,450	132,241	132,510	132,510
Additions/ (Reduction)	1,654	859	859	859
Adjustments:				
Pension Reg Liability			2,294	2,294
OPEB Reg Liability			73	73
Bonus Depreciation				14,396
State ITC				3,346
CIS				608
Emissions Fees				(86)
OPEB book				(501)
OPEB tax				2,627
Book Depreciation				427
Rounding				(1)
Ending Balance	136,104	133,100	135,736	156,552
Average Balance	135,277	132,671	134,123	144,531

The Consumer Advocate adjusted the ADIT average balance to update for the actual 12/31/08 balance. The adjustment to actual was $269,000, and its impact on ADIT average balance was accomplished in two steps: first by an adjustment of $135,000 ($269,000 x 50%) to the ADIT average balance to account for the impact of the adjusted 12/31/08 balance (CA-101, Schedule B-1), and second by a similar adjustment of $134,000 ($269,000 x 50%) to account for the impact of the adjusted 12/31/09 balance (CA-101, Schedule B-6).

The DOD adjusted ADIT for the 12/31/08 actual balance by $269,000 and adjusted the average balance by $135,000 (see DOD-106). As indicated above, the $269,000 adjustment is an adjustment to both the beginning and ending test year balances and therefore the impact to average rate base should be $269,000.

In direct testimony, the Consumer Advocate further adjusted the ADIT average balance reducing rate base by $1,184,000 (CA-101, Schedule B-7) related to the 2009 pension and OPEB net regulatory assets/liabilities in the amounts of $3,454,000 and $(433,000), respectively. This increase in the ADIT offset to rate base was based on the updated expense estimates for 2009 received from the Company's actuary, Watson Wyatt Worldwide and the agreement to account for six months of the pension/OPEB tracker

resulting from the updated expense. The OPEB ADIT balance was subsequently revised by the Consumer Advocate based on additional information provided by HECO that caused a restatement of the $1,184,000 rate base reduction to a $2,497,000 reduction. Please see above Regulatory Assets (Liability)-NPPC vs NPPC in Rates and Regulatory Assets (Liability) - NPBC vs NPBC in Rates for further discussion.

The DOD did not include an adjustment for this pension/OPEB tracker.

HECO compared its latest update to the Consumer Advocate's summary of ADIT rate base adjustments, and in addition to the items discussed immediately above, the Company, the Consumer Advocate and the DOD are tentatively in agreement on the following two ADIT items (1-2 and 7), but HECO proposes the next four items (3-6) that neither the Consumer Advocate nor the DOD accounted for CA-101, Schedule B, page 2 and DOD-106, page 1. In addition, HECO proposed and the Consumer Advocate accepted the last adjustment below (7), which was inadvertently missed by HECO, the Consumer Advocate and the DOD. The following explains each ADIT item of adjustment:

(1) State ITC. See below for a detailed discussion of the state ITC adjustment. State ITC is deferred and amortized for book and regulatory purposes and ADIT is adjusted for the tax effect of any adjustment to state ITC. As discussed below, the amount of state ITC earned in 2009 is reduced by $8,600,000 and the related adjustment to ADIT is $3,346,000 ($8,600,000 x 38.91%), which increases ADIT and decreases average rate base by $1,673,000.

(2) Bonus Tax Depreciation. Both the Consumer Advocate (CA-T-1, page 122) and the DOD (DOD T-1, page 21) raised the issue of whether tax bonus depreciation was reflected in HECO's estimated ADIT balances. HECO did not include any bonus depreciation for 2009 plant additions in the calculation of ADIT in Direct Testimony or the Rate Case Update. Subsequent to those submissions, bonus depreciation for 2009 was signed into law on February 17, 2009.

Accordingly, HECO computed a 2009 estimate of tax bonus depreciation and its incremental impact on the ADIT balances for rate base purposes and provided the Consumer Advocate and DOD with the information in HECO T-16 Attachments 1, 1A, 1B, 1C and 1D Final Settlement. Both the Consumer Advocate and DOD have tentatively agreed with the depreciation estimate of $41,132,662 as reasonable. The increase in the test year end balance of ADIT associated with this tax depreciation is $14,396,431, and the impact on average rate base is $7,198,000, or 50% of the total increase. Only the federal 35% rate is used in the calculation of ADIT because Hawaii has not adopted the federal bonus depreciation rules in prior years and is not expected to adopt the 2009 provision.

(3) CIS. The adjustment to remove the CIS project costs from rate base are shown on the Consumer Advocate exhibit CA-101, Schedule B-3, including the adjustment to ADIT of $306,000 (increase ADIT balance/decrease rate base). However, it

appears the Consumer Advocate did not transfer the ADIT adjustment to the Summary of Rate Base Adjustments. Please see section "CIS O&M Expense and Rate Base Impact" above for further discussion.

Based on the Company's proposal to exclude the CIS cost from rate base, the DOD reduced the ADIT average balance by $1,850,000 for the ADIT associated with the CIS tax deduction (see DOD-106), which was revised in the Company's response to CA-IR-396 Attachment 4, page 1. The adjustment attempted to remove the effects of CIS on rate base. HECO and the Consumer Advocate have agreed that the ADIT related to the CIS costs should remain in the ADIT balance for rate base purposes, resulting in the adjustment on average rate base of $306,000, proposed above.

(4) Emission Fee. The change in the estimated emission fee for 2009 affects ADIT because for tax purposes, HECO deducts the amount actually paid in the test year, not the amount accrued for book purposes. Accordingly, the increase in the book expense creates a negative deferred income tax. This impact was not accounted for by the Consumer Advocate. HECO calculated its ADIT on the emission fee in its Rate Case Update based on a book expense of $872,000, which the Consumer Advocate proposed. In Rate Case Update T-7, Attachment 2, the Company proposed to increase the emission fee expense to $1,092,000, to which the Consumer Advocate has agreed but has not accounted for the related 2009 ADIT impact of $86,000 (($1,092,000-$872,000) x 38.91%). Average rate base is increased by the $43,000 (50% x $86,000).

(5) Book Depreciation. Book depreciation was adjusted for various items addressed in CA-101, Schedule C-22. The net reduction in book depreciation of $1,098,000 must be carried through to the ADIT calculation. The impact is an increase of ADIT of $427,000 ($1,098,000 x 38.91%), which correspondingly decreases rate base by the same amount and decreases average rate base by $214,000 (50% x $427,000).

(6) OPEB Expense. In addition to the Consumer Advocate's adjustment related to the pension/OPEB tracker, another ADIT adjustment related to the OPEB expense is proposed. OPEB expense included in cost of service is a temporary book/tax difference since the actual contributions are deducted for tax purposes. The 2009 ADIT should decrease by $501,000 (($6,941,000-5,652,839) x 38.91%) as a result of the increase in OPEB expense from $5,652,839 in the Rate Case Update to $6,941,000 based on the February 2009 Watson Wyatt estimate. The 2009 average rate base should increase by $251,000 ($501,000 x 50%).

(7) OPEB Deduction. As discussed in item (6) above, the OPEB cost generates a temporary difference for which negative ADIT is provided on the book expense. Conversely, positive ADIT is provided on the contributions made that are tax deductible.

In the process of reviewing ADIT, HECO ascertained that ADIT had not been provided for the estimated 2009 contribution for OPEB in the Rate Case Update ADIT balances.

HECO proposes an addition to 2009 ADIT of $2,626,751 ($6,750,839 x 38.91%) for the estimated 2009 OPEB contribution payment of $6,750,839, as provided by Watson Wyatt Worldwide in February 2009. Accordingly, average 2009 rate base decreases by $1,313,000 ($2,626,751 x 50%).

For settlement purposes, the Parties agree with the ADIT average balance of $144,531,000.

37. Unamortized State ITC

The Company's average Unamortized State ITC for the Rate Case Update was $33,838,000, shown in HECO-T-16 Attachment 3, page 1.

($000's)	Direct Base Case	Rate Case Update	Consumer Advocate Direct	Settlement
Beginning Balance	30,531	30,264	30,264	30,264
Adjust for Actual 2008 balance			(80)	(161)
Revised Beginning Balance	30,531	30,264	30,184	30,103
Amortization	(1,462)	(1,453)	(1,453)	(1,453)
Additions (Net of Recap)	6,061	8,600	8,600	0
Adjustments	0	0		
Ending Balance	35,130	37,411	37,331	28,650
Average Balance	32,831	33,838	33,758	29,376

Source: HECO Direct – HECO-1604
HECO Rate Case Update – HECO T-16, Att. 3 page 1.
Consumer Advocate Direct – CA-101, Schedule B page 1.

The Consumer Advocate adjusted the Unamortized State ITC average balance to update for the actual 12/31/08 balance. The adjustment to actual was $81,000 (CA-101, Schedule B-1). However, the Consumer Advocate did not adjust for the beginning balance to update 2009 to the ending balance. The adjustment to account for this should have been $161,000 ($81,000 + $80,000).

HECO included an estimate for state ITC earned on 2009 plant additions of $8,600,100 in the Rate Case Update (see Rate Case Update, HECO T-16, Att 3, page 5). The related deferred tax liability is $3,346,299 (8,600,100 x 38.91%).

The Company informed the Consumer Advocate and the DOD of a legislative bill regarding capital goods excise tax credit. The Company provided information as HECO T-16 Attachment 2 and 2A Final Settlement.

On May 8, 2009, the Hawaii legislature passed Senate Bill No. 199, SD1, HD1, CD2, which suspends state ITC for all property placed into service in 2009. The bill has been sent to the Governor for signature. The expectation is that this bill will become law.

HECO, the Consumer Advocate and the DOD have agreed to remove the $8,600,100 from the 2009 additions to state ITC and the related ADIT of $3,346,299. Rate base will increase by the $8,600,100 (reduction in state ITC) and will decrease by the $3,346,299 (ADIT increase). The net adjustment to average rate base will be an increase of $2,627,000. This adjustment remains conditional on the final passage of this bill into law.

For settlement purposes and subject to the state ITC bill becoming law, the Parties agree with the Unamortized State ITC average balance of $29,376,000.

38. Unamortized Gain on Sales
As described above in Rate Base Update – 2008 Actuals, for purposes of settlement, HECO agreed to include the adjustments resulting from the introduction of 2008 year-end actuals as identified in CA-101, Schedule B-1. This results in an agreed to average Unamortized Gain on Sales for the 2009 test year of $1,046,000.

39. Pension Regulatory Asset (Liability)
The Consumer Advocate adjusted the Pension Regulatory liability – NPPC vs. NPPC in rates based on the current estimates for 2009 received from the Company's actuary, Watson Wyatt Worldwide which reflected the pension plan asset values as of December 31, 2008 (C-101 Schedule B-2). Refer to Regulatory Assets (Liability) – NPPC vs. NPPC in Rates above for further discussion.

40. OPEB Regulatory Asset (Liability)
The Consumer Advocate adjusted the OPEB Regulatory asset (liability) – NPBC vs. NPBC in rates based on the current estimates for 2009 received from the Company's actuary, Watson Wyatt Worldwide which reflected the OPEB plan asset values as of December 31, 2008 (C-101 Schedule B-2). Refer to Regulatory Assets (Liability) - NPBC vs. NPBC in Rates above for further discussion.

WORKING CASH

After the filing of direct testimonies, the Parties were in agreement on all items included in the working cash calculation and the revenue and payment lag days except as described below. And after extensive discussions also described below, for purposes of global settlement in this rate case, the Parties reached agreement on all items in working cash.

41. Working Cash for O&M Non-Labor – The Company's position is pension expense, pension regulatory asset/liability amortization, OPEB regulatory asset/liability amortization, system development cost amortization, regulatory commission expense and Waiau Water Well amortization should be included in the working cash calculation and in the calculation of the 30-day expense lag applied to the O&M non-labor components of the working cash study. The Consumer Advocate and DOD objected to the inclusion of these items. More specifically, the Consumer Advocate disagrees with HECO's assertion that these non-cash transactions should be included in cash working capital. Each item will be discussed separately below.

Pension Expense – The Company's position is (1) the revenues associated with the pension expense are subject to the same revenue collection lag as any other revenue item regardless of whether a contribution to the pension plan is made or not, and (2) the Company proposed to include the pension expense in the working cash calculation and in the calculation O&M non-labor expense payment lag with a payment lag of zero days (see HECO T-18, pages 28 to 29 and HECO-WP-1806). The Consumer Advocate disagreed with HECO's assertion that non-cash transactions, in this case pension accruals (or NPPC), are properly includable in the calculation of cash working capital (see CA-T-3, pages 97 to 101). As a result, this non-cash expense should be completely excluded from the calculation of O&M non-labor expense lag.

During the settlement discussions, HECO also presented supplemental information regarding the cessation of previously planned pension contributions in the discussion of working cash. The Company made two pension contribution payments in the month of February and March totaling $2,739,000. A pension contribution schedule totaling $8,218,000 was provided in response to DOD-IR-101 (Supplement 3/20/09) identifying monthly contribution payments from February through September that HECO had planned to make to the pension trust in 2009. (See DOD-IR-101 Supplement 3/20/09, page 2 and Attachment 1 page 2.) In April 2009, additional guidance on funding relief for defined benefit pension plans was received from the IRS including: (1) IRS Notice 2009-22 related to the application of new asset valuation rules included in the "Worker, Retiree, and Employer Recovery Act of 2008" (see HECO T-18, Attachment 2) and (2) publication of a Special March Edition of "employee plans news" related to yield curve selection for the target liability calculation (see HECO T-18, Attachment 3).

As a result of adopting the revised assumptions, HECO had the ability to cease contributions beginning in April 2009. The Company's position on payment lag days decreased to negative 109 days based on the amount and timing of the two contributions made. The Consumer Advocate objected to the inclusion of pension expense in the working cash calculation at a payment lag of zero days and to the inclusion of the two 2009 pension contributions in the working cash calculation at a negative 109 days as aberrational and not representative of recurring contribution activity.

The DOD proposed a 45.6 day payment lag to the pension contribution in calculating a 33-day O&M non-labor payment lag in DOD-109. The DOD objected to the inclusion of pension expense accrued beyond payment in the working cash calculation and in the calculation of the payment lag applied to the O&M non-labor components of the working cash study.

For purposes of settlement in this proceeding, and with the acknowledgement that settlement on this item does not reflect any party's position, the Parties agree to include the contributed portion of the pension expense in the working cash calculation with a payment lag of 14 days which reflects pension funding on a monthly basis at the end of each month (see HECO T-18, Attachment 4, page 2). The Parties also agree to exclude the uncontributed portion of the pension expense from the working cash calculation (See HECO T-18, Attachment 4, page 1).

Pension & OPEB regulatory asset/liability amortization – The Company's position is all revenues should be included with a revenue collection lag. The revenues associated with the pension & OPEB regulatory asset/liability amortization are subject to the same revenue collection lag as any other revenue item and a payment lag of zero days (see HECO T-18, pages 28 to 29 and HECO-WP-1806). The Consumer Advocate and DOD disagree with HECO's assertion that all revenues, including non-cash transactions, are properly includable in the calculation of cash working capital. The Consumer Advocate and DOD's position is the pension regulatory asset/liability amortization and the OPEB regulatory asset/liability amortization should be removed from the working cash calculation on the basis that they are non-cash transactions (see CA-T-3, pages 99 to 101 and DOD T-1, pages 17 to 18). For purposes of settlement in this proceeding, and with the acknowledgement that settlement on this item does not reflect any party's position, the Parties agree to exclude the pension & OPEB regulatory asset/liability amortization from the working cash calculation.

Amortization Expenses – The Company's position, as discussed in response to DOD-IR-81 and CA-IR-432, is amortization expenses (system development cost amortization, regulatory commission expense and Waiau Water Well amortization) were paid for in advance of the expense recognition and have zero or negative payment lags or should be included as rate base items. The Consumer Advocate disagrees with HECO's assertion that all revenues, including non-cash transactions, are properly includable in the calculation of cash working capital or that these items necessarily merit rate base treatment. However, the Consumer Advocate would observe that system development costs are afforded rate base treatment. The Consumer Advocate and DOD proposed these amortization expenses should be removed from the working cash calculation on the basis that these are non-cash transactions (see CA-T-3, pages 99 to 101 and DOD T-1, pages 17 to 18). For purposes of settlement in this proceeding, and with the acknowledgement that settlement on this item does not reflect any party's

position, the Parties agree to exclude the amortization expenses from the working cash calculation.

The revised O&M non-labor payment lag days, as a result of incorporating the above discussed items, is 33 days (see HECO T-18, Attachment 4, page 1). Other differences in the working cash result from differences in the related expense items and will be adjusted according to the settlement proposals for those items.

42. Revenue Tax Payment Lag – In Direct Testimony and Rate Case Update, the Company proposed a 37 day revenue collection lag and a 66 day payment lag for revenue taxes (see HECO-1806 and Rate Case Update HECO T-18, page 19). In its direct testimony, the Consumer Advocate proposed a 13.5 day revenue collection lag and a 66.1 day payment lag for revenue taxes (CA-101 Schedule B-5 and CA-T-3, pages 102 to 104). In DOD T-1, at page 19, the DOD noted that whereas the Public Service Company Tax and Public Utility Fees are computed on billed revenues, the Franchise Tax is computed on a cash basis. Consequently, it appears that the expense payment lag for the Franchise Tax used by HECO warrants an adjustment. During the settlement discussions, the Consumer Advocate also proposed an alternative approach which adjusted the payment lag days rather than the revenue collection lag days, resulting in a composite revenue tax payment lag days of 89 days. As detailed in HECO T-18, Attachment 5, for purposes of settlement in this proceeding, and with the acknowledgement that settlement on this item does not reflect any party's position, the Parties agreed to reflect the revenue tax revenue collection lag at 37 days, the revenue tax payment lag at 66 days, and include a $7,500,000 downward adjustment to working cash to reflect the approximate impact resulting from the differences in the revenue tax payment lag days between the Parties' positions.

43. For purposes of fully resolving cash working capital in the present rate case and streamlining and/or simplifying the presentation and review of this issue in the next rate case, HECO and the Consumer Advocate agree to the following additional provisions. (a) HECO agrees to update the various revenue and expense lag calculations using a reasonably current study period; (b) the updated workpapers and supporting documents, including underlying transaction detail, will be made available for review by the Consumer Advocate; (c) the Company agrees to work collaboratively with the Consumer Advocate to better quantify and design the expense categories set forth in the updated lead lag study; and (d) HECO agrees to employ calculated revenue and expense lag days that are not rounded to whole days.

The revised working cash at current effective rate, as a result of incorporating the above discussed items, is $15,480,000 (see Statement of Probable Entitlement, page 3 of Exhibit 1).

COST OF CAPITAL

44. Capitalization

In direct testimony, HECO proposed the following capitalization amounts and weights:

HECO Direct Testimony
HECO-2001

	Amounts ($000)	Weights (%)
Short-term borrowing	29,951	1.49
Long-term borrowing	561,940	38.27
Hybrid securities	27,775	1.89
Preferred stock	59,496	4.05
Common stock	797,307	54.30

In their direct testimonies, both the Consumer Advocate and the DOD used the capital structure proposed by HECO (CA-101, Schedule D; DOD-105).

In its settlement proposal to the other Parties, HECO proposed a revised capital structure to reflect its current financing plans (see HECO T-20, Attachment 1, Final Settlement):

HECO Revised Proposal
HECO T-20, Attachment 1

	Amounts ($000)	Weights (%)
Short-term borrowing	(22,011)	-1.58
Long-term borrowing	576,569	41.40
Hybrid securities	27,775	1.99
Preferred stock	20,696	1.49
Common stock	789,519	56.70

At the time HECO filed its Application and direct testimonies in this docket, it planned to issue preferred stock. However, given the current financial market conditions, HECO no longer plans to issue preferred stock. Instead, HECO (along with HELCO and MECO) has filed applications requesting approval for the issuance of special purpose revenue bonds (Docket No. 2008-0281) and common equity (Docket No. 2009-0089). The applications provided an updated capital structure for HECO and included a statement of capital structure at year end 2008 and projected for 2009, and statement of sources and application of funds at year end 2008 and forecast for 2009. See Docket No. 2008-0021, Application (filed October 29, 2008), Exhibits 5 and 7; Docket No. 2009-0089, Application (filed April 20, 2009), Exhibits 3 and 4.

The Parties discussed the timing reasons for the negative short-term borrowing position at year-end 2008 and estimated at year-end 2009, and the impact on the before-tax and after-tax rate of return. For purposes of settlement, the Parties agree that the short-term borrowing amount would be assumed to be zero for the test year, resulting in the following capital structure for purposes of the 2009 test year:

Compromise Capital Structure for Settlement
HECO T-20, Attachment 2

	Amounts ($000)	Weights (%)
Short-term borrowing	0	0.00
Long-term borrowing	576,569	40.76
Hybrid securities	27,775	1.96
Preferred stock	20,696	1.46
Common stock	789,519	55.81

45. Cost of Capital.
The table below shows the cost rates for short-term debt, long-term debt, hybrid securities, and preferred stock that the Company proposed in its direct testimony:

HECO Direct Testimony
HECO-2001

	Cost Rate	Weighted Earnings Requirement
Short-term borrowing	3.25%	0.05%
Long-term borrowing	5.75%	2.20%
Hybrid securities	7.41%	0.14%
Preferred stock	7.62%	0.31%

In their direct testimonies, the Consumer Advocate and the DOD used the cost rates and weighted earnings requirements for long-term debt, hybrid securities, and preferred stock that the Company proposed in its direct testimony. For short-term debt, the Consumer Advocate used the Company's proposed cost rate of 3.25%; the DOD estimated a cost rate of 2.50%. (See CA-101, Schedule D; DOD-105.)

In its settlement proposal to the other Parties, HECO proposed revised cost rates to reflect its current financing plans and market conditions as explained above (see HECO T-20, Attachment 1, Final Settlement):

HECO Revised Proposal
HECO T-20, Attachment 1

	Cost Rate	Weighted Earnings Requirement
Short-term borrowing	0.75%	-0.01%
Long-term borrowing	5.81%	2.41%
Hybrid securities	7.41%	0.15%
Preferred stock	5.48%	0.08%

For purposes of settlement, the Parties agree to the revised cost rates for long-term borrowing, hybrid securities, and preferred stock proposed by the Company, and to assume the short-term borrowing amount is zero, as discussed above.

46. Return on Common Equity and Composite Cost of Capital
In direct testimony, the Company recommended a rate of return on common equity ("ROE") of 11.25%. This resulted in an overall cost of capital of 8.81%. (See HECO T-19, page 4; HECO T-20, pages 65 to 66; and HECO-2001.)

The Consumer Advocate proposed a ROE in the range of 9.50% to 10.50%, resulting in an overall cost of capital in the range of 7.86% to 8.40%. In its determination of HECO's revenue requirements, the Consumer Advocate used the low point of 9.50% for ROE, resulting in an overall cost of capital of 7.86% (see CA-101, Schedule D).

The DOD estimated the equity capital cost of similar-risk electric utility companies to fall in a range of 9.25% to 10.25%, with a specific return on common equity for HECO of 9.50%. Using the 9.50% ROE estimate, along with the DOD's cost rate of 2.50% for short-term debt, results in an overall cost of capital of 7.84% (see DOD-105).

The Parties discussed the stipulations in the 2005 and 2007 rate cases (which included a compromise ROE of 10.70%), the Commission's acceptance of the stipulated ROE in the 2005 rate case, current economic and financial market conditions, the requirements in new legislation to substantially increase the Company's commitment to add clean, renewable energy to its system, the proposals for new cost recovery and decoupling mechanisms (including the Power Purchase Adjustment Clause and sales decoupling mechanisms stipulated to by the Parties in this proceeding, the revenue adjustment mechanism jointly proposed by the Company and the Consumer Advocate in the decoupling docket, and the Renewable Energy Infrastructure Program ("REIP") surcharge stipulated to in the REIP docket), as well as other factors impacting the Company's risk profile and cost of capital.

For purposes of this settlement agreement, the Parties agree that the interim increase should be based on a 10.50% ROE. The Parties also agree that the evidence on the fair ROE to be used in determining the revenue requirements for the final decision in this rate case should be presented in the evidentiary hearing scheduled for August 2009, which

will allow the Commission to consider and decide this issue. Each party is entitled to present its own position as to what ROE should be used in determining the final revenue requirements and, as a result, the final rate increase recommended by a party may be higher or lower that the interim rate increase stipulated to in this settlement agreement.

Using the compromise capital structure shown above, and a 10.50% ROE, results in a composite cost of capital of 8.46% for purposes of the interim rate increase. See HECO T-20, Attachment 2, Final Settlement.

COST OF SERVICE/RATE INCREASE ALLOCATION/RATE DESIGN

47. Cost of Service

HECO presented the results of the cost of service studies using two different methodologies of classifying distribution network costs: 1) the minimum system method that HECO, HELCO, and MECO have used in all of their respective recent rate cases, and 2) the Division of Consumer Advocacy's method of classifying all distribution network costs as demand-related (HECO T-22, pages 2 to 3). The Division of Consumer Advocacy recommends that the Commission discount any results from the minimum system method and rely only upon cost of service study scenarios that classify all distribution network costs as 100% demand costs (CA-T-5, page 13). The Department of Defense finds that the HECO class cost of service study that incorporates the minimum system method for classifying distribution costs is reasonable (DOD-300, page 9).

For settlement purposes, the Parties concur that agreement on a cost of service methodology is not a requirement to settle the case. The agreements on revenue allocation and rate design presented below are reasonable given the results of the cost of service studies based on the two methodologies presented by HECO. HECO agrees to continue to present the results of its cost of service studies in its next rate filing using the two different methods, reflecting the minimum system method and alternatively the full demand classification of distribution network costs.

48. Inter-Class Allocation of Rate Increase

HECO proposed to allocate the increase in revenues as an equal percentage increase to current effective revenues at all rate schedules (HECO T-1, page 20). The Division of Consumer Advocacy supports an equal percentage distribution of any revenue increase in this Docket (CA-T-5, page 34). The Department of Defense argues that an across-the board increase is not appropriate because it will not move rates closer to cost and, in fact, would exacerbate existing subsidies (DOD-300, page 20).

For settlement purposes, the Parties agree to allocate any interim increase in electric revenues to the existing rate classes in the percentages shown below:

Schedule R	35.74%
Schedule G	4.37%

Schedule J	33.86%
Schedule H	0.55%
Schedule PS	8.64%
Schedule PP	15.17%
Schedule PT	1.03%
Schedule F	0.64%
Total	100.00%

In addition, the Parties agree to allocate the interim increase in electric revenues assigned to Schedule PP customers such that the Schedule PP customers who are Directly Served from a substation are assigned a revenue increase that is 50% of the overall revenue percentage increase that the interim increase represents.

HECO proposed to implement the Interim Increase (and the CIP CT-1 step increase, which is no longer being proposed as a result of this global settlement) on a cent per kilowatt-hour basis (HECO T-1, page 21 and HECO T-22, pages 56 to 57). The Division of Consumer Advocacy agrees with this approach (CA-T-5, page 55). For settlement purposes, the Parties agree to implement the interim rate increase on a cents per kWh basis.

For settlement purposes, the Parties agree to allocate any final increase in electric revenues to the proposed rate classes in the percentages shown below:

Schedule R	35.74%
Schedule G	4.48%
Schedule J	34.22%
Schedule DS	7.06%
Schedule P	17.86%
Schedule F	0.64%
Total	100.00%

This settlement considers the positions of HECO, the Division of Consumer Advocacy, and the Department of Defense on cost of service and movement of inter-class revenues towards the respective cost of service positions.

49. Rate Design

HECO proposed tiered residential rates (which were also proposed in Docket No. 2006-0386, HECO's test year 2007 rate case) to mitigate the rate impact on the smallest users of the system, to develop pricing signals that encourage conservation, and to assign a greater share of the cost increase to the largest users. In addition, HECO proposed to modify the residential time-of-use rate option, Schedule TOU-R to widen opportunities for residential customers to shift energy consumption to off-peak hours to create bill savings (HECO T-22, page 25). HECO proposed to create a separate rate class

for customers who are directly served from a dedicated substation and to eliminate Schedule H, consistent with the settlement agreement in Docket No. 2006-0386. HECO also proposed to simplify commercial rate schedules by designing a single demand charge and a single energy charge for each rate schedule (HECO T-22, page 23).

The Division of Consumer Advocacy does not support HECO's proposed changes in the Schedule R customer charges and minimum charges (CA-T-5, page 41). The Division of Consumer Advocacy supports HECO's proposed changes in commercial rate structures, but recommends limiting the increase in Schedule J customer charges to 10% of existing rate levels (CA-T-5, page 44) and limiting demand charge increases to no more than 125% of the existing rate levels (CA-T-5, page 47).

The Department of Defense supports HECO's proposed rate schedules DS and P, although it disagrees with the amount of revenue assigned to these rate schedules (DOD-300, page 23).

For settlement purposes, the Parties agree to the concepts and rate levels for overall rate design shown in HECO T-22 Attachment 2.

50. Power Factor Cost Study

HECO performed a power factor study and concluded that the present power factor adjustment did not require modification (HECO T-22, page 52). The Division of Consumer Advocacy's position is that HECO's power factor study did not include all costs contributing to providing reactive power charges. The Division of Consumer Advocacy recommends that HECO be required to prepare a power factor study that includes generating unit, transmission, and distribution system costs associated with providing reactive power (CA-T-2, pages 53 to 54). The Department of Defense's position is that HECO's study cannot be relied upon and no changes be made to power factor charges at this time (DOD-300, page 25).

For settlement purposes, the Parties agree to the following:

1) the information provided in this docket is insufficient to establish a revised basis for the power factor rate adjustment; 2) the existing power factor provision shall be retained as proposed in HECO's proposed Schedule J, Schedule P, Schedule DS, Schedule U, and Schedule TOU-J rate schedules; and 3) a working group comprised of representatives from all three (3) parties will be established to examine the issue of rate adjustment for power factor. As part of this examination the working group will review approaches taken in other jurisdictions and before other regulatory bodies an take into consideration PA power factor provisions in order to develop a revised approach to the pricing of HECO's power factor adjustment. The working group's finding and recommendations will be presented for adoption in HECO's next general rate case.

51. Purchased Power Adjustment Clause

In its Rate Case Update (HECO T-1, pages 7 to 8), HECO proposed a Purchased Power Adjustment ("PPA") Clause pursuant to Section 30 of the Energy Agreement. Because this provision called for the transfer of recovery of all capacity, O&M and other non-energy payments from base rates to a new surcharge, the Company stated that it is appropriate to propose the PPA Clause in this rate case. Purchased energy costs would continue to be recovered through the Energy Cost Adjustment Clause to the extent they are not recovered through base rates. HECO did not remove any purchased power costs from the test year revenue requirement but as shown in Attachment 1, page 36 of the HECO T-22 Rate Case Update, HECO included $175,431,000 of electric sales revenues at proposed rates for recovery through the new PPA Clause in the 2009 test year.

The Consumer Advocate stated that it was generally satisfied with the purpose of the clause and the manner that the clause will assess and pass through costs to customers. Since the Company indicated that the PPA Clause will be adjusted monthly and reconciled quarterly, the Consumer Advocate recommended that HECO be required to file its calculations with the Commission at least quarterly and that such calculations be reviewed and approved by the Commission to ensure that customers are appropriately charged for projected purchased power costs. Furthermore, the Consumer Advocate recommended that HECO's filing include all necessary workpapers and supporting documentation that would allow the Commission and other parties to determine that HECO is not recovering purchased power non-energy costs more than once through the different cost recovery mechanisms beyond base rates that will be available to the Company.

For purposes of settlement, the Company agrees to file its calculations (including workpapers and supporting documentation) with the Commission at least quarterly. However, because the PPA Clause would be an automatic cost adjustment clause and will be adjusted monthly, the Company proposed, and the Parties agreed, that explicit Commission approval of each PPA Clause filing will not be practicable nor required. Like other automatic adjustment clauses, the monthly PPA Clause adjustment can be allowed to go into effect at the first of each month, subject to the ability of the Commission to investigate and revise any adjustment and order the refund of any over-collection.

Further, the Company will request explicit approval to recover the non-energy costs associated with a purchased power agreement through the PPA clause, and will not recover such costs through the PPA Clause until the Commission has approved the associated purchased power agreement. The Company will also continue to execute fuel contracts on a long term basis where feasible and execute agreements for non-fossil fuel generation at rates that are de-linked from the price of fossil fuels, in accordance with Section 269-27.2 of the Hawaii Revised Statutes. This procurement strategy will have the effect of limited hedging. However, the Company is at this time opposed to engaging in speculative fuel price hedging in an attempt to minimize its fuel costs for the reasons

expressed in its *Report on Power Cost Adjustments and Hedging Fuel Risks* (HECO-1040).

CIP CT-1 STEP INCREASE

52. HECO's revenue requirements in its application were based on including the "full" cost of the CIP CT-1 generating unit (as estimated at the time of the application), and HECO proposed an interim step increase that did not include the CIP CT-1 cost, and a later step increase when CIP CT-1 goes into service at the end of July that was based on the full incremental cost of adding CIP CT-1 (excluding depreciation, which does not begin until the following year). See HECO-101, page 4. HECO asserts that it followed Commission precedent in proposing the CIP CT-1 step, as discussed in HECO T-1.

    The Company further stated that if the Commission does not approve the CIP CT-1 step increase, the interim increase (and effectively the final increase) should be based on the "base case" which includes the 2009 CIP CT-1 plant additions (net of deferred income taxes) in the end of test year rate base balance but not in the beginning of test year rate base balance (HECO-101, page 3, footnote 2).

    The Consumer Advocate and the DOD opposed inclusion of the "full" cost of CIP CT-1 in revenue requirements, and proposed that a fully average test year be used. Based on the joint decoupling proposal of the Company and the Consumer Advocate in the decoupling docket, which incorporates a RAM rate base adjustment in 2010 that includes actual year-end 2009 plant balances (as well as conservatively estimated plant additions in 2010), HECO (as part of the global settlement agreement) has agreed to the use of the fully average test year, without a separate CIP CT-1 Step Increase or annualized ratemaking treatment of CIP CT-1 costs.

REIP SURCHARGE CONDITION

53. In the docket initiated by the Commission to review the Renewable Energy Infrastructure ("REI") Program[18] proposed by the Hawaiian Electric Companies, the Companies and the Consumer Advocate, as well as the other parties to the docket, have stipulated to the use of the REIP/CEI Surcharge to recover the cost of certain REI Projects approved by the Commission.[19] In this rate case, the Consumer Advocate and the DOD have proposed that certain 2009 expenses be recovered through the REIP/CEI Surcharge rather than

[18] Docket No. 2007-0416.

[19] Section II.B.1 of the proposed REIP Framework provides that electric utilities may recover the capital costs, deferred costs relating to software development and licenses, and/or other relevant costs approved by the Commission of REI Projects by means of the REIP Surcharge. REI Projects include infrastructure projects that can assist in the integration of more as-available and other non-dispatchable renewable projects onto the electrical grid than could otherwise be added without such projects. Section III.B.1.a.ii of the REIP Framework. By letter dated and filed October 22, 2007, the parties to the docket notified the Commission that they were in agreement on all issues and, with respect to renewable energy implementation study projects (under section III.B.1.a.ii), the costs would be recovered through the REIP Surcharge after the study project is approved by the Commission.

through base rates. The Company has agreed to this treatment, subject to Commission approval of the surcharge mechanism.

Test year costs to be recovered through the REIP/CEI Surcharge rather than through base rates as an expense include (1) an estimated $2,220,000 for certain wind implementation studies identified in the Energy Agreement[20] to be incurred in 2009, which would otherwise be charged to Other Production O&M Non-Labor Expense, and (2) certain R&D funds (an additional $677,000 to be incurred by HECO in 2009) for the Oahu Electric System Analysis Study that is already underway (which funds were included in Miscellaneous A&G and discussed in the HECO T-14 Rate Case Update).
The Consumer Advocate also expressed concern that, without careful specification of the costs that are to be afforded separate surcharge recovery, it would be possible for the utility to over-recover its total cost to provide service, as the utility could propose new surcharge recoveries for certain types of costs that are already embedded within presently effective base rates. Given what it viewed to be inherent difficulties in defining and verifying the type of work performed by Company employees, the Consumer Advocate recommended that (1) no HECO labor costs chargeable to expense should be afforded REIP/CEI Surcharge recovery, (2) only non-labor costs supported by contractual documentation of work scope that is clearly related to HCEI implementation and that would otherwise be expensed on the books should be considered eligible for surcharge recovery, and (3) an "expense test" be imposed that would require a showing that HECO has not reduced its total O&M below the levels last allowed in a rate order or RAM calculations, before allowing additional REIP/CEI Surcharge recovery of any otherwise qualifying incremental non-labor expenses.

In discussing the proposed conditions, HECO contended that the proposed expense test condition (1) was not included in the stipulation between the Company and the Consumer Advocate in the REIP docket, or in the Energy Agreement, (2) there would be unintended consequences to adapting the expense test condition as proposed, (3) the need for the costs to be recovered through the REIP/CEI Surcharge instead of through base rates generally was not at issue, (4) approvals in separate dockets would be required under the REIP Surcharge to recover costs through the surcharge, (5) to address concerns identified by the Consumer Advocate, HECO would agree to not include HECO employee labor costs in the costs to be recovered through the REIP/CEI Surcharge, even though it believed a case could be made to recover certain labor costs through the surcharge, (6) numerous surcharge or other cost recovery provisions had been approved in other jurisdictions without the imposition of such an expense condition, and (7) the benefits of such a surcharge mechanism had been examined in the REIP docket, and the Consumer Advocate's proposal that certain test year costs be recovered through the surcharge rather than through base rates illustrated one such benefit.

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[20] Energy Agreement among the State of Hawaii, Division of Consumer Advocacy of the Department of Commerce & Consumer Affairs, and the Hawaiian Electric Companies, dated October 20, 2008. The signatories include the Governor of the State of Hawaii, the Department of Business, Economic Development and Tourism, the Consumer Advocate, HECO, Hawaii Electric Light Company, Inc. and Maui Electric Company, Limited. The Energy Agreement refers to the REIP Surcharge as the CEI surcharge (or "CEIS").

In settlement of this proceeding, HECO agrees with the Consumer Advocate that its labor costs are to be recovered solely through base rates and not through future REIP/CEI Surcharges that may be requested. With regard to the Consumer Advocate's proposed expense test, it is not necessary to resolve this issue in this proceeding and the Consumer Advocate reserves its right to present this proposal in other proceedings.

Hawaiian Electric Company
Revenues at Present Rates and Current Effective Rates - LOWER SALES and December 2008 Fuel Prices

	TY 2009 mWh Sales	Base Revenue	Fuel Oil Adjustment	Revenue at Present Rates	2007 Interim Rate Increase	Revenue at Current Effective Rates
		(A)	(B)	[C]=(A)+(B)	(D)	(E)=[C]+(D)
Rates						
Sched R	2,028,600	$372,926.3	$3,083.5	$376,009.8	$26,440.5	$402,450.3
Sched G	376,100	$74,291.0	$571.7	$74,862.7	$5,207.8	$80,070.5
Sched H	33,100	$5,271.7	$50.3	$5,322.0	$380.1	$5,702.1
Sched J	2,040,267	$326,658.9	$3,101.2	$329,760.1	$19,370.9	$349,131.0
Sched PP	1,943,260	$270,851.5	$2,953.8	$273,805.3	$12,322.4	$286,127.7
Sched PS	850,797	$125,723.8	$1,293.2	$127,017.0	$9,346.3	$136,363.3
Sched PT	175,076	$23,126.3	$266.1	$23,392.4	$1,512.5	$24,904.9
Sched F	37,500	$6,354.8	$57.0	$6,411.8	$456.9	$6,868.7
	7,484,700	$1,205,204.3	$11,376.8	$1,216,581.1	$75,037.4	$1,291,618.5

Adjusted for Reduced sales

Revenues updated 04/22/09 for:

Two (2) Schedule PP Directly served customers who should not have been Schedule PP Directly Served
One (1) Schedule J customer who should have been Schedule PP Directly Served
One (1) Schedule PS customer who should have been Schedule PP Directly Served
2007 Interim rate increase rates effective November 1, 2008

Revenues updated 05/01/09 for December 2008 fuel prices: ECAF = 0.152 cents per kWh

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2008-, Test-Year 2009
SCHEDULE R - RESIDENTIAL SERVICE

ESTIMATE OF TEST YEAR REVENUES

		PRESENT RATES	
	BILLING UNITS	UNIT PRICE	REVENUES $1000S
ENERGY CHARGE:	(MWH)	¢/kWh	
NON-FUEL ENERGY CHARGE	2,028,600	8.2993	$168,359.6
BASE FUEL ENERGY CHARGE	2,028,600	8.8903	$180,348.6
SUBTOTAL			$348,708.2
CUSTOMER CHARGE:	BILLS	$/MONTH	
1 PHASE CHARGE	3,141,216	8.00	$25,129.7
3 PHASE CHARGE	1,571	17.00	$26.7
SUBTOTAL	3,142,787		$25,156.4
ADJUSTMENTS:			
SCHEDULE E ADJ.			($996.3)
MINIMUM BILL ADJ. - 1 PHASE			$110.1
MINIMUM BILL ADJ. - 3 PHASE			$0.1
RESIDENTIAL TOU			$0.0
APARTMENT HOUSE:			($52.2)
SUBTOTAL			($938.3)
TOTAL BASE REVENUE			$372,926.3
BILL ADJUSTMENTS:			
FUEL OIL ADJUSTMENT:	¢/KWH	0.152	$3,083.5
Total Revenues at Present Rates			$376,009.8
2007 Interim Rate Increase		7.09%	$26,440.5
Total Revenues at Current Effective Rates			$402,450.3

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2008-, Test-Year 2009 DIRECT TESTIMONY
SCHEDULE G - GENERAL SERVICE NON-DEMAND

ESTIMATE OF TEST YEAR REVENUES

		PRESENT RATES	
	BILLING UNITS	UNIT PRICE	REVENUES $1000S
CUSTOMER CHARGE:	BILLS	$/month	
1 PHASE - Regular	192,348	30.00	$5,770.4
3 PHASE - Regular	122,976	55.00	$6,763.7
SUBTOTAL	315,324		$12,534.1
ENERGY CHARGE:	(MWH)	¢/kWh	
G: Regular NON-DEMAND	376,100	16.4205	$61,757.5
Total	376,100		$61,757.5
BASE REVENUE ADJUSTMENTS:			
DP VOLTAGE ADJUSTMENT			($0.5)
DS VOLTAGE ADJUSTMENT			($0.1)
MINIMUM BILL ADJUSTMENT			$0.0
SCHEDULE E ADJUSTMENT			$0.0
TOU-C ADJUSTMENT			
SUBTOTAL			($0.6)
TOTAL BASE REVENUE			$74,291.0
Other Adjustments:		Rate	
FUEL OIL ADJUSTMENT:		0.152 ¢/KWH	$571.7
TOTAL REVENUE AT PRESENT RATES			$74,862.7
2007 INTERIM RATE INCREASE		7.01%	$5,207.8
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			$80,070.5

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2008-, Test-Year 2009
SCHEDULE H - COMMERCIAL COOKING, HEATING, AIR CONDITIONING AND REFRIGERATION SERVICE

ESTIMATE OF TEST YEAR REVENUES

		PRESENT RATES		
	BILLING UNITS	UNIT PRICE		REVENUES $1000S
	MWH	¢/kWh		
ENERGY CHARGE:	33,100	13.4312		$4,445.7
	kW	$/kW		
DEMAND CHARGE:	56,478	9.00		$508.3
CUSTOMER CHARGE:	BILLS	$/month		
1 PHASE	1,887	25.00		$47.2
3 PHASE	4,509	60.00		$270.5
SUBTOTAL	6,396			$317.7
SCHEDULE E ADJUSTMENT				$0.0
TOTAL BASE REVENUE				$5,271.7
ADJUSTMENTS		Rate		
FUEL OIL ADJUSTMEN'		0.152	¢/KWH	$50.3
UNADJUSTED TOTAL REVENUE				$5,322.0
RIDER ADJUSTMENTS				$0.0
TOTAL REVENUE AT PRESENT RATES				$5,322.0
2007 INTERIM RATE INCREASE			7.21%	$380.1
TOTAL REVENUE AT CURRENT EFFECTIVE RATES				$5,702.1

HAWAIIAN ELECTRIC COMPANY, INC
Docket No. 2008-, Test-Year 2009
Schedule J - General Service Demand

Estimate of Test Year Revenues

	PRESENT RATES		
	BILLING UNITS	UNIT PRICE	REVENUES $000s
ENERGY CHARGE:	(MWH)	¢/kWh	
0 - 200 KWH/KW	1,216,728	13.5915	$165,371.6
201 - 400 KWH/KW	671,203	12.4438	$83,521.8
> 400 KWH/KW	152,336	11 4145	$17,388 4
TOTAL	2,040,267		$266,281.8
DEMAND CHARGE:	kW	$/kW	
ALL BILLING KW	6,743,113	8.50	$57,316.5
CUSTOMER CHARGE:	BILLS	$/month	
1 PHASE	6,438	50 00	$321.9
3 PHASE	74,034	70 00	$5,182 4
SUBTOTAL	80,472		$5,504.3
ADJUSTMENTS:			
POWER FACTOR ADJ.			($601 3)
TP VOLT. ADJ.			($86.2)
TS VOLT ADJ.			($4.5)
DP VOLT. ADJ.			($673 6)
DS VOLT ADJ.			($21.0)
NETWORK ADJ.			$38 5
Schedule E Adjustment			$0.0
Schedule J - TOU Adjustment			
SUBTOTAL			($1,350 1)
UNADJUSTED BASE REVENUE			$327,752.5
RATE RIDER & OTHER REVENUE ADJ.			
RIDER M(B)			($179.5)
RIDER I			($56.0)
RIDER T			($491.0)
MULTIPLE RIDERS			($342.6)
SCHEDULE U			($24.5)
Total Rate Rider & Other Revenue Adjustments			($1,093.6)
Total Base Revenue			$326,658.9
Fuel Oil Adjustment	¢/kWh	0.152	$3,101.2
Rate Adjustment (AES Refund)	%	0.000%	$0.0
TOTAL REVENUE AT PRESENT RATES			$329,760.1
2007 INTERIM RATE INCREASE		5 93%	$19,370.9
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			$349,131 0

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PP - LARGE POWER PRIMARY VOLTAGE SERVICE
DOCKET NO. 08- TEST-YEAR: 2009

ESTIMATE OF TEST YEAR REVENUES

		PRESENT RATES	
	BILLING UNITS	UNIT PRICE	REVENUES $1000S
ENERGY CHARGE:	(MWH)	¢/kWh	
0 - 200 KWH/KW	726,196	12.1534	$88,257.5
201 - 400 KWH/KW	650,215	11.3702	$73,930.7
> 400 KWH/KW	566,849	11.0668	$62,732.0
SUBTOTAL	1,943,260		$224,920.2
DEMAND CHARGE: Not Directly Serve	(kW)	$/kW	
0 - 500 KW	890,876	15.11	$13,461.1
501 - 1500 KW	800,084	14.61	$11,689.2
> 1500 KW	2,014,848	13.61	$27,422.1
SUBTOTAL	3,705,808		$52,572.4
BILLING DEMAND CREDIT:	(kW)		
Directly Served Sub Station	2,036,329	(1.76)	($3,583.9)
	BILLS	$/month	
CUSTOMER CHARGE:	1,897	400.00	$758.8
ADJUSTMENTS:	(MWH)	¢/kWh	
POWER FACTOR ADJ.			($2,739.1)
SECONDARY METERING ADJ.	17,804	0.2142	$38.1
Schedule E Adjustment			$0.0
SUBTOTAL			($2,701.0)
UNADJUSTED BASE REVENUE			$271,966.5
RATE RIDER & OTHER REVENUE ADJ.			
RIDER M (B)			($918.5)
RIDER I			($105.8)
MULTIPLE RIDERS			($90.7)
Total Rate Rider & Other Revenue Adjustments			($1,115.0)
Total Base Revenue			$270,851.5
Not Directly Served Amount			$128,348.1
Directly Served Amount			$142,503.4
Fuel Oil Adjustment	¢/kWh	0.152	$2,953.8
TOTAL REVENUE			$273,805.3
INTERIM RATE INCREASE REVENUES (Not directly s		7.58%	$9,728.8
INTERIM RATE INCREASE REVENUES (Directly serv		1.82%	$2,593.6
TOTAL INTERIM RATE INCREASE			$12,322.4
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			$286,127.7

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PS - LARGE POWER SECONDARY VOLTAGE SERVICE
DOCKET NO. 2008- TEST-YEAR. 2009

ESTIMATE OF TEST YEAR REVENUES

		PRESENT RATES	
	BILLING UNITS	UNIT PRICE	REVENUES $1000S
ENERGY CHARGE.	(MWH)	¢/kWh	
0 - 200 KWH/KW	363,205	12.2456	$44,476.6
201 - 400 KWH/KW	324,239	11.4473	$37,116.6
> 400 KWH/KW	163,353	11.1379	$18,194.1
SUBTOTAL	850,797		$99,787 3
DEMAND CHARGE:	(kW)	$/kW	
0 - 500 KW	1,037,960	14.35	$14,894.7
501 - 1500 KW	452,061	13.85	$6,261.0
> 1500 KW	403,031	12.85	$5,178.9
SUBTOTAL	1,893,052		$26,334.6
	BILLS	$/month	
CUSTOMER CHARGE:	2,304	350.00	$806.4
ADJUSTMENTS:			
POWER FACTOR ADJ.			($1,135.1)
NETWORK ADJ.			$200.4
Schedule E Adjustment			$0.0
SUBTOTAL			($934.7)
UNADJUSTED BASE REVENUE			$125,993.6
RATE RIDER & OTHER REVENUE ADJ.			
RIDER M (B)			($52.8)
RIDER I			$0.0
RIDER T			($7.9)
SCHEDULE U			($209.1)
Total Rate Rider & Other Revenue Adjustments			($269.8)
TOTAL BASE REVENUE			$125,723.8
Non Schedule U Base Revenue			$125,218.6
Schedule U Base Revenue			$505.2
Fuel Oil Adjustment	¢/kWh	0 152	$1,293.2
TOTAL REVENUE			$127,017.0
2007 INTERIM RATE INCREASE REVENUES			
Non Schedule U Interim Increase Revenues		7.44%	$9,316.3
Schedule U Interim Increase Revenues		5.93%	$30.0
TOTAL INTERIM RATE INCREASE REVENUES			$9,346.3
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			$136,363.3

HAWAIIAN ELECTRIC COMPANY, INC.
SCHEDULE PT - LARGE POWER TRANSMISSION VOLTAGE SERVICE
DOCKET NO. 2008-0083 TEST-YEAR: 2009

ESTIMATE OF TEST-YEAR REVENUES

		PRESENT RATES	
	BILLING UNITS	UNIT PRICE	REVENUES $1000S
ENERGY CHARGE:	(MWH)	¢/kWH	
0 - 200 KWH/KW	62,410	11.6037	$7,241.9
201 - 400 KWH/KW	56,281	10.8318	$6,096.2
> 400 KWH/KW	56,385	10.5326	$5,938.8
SUBTOTAL	175,076		$19,276.9
DEMAND CHARGE:	(kW)	$/kW	
0 - 500 KW	21,812	14.00	$305.4
501 - 1500 KW	38,359	13.50	$517.8
> 1500 KW	266,843	12.50	$3,335.5
SUBTOTAL	327,014		$4,158.7
	BILLS	$/month	
CUSTOMER CHARGE:	47	400.00	$18.8
ADJUSTMENTS:			
POWER FACTOR ADJ.			($328.1)
SECONDARY METERING ADJ.			$0.0
Schedule E Adjustment			$0.0
SUBTOTAL			($328.1)
UNADJUSTED BASE REVENUE			$23,126.3
Fuel Oil Adjustment	¢/kWH	0.152	$266.1
UNADJUSTED TOTAL REVENUE			$23,392.4
RATE RIDER & OTHER REVENUE ADJ.			
RIDER M (B)			$0.0
RIDER I			$0.0
RIDER T			$0.0
MULTIPLE RIDERS			$0.0
RIDER EDR			$0.0
SCHEDULE CHP			$0.0
Total Rate Rider & Other Revenue Adjustments			$0.0
TOTAL REVENUE AT PRESENT RATES			$23,392.4
2007 INTERIM RATE INCREASE		6.54%	$1,512.5
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			$24,904.9

HAWAIIAN ELECTRIC COMPANY, INC.
Docket No. 2008-, Test-Year 2009
SCHEDULE F - PUBLIC STREET LIGHTING SERVICE
HIGHWAY LIGHTING, & PARK & PLAYGROUND FLOODLIGHTING

ESTIMATE OF TEST-YEAR REVENUES

		PRESENT RATES	
	BILLING UNITS	UNIT PRICE	REVENUES $1000S
CUSTOMER CHARGE:	Bills	$/month	
Customers	5,292	20.00	$105.8
ENERGY CHARGE:	MWH	¢/kWh	
0 - 150 KWH/KW	18,713	18.6161	$3,483.6
> 150 KWH/KW	18,788	14.6421	$2,751.0
SUBTOTAL	37,500		$6,234.6
ADJUSTMENTS:			
MINIMUM BILL			$1.0
SCHEDULE E ADJUSTMENT			$0.0
SECONDARY METERING ADJUSTMENT:			$13.4
SUBTOTAL			$14.4
UNADJUSTED BASE REVENUE:			$6,354.8
FUEL OIL ADJUSTMENT:		0.152 ¢/kWh	$57.0
UNADJUSTED TOTAL REVENUE			$6,411.8
RIDER ADJUSTMENTS			$0.0
TOTAL REVENUE AT PRESENT RATES			$6,411.8
2007 INTERIM RATE INCREASE		7.19%	$456.9
TOTAL REVENUE AT CURRENT EFFECTIVE RATES			$6,868.7

Hawaiian Electric Company, Inc.

TEST YEAR FUEL EXPENSES

Line	Item	Reference	TY 2009 Fuel Expense ($000)
1.	**Total Fuel Oil Expense**	HECO-401 (UPDATED), p. 2, Line 5	$431,206
2.	**Total Fuel Related Expense**	HECO-503 (UPDATED), p. 1, Line 5	$7,142
3.	**TOTAL FUEL EXPENSE**		$438,348

Hawaiian Electric Company, Inc.

TEST YEAR FUEL EXPENSES
TOTAL FUEL OIL EXPENSES

Line	Fuel Type	Reference	TY 2009 Fuel Oil Expense ($000)
1.	**Low Sulfur Fuel Oil**	HECO-501 (UPDATED), p. 1, Line 4	$422,007
2.	**Diesel Fuel Oil**	HECO-501 (UPDATED), p. 1, Line 7	$7,844
3.	**Biodiesel Fuel Oil**	HECO-501 (UPDATED), p. 1, Line 8	$779
4.	**Sub. DG Diesel Fuel Oil**	HECO-501 (UPDATED), p. 1, Line 10	$577
5.	**TOTAL FUEL OIL EXPENSE**		$431,206

Note: Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

2009 TEST YEAR GENERATION

Line		(A) Energy (GWh)	(B) Percent of Net System Input
1.	Sales	7,484.7	
2.	Company Use[1]	16.1	
3.	Sales + NC	7,500.8	
4.	Losses[2]	371.1	
5.	Net System Input	7,871.9	100.00%
6.	- Purchase Power[3]	3,362.9	42.72%
7.	Net HECO	4,509.0	57.28%
7a.	Central Station	4,505.3	57.23%
7b.	Substation DG[4]	3.8	0.05%

[1] No Charge based on 2003-2007 5 year average, 16.1 GWh. (HECO-WP-403, p. 1)
[2] Losses of 4.71% based on 5-year average (2003-2007), (HECO-WP-403, p. 2)
[3] HECO-405 (UPDATED), page 6
[4] HECO-405 (UPDATED), page 7
Note: Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

TEST YEAR FUEL EFFICIENCY

Line			
	ENERGY		
1.	**Company Generated Energy**	4,508.4	Net GWh
2.	**Central Station Generated Energy**	4,504.7	Net GWh
3.	**Steam Generated Energy**	4,480.6	Net GWh
4.	**CT Generated Energy (w/ Diesel)**	22.7	Net GWh
5.	**CT Generated Energy (w/ Biodiesel)**	1.3	Net GWh
6.	**Sub. DG Generated Energy**	3.8	Net GWh
7.	**Test Year Sales**	7,484.7	Net GWh
	FUEL CONSUMPTION		
8.	**Total Fuel Consumed**	47,947,470	MBtu
9.	**Central Station Fuel Consumed**	47,908,217	MBtu
10.	**Steam Fuel Consumed**	47,349,566	MBtu
11.	**CT Fuel Consumed (Diesel)**	533,559	MBtu
12.	**CT Fuel Consumed (Biodiesel)**	25,092	MBtu
13.	**Sub. DG Fuel Consumed**	39,252	MBtu
	HEAT RATE		
14.	**Total Heat Rate**	10,635	Btu/kWh
15.	**Central Station Heat Rate**	10,635	Btu/kWh
16.	**Steam Heat Rate**	10,568	Btu/kWh
17.	**CT Heat Rate (w/ Diesel)**	23,466	Btu/kWh
18.	**CT Heat Rate (w/ Biodiesel)**	19,287	Btu/kWh
19.	**Sub. DG Heat Rate**	10,409	Btu/kWh
20.	**HECO Central Station Generation of Net System Input**	57.23%	Percent
21.	**Sales Heat Rate - Central Station**	0.011184	MBtu/kWh Sales[1]

Reference

[1] 47,908,217 MBtu / (7,484.7 GWh x 57.23% x 1,000,000 kWh/GWh) = 0.011184 MBtu/kWh Sales.

Source: HECO-405 (UPDATED), page 1 and 7.

Hawaiian Electric Company, Inc.

HISTORICAL FUEL EFFICIENCY
(Btu/Net kWh)

Line		(A) 2003	(B) 2004	(C) 2005	(D) 2006	(E) 2007	(F) Test Year 2009
1.	**Central Station Steam**	10,413	10,540	10,620	10,540	10,583	10,568 [1]
2.	**Percent Increase**		1.2%	0.8%	-0.7%	0.4%	-0.1%
3.	**Central Station Diesel**	21,081	21,327	20,985	22,716	36,556	23,466 [2]
4.	**Percent Increase**		1.2%	-1.6%	8.3%	60.9%	-35.8%
5.	**Central Station Biodiesel**						19,287 [3]
6.	**Central Station Average**	10,452	10,621	10,690	10,582	10,649	10,635 [4]
7.	**Percent Increase**		1.6%	0.7%	-1.0%	0.6%	-0.1%
8.	**Substation DG**			10,081	10,243	10,525	10,409 [5]
9.	**Percent Increase**				1.6%	2.7%	-1.1%

[1] HECO-403 (APRIL 2009 UPDATE), Line 16.
[2] HECO-403 (APRIL 2009 UPDATE), Line 17.
[3] HECO-403 (APRIL 2009 UPDATE), Line 18.
[4] HECO-403 (APRIL 2009 UPDATE), Line 15.
[5] HECO-403 (APRIL 2009 UPDATE), Line 19.

Hawaiian Electric Company, Inc.

2009 Production Simulation - (Rate Case - 2009 Test Year - APRIL 2009 UPDATE)

Sales and Peak Forecast dated September 2008

2009 Normalized Planned Maintenance Schedule

Fuel Prices December 2008 Contract Prices

Calibrated (Source: HECO-WP-409)

	1.013	1.003	0.989	1.203	1.1	1.1	
	Mbtu Consumption						
Month	**Kahe**	**Waiau**	**Honolulu**	**WPP Diesel**	**CIP Diesel**	**Biodiesel**	**Total**
Jan	2,446,740	1,059,021	58,307	16,115	-	-	3,580,184
Feb	2,385,171	884,826	118,129	20,042	-	-	3,408,168
Mar	2,710,205	864,280	78,659	9,327	-	-	3,662,470
Apr	2,984,503	1,131,798	139,192	35,579	-	-	4,291,072
May	2,882,186	1,216,638	140,197	23,722	-	-	4,262,743
Jun	2,739,855	1,035,633	102,499	15,981	-	-	3,893,969
Jul	2,809,155	1,116,121	86,998	39,964	-	-	4,052,238
Aug	2,916,089	1,162,586	163,492	12,985	108,048	-	4,363,200
Sep	2,921,653	1,127,264	142,380	6,662	79,847	-	4,277,807
Oct	3,178,769	959,269	119,178	7,747	67,909	-	4,332,871
Nov	2,719,808	1,068,716	48,637	7,148	78,873	-	3,923,183
Dec	2,845,916	964,915	20,781	3,609	-	25,092	3,860,313
Total	33,540,050	12,591,067	1,218,450	198,883	334,676	25,092	47,908,217
Sub. DG							39,252
HECO w/ DG							47,947,470

	Net MWh Generation							
	Kahe	**Waiau**	**Honolulu**	**WPP Diesel**	**CIP Diesel**	**Biodiesel**	**Total**	**Net Heat Rate**
Jan	236,807	90,844	4,392	378	-	-	332,421	10,770
Feb	233,113	77,759	9,145	508	-	-	320,525	10,633
Mar	264,117	76,785	6,086	230	-	-	347,218	10,548
Apr	292,765	99,755	10,989	982	-	-	404,491	10,609
May	283,682	106,678	11,019	647	-	-	402,026	10,603
Jun	268,129	91,480	8,007	367	-	-	367,983	10,582
Jul	276,061	97,668	6,878	1,075	-	-	381,682	10,617
Aug	287,711	102,588	12,821	373	5,696	-	409,189	10,663
Sep	286,566	99,323	11,124	170	4,168	-	401,351	10,659
Oct	311,674	82,215	9,242	217	3,563	-	406,911	10,648
Nov	265,982	92,024	3,614	183	4,100	-	365,903	10,722
Dec	277,138	84,904	1,535	81	-	1,301	364,959	10,577
Total	3,283,745	1,102,023	94,852	5,211	17,527	1,301	4,504,659	10,635
% of Total	72.9%	24.5%	2.1%	0.1%	0.4%	0 0%	100.0%	
Unit Heat Rate	10,214	11,425	12,846	38,166	19,095	19,287		
Sub. DG							3,771	10,409
HECO w/ DG							4,508,430	10,635

Note: Totals may not add exactly due to rounding.

AES Hawaii, Inc

2009 Production Simulation - (Rate Case - 2009 Test Year - APRIL 2009 UPDATE)

Sales and Peak Forecast dated September 2008

2009 Normalized Planned Maintenance Schedule

Fuel Prices December 2008 Contract Prices

Month	2 Boiler Operation			1 Boiler Operation		
	MWh	Hrs	Avg MW	MWh	Hrs	Avg MW
Jan	132,192	734	180.00	0	0	0.00
Feb	89,240	496	179.84	14,893	165	90.00
Mar	114,740	637	180.14	8,510	95	90.00
Apr	128,261	713	179.99	0	0	0.00
May	131,717	732	179.99	0	0	0.00
Jun	127,310	707	179.99	0	0	0.00
Jul	131,976	733	180.00	0	0	0.00
Aug	132,365	735	179.99	0	0	0.00
Sep	126,965	705	179.99	0	0	0.00
Oct	131,847	733	180.00	0	0	0.00
Nov	128,002	711	180.01	0	0	0.00
Dec	131,454	730	180.00	0	0	0.00
Total	1,506,068	8,367	180.00	23,404	260	90.00

Note: Totals may not add exactly due to rounding.

Kalaeloa Partners

2009 Production Simulation - (Rate Case - 2009 Test Year - APRIL 2009 UPDATE)

Sales and Peak Forecast dated September 2008

2009 Normalized Planned Maintenance Schedule

Fuel Prices December 2008 Contract Prices

Month	2 CT Operation			1 CT Operation		
	MWh	Hrs	Avg MW	MWh	Hrs	Avg MW
Jan	122,957	624	197.20	9,840	109	90.00
Feb	113,787	567	200.55	8,510	95	90.00
Mar	122,073	629	193.95	9,308	103	90.00
Apr	15,730	82	192.40	40,513	450	90.00
May	82,975	402	206.47	27,659	307	90.00
Jun	124,987	615	203.35	8,510	95	90.00
Jul	130,424	635	205.29	8,776	98	90.00
Aug	128,785	618	208.53	10,372	115	90.00
Sep	126,082	615	205.13	8,510	95	90.00
Oct	118,215	573	206.21	12,500	139	90.00
Nov	123,534	606	203.93	9,308	103	90.00
Dec	125,864	638	197.19	8,510	95	90.00
Total	1,335,411	6,603	202.23	162,318	1,804	90.00

Note: Totals may not add exactly due to rounding.

HPOWER

2009 Production Simulation - (Rate Case - 2009 Test Year - APRIL 2009 UPDATE)

Sales and Peak Forecast dated September 2008
2009 Normalized Planned Maintenance Schedule
Fuel Prices December 2008 Contract Prices

Month	On-Peak MWh	Off-Peak MWh	Total MWh	NonFirm (Chevron/Tesoro) MWh
Jan	17,658	12,613	30,271	405
Feb	15,804	11,288	27,092	366
Mar	17,710	12,650	30,360	405
Apr	17,079	12,199	29,278	392
May	6,633	4,738	11,371	405
Jun	16,602	11,859	28,461	392
Jul	17,613	12,581	30,194	405
Aug	17,716	12,655	30,371	405
Sep	16,956	12,112	29,068	392
Oct	17,768	12,691	30,459	405
Nov	16,535	11,810	28,345	392
Dec	14,863	10,617	25,480	405
Total	192,938	137,813	330,750	4,768

Note: Totals may not add exactly due to rounding.

Archer PV

2009 Production Simulation - (Rate Case - 2009 Test Year - APRIL 2009 UPDATE)

Sales and Peak Forecast dated September 2008
2009 Normalized Planned Maintenance Schedule
Fuel Prices December 2008 Contract Prices

Month	System Level MWh
Jan	0
Feb	0
Mar	0
Apr	0
May	0
Jun	0
Jul	31
Aug	30
Sep	27
Oct	24
Nov	20
Dec	19
Total	151

IPP Summary

2009 Production Simulation - (Rate Case - 2009 Test Year - APRIL 2009 UPDATE)

Sales and Peak Forecast dated September 2008

2009 Normalized Planned Maintenance Schedule

Fuel Prices December 2008 Contract Prices

	MWh
AES	1,529,472
KPLP	1,497,729
HPOWER	330,750
NonFirm	4,768
Archer PV	151
Total IPP	3,362,870

Substation DG Generation

2009 Production Simulation - (Rate Case - 2009 Test Year - APRIL 2009 UPDATE)

Sales and Peak Forecast dated September 2008
2009 Normalized Planned Maintenance Schedule
Fuel Prices December 2008 Contract Prices

Month	System Level MWh	MBtu
Jan	291	3,029
Feb	310	3,227
Mar	189	1,967
Apr	711	7,401
May	507	5,277
Jun	281	2,925
Jul	664	6,912
Aug	253	2,633
Sep	139	1,447
Oct	141	1,468
Nov	196	2,040
Dec	89	926
Total	3,771	39,252
Net Heat Rate (Btu/kWh)	10,409	

Note: Totals may not add exactly due to rounding.

Index of Workpapers for HECO Rate Case - April 2009 Update
TEST YEAR 2009

Header	Page(s)	Description
HECO - WP - 400 *	1	Index
HECO - WP - 403	1	Company Use (5-yr historical)
HECO - WP - 403	2	Unaccounted For and System Losses (5-yr historical)
HECO - WP - 406	1	Generating Unit Load Carrying Capabilities
HECO - WP - 406	2	Generating Unit Heat Rate Constants
HECO - WP - 406	3	Equivalent Forced Outage Rates
HECO - WP - 407 *	1	Sales Fuel Efficiency
HECO - WP - 408	1	Historical Net Heat Rate (HECO)
HECO - WP - 409 *	2	2009 Production Simulation-Consumption
HECO - WP - 412 *	1-6	Raw Output From Production Simulation Model
HECO - WP - 413 *	1-60	Raw Output From Production Simulation Model (monthly file)
HECO - WP - 414 *	1-4	Input File Into the Production Simulation
HECO - WP - 414 *	5-6	Fuel Input File Into Production Simulations
HECO - WP - 414	7-10	Unit costs/Performance/Maintenance Files
HECO - WP - 414 *	11	As-available Input File
HECO - WP - 414	12-17	Load Input File
HECO - WP - 414	18	QLPU Input File
HECO - WP - 414	19	Spinning Reserve Input File
HECO - WP - 414	20-30	Pattern Files
HECO - WP - 415 *	1	Summary Results

* Updated Workpaper

HECO-WP-403, PAGE 1 OF 2 - SAME AS DIRECT TESTIMONY

Hawaiian Electric Company, Inc.

TEST YEAR 2009 COMPANY USE

Line	Year	(A) Company No-Charge (MWh)	(B) Sales (MWh)	(C) = (A) ÷ (B) (C) Company Use (Percent)
1.	2003	15,002	7,522,230	0.199%
2.	2004	15,521	7,732,834	0.201%
3.	2005	15,698	7,721,296	0.203%
4.	2006	17,363	7,700,605	0.225%
5.	2007	16,813	7,675,355	0.219%
6.	Total	80,396	38,352,319	0.210%
7.	Average	16,079		

HECO-WP-403, PAGE 2 OF 2 - SAME AS DIRECT TESTIMONY

Hawaiian Electric Company, Inc.

TEST YEAR 2009 UNACCOUNTED FOR & SYSTEM LOSSES

Line	Year	(A) Unacct'd & Sys Losses (MWh)	(B) Net-to-System (MWh)	(C) = (A) ÷ (B) (C) System Losses (Percent)
1.	2003	371,726	7,908,957	4.70%
2.	2004	378,644	8,126,998	4.66%
3.	2005	367,309	8,104,303	4.53%
4.	2006	386,904	8,104,872	4.77%
5.	2007	396,947	8,089,115	4.91%
6.	Total	1,901,529	40,334,244	4.71%

HECO-WP-406, PAGE 1 OF 3 - SAME AS DIRECT TESTIMONY

Hawaiian Electric Company, Inc.

TEST YEAR 2009 GENERATING UNIT LOAD CARRYING CAPABILITIES

Unit	(A) Operating Minimum (Net MW)	(B) Normal Top Load (Net MW)
Honolulu 8	22.3	53.4
Honolulu 9	22.3	54.4
Waiau 3	22.3	46.6
Waiau 4	22.3	46.6
Waiau 5	22.5	54.5
Waiau 6	22.5	53.5
Waiau 7	32.6	82.9
Waiau 8	32.8	86.1
Waiau 9	5.9	52.9
Waiau 10	5.9	49.9
Kahe 1	32.5	82.1
Kahe 2	32.7	82.1
Kahe 3	32.3	86.1
Kahe 4	32.3	85.3
Kahe 5	50.7	134.3
Kahe 6	50.0	134.4
CIP1	39.0	113.0
Kalaeloa CT1	32.5	90.0
Kalaeloa CT2	32.5	90.0
Kalaeloa Additional Capacity	0.1	28.0
AES-Hawaii	63.0	180.0
H-POWER	25.0	46.0

HECO-WP-406, PAGE 2 OF 3 - SAME AS DIRECT TESTIMONY

Hawaiian Electric Company, Inc.

TEST YEAR 2009 HEAT RATE CONSTANTS

Unit	A Coefficient	B Coefficient	C Coefficient
Honolulu 8	36.4132	10.3115	0.00568
Honolulu 9	69.8920	8.9484	0.02204
Waiau 3	146.5394	4.8113	0.08544
Waiau 4	49.4604	9.3112	0.03203
Waiau 5	61.0595	8.8137	0.02981
Waiau 6	64.1104	8.7407	0.03199
Waiau 7	88.2107	7.9405	0.01961
Waiau 8	86.8712	8.0919	0.01315
Waiau 9	198.6939	7.8497	0.02922
Waiau 10	191.3958	7.2757	0.02851
Kahe 1	73.4991	8.1733	0.01292
Kahe 2	46.0037	9.0952	0.00350
Kahe 3	57.4864	8.5169	0.00634
Kahe 4	75.5539	8.4394	0.00739
Kahe 5	89.3444	8.6434	0.00305
Kahe 6	117.0609	8.1819	0.00769
CIP1	317.8768	8.8242	0.00074
Kalaeloa CT1	299.0258	4.4054	0.00931
Kalaeloa CT2	299.0258	4.4054	0.00931
Kalaeloa Additional Capacity	0.0000	8.6178	0.00000
AES-Hawaii	258.7479	14.9713	0.00510
H-POWER	10.0000	8.2000	0.00010

HECO-WP-406, PAGE 3 OF 3 - SAME AS DIRECT TESTIMONY

Hawaiian Electric Company, Inc.

TEST YEAR 2009 EQUIVALENT FORCED OUTAGE RATE

Unit	2003	2004	2005	2006	2007	Forward-Looking
Honolulu 8	13.0%	23.7%	1.7%	3.1%	2.0%	11.7%
Honolulu 9	20.0%	1.0%	12.0%	26.1%	25.3%	11.7%
Waiau 3	10.9%	24.7%	42.2%	24.0%	19.6%	27.7%
Waiau 4	3.4%	13.4%	5.0%	27.2%	7.9%	13.1%
Waiau 5	4.1%	1.0%	1.0%	1.7%	4.3%	3.7%
Waiau 6	2.8%	0.3%	2.6%	9.2%	11.2%	3.7%
Waiau 7	0.7%	1.2%	0.6%	1.1%	4.2%	6.3%
Waiau 8	0.0%	7.7%	23.5%	18.5%	3.9%	6.3%
Waiau 9	6.9%	63.2%	69.2%	14.7%	11.7%	11.5%
Waiau 10	36.0%	4.4%	7.4%	26.3%	7.6%	11.5%
Kahe 1	1.2%	2.6%	5.4%	1.6%	0.4%	3.0%
Kahe 2	2.2%	2.9%	2.0%	0.9%	7.5%	3.0%
Kahe 3	3.5%	8.8%	8.3%	2.1%	6.2%	6.3%
Kahe 4	1.3%	1.4%	4.9%	1.4%	6.1%	6.3%
Kahe 5	1.1%	7.6%	3.1%	3.1%	2.5%	4.1%
Kahe 6	1.9%	3.3%	5.9%	2.8%	0.4%	3.1%
CIP1						4.0%
Kalaeloa						1.5%
AES-Hawaii	(See Mr. Dan Ching's Testimony, HECO T-6)					1.5%
H-POWER						11.6%

Hawaiian Electric Company, Inc.

TEST YEAR 2009 SALES FUEL EFFICIENCY

Line	Description	(A) Net Generation (MWh)	(B)[1] Fuel (Barrels)	(C) Fuel (MBtu)	(D)=(C)+(A)x1000 (D) Net Heat Rate (Btu/kWh)
1.	Steam	4,480,620	7,637,027	47,349,566	10,568
2.	Diesel - Central Station	22,738	91,051	533,559	23,466
3.	Biodiesel	1,301	5,020	25,092	19,287
4.	Diesel - DG	(Treated Separately in the ECAF)			
5.	Total	4,504,659	7,733,098	47,908,217	10,635

SALES PROVIDED BY COMPANY GENERATION

6.	Test Year Sales	7,484,700
7.	Company Generated	57.23%
8.	Sales Provided by Company	4,283,695

SALES FUEL EFFICIENCY

		Company Sales	Company MBtu Consumed
9.	Company Sales and Fuel	4,283,695	47,908,217
10.	Sales Heat Rate	**0.011184**	

[1] Steam's LSFO heat content is 6.2 MBtu/barrel
Diesel's heat content is 5.86 MBtu/barrel
Biodiesel's heat content is 4.998 MBtu/barrel

Hawaiian Electric Company, Inc.

HISTORICAL NET HEAT RATE (HECO)

Line	Description	(A) 2003	(B) 2004	(C) 2005	(D) 2006	(E) 2007
1.	**Total Fuel Consumed (MBtu)**					
2.	Steam	48,441,659	51,453,940	49,790,662	50,945,072	51,097,136
3.	Diesel	359,213	785,235	678,309	380,545	449,607
4.	Diesel - DG			4,794	48,434	108,576
5.	Total	48,800,872	52,239,176	50,473,765	51,374,051	51,655,318
6.	**Net Energy Generated (MWh)**					
7.	Steam	4,651,903	4,881,864	4,688,606	4,833,363	4,828,024
8.	Diesel	17,040	36,819	32,324	16,752	12,299
9.	Diesel - DG			476	4,728	10,316
10.	Total	4,668,942	4,918,684	4,721,406	4,854,844	4,850,639
11.	**Heat Rate (Btu/kWh)**					
12.	Steam	10,413	10,540	10,620	10,540	10,583
13.	Diesel	21,081	21,327	20,985	22,716	36,556
14.	Diesel - DG			10,081	10,243	10,525
15.	Total	10,452	10,621	10,690	10,582	10,649
16.	Central Station	10,452	10,621	10,690	10,582	10,649

Hawaiian Electric Company, Inc.

2009 Production Simulation - (Rate Case - 2009 Test Year - APRIL 2009 UPDATE)

	Simulated							Calibrated						
								1.013	1.003	0.989	1.203	1.1	1.1	
	Bbl Consumption							Bbl Consumption						
Month	Kahe	Walau	Honolulu	WPP Diesel	CIP Diesel	Biodiesel	Sub DG	Kahe	Walau	Honolulu	WPP Diesel	CIP Diesel	Biodiesel	Sub DG
Jan	389,571	170,299	9,509	2,286	-	-		394,635	170,810	9,404	2,750	-	-	
Feb	379,768	142,287	19,265	2,843	-	-		384,705	142,714	19,053	3,420	-	-	
Mar	431,520	138,983	12,828	1,323	-	-		437,130	139,400	12,687	1,592	-	-	
Apr	475,194	182,002	22,700	5,047	-	-		481,372	182,548	22,450	6,072	-	-	
May	458,903	195,645	22,864	3,365	-	-		464,869	196,232	22,612	4,048	-	-	
Jun	436,241	166,538	16,716	2,267	-	-		441,912	167,038	16,532	2,727	-	-	
Jul	447,275	179,481	14,188	5,669	-	-		453,090	180,019	14,032	6,820	-	-	
Aug	464,301	186,953	26,663	1,842	16,762	-		470,337	187,514	26,370	2,216	18,438	-	
Sep	465,187	181,273	23,220	945	12,387	-		471,234	181,817	22,965	1,137	13,626	-	
Oct	506,125	154,258	19,436	1,099	10,535	-		512,705	154,721	19,222	1,322	11,589	-	
Nov	433,049	171,858	7,932	1,014	12,236	-		438,679	172,374	7,845	1,220	13,460	-	
Dec	453,128	155,166	3,389	512	-	4,564		459,019	155,631	3,352	616	-	5,020	
Total	5,340,262	2,024,743	198,710	28,212	51,920	4,564	6,698	5,409,685	2,030,817	196,524	33,939	57,112	5,020	6,698

	Derived							Calibrated						
								1.013	1.003	0.989	1.203	1.1	1.1	
	Mbtu Consumption							Mbtu Consumption						
Month	Kahe	Walau	Honolulu	WPP Diesel	CIP Diesel	Biodiesel	Total	Kahe	Walau	Honolulu	WPP Diesel	CIP Diesel	Biodiesel	Total
Jan	2,415,340	1,055,854	58,956	13,396	-	-	3,543,546	2,446,740	1,059,021	58,307	16,115	-	-	3,580,184
Feb	2,354,562	882,179	119,443	16,660	-	-	3,372,844	2,385,171	884,826	118,129	20,042	-	-	3,408,168
Mar	2,675,424	861,695	79,534	7,753	-	-	3,624,405	2,710,205	864,280	78,659	9,327	-	-	3,662,470
Apr	2,946,203	1,128,412	140,740	29,575	-	-	4,244,931	2,984,503	1,131,798	139,192	35,579	-	-	4,291,072
May	2,845,199	1,212,999	141,757	19,719	-	-	4,219,673	2,882,186	1,216,638	140,197	23,722	-	-	4,262,743
Jun	2,704,694	1,032,536	103,639	13,285	-	-	3,854,154	2,739,855	1,035,633	102,499	15,981	-	-	3,893,969
Jul	2,773,105	1,112,782	87,966	33,220	-	-	4,007,073	2,809,155	1,116,121	86,998	39,964	-	-	4,052,238
Aug	2,878,666	1,159,109	165,311	10,794	98,225	-	4,312,105	2,916,089	1,162,586	163,492	12,985	108,048	-	4,363,200
Sep	2,884,159	1,123,893	143,964	5,538	72,588	-	4,230,142	2,921,653	1,127,264	142,380	6,662	79,847	-	4,277,807
Oct	3,137,975	956,400	120,503	6,440	61,735	-	4,283,053	3,178,769	959,269	119,178	7,747	67,909	-	4,332,871
Nov	2,684,904	1,065,520	49,178	5,942	71,703	-	3,877,247	2,719,808	1,068,716	48,637	7,148	78,873	-	3,923,183
Dec	2,809,394	962,029	21,012	3,000	-	22,811	3,818,246	2,845,916	964,915	20,781	3,609	-	25,092	3,860,313
Total	33,109,624	12,553,407	1,232,002	165,322	304,251	22,811	47,387,417	33,540,050	12,591,067	1,218,450	198,883	334,676	25,092	47,908,217
Sub DG							39,252							39,252
HECO w/ DG							47,426,670							47,947,470

LSFO heat content = 6.2 million BTU per barrel
Diesel heat content = 5.85 million BTU per barrel
Biodiesel heat content = 4.998 million BTU per barrel

CIP1 in-service from August 1, 2009.
CIP1 fuel type changes from Diesel to Biodiesel on December 1, 2009.

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Hawaiian Electric Company, Inc.

2009 Production Simulation - (Rate Case - 2009 Test Year - APRIL 2009 UPDATE)

Calibration Factor Reference

Item	2009TY Factor	Source
Kahe	1.013	Calibration Factor Annual Report for Year 2007, filed March 14, 2008
Waiau	1.003	Calibration Factor Annual Report for Year 2007, filed March 14, 2008
Honolulu	0.989	Calibration Factor Annual Report for Year 2007, filed March 14, 2008
WPP Diesel	1.203	Calibration Factor Annual Report for Year 2007, filed March 14, 2008
CIP Diesel	1.1	Estimated value (new unit to be installed in 2009)
Biodiesel	1.1	Estimated value (new unit to be installed in 2009)

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Case Name. h09tyca2
Simulation Period 2009/ 1 - 2009/12

File	Name
Study Data.	h09tyd0 stu
Report Control.	h09tyd0 rfc
Area Data:	h09tyd0 ara
Plant Data	h09tyd1 plt
Fuel Class Data:	h09tyd4 fcl
Spot Fuel Data.	h09tyca1 sfu
Contract Fuel Data.	
Thermal Basic Data	h09tyca2 ubo
Thermal Cost Data	h09tyd6 ucs
Thermal Performance Data	h09tyd4 upf
Thermal NOx Data.	
Hourly Pattern # 1.	ptn1 hcp
Hourly Pattern # 2	ptn2.hcp
Hourly Pattern # 3	ptn3 hcp
Hourly Pattern # 4	ptn4 hcp
Hourly Pattern # 5	ptn5 hcp
Hydro Data	
Pumped Storage Data	
Fixed Energy Transaction Data	h09tyca0 trf
Hourly Transaction # 2	ptn2 htr
Economy Transaction Data:	
DSM Data	
Monte Carlo Scenario Data:	h09tyd10.mcs
Thermal Maintenance Data	h09tyd0 umt
Hydro Maintenance Data	
P-S Maintenance Data:	
Load Data:	h09tyu0 eei
CC Data #1:	
CC Data #2.	
CC Data #3:	
CC Data #4:	
CC Maintenance Data.	
Quick Load Pick Up Curve Data:	h09tyd0 qlp
Spinning Reserve Data	h09tyd0 spn

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Calendar Year: 2009

Monthly system Load and Capacity Summary

Mnth	Peak Load MW	Mnthly Energy GWh	Load Factor %	Installed Capacity MW	Maint outage MW	Adjusted Capacity MW	Capacity Reserve MW	Capacity Reserve %
Jan	1139	628.4	74.2	1648.6	187.8	1460.8	321.8	28.25
Feb	1143	574.7	74.8	1648.6	187.9	1460.7	317.7	27.8
Mar	1129	632.8	75.3	1648.6	53.5	1595.1	466.1	41.29
Apr	1141	619.4	75.4	1530.6	53.5	1477.1	336.1	29.46
May	1164	656.7	75.8	1602.6	82.1	1520.5	356.5	30.63
Jun	1166	657.9	78.4	1625.6	82.1	1543.5	377.5	32.38
Jul	1202	684.2	76.5	1648.6	136.5	1512.1	310.1	25.8
Aug	1239	711.8	77.2	1761.6	128.7	1632.9	393.9	31.79
Sep	1228	692.5	78.3	1761.6	136.6	1625	397	32.33
Oct	1246	700.5	75.6	1761.6	86.1	1675.5	429.5	34.47
Nov	1233	655.7	73.9	1761.6	139.5	1622.1	389.1	31.56
Dec	1189	656.8	74.2	1738.6	187.7	1550.9	361.9	30.44

Summary for Period

Pea	k Load	(MW)	1246
Tot	al Energy	(GWh)	7871.44
Loa	d Factor	(%)	72.12

Month	AM Peak (MW)	PM Peak (MW)	Capacity (MW)	Maint (MW)	Reserve (MW)	Largest (MW)	LSC (MW)	Diff. (MW)
Jan	1066	1139	1648.6	187.8	321.8	180	1280.8	141.8
Feb	1051	1143	1648.6	187.9	317.7	180	1280.7	137.7
Mar	1077	1129	1648.6	53.5	466.1	180	1415.1	286.1
Apr	1107	1141	1530.6	53.5	336.1	180	1297.1	156.1
May	1136	1164	1602.6	82.1	356.5	180	1340.5	176.5
Jun	1134	1166	1625.6	82.1	377.5	180	1363.5	197.5
Jul	1159	1202	1648.6	136.5	310.1	180	1332.1	130.1
Aug	1197	1239	1761.6	128.7	393.9	180	1452.9	213.9
Sep	1187	1228	1761.6	136.6	397	180	1445	217
Oct	1161	1246	1761.6	86.1	429.5	180	1495.5	249.5
Nov	1170	1233	1761.6	139.5	389.1	180	1442.1	209.1
Dec	1110	1189	1738.6	187.7	361.9	180	1370.9	181.9

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Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup Cst M$	Fuel Cst M$	VO&M Cst M$	FO&M Cst M$	Oper Cst $/MWh	Tot Cst $/MWh	Ave Hrt Btu/kWh
1 Honolu 8	53.4	1	2614.5	12.87	60.24	768.9	234	0	0	7.2396	0	0	113.24	120.18	12764
2 Honolu 9	54.4	1	1398.1	7.26	34.611	463.1	186	0	0	4.3605	0	0	116.35	125.99	13380
3 Waiau 3	46.6	1	1468.9	11.21	45.796	622.6	190	0	0	5.5505	0	0	108.71	121.2	13596
4 Waiau 4	46.6	1	2507.3	14.05	57.4	790.7	265	0	0	7.0489	0	0	108.91	122.8	13775
5 Waiau 5	54.5	1	4937.6	24.27	115.926	1497.8	329	0	0	13.3522	0	0	108.18	115.18	12920
6 Waiau 6	53.5	1	3637.6	18.25	85.579	1124.6	278	0	0	10.0256	0	0	109.12	117.15	13141
7 Waiau 7	82.9	1	8207	49.08	356.622	3898.9	4	0	0	34.7573	0	0	96.95	97.46	10933
8 Waiau 8	86.1	1	7685.3	58.4	440.699	4618.8	5	0	0	41.1744	0	0	92.94	93.43	10481
9 Waiau 9	52.9	1	208.8	0.42	1.93	58.4	46	0	0	0.8591	0	0	441.33	445.22	30271
10 Waiau 10	49.9	1	421.1	0.75	3.282	106.9	81	0	0	1.5725	0	0	475.08	479.09	32573
11 Kahe 1	82.1	1	7009.4	46.98	338.038	3519.4	3	0	0	31.3742	0	0	92.39	92.81	10411
12 Kahe 2	82.1	1	7010.6	52.57	378.297	3860.4	3	0	0	34.4142	0	0	90.59	90.97	10205
13 Kahe 3	86.1	1	7737.8	70.96	535.471	5284.6	5	0	0	47.1101	0	0	87.57	87.98	9869
14 Kahe 4	85.3	1	7826.4	68.99	515.802	5241.9	5	0	0	46.7294	0	0	90.6	90.6	10163
15 Kahe 5	134.3	1	7872.5	75.64	890.42	8746.1	4	0	0	77.9682	0	0	87.39	87.56	9822
16 Kahe 6	134.4	1	7373.5	53.12	625.717	6457.2	3	0	0	57.5633	0	0	91.55	92	10320
17 Kalo CC	90	1	6600.7	74.39	586.776	5046.1	92	0	0	42.2425	0	0	71.99	71.99	8600
18 Kalo CC	90	1	8408.4	94.37	744.405	6410.7	8	0	0	53.6661	0	0	72.09	72.09	8612
19 AES	180	1	8627	96.95	1529.471	26524.2	2	0	0	43.8554	0	0	28.67	28.67	17342
20 HPOWER	46	1	7434.2	82.04	330.751	2787.6	7	0	0	0	0	0	0	0	8428
21 Kalo CC	28	1	6603	67.86	166.547	1435.3	92	0	0	12.0151	0	0	72.14	72.14	8618
22 CIP1	113	1	474.5	1.9	18.828	327.1	76	0	0	5.2924	0	0	272.85	281.1	17372
23 DG Sub1	9.8	1	269.4	1.6	1.379	14.4	62	0	0	0.2162	0	0	156.74	156.74	10409
24 DG Sub2	9.8	1	244.3	1.44	1.243	12.9	58	0	0	0.1948	0	0	156.74	156.74	10409
25 DG Sub3	9.8	1	222.7	1.33	1.149	12	55	0	0	0.18	0	0	156.74	156.74	10409
System					7866.377	89631	2094	0	0	578.7625	0	0	72.89	73.57	11394

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Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M$	CAP Cost M$	Total Cost M$	Ave Cost $/MWh
1	Non-Firm	CONSTANT PURC	4 771	0 3085	0	0 3085	64 66
2	ArcherPV	HOURLY PURC	0 151	0	0	0	0

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Fuel Type Summary

	Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
5	pet								
1	WLSFO	1102 021	2024.743	Bbl	12553 4	111 9088	101 55	11391	891 46
2	KLSFO	3283 746	5340 261	Bbl	33109 6	295 1595	89 88	10083	891 46
3	HLSFO	94 852	198.71	Bbl	1232	11 6001	122 3	12989	941 57
4	DG SUB	3 77	6 697	Bbl	39 2	0 591	156 74	10409	1505 81
5	WDIESEL	5 212	28 213	Bbl	165 3	2 4317	466 55	31721	1470 79
6		0	0	Bbl	0	0	0	0	0
7	AES	1529 471	26524 244	Bbl	26524 2	43 8554	28 67	17342	165 34
8	KALAELOA	1497 728	2148 677	Bbl	12892 1	107.9237	72 06	8608	837.13
9	BIODIESEL	18 828	56 485	Bbl	282 4	5 2924	2811	15000	1873 94
10	REFUSE	330 751	449 617	Bbl	2787 6	0	0	8428	0
11		0	0	Bbl	0	0	0	0	0
12	CDIESEL	0	0	Bbl	0	0	0	0	0

Fuel Class Summary

	Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1	LSFO	4480 619	7563.714	Bbl	46895	418 6684	93 44	10466	892 8
2	DIESEL	5 212	28 213	Bbl	165 3	2 4317	466 55	31721	1470 8
4	AES	1529 471	26524 244	Bbl	26524 2	43 8554	28 67	17342	165 3
5	KALAELOA	1497.728	2148 677	Bbl	12892 1	107 9237	72 06	8608	837 1
6	BIODIESEL	18 828	56 485	Bbl	282 4	5 2924	2811	15000	1873 9
7	REFUSE	330 751	449 617	Bbl	2787 6	0	0	8428	0
9	DG SUB	3 77	6 697	Bbl	39 2	0 591	156 74	10409	1505 8

0

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Fiscal Year 2009

System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	7871 56			Thermal Gen:	7866 38	578 7625	73 57
				Hydro Gen:	0	0	0
P-S Pumping:	0			P-S Gen	0	0	0
P-S Payback	0						
F. E Sale:	0	0	0	F E. Purc.	4 92	0.3085	62 68
Econ. Sale.	0	0	0	Econ. Purc:	0	0	0
Unit Sale:	0	0	0				
Transm Loss.	0			Rej. Fuel		0	
Dsm Load:	0			Dsm Reducts:	0		
				Emerg Purc	0	0	0
Dumped Engy:	0	0	0	E U. Energy.	0 14	0 0144	100
				Lvl Cost:		0	
Total:	7871 56	0	0	Total.	7871 44	579 0854	73.57
				System Net:		579 0854	73 57
				LOLH(hr)	3 03		

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Plant Summary

Plant	CF %	Energy GWh	MBtu	Start 1000 Ups	Stup Cst M$	Fuel Cst M$	O&M Cst M$	Tot Cst $/MWh
1 Kahe	62	3283.7456	33109 6	23	0	295 1594	0	89 88
2 Waiau	26 7	1107 2334	12718 7	1199	0	114 3404	0	103 27
3 Kalaeloa	82 2	1497 7275	12892 1	192	0	107 9237	0	72 06
4 AES	97	1529 4708	26524 2	2	0	43 8554	0	28 67
5 HPOWER	82 1	330 7506	2787 6	7	0	0	0	0
6 Honolulu	10	94 8518	1232	420	0	11 6001	0	122 3
8 CIP	4.5	18 8277	327 1	76	0	5 2924	0	281 1
9 DG Sub	1 5	3.7705	39 2	174	0	0 591	0	156 74

Fiscal Year 2009

Yearly Fuel & Var O&M Cost by Subperiod (M$)

Off P	Shoulder Peak	Priority Peak	Total
188	274 046326	116 909134	578 763306

Study Period 2009/Jan - 2009/Dec
Total Fuel & Var O&M Cost by Subperiod (M$)

Off Peak	Shoulder Peak	Priority Peak	Total
187 807846	274 046326	116.909134	578.76330(

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Year: 2009 Month: Jan

Station Summary

	Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup Cst M$	Fuel Cst M$	VO&M Cst M$	FO&M Cst M$	Oper Cst $/MWh	Tot Cst $/MWh	Ave Hrt Btu/kWh
1	Honolu 8	53.4	1	88.0	4.97	1.977	25.7	10.	0.	0.0000	0.2422	0.0000	0.0000	113.55	122.46	13007.
2	Honolu 9	54.4	1	102.4	5.96	2.415	33.2	17.	0.	0.0000	0.3130	0.0000	0.0000	117.25	129.60	13764.
3	Waiau 3	46.6	1	118.6	10.53	3.654	51.0	19.	0.	0.0000	0.4543	0.0000	0.0000	108.86	124.32	13946.
4	Waiau 4	46.6	1	219.0	14.27	4.949	69.3	26.	0.	0.0000	0.6177	0.0000	0.0000	109.03	124.83	14003.
5	Waiau 5	54.5	1	448.3	25.38	10.299	133.4	29.	0.	0.0000	1.1893	0.0000	0.0000	108.46	115.48	12954.
6	Waiau 6	53.5	1	345.4	19.93	7.937	105.4	29.	0.	0.0000	0.9392	0.0000	0.0000	109.44	118.33	13274.
7	Waiau 7	82.9	1	695.0	46.01	28.395	316.6	1.	0.	0.0000	2.8227	0.0000	0.0000	97.60	99.41	11151.
8	Waiau 8	86.1	1	694.3	55.56	35.610	380.2	1.	0.	0.0000	3.3894	0.0000	0.0000	93.69	95.18	10677.
9	Waiau 9	52.9	1	14.8	0.29	0.116	4.0	5.	0.	0.0000	0.0585	0.0000	0.0000	497.14	504.59	34307.
10	Waiau 10	49.9	1	38.2	0.71	0.262	9.4	10.	0.	0.0000	0.1385	0.0000	0.0000	521.80	527.79	35885.
11	Kahe 1	82.1	1	725.3	54.08	33.049	349.4	1.	0.	0.0000	3.1148	0.0000	0.0000	92.78	94.25	10572.
12	Kahe 2	82.1	1	720.2	57.40	35.081	364.5	1.	0.	0.0000	3.2492	0.0000	0.0000	91.22	92.62	10389.
13	Kahe 3	86.1	1	695.8	71.25	45.669	455.8	1.	0.	0.0000	4.0635	0.0000	0.0000	87.80	88.98	9981.
14	Kahe 4	85.3	1	696.7	66.12	41.988	433.4	1.	0.	0.0000	3.8634	0.0000	0.0000	90.73	92.01	10321.
15	Kahe 5	134.3	1	709.4	77.69	77.668	768.0	1.	0.	0.0000	6.8468	0.0000	0.0000	87.56	88.15	9889.
16	Kahe 6	134.4	1	48.0	3.35	3.352	44.2	1.	0.	0.0000	0.3942	0.0000	0.0000	92.93	117.59	13191.
17	Kala CC	90.0	1	621.0	81.46	54.577	471.0	10.	0.	0.0000	3.9432	0.0000	0.0000	72.25	72.25	8631.
18	Kala CC	90.0	1	729.8	94.82	63.524	550.1	1.	0.	0.0000	4.6052	0.0000	0.0000	72.50	72.50	8660.
19	AES	180.0	1	734.4	98.65	132.192	2290.5	1.	0.	0.0000	3.7871	0.0000	0.0000	28.65	28.65	17327.
20	HPOWER	46.0	1	658.1	88.40	30.271	254.9	1.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	8422.
21	Kala CC	28.0	1	622.2	70.50	14.696	126.6	10.	0.	0.0000	1.0602	0.0000	0.0000	72.14	72.14	8618.
22	CIP1	0.0	0	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.
23	DG Sub1	9.8	1	17.9	1.24	0.091	0.9	6.	0.	0.0000	0.0142	0.0000	0.0000	156.74	156.74	10409.
24	DG Sub2	9.8	1	19.0	1.29	0.095	1.0	7.	0.	0.0000	0.0149	0.0000	0.0000	156.74	156.74	10409.
25	DG Sub3	9.8	1	20.6	1.44	0.105	1.1	7.	0.	0.0000	0.0165	0.0000	0.0000	156.74	156.74	10409.
	System					627.973	7240.	197.	0.	0.0000	45.1380	0.0000	0.0000	70.66	71.88	11529.

PPC Proprietary Program Licensed to HECO Till 12/2099
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Year: 2009 Month: Jan

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M$	CAP Cost M$	Total Cost M$	Ave Cost $/MWh
1	Non-Firm	CONSTANT PURC	0.405	0.0262	0.0000	0.0262	64.66

Year: 2009 Month: Jan

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	90.844	170.299	Bbl	1055.9	9.4125	103.61	11623.	891.46
2 KLSFO	236.807	389.571	Bbl	2415.3	21.5318	90.93	10200.	891.46
3 HLSFO	4.392	9.509	Bbl	59.0	0.5551	126.39	13423.	941.57
4 DG SUB	0.291	0.517	Bbl	3.0	0.0456	156.74	10409.	1505.81
5 WDIESEL	0.378	2.286	Bbl	13.4	0.1970	520.67	35401.	1470.79
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	132.192	2290.510	Bbl	2290.5	3.7871	28.65	17327.	165.34
8 KALAELOA	132.796	191.301	Bbl	1147.8	9.6087	72.36	8643.	837.13
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	30.271	41.121	Bbl	254.9	0.0000	0.00	8422.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	332.043	569.379	Bbl	3530.2	31.4995	94.87	10632.	892.3
2 DIESEL	0.378	2.286	Bbl	13.4	0.1970	520.67	35401.	1470.8
4 AES	132.192	2290.510	Bbl	2290.5	3.7871	28.65	17327.	165.3
5 KALAELOA	132.796	191.301	Bbl	1147.8	9.6087	72.36	8643.	837.1
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	30.271	41.121	Bbl	254.9	0.0000	0.00	8422.	0.0
9 DG SUB	0.291	0.517	Bbl	3.0	0.0456	156.74	10409.	1505.8

PPC Proprietary Program Licensed to HECO Till 12/2099
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Year: 2009 Month: Jan

System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	628.38			Therml Gen:	627.97	45.1380	71.88
				Hydro Gen:	0.00	0.0000	0.00
P-S Pumping:	0.00			P-S Gen:	0.00	0.0000	0.00
P-S Payback:	0.00						
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.41	0.0262	64.66
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00
Unit Sale:	0.00	0.0000	0.00				
Transm Loss:	0.00			Rej. Fuel:		0.0000	
Dsm Load:	0.00			Dsm Reductn:	0.00		
				Emerg Purc:	0.00	0.0000	0.00
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.00	0.0001	100.00
				Lvl Cost:		0.0000	
Total:	628.38	0.0000	0.00	Total:	628.38	45.1643	71.87
				System Net:		45.1643	71.87
				LOLH(hr):	0.03		

PPC Proprietary Program Licensed to HECO Till 12/2099
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Year: 2009 Month: Jan

Plant Summary

	Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M$	Fuel Cst M$	O&M Cst M$	Tot Cst $/MWh
1	Kahe	52.7	236.8075	2415.3	7.	0.0000	21.5318	0.0000	90.93
2	Waiau	25.9	91.2220	1069.3	120.	0.0000	9.6096	0.0000	105.34
3	Kalaeloa	85.8	132.7962	1147.8	21.	0.0000	9.6087	0.0000	72.36
4	AES	98.7	132.1921	2290.5	1.	0.0000	3.7871	0.0000	28.65
5	HPOWER	88.5	30.2715	254.9	1.	0.0000	0.0000	0.0000	0.00
6	Honolulu	5.5	4.3923	59.0	27.	0.0000	0.5551	0.0000	126.39
8	CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9	DG Sub	1.3	0.2911	3.0	20.	0.0000	0.0456	0.0000	156.74

Year: 2009 Month: Jan

Monthly Fuel & Var O&M Cost by Subperiod (M$)

Off Peak	Shoulder Peak	Priority Peak	Total
14.933411	20.958994	9.245837	45.138241

Year: 2009 Month: Feb

Station Summary

	Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup Cst M$	Fuel Cst M$	VO&M Cst M$	FO&M Cst M$	Oper Cst $/MWh	Tot Cst $/MWh	Ave Hrt Btu/kWh
1	Honolu 8	53.4	1	285.0	17.96	6.448	82.7	26.	0.	0.0000	0.7784	0.0000	0.0000	113.47	120.72	12821.
2	Honolu 9	54.4	1	112.0	7.38	2.698	36.8	17.	0.	0.0000	0.3463	0.0000	0.0000	116.89	128.37	13633.
3	Waiau 3	46.6	1	125.4	12.34	3.866	53.7	19.	0.	0.0000	0.4786	0.0000	0.0000	108.84	123.81	13889.
4	Waiau 4	46.6	1	222.0	16.13	5.055	70.1	25.	0.	0.0000	0.6249	0.0000	0.0000	108.97	123.62	13867.
5	Waiau 5	54.5	1	395.5	24.91	9.127	118.5	27.	0.	0.0000	1.0565	0.0000	0.0000	108.41	115.76	12985.
6	Waiau 6	53.5	1	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.
7	Waiau 7	82.9	1	630.0	47.17	26.293	288.3	0.	0.	0.0000	2.5701	0.0000	0.0000	97.34	97.75	10965.
8	Waiau 8	86.1	1	629.8	57.73	33.418	351.6	0.	0.	0.0000	3.1342	0.0000	0.0000	93.44	93.79	10521.
9	Waiau 9	52.9	1	20.6	0.49	0.174	5.6	5.	0.	0.0000	0.0826	0.0000	0.0000	469.18	474.23	32243.
10	Waiau 10	49.9	1	43.7	0.99	0.333	11.0	10.	0.	0.0000	0.1625	0.0000	0.0000	482.53	487.34	33135.
11	Kahe 1	82.1	1	652.1	54.32	29.983	312.4	0.	0.	0.0000	2.7846	0.0000	0.0000	92.71	92.87	10418.
12	Kahe 2	82.1	1	654.0	59.88	33.051	337.8	0.	0.	0.0000	3.0110	0.0000	0.0000	90.98	91.10	10219.
13	Kahe 3	86.1	1	631.7	73.05	42.289	417.3	0.	0.	0.0000	3.7204	0.0000	0.0000	87.72	87.97	9869.
14	Kahe 4	85.3	1	630.0	68.18	39.102	398.3	0.	0.	0.0000	3.5510	0.0000	0.0000	90.54	90.81	10187.
15	Kahe 5	134.3	1	648.0	79.33	71.628	703.9	0.	0.	0.0000	6.2750	0.0000	0.0000	87.51	87.61	9827.
16	Kahe 6	134.4	1	210.2	18.88	17.060	184.9	1.	0.	0.0000	1.6481	0.0000	0.0000	91.76	96.60	10836.
17	Kala CC	90.0	1	569.9	83.15	50.312	433.6	8.	0.	0.0000	3.6301	0.0000	0.0000	72.15	72.15	8619.
18	Kala CC	90.0	1	666.5	96.33	58.289	504.0	0.	0.	0.0000	4.2191	0.0000	0.0000	72.38	72.38	8646.
19	AES	180.0	1	661.7	86.04	104.133	1819.0	0.	0.	0.0000	3.0075	0.0000	0.0000	28.88	28.88	17468.
20	HPOWER	46.0	1	589.0	87.60	27.092	228.2	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	8422.
21	Kala CC	28.0	1	567.4	72.75	13.696	118.0	8.	0.	0.0000	0.9881	0.0000	0.0000	72.14	72.14	8618.
22	CIP1	0.0	0	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.
23	DG Sub1	9.8	1	22.5	1.74	0.115	1.2	7.	0.	0.0000	0.0180	0.0000	0.0000	156.74	156.74	10409.
24	DG Sub2	9.8	1	23.9	1.83	0.121	1.3	7.	0.	0.0000	0.0189	0.0000	0.0000	156.74	156.74	10409.
25	DG Sub3	9.8	1	14.8	1.11	0.074	0.8	6.	0.	0.0000	0.0116	0.0000	0.0000	156.74	156.74	10409.
	System					574.357	6479.	169.	0.	0.0000	42.1173	0.0000	0.0000	72.60	73.33	11280.

PPC Proprietary Program Licensed to HECO Till 12/2099
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Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M$	CAP Cost M$	Total Cost M$	Ave Cost $/MWh
1	Non-Firm	CONSTANT PURC	0.366	0.0237	0.0000	0.0237	64.67

Year: 2009 Month: Feb

Fuel Type Summary

	Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:									
1	WLSFO	77.759	142.287	Bbl	882.2	7.8643	101.14	11345.	891.46
2	KLSFO	233.113	379.768	Bbl	2354.6	20.9900	90.04	10101.	891.46
3	HLSFO	9.145	19.265	Bbl	119.4	1.1247	122.98	13061.	941.57
4	DG SUB	0.310	0.550	Bbl	3.2	0.0485	156.74	10409.	1505.81
5	WDIESEL	0.508	2.843	Bbl	16.7	0.2451	482.84	32829.	1470.79
6		0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7	AES	104.133	1818.981	Bbl	1819.0	3.0075	28.88	17468.	165.34
8	KALAELOA	122.298	175.942	Bbl	1055.7	8.8372	72.26	8632.	837.13
9	BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10	REFUSE	27.092	36.802	Bbl	228.2	0.0000	0.00	8422.	0.00
11		0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12	CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

	Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1	LSFO	320.017	541.321	Bbl	3356.2	29.9790	93.68	10488.	893.2
2	DIESEL	0.508	2.843	Bbl	16.7	0.2451	482.84	32829.	1470.8
4	AES	104.133	1818.981	Bbl	1819.0	3.0075	28.88	17468.	165.3
5	KALAELOA	122.298	175.942	Bbl	1055.7	8.8372	72.26	8632.	837.1
6	BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7	REFUSE	27.092	36.802	Bbl	228.2	0.0000	0.00	8422.	0.0
9	DG SUB	0.310	0.550	Bbl	3.2	0.0485	156.74	10409.	1505.8

PPC Proprietary Program Licensed to HECO Till 12/2099
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Year: 2009 Month: Feb

System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	574.73			Therml Gen:	574.36	42.1173	73.33
				Hydro Gen:	0.00	0.0000	0.00
P-S Pumping:	0.00			P-S Gen:	0.00	0.0000	0.00
P-S Payback:	0.00						
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.37	0.0237	64.67
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00
Unit Sale:	0.00	0.0000	0.00				
Transm Loss:	0.00			Rej. Fuel:		0.0000	
Dsm Load:	0.00			Dsm Reductn:	0.00		
				Emerg Purc:	0.00	0.0000	0.00
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.00	0.0003	100.00
				Lvl Cost:		0.0000	
Total:	574.73	0.0000	0.00	Total:	574.73	42.1413	73.32
				System Net:		42.1413	73.32
				LOLH(hr):	0.15		

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Year: 2009 Month: Feb

Plant Summary

	Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M$	Fuel Cst M$	O&M Cst M$	Tot Cst $/MWh
1	Kahe	57.4	233.1126	2354.6	2.	0.0000	20.9900	0.0000	90.04
2	Waiau	24.6	78.2662	898.8	87.	0.0000	8.1094	0.0000	103.61
3	Kalaeloa	87.5	122.2978	1055.7	16.	0.0000	8.8372	0.0000	72.26
4	AES	86.1	104.1331	1819.0	0.	0.0000	3.0075	0.0000	28.88
5	HPOWER	67.6	27.0920	228.2	0.	0.0000	0.0000	0.0000	0.00
6	Honolulu	12.6	9.1453	119.4	43.	0.0000	1.1247	0.0000	122.98
8	CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9	DG Sub	1.6	0.3096	3.2	20.	0.0000	0.0485	0.0000	156.74

Year: 2009 Month: Feb

Monthly Fuel & Var O&M Cost by Subperiod (M$)

Off Peak	Shoulder Peak	Priority Peak	Total
13.721906	19.737986	8.657596	42.117489

PPC Proprietary Program Licensed to HECO Till 12/2099
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Year: 2009 Month: Mar

Station Summary

	Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup Cst M$	Fuel Cst M$	VO&M Cst M$	FO&M Cst M$	Oper Cst $/MWh	Tot Cst $/MWh	Ave Hrt Btu/kWh
1	Honolu 8	53.4	1	208.3	11.90	4.732	61.3	23.	0.	0.0000	0.5772	0.0000	0.0000	113.42	121.96	12953.
2	Honolu 9	54.4	1	55.8	3.34	1.353	18.2	8.	0.	0.0000	0.1717	0.0000	0.0000	116.76	126.87	13475.
3	Waiau 3	46.6	1	67.8	6.08	2.110	28.9	10.	0.	0.0000	0.2580	0.0000	0.0000	108.72	122.29	13718.
4	Waiau 4	46.6	1	126.3	8.27	2.868	41.3	18.	0.	0.0000	0.3680	0.0000	0.0000	108.99	128.34	14397.
5	Waiau 5	54.5	1	331.6	18.73	7.597	101.1	31.	0.	0.0000	0.9011	0.0000	0.0000	108.51	118.62	13306.
6	Waiau 6	53.5	1	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.
7	Waiau 7	82.9	1	698.4	46.06	28.423	312.6	0.	0.	0.0000	2.7868	0.0000	0.0000	97.59	98.05	10998.
8	Waiau 8	86.1	1	697.4	55.84	35.788	377.8	0.	0.	0.0000	3.3677	0.0000	0.0000	93.70	94.10	10556.
9	Waiau 9	52.9	1	10.4	0.22	0.085	2.8	2.	0.	0.0000	0.0414	0.0000	0.0000	480.62	485.00	32975.
10	Waiau 10	49.9	1	19.8	0.39	0.145	4.9	4.	0.	0.0000	0.0727	0.0000	0.0000	496.65	500.75	34046.
11	Kahe 1	82.1	1	720.2	52.18	31.892	333.7	0.	0.	0.0000	2.9745	0.0000	0.0000	93.03	93.27	10462.
12	Kahe 2	82.1	1	721.4	56.70	34.654	355.7	0.	0.	0.0000	3.1713	0.0000	0.0000	91.30	91.51	10265.
13	Kahe 3	86.1	1	698.2	69.76	44.714	442.6	0.	0.	0.0000	3.9455	0.0000	0.0000	87.95	88.24	9898.
14	Kahe 4	85.3	1	386.6	36.22	23.002	235.3	0.	0.	0.0000	2.0977	0.0000	0.0000	90.87	91.20	10230.
15	Kahe 5	134.3	1	714.0	76.24	76.225	750.7	0.	0.	0.0000	6.6920	0.0000	0.0000	87.70	87.79	9848.
16	Kahe 6	134.4	1	716.4	53.60	53.630	557.4	0.	0.	0.0000	4.9693	0.0000	0.0000	92.37	92.66	10394.
17	Kala CC	90.0	1	626.4	80.82	54.150	470.0	9.	0.	0.0000	3.9348	0.0000	0.0000	72.67	72.67	8680.
18	Kala CC	90.0	1	730.8	93.39	62.569	545.0	0.	0.	0.0000	4.5626	0.0000	0.0000	72.92	72.92	8711.
19	AES	180.0	1	731.5	91.98	123.250	2143.8	0.	0.	0.0000	3.5446	0.0000	0.0000	28.76	28.76	17394.
20	HPOWER	46.0	1	660.0	88.66	30.360	255.7	1.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	8422.
21	Kala CC	28.0	1	630.1	70.34	14.662	126.4	9.	0.	0.0000	1.0577	0.0000	0.0000	72.14	72.14	8618.
22	CIP1	0.0	0	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.
23	DG Sub1	9.8	1	13.3	0.93	0.068	0.7	4.	0.	0.0000	0.0107	0.0000	0.0000	156.74	156.74	10409.
24	DG Sub2	9.8	1	13.4	0.94	0.069	0.7	4.	0.	0.0000	0.0108	0.0000	0.0000	156.74	156.74	10409.
25	DG Sub3	9.8	1	10.3	0.71	0.052	0.5	3.	0.	0.0000	0.0081	0.0000	0.0000	156.74	156.74	10409.
	System					632.398	7167.	126.	0.	0.0000	45.5243	0.0000	0.0000	71.51	71.99	11334.

Year: 2009 Month: Mar

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M$	CAP Cost M$	Total Cost M$	Ave Cost $/MWh
1	Non-Firm	CONSTANT PURC	0.405	0.0262	0.0000	0.0262	64.66

Year: 2009 Month: Mar

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	76.785	138.983	Bbl	861.7	7.6817	100.04	11222.	891.46
2 KLSFO	264.117	431.520	Bbl	2675.4	23.8504	90.30	10130.	891.46
3 HLSFO	6.086	12.828	Bbl	79.5	0.7489	123.05	13069.	941.57
4 DG SUB	0.189	0.336	Bbl	2.0	0.0296	156.74	10409.	1505.81
5 WDIESEL	0.230	1.323	Bbl	7.8	0.1140	494.92	33650.	1470.79
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	123.250	2143.807	Bbl	2143.8	3.5446	28.76	17394.	165.34
8 KALAELOA	131.380	190.236	Bbl	1141.4	9.5552	72.73	8688.	837.13
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	30.360	41.241	Bbl	255.7	0.0000	0.00	8422.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	346.988	583.331	Bbl	3616.7	32.2809	93.03	10423.	892.6
2 DIESEL	0.230	1.323	Bbl	7.8	0.1140	494.92	33650.	1470.8
4 AES	123.250	2143.807	Bbl	2143.8	3.5446	28.76	17394.	165.3
5 KALAELOA	131.380	190.236	Bbl	1141.4	9.5552	72.73	8688.	837.1
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	30.360	41.241	Bbl	255.7	0.0000	0.00	8422.	0.0
9 DG SUB	0.189	0.336	Bbl	2.0	0.0296	156.74	10409.	1505.8

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Year: 2009 Month: Mar

System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	632.81			Therml Gen:	632.40	45.5243	71.99
				Hydro Gen:	0.00	0.0000	0.00
P-S Pumping:	0.00			P-S Gen:	0.00	0.0000	0.00
P-S Payback:	0.00						
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.41	0.0262	64.66
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00
Unit Sale:	0.00	0.0000	0.00				
Transm Loss:	0.00			Rej. Fuel:		0.0000	
Dsm Load:	0.00			Dsm Reductn:	0.00		
				Emerg Purc:	0.00	0.0000	0.00
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.00	0.0000	0.00
				Lvl Cost:		0.0000	
Total:	632.81	0.0000	0.00	Total:	632.80	45.5505	71.98
				System Net:		45.5505	71.98
				LOLH(hr):	0.03		

PPC Proprietary Program Licensed to HECO Till 12/2099
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Year: 2009 Month: Mar

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M$	Fuel Cst M$	O&M Cst M$	Tot Cst $/MWh
1 Kahe	58.7	264.1172	2675.4	1.	0.0000	23.8503	0.0000	90.30
2 Waiau	21.9	77.0158	869.5	66.	0.0000	7.7957	0.0000	101.22
3 Kalaeloa	84.9	131.3805	1141.4	18.	0.0000	9.5552	0.0000	72.73
4 AES	92.0	123.2497	2143.8	0.	0.0000	3.5446	0.0000	28.76
5 HPOWER	88.7	30.3598	255.7	1.	0.0000	0.0000	0.0000	0.00
6 Honolulu	7.6	6.0857	79.5	30.	0.0000	0.7489	0.0000	123.05
8 CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9 DG Sub	0.9	0.1891	2.0	10.	0.0000	0.0296	0.0000	156.74

Year: 2009 Month: Mar

Monthly Fuel & Var O&M Cost by Subperiod (M$)

Off Peak	Shoulder Peak	Priority Peak	Total
14.979564	21.330616	9.214026	45.524204

Year: 2009 Month: Apr

Station Summary

	Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup Cst M$	Fuel Cst M$	VO&M Cst M$	FO&M Cst M$	Oper Cst $/MWh	Tot Cst $/MWh	Ave Hrt Btu/kWh
1	Honolu 8	53.4	1	292.8	17.94	6.900	87.5	25.	0.	0.0000	0.8236	0.0000	0.0000	112.97	119.35	12676.
2	Honolu 9	54.4	1	155.3	10.43	4.089	53.3	17.	0.	0.0000	0.5016	0.0000	0.0000	115.28	122.68	13030.
3	Waiau 3	46.6	1	158.1	14.92	5.010	66.8	17.	0.	0.0000	0.5956	0.0000	0.0000	108.54	118.89	13337.
4	Waiau 4	46.6	1	235.1	16.32	5.478	74.2	22.	0.	0.0000	0.6617	0.0000	0.0000	108.77	120.80	13550.
5	Waiau 5	54.5	1	421.6	26.01	10.211	131.1	28.	0.	0.0000	1.1686	0.0000	0.0000	107.78	114.45	12838.
6	Waiau 6	53.5	1	292.8	18.43	7.103	92.6	21.	0.	0.0000	0.8251	0.0000	0.0000	108.75	116.16	13031.
7	Waiau 7	82.9	1	673.7	51.00	30.454	331.5	0.	0.	0.0000	2.9550	0.0000	0.0000	96.68	97.03	10884.
8	Waiau 8	86.1	1	673.4	66.91	41.499	432.2	0.	0.	0.0000	3.8533	0.0000	0.0000	92.56	92.85	10416.
9	Waiau 9	52.9	1	38.6	1.09	0.416	11.4	7.	0.	0.0000	0.1669	0.0000	0.0000	398.33	401.21	27278.
10	Waiau 10	49.9	1	71.5	1.58	0.566	18.2	13.	0.	0.0000	0.2681	0.0000	0.0000	469.76	473.44	32189.
11	Kahe 1	82.1	1	697.0	60.33	35.684	369.1	0.	0.	0.0000	3.2906	0.0000	0.0000	92.06	92.22	10344.
12	Kahe 2	82.1	1	466.3	44.28	26.188	266.0	0.	0.	0.0000	2.3710	0.0000	0.0000	90.38	90.54	10156.
13	Kahe 3	86.1	1	673.7	77.09	47.814	470.2	0.	0.	0.0000	4.1915	0.0000	0.0000	87.46	87.66	9834.
14	Kahe 4	85.3	1	605.3	67.74	41.623	425.9	1.	0.	0.0000	3.7968	0.0000	0.0000	89.90	91.22	10232.
15	Kahe 5	134.3	1	686.9	81.97	79.306	777.2	0.	0.	0.0000	6.9281	0.0000	0.0000	87.27	87.36	9800.
16	Kahe 6	134.4	1	697.4	64.19	62.150	637.9	0.	0.	0.0000	5.6863	0.0000	0.0000	91.33	91.49	10263.
17	Kala CC	90.0	1	83.2	11.02	7.146	62.1	1.	0.	0.0000	0.5202	0.0000	0.0000	72.80	72.80	8696.
18	Kala CC	90.0	1	531.1	72.90	47.263	406.3	2.	0.	0.0000	3.4015	0.0000	0.0000	71.97	71.97	8597.
19	AES	180.0	1	712.6	98.91	128.261	2222.4	0.	0.	0.0000	3.6745	0.0000	0.0000	28.65	28.65	17327.
20	HPOWER	46.0	1	636.5	88.35	29.278	246.6	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	8422.
21	Kala CC	28.0	1	82.3	9.09	1.834	15.8	1.	0.	0.0000	0.1323	0.0000	0.0000	72.14	72.14	8618.
22	CIP1	0.0	0	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.
23	DG Sub1	9.8	1	47.0	3.36	0.239	2.5	8.	0.	0.0000	0.0374	0.0000	0.0000	156.74	156.74	10409.
24	DG Sub2	9.8	1	44.3	3.16	0.224	2.3	8.	0.	0.0000	0.0351	0.0000	0.0000	156.74	156.74	10409.
25	DG Sub3	9.8	1	47.4	3.50	0.248	2.6	8.	0.	0.0000	0.0388	0.0000	0.0000	156.74	156.74	10409.
	System					618.984	7206.	181.	0.	0.0000	45.9236	0.0000	0.0000	73.50	74.19	11641.

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Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M$	CAP Cost M$	Total Cost M$	Ave Cost $/MWh
1	Non-Firm	CONSTANT PURC	0.392	0.0254	0.0000	0.0254	64.66

Year: 2009 Month: Apr

Fuel Type Summary

	Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
	Spot:								
1	WLSFO	99.755	182.002	Bbl	1128.4	10.0593	100.84	11312.	891.46
2	KLSFO	292.765	475.194	Bbl	2946.2	26.2643	89.71	10063.	891.46
3	HLSFO	10.989	22.700	Bbl	140.7	1.3252	120.59	12807.	941.57
4	DG SUB	0.710	1.261	Bbl	7.4	0.1113	156.74	10409.	1505.81
5	WDIESEL	0.982	5.047	Bbl	29.6	0.4350	442.84	30109.	1470.79
6		0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7	AES	128.261	2222.392	Bbl	2222.4	3.6745	28.65	17327.	165.34
8	KALAELOA	56.244	80.712	Bbl	484.3	4.0540	72.08	8610.	837.13
9	BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10	REFUSE	29.278	39.771	Bbl	246.6	0.0000	0.00	8422.	0.00
11		0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12	CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

	Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1	LSFO	403.509	679.896	Bbl	4215.4	37.6488	93.30	10447.	893.1
2	DIESEL	0.982	5.047	Bbl	29.6	0.4350	442.84	30109.	1470.8
4	AES	128.261	2222.392	Bbl	2222.4	3.6745	28.65	17327.	165.3
5	KALAELOA	56.244	80.712	Bbl	484.3	4.0540	72.08	8610.	837.1
6	BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7	REFUSE	29.278	39.771	Bbl	246.6	0.0000	0.00	8422.	0.0
9	DG SUB	0.710	1.261	Bbl	7.4	0.1113	156.74	10409.	1505.8

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Year: 2009 Month: Apr

System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	619.47			Therml Gen:	618.98	45.9236	74.19
				Hydro Gen:	0.00	0.0000	0.00
P-S Pumping:	0.00			P-S Gen:	0.00	0.0000	0.00
P-S Payback:	0.00						
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.39	0.0254	64.66
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00
Unit Sale:	0.00	0.0000	0.00				
Transm Loss:	0.00			Rej. Fuel:		0.0000	
Dsm Load:	0.00			Dsm Reductn:	0.00		
				Emerg Purc:	0.00	0.0000	0.00
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.06	0.0059	100.00
				Lvl Cost:		0.0000	
Total:	619.47	0.0000	0.00	Total:	619.43	45.9549	74.19
				System Net:		45.9549	74.19
				LOLH(hr):	1.06		

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Plant Summary

	Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M$	Fuel Cst M$	O&M Cst M$	Tot Cst $/MWh
1	Kahe	67.3	292.7651	2946.2	2.	0.0000	26.2643	0.0000	89.71
2	Waiau	29.6	100.7372	1158.0	109.	0.0000	10.4943	0.0000	104.18
3	Kalaeloa	37.6	56.2436	484.3	4.	0.0000	4.0540	0.0000	72.08
4	AES	99.0	128.2608	2222.4	0.	0.0000	3.6745	0.0000	28.65
5	HPOWER	88.4	29.2779	246.6	0.	0.0000	0.0000	0.0000	0.00
6	Honolulu	14.2	10.9890	140.7	42.	0.0000	1.3252	0.0000	120.59
8	CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9	DG Sub	3.3	0.7102	7.4	25.	0.0000	0.1113	0.0000	156.74

Year: 2009 Month: Apr

Monthly Fuel & Var O&M Cost by Subperiod (M$)

Off Peak	Shoulder Peak	Priority Peak	Total
14.497980	22.032623	9.392873	45.923477

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Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup Cst M$	Fuel Cst M$	VO&M Cst M$	FO&M Cst M$	Oper Cst $/MWh	Tot Cst $/MWh	Ave Hrt Btu/kWh
1 Honolu 8	53.4	1	320.7	18.62	7.403	94.1	27.	0.	0.0000	0.8862	0.0000	0.0000	113.22	119.71	12714.
2 Honolu 9	54.4	1	140.4	8.93	3.616	47.6	17.	0.	0.0000	0.4485	0.0000	0.0000	115.65	124.04	13173.
3 Waiau 3	46.6	1	156.2	14.20	4.926	66.8	20.	0.	0.0000	0.5959	0.0000	0.0000	108.59	120.98	13571.
4 Waiau 4	46.6	1	247.9	16.53	5.733	78.2	24.	0.	0.0000	0.6971	0.0000	0.0000	108.84	121.61	13642.
5 Waiau 5	54.5	1	485.5	28.41	11.528	147.5	28.	0.	0.0000	1.3147	0.0000	0.0000	108.05	114.04	12793.
6 Waiau 6	*53.5*	*1*	*426.4*	*25.34*	*10.092*	*131.8*	*30.*	*0.*	*0.0000*	*1.1746*	*0.0000*	*0.0000*	*109.06*	*116.39*	*13056.*
7 Waiau 7	82.9	1	696.2	50.72	31.299	340.6	0.	0.	0.0000	3.0360	0.0000	0.0000	96.64	97.00	10881.
8 Waiau 8	86.1	1	692.4	67.25	43.100	448.1	0.	0.	0.0000	3.9950	0.0000	0.0000	92.46	92.69	10398.
9 Waiau 9	52.9	1	18.8	0.49	0.194	5.4	3.	0.	0.0000	0.0801	0.0000	0.0000	410.85	413.68	28126.
10 Waiau 10	49.9	1	55.5	1.22	0.453	14.3	10.	0.	0.0000	0.2099	0.0000	0.0000	459.61	463.15	31489.
11 Kahe 1	82.1	1	724.3	61.05	37.314	385.7	0.	0.	0.0000	3.4379	0.0000	0.0000	91.98	92.13	10335.
12 Kahe 2	82.1	1	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.
13 Kahe 3	86.1	1	700.6	78.87	50.550	496.8	0.	0.	0.0000	4.4289	0.0000	0.0000	87.37	87.61	9828.
14 Kahe 4	85.3	1	699.4	75.94	48.221	487.4	0.	0.	0.0000	4.3453	0.0000	0.0000	89.88	90.11	10108.
15 Kahe 5	134.3	1	716.2	83.21	83.192	815.0	0.	0.	0.0000	7.2653	0.0000	0.0000	87.24	87.33	9796.
16 Kahe 6	134.4	1	721.0	64.37	64.406	660.3	0.	0.	0.0000	5.8864	0.0000	0.0000	91.27	91.40	10252.
17 Kala CC	90.0	1	401.3	53.87	36.088	309.2	7.	0.	0.0000	2.5883	0.0000	0.0000	71.72	71.72	8568.
18 Kala CC	90.0	1	711.5	95.42	63.930	547.9	2.	0.	0.0000	4.5864	0.0000	0.0000	71.74	71.74	8570.
19 AES	180.0	1	731.8	98.30	131.717	2282.3	0.	0.	0.0000	3.7735	0.0000	0.0000	28.65	28.65	17327.
20 HPOWER	46.0	1	343.2	33.21	11.371	96.6	1.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	8492.
21 Kala CC	28.0	1	401.5	50.93	10.616	91.5	7.	0.	0.0000	0.7659	0.0000	0.0000	72.14	72.14	8618.
22 CIP1	0.0	0	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.
23 DG Sub1	9.8	1	37.1	2.62	0.192	2.0	7.	0.	0.0000	0.0301	0.0000	0.0000	156.74	156.74	10409.
24 DG Sub2	9.8	1	34.7	2.40	0.176	1.8	7.	0.	0.0000	0.0276	0.0000	0.0000	156.74	156.74	10409.
25 DG Sub3	9.8	1	26.8	1.89	0.139	1.4	6.	0.	0.0000	0.0217	0.0000	0.0000	156.74	156.74	10409.
System					656.254	7552.	199.	0.	0.0000	49.5955	0.0000	0.0000	74.93	75.57	11508.

Year: 2009 Month: May

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M$	CAP Cost M$	Total Cost M$	Ave Cost $/MWh
1	Non-Firm	CONSTANT PURC	0.405	0.0262	0.0000	0.0262	64.66

Year: 2009 Month: May

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	106.678	195.645	Bbl	1213.0	10.8134	101.37	11371.	891.46
2 KLSFO	283.682	458.903	Bbl	2845.2	25.3638	89.41	10030.	891.46
3 HLSFO	11.019	22.864	Bbl	141.8	1.3347	121.13	12865.	941.57
4 DG SUB	0.507	0.900	Bbl	5.3	0.0794	156.74	10409.	1505.81
5 WDIESEL	0.647	3.365	Bbl	19.7	0.2900	448.33	30482.	1470.79
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	131.717	2282.276	Bbl	2282.3	3.7735	28.65	17327.	165.34
8 KALAELOA	110.634	158.091	Bbl	948.5	7.9406	71.77	8574.	837.13
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	11.371	15.575	Bbl	96.6	0.0000	0.00	8492.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	401.379	677.411	Bbl	4199.9	37.5119	93.46	10464.	893.2
2 DIESEL	0.647	3.365	Bbl	19.7	0.2900	448.33	30482.	1470.8
4 AES	131.717	2282.276	Bbl	2282.3	3.7735	28.65	17327.	165.3
5 KALAELOA	110.634	158.091	Bbl	948.5	7.9406	71.77	8574.	837.1
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	11.371	15.575	Bbl	96.6	0.0000	0.00	8492.	0.0
9 DG SUB	0.507	0.900	Bbl	5.3	0.0794	156.74	10409.	1505.8

PPC Proprietary Program Licensed to HECO Till 12/2099
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Year: 2009 Month: May

System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	656.67			Therml Gen:	656.25	49.5955	75.57
				Hydro Gen:	0.00	0.0000	0.00
P-S Pumping:	0.00			P-S Gen:	0.00	0.0000	0.00
P-S Payback:	0.00						
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.41	0.0262	64.66
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00
Unit Sale:	0.00	0.0000	0.00				
Transm Loss:	0.00			Rej. Fuel:		0.0000	
Dsm Load:	0.00			Dsm Reductn:	0.00		
				Emerg Purc:	0.00	0.0000	0.00
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.01	0.0012	100.00
				Lvl Cost:		0.0000	
Total:	656.67	0.0000	0.00	Total:	656.67	49.6229	75.57
				System Net:		49.6229	75.57
				LOLH(hr):	0.37		

Year: 2009 Month: May

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M$	Fuel Cst M$	O&M Cst M$	Tot Cst $/MWh
1 Kahe	63.1	283.6825	2845.2	1.	0.0000	25.3638	0.0000	89.41
2 Waiau	30.5	107.3244	1232.7	116.	0.0000	11.1034	0.0000	103.46
3 Kalaeloa	71.5	110.6339	948.5	16.	0.0000	7.9406	0.0000	71.77
4 AES	98.4	131.7169	2282.3	0.	0.0000	3.7735	0.0000	28.65
5 HPOWER	33.2	11.3712	96.6	1.	0.0000	0.0000	0.0000	0.00
6 Honolulu	13.7	11.0189	141.8	44.	0.0000	1.3347	0.0000	121.13
8 CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9 DG Sub	2.3	0.5066	5.3	21.	0.0000	0.0794	0.0000	156.74

Year: 2009 Month: May

Monthly Fuel & Var O&M Cost by Subperiod (M$)

Off Peak	Shoulder Peak	Priority Peak	Total
16.042828	23.704836	9.848032	49.595695

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Year: 2009 Month: Jun

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup Cst M$	Fuel Cst M$	VO&M Cst M$	FO&M Cst M$	Oper Cst $/MWh	Tot Cst $/MWh	Ave Hrt Btu/kWh
1 Honolu 8	53.4	1	245.0	14.47	5.566	71.3	22.	0.	0.0000	0.6710	0.0000	0.0000	113.41	120.55	12803.
2 Honolu 9	54.4	1	99.3	6.23	2.440	32.4	12.	0.	0.0000	0.3048	0.0000	0.0000	116.47	124.90	13265.
3 Waiau 3	46.6	1	111.9	10.35	3.476	46.8	13.	0.	0.0000	0.4176	0.0000	0.0000	108.75	120.13	13475.
4 Waiau 4	46.6	1	64.0	4.30	1.445	20.1	7.	0.	0.0000	0.1792	0.0000	0.0000	109.02	124.01	13911.
5 Waiau 5	54.5	1	428.5	25.28	9.927	128.6	29.	0.	0.0000	1.1463	0.0000	0.0000	108.34	115.48	12954.
6 Waiau 6	53.5	1	341.8	20.53	7.911	104.8	28.	0.	0.0000	0.9344	0.0000	0.0000	109.33	118.11	13249.
7 Waiau 7	82.9	1	678.0	49.37	29.484	321.9	0.	0.	0.0000	2.8695	0.0000	0.0000	96.90	97.32	10917.
8 Waiau 8	86.1	1	680.9	63.26	39.236	410.3	0.	0.	0.0000	3.6577	0.0000	0.0000	92.89	93.22	10457.
9 Waiau 9	52.9	1	18.5	0.35	0.134	4.8	3.	0.	0.0000	0.0709	0.0000	0.0000	526.95	531.08	36108.
10 Waiau 10	49.9	1	34.6	0.65	0.233	8.5	6.	0.	0.0000	0.1244	0.0000	0.0000	529.40	533.25	36256.
11 Kahe 1	82.1	1	697.2	56.92	33.667	349.6	0.	0.	0.0000	3.1164	0.0000	0.0000	92.38	92.57	10384.
12 Kahe 2	82.1	1	159.6	13.54	8.007	86.8	1.	0.	0.0000	0.7736	0.0000	0.0000	91.00	96.62	10838.
13 Kahe 3	86.1	1	670.8	74.97	46.500	458.2	0.	0.	0.0000	4.0845	0.0000	0.0000	87.57	87.84	9853.
14 Kahe 4	85.3	1	675.1	72.17	44.348	450.2	0.	0.	0.0000	4.0137	0.0000	0.0000	90.20	90.50	10152.
15 Kahe 5	134.3	1	687.1	80.24	77.629	762.0	0.	0.	0.0000	6.7929	0.0000	0.0000	87.40	87.50	9816.
16 Kahe 6	134.4	1	701.0	59.88	57.979	597.9	0.	0.	0.0000	5.3302	0.0000	0.0000	91.69	91.93	10313.
17 Kala CC	90.0	1	613.4	84.67	54.893	471.0	8.	0.	0.0000	3.9431	0.0000	0.0000	71.83	71.83	8581.
18 Kala CC	90.0	1	709.9	97.32	63.100	542.6	0.	0.	0.0000	4.5425	0.0000	0.0000	71.99	71.99	8599.
19 AES	180.0	1	707.3	98.18	127.310	2205.9	0.	0.	0.0000	3.6473	0.0000	0.0000	28.65	28.65	17327.
20 HPOWER	46.0	1	640.3	85.89	28.461	239.9	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	8428.
21 Kala CC	28.0	1	612.5	76.87	15.504	133.6	8.	0.	0.0000	1.1185	0.0000	0.0000	72.14	72.14	8618.
22 CIP1	0.0	0	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.
23 DG Sub1	9.8	1	21.4	1.53	0.108	1.1	5.	0.	0.0000	0.0170	0.0000	0.0000	156.74	156.74	10409.
24 DG Sub2	9.8	1	18.5	1.31	0.093	1.0	4.	0.	0.0000	0.0146	0.0000	0.0000	156.74	156.74	10409.
25 DG Sub3	9.8	1	15.6	1.12	0.080	0.8	4.	0.	0.0000	0.0125	0.0000	0.0000	156.74	156.74	10409.
System					657.532	7450.	152.	0.	0.0000	47.7825	0.0000	0.0000	72.08	72.67	11330.

Year: 2009 Month: Jun

Transaction Summary

ID	Transaction	Type	Energy GWh	Engy Cost M$	CAP Cost M$	Total Cost M$	Ave Cost $/MWh
1	Non-Firm	CONSTANT PURC	0.392	0.0254	0.0000	0.0254	64.66

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Fuel Type Summary

	Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
	Spot:								
1	WLSFO	91.480	166.538	Bbl	1032.5	9.2046	100.62	11287.	891.46
2	KLSFO	268.129	436.241	Bbl	2704.7	24.1113	89.92	10087.	891.46
3	HLSFO	8.007	16.716	Bbl	103.6	0.9758	121.88	12944.	941.57
4	DG SUB	0.281	0.499	Bbl	2.9	0.0440	156.74	10409.	1505.81
5	WDIESEL	0.367	2.267	Bbl	13.3	0.1954	532.46	36202.	1470.79
6		0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7	AES	127.310	2205.925	Bbl	2205.9	3.6473	28.65	17327.	165.34
8	KALAELOA	133.497	191.211	Bbl	1147.3	9.6041	71.94	8594.	837.13
9	BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10	REFUSE	28.461	38.690	Bbl	239.9	0.0000	0.00	8428.	0.00
11		0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12	CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

	Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1	LSFO	367.616	619.494	Bbl	3840.9	34.2917	93.28	10448.	892.8
2	DIESEL	0.367	2.267	Bbl	13.3	0.1954	532.46	36202.	1470.8
4	AES	127.310	2205.925	Bbl	2205.9	3.6473	28.65	17327.	165.3
5	KALAELOA	133.497	191.211	Bbl	1147.3	9.6041	71.94	8594.	837.1
6	BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7	REFUSE	28.461	38.690	Bbl	239.9	0.0000	0.00	8428.	0.0
9	DG SUB	0.281	0.499	Bbl	2.9	0.0440	156.74	10409.	1505.8

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Year: 2009 Month: Jun

System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	657.92			Therml Gen:	657.53	47.7825	72.67
				Hydro Gen:	0.00	0.0000	0.00
P-S Pumping:	0.00			P-S Gen:	0.00	0.0000	0.00
P-S Payback:	0.00						
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.39	0.0254	64.66
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00
Unit Sale:	0.00	0.0000	0.00				
Transm Loss:	0.00			Rej. Fuel:		0.0000	
Dsm Load:	0.00			Dsm Reductn:	0.00		
				Emerg Purc:	0.00	0.0000	0.00
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.00	0.0000	0.00
				Lvl Cost:		0.0000	
Total:	657.92	0.0000	0.00	Total:	657.92	47.8079	72.66
				System Net:		47.8079	72.66
				LOLH(hr):	0.00		

Year: 2009 Month: Jun

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M$	Fuel Cst M$	O&M Cst M$	Tot Cst $/MWh
1 Kahe	61.6	268.1293	2704.7	2.	0.0000	24.1113	0.0000	89.92
2 Waiau	27.0	91.8467	1045.8	87.	0.0000	9.4000	0.0000	102.34
3 Kalaeloa	89.1	133.4970	1147.3	16.	0.0000	9.6041	0.0000	71.94
4 AES	98.2	127.3104	2205.9	0.	0.0000	3.6473	0.0000	28.65
5 HPOWER	85.9	28.4609	239.9	0.	0.0000	0.0000	0.0000	0.00
6 Honolulu	10.3	8.0066	103.6	34.	0.0000	0.9758	0.0000	121.88
8 CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9 DG Sub	1.3	0.2809	2.9	13.	0.0000	0.0440	0.0000	156.74

Year: 2009 Month: Jun

Monthly Fuel & Var O&M Cost by Subperiod (M$)

Off Peak	Shoulder Peak	Priority Peak	Total
15.734797	22.739870	9.307893	47.782558

Year: 2009 Month: Jul

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup Cst M$	Fuel Cst M$	VO&M Cst M$	FO&M Cst M$	Oper Cst $/MWh	Tot Cst $/MWh	Ave Hrt Btu/kWh
1 Honolu 8	53.4	1	266.2	15.76	6.263	79.8	24.	0.	0.0000	0.7515	0.0000	0.0000	112.99	119.98	12742.
2 Honolu 9	54.4	1	24.2	1.52	0.615	8.2	3.	0.	0.0000	0.0768	0.0000	0.0000	115.89	124.88	13263.
3 Waiau 3	46.6	1	132.2	12.07	4.185	56.5	17.	0.	0.0000	0.5040	0.0000	0.0000	108.53	120.42	13509.
4 Waiau 4	46.6	1	212.5	14.21	4.931	67.7	22.	0.	0.0000	0.6039	0.0000	0.0000	108.80	122.48	13739.
5 Waiau 5	54.5	1	425.6	25.17	10.213	131.5	28.	0.	0.0000	1.1725	0.0000	0.0000	107.93	114.81	12878.
6 Waiau 6	53.5	1	356.9	21.53	8.573	112.6	28.	0.	0.0000	1.0034	0.0000	0.0000	108.88	117.05	13130.
7 Waiau 7	82.9	1	696.2	48.76	30.092	329.2	0.	0.	0.0000	2.9346	0.0000	0.0000	97.10	97.52	10939.
8 Waiau 8	86.1	1	697.0	61.90	39.674	415.2	0.	0.	0.0000	3.7015	0.0000	0.0000	93.00	93.30	10466.
9 Waiau 9	52.9	1	44.1	1.09	0.431	12.6	9.	0.	0.0000	0.1848	0.0000	0.0000	425.78	429.04	29170.
10 Waiau 10	49.9	1	80.9	1.73	0.644	20.7	13.	0.	0.0000	0.3038	0.0000	0.0000	468.20	471.55	32061.
11 Kahe 1	82.1	1	94.1	6.81	4.160	43.4	0.	0.	0.0000	0.3870	0.0000	0.0000	93.04	93.04	10436.
12 Kahe 2	82.1	1	726.5	63.59	38.864	395.6	0.	0.	0.0000	3.5270	0.0000	0.0000	90.65	90.75	10180.
13 Kahe 3	86.1	1	696.7	74.15	47.525	468.4	0.	0.	0.0000	4.1752	0.0000	0.0000	87.63	87.85	9855.
14 Kahe 4	85.3	1	697.4	71.25	45.246	459.4	0.	0.	0.0000	4.0957	0.0000	0.0000	90.27	90.52	10154.
15 Kahe 5	134.3	1	717.1	80.24	80.224	787.5	0.	0.	0.0000	7.0205	0.0000	0.0000	87.45	87.51	9817.
16 Kahe 6	134.4	1	723.6	60.01	60.042	618.7	0.	0.	0.0000	5.5157	0.0000	0.0000	91.71	91.86	10305.
17 Kala CC	90.0	1	634.7	85.14	57.044	488.8	8.	0.	0.0000	4.0920	0.0000	0.0000	71.74	71.74	8569.
18 Kala CC	90.0	1	733.7	98.20	65.788	564.2	0.	0.	0.0000	4.7227	0.0000	0.0000	71.79	71.79	8575.
19 AES	180.0	1	733.2	98.49	131.976	2286.8	0.	0.	0.0000	3.7810	0.0000	0.0000	28.65	28.65	17327.
20 HPOWER	46.0	1	656.4	88.18	30.194	254.3	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	8422.
21 Kala CC	28.0	1	635.9	78.53	16.368	141.1	8.	0.	0.0000	1.1808	0.0000	0.0000	72.14	72.14	8618.
22 CIP1	0.0	0	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.
23 DG Sub1	9.8	1	50.2	3.62	0.265	2.8	11.	0.	0.0000	0.0415	0.0000	0.0000	156.74	156.74	10409.
24 DG Sub2	9.8	1	36.3	2.55	0.187	1.9	8.	0.	0.0000	0.0293	0.0000	0.0000	156.74	156.74	10409.
25 DG Sub3	9.8	1	40.0	2.89	0.212	2.2	9.	0.	0.0000	0.0332	0.0000	0.0000	156.74	156.74	10409.
System					683.716	7749.	192.	0.	0.0000	49.8386	0.0000	0.0000	72.35	72.89	11334.

Year: 2009 Month: Jul

Transaction Summary

ID	Transaction	Type		Energy GWh	Engy Cost M$	CAP Cost M$	Total Cost M$	Ave Cost $/MWh
1	Non-Firm	CONSTANT	PURC	0.405	0.0262	0.0000	0.0262	64.66
2	ArcherPV	HOURLY	PURC	0.031	0.0000	0.0000	0.0000	0.00

Year: 2009 Month: Jul

Fuel Type Summary

	Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
	Spot:								
1	WLSFO	97.668	179.481	Bbl	1112.8	9.9200	101.57	11394.	891.46
2	KLSFO	276.061	447.275	Bbl	2773.1	24.7212	89.55	10045.	891.46
3	HLSFO	6.878	14.188	Bbl	88.0	0.8282	120.41	12789.	941.57
4	DG SUB	0.664	1.179	Bbl	6.9	0.1041	156.74	10409.	1505.81
5	WDIESEL	1.075	5.669	Bbl	33.2	0.4886	454.52	30903.	1470.79
6		0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7	AES	131.976	2286.767	Bbl	2286.8	3.7810	28.65	17327.	165.34
8	KALAELOA	139.199	199.004	Bbl	1194.0	9.9956	71.81	8578.	837.13
9	BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10	REFUSE	30.194	41.016	Bbl	254.3	0.0000	0.00	8422.	0.00
11		0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12	CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

	Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1	LSFO	380.607	640.944	Bbl	3973.9	35.4694	93.19	10441.	892.6
2	DIESEL	1.075	5.669	Bbl	33.2	0.4886	454.52	30903.	1470.8
4	AES	131.976	2286.767	Bbl	2286.8	3.7810	28.65	17327.	165.3
5	KALAELOA	139.199	199.004	Bbl	1194.0	9.9956	71.81	8578.	837.1
6	BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7	REFUSE	30.194	41.016	Bbl	254.3	0.0000	0.00	8422.	0.0
9	DG SUB	0.664	1.179	Bbl	6.9	0.1041	156.74	10409.	1505.8

Year: 2009 Month: Jul

System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	684.24			Therml Gen:	683.72	49.8386	72.89
				Hydro Gen:	0.00	0.0000	0.00
P-S Pumping:	0.00			P-S Gen:	0.00	0.0000	0.00
P-S Payback:	0.00						
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.44	0.0262	60.09
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00
Unit Sale:	0.00	0.0000	0.00				
Transm Loss:	0.00			Rej. Fuel:		0.0000	
Dsm Load:	0.00			Dsm Reductn:	0.00		
				Emerg Purc:	0.00	0.0000	0.00
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.06	0.0063	100.00
				Lvl Cost:		0.0000	
Total:	684.24	0.0000	0.00	Total:	684.21	49.8711	72.89
				System Net:		49.8711	72.89
				LOLH(hr):	1.00		

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Per CA DT, Update Fuel prices, Hoku July install, CT-1 low cap cycler

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Year: 2009 Month: Jul

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M$	Fuel Cst M$	O&M Cst M$	Tot Cst $/MWh
1 Kahe	61.4	276.0606	2773.1	1.	0.0000	24.7212	0.0000	89.55
2 Waiau	28.1	98.7430	1146.0	118.	0.0000	10.4086	0.0000	105.41
3 Kalaeloa	89.9	139.1992	1194.0	16.	0.0000	9.9955	0.0000	71.81
4 AES	98.5	131.9761	2286.8	0.	0.0000	3.7810	0.0000	28.65
5 HPOWER	88.2	30.1942	254.3	0.	0.0000	0.0000	0.0000	0.00
6 Honolulu	8.6	6.8783	88.0	28.	0.0000	0.8282	0.0000	120.41
8 CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9 DG Sub	3.0	0.6640	6.9	28.	0.0000	0.1041	0.0000	156.74

Year: 2009 Month: Jul

Monthly Fuel & Var O&M Cost by Subperiod (M$)

Off Peak	Shoulder Peak	Priority Peak	Total
16.070026	23.922623	9.846045	49.838696

PPC Proprietary Program Licensed to HECO Till 12/2099
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Year: 2009 Month: Aug

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup Cst M$	Fuel Cst M$	VO&M Cst M$	FO&M Cst M$	Oper Cst $/MWh	Tot Cst $/MWh	Ave Hrt Btu/kWh
1 Honolu 8	53.4	1	333.0	19.59	7.786	98.7	27.	0.	0.0000	0.9289	0.0000	0.0000	113.06	119.31	12672.
2 Honolu 9	54.4	1	197.2	12.43	5.035	66.6	25.	0.	0.0000	0.6276	0.0000	0.0000	115.76	124.63	13237.
3 Waiau 3	46.6	1	27.0	2.40	0.833	11.5	4.	0.	0.0000	0.1029	0.0000	0.0000	108.79	123.54	13858.
4 Waiau 4	46.6	1	258.8	17.30	6.000	81.9	26.	0.	0.0000	0.7305	0.0000	0.0000	108.77	121.74	13657.
5 Waiau 5	54.5	1	481.6	28.68	11.638	148.2	27.	0.	0.0000	1.3216	0.0000	0.0000	107.79	113.56	12739.
6 Waiau 6	53.5	1	426.0	25.56	10.181	132.5	30.	0.	0.0000	1.1816	0.0000	0.0000	108.87	116.05	13018.
7 Waiau 7	82.9	1	694.3	51.21	31.605	343.9	0.	0.	0.0000	3.0656	0.0000	0.0000	96.58	97.00	10881.
8 Waiau 8	86.1	1	690.0	66.04	42.330	440.9	0.	0.	0.0000	3.9309	0.0000	0.0000	92.52	92.86	10417.
9 Waiau 9	52.9	1	11.5	0.32	0.126	3.4	2.	0.	0.0000	0.0500	0.0000	0.0000	392.82	395.91	26918.
10 Waiau 10	49.9	1	28.3	0.67	0.247	7.4	5.	0.	0.0000	0.1088	0.0000	0.0000	436.62	440.15	29926.
11 Kahe 1	82.1	1	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.
12 Kahe 2	82.1	1	724.1	68.47	41.844	424.1	0.	0.	0.0000	3.7807	0.0000	0.0000	90.20	90.35	10135.
13 Kahe 3	86.1	1	694.8	79.05	50.664	498.1	0.	0.	0.0000	4.4402	0.0000	0.0000	87.34	87.64	9831.
14 Kahe 4	85.3	1	692.9	74.98	47.613	481.5	0.	0.	0.0000	4.2924	0.0000	0.0000	89.88	90.15	10113.
15 Kahe 5	134.3	1	712.1	84.21	84.188	824.1	0.	0.	0.0000	7.3467	0.0000	0.0000	87.16	87.27	9789.
16 Kahe 6	134.4	1	715.9	63.37	63.403	650.9	0.	0.	0.0000	5.8023	0.0000	0.0000	91.28	91.51	10266.
17 Kala CC	90.0	1	620.3	83.32	55.825	478.2	10.	0.	0.0000	4.0030	0.0000	0.0000	71.71	71.71	8566.
18 Kala CC	90.0	1	735.6	98.82	66.204	567.1	0.	0.	0.0000	4.7472	0.0000	0.0000	71.71	71.71	8566.
19 AES	180.0	1	735.4	98.78	132.365	2293.5	0.	0.	0.0000	3.7921	0.0000	0.0000	28.65	28.65	17327.
20 HPOWER	46.0	1	660.2	88.69	30.371	255.8	1.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	8422.
21 Kala CC	28.0	1	619.8	82.17	17.128	147.6	10.	0.	0.0000	1.2356	0.0000	0.0000	72.14	72.14	8618.
22 CIP1	113.0	1	142.9	6 77	5.696	98.2	19.	0.	0.0000	1.4801	0.0000	0.0000	253.63	259.87	17246.
23 DG Sub1	9.8	1	17.7	1.19	0.087	0.9	4.	0.	0.0000	0.0136	0.0000	0.0000	156.74	156.74	10409.
24 DG Sub2	9.8	1	18.2	1.29	0.094	1.0	3.	0.	0.0000	0.0148	0.0000	0.0000	156.74	156.74	10409.
25 DG Sub3	9.8	1	14.5	0.99	0.072	0.8	3.	0.	0.0000	0.0113	0.0000	0.0000	156.74	156.74	10409.
System					711.334	8057.	198.	0.	0.0000	53.0082	0.0000	0.0000	73.89	74.52	11326.

Year: 2009 Month: Aug

Transaction Summary

ID	Transaction	Type		Energy GWh	Engy Cost M$	CAP Cost M$	Total Cost M$	Ave Cost $/MWh
1	Non-Firm	CONSTANT	PURC	0.405	0.0262	0.0000	0.0262	64.66
2	ArcherPV	HOURLY	PURC	0.030	0.0000	0.0000	0.0000	0.00

Year: 2009 Month: Aug

Fuel Type Summary

	Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
	Spot:								
1	WLSFO	102.588	186.953	Bbl	1159.1	10.3330	100.72	11299.	891.46
2	KLSFO	287.711	464.301	Bbl	2878.7	25.6622	89.19	10005.	891.46
3	HLSFO	12.821	26.663	Bbl	165.3	1.5565	121.40	12894.	941.57
4	DG SUB	0.253	0.450	Bbl	2.6	0.0397	156.74	10409.	1505.81
5	WDIESEL	0.373	1.842	Bbl	10.8	0.1588	425.19	28909.	1470.79
6		0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7	AES	132.365	2293.504	Bbl	2293.5	3.7921	28.65	17327.	165.34
8	KALAELOA	139.156	198.809	Bbl	1192.9	9.9858	71.76	8572.	837.13
9	BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10	REFUSE	30.371	41.256	Bbl	255.8	0.0000	0.00	8422.	0.00
11		0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12	CDIESEL	5.696	16.762	Bbl	98.2	1.4801	259.87	17246.	1506.83

Fuel Class Summary

	Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1	LSFO	403.120	677.917	Bbl	4203.1	37.5517	93.15	10426.	893.4
2	DIESEL	6.069	18.604	Bbl	109.0	1.6389	270.04	17963.	1503.3
4	AES	132.365	2293.504	Bbl	2293.5	3.7921	28.65	17327.	165.3
5	KALAELOA	139.156	198.809	Bbl	1192.9	9.9858	71.76	8572.	837.1
6	BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7	REFUSE	30.371	41.256	Bbl	255.8	0.0000	0.00	8422.	0.0
9	DG SUB	0.253	0.450	Bbl	2.6	0.0397	156.74	10409.	1505.8

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Year: 2009 Month: Aug

System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	711.78			Therml Gen:	711.33	53.0082	74.52
				Hydro Gen:	0.00	0.0000	0.00
P-S Pumping:	0.00			P-S Gen:	0.00	0.0000	0.00
P-S Payback:	0.00						
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.44	0.0262	60.23
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00
Unit Sale:	0.00	0.0000	0.00				
Transm Loss:	0.00			Rej. Fuel:		0.0000	
Dsm Load:	0.00			Dsm Reductn:	0.00		
				Emerg Purc:	0.00	0.0000	0.00
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.00	0.0004	100.00
				Lvl Cost:		0.0000	
Total:	711.78	0.0000	0.00	Total:	711.77	53.0348	74.51
				System Net:		53.0348	74.51
				LOLH(hr):	0.24		

Year: 2009 Month: Aug

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M$	Fuel Cst M$	O&M Cst M$	Tot Cst $/MWh
1 Kahe	64.0	287.7113	2878.7	1.	0.0000	25.6622	0.0000	89.19
2 Waiau	29.3	102.9610	1169.9	95.	0.0000	10.4918	0.0000	101.90
3 Kalaeloa	89.9	139.1564	1192.9	20.	0.0000	9.9858	0.0000	71.76
4 AES	98.8	132.3649	2293.5	0.	0.0000	3.7921	0.0000	28.65
5 HPOWER	88.7	30.3708	255.8	1.	0.0000	0.0000	0.0000	0.00
6 Honolulu	16.0	12.8208	165.3	52.	0.0000	1.5565	0.0000	121.40
8 CIP	6.8	5.6957	98.2	19.	0.0000	1.4801	0.0000	259.87
9 DG Sub	1.2	0.2533	2.6	10.	0.0000	0.0397	0.0000	156.74

Year: 2009 Month: Aug

Monthly Fuel & Var O&M Cost by Subperiod (M$)

Off Peak	Shoulder Peak	Priority Peak	Total
17.071968	25.316055	10.620321	53.008347

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Year: 2009 Month: Sep

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup Cst M$	Fuel Cst M$	VO&M Cst M$	FO&M Cst M$	Oper Cst $/MWh	Tot Cst $/MWh	Ave Hrt Btu/kWh
1 Honolu 8	53.4	1	328.5	19.50	7.500	95.5	27.	0.	0.0000	0.8991	0.0000	0.0000	113.36	119.88	12732.
2 Honolu 9	54.4	1	149.9	9.25	3.624	48.5	19.	0.	0.0000	0.4565	0.0000	0.0000	116.75	125.94	13376.
3 Waiau 3	46.6	1	167.9	15.61	5.239	70.7	20.	0.	0.0000	0.6300	0.0000	0.0000	108.69	120.25	13489.
4 Waiau 4	46.6	1	267.6	18.11	6.080	83.2	26.	0.	0.0000	0.7415	0.0000	0.0000	108.97	121.95	13680.
5 Waiau 5	54.5	1	251.6	14.93	5.860	75.2	15.	0.	0.0000	0.6707	0.0000	0.0000	108.25	114.45	12838.
6 Waiau 6	53.5	1	424.0	25.78	9.936	129.5	28.	0.	0.0000	1.1541	0.0000	0.0000	109.16	116.16	13030.
7 Waiau 7	82.9	1	675.4	50.89	30.394	330.5	0.	0.	0.0000	2.9466	0.0000	0.0000	96.57	96.94	10875.
8 Waiau 8	86.1	1	678.2	67.41	41.814	434.8	0.	0.	0.0000	3.8763	0.0000	0.0000	92.48	92.70	10399.
9 Waiau 9	52.9	1	10.1	0.20	0.076	2.6	3.	0.	0.0000	0.0389	0.0000	0.0000	507.25	512.65	34855.
10 Waiau 10	49.9	1	11.2	0.26	0.094	2.9	2.	0.	0.0000	0.0425	0.0000	0.0000	447.26	451.45	30695.
11 Kahe 1	82.1	1	560.4	48.00	28.386	298.3	1.	0.	0.0000	2.6597	0.0000	0.0000	92.03	93.69	10510.
12 Kahe 2	82.1	1	692.9	69.56	41.141	416.5	0.	0.	0.0000	3.7125	0.0000	0.0000	90.06	90.24	10123.
13 Kahe 3	86.1	1	363.4	41.84	25.949	255.2	0.	0.	0.0000	2.2751	0.0000	0.0000	87.45	87.68	9835.
14 Kahe 4	85.3	1	676.1	76.65	47.099	475.8	0.	0.	0.0000	4.2416	0.0000	0.0000	89.83	90.06	10102.
15 Kahe 5	134.3	1	690.5	84.03	81.293	795.8	0.	0.	0.0000	7.0943	0.0000	0.0000	87.19	87.27	9789.
16 Kahe 6	134.4	1	701.0	64.76	62.697	642.5	0.	0.	0.0000	5.7280	0.0000	0.0000	91.21	91.36	10248.
17 Kala CC	90.0	1	611.3	84.84	55.005	471.2	8.	0.	0.0000	3.9444	0.0000	0.0000	71.71	71.71	8566.
18 Kala CC	90.0	1	702.7	97.32	63.096	540.8	0.	0.	0.0000	4.5276	0.0000	0.0000	71.76	71.76	8572.
19 AES	180.0	1	705.4	97.91	126.965	2199.9	0.	0.	0.0000	3.6374	0.0000	0.0000	28.65	28.65	17327.
20 HPOWER	46.0	1	631.9	87.72	29.068	244.8	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	8422.
21 Kala CC	28.0	1	613.7	81.76	16.491	142.1	8.	0.	0.0000	1.1897	0.0000	0.0000	72.14	72.14	8618.
22 CIP1	113.0	1	105.5	5.12	4.168	72.6	17.	0.	0.0000	1.0938	0.0000	0.0000	254.63	262.40	17414.
23 DG Sub1	9.8	1	10.5	0.74	0.052	0.5	3.	0.	0.0000	0.0082	0.0000	0.0000	156.74	156.74	10409.
24 DG Sub2	9.8	1	8.6	0.61	0.043	0.4	2.	0.	0.0000	0.0067	0.0000	0.0000	156.74	156.74	10409.
25 DG Sub3	9.8	1	8.4	0.61	0.044	0.5	2.	0.	0.0000	0.0068	0.0000	0.0000	156.74	156.74	10409.
System					692.115	7830.	183.	0.	0.0000	51.5818	0.0000	0.0000	73.85	74.53	11314.

Year: 2009 Month: Sep

Transaction Summary

ID	Transaction	Type		Energy GWh	Engy Cost M$	CAP Cost M$	Total Cost M$	Ave Cost $/MWh
1	Non-Firm	CONSTANT	PURC	0.392	0.0254	0.0000	0.0254	64.66
2	ArcherPV	HOURLY	PURC	0.027	0.0000	0.0000	0.0000	0.00

Year: 2009 Month: Sep

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	99.323	181.273	Bbl	1123.9	10.0191	100.87	11316.	891.46
2 KLSFO	286.566	465.187	Bbl	2884.2	25.7111	89.72	10065.	891.46
3 HLSFO	11.124	23.220	Bbl	144.0	1.3555	121.85	12942.	941.57
4 DG SUB	0.139	0.247	Bbl	1.4	0.0218	156.74	10409.	1505.81
5 WDIESEL	0.170	0.945	Bbl	5.5	0.0814	478.76	32551.	1470.79
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	126.965	2199.937	Bbl	2199.9	3.6374	28.65	17327.	165.34
8 KALAELOA	134.592	192.357	Bbl	1154.1	9.6617	71.79	8575.	837.13
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	29.068	39.486	Bbl	244.8	0.0000	0.00	8422.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	4.168	12.387	Bbl	72.6	1.0938	262.40	17414.	1506.83

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	397.013	669.680	Bbl	4152.0	37.0858	93.41	10458.	893.2
2 DIESEL	4.338	13.332	Bbl	78.1	1.1752	270.89	18008.	1504.3
4 AES	126.965	2199.937	Bbl	2199.9	3.6374	28.65	17327.	165.3
5 KALAELOA	134.592	192.357	Bbl	1154.1	9.6617	71.79	8575.	837.1
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	29.068	39.486	Bbl	244.8	0.0000	0.00	8422.	0.0
9 DG SUB	0.139	0.247	Bbl	1.4	0.0218	156.74	10409.	1505.8

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System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	692.55			Therml Gen:	692.12	51.5818	74.53
				Hydro Gen:	0.00	0.0000	0.00
P-S Pumping:	0.00			P-S Gen:	0.00	0.0000	0.00
P-S Payback:	0.00						
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.42	0.0254	60.44
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00
Unit Sale:	0.00	0.0000	0.00				
Transm Loss:	0.00			Rej. Fuel:		0.0000	
Dsm Load:	0.00			Dsm Reductn:	0.00		
				Emerg Purc:	0.00	0.0000	0.00
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.00	0.0000	0.00
				Lvl Cost:		0.0000	
Total:	692.55	0.0000	0.00	Total:	692.53	51.6072	74.52
				System Net:		51.6072	74.52
				LOLH(hr):	0.00		

Year: 2009 Month: Sep

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M$	Fuel Cst M$	O&M Cst M$	Tot Cst $/MWh
1 Kahe	65.9	286.5661	2884.2	2.	0.0000	25.7111	0.0000	89.72
2 Waiau	29.2	99.4934	1129.4	95.	0.0000	10.1005	0.0000	101.52
3 Kalaeloa	89.9	134.5915	1154.1	16.	0.0000	9.6617	0.0000	71.79
4 AES	98.0	126.9648	2199.9	0.	0.0000	3.6374	0.0000	28.65
5 HPOWER	87.8	29.0681	244.8	0.	0.0000	0.0000	0.0000	0.00
6 Honolulu	14.3	11.1240	144.0	46.	0.0000	1.3555	0.0000	121.85
8 CIP	5.1	4.1684	72.6	17.	0.0000	1.0938	0.0000	262.40
9 DG Sub	0.7	0.1389	1.4	7.	0.0000	0.0218	0.0000	156.74

Year: 2009 Month: Sep

Monthly Fuel & Var O&M Cost by Subperiod (M$)

Off Peak	Shoulder Peak	Priority Peak	Total
16.603096	24.610458	10.368251	51.581806

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Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup Cst M$	Fuel Cst M$	VO&M Cst M$	FO&M Cst M$	Oper Cst $/MWh	Tot Cst $/MWh	Ave Hrt Btu/kWh
1 Honolu 8	53.4	1	247.2	14.25	5.665	72.4	22.	0.	0.0000	0.6817	0.0000	0.0000	113.31	120.34	12781.
2 Honolu 9	54.4	1	145.2	8.83	3.577	48.1	20.	0.	0.0000	0.4529	0.0000	0.0000	116.46	126.62	13448.
3 Waiau 3	46.6	1	151.8	13.64	4.733	64.5	20.	0.	0.0000	0.5753	0.0000	0.0000	108.72	121.56	13636.
4 Waiau 4	46.6	1	245.8	16.18	5.612	77.1	25.	0.	0.0000	0.6870	0.0000	0.0000	108.94	122.41	13732.
5 Waiau 5	54.5	1	454.3	26.37	10.699	137.8	29.	0.	0.0000	1.2282	0.0000	0.0000	108.14	114.79	12877.
6 Waiau 6	53.5	1	389.7	23.00	9.161	120.5	30.	0.	0.0000	1.0738	0.0000	0.0000	109.14	117.22	13149.
7 Waiau 7	82.9	1	691.9	49.91	30.800	335.3	0.	0.	0.0000	2.9890	0.0000	0.0000	96.69	97.04	10886.
8 Waiau 8	86.1	1	360.2	33.09	21.210	221.3	0.	0.	0.0000	1.9727	0.0000	0.0000	92.77	93.01	10433.
9 Waiau 9	52.9	1	10.7	0.24	0.094	2.9	3.	0.	0.0000	0.0432	0.0000	0.0000	453.45	457.98	31139.
10 Waiau 10	49.9	1	13.2	0.33	0.123	3.5	3.	0.	0.0000	0.0516	0.0000	0.0000	416.79	420.16	28567.
11 Kahe 1	82.1	1	719.8	59.17	36.163	374.4	0.	0.	0.0000	3.3373	0.0000	0.0000	92.11	92.28	10352.
12 Kahe 2	82.1	1	725.8	69.30	42.354	428.9	0.	0.	0.0000	3.8233	0.0000	0.0000	90.16	90.27	10126.
13 Kahe 3	86.1	1	540.7	59.95	38.425	382.5	1.	0.	0.0000	3.4096	0.0000	0.0000	87.47	88.73	9954.
14 Kahe 4	85.3	1	697.0	75.39	47.870	484.1	0.	0.	0.0000	4.3155	0.0000	0.0000	89.93	90.15	10113.
15 Kahe 5	134.3	1	715.4	83.02	83.002	813.2	0.	0.	0.0000	7.2494	0.0000	0.0000	87.27	87.34	9797.
16 Kahe 6	134.4	1	718.8	63.83	63.860	655.0	0.	0.	0.0000	5.8388	0.0000	0.0000	91.28	91.43	10256.
17 Kala CC	90.0	1	575.0	77.18	51.709	443.0	7.	0.	0.0000	3.7086	0.0000	0.0000	71.72	71.72	8567.
18 Kala CC	90.0	1	715.4	95.75	64.153	550.1	2.	0.	0.0000	4.6052	0.0000	0.0000	71.78	71.78	8575.
19 AES	180.0	1	732.5	98.40	131.847	2284.5	0.	0.	0.0000	3.7772	0.0000	0.0000	28.65	28.65	17327.
20 HPOWER	46.0	1	662.2	88.95	30.459	256.5	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	8422.
21 Kala CC	28.0	1	571.6	71.26	14.853	128.0	7.	0.	0.0000	1.0715	0.0000	0.0000	72.14	72.14	8618.
22 CIP1	113.0	1	88.5	4.24	3.563	61.7	16.	0.	0.0000	0.9303	0.0000	0.0000	252.34	261.09	17327.
23 DG Sub1	9.8	1	10.4	0.71	0.052	0.5	3.	0.	0.0000	0.0082	0.0000	0.0000	156.74	156.74	10409.
24 DG Sub2	9.8	1	9.2	0.63	0.046	0.5	2.	0.	0.0000	0.0073	0.0000	0.0000	156.74	156.74	10409.
25 DG Sub3	9.8	1	8.7	0.59	0.043	0.4	2.	0.	0.0000	0.0068	0.0000	0.0000	156.74	156.74	10409.
System					700.073	7947.	194.	0.	0.0000	51.8442	0.0000	0.0000	73.35	74.06	11351.

Year: 2009 Month: Oct

Transaction Summary

ID	Transaction	Type		Energy GWh	Engy Cost M$	CAP Cost M$	Total Cost M$	Ave Cost $/MWh
1	Non-Firm	CONSTANT	PURC	0.405	0.0262	0.0000	0.0262	64.66
2	ArcherPV	HOURLY	PURC	0.024	0.0000	0.0000	0.0000	0.00

Year: 2009 Month: Oct

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	82.215	154.258	Bbl	956.4	8.5260	103.70	11633.	891.46
2 KLSFO	311.674	506.125	Bbl	3138.0	27.9739	89.75	10068.	891.46
3 HLSFO	9.242	19.436	Bbl	120.5	1.1346	122.77	13039.	941.57
4 DG SUB	0.142	0.252	Bbl	1.5	0.0222	156.74	10409.	1505.81
5 WDIESEL	0.217	1.099	Bbl	6.4	0.0948	436.58	29684.	1470.79
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	131.847	2284.521	Bbl	2284.5	3.7772	28.65	17327.	165.34
8 KALAELOA	130.715	186.855	Bbl	1121.1	9.3854	71.80	8577.	837.13
9 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10 REFUSE	30.459	41.376	Bbl	256.5	0.0000	0.00	8422.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	3.563	10.535	Bbl	61.7	0.9303	261.09	17327.	1506.83

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	403.130	679.820	Bbl	4214.9	37.6344	93.36	10455.	892.9
2 DIESEL	3.780	11.635	Bbl	68.2	1.0250	271.16	18036.	1503.4
4 AES	131.847	2284.521	Bbl	2284.5	3.7772	28.65	17327.	165.3
5 KALAELOA	130.715	186.855	Bbl	1121.1	9.3854	71.80	8577.	837.1
6 BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7 REFUSE	30.459	41.376	Bbl	256.5	0.0000	0.00	8422.	0.0
9 DG SUB	0.142	0.252	Bbl	1.5	0.0222	156.74	10409.	1505.8

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System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	700.51			Therml Gen:	700.07	51.8442	74.06
				Hydro Gen:	0.00	0.0000	0.00
P-S Pumping:	0.00			P-S Gen:	0.00	0.0000	0.00
P-S Payback:	0.00						
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.43	0.0262	61.04
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00
Unit Sale:	0.00	0.0000	0.00				
Transm Loss:	0.00			Rej. Fuel:		0.0000	
Dsm Load:	0.00			Dsm Reductn:	0.00		
				Emerg Purc:	0.00	0.0000	0.00
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.00	0.0000	0.00
				Lvl Cost:		0.0000	
Total:	700.51	0.0000	0.00	Total:	700.50	51.8704	74.05
				System Net:		51.8704	74.05
				LOLH(hr):	0.04		

Year: 2009 Month: Oct

Plant Summary

	Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M$	Fuel Cst M$	O&M Cst M$	Tot Cst $/MWh
1	Kahe	69.3	311.6735	3138.0	2.	0.0000	27.9739	0.0000	89.75
2	Waiau	23.4	82.4322	962.8	110.	0.0000	8.6207	0.0000	104.58
3	Kalaeloa	84.5	130.7148	1121.1	16.	0.0000	9.3854	0.0000	71.80
4	AES	98.5	131.8465	2284.5	0.	0.0000	3.7772	0.0000	28.65
5	HPOWER	89.0	30.4592	256.5	0.	0.0000	0.0000	0.0000	0.00
6	Honolulu	11.5	9.2417	120.5	43.	0.0000	1.1346	0.0000	122.77
8	CIP	4.2	3.5631	61.7	16.	0.0000	0.9303	0.0000	261.09
9	DG Sub	0.6	0.1416	1.5	7.	0.0000	0.0222	0.0000	156.74

Year: 2009 Month: Oct

Monthly Fuel & Var O&M Cost by Subperiod (M$)

Off Peak	Shoulder Peak	Priority Peak	Total
16.472647	24.746244	10.625473	51.844364

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Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup Cst M$	Fuel Cst M$	VO&M Cst M$	FO&M Cst M$	Oper Cst $/MWh	Tot Cst $/MWh	Ave Hrt Btu/kWh
1 Honolu 8	53.4	1	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.
2 Honolu 9	54.4	1	151.4	9.22	3.614	49.2	22.	0.	0.0000	0.4630	0.0000	0.0000	117.04	128.14	13609.
3 Waiau 3	46.6	1	173.1	15.90	5.337	72.1	21.	0.	0.0000	0.6426	0.0000	0.0000	108.84	120.40	13505.
4 Waiau 4	46.6	1	274.8	18.62	6.250	85.5	27.	0.	0.0000	0.7626	0.0000	0.0000	108.98	122.02	13688.
5 Waiau 5	54.5	1	465.5	27.71	10.877	139.8	28.	0.	0.0000	1.2464	0.0000	0.0000	108.25	114.59	12854.
6 Waiau 6	53.5	1	392.2	23.71	9.140	120.0	29.	0.	0.0000	1.0699	0.0000	0.0000	109.26	117.06	13132.
7 Waiau 7	82.9	1	679.2	50.91	30.402	330.9	0.	0.	0.0000	2.9495	0.0000	0.0000	96.59	97.02	10883.
8 Waiau 8	86.1	1	494.9	48.40	30.018	317.2	1.	0.	0.0000	2.8277	0.0000	0.0000	92.54	94.20	10567.
9 Waiau 9	52.9	1	7.1	0.15	0.058	1.9	2.	0.	0.0000	0.0280	0.0000	0.0000	475.02	479.99	32635.
10 Waiau 10	49.9	1	15.9	0.35	0.124	4.0	4.	0.	0.0000	0.0594	0.0000	0.0000	472.51	477.68	32478.
11 Kahe 1	82.1	1	698.6	58.85	34.809	360.4	0.	0.	0.0000	3.2126	0.0000	0.0000	92.11	92.29	10353.
12 Kahe 2	82.1	1	695.3	68.91	40.758	412.8	0.	0.	0.0000	3.6802	0.0000	0.0000	90.12	90.30	10129.
13 Kahe 3	86.1	1	678.5	79.16	49.097	482.8	0.	0.	0.0000	4.3042	0.0000	0.0000	87.39	87.67	9834.
14 Kahe 4	85.3	1	674.9	75.76	46.555	471.0	0.	0.	0.0000	4.1990	0.0000	0.0000	89.90	90.19	10118.
15 Kahe 5	134.3	1	298.8	35.03	33.895	332.6	0.	0.	0.0000	2.9650	0.0000	0.0000	87.39	87.48	9813.
16 Kahe 6	134.4	1	695.5	62.87	60.869	625.3	0.	0.	0.0000	5.5739	0.0000	0.0000	91.33	91.57	10272.
17 Kala CC	90.0	1	606.6	83.71	54.276	465.8	9.	0.	0.0000	3.8990	0.0000	0.0000	71.84	71.84	8581.
18 Kala CC	90.0	1	711.1	97.46	63.191	543.5	0.	0.	0.0000	4.5494	0.0000	0.0000	72.00	72.00	8600.
19 AES	180.0	1	711.1	98.71	128.002	2217.9	0.	0.	0.0000	3.6671	0.0000	0.0000	28.65	28.65	17327.
20 HPOWER	46.0	1	637.4	85.54	28.345	238.9	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	8428.
21 Kala CC	28.0	1	608.2	76.22	15.375	132.5	9.	0.	0.0000	1.1092	0.0000	0.0000	72.14	72.14	8618.
22 CIP1	113.0	1	104.2	5.04	4.100	71.7	18.	0.	0.0000	1.0804	0.0000	0.0000	255.21	263.54	17490.
23 DG Sub1	9.8	1	14.1	1.05	0.074	0.8	3.	0.	0.0000	0.0116	0.0000	0.0000	156.74	156.74	10409.
24 DG Sub2	9.8	1	13.2	0.98	0.070	0.7	3.	0.	0.0000	0.0109	0.0000	0.0000	156.74	156.74	10409.
25 DG Sub3	9.8	1	9.8	0.74	0.052	0.5	3.	0.	0.0000	0.0082	0.0000	0.0000	156.74	156.74	10409.
System					655.287	7478.	180.	0.	0.0000	48.3199	0.0000	0.0000	73.01	73.74	11411.

Year: 2009 Month: Nov

Transaction Summary

ID	Transaction	Type		Energy GWh	Engy Cost M$	CAP Cost M$	Total Cost M$	Ave Cost $/MWh
1	Non-Firm	CONSTANT	PURC	0.392	0.0254	0.0000	0.0254	64.66
2	ArcherPV	HOURLY	PURC	0.020	0.0000	0.0000	0.0000	0.00

Year: 2009 Month: Nov

Fuel Type Summary

	Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
	Spot:								
1	WLSFO	92.024	171.858	Bbl	1065.5	9.4987	103.22	11579.	891.46
2	KLSFO	265.982	433.049	Bbl	2684.9	23.9349	89.99	10094.	891.46
3	HLSFO	3.614	7.932	Bbl	49.2	0.4630	128.14	13609.	941.57
4	DG SUB	0.196	0.348	Bbl	2.0	0.0307	156.74	10409.	1505.81
5	WDIESEL	0.183	1.014	Bbl	5.9	0.0874	478.42	32528.	1470.79
6		0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7	AES	128.002	2217.901	Bbl	2217.9	3.6671	28.65	17327.	165.34
8	KALAELOA	132.842	190.286	Bbl	1141.7	9.5577	71.95	8595.	837.13
9	BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
10	REFUSE	28.345	38.532	Bbl	238.9	0.0000	0.00	8428.	0.00
11		0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12	CDIESEL	4.100	12.236	Bbl	71.7	1.0804	263.54	17490.	1506.83

Fuel Class Summary

	Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1	LSFO	361.619	612.838	Bbl	3799.6	33.8966	93.74	10507.	892.1
2	DIESEL	4.282	13.250	Bbl	77.6	1.1678	272.70	18131.	1504.1
4	AES	128.002	2217.901	Bbl	2217.9	3.6671	28.65	17327.	165.3
5	KALAELOA	132.842	190.286	Bbl	1141.7	9.5577	71.95	8595.	837.1
6	BIODIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.0
7	REFUSE	28.345	38.532	Bbl	238.9	0.0000	0.00	8428.	0.0
9	DG SUB	0.196	0.348	Bbl	2.0	0.0307	156.74	10409.	1505.8

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System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	655.72			Therml Gen:	655.29	48.3199	73.74
				Hydro Gen:	0.00	0.0000	0.00
P-S Pumping:	0.00			P-S Gen:	0.00	0.0000	0.00
P-S Payback:	0.00						
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.41	0.0254	61.52
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00
Unit Sale:	0.00	0.0000	0.00				
Transm Loss:	0.00			Rej. Fuel:		0.0000	
Dsm Load:	0.00			Dsm Reductn:	0.00		
				Emerg Purc:	0.00	0.0000	0.00
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.00	0.0002	100.00
				Lvl Cost:		0.0000	
Total:	655.72	0.0000	0.00	Total:	655.70	48.3454	73.73
				System Net:		48.3454	73.73
				LOLH(hr):	0.11		

Year: 2009 Month: Nov

Plant Summary

	Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M$	Fuel Cst M$	O&M Cst M$	Tot Cst $/MWh
1	Kahe	61.1	265.9819	2684.9	1.	0.0000	23.9349	0.0000	89.99
2	Waiau	27.1	92.2066	1071.5	112.	0.0000	9.5861	0.0000	103.96
3	Kalaeloa	88.7	132.8424	1141.7	18.	0.0000	9.5577	0.0000	71.95
4	AES	98.8	128.0016	2217.9	0.	0.0000	3.6671	0.0000	28.65
5	HPOWER	85.6	28.3450	238.9	0.	0.0000	0.0000	0.0000	0.00
6	Honolulu	4.7	3.6137	49.2	22.	0.0000	0.4630	0.0000	128.14
8	CIP	5.0	4.0997	71.7	18.	0.0000	1.0804	0.0000	263.54
9	DG Sub	0.9	0.1959	2.0	9.	0.0000	0.0307	0.0000	156.74

Year: 2009 Month: Nov

Monthly Fuel & Var O&M Cost by Subperiod (M$)

Off Peak	Shoulder Peak	Priority Peak	Total
15.549048	22.817022	9.953806	48.319878

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Year: 2009 Month: Dec

Station Summary

Station	Capacity MW	Unit	Hours	CF %	Energy GWh	MBtu k	Cold Start	Warm Start	Stup Cst M$	Fuel Cst M$	VO&M Cst M$	FO&M Cst M$	Oper Cst $/MWh	Tot Cst $/MWh	Ave Hrt Btu/kWh
1 Honolu 8	53.4	1	0.0	0.00	0.000	0.0	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.
2 Honolu 9	54.4	1	64.9	3.79	1.535	21.0	10.	0.	0.0000	0.1979	0.0000	0.0000	117.19	128.87	13686.
3 Waiau 3	46.6	1	78.9	7.00	2.427	33.2	10.	0.	0.0000	0.2956	0.0000	0.0000	108.86	121.81	13664.
4 Waiau 4	46.6	1	133.6	8.65	3.001	42.0	16.	0.	0.0000	0.3747	0.0000	0.0000	109.08	124.86	14006.
5 Waiau 5	54.5	1	347.9	19.60	7.950	105.0	30.	0.	0.0000	0.9362	0.0000	0.0000	108.53	117.76	13210.
6 Waiau 6	53.5	1	242.3	13.92	5.546	75.1	25.	0.	0.0000	0.6696	0.0000	0.0000	109.49	120.74	13544.
7 Waiau 7	82.9	1	698.6	46.96	28.980	317.7	0.	0.	0.0000	2.8320	0.0000	0.0000	97.35	97.72	10962.
8 Waiau 8	86.1	1	696.7	57.73	37.000	389.0	0.	0.	0.0000	3.4681	0.0000	0.0000	93.41	93.73	10514.
9 Waiau 9	52.9	1	3.6	0.06	0.025	0.9	1.	0.	0.0000	0.0138	0.0000	0.0000	536.20	542.64	36895.
10 Waiau 10	49.9	1	8.5	0.15	0.056	2.1	2.	0.	0.0000	0.0304	0.0000	0.0000	537.69	543.33	36941.
11 Kahe 1	82.1	1	720.5	53.88	32.931	343.1	0.	0.	0.0000	3.0588	0.0000	0.0000	92.73	92.88	10419.
12 Kahe 2	82.1	1	724.6	59.49	36.356	371.8	0.	0.	0.0000	3.3145	0.0000	0.0000	91.02	91.17	10227.
13 Kahe 3	86.1	1	693.1	72.20	46.277	456.7	0.	0.	0.0000	4.0717	0.0000	0.0000	87.73	87.99	9870.
14 Kahe 4	85.3	1	695.0	67.93	43.136	439.4	0.	0.	0.0000	3.9174	0.0000	0.0000	90.55	90.81	10187.
15 Kahe 5	134.3	1	577.0	62.19	62.170	616.1	1.	0.	0.0000	5.4922	0.0000	0.0000	87.64	88.34	9910.
16 Kahe 6	134.4	1	724.6	56.24	56.269	582.2	0.	0.	0.0000	5.1902	0.0000	0.0000	92.08	92.24	10347.
17 Kala CC	90.0	1	637.7	83.21	55.750	482.1	8.	0.	0.0000	4.0357	0.0000	0.0000	72.39	72.39	8647.
18 Kala CC	90.0	1	730.3	94.48	63.299	549.1	0.	0.	0.0000	4.5966	0.0000	0.0000	72.62	72.62	8675.
19 AES	180.0	1	730.3	98.10	131.454	2277.7	0.	0.	0.0000	3.7660	0.0000	0.0000	28.65	28.65	17327.
20 HPOWER	46.0	1	659.0	74.41	25.480	215.5	0.	0.	0.0000	0.0000	0.0000	0.0000	0.00	0.00	8456.
21 Kala CC	28.0	1	637.9	73.52	15.325	132.1	8.	0.	0.0000	1.1056	0.0000	0.0000	72.14	72.14	8618.
22 CIP1	113.0	1	33.3	1.55	1.301	22.8	6.	0.	0.0000	0.7078	0.0000	0.0000	527.22	544.14	17543.
23 DG Sub1	9.8	1	7.3	0.49	0.036	0.4	2.	0.	0.0000	0.0056	0.0000	0.0000	156.74	156.74	10409.
24 DG Sub2	9.8	1	5.0	0.34	0.025	0.3	1.	0.	0.0000	0.0039	0.0000	0.0000	156.74	156.74	10409.
25 DG Sub3	9.8	1	5.7	0.39	0.028	0.3	2.	0.	0.0000	0.0045	0.0000	0.0000	156.74	156.74	10409.
System					656.356	7476.	123.	0.	0.0000	48.0886	0.0000	0.0000	72.71	73.27	11390.

Year: 2009 Month: Dec

Transaction Summary

ID	Transaction	Type		Energy GWh	Engy Cost M$	CAP Cost M$	Total Cost M$	Ave Cost $/MWh
1	Non-Firm	CONSTANT	PURC	0.405	0.0262	0.0000	0.0262	64.66
2	ArcherPV	HOURLY	PURC	0.019	0.0000	0.0000	0.0000	0.00

Year: 2009 Month: Dec

Fuel Type Summary

Type	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
Spot:								
1 WLSFO	84.904	155.166	Bbl	962.0	8.5761	101.01	11331.	891.46
2 KLSFO	277.138	453.128	Bbl	2809.4	25.0447	90.37	10137.	891.46
3 HLSFO	1.535	3.389	Bbl	21.0	0.1979	128.87	13686.	941.57
4 DG SUB	0.089	0.159	Bbl	0.9	0.0140	156.74	10409.	1505.81
5 WDIESEL	0.081	0.512	Bbl	3.0	0.0442	543.12	36927.	1470.79
6	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
7 AES	131.454	2277.724	Bbl	2277.7	3.7660	28.65	17327.	165.34
8 KALAELOA	134.374	193.874	Bbl	1163.2	9.7379	72.47	8657.	837.13
9 BIODIESEL	1.301	4.564	Bbl	22.8	0.7078	544.14	17543.	3101.74
10 REFUSE	25.480	34.753	Bbl	215.5	0.0000	0.00	8456.	0.00
11	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00
12 CDIESEL	0.000	0.000	Bbl	0.0	0.0000	0.00	0.	0.00

Fuel Class Summary

Class	Energy GWh	Fuel ,000	Fuel Unit	MBtu ,000	Fuel Cost M$	Fuel Cost $/MWh	Heat Rate Btu/kWh	Fuel Cost C/MBtu
1 LSFO	363.577	611.684	Bbl	3792.4	33.8186	93.02	10431.	891.7
2 DIESEL	0.081	0.512	Bbl	3.0	0.0442	543.12	36927.	1470.8
4 AES	131.454	2277.724	Bbl	2277.7	3.7660	28.65	17327.	165.3
5 KALAELOA	134.374	193.874	Bbl	1163.2	9.7379	72.47	8657.	837.1
6 BIODIESEL	1.301	4.564	Bbl	22.8	0.7078	544.14	17543.	3101.7
7 REFUSE	25.480	34.753	Bbl	215.5	0.0000	0.00	8456.	0.0
9 DG SUB	0.089	0.159	Bbl	0.9	0.0140	156.74	10409.	1505.8

PPC Proprietary Program Licensed to HECO Till 12/2099
HECO Rate Case 2009 Test Year - Direct Testimony -Dec KPLP price
Per CA DT, Update Fuel prices, Hoku July install, CT-1 low cap cycler

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Year: 2009 Month: Dec

System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	656.79			Therml Gen:	656.36	48.0886	73.27
				Hydro Gen:	0.00	0.0000	0.00
P-S Pumping:	0.00			P-S Gen:	0.00	0.0000	0.00
P-S Payback:	0.00						
F. E. Sale:	0.00	0.0000	0.00	F. E. Purc:	0.42	0.0262	61.75
Econ. Sale:	0.00	0.0000	0.00	Econ. Purc:	0.00	0.0000	0.00
Unit Sale:	0.00	0.0000	0.00				
Transm Loss:	0.00			Rej. Fuel:		0.0000	
Dsm Load:	0.00			Dsm Reductn:	0.00		
				Emerg Purc:	0.00	0.0000	0.00
Dumped Engy:	0.00	0.0000	0.00	E.U. Energy:	0.00	0.0000	0.00
				Lvl Cost:		0.0000	
Total:	656.79	0.0000	0.00	Total:	656.78	48.1148	73.26
				System Net:		48.1148	73.26
				LOLH(hr):	0.00		

PPC Proprietary Program Licensed to HECO Till 12/2099
HECO Rate Case 2009 Test Year - Direct Testimony -Dec KPLP price
Per CA DT, Update Fuel prices, Hoku July install, CT-1 low cap cycler

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Year: 2009 Month: Dec

Plant Summary

Plant	CF %	Energy GWh	MBtu 1000	Start Ups	Stup Cst M$	Fuel Cst M$	O&M Cst M$	Tot Cst $/MWh
1 Kahe	61.6	277.1379	2809.4	2.	0.0000	25.0447	0.0000	90.37
2 Waiau	24.1	84.9849	965.0	85.	0.0000	8.6203	0.0000	101.43
3 Kalaeloa	86.8	134.3741	1163.2	16.	0.0000	9.7379	0.0000	72.47
4 AES	98.2	131.4538	2277.7	0.	0.0000	3.7660	0.0000	28.65
5 HPOWER	74.5	25.4801	215.5	0.	0.0000	0.0000	0.0000	0.00
6 Honolulu	1.9	1.5355	21.0	10.	0.0000	0.1979	0.0000	128.87
8 CIP	1.5	1.3009	22.8	6.	0.0000	0.7078	0.0000	544.14
9 DG Sub	0.4	0.0892	0.9	5.	0.0000	0.0140	0.0000	156.74

Year: 2009 Month: Dec

Monthly Fuel & Var O&M Cost by Subperiod (M$)

Off Peak	Shoulder Peak	Priority Peak	Total
16.130558	22.128983	9.828982	48.088520

System Study Summary

YR	PRD	Exec Flag	UC Flag	LoadBand pc	LoadBand MW	SpinRsv pc	SpinRsv MW	MargCost	MargCst Incr	FixDisp Incr	MC Option	EUE Cost	EUE CostEsc	Dump Cost	Dump CostEsc	Nox	Sox	CO2	ROG	Other	Num WkDay	WDPk Hrl	WDPk Hrn	WEPk Hrl	WEPk Hrn	126	X31
2009	1	0	0	0.0	0.0	0.0	0.0	-1	10	10	2	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	7	20	1	24	15	100

Report Control Summary

YR	PRD	FiscalYr	PrdCntrl	YrCntrl	AllocFile	StnRept	PltRept	AreaRept	PSRept	DiagRept	HrInfFile	MonInfFile	YrInfFile	I26
2009	1	12	2	0	0	1	1	0	0	1	1	1	1	0

Area Summary

ID	NAME	YR	PRD	SpinRsv pc	SpinRsv MW	LdAdj pc	LdAdj MW	Tie MW	Tie Cost	Tie CostEsc
1	heco	2009	1	0.0	0.0	0.0	0.0	0.0	0.00	0.0

Plant Summary

ID	NAME	YR	PRD	X31	X32	X33	X34	X35
1	Kahe	2009	1	0.00	0.00	0.00	0.00	0.00
2	Waiau	2009	1	0.00	0.00	0.00	0.00	0.00
3	Kalaeloa	2009	1	0.00	0.00	0.00	0.00	0.00
4	AES	2009	1	0.00	0.00	0.00	0.00	0.00
5	HPOWER	2009	1	0.00	0.00	0.00	0.00	0.00
6	Honolulu	2009	1	0.00	0.00	0.00	0.00	0.00
8	CIP	2009	1	0.00	0.00	0.00	0.00	0.00
9	DG Sub	2009	1	0.00	0.00	0.00	0.00	0.00

Fuel Class Summary

ID	NAME	YR	PRD	FuelUnit
1	LSFO	2009	1	1
2	DIESEL	2009	1	1
4	AES	2009	1	1
5	KALAELOA	2009	1	1
6	BIODIESEL	2009	1	1
7	REFUSE	2009	1	1
8	GG SUB	2009	1	1

Spot Fuel Summary

ID	NAME	YR	PRD	FuelClass	FuelCost	CmtCost	CostEsc	HeatCont	Sox	CO2	HOG	Other
1	WLSFO	2009	1	1	891.5	0.0	0.0	6.2	0.0000	0.0000	0.0000	0.0000
2	KLSFO	2009	1	1	891.5	0.0	0.0	6.2	0.0000	0.0000	0.0000	0.0000
3	HLSFO	2009	1	1	941.6	0.0	0.0	6.2	0.0000	0.0000	0.0000	0.0000
4	DG SUB	2009	1	9	1505.8	0.0	0.0	5.86	0.0000	0.0000	0.0000	0.0000
5	WDIESEL	2009	1	2	1470.8	0.0	0.0	5.86	0.0000	0.0000	0.0000	0.0000
7	AES	2009	1	4	165.3	0.0	0.0	1	0.0000	0.0000	0.0000	0.0000
8	KALAELOA	2009	1	5	837.1	0.0	0.0	6	0.0000	0.0000	0.0000	0.0000
9	BIODIESEL	2009	1	6	3101.7	0.0	0.0	5	0.0000	0.0000	0.0000	0.0000
10	REFUSE	2009	1	7	0.0	0.0	0.0	6.2	0.0000	0.0000	0.0000	0.0000
12	CDIESEL	2009	1	2	1506.8	0.0	0.0	5.86	0.0000	0.0000	0.0000	0.0000

Thermal Basic Summary

ID	NAME	YR	PRD	Area ID	Plant ID	Units	Hr Pattern	Branching	Firm	OpType	Quick	Derate	Englmt Cmt	Ramp Rate	Down Time	Up Time	SpinRsv	Ownership	CmtCost Ftr	CmtEmis Ftr	DspCost Ftr	DspEmis Ftr	Scrub Eff	Util Mnr
1	Honolu 8	2009	1	1	6	1	0	0	0	3	0	0	0	9999.9	3	3	100.0	100.0	1	0	1	0	0.0	0
2	Honolu 9	2009	1	1	6	1	0	0	0	3	0	0	0	9999.9	3	3	100.0	100.0	1	0	1	0	0.0	0
3	Waiau 3	2009	1	1	2	1	0	0	0	3	0	0	0	9999.9	3	3	100.0	100.0	1	0	1	0	0.0	0
4	Waiau 4	2009	1	1	2	1	0	0	0	3	0	0	0	9999.9	3	3	100.0	100.0	1	0	1	0	0.0	0
5	Waiau 5	2009	1	1	2	1	0	0	0	3	0	0	0	9999.9	3	3	100.0	100.0	1	0	1	0	0.0	0
6	Waiau 6	2009	1	1	2	1	0	0	0	3	0	0	0	9999.9	3	3	100.0	100.0	1	0	1	0	0.0	0
7	Waiau 7	2009	1	1	2	1	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
8	Waiau 8	2009	1	1	2	1	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
9	Waiau 9	2009	1	1	2	1	0	0	0	5	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
10	Waiau 10	2009	1	1	2	1	0	0	0	5	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
11	Kahe 1	2009	1	1	1	1	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
12	Kahe 2	2009	1	1	1	1	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
13	Kahe 3	2009	1	1	1	1	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
14	Kahe 4	2009	1	1	1	1	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
15	Kahe 5	2009	1	1	1	1	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
16	Kahe 6	2009	1	1	1	1	0	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
17	Kala CC	2009	1	1	3	1	-2	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
18	Kala CC	2009	1	1	3	1	-3	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
19	AES	2009	1	1	4	1	-5	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
20	HPOWER	2009	1	1	5	1	-1	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
21	Kala CC	2009	1	1	3	1	-4	0	0	1	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
22	CIP1	2009	8	1	8	1	0	0	0	4	0	0	0	9999	1	1	100.0	100.0	1	0	1	0	0.0	0
23	DG Sub1	2009	1	1	9	1	0	0	0	5	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
24	DG Sub2	2009	1	1	9	1	0	0	0	5	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0
25	DG Sub3	2009	1	1	9	1	0	0	0	5	0	0	0	9999.9	1	1	100.0	100.0	1	0	1	0	0.0	0

Thermal Cost and Variable Summary

ID	NAME	YR	PRD	SpotFuel	Start Fuel	Start BTU	StnEng	VarOM	FixOM	Fix Start	CapCost	VarOM Esc	FixOM Esc	Cost Cmt	Dsp Pnlty	Cmt Pnlty	Trnsm Loss	Start Cost	HrVarOM	126	X31	X32
1	Honolu 8	2009	1	3	3	190.0	0	0.00	0	0	0.00	0.0	0.0	0	0.99700	0.99700	1.00000	0	0.00	0	0	0
2	Honolu 9	2009	1	3	3	190.0	0	0.00	0	0	0.00	0.0	0.0	0	0.99700	0.99700	1.00000	0	0.00	0	0	0
3	Waiau 3	2009	1	1	1	337.0	0	0.00	0	0	0.00	0.0	0.0	0	1.00600	1.00600	1.00000	0	0.00	0	0	0
4	Waiau 4	2009	1	1	1	337.0	0	0.00	0	0	0.00	0.0	0.0	0	1.00600	1.00600	1.00000	0	0.00	0	0	0
5	Waiau 5	2009	1	1	1	277.0	0	0.00	0	0	0.00	0.0	0.0	0	1.01200	1.01200	1.00000	0	0.00	0	0	0
6	Waiau 6	2009	1	1	1	277.0	0	0.00	0	0	0.00	0.0	0.0	0	1.01200	1.01200	1.00000	0	0.00	0	0	0
7	Waiau 7	2009	1	1	1	5044.0	0	0.00	0	0	0.00	0.0	0.0	0	1.01200	1.01200	1.00000	0	0.00	0	0	0
8	Waiau 8	2009	1	1	1	5044.0	0	0.00	0	0	0.00	0.0	0.0	0	1.01200	1.01200	1.00000	0	0.00	0	0	0
9	Waiau 9	2009	1	5	5	11.0	0	0.00	0	0	0.00	0.0	0.0	0	1.01200	1.01200	1.00000	0	0.00	0	0	0
10	Waiau 10	2009	1	5	5	11.0	0	0.00	0	0	0.00	0.0	0.0	0	1.01200	1.01200	1.00000	0	0.00	0	0	0
11	Kahe 1	2009	1	2	2	5044.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02600	1.02600	1.00000	0	0.00	0	0	0
12	Kahe 2	2009	1	2	2	5044.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02600	1.02600	1.00000	0	0.00	0	0	0
13	Kahe 3	2009	1	2	2	5044.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02600	1.02600	1.00000	0	0.00	0	0	0
14	Kahe 4	2009	1	2	2	5044.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02600	1.02600	1.00000	0	0.00	0	0	0
15	Kahe 5	2009	1	2	2	4586.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02600	1.02600	1.00000	0	0.00	0	0	0
16	Kahe 6	2009	1	2	2	9274.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02600	1.02600	1.00000	0	0.00	0	0	0
17	Kala CC	2009	1	8	8	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02900	1.02900	1.00000	0	0.00	0	0	0
18	Kala CC	2009	1	8	8	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02900	1.02900	1.00000	0	0.00	0	0	0
19	AES	2009	1	7	7	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02900	1.02900	1.00000	0	0.00	0	0	0
20	HPOWER	2009	1	10	10	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.00000	1.00000	1.00000	0	0.00	0	0	0
21	Kala CC	2009	1	8	8	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02900	1.02900	1.00000	0	0.00	0	0	0
22	CIP1	2009	8	12	12	126.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02900	1.02900	1.00000	0	0.00	0	0	0
22	CIP1	2009	12	9	9	126.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02900	1.02900	1.00000	0	0.00	0	0	0
22	CIP1	2010	1	9	9	126.0	0	0.00	0	0	0.00	0.0	0.0	0	1.02900	1.02900	1.00000	0	0.00	0	0	0
23	DG Sub1	2009	1	4	4	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.00000	1.00000	1.00000	0	0.00	0	0	0
24	DG Sub2	2009	1	4	4	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.00000	1.00000	1.00000	0	0.00	0	0	0
25	DG Sub3	2009	1	4	4	0.0	0	0.00	0	0	0.00	0.0	0.0	0	1.00000	1.00000	1.00000	0	0.00	0	0	0

Thermal Performance Summary

ID	[illegible]	Yr	PRU	Cap1	Cap2	Cap3	Cap4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	Honolu 8	2009	1	22.3000000	32.7000000	43.1000000	53 4000000	0	1	36 4132000	10.3115000	0 0056800	11.73	0.00
2	Honolu 9	2009	1	22 3000000	33.0000000	43 7000000	54.4000000	0	1	69.8920000	8.9464000	0.0220400	11.73	0.00
3	Waiau 3	2009	1	22.3000000	30.4000000	38 5000000	46.6000000	0	1	146.5394000	4.8113000	0.0854400	27.67	0.00
4	Waiau 4	2009	1	22.3000000	30 4000000	38 5000000	46 6000000	0	1	49 4604000	9.3112000	0.0320300	13.06	0.00
5	Waiau 5	2009	1	22.5000000	33.2000000	43.9000000	54 5000000	0	1	61.0595000	8.8137000	0.0298100	3.73	0.00
6	Waiau 6	2009	1	22 5000000	32.8000000	43.1000000	53 5000000	0	1	64.1104000	8.7407000	0.0319900	3 73	0.00
7	Waiau 7	2009	1	32 6000000	49.4000000	66.2000000	82.9000000	0	1	86.2107000	7.9405000	0.0196100	6 35	0.00
8	Waiau 8	2009	1	32.8000000	50.6000000	68.4000000	86.1000000	0	1	86.8712000	8.0919000	0.0131500	6.35	0 00
9	Waiau 9	2009	1	5.9000000	21 0000000	36.9000000	52.9000000	0	1	198.6939000	7.8497000	0.0292200	11.46	0.00
10	Waiau 10	2009	1	5.9000000	21.0000000	36.9000000	52.9000000	0	1	192.3958000	7.2757000	0.0285100	11.46	0.00
11	Kahe 1	2009	1	32.5000000	49.0000000	65 5000000	82.1000000	0	1	73.4991000	8.1733000	0.0129200	2 98	0.00
12	Kahe 2	2009	1	32.7000000	49 2000000	65.7000000	82.1000000	0	1	46.0037000	9.0952000	0.0035000	2.98	0 00
13	Kahe 3	2009	1	32.3000000	50.2000000	68.1000000	86.1000000	0	1	57 4864000	8.5169000	0.0063400	6.35	0.00
14	Kahe 4	2009	1	32.3000000	50.0000000	67.7000000	85.3000000	0	1	75.5539000	8.4394000	0.0073900	6.35	0.00
15	Kahe 5	2009	1	50.7000000	78.6000000	106.5000000	134.3000000	0	1	89.3464000	8 6434000	0.0030500	4.11	0.00
16	Kahe 6	2009	1	50.0000000	78.1000000	106.2000000	134.4000000	0	1	117 0609000	8 1819000	0.0076900	3.12	0.00
17	Kala CC	2009	1	32.5000000	51.6700000	70.8333360	90.0000000	0	1	299.0258300	4.4054000	0 0093080	1.50	0.00
18	Kala CC	2009	1	32.5000000	51.6700000	70.8333360	90.0000000	0	1	299 0258300	4 4054000	0.0093080	1.50	0.00
19	AES	2009	1	63.0000000	102.0000000	141.0000000	180 0000000	0	1	258 7479000	14.9713000	0.0051019	1.50	0.00
20	HPOWER	2009	1	25.0000000	32.0000000	39 0000000	46.0000000	0	1	10.0000000	8.2000000	0 0001000	11.60	0.00
21	Kala CC	2009	1	0.1000000	9.3000000	18.7000000	28.0000000	0	1	0.0000010	8 6178000	0.0000010	1.50	0.00
22	CIP1	2009	8	39.0000000	64.0000000	88.0000000	113.0000000	0	1	3,7.8767817	8.8242222	0.0007403	4.00	0.00
23	DG Sub1	2009	1	4 9200000	6.5600000	8 2000000	9 8400000	0	1	0.0000001	10.4090000	0.0000001	50.00	0.00
24	DG Sub2	2009	1	4.9200000	6.5600000	8 2000000	9.8400000	0	1	0.0000001	10.4090000	0.0000001	50 00	0.00
25	DG Sub3	2009	1	4.9200000	6.5600000	8.2000000	9.8400000	0	1	0.0000001	10.4090000	0.0000001	50.00	0 00

Thermal Maintenance Summary

ID	NAME	YR	PRD	Start Day	Days
16	Kahe 6	2009	1	3	48
1	Honolu 8	2009	1	9	20
6	Waiau 6	2009	1	10	69
14	Kahe 4	2009	3	18	17
12	Kahe 2	2009	4	21	64
9	Waiau 9	2009	5	12	15
4	Waiau 4	2009	6	8	17
11	Kahe 1	2009	7	5	64
2	Honolu 9	2009	7	13	19
3	Waiau 3	2009	8	3	25
5	Waiau 5	2009	8	31	15
10	Waiau 10	2009	9	16	31
13	Kahe 3	2009	9	17	21
8	Waiau 8	2009	10	17	23
1	Honolu 8	2009	10	26	67
15	Kahe 5	2009	11	14	23
22	CIP1	2009	12	14	17

Fixed Energy Transaction Summary

ID	NAME	YR	PRD	Area ID	Type	Peak Def	Firm	MinCap	MaxCap	Energy	Eng Cost	CapCost	EngCost Esc	CapCost Esc	WkDays	MDPk Hr1	MDPk Hrn	WEPk Hr1	WEPk Hrn
1	Non-Firm	2009	1	1	6	0	1	0.54	0.54	0.000	64.74	0.0	0.0	0.0	7	1	24	1	24
2	ArcherPV	2009	1	1	8	1	1	0.00	0.00	0.000	0.00	0.0	0.0	0.0	7	1	24	1	24
2	ArcherPV	2009	2	1	8	1	1	0.00	0.00	0.000	0.00	0.0	0.0	0.0	7	1	24	1	24
2	ArcherPV	2009	3	1	8	1	1	0.00	0.00	0.000	0.00	0.0	0.0	0.0	7	1	24	1	24
2	ArcherPV	2009	4	1	8	1	1	0.00	0.00	0.000	0.00	0.0	0.0	0.0	7	1	24	1	24
2	ArcherPV	2009	5	1	8	1	1	0.00	0.00	0.000	0.00	0.0	0.0	0.0	7	1	24	1	24
2	ArcherPV	2009	6	1	8	1	1	0.00	0.00	0.000	0.00	0.0	0.0	0.0	7	1	24	1	24
2	ArcherPV	2009	7	1	8	1	1	0.00	0.22	0.031	0.00	0.0	0.0	0.0	7	1	24	1	24
2	ArcherPV	2009	8	1	8	1	1	0.00	0.22	0.030	0.00	0.0	0.0	0.0	7	1	24	1	24
2	ArcherPV	2009	9	1	8	1	1	0.00	0.22	0.027	0.00	0.0	0.0	0.0	7	1	24	1	24
2	ArcherPV	2009	10	1	8	1	1	0.00	0.22	0.024	0.00	0.0	0.0	0.0	7	1	24	1	24
2	ArcherPV	2009	11	1	8	1	1	0.00	0.22	0.020	0.00	0.0	0.0	0.0	7	1	24	1	24
2	ArcherPV	2009	12	1	8	1	1	0.00	0.22	0.019	0.00	0.0	0.0	0.0	7	1	24	1	24

Load Summary

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
1/1/09	727.0	721.2	685.4	637.9	614.2	616.5	635.3	658.0	696.9	784.7	858.6	903.9	920.0	916.0	906.0	896.0	911.0	918.0	962.0	999.0	954.0	919.0	856.0	767.0
1/2/09	692.0	644.0	618.0	605.0	611.0	651.0	738.0	835.0	894.0	951.0	994.0	1033.0	1044.0	1045.0	1044.0	1027.0	1023.0	1009.0	1034.0	1061.0	994.0	948.0	876.0	790.0
1/3/09	711.3	659.0	628.4	614.5	613.7	626.1	666.4	723.9	789.9	875.0	942.3	961.8	962.0	955.0	940.0	934.0	941.0	940.0	969.0	1027.0	971.0	916.0	854.0	785.0
1/4/09	706.1	656.3	625.0	609.7	602.0	612.6	640.8	677.3	735.7	810.6	876.1	907.3	913.0	905.0	902.0	902.0	923.0	950.0	1005.0	1048.0	986.0	921.0	852.0	756.0
1/5/09	679.0	636.0	611.0	599.0	608.0	648.0	747.0	845.0	904.0	961.0	1012.0	1034.0	1045.0	1044.0	1027.0	1018.0	1015.0	1018.0	1071.0	1083.0	1018.0	945.0	850.0	749.0
1/6/09	667.0	621.0	597.0	586.0	597.0	643.0	736.0	833.0	877.0	935.0	1005.0	1041.0	1067.0	1071.0	1074.0	1072.0	1071.0	1048.0	1072.0	1130.0	1058.0	982.0	888.0	783.0
1/7/09	695.0	645.0	619.0	606.0	612.0	657.0	752.0	856.0	912.0	945.0	1014.0	1050.0	1050.0	1053.0	1054.0	1044.0	1034.0	1040.0	1088.0	1127.0	1061.0	990.0	901.0	791.0
1/8/09	704.0	657.0	628.0	617.0	623.0	666.0	773.0	887.0	929.0	994.0	1046.0	1066.0	1069.0	1074.0	1071.0	1058.0	1053.0	1033.0	1055.0	1116.0	1058.0	987.0	893.0	787.0
1/9/09	698.0	651.0	624.0	611.0	616.0	655.0	762.0	886.0	914.0	982.0	1026.0	1046.0	1040.0	1050.0	1040.0	1033.0	1017.0	997.0	1003.0	1056.0	986.0	933.0	864.0	779.0
1/10/09	700.9	649.9	618.5	602.[illegible]	598.9	610.0	647.3	704.4	776.2	855.2	904.1	924.7	928.7	918.7	902.1	890.1	896.6	903.2	924.3	985.1	932.1	875.0	826.9	750.6
1/11/09	677.9	630.0	602.4	586.0	583.2	591.4	618.6	659.3	713.0	791.8	846.8	865.8	873.9	863.3	859.1	854.9	869.7	877.2	908.7	987.4	929.9	871.8	821.8	742.2
1/12/09	665.6	623.7	598.6	586.9	586.9	613.7	668.1	733.9	789.9	881.5	950.3	975.7	985.0	986.0	979.0	968.0	976.0	980.0	1010.0	1079.0	1012.0	942.0	852.0	749.0
1/13/09	666.4	622.2	601.6	590.5	600.1	642.7	751.5	878.2	892.3	940.0	979.2	996.9	1009.0	1011.0	1009.0	1000.0	998.0	980.0	996.0	1076.0	1000.0	932.0	850.0	740.0
1/14/09	657.3	614.5	594.9	584.7	589.1	630.0	735.7	857.0	872.9	919.8	946.8	965.2	965.0	973.0	983.0	982.0	984.0	979.0	1011.0	1083.0	1017.0	946.0	856.0	748.0
1/15/09	663.9	619.1	594.2	586.9	591.3	631.5	739.4	850.7	864.4	928.7	976.9	986.2	989.0	998.0	1000.0	1004.0	1003.0	985.0	1003.0	1072.0	1014.0	934.0	844.0	742.0
1/16/09	662.3	618.3	595.7	583.3	588.4	631.5	733.9	851.7	869.7	933.2	973.4	981.5	992.0	1002.0	1002.0	998.0	991.0	970.0	978.0	1031.0	969.0	916.0	852.0	762.0
1/17/09	683.8	636.9	607.8	593.5	588.8	605.1	641.8	700.4	762.8	845.5	884.9	905.7	910.9	908.7	906.5	903.2	913.1	916.5	929.9	998.1	942.3	886.8	817.8	741.3
1/18/09	664.4	619.6	590.9	574.3	569.7	576.7	602.9	637.4	695.3	779.2	836.2	861.2	877.0	880.0	881.0	878.0	888.0	904.0	937.0	1026.0	971.0	904.0	825.0	718.0
1/19/09	639.5	597.9	576.2	566.3	574.0	621.4	720.3	827.9	839.2	904.3	948.0	974.5	992.0	1004.0	1003.0	999.0	994.0	983.0	1008.0	1090.0	1020.0	940.0	841.0	725.0
1/20/09	644.3	601.6	579.7	571.2	578.3	622.9	730.2	853.8	876.1	931.0	957.1	969.9	978.0	983.0	972.0	965.0	958.0	956.0	993.0	1065.0	997.0	942.0	839.0	730.0
1/21/09	648.3	609.9	586.2	576.2	584.7	626.8	737.6	855.9	871.8	941.2	980.4	995.7	1006.0	1011.0	1010.0	1010.0	1006.0	1000.0	1020.0	1094.0	1029.0	943.0	861.0	748.0
1/22/09	661.0	618.0	594.0	583.0	590.0	632.0	734.0	852.0	862.0	928.0	975.0	1002.0	1009.0	1017.0	1012.0	1011.0	1005.0	992.0	1003.0	1075.0	1021.0	943.0	853.0	744.0
1/23/09	663.1	618.3	593.5	580.4	589.8	633.1	743.1	860.1	876.1	944.6	985.1	996.9	1004.0	1014.0	1018.0	1002.0	996.0	975.0	979.0	1022.0	956.0	901.0	835.0	747.0
1/24/09	664.6	618.5	591.9	577.5	574.6	587.3	620.7	674.3	746.8	837.6	889.1	909.4	912.0	909.8	901.0	891.2	891.2	901.0	929.9	983.9	936.6	889.0	833.1	752.5
1/25/09	685.4	637.6	607.4	592.3	587.4	597.8	625.1	664.4	721.8	806.7	867.5	896.6	905.0	903.0	903.0	897.0	909.0	925.0	976.0	1029.0	971.0	901.0	820.0	721.0
1/26/09	645.0	610.0	595.0	589.0	602.0	646.0	760.0	883.0	910.0	956.0	979.0	1005.0	958.0	992.0	970.0	987.0	989.0	987.0	996.0	1096.0	1040.0	961.0	868.0	749.0
1/27/09	671.0	627.0	598.0	591.0	612.0	660.0	765.0	894.0	920.0	975.0	1004.0	1012.0	1031.0	1040.0	1024.0	1026.0	1018.0	1021.0	1055.0	1139.0	1061.0	968.0	866.0	753.0
1/28/09	672.0	631.0	610.0	599.0	607.0	657.0	763.0	888.0	899.0	958.0	1011.0	1027.0	1044.0	1037.0	1034.0	1024.0	1010.0	1009.0	1037.0	1125.0	1065.0	984.0	872.0	764.0
1/29/09	680.0	647.0	621.0	610.0	621.0	664.0	780.0	904.0	937.0	996.0	1024.0	1048.0	1053.0	1055.0	1046.0	1014.0	1002.0	976.0	999.0	1034.0	992.0	909.0	823.0	722.0
1/30/09	644.7	584.0	566.8	561.0	569.6	606.7	713.0	819.2	829.3	884.0	932.0	923.6	919.9	920.7	911.2	917.0	912.5	895.8	898.5	949.5	894.6	844.9	782.1	703.0
1/31/09	635.4	590.8	567.2	553.1	550.5	564.1	597.9	651.9	720.1	796.9	840.4	848.0	852.4	840.1	826.3	819.3	821.2	827.3	845.9	916.5	873.2	825.9	768.6	694.9
2/1/09	641.6	597.7	572.8	559.5	556.8	565.4	587.3	621.9	682.2	767.4	825.8	854.7	870.7	865.7	840.2	828.1	826.8	832.4	875.7	974.2	954.6	895.2	807.6	706.3
2/2/09	630.0	594.0	576.0	569.0	575.0	619.0	717.0	844.0	863.0	923.0	975.0	1002.0	1016.0	1028.0	1035.0	1032.0	1030.0	1022.0	1045.0	1137.0	1077.0	990.0	884.0	760.0
2/3/09	676.0	634.0	611.0	601.0	605.0	654.0	765.0	903.0	923.0	964.0	989.0	1018.0	1043.0	1051.0	1051.0	1045.0	1048.0	1041.0	1061.0	1143.0	1072.0	995.0	902.0	776.0
2/4/09	689.0	641.0	620.0	611.0	617.0	664.0	778.0	912.0	938.0	991.0	1024.0	1031.0	1018.0	1012.0	1013.0	994.0	991.0	1002.0	1045.0	1100.0	1043.0	950.0	851.0	744.0
2/5/09	658.0	616.0	592.0	582.0	589.0	634.0	748.0	876.0	884.0	950.0	991.0	1000.0	998.0	996.0	980.0	964.0	970.0	970.0	991.0	1076.0	1023.0	944.0	848.0	740.0
2/6/09	656.0	614.3	591.6	581.0	585.2	629.6	742.2	869.4	886.3	942.4	984.0	991.5	981.0	983.0	978.0	958.0	952.0	939.0	969.0	1016.0	952.0	900.0	827.0	738.0
2/7/09	662.0	614.0	590.9	576.8	574.3	590.1	625.9	686.6	765.3	851.6	897.0	904.9	899.8	892.5	879.2	868.8	870.2	879.6	893.8	966.9	925.4	871.8	808.4	729.7
2/8/09	655.2	610.7	586.0	572.5	567.7	580.6	602.0	636.7	697.6	778.1	824.8	840.3	844.0	840.0	834.0	835.0	847.0	866.0	899.0	1000.0	958.0	890.0	806.0	707.0
2/9/09	627.8	589.9	571.0	562.7	573.7	617.4	723.2	842.7	860.9	923.3	958.2	977.0	990.0	1000.0	1003.0	1004.0	1000.0	995.0	1012.0	1100.0	1047.0	964.0	863.0	748.0
2/10/09	659.0	615.0	594.0	584.0	589.0	631.0	736.0	855.0	903.0	962.0	1005.0	1016.0	1019.0	1034.0	1032.0	1037.0	1022.0	1021.0	1034.0	1112.0	1058.0	983.0	884.0	765.0
2/11/09	674.0	629.0	606.0	595.0	600.0	646.0	751.0	867.0	890.0	945.0	1002.0	1023.0	1031.0	1043.0	1045.0	1040.0	1034.0	1019.0	1024.0	1093.0	1057.0	967.0	876.0	761.0
2/12/09	674.0	630.0	605.0	596.0	602.0	646.0	757.0	877.0	900.0	956.0	1005.0	1027.0	1047.0	1048.0	1041.0	1032.0	1024.0	995.0	1005.0	1093.0	1056.0	980.0	884.0	770.0
2/13/09	680.0	637.0	614.0	603.0	609.0	649.0	752.0	875.0	915.0	986.0	1030.0	1040.0	1048.0	1054.0	1058.0	1053.0	1035.0	1014.0	1024.0	1084.0	1027.0	962.0	894.0	800.0
2/14/09	716.9	665.2	635.1	620.3	618.8	628.0	671.1	737.4	831.2	922.2	976.5	995.2	986.0	963.0	942.0	933.0	933.0	942.0	956.0	1003.0	963.0	910.0	846.0	765.0
2/15/09	691.6	640.6	613.9	596.7	593.9	602.1	630.4	657.0	734.4	809.3	864.5	881.8	882.6	871.9	866.5	865.1	875.7	892.1	909.8	966.2	926.3	878.0	821.8	743.1
2/16/09	671.2	628.7	602.9	591.7	593.9	617.5	659.6	712.9	778.7	872.1	935.2	961.4	958.0	946.0	932.0	928.0	935.0	951.0	977.0	1068.0	1022.0	951.0	858.0	740.0
2/17/09	663.0	623.0	600.0	593.0	599.0	645.0	757.0	882.0	905.0	956.0	991.0	1009.0	1018.0	1009.0	1007.0	1002.0	995.0	989.0	996.0	1091.0	1030.0	951.0	861.0	748.0
2/18/09	662.2	620.7	598.0	587.5	593.6	640.4	746.9	867.6	883.7	928.3	953.8	980.2	984.0	986.0	985.0	986.0	985.0	991.0	996.0	1078.0	1034.0	959.0	868.0	745.0
2/19/09	663.0	622.0	599.0	589.0	594.0	637.0	743.0	859.0	886.0	948.0	986.0	1000.0	1009.0	1016.0	1009.0	1010.0	1004.0	995.0	999.0	1085.0	1043.0	964.0	872.0	757.0
2/20/09	669.0	624.0	604.0	591.0	596.0	634.0	744.0	872.0	903.0	978.0	1027.0	1051.0	1052.0	1062.0	1048.0	1047.0	1043.0	1023.0	1013.0	1065.0	1016.0	961.0	876.0	788.0
2/21/09	698.0	647.2	617.6	601.6	601.6	616.1	656.0	714.8	801.5	891.9	945.9	966.9	957.0	958.0	944.0	939.0	946.0	951.0	963.0	1017.0	979.0	919.0	856.0	789.0
2/22/09	689.2	638.2	610.7	594.1	589.7	597.2	622.9	660.3	730.0	812.6	869.0	887.9	900.0	898.0	895.0	900.0	914.0	934.0	959.0	1043.0	1010.0	946.0	857.0	757.0
2/23/09	670.0	626.0	601.0	594.0	602.0	645.0	759.0	881.0	914.0	981.0	1030.0	1051.0	1069.0	1072.0	1069.0	1066.0	1052.0	1036.0	1053.0	1128.0	1084.0	994.0	887.0	765.0
2/24/09	679.0	635.0	614.0	603.0	608.0	653.0	768.0	898.0	926.0	979.0	1009.0	1041.0	1048.0	1058.0	1047.0	1051.0	1040.0	1027.0	1039.0	1117.0	1065.0	994.0	887.0	763.0
2/25/09	678.0	633.0	609.0	599.0	606.0	648.0	764.0	887.0	914.0	978.0	1021.0	1036.0	1040.0	1051.0	1058.0	1056.0	1045.0	1032.0	1031.0	1108.0	1065.0	998.0	886.0	769.0
2/26/09	681.0	638.0	614.0	601.0	605.0	648.0	760.0	875.0	913.0	984.0	1023.0	1037.0	1048.0	1057.0	1049.0	1053.0	1051.0	1032.0	1028.0	1108.0	1062.0	988.0	887.0	765.0
2/27/09	680.0	636.0	612.0	600.0	604.0	641.0	747.0	857.0	903.0	985.0	1031.0	1047.0	1051.0	1064.0	1073.0	1064.0	1052.0	1024.0	1010.0	1041.0	996.0	938.0	863.0	769.0
2/28/09	689.3	640.9	612.4	596.4	592.6	605.3	644.6	701.8	789.2	882.8	943.6	956.9	963.0	956.0	948.0	948.0	945.0	954.0	965.0	1005.0	975.0	919.0	845.0	760.0

PPLUS program licensed to HECO

Load Summary

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
3/1/09	672.2	626.5	601.5	587.0	584.7	593.3	617.8	648.9	716.7	798.0	849.3	874.7	888.0	890.0	895.0	897.0	917.0	934.0	952.0	1036.0	1009.0	943.0	862.0	751.0
3/2/09	670.0	627.0	604.0	592.0	598.0	642.0	744.0	854.0	898.0	975.0	1018.0	1046.0	1056.0	1072.0	1070.0	1070.0	1061.0	1057.0	1064.0	1103.0	1076.0	993.0	881.0	762.0
3/3/09	677.0	632.0	609.0	597.0	603.0	646.0	748.0	855.0	897.0	966.0	1003.0	1027.0	1042.0	1059.0	1062.0	1062.0	1068.0	1049.0	1041.0	1135.0	1063.0	986.0	879.0	757.0
3/4/09	669.0	625.0	602.0	592.0	597.0	637.0	740.0	841.0	868.0	944.0	986.0	1015.0	1032.0	1046.0	1054.0	1057.0	1058.0	1048.0	1044.0	1121.0	1080.0	1003.0	888.0	768.0
3/5/09	680.0	634.0	609.0	596.0	600.0	640.0	746.0	858.0	893.0	968.0	1014.0	1044.0	1057.0	1048.0	1038.0	1026.0	1021.0	1010.0	1010.0	1078.0	1047.0	979.0	886.0	772.0
3/6/09	689.0	644.0	623.0	612.0	618.0	663.0	771.0	897.0	936.0	1004.0	1039.0	1057.0	1070.0	1080.0	1075.0	1062.0	1053.0	1037.0	1032.0	1081.0	1029.0	968.0	881.0	779.0
3/7/09	703.7	661.4	620.3	611.7	607.6	618.6	658.7	718.5	798.8	880.0	926.3	955.3	963.5	949.6	937.0	920.0	916.6	914.4	927.9	975.2	937.0	882.6	820.9	745.7
3/8/09	672.3	629.0	603.6	591.1	589.4	595.4	618.3	653.2	716.6	814.3	872.2	896.2	906.0	906.0	907.0	910.0	923.0	942.0	959.0	1048.0	1032.0	972.0	883.0	776.0
3/9/09	691.0	646.0	624.0	614.0	622.0	668.0	776.0	901.0	944.0	1012.0	1056.0	1077.0	1085.0	1099.0	1091.0	1086.0	1068.0	1054.0	1081.0	1129.0	1093.0	1009.0	906.0	782.0
3/10/09	695.0	651.0	628.0	621.0	626.0	670.0	786.0	916.0	948.0	998.0	1031.0	1021.0	1006.0	1006.0	1014.0	1025.0	1017.0	1017.0	1034.0	1084.0	1031.0	966.0	878.0	765.0
3/11/09	684.5	641.2	618.7	609.3	616.5	657.6	763.3	883.6	905.5	940.4	967.0	974.0	967.0	986.0	1006.0	1009.0	1016.0	1014.0	1012.0	1076.0	1056.0	984.0	873.0	760.0
3/12/09	675.0	628.0	606.0	599.0	604.0	646.0	748.0	860.0	893.0	957.0	1005.0	1032.0	1036.0	1052.0	1047.0	1026.0	1031.0	1014.0	1016.0	1077.0	1043.0	969.0	873.0	755.0
3/13/09	667.0	623.0	601.0	592.0	597.0	636.0	733.0	837.0	888.0	975.0	1021.0	1042.0	1046.0	1047.0	1027.0	1021.0	1011.0	988.0	978.0	1021.0	984.0	927.0	855.0	766.0
3/14/09	689.3	640.5	613.3	600.7	600.0	614.8	655.6	709.4	797.1	886.6	939.5	958.5	957.7	954.2	941.5	933.5	932.4	932.4	939.2	975.2	942.7	888.0	823.9	749.4
3/15/09	677.4	631.3	604.7	589.1	586.3	593.9	614.1	646.4	713.3	789.9	834.2	861.6	864.4	863.3	857.0	850.7	869.7	886.9	907.7	967.0	943.8	880.4	810.8	721.4
3/16/09	651.0	616.0	596.0	588.0	597.0	637.0	722.0	809.0	877.0	951.0	1000.0	1018.0	1032.0	1029.0	1029.0	1027.0	1021.0	1006.0	1011.0	1066.0	1026.0	938.0	842.0	737.0
3/17/09	655.2	617.2	597.3	589.0	592.4	629.8	711.7	800.9	870.7	937.0	979.9	994.2	1015.0	1023.0	1023.0	1027.0	1026.0	1004.0	999.0	1061.0	1007.0	938.0	852.0	746.0
3/18/09	666.0	625.0	605.0	597.0	601.0	638.0	725.0	815.0	887.0	940.0	981.0	1014.0	1012.0	1026.0	1028.0	1028.0	1029.0	1010.0	1012.0	1058.0	1021.0	957.0	855.0	752.0
3/19/09	674.0	634.0	609.0	600.0	604.0	641.0	728.0	822.0	892.0	965.0	1004.0	1025.0	1028.0	1031.0	1028.0	1021.0	1016.0	993.0	986.0	1038.0	1003.0	940.0	854.0	750.0
3/20/09	672.0	628.0	604.0	594.0	597.0	633.0	713.0	802.0	885.0	961.0	1009.0	1026.0	1037.0	1041.0	1036.0	1028.0	1021.0	1000.0	986.0	1012.0	974.0	922.0	848.0	764.0
3/21/09	689.7	638.8	610.3	595.9	594.6	607.0	640.9	690.7	770.5	852.7	898.4	913.7	914.5	910.6	895.7	888.0	893.4	900.7	903.3	952.0	935.6	886.0	821.5	745.9
3/22/09	678.5	632.4	605.9	593.3	587.6	596.7	619.6	650.2	713.8	787.2	830.0	851.7	855.9	854.2	847.3	845.6	855.7	871.7	880.5	932.9	921.2	874.0	807.7	730.7
3/23/09	656.8	619.4	598.7	589.7	593.8	626.1	692.0	766.2	843.4	918.9	965.8	993.0	1004.0	1006.0	1003.0	1000.0	1003.0	1001.0	1015.0	1066.0	1032.0	955.0	868.0	757.0
3/24/09	678.0	633.0	610.0	601.0	606.0	645.0	729.0	818.0	896.0	969.0	1016.0	1038.0	1057.0	1063.0	1064.0	1062.0	1044.0	1027.0	1034.0	1062.0	1007.0	944.0	858.0	753.0
3/25/09	680.0	636.0	613.0	605.0	608.0	641.0	721.0	800.0	881.0	958.0	1006.0	1036.0	1052.0	1059.0	1046.0	1036.0	1037.0	1025.0	1021.0	1063.0	1034.0	961.0	858.0	757.0
3/26/09	676.0	630.0	605.0	593.0	594.0	628.0	708.0	789.0	872.0	944.0	1004.0	1034.0	1038.0	1051.0	1046.0	1033.0	1018.0	999.0	993.0	1017.0	995.0	928.0	837.0	742.0
3/27/09	662.4	620.9	598.0	584.3	587.0	620.9	693.7	776.6	851.7	924.5	967.0	975.2	988.3	988.3	993.0	985.9	981.1	957.7	955.3	975.2	945.0	896.7	825.9	741.1
3/28/09	668.0	623.1	598.5	586.1	584.5	596.4	628.0	674.4	756.2	828.2	875.7	893.8	902.1	904.2	891.6	888.4	891.7	892.4	905.4	925.4	915.6	862.3	800.6	729.9
3/29/09	657.0	621.9	600.8	590.4	586.8	593.7	613.7	642.8	702.2	774.5	816.5	835.4	843.5	846.3	840.4	831.9	842.1	860.0	878.2	939.9	937.6	881.4	783.4	694.8
3/30/09	632.1	599.4	582.9	577.6	583.6	620.9	711.7	807.8	862.2	922.2	956.5	977.6	979.0	985.0	982.0	978.0	973.0	960.0	963.0	1022.0	1003.0	927.0	815.0	709.0
3/31/09	636.3	601.8	584.5	578.2	582.6	616.2	704.4	793.5	841.3	900.4	926.3	948.4	960.0	969.0	972.0	969.0	959.0	943.0	942.0	1009.0	993.0	914.0	809.0	707.0
4/1/09	629.5	606.8	595.7	590.5	593.5	617.0	687.5	788.0	814.9	875.0	919.1	939.7	957.0	981.0	987.0	991.0	983.0	949.0	957.0	1034.0	1022.0	941.0	810.0	705.0
4/2/09	639.9	611.3	596.7	592.4	595.0	615.9	686.6	774.0	823.2	898.3	935.3	966.1	966.0	994.0	994.0	992.0	999.0	974.0	958.0	1014.0	954.0	912.0	807.0	709.0
4/3/09	642.1	613.1	599.8	593.0	594.7	609.9	645.7	701.7	776.5	864.5	920.9	949.5	961.0	963.0	965.0	969.0	969.0	972.0	970.0	1001.0	969.0	903.0	820.0	726.0
4/4/09	658.7	625.4	609.6	600.7	599.6	606.6	631.8	672.1	750.8	834.2	892.6	913.5	912.1	903.8	888.8	876.7	880.6	891.1	899.8	952.2	948.8	884.7	815.5	740.3
4/5/09	673.0	635.3	613.9	606.3	603.7	609.6	627.8	652.6	713.7	783.5	816.7	838.4	841.1	836.6	834.3	842.2	853.8	866.7	866.7	919.8	955.2	904.5	809.1	716.6
4/6/09	648.0	621.0	608.0	604.0	608.0	635.0	717.0	825.0	908.0	984.0	1036.0	1087.0	1106.0	1126.0	1126.0	1123.0	1107.0	1079.0	1062.0	1141.0	1139.0	1022.0	877.0	738.0
4/7/09	666.0	634.0	619.0	613.0	616.0	644.0	735.0	853.0	906.0	994.0	1050.0	1095.0	1106.0	1130.0	1123.0	1112.0	1085.0	1061.0	1070.0	1138.0	1090.0	991.0	862.0	737.0
4/8/09	661.0	628.0	614.0	609.0	612.0	640.0	729.0	842.0	924.0	1014.0	1068.0	1104.0	1115.0	1125.0	1134.0	1134.0	1122.0	1090.0	1078.0	1125.0	1131.0	987.0	876.0	751.0
4/9/09	667.0	633.0	619.0	612.0	614.0	640.0	728.0	847.0	911.0	1001.0	1067.0	1107.0	1103.0	1098.0	1068.0	1050.0	1058.0	1043.0	1044.0	1084.0	1093.0	991.0	864.0	746.0
4/10/09	663.0	632.0	616.0	609.0	611.0	639.0	726.0	837.0	900.0	980.0	1034.0	1067.0	1072.0	1087.0	1065.0	1078.0	1070.0	1022.0	1004.0	1024.0	1011.0	941.0	848.0	754.0
4/11/09	678.2	640.6	625.2	613.8	611.3	620.2	650.2	699.2	792.2	885.9	951.2	971.5	966.1	966.1	955.2	941.9	952.6	948.5	939.3	972.9	977.0	907.0	832.1	747.0
4/12/09	676.8	640.5	621.6	610.2	606.6	614.7	630.4	656.6	721.6	800.2	856.4	880.2	893.0	896.0	891.0	892.0	903.0	926.0	946.0	1015.0	1033.0	943.0	830.0	728.0
4/13/09	657.0	628.0	614.0	609.0	614.0	643.0	736.0	849.0	907.0	990.0	1047.0	1070.0	1090.0	1106.0	1096.0	1090.0	1079.0	1061.0	1058.0	1115.0	1114.0	1012.0	860.0	736.0
4/14/09	662.0	630.0	615.0	610.0	613.0	644.0	738.0	855.0	901.0	990.0	1036.0	1068.0	1076.0	1070.0	1047.0	1041.0	1034.0	1012.0	1019.0	1106.0	1064.0	969.0	846.0	723.0
4/15/09	653.0	625.0	611.0	606.0	611.0	641.0	727.0	834.0	886.0	958.0	1007.0	1040.0	1044.0	1050.0	1056.0	1044.0	1040.0	1021.0	1017.0	1061.0	1072.0	950.0	838.0	720.0
4/16/09	651.0	622.0	610.0	603.0	607.0	636.0	730.0	828.0	880.0	943.0	1004.0	1012.0	1019.0	1025.0	1036.0	1040.0	1041.0	1012.0	999.0	1043.0	1049.0	958.0	839.0	724.0
4/17/09	653.0	624.0	609.0	603.0	607.0	636.0	723.0	823.0	888.0	970.0	1021.0	1049.0	1056.0	1059.0	1056.0	1053.0	1044.0	1011.0	997.0	1011.0	990.0	925.0	838.0	740.0
4/18/09	667.1	632.3	613.8	605.3	604.6	613.8	638.2	683.7	766.4	850.6	910.7	931.4	938.0	932.7	921.0	913.4	921.0	934.0	914.6	938.0	953.9	887.2	814.5	735.1
4/19/09	667.2	632.6	613.7	604.6	601.6	607.6	621.0	649.4	709.9	791.2	842.9	868.0	884.7	884.7	884.7	894.5	909.6	919.8	930.1	986.8	996.6	910.8	811.2	710.7
4/20/09	644.0	620.0	607.0	602.0	607.0	636.0	726.0	825.0	880.0	950.0	1009.0	1034.0	1040.0	1049.0	1050.0	1036.0	1025.0	1014.0	1005.0	1058.0	1070.0	962.0	838.0	723.0
4/21/09	651.0	625.0	609.0	605.0	609.0	637.0	723.0	838.0	895.0	946.0	1001.0	1022.0	1024.0	1043.0	1040.0	1030.0	1024.0	1009.0	997.0	1053.0	1058.0	965.0	842.0	724.0
4/22/09	652.0	623.0	611.0	605.0	608.0	635.0	721.0	831.0	900.0	974.0	1017.0	1034.0	1043.0	1058.0	1053.0	1053.0	1044.0	1025.0	1012.0	1050.0	1068.0	965.0	841.0	727.0
4/23/09	655.0	625.0	612.0	605.0	609.0	636.0	724.0	823.0	887.0	970.0	1024.0	1044.0	1064.0	1079.0	1084.0	1084.0	1064.0	1049.0	1030.0	1053.0	1067.0	972.0	847.0	728.0
4/24/09	655.0	623.0	610.0	603.0	607.0	633.0	709.0	809.0	882.0	958.0	1019.0	1044.0	1056.0	1076.0	1076.0	1068.0	1064.0	1031.0	1002.0	995.0	987.0	921.0	829.0	744.0
4/25/09	666.8	632.5	613.2	603.9	602.6	609.9	633.3	681.4	764.8	855.6	909.8	929.3	932.8	919.5	910.7	905.4	915.3	911.9	902.8	941.5	944.4	883.3	808.7	730.2
4/26/09	665.4	631.7	613.3	604.5	602.9	608.8	623.3	651.9	719.1	795.0	847.1	874.5	885.0	888.0	882.0	880.0	892.0	913.0	925.0	977.0	1012.0	933.0	824.0	719.0
4/27/09	649.0	622.0	608.0	603.0	607.0	636.0	720.0	829.0	902.0	984.0	1038.0	1072.0	1088.0	1098.0	1103.0	1107.0	1098.0	1070.0	1061.0	1084.0	1103.0	1001.0	850.0	733.0
4/28/09	667.0	630.0	612.0	606.0	609.0	641.0	736.0	846.0	912.0	981.0	1033.0	1055.0	1058.0	1072.0	1062.0	1072.0	1058.0	1034.0	1018.0	1058.0	1052.0	972.0	864.0	743.0
4/29/09	669.0	633.0	615.0	609.0	615.0	638.0	744.0	856.0	913.0	974.0	1022.0	1043.0	1052.0	1070.0	1072.0	1073.0	1067.0	1041.0	1043.0	1065.0	1087.0	983.0	876.0	756.0
4/30/09	677.0	638.0	620.0	612.0	616.0	650.0	743.0	853.0	921.0	992.0	1037.0	1056.0	1062.0	1076.0	1067.0	1067.0	1068.0	1050.0	1040.0	1070.0	1085.0	997.0	881.0	767.0

Load Summary

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
5/1/09	690.0	654.0	635.0	626.0	630.0	662.0	757.0	866.0	931.0	995.0	1036.0	1052.0	1049.0	1048.0	1043.0	1048.0	1049.0	1028.0	1003.0	996.0	1005.0	947.0	871.0	786.0
5/2/09	701.6	659.6	634.1	623.7	622.1	634.7	665.5	720.2	810.1	901.5	954.8	977.8	976.5	980.4	965.0	958.6	952.3	948.6	931.3	952.3	977.8	925.3	855.1	778.0
5/3/09	702.4	660.1	636.4	622.8	619.7	626.2	640.1	679.5	752.1	831.2	881.7	904.4	917.0	919.0	918.0	929.0	933.0	944.0	950.0	976.0	1011.0	952.0	863.0	761.0
5/4/09	680.0	648.0	627.0	622.0	626.0	662.0	751.0	852.0	924.0	995.0	1024.0	1048.0	1059.0	1057.0	1053.0	1035.0	1024.0	1011.0	1008.0	1030.0	1060.0	975.0	862.0	753.0
5/5/09	679.0	642.0	626.0	616.0	623.0	653.0	745.0	855.0	904.0	966.0	1008.0	1032.0	1041.0	1048.0	1052.0	1060.0	1057.0	1035.0	1017.0	1035.0	1057.0	982.0	875.0	760.0
5/6/09	685.0	650.0	630.0	621.0	625.0	660.0	750.0	860.0	916.0	980.0	1027.0	1049.0	1046.0	1059.0	1067.0	1059.0	1055.0	1024.0	1009.0	1026.0	1056.0	969.0	868.0	755.0
5/7/09	678.0	645.0	628.0	620.0	623.0	656.0	745.0	846.0	898.0	951.0	993.0	1019.0	1028.0	1042.0	1037.0	1038.0	1034.0	1023.0	1000.0	1017.0	1038.0	960.0	856.0	752.0
5/8/09	677.1	642.8	625.8	618.5	621.1	650.1	725.9	834.8	881.9	932.6	962.4	980.4	993.0	1004.0	1001.0	1007.0	1001.0	980.0	942.0	952.0	960.0	901.0	833.0	752.0
5/9/09	685.6	646.6	625.7	615.4	613.5	621.6	644.6	704.5	785.0	863.4	904.9	927.1	925.5	923.3	916.4	914.8	921.0	920.3	908.2	918.9	941.5	889.6	831.0	755.7
5/10/09	686.8	645.7	623.5	612.4	609.6	616.7	634.1	673.4	745.1	814.1	857.1	873.7	872.6	870.1	876.8	884.3	895.6	903.9	901.0	913.1	941.6	905.1	833.8	741.7
5/11/09	668.0	632.0	617.0	609.0	614.0	646.0	730.0	836.0	917.0	996.0	1043.0	1069.0	1084.0	1089.0	1086.0	1073.0	1055.0	1030.0	1017.0	1042.0	1069.0	984.0	869.0	756.0
5/12/09	678.0	644.0	626.0	621.0	623.0	655.0	739.0	845.0	920.0	997.0	1041.0	1066.0	1084.0	1090.0	1084.0	1080.0	1072.0	1049.0	1027.0	1034.0	1060.0	978.0	876.0	756.0
5/13/09	676.0	643.0	625.0	616.0	621.0	653.0	738.0	845.0	917.0	996.0	1039.0	1064.0	1086.0	1090.0	1096.0	1089.0	1086.0	1073.0	1045.0	1042.0	1080.0	989.0	885.0	770.0
5/14/09	685.0	648.0	629.0	620.0	622.0	648.0	739.0	848.0	918.0	989.0	1035.0	1066.0	1073.0	1086.0	1083.0	1086.0	1090.0	1066.0	1034.0	1030.0	1073.0	991.0	888.0	775.0
5/15/09	694.0	653.0	633.0	623.0	628.0	658.0	746.0	865.0	935.0	1012.0	1060.0	1092.0	1103.0	1112.0	1111.0	1109.0	1095.0	1062.0	1031.0	1015.0	1011.0	950.0	872.0	774.0
5/16/09	701.0	662.0	640.0	628.0	627.0	637.0	664.0	731.0	836.0	925.0	978.0	1001.0	1009.0	1001.0	997.0	999.0	1016.0	1007.0	995.0	995.0	1024.0	971.0	890.0	807.0
5/17/09	723.4	676.4	650.7	636.9	632.4	639.9	655.7	700.5	778.9	857.3	922.8	954.8	966.0	971.0	976.0	983.0	999.0	1004.0	1008.0	1037.0	1082.0	1009.0	912.0	799.0
5/18/09	703.0	668.0	643.0	636.0	640.0	674.0	768.0	888.0	979.0	1056.0	1100.0	1136.0	1147.0	1161.0	1150.0	1148.0	1138.0	1123.0	1117.0	1129.0	1133.0	1035.0	922.0	794.0
5/19/09	703.0	662.0	642.0	633.0	636.0	673.0	766.0	882.0	969.0	1043.0	1092.0	1120.0	1138.0	1153.0	1150.0	1147.0	1135.0	1111.0	1095.0	1100.0	1105.0	1038.0	906.0	790.0
5/20/09	701.0	660.0	639.0	631.0	635.0	670.0	761.0	873.0	934.0	1005.0	1050.0	1076.0	1083.0	1092.0	1102.0	1111.0	1112.0	1093.0	1062.0	1053.0	1083.0	1001.0	907.0	790.0
5/21/09	705.0	666.0	643.0	634.0	637.0	667.0	761.0	876.0	944.0	1015.0	1062.0	1079.0	1093.0	1106.0	1106.0	1114.0	1114.0	1087.0	1059.0	1055.0	1086.0	1016.0	906.0	787.0
5/22/09	705.0	666.0	644.0	632.0	635.0	663.0	750.0	864.0	933.0	979.0	1032.0	1062.0	1072.0	1077.0	1083.0	1079.0	1064.0	1037.0	1004.0	978.0	1001.0	950.0	874.0	784.0
5/23/09	710.6	666.2	642.2	629.6	626.4	635.8	660.3	720.2	812.1	900.3	948.6	966.2	962.4	961.2	952.3	947.3	948.6	946.1	933.8	919.2	948.6	901.5	841.1	762.3
5/24/09	693.7	653.0	630.9	618.6	615.8	621.5	635.1	672.3	741.2	812.8	862.8	884.5	896.8	906.2	913.3	915.6	927.7	932.6	921.6	921.6	952.3	907.3	845.4	773.3
5/25/09	698.2	660.3	638.1	628.0	626.4	638.7	661.6	705.1	775.2	862.8	922.8	951.1	960.0	959.0	955.0	957.0	971.0	982.0	984.0	988.0	1046.0	992.0	888.0	771.0
5/26/09	692.0	654.0	634.0	627.0	632.0	662.0	747.0	861.0	946.0	1030.0	1082.0	1115.0	1126.0	1150.0	1148.0	1148.0	1145.0	1111.0	1087.0	1066.0	1114.0	1026.0	909.0	787.0
5/27/09	702.0	663.0	642.0	634.0	637.0	669.0	753.0	868.0	957.0	1035.0	1083.0	1120.0	1135.0	1133.0	1145.0	1164.0	1161.0	1135.0	1105.0	1079.0	1121.0	1049.0	935.0	806.0
5/28/09	705.0	666.0	643.0	634.0	637.0	667.0	761.0	876.0	944.0	1015.0	1062.0	1079.0	1093.0	1106.0	1106.0	1114.0	1114.0	1087.0	1059.0	1055.0	1086.0	1016.0	906.0	787.0
5/29/09	718.0	672.0	650.0	639.0	640.0	669.0	758.0	880.0	955.0	1026.0	1073.0	1115.0	1118.0	1138.0	1145.0	1151.0	1141.0	1117.0	1066.0	1013.0	1030.0	971.0	890.0	796.0
5/30/09	715.0	669.0	642.0	630.0	626.0	635.0	658.0	719.0	821.0	912.0	974.0	1005.0	1012.0	1015.0	1009.0	1008.0	1009.0	1000.0	979.0	960.0	991.0	946.0	873.0	788.0
5/31/09	710.0	662.9	640.3	625.2	621.1	627.4	640.0	682.6	759.3	845.4	898.8	931.6	954.0	960.0	970.0	978.0	986.0	991.0	991.0	991.0	1056.0	1005.0	912.0	802.0
6/1/09	735.0	685.0	656.0	643.0	650.0	699.0	797.0	909.0	972.0	1036.0	1079.0	1103.0	1114.0	1125.0	1122.0	1122.0	1110.0	1085.0	1069.0	1054.0	1067.0	1013.0	926.0	820.0
6/2/09	730.0	682.0	652.0	658.0	666.0	714.0	813.0	930.0	1008.0	1075.0	1112.0	1134.0	1143.0	1155.0	1158.0	1166.0	1154.0	1137.0	1123.0	1088.0	1112.0	1055.0	961.0	852.0
6/3/09	753.0	700.0	666.0	650.0	655.0	705.0	787.0	914.0	986.0	1042.0	1076.0	1111.0	1124.0	1135.0	1137.0	1139.0	1136.0	1119.0	1102.0	1078.0	1101.0	1042.0	957.0	848.0
6/4/09	752.0	705.0	673.0	660.0	663.0	706.0	799.0	907.0	983.0	1038.0	1078.0	1100.0	1109.0	1114.0	1122.0	1126.0	1122.0	1104.0	1077.0	1057.0	1085.0	1033.0	953.0	846.0
6/5/09	755.0	698.0	666.0	648.0	651.0	688.0	772.0	879.0	978.0	1046.0	1091.0	1111.0	1118.0	1125.0	1122.0	1120.0	1115.0	1100.0	1069.0	1037.0	1054.0	1006.0	937.0	846.0
6/6/09	764.0	705.0	672.0	654.0	649.0	664.0	698.0	763.0	864.0	946.0	991.0	1013.0	1011.0	1009.0	995.0	992.0	993.0	997.0	986.0	978.0	999.0	963.0	902.0	830.0
6/7/09	743.5	693.1	661.9	641.8	636.1	648.0	664.9	718.1	803.3	876.6	926.4	952.9	960.0	962.0	965.0	973.0	978.0	986.0	983.0	973.0	1014.0	981.0	915.0	826.0
6/8/09	746.0	687.0	656.0	641.0	637.0	674.0	735.0	821.0	917.0	993.0	1042.0	1069.0	1077.0	1080.0	1084.0	1077.0	1079.0	1077.0	1061.0	1046.0	1072.0	1020.0	939.0	827.0
6/9/09	739.0	686.0	656.0	644.0	647.0	692.0	772.0	876.0	957.0	1018.0	1059.0	1085.0	1098.0	1108.0	1112.0	1116.0	1107.0	1080.0	1064.0	1047.0	1076.0	1021.0	935.0	830.0
6/10/09	742.0	686.0	653.0	639.0	642.0	684.0	768.0	858.0	958.0	1027.0	1076.0	1101.0	1102.0	1107.0	1100.0	1098.0	1087.0	1071.0	1060.0	1043.0	1082.0	1023.0	942.0	828.0
6/11/09	737.0	685.0	655.0	642.0	647.0	689.0	772.0	874.0	957.0	1012.0	1044.0	1055.0	1052.0	1064.0	1065.0	1066.0	1059.0	1045.0	1036.0	1027.0	1059.0	1011.0	930.0	825.0
6/12/09	732.0	682.0	650.0	637.0	643.0	683.0	771.0	876.0	943.0	1013.0	1051.0	1076.0	1080.0	1098.0	1097.0	1097.0	1091.0	1064.0	1037.0	1008.0	1029.0	984.0	918.0	838.0
6/13/09	757.0	698.6	663.8	645.9	641.6	657.8	691.6	758.0	845.4	927.4	970.2	985.7	986.8	978.5	967.1	968.2	971.2	970.2	955.8	944.6	978.5	941.5	894.4	819.6
6/14/09	740.3	686.3	652.5	632.0	626.1	638.2	659.8	714.7	798.7	870.0	917.1	935.7	945.6	949.7	961.0	965.1	973.3	979.5	968.2	956.9	994.1	970.2	907.3	818.6
6/15/09	733.0	679.0	648.0	637.0	644.0	691.0	775.0	881.0	961.0	1032.0	1080.0	1108.0	1120.0	1123.0	1125.0	1123.0	1116.0	1094.0	1074.0	1052.0	1087.0	1032.0	933.0	824.0
6/16/09	736.0	680.0	652.0	637.0	643.0	683.0	769.0	848.0	953.0	1019.0	1051.0	1080.0	1094.0	1100.0	1088.0	1105.0	1097.0	1080.0	1061.0	1040.0	1076.0	1021.0	937.0	830.0
6/17/09	740.0	687.0	657.0	642.0	648.0	685.0	775.0	877.0	963.0	1032.0	1077.0	1098.0	1104.0	1114.0	1115.0	1121.0	1120.0	1102.0	1081.0	1057.0	1086.0	1032.0	946.0	840.0
6/18/09	752.0	696.0	668.0	654.0	658.0	699.0	789.0	889.0	968.0	1050.0	1097.0	1127.0	1131.0	1143.0	1145.0	1136.0	1127.0	1084.0	1066.0	1049.0	1084.0	1036.0	950.0	840.0
6/19/09	752.0	696.0	665.0	649.0	654.0	696.0	776.0	885.0	962.0	1029.0	1069.0	1093.0	1091.0	1094.0	1097.0	1103.0	1097.0	1076.0	1043.0	1008.0	1029.0	982.0	914.0	824.0
6/20/09	744.3	693.4	660.4	642.5	635.7	648.4	682.9	747.0	839.7	920.3	967.1	985.7	992.0	993.0	987.8	985.7	984.7	978.5	964.0	953.8	983.7	948.7	894.4	818.6
6/21/09	741.6	686.0	653.3	631.6	624.1	633.0	642.8	697.5	773.4	848.8	892.9	919.7	930.0	933.0	942.0	944.0	955.0	963.0	969.0	967.0	1008.0	972.0	900.0	806.0
6/22/09	727.0	671.0	640.0	628.0	635.0	679.0	768.0	868.0	950.0	1017.0	1064.0	1089.0	1100.0	1104.0	1107.0	1104.0	1100.0	1082.0	1066.0	1046.0	1079.0	1022.0	934.0	827.0
6/23/09	741.0	686.0	658.0	643.0	646.0	692.0	776.0	881.0	933.0	1007.0	1059.0	1087.0	1094.0	1105.0	1112.0	1110.0	1102.0	1085.0	1068.0	1046.0	1082.0	1035.0	945.0	841.0
6/24/09	752.0	695.0	668.0	654.0	659.0	698.0	793.0	898.0	977.0	1040.0	1082.0	1104.0	1111.0	1119.0	1118.0	1119.0	1115.0	1097.0	1074.0	1052.0	1090.0	1038.0	952.0	845.0
6/25/09	759.0	702.0	668.0	654.0	656.0	697.0	786.0	883.0	954.0	1015.0	1052.0	1066.0	1076.0	1076.0	1075.0	1074.0	1062.0	1044.0	1030.0	1016.0	1049.0	1006.0	924.0	824.0
6/26/09	737.0	684.0	653.0	636.0	640.0	680.0	769.0	862.0	939.0	1006.0	1044.0	1060.0	1066.0	1075.0	1074.0	1074.0	1064.0	1047.0	1017.0	986.0	1005.0	968.0	907.0	821.0
6/27/09	737.9	683.7	650.1	632.3	624.8	637.4	669.0	733.4	833.9	913.3	961.0	980.6	984.7	984.7	976.4	973.3	978.5	981.6	968.2	950.7	979.5	946.6	899.3	821.5
6/28/09	743.1	690.9	656.4	638.6	634.8	643.0	660.5	708.2	775.5	854.7	905.3	933.7	942.0	943.0	947.0	952.0	957.0	966.0	967.0	974.0	999.0	963.0	892.0	802.0
6/29/09	721.0	675.0	645.0	634.0	642.0	687.0	773.0	872.0	946.0	1011.0	1054.0	1089.0	1102.0	1113.0	1113.0	1111.0	1105.0	1092.0	1073.0	1054.0	1091.0	1036.0	953.0	842.0
6/30/09	751.0	696.0	665.0	650.0	654.0	695.0	780.0	881.0	957.0	1018.0	1067.0	1090.0	1101.0	1111.0	1115.0	1115.0	1110.0	1087.0	1064.0	1034.0	1057.0	1010.0	934.0	855.0

Load Summary

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
7/1/09	738.5	699.4	678.8	670.1	668.0	675.2	690.2	722.7	782.8	855.6	915.0	943.0	950.6	959.5	948.0	948.0	944.3	948.0	933.1	917.4	918.6	875.0	869.5	793.3
7/2/09	721.0	685.0	670.0	664.0	666.0	686.0	741.0	832.0	925.0	1027.0	1102.0	1133.0	1142.0	1152.0	1157.0	1159.0	1147.0	1121.0	1082.0	1051.0	1100.0	1031.0	921.0	811.0
7/3/09	731.0	695.0	677.0	670.0	669.0	688.0	747.0	840.0	929.0	1016.0	1082.0	1125.0	1133.0	1136.0	1138.0	1141.0	1128.0	1096.0	1058.0	1002.0	1029.0	975.0	887.0	795.0
7/4/09	738.5	699.4	678.8	670.1	668.0	675.2	690.2	722.7	782.8	855.6	915.0	943.0	950.6	959.5	948.0	948.0	944.3	948.0	933.1	917.4	918.6	875.0	869.5	793.3
7/5/09	722.0	688.0	668.6	660.1	657.6	661.7	671.9	695.5	747.7	815.4	871.5	902.5	915.0	927.0	932.0	938.0	953.0	963.0	961.0	958.0	1007.0	961.0	897.0	763.0
7/6/09	714.0	681.0	667.0	661.0	664.0	686.0	745.0	838.0	913.0	1015.0	1077.0	1117.0	1134.0	1146.0	1146.0	1146.0	1141.0	1119.0	1085.0	1055.0	1109.0	1028.0	916.0	800.0
7/7/09	728.0	690.0	674.0	668.0	670.0	695.0	758.0	852.0	934.0	1018.0	1082.0	1117.0	1146.0	1168.0	1173.0	1173.0	1175.0	1155.0	1117.0	1105.0	1149.0	1061.0	942.0	817.0
7/8/09	738.0	698.0	680.0	673.0	674.0	697.0	762.0	861.0	948.0	1014.0	1076.0	1120.0	1147.0	1160.0	1151.0	1159.0	1149.0	1122.0	1079.0	1080.0	1102.0	1027.0	921.0	808.0
7/9/09	729.0	693.0	677.0	670.0	674.0	695.0	762.0	852.0	934.0	1029.0	1100.0	1130.0	1149.0	1142.0	1146.0	1146.0	1136.0	1120.0	1096.0	1061.0	1103.0	1032.0	925.0	813.0
7/10/09	730.0	691.0	673.0	665.0	667.0	687.0	742.0	835.0	927.0	1010.0	1061.0	1077.0	1083.0	1082.0	1091.0	1091.0	1082.0	1054.0	1015.0	979.0	1017.0	963.0	886.0	803.0
7/11/09	734.3	694.9	677.0	667.3	664.2	672.6	690.7	735.7	811.7	894.0	958.2	984.2	984.2	963.3	955.6	934.4	936.8	940.5	933.1	930.7	959.5	921.0	862.0	788.9
7/12/09	726.5	690.3	672.0	664.6	661.3	666.2	674.9	698.9	755.1	822.5	875.3	896.6	910.0	907.0	907.0	910.0	923.0	942.0	95..0	954.0	1011.0	963.0	882.0	784.0
7/13/09	714.0	683.0	668.0	662.0	665.0	689.0	751.0	843.0	941.0	1010.0	1088.0	1125.0	1146.0	1157.0	1152.0	1147.0	1133.0	1114.0	1096.0	1076.0	1116.0	1037.0	917.0	801.0
7/14/09	724.0	690.0	673.0	666.0	668.0	690.0	752.0	842.0	933.0	1021.0	1070.0	1105.0	1125.0	1131.0	1134.0	1138.0	1146.0	1125.0	1103.0	1079.0	1125.0	1049.0	938.0	819.0
7/15/09	736.0	696.0	678.0	671.0	674.0	697.0	757.0	842.0	926.0	1020.0	1079.0	1114.0	1128.0	1152.0	1154.0	1155.0	1147.0	1125.0	1099.0	1077.0	1122.0	1057.0	943.0	823.0
7/16/09	740.0	700.0	682.0	673.0	676.0	697.0	761.0	851.0	942.0	1038.0	1117.0	1159.0	1172.0	1195.0	1197.0	1202.0	1200.0	1165.0	1128.0	1077.0	1116.0	1042.0	929.0	812.0
7/17/09	736.0	699.0	681.0	672.0	673.0	696.0	756.0	850.0	947.0	1032.0	1089.0	1128.0	1151.0	1164.0	1154.0	1152.0	1146.0	1108.0	1071.0	1037.0	1070.0	1002.0	923.0	822.0
7/18/09	749.0	709.0	689.0	677.0	675.0	678.0	702.0	751.0	838.0	928.0	999.0	1021.0	1022.0	1015.0	1009.0	1002.0	1003.0	1003.0	988.0	980.0	1009.0	957.0	879.0	803.0
7/19/09	737.3	697.0	677.9	668.0	666.4	670.8	682.2	704.7	761.6	828.0	893.0	921.2	931.9	938.1	934.4	941.8	946.8	963.3	962.0	958.2	996.3	950.6	868.4	776.8
7/20/09	713.0	683.0	669.0	664.0	665.0	688.0	749.0	838.0	949.0	1045.0	1105.0	1144.0	1168.0	1168.0	1164.0	1162.0	1157.0	1136.0	1102.0	1071.0	1109.0	1039.0	927.0	804.0
7/21/09	727.0	691.0	672.0	666.0	668.0	689.0	751.0	840.0	937.0	1028.0	1103.0	1134.0	1157.0	1172.0	1173.0	1180.0	1170.0	1151.0	1116.0	1076.0	1127.0	1048.0	927.0	811.0
7/22/09	728.0	694.0	675.0	668.0	669.0	690.0	750.0	837.0	931.0	1024.0	1091.0	1128.0	1146.0	1160.0	1165.0	1168.0	1164.0	1144.0	1106.0	1076.0	1119.0	1039.0	927.0	809.0
7/23/09	729.0	692.0	672.0	666.0	667.0	690.0	747.0	838.0	926.0	1014.0	1085.0	1131.0	1146.0	1164.0	1159.0	1154.0	1141.0	1108.0	1073.0	1037.0	1082.0	1014.0	911.0	799.0
7/24/09	725.0	687.0	673.0	665.0	666.0	685.0	743.0	828.0	937.0	1031.0	1096.0	1128.0	1144.0	1168.0	1164.0	1160.0	1141.0	1096.0	1051.0	1011.0	1038.0	979.0	901.0	802.0
7/25/09	731.0	693.0	673.0	664.0	662.0	668.0	686.0	731.0	817.0	910.0	972.0	1010.0	1018.0	1009.0	998.0	996.0	996.0	996.0	978.0	959.0	1002.0	949.0	881.0	795.0
7/26/09	727.6	689.9	671.8	662.1	660.0	663.5	673.5	695.1	753.0	822.5	880.5	914.4	927.0	941.0	948.0	947.0	959.0	978.0	972.0	961.0	1020.0	968.0	884.0	786.0
7/27/09	711.0	683.0	666.0	660.0	661.0	682.0	741.0	829.0	928.0	1017.0	1091.0	1133.0	1159.0	1175.0	1180.0	1185.0	1172.0	1146.0	1103.0	1082.0	1127.0	1035.0	917.0	801.0
7/28/09	720.0	687.0	672.0	665.0	668.0	689.0	758.0	851.0	931.0	1024.0	1102.0	1138.0	1152.0	1180.0	1188.0	1188.0	1188.0	1157.0	1123.0	1096.0	1147.0	1054.0	932.0	806.0
7/29/09	728.0	692.0	674.0	668.0	670.0	693.0	775.0	885.0	968.0	1055.0	1109.0	1144.0	1164.0	1187.0	1198.0	1192.0	1195.0	1172.0	1146.0	1117.0	1165.0	1086.0	952.0	819.0
7/30/09	732.0	694.0	676.0	668.0	670.0	695.0	779.0	884.0	962.0	1054.0	1108.0	1136.0	1151.0	1160.0	1162.0	1160.0	1168.0	1134.0	1108.0	1080.0	1128.0	1038.0	926.0	801.0
7/31/09	725.0	690.0	673.0	666.0	667.0	691.0	770.0	866.0	962.0	1048.0	1100.0	1138.0	1151.0	1167.0	1165.0	1155.0	1116.0	1122.0	1068.0	1041.0	1047.0	978.0	895.0	806.0
8/1/09	769.0	723.0	699.0	685.0	683.0	694.0	721.0	770.0	869.0	965.0	1022.0	1047.0	1050.0	1047.0	1038.0	1031.0	1043.0	1045.0	1030.0	1017.0	1051.0	1004.0	936.0	850.0
8/2/09	771.2	726.1	699.6	685.4	681.6	688.1	704.4	737.1	809.2	889.6	947.6	977.5	995.0	998.0	1005.0	1013.0	1027.0	1035.0	1033.0	1033.0	1088.0	1036.0	946.0	838.0
8/3/09	754.0	712.0	690.0	685.0	690.0	727.0	813.0	925.0	1005.0	1077.0	1138.0	1170.0	1191.0	1200.0	1202.0	1199.0	1188.0	1168.0	1145.0	1124.0	1171.0	1090.0	976.0	845.0
8/4/09	762.0	720.0	695.0	684.0	685.0	716.0	801.0	909.0	983.0	1065.0	1117.0	1144.0	1164.0	1177.0	1175.0	1184.0	1178.0	1158.0	1124.0	1111.0	1157.0	1086.0	962.0	843.0
8/5/09	760.0	720.0	697.0	685.0	689.0	720.0	802.0	907.0	981.0	1055.0	1108.0	1138.0	1158.0	1165.0	1180.0	1181.0	1167.0	1147.0	1112.0	1105.0	1136.0	1068.0	954.0	836.0
8/6/09	754.0	714.0	692.0	682.0	686.0	715.0	801.0	906.0	976.0	1056.0	1111.0	1147.0	1158.0	1174.0	1175.0	1186.0	1174.0	1155.0	1124.0	1108.0	1157.0	1081.0	964.0	844.0
8/7/09	759.0	718.0	696.0	685.0	688.0	719.0	804.0	916.0	976.0	1051.0	1108.0	1144.0	1164.0	1177.0	1183.0	1193.0	1183.0	1147.0	1123.0	1089.0	1101.0	1037.0	959.0	858.0
8/8/09	777.0	731.0	704.0	693.0	689.0	700.0	725.0	780.0	885.0	987.0	1046.0	1071.0	1064.0	1068.0	1059.0	1055.0	1059.0	1054.0	1031.0	1028.0	1063.0	1013.0	945.0	857.0
8/9/09	777.5	731.5	704.4	691.5	686.5	693.8	711.2	741.3	816.2	898.9	960.1	994.0	1000.0	1001.0	1002.0	1010.0	1027.0	1040.0	1041.0	1050.0	1094.0	1042.0	946.0	838.0
8/10/09	753.0	713.0	692.0	683.0	687.0	726.0	815.0	920.0	994.0	1081.0	1129.0	1148.0	1168.0	1177.0	1172.0	1172.0	1168.0	1150.0	1130.0	1138.0	1162.0	1074.0	964.0	843.0
8/11/09	761.0	720.0	697.0	686.0	686.0	721.0	810.0	923.0	996.0	1067.0	1113.0	1138.0	1147.0	1162.0	1157.0	1167.0	1157.0	1138.0	1107.0	1102.0	1152.0	1078.0	967.0	849.0
8/12/09	765.0	725.0	703.0	693.0	695.0	731.0	825.0	936.0	992.0	1060.0	1098.0	1133.0	1134.0	1134.0	1129.0	1136.0	1124.0	1117.0	1102.0	1088.0	1122.0	1054.0	946.0	835.0
8/13/09	756.0	718.0	687.0	680.0	690.0	726.0	821.0	931.0	998.0	1073.0	1119.0	1143.0	1155.0	1170.0	1170.0	1172.0	1162.0	1143.0	1104.0	1088.0	1115.0	1042.0	954.0	843.0
8/14/09	760.0	718.0	685.0	685.0	686.0	714.0	779.0	857.0	945.0	1041.0	1089.0	1113.0	1113.0	1123.0	1129.0	1124.0	1124.0	1109.0	1074.0	1059.0	1076.0	1010.0	932.0	852.0
8/15/09	777.0	729.0	706.0	693.0	687.0	697.0	725.0	771.0	860.0	951.0	993.0	1027.0	1032.0	1027.0	1022.0	1020.0	1021.0	1021.0	1002.0	1010.0	1035.0	989.0	930.0	847.0
8/16/09	774.3	726.1	702.0	689.8	685.4	692.1	712.5	742.0	812.6	881.5	951.0	977.5	993.0	992.0	989.0	989.0	992.0	1002.0	1005.0	1006.0	1054.0	1004.0	922.0	821.0
8/17/09	744.0	709.0	689.0	682.0	688.0	725.0	819.0	931.0	999.0	1072.0	1122.0	1158.0	1170.0	1180.0	1186.0	1181.0	1171.0	1143.0	1117.0	1126.0	1157.0	1084.0	964.0	844.0
8/18/09	762.0	720.0	698.0	689.0	693.0	726.0	822.0	929.0	987.0	1058.0	1115.0	1138.0	1155.0	1170.0	1167.0	1175.0	1171.0	1143.0	1126.0	1116.0	1150.0	1065.0	956.0	835.0
8/19/09	756.0	716.0	697.0	687.0	690.0	723.0	812.0	910.0	987.0	1061.0	1112.0	1151.0	1164.0	1181.0	1196.0	1200.0	1197.0	1175.0	1137.0	1131.0	1167.0	1088.0	973.0	844.0
8/20/09	765.0	722.0	701.0	691.0	696.0	732.0	826.0	931.0	1012.0	1089.0	1144.0	1168.0	1194.0	1217.0	1218.0	1220.0	1218.0	1190.0	1157.0	1155.0	1188.0	1105.0	990.0	861.0
8/21/09	773.0	729.0	706.0	694.0	697.0	733.0	824.0	925.0	1000.0	1077.0	1124.0	1152.0	1172.0	1183.0	1186.0	1194.0	1183.0	1157.0	1113.0	1098.0	1105.0	1035.0	951.0	862.0
8/22/09	780.0	732.0	704.0	690.0	686.0	697.0	726.0	777.0	882.0	983.0	1042.0	1074.0	1076.0	1058.0	1049.0	1042.0	1059.0	1056.0	1037.0	1050.0	1051.0	998.0	929.0	859.0
8/23/09	777.0	732.0	703.0	690.0	684.0	692.0	709.0	743.0	821.0	915.0	979.0	1013.0	1030.0	1040.0	1043.0	1042.0	1058.0	1068.0	1074.0	1092.0	1116.0	1058.0	959.0	843.0
8/24/09	759.0	718.0	696.0	687.0	691.0	726.0	819.0	921.0	1007.0	1096.0	1148.0	1183.0	1203.0	1221.0	1232.0	1232.0	1229.0	1214.0	1183.0	1188.0	1208.0	1116.0	992.0	864.0
8/25/09	777.0	735.0	709.0	698.0	698.0	734.0	828.0	930.0	1013.0	1094.0	1152.0	1190.0	1208.0	1223.0	1227.0	1221.0	1212.0	1180.0	1145.0	1161.0	1181.0	1090.0	973.0	854.0
8/26/09	769.0	725.0	704.0	693.0	698.0	731.0	832.0	935.0	1000.0	1074.0	1115.0	1160.0	1180.0	1196.0	1208.0	1215.0	1214.0	1197.0	1174.0	1178.0	1193.0	1107.0	989.0	862.0
8/27/09	777.0	734.0	709.0	699.0	701.0	736.0	821.0	939.0	1007.0	1100.0	1161.0	1197.0	1214.0	1227.0	1226.0	1239.0	1227.0	1188.0	1168.0	1181.0	1190.0	1098.0	982.0	859.0
8/28/09	774.0	730.0	709.0	698.0	700.0	732.0	825.0	930.0	1009.0	1088.0	1140.0	1180.0	1188.0	1194.0	1194.0	1200.0	1183.0	1150.0	1108.0	1111.0	1096.0	1038.0	954.0	863.0
8/29/09	778.0	733.0	708.0	693.0	689.0	697.0	731.0	771.0	855.0	945.0	1004.0	1031.0	1043.0	1049.0	1042.0	1028.0	1028.0	1013.0	995.0	1018.0	1017.0	962.0	909.0	838.0
8/30/09	764.5	722.4	697.2	684.9	680.2	687.6	703.4	727.4	794.7	871.7	928.2	956.7	965.0	970.0	974.0	979.0	986.0	988.0	976.0	999.0	1006.0	956.0	898.0	821.0
8/31/09	754.0	716.0	694.0	684.0	683.0	693.0	717.0	750.0	821.0	908.0	977.0	1013.0	1027.0	1023.0	1030.0	1032.0	1041.0	1055.0	1058.0	1097.0	1111.0	1038.0	935.0	831.0

Load Summary

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
9/1/09	759.0	716.0	695.0	684.0	687.0	727.0	827.0	928.0	995.0	1074.0	1119.0	1154.0	1172.0	1188.0	1196.0	1206.0	1195.0	1170.0	1132.0	1162.0	1160.0	1072.0	962.0	850.0
9/2/09	765.0	723.0	701.0	691.0	695.0	736.0	833.0	929.0	1002.0	1079.0	1124.0	1150.0	1160.0	1172.0	1176.0	1181.0	1176.0	1162.0	1129.0	1159.0	1152.0	1072.0	958.0	835.0
9/3/09	783.0	737.0	708.0	696.0	699.0	739.0	830.0	946.0	1011.0	1098.0	1154.0	1187.0	1202.0	1214.0	1212.0	1225.0	1214.0	1179.0	1160.0	1172.0	1180.0	1096.0	988.0	867.0
9/4/09	767.0	719.0	694.0	682.0	685.0	719.0	812.0	910.0	991.0	1074.0	1136.0	1175.0	1195.0	1211.0	1218.0	1228.0	1216.0	1184.0	1142.0	1166.0	1123.0	1061.0	975.0	882.0
9/5/09	796.0	741.0	714.0	697.0	694.0	707.0	742.0	801.0	901.0	998.0	1056.0	1084.0	1095.0	1098.0	1088.0	1087.0	1094.0	1082.0	1073.0	1111.0	1089.0	1030.0	967.0	881.0
9/6/09	794.0	741.0	711.0	691.0	684.0	691.0	713.0	745.0	828.0	914.0	975.0	1013.0	1027.0	1037.0	1037.0	1041.0	1053.0	1055.0	1048.0	1101.0	1096.0	1030.0	939.0	832.0
9/7/09	758.0	716.0	691.0	679.0	677.0	689.0	717.0	754.0	830.0	916.0	983.0	1017.0	1030.0	1027.0	1032.0	1035.0	1043.0	1056.0	1059.0	1095.0	1108.0	1041.0	943.0	839.0
9/8/09	758.0	716.0	692.0	683.0	686.0	724.0	821.0	918.0	983.0	1062.0	1119.0	1147.0	1166.0	1181.0	1187.0	1188.0	1181.0	1152.0	1122.0	1175.0	1156.0	1069.0	956.0	840.0
9/9/09	760.0	723.0	708.0	697.0	703.0	741.0	837.0	938.0	1000.0	1080.0	1129.0	1156.0	1162.0	1180.0	1187.0	1192.0	1187.0	1164.0	1114.0	1170.0	1141.0	1057.0	948.0	837.0
9/10/09	752.0	712.0	689.0	678.0	683.0	721.0	819.0	928.0	992.0	1042.0	1074.0	1110.0	1134.0	1147.0	1155.0	1160.0	1156.0	1134.0	1106.0	1166.0	1136.0	1054.0	947.0	838.0
9/11/09	758.0	716.0	692.0	682.0	687.0	727.0	820.0	917.0	985.0	1063.0	1125.0	1151.0	1166.0	1184.0	1193.0	1193.0	1179.0	1142.0	1105.0	1140.0	1091.0	1047.0	965.0	876.0
9/12/09	796.0	747.0	714.0	700.0	695.0	708.0	743.0	801.0	909.0	990.0	1049.0	1078.0	1074.0	1074.0	1067.0	1036.0	1030.0	1021.0	1018.0	1069.0	1043.0	994.0	931.0	851.0
9/13/09	774.4	730.6	701.9	686.6	684.6	693.5	720.1	748.4	825.9	902.0	956.7	991.0	1001.0	1003.0	1001.0	1011.0	1015.0	1028.0	1036.0	1120.0	1094.0	1029.0	943.0	840.0
9/14/09	760.0	719.0	699.0	691.0	699.0	739.0	847.0	958.0	1027.0	1103.0	1152.0	1179.0	1195.0	1208.0	1204.0	1214.0	1195.0	1175.0	1166.0	1221.0	1171.0	1090.0	974.0	854.0
9/15/09	771.0	730.0	705.0	711.0	714.0	757.0	865.0	973.0	1032.0	1106.0	1149.0	1171.0	1181.0	1195.0	1180.0	1180.0	1167.0	1137.0	1127.0	1163.0	1124.0	1043.0	939.0	827.0
9/16/09	754.0	713.0	694.0	684.0	690.0	731.0	832.0	936.0	985.0	1055.0	1099.0	1124.0	1140.0	1147.0	1151.0	1155.0	1150.0	1128.0	1109.0	1175.0	1128.0	1050.0	945.0	833.0
9/17/09	772.0	731.0	706.0	697.0	703.0	745.0	855.0	958.0	1027.0	1098.0	1147.0	1171.0	1179.0	1185.0	1187.0	1181.0	1175.0	1146.0	1125.0	1181.0	1119.0	1050.0	960.0	850.0
9/18/09	764.0	723.0	698.0	689.0	694.0	733.0	832.0	935.0	992.0	1066.0	1105.0	1127.0	1132.0	1143.0	1138.0	1129.0	1119.0	1093.0	1078.0	1111.0	1050.0	999.0	930.0	848.0
9/19/09	773.0	725.0	698.0	685.0	681.0	696.0	736.0	792.0	890.0	975.0	1027.0	1053.0	1060.0	1055.0	1044.0	1047.0	1043.0	1032.0	1016.0	1059.0	1015.0	959.0	903.0	839.0
9/20/09	766.0	722.0	694.0	689.0	687.0	693.0	720.0	753.0	827.0	904.0	988.0	1001.0	1014.0	1020.0	1027.0	1035.0	1047.0	1051.0	1061.0	1137.0	1101.0	1037.0	945.0	841.0
9/21/09	744.0	704.0	684.0	675.0	683.0	723.0	820.0	921.0	982.0	1054.0	1101.0	1129.0	1137.0	1150.0	1150.0	1151.0	1147.0	1125.0	1109.0	1187.0	1132.0	1050.0	943.0	827.0
9/22/09	748.0	708.0	688.0	677.0	683.0	721.0	826.0	927.0	995.0	1068.0	1123.0	1138.0	1152.0	1176.0	1173.0	1171.0	1160.0	1137.0	1114.0	1184.0	1129.0	1048.0	943.0	835.0
9/23/09	756.0	719.0	694.0	687.0	691.0	728.0	835.0	934.0	998.0	1056.0	1105.0	1122.0	1128.0	1140.0	1143.0	1147.0	1137.0	1111.0	1101.0	1170.0	1096.0	1027.0	934.0	824.0
9/24/09	747.0	709.0	686.0	679.0	684.0	721.0	826.0	925.0	980.0	1038.0	1084.0	1103.0	1108.0	1113.0	1131.0	1125.0	1124.0	1110.0	1094.0	1163.0	1108.0	1022.0	936.0	830.0
9/25/09	752.0	712.0	687.0	679.0	685.0	723.0	822.0	920.0	990.0	1073.0	1128.0	1152.0	1162.0	1176.0	1176.0	1175.0	1162.0	1125.0	1103.0	1151.0	1089.0	1031.0	950.0	861.0
9/26/09	781.0	733.0	705.0	690.0	686.0	698.0	736.0	793.0	903.0	1002.0	1060.0	1094.0	1088.0	1087.0	1071.0	1069.0	1077.0	1066.0	1067.0	1122.0	1067.0	1017.0	945.0	867.0
9/27/09	792.2	742.9	713.4	697.0	694.2	702.6	729.1	762.9	844.4	920.5	970.9	998.9	1008.0	1011.0	1014.0	1020.0	1030.0	1042.0	1051.0	1117.0	1072.0	1020.0	939.0	842.0
9/28/09	759.0	720.0	698.0	691.0	697.0	737.0	821.0	920.0	992.0	1067.0	1118.0	1142.0	1146.0	1160.0	1167.0	1154.0	1141.0	1115.0	1096.0	1172.0	1106.0	1021.0	926.0	829.0
9/29/09	748.0	711.0	691.0	682.0	688.0	725.0	814.0	898.0	984.0	1053.0	1106.0	1136.0	1143.0	1141.0	1131.0	1128.0	1118.0	1087.0	1109.0	1162.0	1096.0	1009.0	928.0	825.0
9/30/09	748.0	708.0	689.0	680.0	687.0	725.0	809.0	890.0	968.0	1047.0	1083.0	1115.0	1129.0	1141.0	1136.0	1115.0	1098.0	1080.0	1082.0	1145.0	1079.0	1005.0	912.0	820.0
10/1/09	737.0	703.0	684.0	676.0	682.0	711.0	792.0	873.0	956.0	1038.0	1094.0	1133.0	1140.0	1142.0	1147.0	1137.0	1122.0	1102.0	1095.0	1155.0	1086.0	1006.0	909.0	811.0
10/2/09	738.0	702.0	685.0	676.0	680.0	710.0	789.0	863.0	951.0	1036.0	1083.0	1117.0	1127.0	1140.0	1136.0	1127.0	1116.0	1082.0	1073.0	1113.0	1030.0	974.0	899.0	822.0
10/3/09	748.0	711.0	692.0	678.0	675.0	684.0	715.0	764.0	843.0	923.0	994.0	1006.0	1020.0	1015.0	1000.0	973.0	966.0	967.0	971.0	1027.0	983.0	924.0	873.0	810.0
10/4/09	742.0	705.0	682.2	673.2	668.8	676.5	695.0	720.3	785.4	854.5	909.6	936.4	945.0	955.0	963.0	972.0	980.0	990.0	1006.0	1077.0	1020.0	959.0	886.0	803.0
10/5/09	736.0	702.0	683.0	675.0	677.0	700.0	760.0	826.0	911.0	1007.0	1073.0	1109.0	1125.0	1135.0	1135.0	1133.0	1133.0	1119.0	1115.0	1202.0	1117.0	1031.0	915.0	813.0
10/6/09	739.0	704.0	686.0	678.0	682.0	715.0	807.0	906.0	983.0	1048.0	1123.0	1159.0	1177.0	1196.0	1192.0	1199.0	1184.0	1150.0	1156.0	1224.0	1150.0	1044.0	928.0	821.0
10/7/09	744.0	707.0	689.0	680.0	684.0	718.0	815.0	920.0	989.0	1069.0	1116.0	1137.0	1161.0	1175.0	1189.0	1199.0	1190.0	1159.0	1150.0	1227.0	1142.0	1044.0	923.0	811.0
10/8/09	734.0	700.0	682.0	674.0	678.0	708.0	799.0	908.0	966.0	1043.0	1097.0	1129.0	1149.0	1168.0	1174.0	1189.0	1172.0	1143.0	1136.0	1207.0	1140.0	1049.0	946.0	830.0
10/9/09	750.0	711.0	692.0	683.0	686.0	719.0	811.0	917.0	978.0	1049.0	1106.0	1143.0	1169.0	1171.0	1174.0	1163.0	1153.0	1102.0	1073.0	1133.0	1047.0	980.0	900.0	817.0
10/10/09	752.0	710.0	690.0	679.0	676.0	689.0	719.0	769.0	852.0	939.0	1002.0	1038.0	1035.0	1029.0	1016.0	1002.0	1003.0	1001.0	1007.0	1080.0	1019.0	961.0	892.0	818.0
10/11/09	746.9	707.4	686.8	676.5	671.6	681.6	701.6	730.0	799.4	879.1	940.2	972.9	983.0	985.0	980.0	975.0	980.0	1000.0	1027.0	1119.0	1061.0	987.0	898.0	801.0
10/12/09	729.0	699.0	681.0	673.0	679.0	715.0	790.0	910.0	985.0	1069.0	1123.0	1155.0	1159.0	1169.0	1171.0	1162.0	1155.0	1135.0	1137.0	1222.0	1147.0	1049.0	921.0	815.0
10/13/09	736.0	700.0	684.0	675.0	679.0	713.0	807.0	912.0	981.0	1060.0	1094.0	1095.0	1137.0	1166.0	1171.0	1178.0	1162.0	1136.0	1145.0	1213.0	1137.0	1040.0	924.0	813.0
10/14/09	741.0	703.0	686.0	678.0	679.0	717.0	816.0	917.0	991.0	1065.0	1129.0	1155.0	1174.0	1193.0	1205.0	1205.0	1178.0	1156.0	1161.0	1231.0	1152.0	1051.0	939.0	819.0
10/15/09	740.0	705.0	687.0	678.0	680.0	715.0	807.0	913.0	989.0	1068.0	1127.0	1158.0	1174.0	1189.0	1196.0	1204.0	1187.0	1150.0	1162.0	1231.0	1145.0	1048.0	942.0	826.0
10/16/09	746.0	709.0	691.0	682.0	686.0	722.0	817.0	920.0	983.0	1072.0	1125.0	1152.0	1162.0	1178.0	1172.0	1180.0	1174.0	1122.0	1119.0	1147.0	1064.0	994.0	912.0	823.0
10/17/09	755.0	715.0	692.0	680.0	680.0	690.0	726.0	782.0	870.0	956.0	1019.0	1038.0	1052.0	1052.0	1046.0	1044.0	1049.0	1040.0	1065.0	1102.0	1027.0	963.0	897.0	816.0
10/18/09	743.2	704.8	682.7	669.9	666.8	673.7	693.4	718.8	789.0	879.1	942.5	977.7	996.0	1008.0	1016.0	1025.0	1031.0	1043.0	1072.0	1152.0	1088.0	998.0	895.0	797.0
10/19/09	726.0	694.0	679.0	670.0	674.0	706.0	787.0	880.0	959.0	1059.0	1119.0	1161.0	1199.0	1207.0	1207.0	1210.0	1193.0	1168.0	1178.0	1246.0	1149.0	1047.0	925.0	813.0
10/20/09	736.0	702.0	684.0	675.0	679.0	713.0	806.0	907.0	971.0	1057.0	1110.0	1137.0	1152.0	1163.0	1168.0	1174.0	1166.0	1147.0	1159.0	1222.0	1149.0	1047.0	934.0	815.0
10/21/09	739.0	704.0	686.0	678.0	683.0	716.0	808.0	909.0	973.0	1059.0	1106.0	1139.0	1140.0	1153.0	1168.0	1156.0	1155.0	1127.0	1139.0	1208.0	1127.0	1033.0	927.0	817.0
10/22/09	739.0	706.0	687.0	676.0	681.0	715.0	816.0	921.0	984.0	1064.0	1098.0	1109.0	1115.0	1117.0	1113.0	1104.0	1112.0	1091.0	1109.0	1178.0	1110.0	1011.0	909.0	805.0
10/23/09	734.0	700.0	682.0	676.0	681.0	717.0	810.0	915.0	980.0	1060.0	1108.0	1129.0	1143.0	1147.0	1133.0	1139.0	1117.0	1102.0	1099.0	1125.0	1042.0	974.0	900.0	815.0
10/24/09	750.0	711.0	689.0	679.0	678.0	690.0	726.0	774.0	870.0	969.0	1027.0	1048.0	1049.0	1047.0	1031.0	1005.0	998.0	983.0	1011.0	1044.0	987.0	936.0	876.0	811.0
10/25/09	742.7	704.2	682.4	669.8	667.5	676.8	695.2	721.2	786.8	864.7	918.3	941.1	959.0	956.0	955.0	955.0	962.0	979.0	1033.0	1092.0	1030.0	960.0	860.0	788.0
10/26/09	722.0	693.0	676.0	672.0	679.0	706.0	807.0	917.0	971.0	1043.0	1097.0	1125.0	1142.0	1153.0	1149.0	1149.0	1132.0	1110.0	1145.0	1204.0	1120.0	1031.0	910.0	803.0
10/27/09	730.0	697.0	682.0	675.0	679.0	715.0	806.0	913.0	963.0	1034.0	1087.0	1112.0	1122.0	1120.0	1122.0	1120.0	1106.0	1080.0	1120.0	1168.0	1099.0	1010.0	905.0	799.0
10/28/09	729.0	694.0	679.0	671.0	676.0	707.0	802.0	901.0	953.0	1020.0	1064.0	1086.0	1077.0	1091.0	1090.0	1086.0	1059.0	1042.0	1043.0	990.0	948.0	922.0	858.0	768.0
10/29/09	708.0	681.0	667.0	662.0	669.0	701.0	787.0	883.0	944.0	1021.0	1088.0	1122.0	1139.0	1147.0	1149.0	1145.0	1133.0	1113.0	1146.0	1183.0	1083.0	986.0	885.0	785.0
10/30/09	718.0	688.0	670.0	665.0	668.0	699.0	781.0	876.0	953.0	1039.0	1095.0	1125.0	1140.0	1156.0	1168.0	1169.0	1158.0	1133.0	1152.0	1171.0	1075.0	992.0	903.0	809.0
10/31/09	739.0	700.0	676.0	666.0	666.0	675.0	707.0	753.0	831.0	922.0	979.0	1013.0	1039.0	1038.0	1043.0	1039.0	1039.0	1038.0	1101.0	1109.0	1029.0	966.0	897.0	819.0

Load Summary

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
11/1/09	762.0	706.7	674.1	658.8	657.8	665.2	696.0	737.8	810.7	850.4	909.4	927.0	935.0	936.0	921.0	908.0	917.0	981.0	1053.0	1025.0	962.0	948.0	824.0	743.0
11/2/09	674.0	635.0	617.0	611.0	622.0	676.0	780.0	889.0	961.0	1027.0	1072.0	1078.0	1100.0	1119.0	1120.0	1106.0	1091.0	1084.0	1139.0	1153.0	1077.0	1003.0	905.0	796.0
11/3/09	717.0	673.0	651.0	639.0	647.0	698.0	808.0	916.0	954.0	1033.0	1081.0	1118.0	1131.0	1143.0	1156.0	1157.0	1145.0	1137.0	1205.0	1221.0	1140.0	1038.0	933.0	816.0
11/4/09	728.0	684.0	662.0	651.0	658.0	705.0	820.0	927.0	975.0	1048.0	1104.0	1147.0	1164.0	1176.0	1192.0	1194.0	1179.0	1157.0	1221.0	1233.0	1164.0	1087.0	984.0	859.0
11/5/09	765.0	715.0	688.0	676.0	679.0	725.0	839.0	946.0	1008.0	1090.0	1140.0	1170.0	1179.0	1192.0	1196.0	1194.0	1179.0	1157.0	1202.0	1215.0	1143.0	1058.0	962.0	850.0
11/6/09	759.0	710.0	681.0	667.0	671.0	716.0	819.0	918.0	981.0	1058.0	1098.0	1112.0	1118.0	1125.0	1119.0	1114.0	1098.0	1074.0	1100.0	1106.0	1033.0	972.0	904.0	817.0
11/7/09	745.0	696.0	670.0	656.0	652.0	667.0	711.0	770.0	867.0	961.0	1003.0	1019.0	1023.0	1022.0	1010.0	1005.0	1007.0	994.0	1027.0	1042.0	987.0	939.0	889.0	822.0
11/8/09	748.5	696.2	664.4	648.3	642.5	653.8	681.6	724.3	804.3	886.9	941.5	969.5	985.0	986.0	984.0	989.0	997.0	998.0	1046.0	1075.0	1010.0	954.0	899.0	805.0
11/9/09	727.0	678.0	651.0	636.0	636.0	663.0	717.0	776.0	874.0	976.0	1046.0	1076.0	1099.0	1108.0	1112.0	1111.0	1120.0	1122.0	1174.0	1186.0	1102.0	1031.0	922.0	808.0
11/10/09	729.0	681.0	653.0	644.0	648.0	693.0	806.0	909.0	969.0	1045.0	1096.0	1127.0	1133.0	1152.0	1154.0	1150.0	1142.0	1111.0	1146.0	1182.0	1112.0	1023.0	927.0	813.0
11/11/09	731.0	681.0	662.0	649.0	653.0	701.0	814.0	921.0	981.0	1034.0	1089.0	1114.0	1128.0	1140.0	1141.0	1137.0	1124.0	1107.0	1140.0	1166.0	1102.0	1024.0	930.0	816.0
11/12/09	733.0	689.0	661.0	651.0	653.0	698.0	806.0	911.0	964.0	1030.0	1078.0	1100.0	1098.0	1116.0	1125.0	1127.0	1118.0	1096.0	1129.0	1161.0	1092.0	1016.0	929.0	817.0
11/13/09	725.0	684.0	660.0	646.0	652.0	698.0	805.0	917.0	971.0	1048.0	1096.0	1118.0	1126.0	1134.0	1132.0	1132.0	1116.0	1092.0	1104.0	1073.0	1048.0	979.0	936.0	843.0
11/14/09	754.0	703.0	669.0	653.0	647.0	663.0	702.0	760.0	854.0	946.0	993.0	1016.0	1024.0	1023.0	1011.0	1001.0	1008.0	1001.0	1047.0	1036.0	992.0	943.0	885.0	808.0
11/15/09	735.6	685.5	658.5	641.3	637.8	649.2	681.8	714.1	791.6	870.8	920.2	942.0	952.0	954.0	952.0	952.0	966.0	983.0	1058.0	1069.0	1019.0	958.0	879.0	782.0
11/16/09	707.0	661.0	637.0	626.0	635.0	683.0	789.0	900.0	951.0	1026.0	1066.0	1091.0	1098.0	1110.0	1103.0	1085.0	1062.0	1058.0	1146.0	1131.0	1055.0	994.0	890.0	786.0
11/17/09	705.0	661.0	639.0	628.0	638.0	684.0	793.0	895.0	929.0	982.0	1020.0	1032.0	1041.0	1047.0	1048.0	1050.0	1047.0	1033.0	1074.0	1101.0	1036.0	967.0	879.0	780.0
11/18/09	699.0	652.0	624.0	612.0	620.0	664.0	765.0	867.0	917.0	988.0	1033.0	1059.0	1071.0	1078.0	1075.0	1063.0	1054.0	1038.0	1080.0	1087.0	1028.0	966.0	903.0	811.0
11/19/09	728.0	675.0	642.0	626.0	623.0	640.0	679.0	725.0	808.0	913.0	976.0	1003.0	1011.0	984.0	962.0	954.0	945.0	925.0	915.0	907.0	879.0	857.0	828.0	762.0
11/20/09	694.0	652.0	630.0	621.0	628.0	664.0	729.0	794.0	875.0	951.0	987.0	1012.0	1022.0	1021.0	1013.0	1015.0	1010.0	986.0	1038.0	1003.0	969.0	943.0	888.0	805.0
11/21/09	728.3	676.9	646.8	632.5	632.2	647.2	687.1	740.9	815.0	898.0	942.1	957.8	964.0	959.0	946.0	946.0	948.0	951.0	1005.0	1024.0	975.0	974.0	863.0	788.0
11/22/09	735.6	685.5	658.5	641.3	637.8	649.2	681.8	714.1	791.6	870.8	920.2	942.0	952.0	954.0	952.0	952.0	966.0	983.0	1058.0	1069.0	1019.0	958.0	879.0	782.0
11/23/09	707.0	661.0	637.0	626.0	635.0	683.0	789.0	900.0	951.0	1026.0	1066.0	1091.0	1098.0	1110.0	1103.0	1085.0	1062.0	1058.0	1146.0	1131.0	1055.0	994.0	890.0	786.0
11/24/09	740.0	691.0	664.0	647.0	655.0	704.0	810.0	918.0	966.0	1051.0	1091.0	1110.0	1122.0	1137.0	1152.0	1149.0	1140.0	1118.0	1200.0	1199.0	1127.0	1044.0	954.0	841.0
11/25/09	754.0	702.0	673.0	659.0	665.0	702.0	808.0	928.0	968.0	1023.0	1037.0	1028.0	1044.0	1049.0	1045.0	1055.0	1043.0	1044.0	1118.0	1140.0	1069.0	991.0	893.0	782.0
11/26/09	728.0	675.0	642.0	626.0	623.0	640.0	679.0	725.0	808.0	913.0	976.0	1003.0	1011.0	984.0	962.0	954.0	945.0	925.0	915.0	907.0	879.0	857.0	828.0	762.0
11/27/09	694.0	652.0	630.0	621.0	628.0	664.0	729.0	794.0	875.0	951.0	987.0	1012.0	1022.0	1021.0	1013.0	1015.0	1010.0	986.0	1038.0	1003.0	969.0	943.0	888.0	805.0
11/28/09	761.0	708.0	672.0	654.0	651.0	672.0	717.0	788.0	889.0	982.0	1031.0	1058.0	1062.0	1056.0	1049.0	1039.0	1039.0	1036.0	1094.0	1080.0	1025.0	988.0	919.0	879.0
11/29/09	801.8	731.8	692.4	670.5	667.1	678.3	709.2	752.9	823.0	913.9	960.7	992.7	1008.0	1011.0	1009.0	1012.0	1014.0	1041.0	1103.0	1117.0	1061.0	995.0	914.0	800.0
11/30/09	713.0	666.0	640.0	629.0	640.0	698.0	805.0	926.0	964.0	1005.0	1044.0	1056.0	1086.0	1094.0	1094.0	1087.0	1087.0	1094.0	1164.0	1192.0	1118.0	1051.0	959.0	834.0
12/1/09	749.0	692.0	659.0	648.0	663.0	730.0	862.0	980.0	1016.0	1061.0	1102.0	1110.0	1119.0	1118.0	1106.0	1105.0	1105.0	1110.0	1178.0	1189.0	1137.0	1071.0	990.0	875.0
12/2/09	761.5	710.3	675.9	663.7	508.3	537.7	648.3	746.8	795.7	850.1	889.9	923.9	930.0	939.0	964.0	972.0	989.0	987.0	1058.0	1055.0	1025.0	970.0	889.0	801.0
12/3/09	688.0	651.0	620.0	605.0	615.0	670.0	784.0	898.0	927.0	967.0	1011.0	1029.0	1044.0	1046.0	1041.0	1037.0	1036.0	1024.0	1078.0	1098.0	1046.0	985.0	915.0	813.0
12/4/09	720.0	662.0	625.0	616.0	624.0	677.0	798.0	915.0	944.0	998.0	1019.0	1032.0	1032.0	1032.0	1018.0	1019.0	1021.0	1026.0	1069.0	1055.0	1008.0	967.0	914.0	826.0
12/5/09	749.0	683.0	644.0	627.0	626.0	650.0	702.0	774.0	863.0	949.0	995.0	1015.0	1013.0	1005.0	997.0	994.0	988.0	996.0	1033.0	1048.0	1006.0	965.0	908.0	833.0
12/6/09	750.0	680.8	646.0	623.5	616.3	629.8	662.8	708.0	780.8	866.6	825.2	949.7	967.0	974.0	971.0	978.0	989.0	1002.0	1064.0	1093.0	1055.0	997.0	917.0	806.0
12/7/09	708.0	648.0	631.0	617.0	629.0	696.0	813.0	926.0	957.0	1021.0	1063.0	1087.0	1093.0	1104.0	1107.0	1106.0	1103.0	1092.0	1143.0	1179.0	1120.0	1062.0	972.0	854.0
12/8/09	752.0	688.0	658.0	644.0	654.0	712.0	835.0	944.0	979.0	1039.0	1070.0	1092.0	1088.0	1100.0	1096.0	1093.0	1089.0	1070.0	1114.0	1155.0	1104.0	1047.0	962.0	840.0
12/9/09	744.0	684.0	657.0	643.0	654.0	713.0	830.0	946.0	966.0	1025.0	1061.0	1080.0	1087.0	1089.0	1084.0	1086.0	1081.0	1073.0	1115.0	1145.0	1097.0	1040.0	962.0	846.0
12/10/09	748.0	692.0	657.0	640.0	653.0	712.0	835.0	954.0	967.0	1020.0	1053.0	1071.0	1068.0	1071.0	1067.0	1067.0	1061.0	1053.0	1095.0	1126.0	1079.0	1023.0	946.0	831.0
12/11/09	734.0	680.0	643.0	630.0	642.0	703.0	825.0	943.0	960.0	1006.0	1029.0	1041.0	1045.0	1046.0	1039.0	1036.0	1021.0	1021.0	1050.0	1068.0	1027.0	984.0	926.0	842.0
12/12/09	755.7	690.6	651.8	627.9	627.3	648.4	699.6	771.1	858.5	938.7	977.0	986.7	988.0	975.0	955.0	946.0	949.0	937.0	1002.0	1019.0	974.0	940.0	892.0	818.0
12/13/09	732.5	665.7	622.6	600.8	598.1	612.8	652.0	700.8	767.8	850.4	902.0	912.8	921.0	920.0	908.0	916.0	930.0	945.0	1006.0	1050.0	1013.0	970.0	905.0	803.0
12/14/09	705.0	647.0	614.0	598.0	608.0	671.0	785.0	901.0	932.0	986.0	1016.0	1028.0	1036.0	1036.0	1034.0	1028.0	1023.0	1015.0	1069.0	1107.0	1047.0	1006.0	924.0	811.0
12/15/09	707.0	650.0	616.0	599.0	609.0	669.0	791.0	900.0	928.0	970.0	1004.0	1006.0	1019.0	1022.0	1012.0	1012.0	1008.0	1008.0	1058.0	1097.0	1049.0	991.0	923.0	814.0
12/16/09	718.0	655.0	621.0	607.0	617.0	676.0	791.0	906.0	931.0	986.0	1016.0	1034.0	1028.0	1032.0	1034.0	1032.0	1029.0	1028.0	1071.0	1101.0	1052.0	1004.0	932.0	822.0
12/17/09	725.0	664.0	628.0	610.0	620.0	674.0	780.0	889.0	932.0	986.0	1025.0	1037.0	1040.0	1044.0	1044.0	1039.0	1032.0	1025.0	1060.0	1096.0	1044.0	990.0	924.0	827.0
12/18/09	732.0	668.0	632.0	610.0	617.0	668.0	764.0	860.0	926.0	989.0	1022.0	1035.0	1032.0	1030.0	1026.0	1026.0	1016.0	1002.0	1029.0	1054.0	1002.0	965.0	910.0	829.0
12/19/09	739.7	675.0	632.1	609.4	606.9	630.1	681.2	745.5	832.0	915.6	959.8	972.0	972.0	967.0	958.0	955.0	960.0	963.0	994.0	1030.0	988.0	949.0	905.0	831.0
12/20/09	746.5	682.5	639.8	614.5	611.8	627.6	663.8	711.3	787.0	864.3	910.5	927.4	934.0	930.0	924.0	925.0	926.0	942.0	999.0	1036.0	1001.0	967.0	922.0	835.0
12/21/09	746.0	681.0	641.0	619.0	627.0	667.0	744.0	828.0	898.0	968.0	1013.0	1034.0	1031.0	1023.0	1018.0	1018.0	1025.0	1029.0	1035.0	1018.0	961.0	921.0	889.0	830.0
12/22/09	754.7	689.3	649.8	619.9	612.8	627.6	663.7	710.2	774.9	850.9	893.4	913.7	914.1	904.4	895.5	892.9	891.5	899.7	923.1	953.2	923.6	901.6	865.2	787.2
12/23/09	705.0	651.0	614.0	600.0	611.0	662.0	752.0	846.0	907.0	980.0	1016.0	1028.0	1041.0	1041.0	1033.0	1019.0	1011.0	1012.0	1066.0	1091.0	1038.0	987.0	922.0	818.0
12/24/09	720.0	659.0	624.0	607.0	617.0	669.0	762.0	854.0	912.0	976.0	1012.0	1023.0	1030.0	1025.0	1019.0	1007.0	1008.0	1018.0	1076.0	1083.0	1034.0	980.0	910.0	815.0
12/25/09	754.7	689.3	649.8	619.9	612.8	627.6	663.7	710.2	774.9	850.9	893.4	913.7	914.1	904.4	895.5	892.9	891.5	899.7	923.1	953.2	923.6	901.6	865.2	787.2
12/26/09	738.1	678.7	639.5	616.4	616.9	639.8	682.3	745.0	818.4	901.8	949.3	958.6	971.0	960.0	946.0	934.0	940.0	952.0	1004.0	1034.0	988.0	952.0	891.0	822.0
12/27/09	737.0	676.8	637.6	612.1	610.1	623.6	656.6	696.7	759.4	831.7	901.1	925.4	936.0	937.0	925.0	918.0	927.0	950.0	1003.0	1044.0	1002.0	955.0	898.0	818.0
12/28/09	727.6	664.5	626.2	607.7	610.1	647.8	723.5	803.9	862.3	926.3	977.2	988.9	989.0	980.0	972.0	959.0	968.0	980.0	1019.0	1002.0	923.0	865.0	821.0	780.0
12/29/09	754.7	689.3	649.8	619.9	612.8	627.6	663.7	710.2	774.9	850.9	893.4	913.7	914.1	904.4	895.5	892.9	891.5	899.7	923.1	953.2	923.6	901.6	865.2	787.2
12/30/09	705.0	651.0	614.0	600.0	611.0	662.0	752.0	846.0	907.0	980.0	1016.0	1028.0	1041.0	1041.0	1033.0	1019.0	1011.0	1012.0	1066.0	1091.0	1038.0	987.0	922.0	818.0
12/31/09	720.0	659.0	624.0	607.0	617.0	669.0	762.0	854.0	912.0	976.0	1012.0	1023.0	1030.0	1025.0	1019.0	1007.0	1008.0	1018.0	1076.0	1083.0	1034.0	980.0	910.0	815.0

Quick Load Pick Up Summary

Code	ID	CC Flag	Load Pt1	QLPU Cap1	Load Pt2	QLPU Cap2	Load Pt3	QLPU Cap3	Load Pt4	QLPU Cap4	Load Pt5	QLPU Cap5	Load Pt6	QLPU Cap6	Load Pt7	QLPU Cap7	Load Pt8	QLPU Cap8	Load Pt9	QLPU Cap9	Load Pt10	QLPU Cap10
Th	1	0	18	21	23	19	28	16	33	15	38	11	42	8	47	4	52	0	0	0	0	0
Th	2	0	19	27	23	23	28	19	33	16	38	13	43	9	48	5	52	2	57	0	0	0
Th	3	0	18	24	23	20	28	15	33	12	38	8	42	4	47	1	52	0	0	0	0	0
Th	4	0	18	24	23	20	28	15	33	12	38	8	43	4	47	1	52	0	0	0	0	0
Th	5	0	19	24	24	20	28	17	33	15	38	11	43	8	48	4	53	2	58	0	0	0
Th	6	0	19	24	23	20	28	18	33	15	38	11	43	8	48	4	53	1	58	0	0	0
Th	7	0	23	27	47	18	52	16	57	13	62	11	67	8	72	5	76	2	81	1	86	0
Th	8	0	23	27	47	18	52	16	57	13	62	11	67	8	72	5	76	2	81	1	86	0
Th	9	0	5	40	10	35	15	31	20	27	25	23	30	18	35	13	40	8	45	1	50	0
Th	10	0	5	40	10	35	15	31	20	27	25	23	30	18	35	13	40	8	45	1	50	0
Th	11	0	23	32	28	30	52	16	57	13	62	11	67	8	72	5	76	3	81	1	86	0
Th	12	0	23	32	28	30	52	16	57	13	62	11	67	8	72	5	77	3	81	1	86	0
Th	13	0	23	32	28	27	38	21	42	19	47	17	67	9	72	5	77	3	81	1	86	0
Th	14	0	23	32	28	27	38	21	42	19	47	17	67	9	72	5	77	3	81	1	86	0
Th	15	0	50	49	55	47	65	41	75	35	84	29	94	23	104	17	113	12	123	6	134	0
Th	16	0	41	52	55	44	65	38	75	32	84	26	94	20	104	15	113	9	123	3	134	0
Th	17	0	33	34	93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Th	18	0	33	34	93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Th	19	0	63	0	180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Th	20	0	10	0	20	0	30	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0
Th	22	0	39	28	64	28	86	27	113	0	0	0	0	0	0	0	0	0	0	0	0	0

Operating Reserve Requirement

Year	Month	Day	Hour	Spin Req
2009	1	1	1	180
2009	1	1	2	180
2009	1	1	3	180
2009	1	1	4	180
2009	1	1	5	180
2009	1	1	6	180
2009	1	1	7	180
2009	1	1	8	180
2009	1	1	9	180
2009	1	1	10	180
2009	1	1	11	180
2009	1	1	12	180
2009	1	1	13	180
2009	1	1	14	180
2009	1	1	15	180
2009	1	1	16	180
2009	1	1	17	180
2009	1	1	18	180
2009	1	1	19	180
2009	1	1	20	180
2009	1	1	21	180
2009	1	1	22	180
2009	1	1	23	180
2009	1	1	24	180
2009	1	2	1	180
2009	1	2	2	180
2009	1	2	3	180
2009	1	2	4	180
2009	1	2	5	180
2009	1	2	6	180
2009	1	2	7	180
2009	1	2	8	180
2009	1	2	9	180
2009	1	2	10	180
2009	1	2	11	180
2009	1	2	12	180
2009	1	2	13	180
2009	1	2	14	180
2009	1	2	15	180
2009	1	2	16	180
2009	1	2	17	180
2009	1	2	18	180
2009	1	2	19	180
2009	1	2	20	180
2009	1	2	21	180
2009	1	2	22	180
2009	1	2	23	180
2009	1	2	24	180
2009	1	3	1	180
2009	1	3	2	180
2009	1	3	3	180
2009	1	3	4	180
2009	1	3	5	180
2009	1	3	6	180
2009	1	3	7	180
2009	1	3	8	180
2009	1	3	9	180
2009	1	3	10	180
2009	1	3	11	180
2009	1	3	12	180
2009	1	3	13	180
2009	1	3	14	180
2009	1	3	15	180
2009	1	3	16	180
2009	1	3	17	180
2009	1	3	18	180
2009	1	3	19	180
2009	1	3	20	180
2009	1	3	21	180
2009	1	3	22	180
2009	1	3	23	180
2009	1	3	24	180
2009	1	4	1	180
2009	1	4	2	180
2009	1	4	3	180
2009	1	4	4	180
2009	1	4	5	180
2009	1	4	6	180
2009	1	4	7	180
2009	1	4	8	180
2009	1	4	9	180
2009	1	4	10	180
2009	1	4	11	180
2009	1	4	12	180
2009	1	4	13	180
2009	1	4	14	180
2009	1	4	15	180
2009	1	4	16	180
2009	1	4	17	180
2009	1	4	18	180
2009	1	4	19	180
2009	1	4	20	180
2009	1	4	21	180
2009	1	4	22	180
2009	1	4	23	180
2009	1	4	24	180
2009	1	5	1	180
2009	1	5	2	180
2009	1	5	3	180
2009	1	5	4	180
2009	1	5	5	180
2009	1	5	6	180
2009	1	5	7	180
2009	1	5	8	180
2009	1	5	9	180
2009	1	5	10	180
2009	1	5	11	180
2009	1	5	12	180
2009	1	5	13	180
2009	1	5	14	180
2009	1	5	15	180
2009	1	5	16	180
2009	1	5	17	180
2009	1	5	18	180
2009	1	5	19	180
2009	1	5	20	180
2009	1	5	21	180
2009	1	5	22	180
2009	1	5	23	180
2009	1	5	24	180
2009	1	6	1	180
2009	1	6	2	180
2009	1	6	3	180
2009	1	6	4	180
2009	1	6	5	180
2009	1	6	6	180
2009	1	6	7	180
2009	1	6	8	180
2009	1	6	9	180
2009	1	6	10	180
2009	1	6	11	180
2009	1	6	12	180
2009	1	6	13	180
2009	1	6	14	180
2009	1	6	15	180
2009	1	6	16	180
2009	1	6	17	180
2009	1	6	18	180
2009	1	6	19	180
2009	1	6	20	180
2009	1	6	21	180
2009	1	6	22	180
2009	1	6	23	180
2009	1	6	24	180
2009	1	7	1	180
2009	1	7	2	180
2009	1	7	3	180
2009	1	7	4	180
2009	1	7	5	180
2009	1	7	6	180
2009	1	7	7	180
2009	1	7	8	180
2009	1	7	9	180
2009	1	7	10	180
2009	1	7	11	180
2009	1	7	12	180
2009	1	7	13	180
2009	1	7	14	180
2009	1	7	15	180
2009	1	7	16	180
2009	1	7	17	180
2009	1	7	18	180
2009	1	7	19	180
2009	1	7	20	180
2009	1	7	21	180
2009	1	7	22	180
2009	1	7	23	180
2009	1	7	24	180

Hourly Transaction Pattern 2

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
1/1/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/2/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/3/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/4/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/5/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/6/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/7/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/8/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/9/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/10/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/11/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/12/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/13/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/14/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/15/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/16/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/17/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/18/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/19/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/20/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/21/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/22/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/23/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/24/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/25/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/26/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/27/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/28/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/29/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/30/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1/31/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/1/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/2/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/3/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/4/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/5/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/6/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/7/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/8/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/9/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/10/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/11/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/12/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/13/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/14/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/15/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/16/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/17/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/18/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/19/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/20/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/21/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/22/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/23/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/24/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/25/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/26/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/27/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2/28/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Hourly Transaction Pattern 2

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
3/1/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/2/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/3/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/4/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/5/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/6/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/7/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/8/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/9/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/10/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/11/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/12/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/13/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/14/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/15/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/16/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/17/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/18/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/19/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/20/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/21/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/22/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/23/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/24/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/25/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/26/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/27/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/28/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/29/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/30/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3/31/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/1/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/2/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/3/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/4/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/5/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/6/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/7/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/8/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/9/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/10/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/11/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/12/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/13/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/14/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/15/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/16/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/17/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/18/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/19/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/20/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/21/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/22/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/23/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/24/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/25/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/26/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/27/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/28/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/29/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4/30/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Hourly Transaction Pattern 2

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
5/1/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/2/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/3/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/4/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/5/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/6/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/7/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/8/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/9/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/10/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/11/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/12/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/13/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/14/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/15/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/16/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/17/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/18/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/19/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/20/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/21/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/22/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/23/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/24/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/25/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/26/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/27/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/28/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/29/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/30/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5/31/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/1/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/2/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/3/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/4/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/5/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/6/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/7/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/8/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/9/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/10/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/11/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/12/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/13/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/14/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/15/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/16/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/17/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/18/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/19/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/20/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/21/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/22/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/23/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/24/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/25/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/26/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/27/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/28/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/29/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6/30/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Hourly Transaction Pattern 2

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
7/1/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/2/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/3/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/4/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/5/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/6/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/7/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/8/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/9/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/10/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/11/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/12/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/13/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/14/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/15/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/16/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/17/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/18/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/19/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/20/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/21/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/22/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/23/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/24/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/25/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/26/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/27/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/28/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/29/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/30/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7/31/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/1/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/2/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/3/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/4/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/5/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/6/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/7/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/8/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/9/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/10/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/11/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/12/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/13/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/14/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/15/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/16/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/17/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/18/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/19/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/20/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/21/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/22/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/23/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/24/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/25/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/26/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/27/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/28/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/29/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/30/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8/31/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Hourly Transaction Pattern 2

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
9/1/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/2/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/3/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/4/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/5/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/6/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/7/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/8/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/9/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/10/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/11/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/12/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/13/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/14/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/15/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/16/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/17/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/18/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/19/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/20/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/21/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/22/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/23/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/24/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/25/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/26/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/27/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/28/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/29/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9/30/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/1/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/2/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/3/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/4/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/5/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/6/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/7/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/8/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/9/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/10/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/11/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/12/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/13/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/14/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/15/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/16/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/17/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/18/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/19/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/20/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/21/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/22/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/23/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/24/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/25/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/26/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/27/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/28/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/29/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/30/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/31/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Hourly Transaction Pattern 2

Date	HR1	HR2	HR3	HR4	HR5	HR6	HR7	HR8	HR9	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	HR18	HR19	HR20	HR21	HR22	HR23	HR24
11/1/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/2/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/3/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/4/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/5/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/6/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/7/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/8/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/9/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/10/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/11/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/12/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/13/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/14/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/15/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/16/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/17/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/18/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/19/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/20/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/21/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/22/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/23/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/24/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/25/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/26/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/27/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/28/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/29/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11/30/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/1/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/2/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/3/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/4/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/5/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/6/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/7/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/8/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/9/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/10/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/11/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/12/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/13/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/14/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/15/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/16/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/17/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/18/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/19/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/20/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/21/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/22/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/23/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/24/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/25/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/26/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/27/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/28/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/29/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/30/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12/31/09	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Hourly Capacity Pattern 1

Yr	Prd	Start Day	Hr	Cap Multiplier	OM Multiplier
2009	1	1	1	1.0	1
2009	2	1	1	1.0	1
2009	3	1	1	1.0	1
2009	4	1	1	1.0	1
2009	5	1	1	1.0	1
2009	5	8	1	0.5	1
2009	5	15	1	0.0	1
2009	5	30	1	0.5	1
2009	6	1	1	0.5	1
2009	6	3	1	1.0	1
2009	7	1	1	1.0	1
2009	8	1	1	1.0	1
2009	9	1	1	1.0	1
2009	10	1	1	1.0	1
2009	11	1	1	1.0	1
2009	11	29	1	0.5	1
2009	12	1	1	0.5	1
2009	12	6	1	0.5	1
2009	12	11	1	1.0	1

Hourly Capacity Pattern 3

Yr	Prd	Start Day	Hr	Cap Multiplier	OM Multiplier
2009	1	1	1	1.0	1
2009	2	1	1	1.0	1
2009	3	1	1	1.0	1
2009	4	1	1	1.0	1
2009	4	12	1	0.0	1
2009	4	19	1	1.0	1
2009	4	24	21	0.0	1
2009	4	25	9	1.0	1
2009	5	1	1	1.0	1
2009	5	1	21	0.0	1
2009	5	2	9	1.0	1
2009	5	8	21	0.0	1
2009	5	9	9	1.0	1
2009	6	1	1	1.0	1
2009	7	1	1	1.0	1
2009	8	1	1	1.0	1
2009	9	1	1	1.0	1
2009	10	1	1	1.0	1
2009	10	17	21	0.0	1
2009	10	18	9	1.0	1
2009	10	24	1	0.0	1
2009	10	24	9	1.0	1
2009	11	1	1	1.0	1
2009	12	1	1	1.0	1

Hourly Capacity Pattern 5

Yr	Prd	Start Day	Hr	Cap Multiplier	OM Multiplier
2009	1	1	1	1.0	1
2009	2	1	1	1.0	1
2009	2	22	1	0.5	1
2009	3	1	1	0.5	1
2009	3	5	1	1.0	1
2009	4	1	1	1.0	1
2009	5	1	1	1.0	1
2009	6	1	1	1.0	1
2009	7	1	1	1.0	1
2009	8	1	1	1.0	1
2009	9	1	1	1.0	1
2009	10	1	1	1.0	1
2009	11	1	1	1.0	1
2009	12	1	1	1.0	1

Hourly Capacity Pattern 2

Yr	Prd	Start Day	Hr	Cap Multiplier	OM Multiplier
2009	1	1	1	1.0	1
2009	1	2	21	0.0	1
2009	1	3	9	1.0	1
2009	1	3	21	0.0	1
2009	1	4	9	1.0	1
2009	1	9	21	0.0	1
2009	1	10	9	1.0	1
2009	1	10	21	0.0	1
2009	1	11	9	1.0	1
2009	1	16	21	0.0	1
2009	1	17	9	1.0	1
2009	1	17	21	0.0	1
2009	1	18	9	1.0	1
2009	1	23	21	0.0	1
2009	1	24	9	1.0	1
2009	1	24	21	0.0	1
2009	1	25	9	1.0	1
2009	1	30	21	0.0	1
2009	1	31	9	1.0	1
2009	1	31	21	0.0	1
2009	2	1	1	0.0	1
2009	2	1	9	1.0	1
2009	2	6	21	0.0	1
2009	2	7	9	1.0	1
2009	2	7	21	0.0	1
2009	2	8	9	1.0	1
2009	2	13	21	0.0	1
2009	2	14	9	1.0	1
2009	2	14	21	0.0	1
2009	2	15	9	1.0	1
2009	2	20	21	0.0	1
2009	2	21	9	1.0	1
2009	2	21	21	0.0	1
2009	2	22	9	1.0	1
2009	2	27	21	0.0	1
2009	2	28	9	1.0	1
2009	2	28	21	0.0	1
2009	3	1	1	0.0	1
2009	3	1	9	1.0	1
2009	3	6	21	0.0	1
2009	3	7	9	1.0	1
2009	3	7	21	0.0	1
2009	3	8	9	1.0	1
2009	3	13	21	0.0	1
2009	3	14	9	1.0	1
2009	3	14	21	0.0	1
2009	3	15	9	1.0	1
2009	3	20	21	0.0	1
2009	3	21	9	1.0	1
2009	3	21	21	0.0	1
2009	3	22	9	1.0	1
2009	3	27	21	0.0	1
2009	3	28	9	1.0	1
2009	3	28	21	0.0	1
2009	3	29	9	1.0	1
2009	4	1	1	1.0	1
2009	4	3	21	0.0	1
2009	4	4	9	1.0	1
2009	4	5	1	0.0	1

Yr	Prd	Start Day	Hr	Cap Multiplier	OM Multiplier
2009	5	1	1	0.0	1
2009	5	12	1	1.0	1
2009	5	15	21	0.0	1
2009	5	16	9	1.0	1
2009	5	16	21	0.0	1
2009	5	17	9	1.0	1
2009	5	22	21	0.0	1
2009	5	23	9	1.0	1
2009	5	23	21	0.0	1
2009	5	24	9	1.0	1
2009	5	29	21	0.0	1
2009	5	30	9	1.0	1
2009	5	30	21	0.0	1
2009	5	31	9	1.0	1
2009	6	1	1	1.0	1
2009	6	5	21	0.0	1
2009	6	6	9	1.0	1
2009	6	6	21	0.0	1
2009	6	7	9	1.0	1
2009	6	12	21	0.0	1
2009	6	13	9	1.0	1
2009	6	13	21	0.0	1
2009	6	14	9	1.0	1
2009	6	19	21	0.0	1
2009	6	20	9	1.0	1
2009	6	20	21	0.0	1
2009	6	21	9	1.0	1
2009	6	26	21	0.0	1
2009	6	27	9	1.0	1
2009	6	27	21	0.0	1
2009	6	28	9	1.0	1
2009	7	1	1	1.0	1
2009	7	3	21	0.0	1
2009	7	4	9	1.0	1
2009	7	4	21	0.0	1
2009	7	5	9	1.0	1
2009	7	10	21	0.0	1
2009	7	11	9	1.0	1
2009	7	11	21	0.0	1
2009	7	12	9	1.0	1
2009	7	17	21	0.0	1
2009	7	18	9	1.0	1
2009	7	18	21	0.0	1
2009	7	19	9	1.0	1
2009	7	24	21	0.0	1
2009	7	25	9	1.0	1
2009	7	25	21	0.0	1
2009	7	26	9	1.0	1
2009	7	31	21	0.0	1
2009	8	1	1	0.0	1
2009	8	1	9	1.0	1
2009	8	1	21	0.0	1
2009	8	2	9	1.0	1
2009	8	7	21	0.0	1
2009	8	8	9	1.0	1
2009	8	8	21	0.0	1
2009	8	9	9	1.0	1
2009	8	14	21	0.0	1
2009	8	15	9	1.0	1

Yr	Prd	Start Day	Hr	Cap Multiplier	OM Multiplier
2009	8	15	21	0.0	1
2009	8	16	9	1.0	1
2009	8	21	21	0.0	1
2009	8	22	9	1.0	1
2009	8	22	21	0.0	1
2009	8	23	9	1.0	1
2009	8	28	21	0.0	1
2009	8	29	9	1.0	1
2009	8	29	21	0.0	1
2009	8	30	9	1.0	1
2009	9	1	1	1.0	1
2009	9	4	21	0.0	1
2009	9	5	9	1.0	1
2009	9	5	21	0.0	1
2009	9	6	9	1.0	1
2009	9	11	21	0.0	1
2009	9	12	9	1.0	1
2009	9	12	21	0.0	1
2009	9	13	9	1.0	1
2009	9	18	21	0.0	1
2009	9	19	9	1.0	1
2009	9	19	21	0.0	1
2009	9	20	9	1.0	1
2009	9	25	21	0.0	1
2009	9	26	9	1.0	1
2009	9	26	21	0.0	1
2009	9	27	9	1.0	1
2009	10	1	1	1.0	1
2009	10	2	21	0.0	1
2009	10	3	9	1.0	1
2009	10	3	21	0.0	1
2009	10	4	9	1.0	1
2009	10	9	21	0.0	1
2009	10	10	9	1.0	1
2009	10	10	21	0.0	1
2009	10	11	9	1.0	1
2009	10	17	1	0.0	1
2009	10	18	1	1.0	1
2009	10	23	21	0.0	1
2009	10	24	1	0.0	1
2009	10	26	1	1.0	1
2009	10	30	21	0.0	1
2009	10	31	9	1.0	1
2009	10	31	21	0.0	1
2009	11	1	1	0.0	1
2009	11	1	9	1.0	1
2009	11	6	21	0.0	1
2009	11	7	9	1.0	1
2009	11	7	21	0.0	1
2009	11	8	9	1.0	1
2009	11	13	21	0.0	1
2009	11	14	9	1.0	1
2009	11	14	21	0.0	1
2009	11	15	9	1.0	1
2009	11	20	21	0.0	1
2009	11	21	9	1.0	1
2009	11	21	21	0.0	1
2009	11	22	9	1.0	1
2009	11	27	21	0.0	1

Hourly Capacity Pattern 2 (continued)

Yr	Prd	Start Day	Hr	Cap Multiplier	ON Multiplier
2009	11	28	9	1.0	1
2009	11	28	21	0.0	1
2009	11	29	9	1.0	1
2009	12	1	1	1.0	1
2009	12	4	21	0.0	1
2009	12	5	9	1.0	1
2009	12	5	21	0.0	1
2009	12	6	9	1.0	1
2009	12	11	21	0.0	1
2009	12	12	9	1.0	1
2009	12	12	21	0.0	1
2009	12	13	9	1.0	1
2009	12	18	21	0.0	1
2009	12	19	9	1.0	1
2009	12	19	21	0.0	1
2009	12	20	9	1.0	1
2009	12	25	21	0.0	1
2009	12	26	9	1.0	1
2009	12	26	21	0.0	1
2009	12	27	9	1.0	1

Hourly Capacity Pattern 4

Yr	Prd	Start Day	Hr	Cap Multiplier	OM Multiplier
2009	1	1	1	1.0	1
2009	1	2	21	0.0	1
2009	1	3	9	1.0	1
2009	1	3	21	0.0	1
2009	1	4	9	1.0	1
2009	1	9	21	0.0	1
2009	1	10	9	1.0	1
2009	1	10	21	0.0	1
2009	1	11	9	1.0	1
2009	1	16	21	0.0	1
2009	1	17	9	1.0	1
2009	1	17	21	0.0	1
2009	1	18	9	1.0	1
2009	1	23	21	0.0	1
2009	1	24	9	1.0	1
2009	1	24	21	0.0	1
2009	1	25	9	1.0	1
2009	1	30	21	0.0	1
2009	1	31	9	1.0	1
2009	1	31	21	0.0	1
2009	2	1	1	0.0	1
2009	2	1	9	1.0	1
2009	2	6	21	0.0	1
2009	2	7	9	1.0	1
2009	2	7	21	0.0	1
2009	2	8	9	1.0	1
2009	2	13	21	0.0	1
2009	2	14	9	1.0	1
2009	2	14	21	0.0	1
2009	2	15	9	1.0	1
2009	2	20	21	0.0	1
2009	2	21	9	1.0	1
2009	2	21	21	0.0	1
2009	2	22	9	1.0	1
2009	2	27	21	0.0	1
2009	2	28	9	1.0	1
2009	2	28	21	0.0	1
2009	3	1	1	0.0	1
2009	3	1	9	1.0	1
2009	3	6	21	0.0	1
2009	3	7	9	1.0	1
2009	3	7	21	0.0	1
2009	3	8	9	1.0	1
2009	3	13	21	0.0	1
2009	3	14	9	1.0	1
2009	3	14	21	0.0	1
2009	3	15	9	1.0	1
2009	3	20	21	0.0	1
2009	3	21	9	1.0	1
2009	3	21	21	0.0	1
2009	3	22	9	1.0	1
2009	3	27	21	0.0	1
2009	3	28	9	1.0	1
2009	3	28	21	0.0	1
2009	3	29	9	1.0	1
2009	4	1	1	1.0	1
2009	4	3	21	0.0	1
2009	4	4	9	1.0	1
2009	4	5	1	0.0	1

Yr	Prd	Start Day	Hr	Cap Multiplier	OM Multiplier
2009	5	1	1	0.0	1
2009	5	12	1	1.0	1
2009	5	15	21	0.0	1
2009	5	16	9	1.0	1
2009	5	16	21	0.0	1
2009	5	17	9	1.0	1
2009	5	22	21	0.0	1
2009	5	23	9	1.0	1
2009	5	23	21	0.0	1
2009	5	24	9	1.0	1
2009	5	25	21	0.0	1
2009	5	30	9	1.0	1
2009	5	30	21	0.0	1
2009	5	31	9	1.0	1
2009	6	1	1	1.0	1
2009	6	5	21	0.0	1
2009	6	6	9	1.0	1
2009	6	6	21	0.0	1
2009	6	7	9	1.0	1
2009	6	12	21	0.0	1
2009	6	13	9	1.0	1
2009	6	13	21	0.0	1
2009	6	14	9	1.0	1
2009	6	19	21	0.0	1
2009	6	20	9	1.0	1
2009	6	20	21	0.0	1
2009	6	21	9	1.0	1
2009	6	26	21	0.0	1
2009	6	27	9	1.0	1
2009	6	27	21	0.0	1
2009	6	28	9	1.0	1
2009	7	1	1	1.0	1
2009	7	3	21	0.0	1
2009	7	4	9	1.0	1
2009	7	4	21	0.0	1
2009	7	5	9	1.0	1
2009	7	10	21	0.0	1
2009	7	11	9	1.0	1
2009	7	11	21	0.0	1
2009	7	12	9	1.0	1
2009	7	17	21	0.0	1
2009	7	18	9	1.0	1
2009	7	18	21	0.0	1
2009	7	19	9	1.0	1
2009	7	24	21	0.0	1
2009	7	25	9	1.0	1
2009	7	25	21	0.0	1
2009	7	26	9	1.0	1
2009	7	31	21	0.0	1
2009	8	1	1	0.0	1
2009	8	1	9	1.0	1
2009	8	1	21	0.0	1
2009	8	2	9	1.0	1
2009	8	7	21	0.0	1
2009	8	8	9	1.0	1
2009	8	8	21	0.0	1
2009	8	9	9	1.0	1
2009	8	14	21	0.0	1
2009	8	15	9	1.0	1

Yr	Prd	Start Day	Hr	Cap Multiplier	OM Multiplier
2009	8	15	21	0.0	1
2009	8	16	9	1.0	1
2009	8	21	21	0.0	1
2009	8	22	9	1.0	1
2009	8	22	21	0.0	1
2009	8	23	9	1.0	1
2009	8	28	21	0.0	1
2009	8	29	9	1.0	1
2009	8	29	21	0.0	1
2009	8	30	9	1.0	1
2009	9	1	1	1.0	1
2009	9	4	21	0.0	1
2009	9	5	9	1.0	1
2009	9	5	21	0.0	1
2009	9	6	9	1.0	1
2009	9	11	21	0.0	1
2009	9	12	9	1.0	1
2009	9	12	21	0.0	1
2009	9	13	9	1.0	1
2009	9	18	21	0.0	1
2009	9	19	9	1.0	1
2009	9	19	21	0.0	1
2009	9	20	9	1.0	1
2009	9	25	21	0.0	1
2009	9	26	9	1.0	1
2009	9	26	21	0.0	1
2009	9	27	9	1.0	1
2009	10	1	1	1.0	1
2009	10	2	21	0.0	1
2009	10	3	9	1.0	1
2009	10	3	21	0.0	1
2009	10	4	9	1.0	1
2009	10	9	21	0.0	1
2009	10	10	9	1.0	1
2009	10	10	21	0.0	1
2009	10	11	9	1.0	1
2009	10	17	1	0.0	1
2009	10	19	1	1.0	1
2009	10	23	21	0.0	1
2009	10	26	1	1.0	1
2009	10	30	21	0.0	1
2009	10	31	9	1.0	1
2009	10	31	21	0.0	1
2009	11	1	1	0.0	1
2009	11	1	9	1.0	1
2009	11	6	21	0.0	1
2009	11	7	9	1.0	1
2009	11	7	21	0.0	1
2009	11	8	9	1.0	1
2009	11	13	21	0.0	1
2009	11	14	9	1.0	1
2009	11	14	21	0.0	1
2009	11	15	9	1.0	1
2009	11	20	21	0.0	1
2009	11	21	9	1.0	1
2009	11	21	21	0.0	1
2009	11	22	9	1.0	1
2009	11	27	21	0.0	1
2009	11	28	9	1.0	1

Hourly Capacity Pattern 4 (continued)

Yr	Prd	Start Day	Hr	Cap Multiplier	OM Multiplier
2009	11	28	21	0.0	1
2009	11	29	9	1.0	1
2009	12	1	1	1.0	1
2009	12	4	21	0.0	1
2009	12	5	9	1.0	1
2009	12	5	21	0.0	1
2009	12	6	9	1.0	1
2009	12	11	21	0.0	1
2009	12	12	9	1.0	1
2009	12	12	21	0.0	1
2009	12	13	9	1.0	1
2009	12	18	21	0.0	1
2009	12	19	9	1.0	1
2009	12	19	21	0.0	1
2009	12	20	9	1.0	1
2009	12	25	21	0.0	1
2009	12	26	9	1.0	1
2009	12	26	21	0.0	1
2009	12	27	9	1.0	1

Hawaiian Electric Company, Inc.

SUMMARY OF RESULTS

	HECO Direct Testimony (A)	HECO Apr2009 Update (B)
Total Fuel Oil Expense ($000)	$ 809,058	$ 431,206
Total Fuel Related Expense ($000)	$ 7,596	$ 7,142
Total Fuel Expense ($000)	$ 816,654	$ 438,348
Test Year Sales (GWH)	7,657.8	7,484.7
Test Year Company Use (GWH)	16.1	16.1
Test Year Losses (GWH)	379.7	371.1
Net System Input (GWH)	8,053.6	7,871.9
Purchased Power (GWH)	3,345.6	3,362.9
Net HECO (GWH)	4,708.0	4,509.0
Central Station	4,702.6	4,505.3
Substation DG	5.4	3.8
Total Central Station Net Heat Rate (BTU/Net KWH)	10,635	10,635
Steam Net Heat Rate (BTU/Net KWH)	10,547	10,568
Diesel Net Heat Rate (BTU/Net KWH)	23,457	23,466
Biodiesel Net Heat Rate (BTU/Net KWH)	19,236	19,287
Total Central Station Sales Heat Rate (BTU/KWH Sales)	0.011185	0.011184

NOTE: TOTALS MAY NOT ADD EXACTLY DUE TO ROUNDING

Hawaiian Electric Company, Inc.

Comparison of Fuel Consumption

		HECO (APRIL 2009 UPDATE)	CA DT	
Line	LSFO	(A) Fuel Consumption (Barrels)	(B) Fuel Consumption (Barrels)	(C) = (A) - (B) Difference (Barrels)
1.	Honolulu	196,524	195,631	893
2.	Kahe	5,409,685	5,612,493	(202,808)
3.	Waiau-Steam	2,030,817	2,071,017	(40,200)
4.	Subtotal	7,637,027	7,879,141	(242,114)
5.	Waiau-Diesel	33,939	33,894	45
6.	CIP-Diesel	57,112	61,026	(3,914)
8.	Biodiesel	5,020	946	4,074
7.	Subtotal	96,071	95,866	205
9.	Central Station Total	7,733,098	7,975,007	(241,909)
10.	Substation DG	6,698	11,468	(4,770)
11.	Grand Total	7,739,797	7,986,475	(246,678)

HECO Reference:
HECO-501 April 2009 Update and HECO-502 April 2009 Update

CA Reference:
CA-204, p1

Hawaiian Electric Company, Inc.

TEST YEAR FUEL EFFICIENCY COMPARISON

Line			HECO Update 4/2009	CA DT	Difference (HECO - CA)
	ENERGY (Net GWh)				
1.	**Company Generated Energy**	Net GWh	4,508.4	4,664.0	(155.6)
2.	**Central Station Generated Energy**	Net GWh	4,504.7	4,657.6	(152.9)
3.	**Steam Generated Energy**	Net GWh	4,480.6	4,638.9	(158.2)
4.	**CT Generated Energy (w/Diesel)**	Net GWh	22.7	18.7	4.0
5.	**CT Generated Energy (w/Biodiesel)**	Net GWh	1.3	0.2	1.1
6.	**Sub. DG Generated Energy**	Net GWh	3.8	6.5	(2.7)
7.	**Test Year Sales**	Net GWh	7,484.7	7,484.7	-
	FUEL CONSUMPTION (MBtu)				
8.	**Total Fuel Consumed**	MBtu	47,947,470	49,474,107	(1,526,637)
9.	**Central Station Fuel Consumed**	MBtu	47,908,217	49,406,905	(1,498,688)
10.	**Steam Fuel Consumed**	MBtu	47,349,566	48,850,674	(1,501,108)
11.	**CT Fuel Consumed (Diesel)**	MBtu	533,559	556,231	(22,672)
12.	**CT Fuel Consumed (Biodiesel)**	MBtu	25,092	4,728	20,364
13.	**Sub. DG Fuel Consumed**	MBtu	39,252	67,202	(27,950)
	HEAT RATE (Btu/kWh)				
14.	**Total Heat Rate**	Btu/kWh	10,635	10,608	28
15.	**Central Station Heat Rate**	Btu/kWh	10,635	10,608	27
16.	**Steam Heat Rate**	Btu/kWh	10,568	10,531	37
17.	**CT Heat Rate (w/Diesel)**	Btu/kWh	23,466	29,697	(6,232)
18.	**CT Heat Rate (w/Biodiesel)**	Btu/kWh	19,287	19,700	(413)
19.	**Sub. DG Heat Rate**	Btu/kWh	10,409	10,403	6
20.	**HECO Central Station Generation of Net System Input**	Percent	57.23%	59.17%	-1.94%
21.	**Sales Heat Rate - Central Station**	MBtu/kWh Sales[1]	0.011184	0.011156	0.0000278

Reference

Source: HECO-403 (APRIL 2009 UPDATE)
CA-206

Hawaiian Electric Company, Inc.

MWH COMPARISON

	HECO April 2009 UPDATE **MWh**	CA Direct Testimony (CA-WP-204, p1) **MWh**
AES	1,529,472	1,529,470
KPLP	1,497,729	1,341,890
HPOWER	330,750	330,750
NonFirm	4,768	4,770
Archer PV	151	160
Total IPP	3,362,870	3,207,040

Hawaiian Electric Company, Inc.

FUEL PRICE COMPARISON

	HECO APRIL 2009 UPDATE $/bbl	CA Direct Testimony $/bbl
LSFO Honolulu	58.3771	58.3771
LSFO Kahe	55.2706	55.2706
LSFO Waiau	55.2706	55.2706
Diesel Waiau	86.1885	86.1885
Kalaeloa	50.228	62.97
CIP Diesel	88.3004	88.3004
Biodiesel	155.0872	155.0872
Substation DG Diesel	*88.2406*	*88.2406*

CA Direct Testimony $/bbl from CA-WP-213, page 1, line 12

Hawaiian Electric Company, Inc.

Total Avoided Energy Cost Rates

	On-Peak	Off-Peak	
HECO November 2008 Update	19.347	14.797	¢/kwh
CA Direct Testimony (CA-WP-215, p2)	11.554	8.546	¢/kwh
HECO April 2009 Update	11.524	8.180	¢/kwh

APRIL 2009 RATE CASE UPDATE

Ref: R. Sakuda, HECO T-4, Production Simulation, Fuel Expense and Generation Efficiency

For purposes of settlement, HECO agreed with the following production simulation assumptions used by the Consumer Advocate: (1) use of the September 2008 Sales and Peak Forecast which projected lower sales for the 2009 test year, (2) Hoku Solar in-service date of July 1, 2009, and (3) the use of December 2008 fuel prices. However, the Company did not agree with the Consumer Advocate's December 2008 LSFO fuel price of $62.97/bbl price for Kalaeloa and instead proposes a fuel price of $50.228/bbl. (The calculation supporting HECO's $50.228/bbl price for Kalaeloa is provided in HECO T-5, Attachment 2, Final Settlement.) Based on the changes in assumptions described above, HECO reran its production simulation on April 24, 2009. A summary of HECO's latest production simulation results, including the Company's proposed fuel expense and generation efficiency rates for the 2009 test year is provided in the table below.

Hawaiian Electric Company, Inc.

SUMMARY OF RESULTS

	HECO Direct Testimony (A)	HECO Apr2009 Update (B)
Total Fuel Oil Expense ($000)	$ 809,058	$ 431,206
Total Fuel Related Expense ($000)	$ 7,596	$ 7,142
Total Fuel Expense ($000)	$ 816,654	$ 438,348
Test Year Sales (GWH)	7,657.8	7,484.7
Test Year Company Use (GWH)	16.1	16.1
Test Year Losses (GWH)	379.7	371.1
Net System Input (GWH)	8,053.6	7,871.9
Purchased Power (GWH)	3,345.6	3,362.9
Net HECO (GWH)	4,708.0	4,509.0
Central Station	4,702.6	4,505.3
Substation DG	5.4	3.8
Total Central Station Net Heat Rate (BTU/Net KWH)	10,635	10,635
Steam Net Heat Rate (BTU/Net KWH)	10,547	10,568
Diesel Net Heat Rate (BTU/Net KWH)	23,457	23,466
Biodiesel Net Heat Rate (BTU/Net KWH)	19,236	19,287
Total Central Station Sales Heat Rate (BTU/KWH Sales)	0.011185	0.011184

(See HECO T-4, Attachment 1, Page 119, April 2009 Update, Final Settlement.)

Hawaiian Electric Company, Inc.

DERIVATION OF FUEL EXPENSE
(Contract Fuel Prices)

Line	LSFO	(A) Fuel Consumption (Barrels)	(B)[1] Contract Prices ($/bbl)	(C) = (A) x (B) (C) Fuel Expense ($000)
1.	Honolulu	196,524	55.2580	$ 10,860
2.	Kahe	5,409,685	55.2580	$ 298,928
3.	Waiau-Steam	2,030,817	55.2580	$ 112,219
4.	Subtotal	7,637,027		$ 422,007
5.	Waiau-Diesel	33,939	86.1462	$ 2,924
6.	CIP-Diesel	57,112	86.1462	$ 4,920
7.	Subtotal	91,051		$ 7,844
8.	Biodiesel	5,020	155.0872	$ 779
9.	Central Station Total	7,733,098		$ 430,629
10	Substation DG	6,698	86.1462	$ 577
11	Grand Total	7,739,797		$ 431,206
		Composite Fuel Price		55.7129 $/bbl

[1] See HECO-502 and HECO-WP-502.

Hawaiian Electric Company, Inc.

DERIVATION OF FUEL EXPENSE
(Including Trucking and Petrospect Costs)

Line	LSFO	(A) Fuel Consumption (Barrels)	(B)[1] Fuel Costs ($/bbl)	(C) = (A) x (B) (C) Fuel Expense ($000)
1.	Honolulu	196,524	58.3771	$ 11,473
2.	Kahe	5,409,685	55.2706	$ 298,996
3.	Waiau-Steam	2,030,817	55.2706	$ 112,244
4.	Subtotal	7,637,027		$ 422,713
5.	Waiau-Diesel	33,939	86.1885	$ 2,925
6.	CIP-Diesel	57,112	88.3004	$ 5,043
7.	Subtotal	91,051		$ 7,968
8.	Biodiesel	5,020	155.0872	$ 779
9.	Central Station Total	7,733,098		$ 431,460
10.	Substation DG	6,698	88.2406	$ 591
11.	Grand Total	7,739,797		$ 432,051
		Composite Fuel Price		55.8220 $/bbl

[1] See HECO-502.

Confidential Information Deleted Pursuant To Protective Order, Filed on November 21, 2008.

Page 3 contains confidential information and is provided subject to

the Protective Order filed on November 21, 2008 in this proceeding.

Hawaiian Electric Company, Inc.

TEST YEAR FUEL RELATED EXPENSES

Line		Dollars ($000)	Reference
1.	**Fuel Handling Expenses**	$ 6,197	HECO-504; HECO-WP-511
2.	**Fuel Trucking Expenses**	$ 748	HECO-503, page 2
3.	**Petrospect Expenses**	$ 97	HECO-503, page 3; HECO-WP-503
4.	**Kahe 6 Fuel Additive Expense**	$ 100	HECO-WP-512
5.	**Total**	$ 7,142	

Hawaiian Electric Company, Inc.

DERIVATION OF FUEL EXPENSE
(Trucking Costs)

Line	LSFO	(A) Fuel Consumption (Barrels)	(B)[1] Trucking Cost ($/bbl)	(C) = (A) x (B) (C) Fuel Expense ($000)
1.	Honolulu	196,524	3.1065	$ 611
2.	Kahe	5,409,685	-	$ -
3.	Waiau-Steam	2,030,817	-	$ -
4.	Subtotal	7,637,027		$ 611
5.	Waiau-Diesel	33,939	-	$ -
6.	CIP-Diesel	57,112	2.1542	$ 123
7.	Biodiesel	5,020	-	$ -
8.	Subtotal	96,071		$ 123
9.	Central Station Total	7,733,098		$ 734
10.	Substation DG	6,698	2.0944	$ 14
11.	Grand Total	7,739,797		$ 748

[1] See HECO-502

Hawaiian Electric Company, Inc.

DERIVATION OF FUEL EXPENSE
(Petrospect Costs)

Line	LSFO	(A) Fuel Consumption (Barrels)	(B)[1] Petrospect Cost ($/bbl)	(C) = (A) x (B) (C) Fuel Expense ($000)
1.	Honolulu	196,524	0.0126	$ 2
2.	Kahe	5,409,685	0.0126	$ 68
3.	Waiau-Steam	2,030,817	0.0126	$ 26
4.	Subtotal	7,637,027		$ 96
5.	Waiau-Diesel	33,939	0.0423	$ 1
6.	CIP-Diesel	57,112	-	$ -
7.	Biodiesel	5,020	-	$ -
8.	Subtotal	96,071		$ 1
9.	Central Station Total	7,733,098		$ 97
10.	Substation DG	6,698	-	$ -
11.	Grand Total	7,739,797		$ 97

[1] See HECO-502, Line 8 and HECO-WP-503.

No change from direct testimony.

Hawaiian Electric Company, Inc.

TEST YEAR FUEL HANDLING EXPENSES
($000)

Line	Description	(A) Kahe	(B) Waiau	(C) Honolulu	(D) Other	(E) = (A)+(B)+(C)+(D) (E) Total
1.	Facilities Base Fee	$ 868	$ 2,161	-	$ -	$ 3,029
2.	Pipeline Maintenance	$ 602	$ 111	-	$ -	$ 713
3.	Tankfarm Management Fee	$ -	$ -	-	$ 2,455	$ 2,455
4.	Total	$ 1,470	$ 2,272	-	$ 2,455	$ 6,197

Sources:

Line 1: HECO-WP-504, HECO-WP-505, and HECO-WP-511
Line 2: HECO-WP-506, HECO-WP-507 and HECO-WP-511.
Line 3: HECO-WP-508 to HECO-WP-511.

Hawaiian Electric Company, Inc.

TEST YEAR FUEL OIL INVENTORY

Line		(A) Average Barrels[1]	(B) Price per Barrel	(C) = (A) x (B) (C) Fuel Oil Inventory ($000)
	Start of Year Without CIP1:			
1.	**Residual Fuel Oil**	732,318	55.3505	$ 40,534
2.	**Diesel Oil**	31,624	86.6302	$ 2,740
3.	**TOTAL INVENTORY**	**763,942**		**$ 43,274**
	End of Year With CIP1:			
4.	**Residual Fuel Oil**	732,318	55.3505	$ 40,534
5.	**Diesel Oil**	19,144	86.9182	$ 1,664
6.	**Biodiesel**	29,266	155.0872	$ 4,539
7.	**TOTAL INVENTORY**	**780,727**		**$ 46,737**
7A.	**AVERAGE ANNUAL TOTAL INVENTORY**	**772,334**		**$ 45,005**
	AVERAGE RESIDUAL FUEL OIL PRICE			
8.	Residual Fuel Oil Expense (HECO-501, p. 2, Line 4, Column C)			$ 422,713
9.	Barrels of Residual Fuel Oil (HECO-501, p. 2, Line 4, Column A)			7,637,027
10.	Average Price per Barrel (Line 8 + Line 9)			$ 55.3505
	AVERAGE DIESEL OIL PRICE			
11.	No BP-CT Waiau CT Diesel Inventory Volume (HECO-507, p.1, Line 6)			24,961
12.	With BP-CT Waiau CT Diesel Inventory Volume (HECO-507, p.2, Line 2)			12,481
13.	BP Diesel Oil Inventories Total Volume (HECO-507, p.1, Line 7)			4,950
14.	Substation DG Diesel Oil Inventory Volume (HECO-507, p.1, Line 9)			1,713
15.	Waiau CT Diesel Oil Price (HECO-501, Page 2, Line 5, Column B)			$ 86.1885
16.	BP Diesel Oil Price (HECO-501, Page 2, Line 6, Column B)			$ 88.3004
17.	Substation DG Diesel Oil Price (HECO-501, Page 2, Line 10, Column B)			$ 88.2406
18.	No BP-CT Waiau CT Diesel Oil Inventory Value (Line 11 * Line 15)			$ 2,151,351
19.	With BP-CT Waiau CT Diesel Oil Inventory Value (Line 12 * Line 15)			$ 1,075,675
20.	BP Diesel Oil Inventory Value (Line 13 * Line 16)			$ 437,087
21.	Substation DG Diesel Oil Inventory Value (Line 14 * Line 17)			$ 151,156
22.	No BP-CT Total Diesel Inventory Value (Line 18 + Line 20 + Line 21)			$ 2,739,594
23.	With BP-CT Total Diesel Inventory Value (Line 19 + Line 20 + Line 21)			$ 1,663,918
24.	No BP-CT Diesel Inventory Average Value (Line 22/Line 2, Column A)			$ 86.6302
25.	With BP-CT Diesel Inventory Average Value (Line 23/Line 5, Column A)			$ 86.9182
	AVERAGE BIODIESEL PRICE			
26.	Biodiesel Expense (HECO-501, p. 2, Line 8, Column C)			$ 779
27.	Barrels of Biodiesel (HECO-501, p. 2, Line 8, Column A)			5,020
28.	Average Price per Barrel (Line 26/Line 27)			$ 155.0872

[1] Residential Fuel Oil - HECO-506; Diesel Oil & Biodiesel: HECO-507

Hawaiian Electric Company, Inc.

DERIVATION OF RESIDUAL FUEL OIL INVENTORY

Line				
1.	**Forecast Residual Fuel Oil Consumption**[1]		7,637,027	Barrels
2.	**Burn Rate (Line 1 / 365 days)**		20,923	Barrels/Day
3.	**35 Day Inventory (Line 2 X 35 days)**		732,318	Barrels
4.	**Fuel Price**[2]	$	55.3505	$/Barrel
5.	**Residual Fuel Oil Inventory (Line 3 x Line 4)**	$	40,534	$000

[1] See HECO-501, line 4, column A.
[2] See HECO-505, line 10.

Hawaiian Electric Company, Inc.

DERIVATION OF DIESEL OIL & BIODIESEL INVENTORIES
PORTION OF YEAR WITHOUT CIP1 GENERATION

Line		Monthly Data Period	Average Month Ending Inventory (Barrel)	Average Period Inventory (Barrel)
	Diesel			
1.	Waiau CT	2003	23,827	
2.		2004	22,414	
3.		2005	25,174	
4.		2006	23,405	
5.		2007	29,985	
6.		Average		24,961
7.	[1] BPTF	2/2005-4/2008		4,950
8.	Central Station Inventory			29,911
9.	[2] DG Inventory			1,713
10.	Total Diesel Oil Inventory			31,624

[1] Average month end inventory for emergency pipeline displacement since tank fill start in 2/2005.
[2] Average month end inventory since full build out (5/2007 - 4/2008).

No change from direct testimony.

Hawaiian Electric Company, Inc.

DERIVATION OF DIESEL OIL & BIODIESEL INVENTORIES
PORTION OF YEAR WITH CIP1 GENERATION

Line		Monthly Data Period	Inventory (Barrel)	Average Ending Inventory (Barrel)
	Diesel			
1.	**Waiau CT**	**from above 1/2003-12/2007**	24,961	
2.	**Waiau CT**	**Assume 50% less output with CIP1 available**		12,481
3. [1]	**BPTF**	**2/2005-4/2008**		4,950
4.	**Central Station Inventory**			17,431
5. [2]	**DG Inventory**			1,713
6.	**Total Diesel Oil Inventory**			19,144
	Biodiesel			
7.	**CIP1**	**BTU content of Waiau diesel inventory**	24,961 X 5.86 MBTU/Bbl	= 146,271 MBTU
8.		**Barrels Biodiesel with heat content @ 4.998 MBTU per Barrel**		29,266

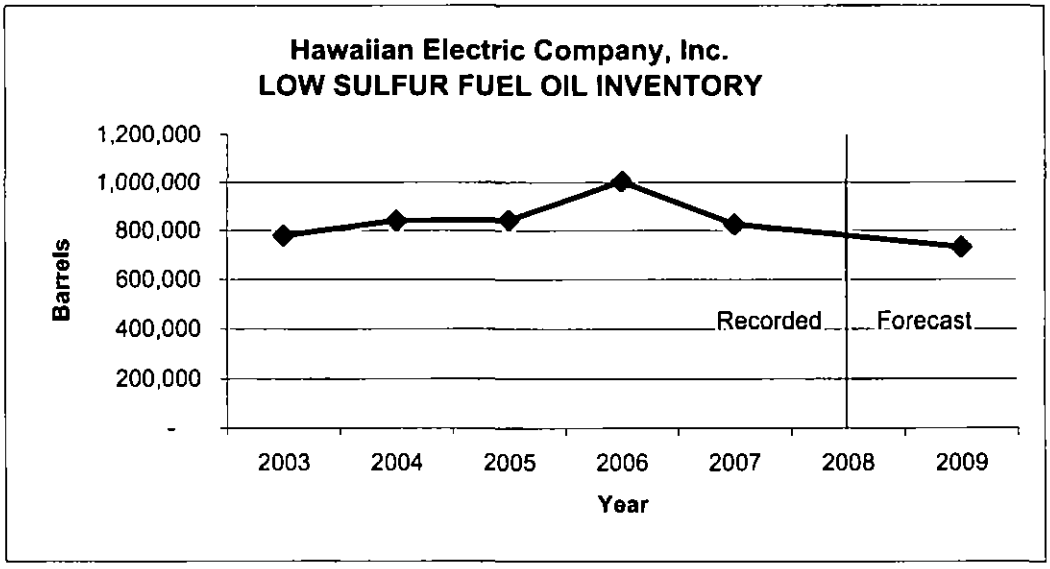
[1] Average month end inventory for emergency pipeline displacement since tank fill start in 2/2005.
[2] Average month end inventory since full build out (5/2007 - 4/2008).

No change from direct testimony.

Hawaiian Electric Company, Inc.

AVERAGE MONTHLY LSFO INVENTORY COMPARED WITH TEST YEAR LSFO INVENTORY

Line	Year	(A) Barrels Consumed Per Day	(B) Average Ending Inventory (Barrel)	(C) = (B) / (A) (C) Average Days Supply
1.	2003	20,974	778,717	37
2.	2004	22,229	840,343	38
3.	2005	21,574	842,358	39
4.	2006	22,128	1,005,056	45
5.	2007	22,188	826,331	37
6.	2003 - 2007 Average	21,818	858,561	39

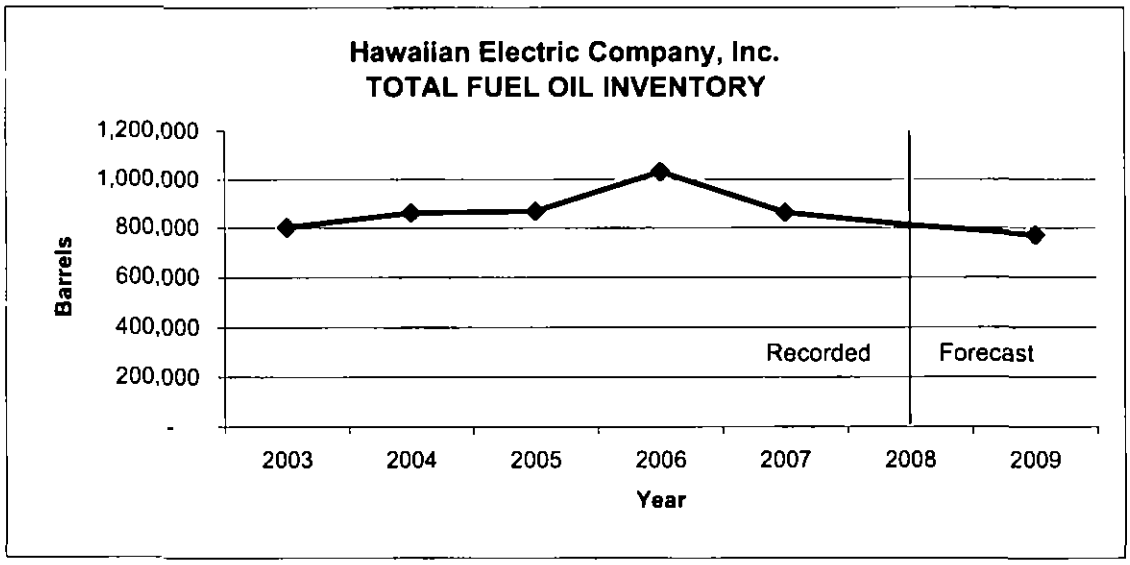


No change from direct testimony.

Hawaiian Electric Company, Inc.

AVERAGE MONTHLY TOTAL FUELS INVENTORY COMPARED WITH TEST YEAR TOTAL FUELS INVENTORY

Line	Year	(A) L S F O Barrels	(B) Diesel Barrels	(C) Biodiesel Barrels	(D) = (A) + (B) + (C) (D) Total Barrels
1.	2003	778,717	23,827	0	802,544
2.	2004	840,343	22,414	0	862,757
3.	2005	842,358	26,632	0	868,990
4.	2006	1,005,056	28,281	0	1,033,337
5.	2007	826,331	37,389	0	863,720
6.	2003 - 2007 Average	858,561	27,709		886,269



Hawaiian Electric Company, Inc.

Index of Exhibits & Workpapers for HECO Rate Case - Direct Testimony HECO T-5
TEST YEAR 2009

Header		Page	Description
HECO-501	(4/09 UPD	1	DERIVATION OF FUEL EXPENSE (Contract Fuel Prices)
HECO-501	(4/09 UPD	2	DERIVATION OF FUEL EXPENSE (Incl. Trucking & Petrospect Costs)
HECO-502	(4/09 UPD	1	CONFIDENTIAL - FUEL PRICES FOR 2009 TEST YEAR
HECO-503	(4/09 UPD	1	TEST YEAR FUEL RELATED EXPENSES
HECO-503	(4/09 UPD	2	DERIVATION OF FUEL EXPENSE (Trucking Costs)
HECO-503	(4/09 UPD	3	DERIVATION OF FUEL EXPENSE (Petrospect Costs)
HECO-504		1	TEST YEAR FUEL HANDLING EXPENSES
HECO-505	(4/09 UPD	1	TEST YEAR FUEL INVENTORY
HECO-506	(4/09 UPD	1	DERIVATION OF RESIDUAL FUEL OIL INVENTORY
HECO-507		1	DERIVATION OF DIESEL & BIODIESEL INVENTORY - W/O CIP1
HECO-507		2	DERIVATION OF DIESEL & BIODIESEL INVENTORY - WITH CIP1
HECO-508		1	AVERAGE MONTHLY LOW SULFUR FUEL OIL INVENTORY 2003-2007
HECO-509		1	AVERAGE MONTHLY TOTAL FUELS INVENTORY 2003-2007
HECO-WP-500		1	Index
HECO-WP-502		1	CONFIDENTIAL - HECO FUEL PRICES
HECO-WP-502	(4/09 UPD	2	CONFIDENTIAL - BIODIESEL PRICE COMPUTATION
HECO-WP-503	(4/09 UPD	1	CONFIDENTIAL - PETROSPECT EXPENSE COMPUTATION
HECO-WP-504		1	Normalization of Facilities Base Fee Allocated to Kahe Pipeline
HECO-WP-505		1	Normalization of Facilities Base Fee Allocated to Waiau Pipeline
HECO-WP-506		1	Normalization of Kahe Pipeline Non-Base/Variable O&M Expense (Pipeline Maint)
HECO-WP-507		1	Normalization of Waiau Pipeline Non-Base/Variable O&M Expense (Pipeline Maint)
HECO-WP-508		1	Normalization of BPTF Base Fee Expense (Tank Farm Mgt Fee)
HECO-WP-509		1	Normalization of BPTF Low Pressure Steam Expense (Tank Farm Mgt Fee)
HECO-WP-510		1	Normalization of BPTF Non-Tank Non-Base/Variable O&M Expense (Tank Farm Mgt Fee)
HECO-WP-510		2	Normalization of BPTF Major Tank Maintenance/O&M Expense (Tank Farm Mgt Fee)
HECO-WP-511		1	Derivation of Fuel Handling Expense
HECO-WP-512	(4/09 UPD	1	Derivation of Calcium Nitrate Additive Expense For Kahe Unit 6

Confidential Information Deleted Pursuant To Protective Order, Filed on November 21, 2008.

Pages 15 to 17 contain confidential information and are provided subject to the Protective Order filed on November 21, 2008 in this proceeding.

No change from direct testimony.

Hawaiian Electric Company, Inc.

Normalization of Facilities Base Fee Allocated To Kahe Pipeline

		Pipeline Base Fee Allocated To Kahe Pipeline	
Year	w.o. #	total actual work order	Fixed Fee 2007 Dollars
2005	HP002069	$588,128	$622,812
2006	HP002263	$588,647	$604,287
2007	HP002531	$591,861	$591,861
total in 2007 dollars			$1,818,959
annual average in 2007 dollars			$606,320
annual average in 2008 dollars			$618,156
3-year normalized annual amount in 2009 dollars			**$630,823**

Notes:
Price-Year Conversions:
GDP: Implicit Price Deflator (2000 = 100)

(Source: BEA, NIPA Table) 2005	113.0
(Source: BEA, NIPA Table) 2006	116.6
(Source: BEA, NIPA Table) 2007	119.7
Est GDPIPD DOE/EIA STEO May 2008)	
2008	122.0
2009	124.5

No change from direct testimony.

Hawaiian Electric Company, Inc.

Normalization of Facilities Base Fee Allocated To Waiau Pipeline

		Pipeline Base Fee Allocated To Waiau Pipeline	
Year	**w.o. #**	**total actual work order**	**Fixed Fee 2007 Dollars**
2005	HP002070	$1,463,916	$1,550,248
2006	HP002264	$1,465,210	$1,504,138
2007	HP002530	$1,473,210	$1,473,210
total in 2007 dollars			$4,527,596
annual average in 2007 dollars			$1,509,199
annual average in 2008 dollars			$1,538,661
3-year normalized annual amount in 2009 dollars			**$1,570,191**

Notes:
Price-Year Conversions:
GDP: Implicit Price Deflator (2000 = 100)

(Source: BEA, NIPA Table)	2005	113.0
(Source: BEA, NIPA Table)	2006	116.6
(Source: BEA, NIPA Table)	2007	119.7
Est GDPIPD DOE/EIA STEO May 2008)		
	2008	122.0
	2009	124.5

No change from direct testimony.

Hawaiian Electric Company, Inc.

Pipeline Maintenance Expense

Normalization of Kahe Pipeline Non-Base/Variable O&M Expense

		Kahe Pipeline Non-Base/Variable O&M Expense	
Year	**w.o. #**	**total actual work order**	**total in 2007 dollars**
2005	G0011242	$290,013	$307,116
2006	G0011251	$138,651	$142,335
2007	G0014143	$811,696	$811,696
total in 2007 dollars			$1,261,147
annual average in 2007 dollars			$420,382
annual average in 2008 dollars			$428,588
3-year normalized annual amount in 2009 dollars			**$437,371**

Notes:
Price-Year Conversions:
GDP: Implicit Price Deflator (2000 = 100)
(Source: BEA, NIPA Table) 2005 113.0
(Source: BEA, NIPA Table) 2006 116.6
(Source: BEA, NIPA Table) 2007 119.7
Est GDPIPD DOE/EIA STEO May 2008)
2008 122.0
2009 124.5

No change from direct testimony.

Hawaiian Electric Company, Inc.

Pipeline Maintenance Expense

Normalization of Waiau Pipeline Non-Base/Variable O&M Expense

		Waiau Pipeline Non-Base/Variable O&M Expense	
Year	**w.o. #**	**total actual work order**	**total in 2007 dollars**
2005	G0011243	$125,965	$133,393
2006	G0011252	$40,699	$41,780
2007	G0014142	$58,330	$58,330
total in 2007 dollars			$233,504
annual average in 2007 dollars			$77,835
annual average in 2008 dollars			$79,354
3-year normalized annual amount in 2009 dollars			**$80,980**

Notes:
Price-Year Conversions:
GDP: Implicit Price Deflator (2000 = 100)
(Source: BEA, NIPA Table) 2005 113
(Source: BEA, NIPA Table) 2006 117
(Source: BEA, NIPA Table) 2007 120
Est GDPIPD DOE/EIA STEO May 2008)
2008 122
2009 125

No change from direct testimony.

Hawaiian Electric Company, Inc.

Tank Farm Management Fee
Normalization of BPTF Base Fee Expense

		Tankfield/BPTF Base Fee	
year	**w.o. #**	**total actual work order**	**total in 2007 dollars**
2005	HP2072	$304,787	$322,761
2006	HP2265	$304,807	$312,905
2007	HP2533	$320,461	$320,461
total in 2007 dollars			$956,127
annual average in 2007 dollars			$318,709
annual average in 2008 dollars			$324,931
3-year normalized annual amount in 2009 dollars			**$331,589**

Notes:
Price-Year Conversions:
GDP: Implicit Price Deflator (2000 = 100)
(Source: BEA, NIPA Table) 2005 113.0
(Source: BEA, NIPA Table) 2006 116.6
(Source: BEA, NIPA Table) 2007 119.7
Est GDPIPD DOE/EIA STEO May 2008)
2008 122.0
2009 124.5

No change from direct testimony.

Hawaiian Electric Company, Inc.

Tank Farm Management Fee
Normalization of BPTF Low Pressure Steam Expense

		BPTF Low Pressure Steam	
year	**w.o. #**	**total actual work order**	**total in 2007 dollars**
2005	HP002071	$635,369	$672,839
2006	HP002268	$710,625	$729,505
2007	HP002532	$391,060	$391,060
total in 2007 dollars			$1,793,405
annual average in 2007 dollars			$597,802
annual average in 2008 dollars			$609,472
3-year normalized annual amount in 2009 dollars			**$621,961**

Notes:
Price-Year Conversions:
GDP: Implicit Price Deflator (2000 = 100)
(Source: BEA, NIPA Table) 2005 113.0
(Source: BEA, NIPA Table) 2006 116.6
(Source: BEA, NIPA Table) 2007 119.7
Est GDPIPD DOE/EIA STEO May 2008
2008 122.0
2009 124.5

No change from direct testimony.

Hawaiian Electric Company, Inc.

Tank Farm Management Fee
Normalization of Non-Tank BPTF Non-Base/Variable O&M

		BPTF Reimbursable/variable O&M	
Year	**w.o. #**	**total actual work order**	**total in 2007 dollars**
2005	G0011244	$363,016	$384,424
2006	G0011253	$550,595	$565,223
2007	G0014134	$1,029,137	$1,029,137
total in 2007 dollars			$1,978,784
annual average in 2007 dollars			$659,595
annual average in 2008 dollars			$672,471
3-year normalized annual amount in 2009 dollars			**$686,251**

Notes:
Price-Year Conversions:
GDP: Implicit Price Deflator (2000 = 100)
(Source: BEA, NIPA Table) 1995 92.1
(Source: BEA, NIPA Table) 1996 93.9
(Source: BEA, NIPA Table) 1997 95.4
(Source: BEA, NIPA Table) 2005 113.0
(Source: BEA, NIPA Table) 2006 116.6
(Source: BEA, NIPA Table) 2007 119.7
Est GDPIPD DOE/EIA STEO May 2008)
2008 122.0
2009 124.5

No change from direct testimony.

Hawaiian Electric Company, Inc.

Tank Farm Management Fee

Normalization of Tank # 131, # 132, # 133 Major Maintenance/O&M

Reimbursable/variable O&M - Tank Maintenance

Tank 131 cleaning, bottom inspection, re-coating, shell repairs, re-insulation O&M occurring presently
Tank 131 bottom replacement is capital work. Tank 132/Tank 133 similar repairs likely.
Previous repairs: # 131 in 1995, # 132 in 1996, and Tk133 in 1007
Tank maintenance outage cycle: # 131 in 2007, # 133 in 2009; #132 in 2010
Assumption that bottom replacement will lengthen maintenance cycle to 20 years

Normalize on 20 year re-inspection cycle (double bottom)

	total project cost	total in 2007 dollars
Tank 131 O&M (outage in 2007)	$866,348	$866,348
Tank 131 20-year cycle annual avg in 2007 dollars		$43,317
Tank 131 20-year cycle annual avg in 2008 dollars		$44,163
20-year normalized annual amount for # 131 in 2009 dollars		**$45,068**

	total project cost	total in 2007 dollars
Tank 132 (last inspection 1996)	$530,739	$676,707
Tank 133 (last inspection 1997)	$447,441	$561,161
Total in 2007 dollars		$1,237,868
Tank 132/133 13-year cycle annual avg in 2007 dollars		$95,221
Tank 132/133 13-year cycle annual avg in 2008 dollars		$97,080
13-year normalized annual amount for # 132+#133 in 2009 dollars		**$99,069**

Notes:
Price-Year Conversions:
GDP: Implicit Price Deflator (2000 = 100)

(Source: BEA, NIPA Table) 1995	92.1
(Source: BEA, NIPA Table) 1996	93.9
(Source: BEA, NIPA Table) 1997	95.4
(Source: BEA, NIPA Table) 2007	119.7
Est GDPIPD DOE/EIA STEO May 2008)	
2008	122.0
2009	124.5

No change from direct testimony.

Hawaiian Electric Company, Inc.

DERIVATION OF HECO (INTERNAL) FUEL HANDLING EXPENSES

Non-Facilities Fuel Handling Expenses:		
Share info sys non-labor for fuel data system:	$	42,600
Fuels Resources Div. labor, non-labor and overheads:	$	954,095
Fuels Infrastructure Div., non-labor and overheads	$	257,564
Power Supply Services Dept. overheads	$	9,700
Share O&M Department labor and overheads:	$	429,655
TOTAL	**$**	**1,693,614**

		Kahe	Waiau	Other	Total
1	**Facilities Base Fee:**				
	Base Fee before prorata handling	$ 630,823	$ 1,570,191		$ 2,201,014
2	**Facilities Non-Base Maintenance:**				
	Non-Base maintenance before prorata handling	$ 437,371	$ 80,980		$ 518,351
3	**Tank Farm Services:**				
	Management Fee, Steam, Non-Base maintenance, Tank maintenance before prorata handling			$ 1,783,938	$ 1,783,938
	TOTAL FUEL FACILITIES O&M BEFORE PRORATA HANDLING APPLIED				**$ 4,503,303**

[1] See HECO-WP-504, HECO-WP-505
[2] See HECO-WP-506, HECO-WP-507
[3] See HECO-WP-508, HECO-WP-509, HECO-WP-510

Allocation by Activity Expense Amount:

	% total expense before allocation	dollar amount
Kahe Base Fee	14.01%	237,241.57
Waiau Base Fee	34.87%	590,521.55
Kahe Maintenance	9.71%	164,487.63
Waiau Maintenance	1.80%	30,455.17
BPTF Services	39.61%	670,908.08
total fuel handling by allocation		1,693,614.00

	Kahe	Waiau	Other	Total
Facilities Base Fee:				
Base Fee after prorata handling	$ 868,065	$ 2,160,713		$ 3,028,777
Facilities Non-Base Maintenance:				
Non-Base maintenance after prorata handling	$ 601,859	$ 111,435		$ 713,294
Tank Farm Services:				
Management Fee, Steam, Non-Base maintenance Tank maintenance after prorata handling			$ 2,454,846	$ 2,454,846
TOTAL FUEL HANDLING EXPENSE AFTER PRORATA EXPENSE APPLICATION				**$ 6,196,917**

Hawaiian Electric Company, Inc.

DERIVATION OF CALCIUM NITRATE FUEL ADDITIVE EXPENSE FOR KAHE UNIT 6

Based on Kahe 6 estimated annual generation of 625,717 MWH
and the estimated annual fuel usage at Kahe 6 of 6,457,200 MBTU

The annual fuel usage in gallons is calculated to be:
6,457,200 MBTU ÷ 6.2 MBTU per bbl x 42 gallons per bbl
= 43,742,323 gallons of Fuel Oil

Fuel additive usage is 1 gallon of additive per 4000 gallons of Fuel Oil

Estimated annual fuel additive usage:
43,742,323 ÷ 4000 = **10,936** **gallons fuel additive per year**

Estimated annual cost of the fuel additive.
The calculation of the estimated annual fuel additive cost is shown below:

a) cost of the additive is $5.51 per gallon
$5.51 x 10,936 gallons = $ 60,255

b) tax = $ 60,255 x 4.5% = $ 2,711

c) materials on-cost is 10.53%
($ 60,255 + $2,711) = $ 6,630

d) shipping cost to Hawaii $17,142 per 26 totes order, plus trucking to inventory $1,162 per 26 totes (7,150 gallon) order; plus 4.5% tax = $2.675 per gallon
10,936 gallons x $2.675 = $ 30,569

The total estimated annual cost of the fuel additive is:
$ 60,255 + $ 2,711 + $ 6,630 + $ 30,569 = **$ 100,166**

per gallon: **$ 9.1596**

Confidential Information Deleted Pursuant To Protective Order, Filed on November 21, 2008.

Attachment 2 contains confidential information and is provided subject to

the Protective Order filed on November 21, 2008 in this proceeding.

APRIL 2009 RATE CASE UPDATE

Ref: R. Cox, HECO T-5, Fuel Price, Fuel Related Expense, and Fuel Inventory

For purposes of settlement, HECO agreed with the Consumer Advocate and proposed to use the following December 2008 contract fuel prices and fuel prices including trucking and petrospect costs:

Contract Fuel Price	HECO APRIL 2009 UPDATE $/bbl	CA Direct Testimony $/bbl
LSFO Honolulu	55.2580	55.2580
LSFO Kahe	55.2580	55.2580
LSFO Waiau	55.2580	55.2580
Diesel Waiau	86.1462	86.1462
CIP Diesel	86.1462	86.1462
Biodiesel	155.0872	155.0872
Substation DG Diesel	88.1462	88.1462

Fuel price, including trucking and petrospect costs:

	HECO APRIL 2009 UPDATE $/bbl	CA Direct Testimony $/bbl
LSFO Honolulu	58.3771	58.3771
LSFO Kahe	55.2706	55.2706
LSFO Waiau	55.2706	55.2706
Diesel Waiau	86.1885	86.1885
CIP Diesel	88.3004	88.3004
Biodiesel	155.0872	155.0872
Substation DG Diesel	88.2406	88.2406

See CA-204, pages 1 and 2, and HECO T-5, Attachment 1, Pages 1-3, April 2009 Update, Final Settlement. HECO also proposed a December 2008 LSFO fuel price of $50.228/bbl for Kalaeloa instead of the $62.97/bbl that the Consumer Advocate used in its production simulation. The calculation supporting HECO's December 2008 Kalaeloa LSFO fuel price is provided as HECO T-5, Attachment 2, Final Settlement.

Based on the use of the above December 2008 contract fuel prices and HECO's April 24, 2009 production simulation results as explained in HECO T-4 April 2009 Update, Final Settlement, for purposes of settlement, HECO proposed a reduction in fuel oil expense from $809,058,000 as proposed in direct testimony to $431,206,000 for the 2009 test year. See HECO T-5, Attachment 1, page 1, April 2009 Update, Final Settlement, for calculation of HECO's revised fuel oil expense. HECO also proposes a reduction in fuel related expenses from $7,596,000 as proposed in direct testimony to $7,142,000 for the test year. See HECO T-5, Attachment 1, Page 4, April 2009 Update, Final Settlement, for calculation.

APRIL 2009 RATE CASE UPDATE

Ref: D. Ching, HECO T-6, Purchased Power Expense

HECO Response:

In direct testimony, HECO T-6 provided HECO's 2009 test year estimate for total purchased power expenses of $477,055,480. See HECO T-6, page 1. In the Rate Case Update, HECO T-6, filed on November 26, 2008 ("HECO T-6 November 2008 Rate Case Update"), the Company included information regarding a decrease in the 2009 test year total purchased power expense from $477,055,480 to $474,819,264. See HECO T-6 November 2008 Rate Case Update, pages 1 and 4. The lower figure was derived from HECO's updated production simulation dated October 9, 2008 that was based on HECO's revised September 2008 Sales and Peak Forecast which reflected a lower sales projection for the 2009 test year. In the current HECO T-6 April 2009 Update, HECO proposes to reduce the 2009 test year total purchased power expense to $346,466,882. See Attachment 2, page 1, of this HECO T-6 April 2009 Update. The expense reduction (from the information provided in the HECO T-6 November 2008 Rate Case Update) is comprised of 1) a decrease of $128,292,594 to energy payments, and 2) a decrease of $59,788 to capacity payments. The updated test year estimate of energy purchases from independent power producers ("IPPs") increased from 3,335 GWh as shown in HECO's T-6 November 2008 Rate Case Update to 3,363 GWh (or a total increase of 27 GWh[1]) in the current HECO T-6 April 2009 Update, and is derived from HECO's updated production simulation dated April 24, 2009 ("April 2009 Production Simulation"). See Attachment 2, page 2, to this HECO T-6 April 2009 Update for a comparison of

[1] Increase does not add due to rounding.

the 2009 test year purchased energy forecast at direct versus the information provided in the HECO T-6 November 2008 Rate Case Update information and the current HECO T-6 April 2009 Update.

The April 2009 Production Simulation is based on HECO's September 2008 Sales and Peak Forecast. The April 2009 Production Simulation is also based on a revised fuel price for Kalaeloa, which resulted in an increase in Kalaeloa dispatch. A minor decrease in the output from Hoku Solar to reflect energy deliveries beginning in July 2009 had no significant impact on IPP dispatch. See Attachment 2, page 3 to this HECO T-6 April 2009 Update. Please refer to HECO T-4 April 2009 Update for further discussion of HECO's April 2009 Production Simulation.

ENERGY PAYMENTS

HECO's total energy payments for this April 2009 Update are estimated to decrease from $366,938,695 in the HECO T-6 November 2008 Rate Case Update to $238,646,101. See Attachment 2, page 1, to this HECO T-6 April 2009 Update. The decrease of $128,292,594 from the November 2008 Update resulted primarily from decreases of $109,116,319 to Kalaeloa's energy payment, $18,976,506 to H-POWER's energy payment, $397,473 to Chevron, Tesoro, and Hoku Solar energy payments, offset by an increase of $197,704 to AES Hawaii's energy payment. See Attachment 2, page 5, to this HECO T-6 April 2009 Update for the breakdown of the 2009 test year estimated energy payments to each IPP.

For Kalaeloa, the April 2009 Production Simulation run dispatched Kalaeloa 27[2] GWh more than in the October 2008 run. This purchased GWh energy increase together with a slight increase to the Gross National Product Implicit Price Deflator ("GNPIPD") escalator, offset by a substantial decrease in the test year 2009 LSFO Fuel Price from $102.567/bbl used in the November 2008

[2] Increase does not add due to rounding.

Update to $50.228/bbl, based on the December 2008 fuel price, resulted in the decreased Kalaeloa energy payment. See Attachment 2, pages 8 – 9, to this HECO T-6 April 2009 Update for calculations for Kalaeloa purchased energy payment, and capacity payment.

For AES-Hawaii, there was no increase in MWH purchased in the April 2009 Production Simulation run as compared to the October 2008 run. However, there was a slight increase to the GNPIPD escalators, which resulted in the increased AES-Hawaii energy payment. See Attachment 2, pages 10 – 13, to this HECO T-6 April 2009 Update for calculations for AES-Hawaii purchased energy payment, and capacity payment.

The updated GNPIPD escalators used in the Kalaeloa and AES-Hawaii purchased energy and capacity payments are shown on Attachment 2, pages 14 – 17, to this HECO T-6 April 2009 Update.

For H-POWER, there was no increase in MWH purchased in the April 2009 Production Simulation run as compared to the October 2008 run. However, there were substantial decreases to the on-peak and off-peak energy payment rates, which resulted in the decreased H-POWER energy payment. See Attachment 2, pages 18 – 21, to this HECO T-6 April 2009 Update, for calculations for H-Power purchased energy payment, and capacity payment.

CAPACITY PAYMENTS

HECO's total firm capacity payments for the 2009 test year rate case update are estimated to reduce from $107,880,569 as shown in HECO's T-6 November 2008 Rate Case Update, to $107,820,781 in this HECO T-6 April 2009 Update. See Attachment 2, page 1, to this HECO T-6 April 2009 Update. The decrease of $59,788 from the November 2008 Update resulted from the projected decrease in bonus payment to AES-Hawaii of $59,788. Capacity payments to Kalaeloa,

and AES-Hawaii (excluding the bonus payment) did not change from direct testimony and remained at $32,719,000, and $67,454,079, respectively. The capacity payment for H-Power reduced from $6,717,000 in direct to $6,725,000 in this latest update. See Attachment 2, page 6, to this HECO T-6 April 2009 Update.

For the AES-Hawaii bonus payment, the $59,788 decrease from $982,486 as shown in HECO's T-6 November 2008 Rate Case Update, to $922,698 in this HECO T-6 April 2009 Update was a result of a slightly lower forecast of the two year running average of AES-Hawaii's equivalent availability factor and a slightly higher forecast of the GNPIPD escalator, on which the bonus payment is calculated. See Attachment 2, page 6, to this HECO T-6 April 2009 Update.

Hawaiian Electric Company, Inc.

TOTAL PURCHASED POWER EXPENSES
Recorded 2007, 2009 Test Year Estimate @ Direct and Rate Case Update

	Reference	2007 Recorded	2009 Test Year Estimate @ Direct	Adjustment	2009 Test Year Estimate @ Nov 2008 Update	Adjustment	2009 Test Year Estimate @ Apr 2009 Update
Energy Payments	HECO-607	$261,963,245	$369,123,533	-$2,184,838	$366,938,695	-$128,292,594	$238,646,101
Firm Capacity Payments	HECO-608	$106,847,767	$107,931,947	-$51,378	$107,880,569	-$59,788	$107,820,781
Total Purchased Power Expenses		$368,811,012	$477,055,480	-$2,236,216	$474,819,264	-$128,352,382	$346,466,882

Note:
Totals may not add due to rounding.

Hawaiian Electric Company, Inc.

TEST YEAR PURCHASED ENERGY FORECAST @ DIRECT VS RATE CASE UPDATE

	2009 Test Year @ Direct (GWh)	Adjustment (GWh)	2009 Test Year @ Nov 2008 Update (GWh)	Adjustment (GWh)	2009 Test Year @ Apr 2009 Update (GWh)
As-available					
1. Chevron USA (Note 2)	1	0	1	0	1
2. Tesoro (Note 2)	4	0	4	0	4
3. Hoku Solar (Note 3)	0	0	0	0	0
Subtotal	5	0	5	0	5
Firm Power					
1. H-POWER	331	0	331	0	331
2. Kalaeloa	1,480	-10	1,470	27	1,498
3. AES Hawaii	1,529	0	1,529	0	1,529
Subtotal	3,340	-10	3,331	27	3,358
TOTAL TEST YEAR PURCHASED ENERGY (GWh)	3,345	-10	3,335	27	3,363

Notes:

1. Totals may not add due to rounding.
2. Refer to HECO-604.
3. Refer to HECO-605.

Hawaiian Electric Company, Inc.

PURCHASED ENERGY FROM HOKU SOLAR ARCHER SUBSTATION PV PLANT
Monthly kWh During 2009 Test Year

	KWH	Adjustment	KWH @ Apr 2009 Update
January	19,838	-19,838	0
February	21,170	-21,170	0
March	26,352	-26,352	0
April	26,797	-26,797	0
May	30,202	-30,202	0
June	29,905	-29,905	0
July	30,794	0	30,794
August	29,757	0	29,757
September	27,389	0	27,389
October	23,984	0	23,984
November	19,986	0	19,986
December	19,098	0	19,098
TOTAL	305,272	-154,264	151,008

Hawaiian Electric Company, Inc.

HISTORICAL PURCHASED POWER PRODUCTION @ DIRECT VS RATE CASE UPDATE
Annual GWh

	2003	2004	2005	2006	2007	2009 Test Year @ Direct	Adjustment	2009 Test year @ Nov 2008 Update	Adjustment	2009 Test year @ Apr 2009 Update
As-available	8	4	4	5	4	5	0	5	0	5
Firm Energy	3,232	3,205	3,379	3,245	3,235	3,340	-10	3,331	27	3,358
Total	3,240	3,208	3,383	3,250	3,238	3,345	-10	3,335	27	3,363

Note:
Totals may not add due to rounding.

Hawaiian Electric Company, Inc.

2009 TEST YEAR ENERGY EXPENSE @ DIRECT VS RATE CASE UPDATE
($000)

	2007 Actual	2009 Test Year @ Direct	Adjustment	2009 Test Year @ Nov 2008 Update	Adjustment	2009 Test Year @ Apr 2009 Update
Kalaeloa- Fuel	137,723	219,439	-1,426	218,013	-109,305	108,708
Additive	2,283	2,492	-13	2,479	49	2,528
Non-Fuel	20,079	22,074	-46	22,028	139	22,167
Shortfall	0	0	0	0	0	0
Total	160,084	244,005	-1,485	242,520	-109,116	133,403
AES Hawaii- Fuel	41,302	43,880	60	43,940	118	44,058
O&M	28,165	29,838	41	29,879	80	29,959
Total	69,466	73,718	101	73,819	198	74,017
H-POWER- Energy	31,930	50,476	-786	49,691	-18,977	30,714
Other						
Chevron	2	129	-2	127	-55	72
Tesoro	482	737	-13	724	-313	411
Hoku Solar	0	58	0	58	-29	29
Total	483	924	-15	909	-397	512
Total Energy	261,963	369,124	-2,185	366,939	-128,293	238,646

Note:

1. Totals may not add due to rounding.
2. Amounts for energy reflect only the cost of energy received, without adjustments for reactive or the meter charge in their contracts.

Hawaiian Electric Company, Inc.

2009 TEST YEAR FIRM CAPACITY EXPENSE @ DIRECT VS RATE CASE UPDATE

	Capacity Payment ($000)					
Firm Capacity Producer	2007 Actual	2009 Test Year @ Direct	Adjustment	2009 Test Year @ Nov 2008 Update	Adjustment	2009 Test Year @ Apr 2009 Update
Kalaeloa	32,719	32,719	0	32,719	0	32,719
AES Hawaii	66,772	67,454	0	67,454	0	67,454
H-POWER	6,200	6,717	8	6,725	0	6,725
AES Hawaii bonus	1,157	1,042	-59	982	-60	923
TOTAL	106,848	107,932	-51	107,881	-60	107,821

Notes:

1 Totals may not add due to rounding.

2 For 2007, the H-POWER capacity payment amount is reduced by sanction amount.

Hawaiian Electric Company, Inc.

AVOIDED ENERGY COST RATES
ADJUSTED FOR FUEL PRICES EFFECTIVE DECEMBER 1, 2008

Line		On-Peak	Off-Peak	
(1)	Avoided Fuel Cost	11.126	7.963	¢/kwh
(2)	Avoided O&M Cost	0.165	0.014	¢/kwh
(3)	Avoided Working Cash	0.104	0.074	¢/kwh
(4)	Avoided Fuel Inventory	0.129	0.129	¢/kwh
(5)	Total Avoided Energy Cost Rates	11.524	8.180	¢/kwh

Total Weighted Avoided energy Cost Rate*	10.131	¢/kwh

* Weighted 14/24 On-peak, 10/24 Off-peak

Worksheet Modified: 18-Jun-08
Latest Data Input: 27-Apr-09
Print: 14 May-09

Kalaeloa 2009 Rate Case Forecasted Expenses
4/24/2009 Updated Production Simulation

Assumptions:

Forced Outage Rate	1.50%	Capacity Cost per kW-mo., up to 180 MW	$13.70			4Q 2003 Base Additive GNPIPD	107.18
Base GNPIPD	73.944	Capacity Cost per kW-mo., over 180 MW up to 208	$9.33			4Q 2008 Current Additive GNPIPD	123.228
4Q 2008 GNPIPD	123.228	O&M (Non-fuel) Base per kWh, up to minimum purc	$0.0098	Base Fuel Additive per kWh	$0.00144	Additive transition multiplier	1.019702277
Base LSFO Fuel Pric	$19.5000	O&M (Non-fuel) Base per kWh, above minimum purch		Shortfall Energy per kWh	$0.0008	Variable O&M credit applied to	May
2009 LSFO Fuel Pric	$50.2280	* 180 MW	$0.0048				
		>= 180 MW	$0.00144				

	One CT			Two CTs			EAF Calculation							TOTAL FACILITY				
	net MWh	Op Hrs	Avg MW	net MWh	Op Hrs	Avg MW	Monthly EAF	YTD EAF	Energy MWh	Fuel Only No additive	Additive Only	Total Fuel	O&M (Non-fuel) Independent of Minimum Purch	Variable O&M Credit		Capacity Up to 180 MW	Capacity Over 180 MW	Total Expense
Jan	8,840	108	80.000	122,957	624	197.203	98.50%	98.50%	132,797	$9,586,879	$224,188	$9,811,067	$2,124,511			$2,465,250	$261,333	$14,662,161
Feb	8,610	96	80.000	113,787	567	200.554	98.50%	98.50%	122,297	$8,822,590	$206,482	$9,029,052	$1,956,530			$2,465,250	$261,333	$13,712,165
Mar	8,908	103	80.000	122,073	629	193.946	98.50%	98.50%	131,381	$9,479,800	$221,798	$9,701,598	$2,101,857			$2,465,250	$261,333	$14,530,038
Apr	40,513	456	90.000	18,730	82	192.404	44.60%	85.02%	58,243	$4,473,520	$94,950	$4,568,470	$899,786			$2,465,250	$261,333	$8,194,839
May	27,659	307	90.000	82,975	407	208.468	80.49%	84.09%	110,634	$8,208,147	$186,773	$8,394,919	$1,769,943	($1,793,863)		$2,465,250	$261,333	$11,097,583
Jun	8,610	95	90.000	124,987	615	203.349	98.50%	86.48%	133,497	$9,821,705	$225,370	$9,847,075	$2,135,709			$2,465,250	$261,333	$14,709,367
Jul	8,778	98	90.000	130,424	638	205.287	98.50%	88.24%	139,200	$10,031,835	$234,908	$10,266,632	$2,226,947			$2,465,250	$261,333	$15,220,163
Aug	10,372	115	90.000	129,785	618	208.527	98.50%	89.55%	139,157	$10,046,709	$234,925	$10,281,634	$2,226,259			$2,465,250	$261,333	$15,234,476
Sep	8,610	96	90.000	126,082	615	205.131	98.50%	90.53%	134,592	$9,699,832	$227,219	$9,927,051	$2,153,227			$2,465,250	$261,333	$14,806,862
Oct	12,906	139	90.000	118,215	573	206.212	92.15%	90.70%	130,716	$9,466,566	$220,673	$9,689,239	$2,091,202			$2,465,250	$261,333	$14,507,025
Nov	9,308	103	90.000	123,634	608	203.927	98.50%	91.40%	132,842	$9,584,042	$224,264	$9,808,306	$2,125,231			$2,465,250	$261,333	$14,660,120
Dec	8,610	95	90.000	126,984	608	197.192	98.50%	92.00%	134,374	$9,684,278	$226,850	$9,911,129	$2,149,740			$2,465,250	$261,333	$14,787,452
Total	162,318	1,804	90.000	1,335,411	6,603	202.230		92.00%	1,497,729	$108,787,782	$2,528,469	$111,236,172	$23,868,942	($1,793,863)	$0	$29,583,000	$3,136,000	$166,122,251

Total Shortfall Cost: $0

Total Expense	$166,122,251

DATA SOURCES AND NOTES

Refer to the letter grid across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in ( ) next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A," if the data are from the SUMMARY sheet and preceded by a "B," if the data are from the BACKUP sheet.

1. Forced Outage Rate in cell E(8) is based on the approximate actual performance and forecasted performance.
2. Base GNPIPD in cell E(9) is from the GNPIPD value on 1/1/86 per the Kalaeloa PPA, p50. This value is the 4th quarter 1987 GNPIPD as updated per Bureau of Economic Analyses publication as of March 26, 2008. Value is consistent with the June 30, 2003 letter agreement with KPLP.
3. 4Q 2008 GNPIPD in cell E(10) is the actual value published by BEA on Mar 26, 2009.
4. Base LSFO Fuel Price in cell E(11) is from the Kalaeloa PPA, p49.
5. 2009 LSFO Fuel Price in cell E(12) is from R. Sakuda 4/24/2009 e-mail.
6. Capacity Cost per kW-mo. up to 180 MW, in cell J(8) is based on calculations per Kalaeloa PPA Amendment 2, p5.
7. Capacity Cost per kW-mo. over 180 MW, up to 208 MW, in cell J(9) is from the Kalaeloa PPA Amendment No 6.
8. O&M Base per kWh, up to the minimum purchase amount, in cell J(10) is from the Kalaeloa PPA Amendment 2, p2.
9. O&M Base per kWh, above the minimum purchase amount, for loads < 180 MW, is from proposed Kalaeloa PPA amendment No 5, p10.
10. O&M Base per kWh, above the minimum purchase amount, for loads >= 180 MW, in cell J(13) is from Kalaeloa PPA amendment No.5, p 10.
11. 4Q Base Additive GNPIPD in cell R(8) is the value on 1/1/2004 per the Kalaeloa PPA Amendment 5, page 4. This value is the 4th quarter 2003 GNPIPD as updated per Bureau of Economic Analyses publication as of March 26, 2008.
12. The additive transition multiplier in cell R(10) is from the Kalaeloa PPA Amendment 5, p. 7.
13. 4Q 2008 Current Additive GNPIPD in cell R(9) per Kalaeloa PPA amendment 5, pg 4 is the same values as in Note 3.
14. Base Fuel Additive per kWh in cell N(10) is based on Kalaeloa PPA, p50.
15. Shortfall Energy Cost per kWh in cell N(11) is based on Kalaeloa PPA, p51.
16. The net MWh and Op Hours in cols C and D, respectively, and cols F and G, respectively, are from the HECO 2009 Rate Case Production Simulation dtd 4/24/2009.
17. The Avg MW in col E is calculated from C / D. The Avg MW in col H is calculated from F / G.
18. The monthly EAF in col I is calculated from ((B C * 24) - B D - B E) / (B C * 24).
19. The YTD EAF in col J is calculated as follows. The first month is from I. Subsequent months are calculated from J (from previous month) * (sum B C(existing and previous months) * 24) + (I * B C * 24) / (sum B C(existing and previous months) * 24)
20. The Energy MWh in col K is calculated from C + F.
21. The Fuel Only No Additive cost in col L is calculated from B.H + B.M.
22. The Additive Only cost in col M is calculated from B.I + B.N.
23. The Total Fuel cost in col N is calculated from L + M.
24. The O&M (Non-fuel) cost in col O is calculated from J(10) * 1000 * K * (E10 / E9), where column K values are the monthly MWH. Value is shown regardless of status relative to the minimum purchase level.
25. The variable O&M credit is Col P calculated from (E10 / E9 * 1000) * ((B T(62) * J(10)) - (B R(62) * J(12)) - (B S(62) * J(13)).
26. The credit is input as a negative sign relative to expenses elsewhere on this spreadsheet. It appears only in the month of May, to reflect reconciliation at the end of the Contract Year. Col Q is empty.
27. The Capacity cost, up to 180 MW, in col R is calculated from J(8) * 180,000.
28. The Capacity cost, over 180 MW, in col S is calculated from J(9) * 28,000.
29. The Total Expense cost in col T is the sum of columns N + O + P + R + S. Col Q is empty.
30. The Total Shortfall Cost in cell T(39) is from B N(48).

HECO T-6
ATTACHMENT 2
PAGE 8 OF 37
APRIL 2009 UPDATE
FINAL SETTLEMENT

HECO-WP-601
DOCKET NO. 2008-0083
PAGE 1 OF 3

Worksheet updated: 18-Jun-08
Latest Data Input: 27-Apr-09
Print 14-May-09

Kalaeloa 2009 Rate Case Forecasted Expenses
4/24/2009 Updated Production Simulation

Assumptions: See SUMMARY sheet

	AVAILABILITY DATA			ONE CT ENERGY					TWO CT ENERGY				
	Calendar Days	Planned Maintenance EHrs Out	Forced Outage EHrs Out	Base Fuel Comp cents/kWh	Total Energy cents/kWh	Fuel Only No additive	Additive Only	Total fuel	Base Fuel Comp cents/kWh	Total Energy cents/kWh	Fuel Only No additive	Additive Only	Total Fuel
Jan	31	0.00	11.16	3.211394	8.440712	$813,967	$16,612	$830,579	2.770000	7.303772	$8,772,912	$207,576	$8,980,488
Feb	28	0.00	10.08	3.211394	8.440712	$703,971	$14,367	$718,338	2.770000	7.303772	$8,118,619	$192,095	$8,310,714
Mar	31	0.00	11.16	3.211394	8.440712	$769,968	$15,714	$785,683	2.770000	7.303772	$8,709,832	$206,083	$8,915,915
Apr	30	394.00	4.69	3.211394	8.440712	$3,351,198	$68,394	$3,419,590	2.770000	7.303772	$1,122,324	$26,555	$1,148,880
May	31	136.00	9.12	3.211394	8.440712	$2,287,906	$46,694	$2,334,600	2.770000	7.303772	$5,920,241	$140,079	$6,060,319
Jun	30	0.00	10.80	3.211394	8.440712	$703,971	$14,367	$718,338	2.770000	7.303772	$8,917,734	$211,003	$9,128,736
Jul	31	0.00	11.16	3.211394	8.440712	$725,970	$14,816	$740,786	2.770000	7.303772	$9,305,665	$220,182	$9,525,846
Aug	31	0.00	11.16	3.211394	8.440712	$857,965	$17,510	$875,475	2.770000	7.303772	$9,188,744	$217,415	$9,406,159
Sep	30	0.00	10.80	3.211394	8.440712	$703,971	$14,367	$718,338	2.770000	7.303772	$8,995,861	$212,851	$9,208,713
Oct	31	48.00	10.44	3.211394	8.440712	$1,033,958	$21,102	$1,055,059	2.770000	7.303772	$8,434,608	$199,571	$8,634,180
Nov	30	0.00	10.80	3.211394	8.440712	$769,968	$15,714	$785,683	2.770000	7.303772	$8,814,074	$208,550	$9,022,623
Dec	31	0.00	11.16	3.211394	8.440712	$703,971	$14,367	$718,338	2.770000	7.303772	$8,980,307	$212,483	$9,192,790
Total	365	578	122.73			$13,426,782	$274,026	$13,700,808			$95,280,920	$2,254,444	$97,535,364

DATA SOURCES AND NOTES See SUMMARY sheet and below

Refer to the letter grid across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in ( ) next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A" if the data are from the SUMMARY sheet and preceded by a "B" if the data are from the BACKUP sheet

SHORTFALL CALCULATION

Adjusted Min Purch.	1,336,706	GWh
Actual Annual Purchase	1,497,729	GWh
Shortfall	(161,023)	GWh
O&M Base Shortfall Cost	$0	
Fuel Shortfall Cost	$0	
Total Shortfall Cost	$0	

ABOVE MINIMUM PURCHASE

161,023	MWH	
110,634	MWH	May 2009
50,389	MWH	Part of April 2009

	Energy (MWH) at < 180 MW	Energy (MWH) at >= 180 MW	Total
May	29,299	81,239	110,538
			-
May subtotal	29,299	81,239	110,538
			-
April 3-30	41,247	5,916	47,163
April 2 (partial day)	0	3,264	3,264
April subtotal	41,247	9,180	50,427
			-
March			-
			-
March subtotal	0	0	-
Total	70,546	90,419	160,965

Above minimum purchase starts in the hour after the minimum purchase is exceeded such that the total may not exactly match shortfall calculation

30 Planned Maintenance Equivalent Hours (EHrs) Out in col D is based in part on a template provided by the HECO 2009 Normalized Planned Maintenance Schedule dated 3/24/08
This template and the assumed EAF of 92.0% and EFOR of 1.5% are used to estimate the corresponding number of equivalent full plant hours outage for the respective months
The result is maintenance outage equivalent full plant hours of 394 in April, 136 in May and 48 in October
Data are entered as equivalent full plant hours based on a 189 MW full plant as used in invoice calculations

31 The Forced Outage Equivalent Hours (EHrs) Out in col E is calculated from A E(8) * ((C * 24) - D)

32 The Base Fuel Component in cents per kWh in col F is calculated from the one CT operation formula in the Kalaeloa PPA, p50. The load data are from A E

33 The Total Energy in cents per kWh in col G is calculated from (F * A E(12) / A E(11)) + (A N(10) * 100 * A R(10) * A R(9) / A R(8))
The LSFO Actual / LSFO Base Fuel Price (A E(12) / A E(11)) assumes a 6.0 million Btu per barrel content for LSFO Actual and LSFO Base fuel prices

34 The Fuel Only-No Additive cost in col H is calculated from (A C * 1000 / 100) * F * A E(12) / A E(11)

35 The Additive Only cost in col I is calculated from A C * 1000 * A N(10) * A R(10) * A R(9) / A R(8)

36 The Total Fuel cost in col J is calculated from H + I

37 The Base Fuel Component in cents per kWh in col K is calculated from the two CT operation formula in the Kalaeloa PPA, Amendment 2, p2. The load data are from A H

38 The Total Energy in cents per kWh in col L is calculated from (K * A E(12) / A E(11)) + (A N(10) * 100 * A N(9) / A N(8))
The LSFO Actual / LSFO Base Fuel Price (A E(12) / A E(11)) assumes a 6.0 million Btu per barrel content for LSFO Actual and LSFO Base fuel prices

39 The Fuel Only-No Additive cost in col M is calculated from (A F * 1000 / 100) * K * A E(12) / A E(11)

40 The Additive Only cost in col N is calculated from A F * 1000 * A N(10) * A R(10) * A R(9) / A N(8)

41 The Total Fuel cost in col O is calculated from M + N

42 Notes 43 through 48 refer to the Shortfall Calculation

43 The Adjusted Minimum Purchase in GWh is calculated from 1235 * (minimum of 92% / 85% or A J(36) / 85%)

44 The Actual Annual Purchase in GWh is from A K(36) / 1000

45 The Shortfall in GWh is calculated from N(40) - N(41)

46 The O&M Base Shortfall Cost is calculated from the absolute value of (A J(10) * N(42) * 1000000 * A E(10) / A E(9)). If N(42) is <= zero, the calculation yields zero

47 The Fuel Shortfall Cost is calculated from the absolute value of (A N(11) * N42 * 1000000). If N(42) is <= zero, the calculation yields zero

48 The Total Shortfall Cost is calculated from N(44) + N(46)

49 The input data for the Above Minimum Purchase box categorized by < 180 MW and >= 180 MW are from the HECO 2009 Rate Case Production Simulation dtd 4/24/2009. The monthly totals may differ from respective cells in A K due to minor roundoffs

Workbook Modified: 12-Aug-06
Latest Data input: 27-Apr-09
Print: 14-May-09

AES Hawaii, Inc. 2009 Operational/Budget Forecasted Expenses
4/24/2009 Production Simulation Update

Assumptions:

Forced Outage Rate	1.50%	3rd Q 2008 GNPIPD	123.037
Base GNPIPD	72.465	1st Q 2009 GNPIPD	123.762
Capacity-$/kWh available	*$0.044095*	*Fixed O&M-$/kWh available*	*$0.011*
Variable O&M-$/kWh purchased	$0.0005		

	ONE BOILER			TWO BOILERS			EAF CALCULATION		TOTAL FACILITY					
	net MWh	Op Hrs	Avg MW	net MWh	Op Hrs	Avg MW	Monthly EAF	YTD EAF	Energy MWh	Fuel	Variable O&M	Fixed O&M	Capacity	Total Expense
Jan	0	0	0.000	132,192	734	180.000	98.50%	98.50%	132,192	$3,793,138	$112,223	$2,463,666	$5,816,624	$12,185,651
Feb	14,893	165	90.000	89,240	496	179.839	86.19%	92.66%	104,133	$3,012,429	$88,403	$1,947,091	$4,597,010	$9,644,932
Mar	8,510	95	90.000	114,740	637	180.142	92.15%	92.48%	123,250	$3,550,690	$104,632	$2,304,720	$5,441,358	$11,401,400
Apr	0	0	0.000	128,261	713	179.990	98.50%	93.99%	128,261	$3,680,332	$108,886	$2,384,193	$5,628,991	$11,802,402
May	0	0	0.000	131,717	732	179.990	98.50%	94.91%	131,717	$3,779,499	$111,820	$2,463,666	$5,816,624	$12,171,609
Jun	0	0	0.000	127,310	707	179.994	98.50%	95.51%	127,310	$3,653,047	$108,079	$2,384,193	$5,628,991	$11,774,310
Jul	0	0	0.000	131,976	733	180.000	98.50%	95.94%	131,976	$3,809,254	$112,700	$2,478,183	$5,816,624	$12,216,762
Aug	0	0	0.000	132,365	735	179.990	98.50%	96.27%	132,365	$3,820,473	$113,032	$2,478,183	$5,816,624	$12,228,312
Sep	0	0	0.000	126,965	705	179.990	98.50%	96.52%	126,965	$3,664,611	$108,421	$2,398,242	$5,628,991	$11,800,265
Oct	0	0	0.000	131,847	733	179.996	98.50%	96.72%	131,847	$3,805,527	$112,590	$2,478,183	$5,816,624	$12,212,924
Nov	0	0	0.000	128,002	711	180.006	98.50%	96.88%	128,002	$3,694,557	$109,306	$2,398,242	$5,628,991	$11,831,097
Dec	0	0	0.000	131,454	730	180.000	98.50%	97.02%	131,454	$3,794,188	$112,254	$2,478,183	$5,816,624	$12,201,249
Total	23,404	260	90.000	1,506,068	8,367	179.998		97.02%	1,529,472	$44,057,745	$1,302,346	$28,656,743	$67,454,079	$141,470,913

Bonus: $922,698

Total Expense: $142,393,612

DATA SOURCES AND NOTES:

Refer to the letter grid across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in ( ) next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A:" if the data are from the SUMMARY sheet and preceded by a "B:" if the data are from the BACKUP sheet

1 Forced Outage Rate in cell F(9) is based on approximate actual performance
2 Base GNPIPD in cell F(10) is the GNPIPD value for the 1st Quarter of 1987 per the AES-Hawaii PPA, Amendment 1, Exhibit 5, p14. Actual value will be from the same Bureau of Economic Analysis publication as the actual current GNPIPD (numerator in GNPIPD adjustment factor), per the May 3, 2001 letter agreement. For now, a recent 1Q1987 GNPIPD value is used for the Base GNPIPD
3 Capacity cost per available kWh in cell F(11) is based on AES Hawaii PPA, Amendment dated May 8, 2003, p. 2.
4 Variable O&M cost per kWh purchased in cell F(12) is based on AES-Hawaii PPA, Amendment 1, p7
5. 3rd Q 2008 GNPIPD in cell K(9) is the actual 3rd quarter 2008 final GNPIPD from the Bureau of Economic Analysis on 12/23/2008.
6. 1st Q 2009 GNPIPD in cell K(10) is based on the GDP Chain-Type Price Index per Energy Information Administration / Annual Energy Outlook 2009 (Table A20, Macroeconomic Indicators) from the Internet (http://www.eia.doe.gov/oiaf/aeo/pdf/0383(2009).pdf; visited 4/27/2009).
7. Fixed O&M cost per available kWh in cell K(11) is based on AES-Hawaii PPA, Amendment 1, p7.
8. The net MWh and Op Hrs in columns C and D, respectively and columns F and G, respectively are from the HECO 2009 Operational/Budget Production Simulation dtd 4/24/2009
9. The Avg MW in col E is calculated from C / D. The Avg MW in col H is calculated from F / G.
10 The Monthly EAF in col I is calculated from ((B:C * 24) - B:D - B:E) / (B:C * 24).
11. The YTD EAF in col J is calculated as follows. The first month is from I. Subsequent months are calculated from J (from previous month) * (sum B:C(existing and previous months) * 24) + (I * B:C * 24) / (sum B:C(existing and previous months) * 24).
12 The Energy MWh in col K is calculated from C + F.
13. The Fuel cost in col L is calculated from ((B:J * B:G * F) + (B:H * B:G * C)) * 1000 / 100
14. The Variable O&M cost in col M is calculated from F(12) * 1000 * B:G * K.
15 The Fixed O&M cost in col N is calculated from K(11) * 1000 * B:F * B:G.
16. The Capacity cost in col O is calculated from F(11) * 1000 * B:F.
17. The Total Expense in col P is calculated by L + M + N + O.
18. The Bonus is calculated on the "Bonus" and "Detailed Bonus Calc" sheets.

Page 2 of 3 (BACKUP sheet)

Workbook Modified: 12-Aug-06
Latest Data Input: 27-Apr-09
Print: 14-May-09

AES Hawaii, Inc. 2009 Operational/Budget Forecasted Expenses
4/24/2009 Production Simulation Update

Assumptions: See SUMMARY sheet

	AVAILABILITY DATA					ONE BOILER		TWO BOILERS	
	Calendar Days	Planned Maintenance EHrs Out	Forced Outage EHrs Out	MWh Available	GNPIPD Ratio	Base Fuel Component cents/kWh	Fuel	Base Fuel Component cents/kWh	Fuel
Jan	31	0	11.16	131,911	1.697882	0.000000	$0	1.689997	$3,793,138
Feb	28	84	8.82	104,252	1.697882	1.786989	$451,874	1.689928	$2,560,555
Mar	31	48	10.44	123,401	1.697882	1.786989	$258,214	1.690059	$3,292,477
Apr	30	0	10.80	127,656	1.697882	0.000000	$0	1.689993	$3,680,332
May	31	0	11.16	131,911	1.697882	0.000000	$0	1.689993	$3,779,499
Jun	30	0	10.80	127,656	1.697882	0.000000	$0	1.689995	$3,653,047
Jul	31	0	11.16	131,911	1.707887	0.000000	$0	1.689997	$3,809,254
Aug	31	0	11.16	131,911	1.707887	0.000000	$0	1.689993	$3,820,473
Sep	30	0	10.80	127,656	1.707887	0.000000	$0	1.689993	$3,664,611
Oct	31	0	11.16	131,911	1.707887	0.000000	$0	1.689995	$3,805,527
Nov	30	0	10.80	127,656	1.707887	0.000000	$0	1.690000	$3,694,557
Dec	31	0	11.16	131,911	1.707887	0.000000	$0	1.689997	$3,794,188
Total	365	132	129.42	1,529,744			$710,088		$43,347,657

DATA SOURCES AND NOTES: See SUMMARY sheet and below

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19. Planned Maintenance Equivalent Hours (EHrs) Out in col D is based on the 2009 planned maintenance schedule (normalized) approved on 3/24/2008, which indicates 11 days of 90 MW outage from 2/22/2009 to 3/4/2009. This results in 84 equivalent full plant hours in February and 48 equivalent full plant hours in March.
20. The Forced Outage Equivalent Hours (EHrs) Out in col E is calculated from A:F(9) * ((C * 24) - D).
21. The MWh Available in col F is calculated from 180 * ((C * 24) - D - E).
22. The GNPIPD ratio in col G is calculated from A:K(9) / A:F(10) for the months January through June and from A:K(10) / A:F(10) for the months of July through December.
23. The Base Fuel Component in cents per kWh in col H is calculated from the formula in the AES-Hawaii PPA, Amendment 1, p7. The load data are from A:E.
24. The Fuel cost in col I is calculated from A:C * H * (1000 / 100) * G.
25. The Base Fuel Component in cents per kWh in col J is calculated from the formula in the AES-Hawaii PPA, Amendment 1, p7. The load data are from A:H.
26. The Fuel cost in col K is calculated from A:F * J * (1000 / 100) * G.

Workbook Modified.	12-Aug-06
Latest Data Input:	27-Apr-09
Print.	14-May-09

AES Hawaii, Inc. 2009 Operational/Budget Forecasted Expenses
4/24/2009 Production Simulation Update
AES Availability Bonus

Two Year Running Avg.
Equivalent Availability Factor (EAF): 95.61%

Per PPA Section 5.2: Availability bonus = $15,000 (1987$) per one tenth of a percentage point over 91%, adjusted in accordance with Section 8.1C

Per PPA Section 8.1C: All dollar values noted in Sections 5.2 and 8.1 will be adjusted each Contract Year in accordance with the following formula:

Bonus Corrected = ((C + U) / (C + E)) X GNPIPD Ratio X Liquidated Damage or Bonus (Uncorrected)

C = Capacity Charge
E = Escalated Energy Charge
U = Unescalated Energy Charge

GNPIPD current (forecasted 1st Q for year of payment)	123.762	
GNPIPD base	72.465	
GNPIPD Adjustment Factor	1.7079	
C	4.4095	cents/kWh
U (Fuel equation with 180 MW * EAF as input for plant load + Variable O&M component (0.05 cents/kWh) + Fixed O&M component (1.1 cents/kWh))	2.84	cents/kWh
E (U * (GNPIPD current/GNPIPD base)	4.8464	cents/kWh
((C+U)/(C+E))	0.782975693	
EAF > 91% (truncated to nearest 0.1%)	4.6%	
Bonus uncorrected	$690,000	
Bonus Corrected	**$922,698**	

AES HAWAII, INC. BONUS EQUIVALENT AVAILABILITY CALCULATION

Assumption of forced outage rate for Contract Year 16 = 1.5 percent.

Month	Potential kWh	Available kWh	Monthly Percentage	Contract Year Cumulative Percentage
Contract Year 16				
Oct-07	133,920,000	82,134,208	61.33%	61.33%
Nov-07	129,600,000	129,578,693	99.98%	80.34%
Dec-07	133,920,000	133,920,000	100.00%	86.96%
Jan-08	133,920,000	133,920,000	100.00%	90.25%
Feb-08	125,280,000	125,279,117	100.00%	92.11%
Mar-08	133,920,000	129,299,252	96.55%	92.86%
Apr-08	129,600,000	124,310,130	95.92%	93.29%
May-08	133,920,000	126,629,131	94.56%	93.45%
Jun-08	129,600,000	129,598,277	100.00%	94.17%
Jul-08	133,920,000	133,846,054	99.94%	94.76%
Aug-08	133,920,000	133,304,755	99.54%	95.20%
Sep-08	129,600,000	117,943,200	91.01%	94.85%
Totals	1,581,120,000	1,499,762,817		**94.85%**

Notes

1. Oct-07 to Sep-08 Available kWh are actual values.

TWO YEAR RUNNING AVERAGE EAF FOR CONTRACT YEARS 15 AND 16		**95.98%**
PPA EAF BONUS THRESHOLD		91.0%
PPA BONUS EAF FACTOR (Truncated to 0.1%)		4.9%
PPA BONUS IN UNCORRECTED DOLLARS ($1987)		$735,000.00
PPA BONUS CORRECTED FORMULA		
Capacity = C	C in cents/kWh =	4.4095
Uncorrected Energy = U	U in cents / kWh = ((fuel equation with 180 MW*EAF as input) + 1.10 + 0.05) =	2.84
Corrected Energy = E	E = U * GNPIPD Adjustment Factor =	4.75
	GNPIPD Current value assumed (on payment date)=	**121.328**
GNPIPD adjustment factor =	Current value / 1987 1st Qtr value (72.465) =	1.6743
(C + U) / (C + E) =		0.791120838
PPA BONUS PAYMENT CORRECTED	((C +U)/(C +E)) * GNPIPD adjustment factor * Uncorrected Bonus	$973,561.61
EAF BONUS	*CONTRACT YEARS 15 AND 16* Payable November, 2008	**$973,561.61**

Assumption of forced outage rate for Contract Year 17 = 1.5 percent.

Month	Potential kWh	Available kWh	Monthly Percentage	Contract Year Cumulative Percentage
Contract Year 17				
Oct-08	133,920,000	122,948,039	91.81%	91.81%
Nov-08	129,600,000	129,595,041	100.00%	95.83%
Dec-08	133,920,000	128,842,005	96.21%	95.96%
Jan-09	133,920,000	131,911,200	98.50%	96.60%
Feb-09	120,960,000	104,252,400	86.19%	94.67%
Mar-09	133,920,000	123,400,800	92.15%	94.24%
Apr-09	129,600,000	127,656,000	98.50%	94.84%
May-09	133,920,000	131,911,200	98.50%	95.31%
Jun-09	129,600,000	127,656,000	98.50%	95.66%
Jul-09	133,920,000	131,911,200	98.50%	95.95%
Aug-09	133,920,000	131,911,200	98.50%	96.19%
Sep-09	129,600,000	127,656,000	98.50%	96.38%
Totals	1,576,800,000	1,519,651,085		**96.38%**

Notes

1. October 2008 to December 2008 Available kWh are actual values.
2. The 2009 planned maintenance schedule (normalized) approved on 3/24/2008 indicates 11 days of 90 MW outage from 2/22/2009 to 3/4/2009 (7 days in February and 4 days in March).

TWO YEAR RUNNING AVERAGE EAF FOR CONTRACT YEARS 16 AND 17		**95.61%**
PPA EAF BONUS THRESHOLD		91.0%
PPA BONUS EAF FACTOR (Truncated to 0.1%)		4.6%
PPA BONUS IN UNCORRECTED DOLLARS ($1987)		$690,000.00
PPA BONUS CORRECTED FORMULA		
Capacity = C	C in cents/kWh =	4.4095
Uncorrected Energy = U	U in cents / kWh = ((fuel equation with 180 MW*EAF as input) + 1.10 + 0.05) =	2.84
Corrected Energy = E	E = U * GNPIPD Adjustment Factor =	4.85
	GNPIPD Current value assumed (on payment date)=	**123.762**
GNPIPD adjustment factor =	Current value / 1987 1st Qtr value (72.465) =	1.7079
(C + U) / (C + E) =		0.782975693
PPA BONUS PAYMENT CORRECTED	((C +U)/(C +E)) * GNPIPD adjustment factor * Uncorrected Bonus	$922,698.49
EAF BONUS	*CONTRACT YEARS 16 AND 17* Payable November, 2009	**$922,698.49**

FROM THE BUREAU OF ECONOMIC ANAL
THIRD QUARTER 2008 (FINAL)

> GNP implicit price deflator (2000=100) 12/23/2008- 9:36

YEAR	1ST QUAR	2ND QUAR	3RD QUAR	4TH QUAR	ANNUAL
1965	22.363	22.460	22.544	22.688	22.516
1966	22.837	23.029	23.272	23.486	23.158
1967	23.593	23.722	23.955	24.221	23.874
1968	24.487	24.743	24.988	25.342	24.893
1969	25.605	25.937	26.310	26.652	26.127
1970	27.034	27.406	27.624	27.982	27.512
1971	28.403	28.777	29.069	29.300	28.889
1972	29.759	29.937	30.229	30.631	30.145
1973	31.000	31.481	32.095	32.731	31.830
1974	33.354	34.137	35.141	36.188	34.699
1975	37.022	37.586	38.288	38.961	37.976
1976	39.396	39.818	40.365	41.101	40.175
1977	41.773	42.381	42.899	43.831	42.731
1978	44.483	45.301	46.052	47.027	45.737
1979	47.857	49.034	50.093	51.093	49.527
1980	52.172	53.324	54.534	56.043	54.015
1981	57.492	58.571	59.616	60.706	59.095
1982	61.530	62.276	63.155	63.837	62.699
1983	64.363	64.831	65.495	65.991	65.184
1984	66.815	67.392	67.930	68.359	67.631
1985	69.127	69.529	69.827	70.276	69.695
1986	70.635	70.993	71.401	71.866	71.227
1987	72.465	72.870	73.412	73.944	73.181
1988	74.571	75.285	76.124	76.700	75.679
1989	77.566	78.316	78.875	79.422	78.549
1990	80.376	81.301	82.028	82.652	81.589
1991	83.623	84.164	84.758	85.202	84.440
1992	85.710	86.181	86.567	87.019	86.375
1993	87.705	88.189	88.574	89.048	88.382
1994	89.583	89.963	90.527	90.953	90.262
1995	91.534	91.868	92.299	92.743	92.114
1996	93.338	93.671	93.962	94.458	93.863
1997	95.058	95.212	95.542	95.851	95.420
1998	96.091	96.254	96.604	96.932	96.475
1999	97.330	97.675	98.014	98.433	97.869
2000	99.311	99.741	100.262	100.672	100.000
2001	101.480	102.248	102.671	103.183	102.396
2002	103.552	103.928	104.321	104.903	104.179
2003	105.718	106.053	106.602	107.180	106.396
2004	108.170	109.173	109.786	110.666	109.455
2005	111.757	112.344	113.469	114.523	113.031
2006	115.529	116.315	117.107	117.726	116.672
2007	118.952	119.542	119.990	120.737	119.813
2008	121.495	121.876	123.037	.000	.000

FROM BUREAU OF ECONOMIC ANALYSIS
FOURTH QUARTER 2008 (FINAL)

> GNP implicit price deflator (2000=100) 3/26/2009- 9:10

YEAR	1ST QUAR	2ND QUAR	3RD QUAR	4TH QUAR	ANNUAL
1965	22.363	22.460	22.544	22.688	22.516
1966	22.837	23.029	23.272	23.486	23.158
1967	23.593	23.722	23.955	24.221	23.874
1968	24.487	24.743	24.988	25.342	24.893
1969	25.605	25.937	26.310	26.652	26.127
1970	27.034	27.406	27.624	27.982	27.512
1971	28.403	28.777	29.069	29.300	28.889
1972	29.759	29.937	30.229	30.631	30.145
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1974	33.354	34.137	35.141	36.188	34.699
1975	37.022	37.586	38.288	38.961	37.976
1976	39.396	39.818	40.365	41.101	40.175
1977	41.773	42.381	42.899	43.831	42.731
1978	44.483	45.301	46.052	47.027	45.737
1979	47.857	49.034	50.093	51.093	49.527
1980	52.172	53.324	54.534	56.043	54.015
1981	57.492	58.571	59.616	60.706	59.095
1982	61.530	62.276	63.155	63.837	62.699
1983	64.363	64.831	65.495	65.991	65.184
1984	66.815	67.392	67.930	68.359	67.631
1985	69.127	69.529	69.827	70.276	69.695
1986	70.635	70.993	71.401	71.866	71.227
1987	72.465	72.870	73.412	73.944	73.181
1988	74.571	75.285	76.124	76.700	75.679
1989	77.566	78.316	78.875	79.422	78.549
1990	80.376	81.301	82.028	82.652	81.589
1991	83.623	84.164	84.758	85.202	84.440
1992	85.710	86.181	86.567	87.019	86.375
1993	87.705	88.189	88.574	89.048	88.382
1994	89.583	89.963	90.527	90.953	90.262
1995	91.534	91.868	92.299	92.743	92.114
1996	93.338	93.671	93.962	94.458	93.863
1997	95.058	95.212	95.542	95.851	95.420
1998	96.091	96.254	96.604	96.932	96.475
1999	97.330	97.675	98.014	98.433	97.869
2000	99.311	99.741	100.262	100.672	100.000
2001	101.480	102.248	102.671	103.183	102.396
2002	103.552	103.928	104.321	104.903	104.179
2003	105.718	106.053	106.602	107.180	106.396
2004	108.170	109.173	109.786	110.666	109.455
2005	111.757	112.344	113.469	114.523	113.031
2006	115.529	116.315	117.107	117.726	116.672
2007	118.952	119.542	119.990	120.737	119.813
2008	121.495	121.876	123.037	123.226	122.407

		GDP Chain-Type Price Index* (2000=1.000)	Change Factor based on GDP Chain-Type Price Index**	GNPIPD (2000=100) based on Change Factor	
2006	1				
	2				
	3				
	4				
2007	1	1.198			
	2		1.00435		
	3		1.00435		
	4		1.00435		
2008	1		1.00435		
	2		1.00435		
	3		1.00435		
	4		1.00435	123.226	(123.226 is actual***)
2009	1		1.00435	123.762	
	2		1.00435	124.300	
	3		1.00435	124.840	
	4		1.00435	125.382	
2010	1	1.262	1.00435	125.927	
	2		1.00470	126.519	
	3		1.00470	127.113	
	4		1.00470	127.710	
2011	1		1.00470	128.310	
	2		1.00470	128.913	
	3		1.00470	129.518	
	4		1.00470	130.127	
2012	1		1.00470	130.738	
	2		1.00470	131.352	
	3		1.00470	131.969	
	4		1.00470	132.589	
2013	1		1.00470	133.212	
	2		1.00470	133.837	
	3		1.00470	134.466	
	4		1.00470	135.098	
2014	1		1.00470	135.732	
	2		1.00470	136.370	
	3		1.00470	137.010	
	4		1.00470	137.654	
2015	1	1.386	1.00470	138.301	

* GDP Chain-Type Price Index per Energy Information Administration / Annual Energy Outlook 2009 (Table A20, Macroeconomic Indicators) from the Internet (http://www.eia.doe.gov/oiaf/aeo/pdf/0383(2009).pdf; visited site on 4/27/2009).
Assumed GDP Chain-Type Price Index is for the first quarter of the year.

** e.g., (1.386/1.262)^(1/20) = 1.00470

*** Fourth quarter 2008 final GNPIPD (2000=100) of 123.226 is from the Bureau of Economic Analysis on 3/26/2009.

AES base GNPIPD=First Quarter 1987 GNPIPD = 72.465 (2000=100), based on 3/26/2009 BEA information.

Reference Case

Table A20. Macroeconomic Indicators
(Billion 2000 Chain-Weighted Dollars, Unless Otherwise Noted)

Indicators	Reference Case							Annual Growth 2007-2030 (percent)
	2006	2007	2010	2015	2020	2025	2030	
Real Gross Domestic Product	11295	11624	11779	13745	15524	17591	20114	2.5%
Components of Real Gross Domestic Product								
Real Consumption	8029	8253	8435	9826	10878	12144	13439	2.1%
Real Investment	1912	1810	1581	2265	2565	3067	3756	3.2%
Real Government Spending	1971	2012	2065	2094	2184	2296	2427	0.8%
Real Exports	1315	1426	1585	2291	3061	4122	5820	6.3%
Real Imports	1931	1972	1899	2446	3007	3722	4717	3.9%
Energy Intensity (thousand Btu per 2000 dollar of GDP)								
Delivered Energy	6.45	6.42	6.09	5.39	4.86	4.44	4.04	-2.0%
Total Energy	8.88	8.84	8.48	7.48	6.79	6.20	5.65	-1.9%
Price Indices								
GDP Chain-type Price Index (2000=1.000)	1.167	1.198	1.262	1.386	1.548	1.653	1.737	1.6%
Consumer Price Index (1982-4=1.00)								
All-urban	2.02	2.07	2.20	2.49	2.83	3.08	3.31	2.1%
Energy Commodities and Services	1.97	2.08	2.18	2.75	3.16	3.48	3.87	2.7%
Wholesale Price Index (1982=1.00)								
All Commodities	1.65	1.73	1.80	2.01	2.19	2.27	2.38	1.4%
Fuel and Power	1.67	1.77	1.91	2.37	2.74	3.04	3.45	2.9%
Metals and Metal Products	1.82	1.93	1.82	2.08	2.21	2.17	2.22	0.6%
Interest Rates (percent, nominal)								
Federal Funds Rate	4.96	5.02	1.30	5.43	5.20	5.17	4.04	--
10-Year Treasury Note	4.79	4.63	3.67	5.74	5.88	5.64	4.67	--
AA Utility Bond Rate	5.84	5.94	6.39	7.71	7.49	7.12	5.79	--
Value of Shipments (billion 2000 dollars)								
Total Industrial	5763	5750	5240	6276	6753	7402	8451	1.7%
Nonmanufacturing	1503	1490	1277	1581	1603	1671	1760	0.8%
Manufacturing	4260	4261	3963	4694	5150	5732	6671	2.0%
Energy-Intensive	1218	1239	1238	1321	1374	1441	1525	0.9%
Non-energy Intensive	3042	3022	2725	3373	3776	4290	5145	2.3%
Population and Employment (millions)								
Population, with Armed Forces Overseas	299.6	302.4	311.4	326.7	342.6	358.9	375.1	0.9%
Population, aged 16 and over	234.5	237.2	245.2	257.4	270.4	283.9	297.6	1.0%
Population, over age 65	37.4	38.0	40.4	47.0	55.0	64.2	72.3	2.8%
Employment, Nonfarm	135.7	137.2	135.6	147.2	152.6	159.2	168.3	0.9%
Employment, Manufacturing	14.2	13.9	12.2	12.6	12.3	12.1	11.7	-0.7%
Key Labor Indicators								
Labor Force (millions)	151.4	153.1	155.9	163.2	168.4	174.0	181.5	0.7%
Nonfarm Labor Productivity (1992=1.00)	1.36	1.37	1.45	1.57	1.74	1.93	2.14	2.0%
Unemployment Rate (percent)	4.61	4.64	8.26	5.68	5.53	5.41	4.78	--
Key Indicators for Energy Demand								
Real Disposable Personal Income	8407	8644	9017	10468	12035	13715	15450	2.6%
Housing Starts (millions)	1.93	1.44	1.18	2.00	1.77	1.74	1.74	0.8%
Commercial Floorspace (billion square feet)	75.8	77.3	81.2	86.1	92.3	97.5	103.3	1.3%
Unit Sales of Light-Duty Vehicles (millions)	16.50	16.09	14.18	17.07	17.41	18.86	20.99	1.2%

GDP = Gross domestic product.
Btu = British thermal unit.
-- = Not applicable.
Sources: 2006 and 2007: IHS Global Insight Industry and Employment models, November 2008. **Projections:** Energy Information Administration, AEO2009 National Energy Modeling System run AEO2009.D120908A.

http://www.eia.doe.gov/oiaf/aeo/pdf/0383(2009).pdf

Workbook Modified: 30-May-08
Latest Data Input: 27-Apr-09
Print: 14-May-09

Page 1 of 3 (SUMMARY sheet)

HPOWER 2009 Rate Case Forecasted Expenses
4/24/2009 Production Simulation Update

Assumptions:

On-Peak, Non-contract Weekday Availabili	88.5%	
Capacity Charge	$0.0489	/kWh available weekday on-peak
Capacity	46,000	kW
On Peak Energy Rate-1st 644 MWh/day	$0.1045	/kWh purch
On Peak Energy Rate-Excess MWh/day	$0.1045	/kWh purch
Off Peak Energy Rate-1st 250 MWh/day	$0.0766	/kWh purch
Off Peak Energy Rate-Excess MWh/day	$0.0766	/kWh purch

	On-Peak MWh	Off-Peak MWh	Total MWh	Total Energy	Capacity	Total Expenses
Jan	17,658.08	12,612.92	30,271	$2,811,041	$613,182.16	$3,424,223
Feb	15,803.67	11,288.33	27,092	$2,515,831	$557,438.33	$3,073,269
Mar	17,710.00	12,650.00	30,360	$2,819,306	$613,182.16	$3,432,488
Apr	17,078.83	12,199.17	29,278	$2,718,828	$613,182.16	$3,332,010
May	6,633.08	4,737.92	11,371	$1,055,939	$209,039.37	$1,264,979
Jun	16,602.25	11,858.75	28,461	$2,642,960	$585,310.25	$3,228,270
Jul	17,613.17	12,580.83	30,194	$2,803,890	$621,054.08	$3,424,944
Aug	17,716.42	12,654.58	30,371	$2,820,327	$585,310.25	$3,405,637
Sep	16,956.33	12,111.67	29,068	$2,699,327	$613,182.16	$3,312,509
Oct	17,767.75	12,691.25	30,459	$2,828,499	$613,182.16	$3,441,681
Nov	16,534.58	11,810.42	28,345	$2,632,188	$571,374.29	$3,203,562
Dec	14,863.33	10,616.67	25,480	$2,366,137	$529,566.41	$2,895,703
Total	192,938	137,813	**330,750**	**$30,714,272**	**$6,725,004**	

Total Expense $37,439,276

DATA SOURCES AND NOTES:

Refer to the letter gnd across the top of the page for the column address and the line number on the left side for the row number General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in ( ) next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A:" if the data are from the SUMMARY sheet, preceded by a "B:" if the data are from the BACKUP sheet and preceded by a "C:" if the data are from the OUTAGE sheet.

1. On-Peak is defined as the time period between 7:00 AM and 9:00 PM on Monday through Friday.
2. Off-Peak is defined as the time period between 9:00 PM on one day and 7:00 AM the next day.
3. *On-Peak, Non-contract Weekday Availability in col E(11) is based on HECO projection of HPOWER performance during such periods. Maintenance outages* do not count against this availability statistic. Only forced outages during the specific weekday, on-peak period count against this value.
4. Capacity Charge in col E(12) is calculated per the HPOWER PPA, Firm Capacity Amendment, pD-6.
5. Capacity in col E(13) is specified in HPOWER PPA, Firm Capacity Amendment, pB-8.
6. On-Peak and Off-Peak Energy Rates in cols. E(14), E(15), E(16) and E(17) are described in the HPOWER PPA, Firm Capacity Amendment, Appendix D, pgs D-3 to D-5. Energy rates used are the HECO Avoided Energy Cost Rate adjusted for fuel prices effective December1st 2008, revised downward by operation of the contract "discount", pgs D-4 to D-5.
7. The On-Peak MWh data in col C and the Off-Peak MWh data in col D are from HECO 2009 Operational/Budget Production Simulation dtd 4/24/2009.
8. The Total MWh in col E is calculated from C + D.
9. The Total Energy cost in col F is calculated from B:M + B:R.
10. The Capacity cost in col G is calculated from B:H * E(13) * E(12).
11. The Total Expenses in col H is calculated from F + G

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HPOWER 2009 Rate Case Forecasted Expenses
4/24/2009 Production Simulation Update

Assumptions: *See SUMMARY sheet*

	AVAILABILITY DATA						ON-PEAK					OFF-PEAK				
			ON-PEAK Weekday Only					Forecasted					Forecasted			
	Calendar Days	Number of Weekdays	Number On-Peak Hours	Planned Maintenance Hours	Forced Outage Hours	On-Peak Available Hours	Potential First 644 MWh/Day	First 644 MWh/Day	Excess Over 644 MWh/Day	Excess Over 644 MWh/Day	Energy	Potential First 250 MWh/Day	First 250 MWh/Day	Excess Over 250 MWh/Day	Excess Over 250 MWh/Day	Energy
Jan	31	22	308	0	35	273	19.964	$1,844,387	0	$0	$1,844,387	7,750	$593,960	4,863	$372,694	$966,654
Feb	28	20	280	0	32	248	18.032	$1,650,693	0	$0	$1,650,693	7,000	$536,480	4,288	$328,658	$865,138
Mar	31	22	308	0	35	273	19.964	$1,849,810	0	$0	$1,849,810	7,750	$593,960	4,900	$375,536	$969,496
Apr	30	22	308	0	35	273	19.320	$1,783,884	0	$0	$1,783,884	7,500	$574,800	4,699	$360,144	$934,944
May	31	21	294	189	12	93	7.406	$692,826	0	$0	$692,826	3,820	$292,765	918	$70,349	$363,114
Jun	30	22	308	14	34	260	18.676	$1,734,105	0	$0	$1,734,105	7,460	$571,734	4,399	$337,120	$908,855
Jul	31	23	322	0	37	285	19.964	$1,839,695	0	$0	$1,839,695	7,750	$593,960	4,831	$370,235	$964,195
Aug	31	21	294	0	34	260	19.964	$1,850,480	0	$0	$1,850,480	7,750	$593,960	4,905	$375,887	$969,847
Sep	30	22	308	0	35	273	19.320	$1,771,089	0	$0	$1,771,089	7,500	$574,800	4,612	$353,438	$928,238
Oct	31	22	308	0	35	273	19.964	$1,855,841	0	$0	$1,855,841	7,750	$593,960	4,941	$378,697	$972,657
Nov	30	21	294	7	33	254	18.676	$1,727,037	0	$0	$1,727,037	7,460	$571,734	4,350	$333,416	$905,150
Dec	31	23	322	56	31	235	16.744	$1,552,475	0	$0	$1,552,475	7,550	$578,632	3,067	$235,029	$813,661
Total	365	261	3,654	266	389	2,999	217,994	$20,152,322	0	$0	$20,152,322	87,040	$6,670,746	50,773	$3,891,204	$10,561,950

Contract availability	87.4%
Sanction payment	$ 20,000

DATA SOURCES AND NOTES: See SUMMARY sheet and below

Refer to the letter gnd across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in ( ) next to the column designation Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A:" if the data are from the SUMMARY sheet, preceded by a "B:" if the data are from the BACKUP sheet and preceded by a "C:" if the data are from the OUTAGE sheet.

12. The Number of Weekdays in col D is from the 2009 calendar.
13. The Number of On-Peak Hours (Hrs) in col E is calculated from D * 14.
14. Planned Maintenance Hours in col F are based on the HECO 2009 Normalized maintenance schedule approved 3/24/2008 The schedule shows 5/8/-5/14/09. 5/30-6/02/09 for 7 weekdays of 23 MW loss. and 5/15-5/29/09 for 11 weekdays of 46 MW loss. Also from 11/29-12/10/09 for 9 weekdays of 23 MW loss
Only those hours during weekdays and on-peak are included as calculated from C:K for that month
15. The Forced Outage Hours in col G is calculated from (1 - A:E(11)) * E - F.
16. The On-Peak Available Hours in col H is calculated from E - F - G.
17. The Potential First 644 MWh per Day (46 MW * 14 hr/day) in col I is calculated from 644 * C. However, to account for maintenance, months with planned maintenance are calculated as (644*C)-(644*equivalent full plant maintenance days) where equivalent full plant maintenance days are as calculated in C:K
18. The First 644 MWh per Day cost in col J is calculated from A.E(14) * A:C * 1000 when A:C is less than I, otherwise, from A:E(14) * I * 1000.
19. The Excess Over 644 MWh per Day in col K is calculated from A:C - I when A:C is greater than I, otherwise equals zero.
20. The Excess Over 644 MWh per day cost in col L is calculated from A.E(15) * K * 1000 when K is greater than zero, otherwise, equals zero.
21. The Energy cost in col M is calculated from (A E(14) * A:C * 1000 when K equals zero, otherwise, is calculated from (A:E(15) * 1000 * K) + (A:E(14) * 1000 * I).
22. The Potential First 250 MWh per Day (25 MW * 10 hr/day) in col N is calc from 250 * C. However, to account for maintenance, months with planned maintenance are calculated as (250 MWh per day * 10hr/day)-(250*full plant outage days at C:E)-(20*half plant outage days at C E) where 20 is the difference between 250MWh and 230MWh(23MWh *10hr when at half plant outage)
23. The First 250 MWh per Day cost in col O is calculated from A:E(16) * A:D * 1000 when A D is less than N, otherwise, is calculated from A:E(16) * N * 1000
24. The Excess Over 250 MWh per Day in col P is equal to zero when N is greater than A:D, otherwise, is calculated from A:D - N.
25. The Excess Over 250 MWh per Day cost in col Q is calculated from A:E(17) * P * 1000 when P is greater than zero, otherwise, equals zero.
26. The Energy cost in col R is calculated from A:E(16) * 1000 * A D when P equals zero, otherwise, is calculated from (A:E(17) * 1000 * P) + (A.E(16) * 1000 * N).
27 The Sanction payment in J(32) is payable to HECO at the end of the contract year (July) and is equal to $10,000 for each full percentage point contract availability is below 90%

HECO T-6
ATTACHMENT 2
PAGE 19 OF 37
APRIL 2009 UPDATE
FINAL SETTLEMENT

HECO-WP-604
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PAGE 2 OF 4

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HPOWER 2009 Operational/Budget Forecasted Expenses
4/24/2009 Production Simulation Update

Planned maintenance from 2009 Normalized Planed Maintenance Schedule

Brk Op	Brk Cl	MW unavail.	calendar days	weekdays	equiv full plant days maintenance	equiv full plant weekdays hrs maintenance
5/8/2009	5/14/2009	23	7	5	3.5	35
5/15/2009	5/29/2009	46	15	11	15	154
5/30/2009	5/31/2009	23	2	0	1	0
6/1/2009	6/2/2009	23	2	2	1	14
11/29/2009	11/30/2009	23	2	1	1	7
12/1/2009	12/10/2009	23	10	8	5	56

Monthly Total equiv. full plant planned maintenance hour	
Jan	
Feb	
March	
April	
May	189
June	14
July	
August	
September	
October	
November	7
December	56

DATA SOURCES AND NOTES: See SUMMARY sheet and below

Refer to the letter grid across the top of the page for the column address and the line number on the left side for the row number. General reference to a column without reference to a row means to use the data for the corresponding month. Otherwise a specific row reference is in ( ) next to the column designation. Calculation on one sheet of the spreadsheet may draw on data from another sheet. Elements of a formula that reference data from another sheet are preceded by an "A:" if the data are from the SUMMARY sheet, preceded by a "B:" if the data are from the BACKUP sheet and preceded by a "C:" if the data are from the OUTAGE sheet.

28. Equiv. full plant days outage in column F is calculated as calendar days E/2 if 23MW un avail in column D else is calculated as E if 46MW unavail in column D.
29. *Weekdays is the count of weekdays of maintenance between dates in column B and C*
30. Equiv. full plant weekdays hours maintenance =(1/2 weekdays F if 23MW unavail in column D or weekdays if 46MW unavail in column D)*14 peak hours per weekday.
31. Monthly total equiv full pant planned maintenance hours = total equiv. full plant maintenance in column H for each month. (ie. May total is sum H(13-15)

HECO T-6
ATTACHMENT 2
PAGE 20 OF 37
APRIL 2009 UPDATE
FINAL SETTLEMENT

HECO-WP-604
DOCKET NO. 2008-0083
PAGE 3 OF 4

H-POWER ENERGY RATE CALCULATION

Filed Quarterly Avoided Energy Cost

Adjusted for December 1, 2008 fuel prices

On-Peak	$0.11524	/kWh	(rounded to 4 decimal places)
Off-Peak	$0.08180	/kWh	(rounded to 4 decimal places)

Applicable Rate for Quarter

On-Peak		
	<= 644,000 kWh/day	$0.10445
	Excess	$0.10445
Off-Peak		
	<= 250,000 kWH/day	$0.07664
	Excess	$0.07664

Floor Rates

On-Peak		
	<= 644,000 kWh/day	$0.0721
	Excess	$0.0670
Off-Peak		
	<= 250,000 kWH/day	$0.0560
	Excess	$0.0519

Discount

				Discount
On-Peak				
	$0.0792	to	$0.0899	0.10
	$0.0900	to	$0.1007	0.15
	$0.1008	to	$0.1115	0.20
		>=	$0.1116	0.25
Off-Peak				
	$0.0610	to	$0.0689	0.10
	$0.0690	to	$0.0769	0.15
	$0.0770	to	$0.0849	0.20
		>=	$0.0850	0.25

H-POWER energy rates 10 1 2004.xls

wds 09052000, rev. dh 04022004

rev dh 10/1/2004 Discount rounded to 3 decimal places in cents/kWh (5 decimal places in $/kWh), per 6/21/2004 letter agreement

DERIVATION OF CHEVRON, TESORO, AND HOKU SOLAR PURCHASED ENERGY EXPENSES
(Ref. HECO-607)

Assumptions:

1. 2009 Test Year on- and off-peak avoided energy cost rates for Chevron and Tesoro:
   On-Peak: 11.524 cents/kWh
   Off-Peak: 8.180 cents/kWh

2. 2009 Test Year energy payment rate for Hoku Solar:
   19.0 cents/kWh

3. Purchased kWh:

Tesoro:	4,056,155 kWh
Chevron:	712,072 kWh
Hoku Solar:	151,008 kWh

Purchased expense (rounded to dollars):

Tesoro:
On-peak energy expense = 4,056,155 * 14/24 * 0.11524 = $272,668
Off-peak energy expense = 4,056,155 * 10/24 * 0.08180 = $138,247
Total energy expense = $410,915

Chevron:
On-peak energy expense = 712,072 * 14/24 * 0.11524 = $47,868
Off-peak energy expense = 712,072 * 10/24 * 0.08180 = $24,270
Total energy expense = $72,138

Hoku Solar:
Total energy expense = 151,008 * 0.19 = $28,692

Hawaiian Electric Company, Inc.

AVOIDED FUEL COST RATES
ADJUSTED FOR FUEL PRICES EFFECTIVE DECEMBER 1, 2008

Line	On-Peak Avoided Fuel Cost Rates	
(1)	On-Peak Avoided Cost Rate	11.126 ¢/kwh
(2)	On-Peak Adjustment Factor (Line 17)	1.000
(3)	Adjusted On-Peak Avoided Cost Rate (Line 1 x Line 2)	11.126 ¢/kwh
	Off-Peak Avoided Fuel Cost Rates	
(4)	Off-Peak Avoided Cost Rate	7.963 ¢/kwh
(5)	Off-Peak Adjustment Factor (Line 28)	1.000
(6)	Adjusted Off-Peak Avoided Cost Rate (Line 4 x Line 5)	7.963 ¢/kwh

ADJUSTMENT FACTORS

	On-Peak					
		Fuel Price		Fuel Price	% of	Wtd Fuel
	Generating Facility	ECA Filing	Prod Sim *	Ratio	Avoid Gen	Price Ratio
(7)	Honolulu[1]	941.60	941.60	1.0000	9.71%	0.0971
(8)	Kahe[1]	891.50	891.50	1.0000	52.66%	0.5266
(9)	Waiau[1]	891.50	891.50	1.0000	30.58%	0.3058
(10)	Waiau Diesel (W9-10)[1]	1470.80	1470.80	1.0000	1.64%	0.0164
(11)	CIP1 Diesel[1]	1506.80	1506.80	1.0000	3.52%	0.0352
(12)	CIP1 Biodiesel[1]	3103.00	3103.00	1.0000	0.41%	0.0041
(13)	Substation DG[2]	24.993	24.993	1.0000	1.37%	0.0137
(14)	AES[2]	2.873	2.873	1.0000	0.00%	0.0000
(15)	Kalaeloa[2]	14.995	14.995	1.0000	0.10%	0.0010
(16)	H-Power[2,3]	16.672	0.000	NA	0.00%	0.0000
(17)	Total				99.99%	0.9999
	Off-Peak					
		Fuel Price		Fuel Price	% of	Wtd Fuel
	Generating Facility	ECA Filing	Prod Sim *	Ratio	Avoid Gen	Price Ratio
(18)	Honolulu[1]	941.60	941.60	1.0000	4.19%	0.0419
(19)	Kahe[1]	891.50	891.50	1.0000	57.21%	0.5721
(20)	Waiau[1]	891.50	891.50	1.0000	15.32%	0.1532
(21)	Waiau Diesel (W9-10)[1]	1470.80	1470.80	1.0000	0.11%	0.0011
(22)	CIP1 Diesel[1]	1506.80	1506.80	1.0000	-0.33%	-0.0033
(23)	CIP1 Biodiesel[1]	3103.00	3103.00	1.0000	0.05%	0.0005
(24)	Substation DG[2]	24.993	24.99	1.0000	0.11%	0.0011
(25)	AES[2]	2.873	2.873	1.0000	0.00%	0.0000
(26)	Kalaeloa[2]	14.995	14.995	1.0000	23.33%	0.2333
(27)	H-Power[2,3]	12.716	0.000	NA	0.00%	0.0000
(28)	Total				99.99%	0.9999

[1] Fuel price in ¢/MBTU
[2] Fuel price in ¢/kwh
[3] TY Prodsim used 0.000 ¢/kwh to represent HPower as a must run unit and therefore HPower's % of avoided generation is zero and the fuel price ratio is not applicable.

* Fuel price includes Petrospect(Inspection) costs in Honolulu, Kahe, Waiau and Waiau Diesel; trucking costs in Honolulu and fuel additive costs in Kahe.

Hawaiian Electric Company, Inc.
ENERGY COST ADJUSTMENT FILING

Refer to Rate Case Update Exhibit 1037 HECO Energy Cost Adjustment (ECA) Filing at Proposed Rates for details.

SUMMARY STATISTICS FOR HECO AVOIDED O&M
Docket No. 7310

OFF-PEAK					
UNIT TYPE	% Avoided MWH	Rate (¢/kwh)			
		Consum.	Maint.	Total	Net
HECO					
Steam	76.73%	0.028	0.000	0.028	0.021
CT/DG	-0.05%	15.700	-1.700	14.000	-0.007
AES	0.00%	0.000	0.000	0.000	0.000
KPLP	23.33%	0.000	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000	0.000
Total	100.01%				0.014

ON-PEAK					
UNIT TYPE	% Avoided MWH	Rate (¢/kwh)			
		Consum.	Maint.	Total	Net
HECO					
Steam	92.95%	0.028	0.000	0.028	0.026
CT/DG	6.95%	1.779	0.222	2.001	0.139
AES	0.00%	0.000	0.000	0.000	0.000
KPLP	0.10%	0.000	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000	0.000
Total	100.00%				0.165

TOTAL					
UNIT TYPE	% Avoided MWH	Rate (¢/kwh)			
		Consum.	Maint.	Total	Net
HECO					
Steam	86.19%	0.028	0.000	0.028	0.024
CT/DG	4.03%	1.701	0.233	1.933	0.078
AES	0.00%	0.000	0.000	0.000	0.000
KPLP	9.78%	0.000	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000	0.000
Total	100.00%				0.102

Hawaiian Electric Company, Inc

AVOIDED WORKING CASH CALCULATIONS

Avoided Working Cash Impact for Fuel and Purchased Energy:

$$= \frac{\text{purchased energy payment lag days - fuel oil payment lag days}}{365}$$

$$\times \frac{\text{(rate of return on rate base) - (weighted cost of debt x composite income tax rate)}}{\text{(1 - composite income tax rate)}}$$

x avoided fuel cost

OR,

Avoided Working Cash Impact:

= avoided fuel working cash factor x avoided fuel cost

		On-Peak	Off-Peak
(1)	fuel oil payment lag days (a1)	17	17
(2)	purchased energy payment lag days (b)	44	44
(3)	rate of return on rate base (c)	8.620%	8.620%
(4)	weighted cost of debt (d)	2.46%	2.46%
(5)	composite income tax rate (e)	38.910%	38.910%
(6)	avoided fuel working cash factor	0.928%	0.928%
(7)	avoided fuel cost (¢/kwh)	11.126	7.963
(8)	avoided fuel working cash (¢/kwh)	0.103	0.074

Hawaiian Electric Company, Inc

AVOIDED WORKING CASH CALCULATIONS

Avoided Working Cash Impact for O&M:

$$= \frac{\text{Purchased energy payment lag days - O\&M payment lag days}}{365}$$

$$\times \frac{\text{(rate of return on rate base) - (weighted cost of debt x composite income tax rate)}}{\text{(1 - composite income tax rate)}}$$

x avoided O&M cost

OR,

Avoided Working Cash Impact:

= avoided O&M working cash factor x avoided O&M cost

		On-Peak	Off-Peak
(1)	O&M payment lag days (a2)	34	34
(2)	purchased energy payment lag days (b)	44	44
(3)	rate of return on rate base (c)	8.620%	8.620%
(4)	weighted cost of debt (d)	2.46%	2.46%
(5)	composite income tax rate (e)	38.910%	38.910%
(6)	avoided O&M working cash factor	0.344%	0.344%
(7)	avoided O&M cost (¢/kwh)	0.165	0.014
(8)	avoided O&M working cash (¢/kwh)	0.001	0.000
(9)	total avoided working cash (¢/kwh) (avoided fuel working cash plus avoided O&M working cash)	0.104	0.074

References:

(a1) Docket No. 2006-0386, Interim D&O No. 23749, Exhibit B, page 2 of 2.

(a2) Docket No. 2006-0386, Interim D&O No. 23749, Exhibit B, page 2 of 2, O&M Nonlabor payment lag days.

(b) Represents the weighted average payment lag days based on the specific payment provisions of each purchase power agreement or the payment lag days determined in Docket No. 2006-0386. 44 days represents payment 20 working days following the end of the month.

(c) Docket No. 2006-0386, Interim D&O No. 23749, Exhibit A, page 1 of 3.

(d) Weighted capital cost on short term debt = 0.15%
Weighted capital cost on long term debt = 2.31%
Docket No. 2006-0386, Stipulated Settlement Letter, HECO T-19, Attachment 5, page 1 of 1.

(e) Composite income tax rate = 38.910%
Docket No. 2006-0386, Interim D&O No. 23749, Exhibit A, page 3 of 3.

Hawaiian Electric Company, Inc

AVOIDED FUEL INVENTORY CALCULATIONS

Avoided Fuel Inventory Impact:

= $\frac{\text{days of fuel inventory}}{365}$ x million btus (mbtus) avoided x $/mbtu

x $\frac{\text{(rate of return on rate base) - (weighted cost of debt x composite income tax rate)}}{\text{(1 - composite income tax rate)}}$

/ as-available QF energy

		On and Off-Peak	
		LSFO	Diesel Fuel
(1)	days of fuel inventory (a)	35	35
(2)	fuel avoided (MBTU) (b)	76,815	7,075
(3)	fuel price ($/mbtu) (c)	10.5747	17.1175
(4)	rate of return on rate base (d)	8.620%	8.620%
(5)	weighted cost of debt (e)	2.46%	2.46%
(6)	composite income tax rate (f)	38.910%	38.910%
(7)	as-available QF energy (mwh)	8,760	8,760
(8)	avoided fuel inventory (¢/kwh)	0.112	0.017
(9)	total avoided fuel inventory (¢/kwh)	0.129	

See reference notes on following page.

References:

(a) Docket No. 2006-0386, CA-IR-214, page 19 & 27 of 139.

(b) Production Simulation dated 10/16/08

(c) Docket No. 2006-0386, HECO-408, updated June 2007.
Residual Fuel Price: $65.5629/bbl ÷ 6.2 = $10.5747/mbtu
Diesel Fuel Price: $100.3084/bbl ÷ 5.86 = $17.1175/mbtu

(d) Docket No. 2006-0386, Interim D&O No. 23749, Exhibit A, page 1 of 3.

(e) Weighted capital cost on short term debt = 0.15%
Weighted capital cost on long term debt = 2.31%
Docket No. 2006-0386, Stipulated Settlement Letter, HECO T-19, Attachment 5, page 1 of 1.

(f) Composite income tax rate = 38.910%
Docket No. 2006-0386, Interim D&O No. 23749, Exhibit A, page 3 of 3.

HECO Avoided O&M Rates

	Consumables		Maintenance		Comments
	Rate	Units	Rate	Units	
Honolulu Station					
Steam Units		¢/kwh			
H8	0.028		0.000		See Note 1
H9	0.028		0.000		See Note 1
Kahe Station					
Steam Units		¢/kwh			
K1	0.028		0.000		See Note 1
K2	0.028		0.000		See Note 1
K3	0.028		0.000		See Note 1
K4	0.028		0.000		See Note 1
K5	0.028		0.000		See Note 1
K6	0.028		0.000		See Note 1
Waiau Station					
Steam Units		¢/kwh			
W3	0.028		0.000		See Note 1
W4	0.028		0.000		See Note 1
W5	0.028		0.000		See Note 1
W6	0.028		0.000		See Note 1
W7	0.028		0.000		See Note 1
W8	0.028		0.000		See Note 1
CT/DG Units				$/Hr	
W9	0.000		85.639		See Note 1
W10	0.000		85.639		See Note 1
CIP1	3.143		0.000		
Substation DG	0.000		0.000		
IPP		¢/kwh			
AES	0.000		0.000		HECO Purchase Power Contracts (note 2)
KPLP	0.000		0.000		HECO Purchase Power Contracts
H-POWER	0.000		0.000		HECO Purchase Power Contracts

Notes:
1. HECO unit variable O&M rates based on the 3/4/94 stipulation from Docket 7310 escalated to 2009$ by the Consumer Price Index - Urban for Honolulu & GDPIPD
2. AES variable O&M accounted for in the ABC coefficients

HECO Avoided Off-Peak O&M based on 1 MW Simulation

Off-Peak	MWH				Hours of operation			O&M Rates		Avoided O&M Costs, $		
	Base	QF in	Diff.	% of Total	Base	QF in	Diff.	Consum. (¢/kwh)	Maint. ($/Hr)	Consum.	Maint.	Total
Honolulu												
Steam Units												
Honolulu 8	6,759	6,619	140	3.84%	300.1	293.9	6.2	0.028	0.00	39	0	39
Honolulu 9	3,506	3,493	13	0.36%	151.8	151.3	0.5	0.028	0.00	4	0	4
Total	10,265	10,112	153	4.19%	451.9	445.2	6.7			43	0	43
Kahe												
Steam Units												
Kahe 1	113,837	113,691	146	4.00%	2,920.5	2,920.5	0.0	0.028	0.00	41	0	41
Kahe 2	113,106	112,919	187	5.13%	2,921.0	2,921.0	0.0	0.028	0.00	52	0	52
Kahe 3	168,360	167,950	410	11.24%	3,224.0	3,224.0	0.0	0.028	0.00	115	0	115
Kahe 4	162,843	162,490	353	9.68%	3,260.9	3,260.9	0.0	0.028	0.00	99	0	99
Kahe 5	290,262	289,567	695	19.05%	3,280.1	3,280.1	0.0	0.028	0.00	195	0	195
Kahe 6	204,321	204,025	296	8.11%	3,072.2	3,072.2	0.0	0.028	0.00	83	0	83
Total	1,052,729	1,050,642	2,087	57.21%	18,678.7	18,678.7	0.0			585	0	585
Waiau												
Steam Units												
Waiau 3	5,207	5,168	39	1.07%	170.0	168.8	1.2	0.028	0.00	11	0	11
Waiau 4	5,850	5,822	28	0.77%	260.3	259.0	1.3	0.028	0.00	8	0	8
Waiau 5	18,683	18,669	14	0.38%	822.7	822.3	0.4	0.028	0.00	4	0	4
Waiau 6	11,244	11,167	77	2.11%	494.1	490.7	3.4	0.028	0.00	22	0	22
Waiau 7	122,563	122,413	150	4.11%	3,419.5	3,419.5	0.0	0.028	0.00	42	0	42
Waiau 8	143,037	142,786	251	6.88%	3,202.1	3,202.1	0.0	0.028	0.00	70	0	70
Total	306,584	306,025	559	15.32%	8,368.7	8,362.4	6.3			157	0	157
CT/DG Units												
Waiau 9	77	75	2	0.05%	8.8	8.6	0.2	0.000	85.639	0	17	17
Waiau 10	147	145	2	0.05%	20.4	20.2	0.2	0.000	85.639	0	17	17
CIP1	1,621	1,631	-10	-0.27%	41.0	41.2	-0.2	3.143	0.000	-314	0	-314
Substation DG	181	177	4	0.11%	36.1	35.4	0.7	0.000	0.000	0	0	0
Total	2,026	2,028	-2	-0.05%	106.3	105.4	0.9			-314	34	-280
Total	308,610	308,053	557	15.27%	8,475.0	8,467.8	7.2			-157	34	-123
IPP												
AES	637,274	637,274	0	0.00%	3,594.6	3,594.6	0.0	0.000	0.00	0	0	0
KPLP	548,532	547,681	851	23.33%	8,102.7	8,102.7	0.0	0.000	0.00	0	0	0
H-POWER	137,813	137,813	0	0.00%	3,097.5	3,097.5	0.0	0.000	0.00	0	0	0
Total	1,323,619	1,322,768	851	23.33%	14,794.8	14,794.8	0.0			0	0	0
TOTAL	2,695,223	2,691,575	3,648	100.00%	42,400.4	42,386.5	13.9			471	34	505

Total Avoided Cost, ¢/kwh	0.014

HECO Avoided Off-Peak O&M based on 1 MW Simulation

SUMMARY STATISTICS

UNIT TYPE	% Avoided MWH	Rate (¢/kwh)			
		Consum.	Maint.	Total	Net
HECO					
Steam	76.73%	0.028	0.000	0.028	0.021
CT/DG	-0.05%	15.700	-1.700	14.000	-0.007
AES	0.00%	0.000	0.000	0.000	0.000
KPLP	23.33%	0.000	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000	0.000
TOTAL	100.01%				0.014

Note:
Unit Rates = Total O&M $/Avoided Unit MWH
Net Rates = Unit Rates * % Avoided MWH

HECO Avoided On-Peak O&M based on 1 MW Simulation

On-Peak	MWH				Hours of operation			O&M Rates		Avoided O&M Costs, $		
	Base	QF in	Diff.	% of Total	Base	QF in	Diff.	Consum.	Maint.	Consum.	Maint.	Total
Honolulu								(¢/kwh)	($/Hr)			
Steam Units												
Honolulu 8	53,553	53,457	96	1.88%	2,316.7	2,314.1	2.6	0.028	0.000	27	0	27
Honolulu 9	31,338	30,938	400	7.83%	1,255.4	1,240.0	15.4	0.028	0.000	112	0	112
Total	84,891	84,395	496	9.71%	3,572.1	3,554.1	18.0			139	0	139
Kahe												
Steam Units												
Kahe 1	224,395	224,099	296	5.79%	4,088.7	4,088.7	0.0	0.028	0.000	83	0	83
Kahe 2	265,704	265,022	682	13.35%	4,089.4	4,089.4	0.0	0.028	0.000	191	0	191
Kahe 3	367,490	367,160	330	6.46%	4,513.6	4,513.6	0.0	0.028	0.000	92	0	92
Kahe 4	353,394	353,068	326	6.38%	4,565.3	4,565.3	0.0	0.028	0.000	91	0	91
Kahe 5	600,670	600,425	245	4.80%	4,592.2	4,592.2	0.0	0.028	0.000	69	0	69
Kahe 6	422,037	421,226	811	15.88%	4,301.1	4,301.1	0.0	0.028	0.000	227	0	227
Total	2,233,690	2,231,000	2,690	52.66%	26,150.3	26,150.3	0.0			753	0	753
Waiau												
Steam Units												
Waiau 3	40,785	40,467	318	6.23%	1,305.0	1,295.2	9.8	0.028	0.000	89	0	89
Waiau 4	51,646	51,415	231	4.52%	2,250.8	2,241.6	9.2	0.028	0.000	65	0	65
Waiau 5	97,294	97,221	73	1.43%	4,115.4	4,115.3	0.1	0.028	0.000	20	0	20
Waiau 6	74,388	74,314	74	1.45%	3,144.5	3,143.8	0.7	0.028	0.000	21	0	21
Waiau 7	234,311	233,975	336	6.58%	4,787.3	4,787.3	0.0	0.028	0.000	94	0	94
Waiau 8	298,121	297,591	530	10.38%	4,483.0	4,483.0	0.0	0.028	0.000	148	0	148
Total	796,545	794,983	1562	30.58%	20,086.0	20,066.2	19.8			437	0	437
CT/DG Units												
Waiau 9	1,870	1,838	32	0.63%	201.9	198.7	3.2	0.000	85.639	0	274	274
Waiau 10	3,163	3,111	52	1.02%	403.7	397.7	6.0	0.000	85.639	0	514	514
CIP1	17,317	17,116	201	3.94%	436.2	431.2	5.0	3.143	0.000	6,317	0	6,317
Substation DG	3,623	3,553	70	1.37%	707.4	694.1	13.3	0.000	0.000	0	0	0
Total	25,973	25,618	355	6.95%	1,749.2	1,721.7	27.5			6,317	788	7,105
Total	822,518	820,601	1917	37.53%	21,835.2	21,787.9	47.3			6,754	788	7,542
IPP												
AES	892,190	892,190	0	0.00%	5,032.4	5,032.4	0.0	0.000	0.000	0	0	0
KPLP	949,641	949,636	5	0.10%	13,509.2	13,509.2	0.0	0.000	0.000	0	0	0
H-POWER	192,938	192,938	0	0.00%	4,336.5	4,336.5	0.0	0.000	0.000	0	0	0
Total	2,034,769	2,034,764	5	0.10%	22,878.1	22,878.1	0.0			0	0	0
TOTAL	5,175,868	5,170,760	5,108	100.00%	74,435.7	74,370.4	65.3			7,646	788	8,434

Total Avoided Cost, ¢/kwh	0.165

HECO Avoided On-Peak O&M based on 1 MW Simulation

SUMMARY STATISTICS

UNIT TYPE	% Avoided MWH	Rate (¢/kwh)			
		Consum.	Maint.	Total	Net
HECO					
Steam	92.95%	0.028	0.000	0.028	0.026
CTs	6.95%	1.779	0.222	2.001	0.139
AES	0.00%	0.000	0.000	0.000	0.000
KPLP	0.10%	0.000	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000	0.000
TOTAL	100.00%				0.165

Note:

Unit Rates = Total O&M $/Avoided Unit MWH

Net Rates = Unit Rates * % Avoided MWH

HECO Avoided Total O&M based on 1 MW Simulation

Total	MWH				Hours of operation			O&M Rates		Avoided O&M Costs, $		
	Base	QF in	Diff.	% of Total	Base	QF in	Diff.	Consum. (¢/kwh)	Maint. ($/Hr)	Consum.	Maint.	Total
Honolulu												
Steam Units												
Honolulu 8	60,312	60,076	236	2.70%	2,616.8	2,608.0	8.8	0.028	0.000	66	0	66
Honolulu 9	34,844	34,431	413	4.72%	1,407.2	1,391.3	15.9	0.028	0.000	116	0	116
Total	95,156	94,507	649	7.41%	4,024.0	3,999.3	24.7			182	0	182
Kahe												
Steam Units												
Kahe 1	338,232	337,790	442	5.05%	7,009.2	7,009.2	0.0	0.028	0.000	124	0	124
Kahe 2	378,810	377,941	869	9.92%	7,010.4	7,010.4	0.0	0.028	0.000	243	0	243
Kahe 3	535,850	535,110	740	8.45%	7,737.6	7,737.6	0.0	0.028	0.000	207	0	207
Kahe 4	516,237	515,558	679	7.75%	7,826.2	7,826.2	0.0	0.028	0.000	190	0	190
Kahe 5	890,932	889,992	940	10.74%	7,872.3	7,872.3	0.0	0.028	0.000	263	0	263
Kahe 6	626,358	625,251	1107	12.64%	7,373.3	7,373.3	0.0	0.028	0.000	310	0	310
Total	3,286,419	3,281,642	4,777	54.56%	44,829.0	44,829.0	0.0			1,337	0	1,337
Waiau												
Steam Units												
Waiau 3	45,992	45,635	357	4.08%	1,475.0	1,464.0	11.0	0.028	0.000	100	0	100
Waiau 4	57,496	57,237	259	2.96%	2,511.1	2,500.6	10.5	0.028	0.000	73	0	73
Waiau 5	115,977	115,890	87	0.99%	4,938.1	4,937.6	0.5	0.028	0.000	24	0	24
Waiau 6	85,632	85,481	151	1.72%	3,638.6	3,634.5	4.1	0.028	0.000	42	0	42
Waiau 7	356,874	356,388	486	5.55%	8,206.8	8,206.8	0.0	0.028	0.000	136	0	136
Waiau 8	441,158	440,377	781	8.92%	7,685.1	7,685.1	0.0	0.028	0.000	219	0	219
Total	1,103,129	1,101,008	2121	24.22%	28,454.7	28,428.6	26.1			594	0	594
CT/DG Units												
Waiau 9	1,947	1,913	34	0.39%	210.7	207.3	3.4	0.000	85.639	0	291	291
Waiau 10	3,310	3,256	54	0.62%	424.1	417.9	6.2	0.000	85.639	0	531	531
CIP1	18,938	18,747	191	2.18%	477.2	472.4	4.8	3.143	0.000	6,003	0	6,003
Substation DG	3,804	3,730	74	0.85%	743.5	729.5	14.0	0.000	0.000	0	0	0
Total	27,999	27,646	353	4.03%	1,855.5	1,827.1	28.4			6,003	822	6,825
Total	1,131,128	1,128,654	2474	28.25%	30,310.2	30,255.7	54.5			6,597	822	7,419
IPP												
AES	1,529,464	1,529,464	0	0.00%	8,627.0	8,627.0	0.0	0.000	0.000	0	0	0
KPLP	1,498,173	1,497,317	856	9.78%	21,611.9	21,611.9	0.0	0.000	0.000	0	0	0
H-POWER	330,751	330,751	0	0.00%	7,434.0	7,434.0	0.0	0.000	0.000	0	0	0
Total	3,358,388	3,357,532	856	9.78%	37,672.9	37,672.9	0.0			0	0	0
TOTAL	7,871,091	7,862,335	8,756	100.00%	116,836.1	116,756.9	79.2			8,116	822	8,938

Total Avoided Cost, ¢/kwh	0.102

HECO Avoided Total O&M based on 1 MW Simulation

SUMMARY STATISTICS

UNIT TYPE	% Avoided MWH	Rate (¢/kwh) Consum.	Maint.	Total	Net
HECO					
Steam	86.19%	0.028	0.000	0.028	0.024
CTs	4.03%	1.701	0.233	1.933	0.078
AES	0.00%	0.000	0.000	0.000	0.000
KPLP	9.78%	0.000	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000	0.000
TOTAL	100.00%				0.102

Note:
Unit Rates = Total O&M $/Avoided Unit MWH
Net Rates = Unit Rates * % Avoided MWH

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	HAWAIIAN ELECTRIC COMPANY, INC.													
2	2009 Test Year ($1000s)													
3	RATE CASE UPDATE SUMMARY													
4	PRODUCTION O&M EXPENSE													
5			(A)	(B)	(C)	(D)		(E)		(F)				
6								TOTAL		TY		HCEI	Emission Fee	RO Water
7			OPER	BUDGET		TY EST @		ADJUST		RATE CASE		CA-101	CA-101	CA-101
8	Line		BUDGET	ADJ	NORM	DIRECT		(from T-7 Upd)		UPDATE		C-4	C-5	C-6
9		HECO T-7												
10	OTHER													
11	PRODUCTION O&M EXPENSE													
12														
13		PROD OPER												
14	1	LABOR	15,373	29		15,402		427		15,829				
15	2	NON-LABOR	17,011	(10)	(3)	16,998		2,702		19,700		(2420)	134	(222)
17	3	TOTAL	32,384	19	(3)	32,400		3,129		35,529		(2420)	134	(222)
18														
19		PROD MAINT												
20	4	LABOR	17,610			17,610		0		17,610				
21	5	NON-LABOR	30,393	(12)		30,381		47		30,428				
23	6	TOTAL	48,003	(12)	0	47,991		47		48,038		0	0	0
24														
25														
26		O&M - TOTAL												
27	7	LABOR	32,983	29	0	33,012		427		33,439		0	0	0
28	8	NON-LABOR	47,404	(22)	(3)	47,379		2,749		50,128		(2420)	134	(222)
30	9	TOTAL	80,387	7	(3)	80,391		3,176		83,567		(2420)	134	(222)
31														
32														
33	Sources:													
34	HECO-701													
35	Rate Case Update, HECO T-7, Attachment 1, Page 1													
36	Exhibit CA-101, Sch C													

	A	B	O	P	Q	R	S	T	U	V	W
1	HAWAIIAN ELECTRIC COM										
2	2009 Test Year ($1000s)										
3	RATE CASE UPDATE SUMM										
4	PRODUCTION O&M EXPENSE										
5											
6			*Sta Maint*	*Training Cost*	*CIS*	*IRP Planning*	*Prod Labor*	*Aban Proj*	*Gen Inflation*	*CIP*	*CIP*
7			CA-101	CA-101	CA-101	CA-101	CA-101	CA-101	CA-101	WW Chem	Blr Chem
8	Line		C-7	C-8	C-9	C-12	C-13	C-15	C-16	CA-IR-297	CA-IR-297
9		HECO T-7									
10	OTHER										
11	PRODUCTION O&M EXPENSE										
12											
13		PROD OPER									
14	1	LABOR			(6)		(116)				
15	2	NON-LABOR		(109)	(48)	(1)		3	(3)	(49)	(42)
17	3	TOTAL	0	(109)	(54)	(1)	(116)	3	(3)	(49)	(42)
18											
19		PROD MAINT									
20	4	LABOR					(66)				
21	5	NON-LABOR	(1372)	(109)	(26)			5	(6)		
23	6	TOTAL	(1372)	(109)	(26)	0	(66)	5	(6)	0	0
24											
25											
26		O&M - TOTAL									
27	7	LABOR	0	0	(6)	0	(182)	0	0	0	0
28	8	NON-LABOR	(1372)	(217)	(74)	(1)	0	8	(9)	(49)	(42)
30	9	TOTAL	(1372)	(217)	(80)	(1)	(182)	8	(9)	(49)	(42)
31											
32											
33	Sources:										
34	HECO-701										
35	Rate Case Update, HECO T-7, Attachmen										
36	Exhibit CA-101, Sch C										

	A	B	X	Y	Z	AA	AB
1	HAWAIIAN ELECTRIC COM						
2	2009 Test Year ($1000s)						
3	RATE CASE UPDATE SUMM						
4	PRODUCTION O&M EXPENSE						
5							
6			CIP			SETTLEMENT	
7			Demin Chem	Merit	Total	PROD O&M	
8	Line		CA-IR-468	Labor	Adjustments	TOTAL	
9		HECO T-7					
10	OTHER						
11	PRODUCTION O&M EXPENSE						
12							
13		PROD OPER					
14	1	LABOR		(75)	(197)	15,632	
15	2	NON-LABOR	(14)		(2,771)	16,930	
17	3	TOTAL	(14)		(2,967)	32,562	
18							
19		PROD MAINT					
20	4	LABOR		(53)	(119)	17,491	
21	5	NON-LABOR			(1,508)	28,921	
23	6	TOTAL	0		(1,627)	46,411	
24							
25							
26		O&M - TOTAL					
27	7	LABOR	0	(128)	(316)	33,123	
28	8	NON-LABOR	(14)		(4,278)	45,850	
30	9	TOTAL	(14)	(128)	(4,594)	78,973	
31							
32							
33	Sources:						
34	HECO-701						
35	Rate Case Update, HECO T-7, Attachmen						
36	Exhibit CA-101, Sch C						

Production Emission Fee Adjustment:

HECO's Response to the CA's Proposed Emission Fee Adjustment

The Consumer Advocate proposed a negative adjustment of $86,000, from $958,000 to $872,000 to the Production O&M Labor Expense for Emission Fees based on an Update For Lower [GWh] Sales. The Consumer Advocate's calculation of its proposed adjustment is shown in Exhibit CA-101, Schedule C-5. In concept, HECO agrees with the Consumer Advocate's proposed adjustment but offers a counter proposal for a positive adjustment of the expense by $134,000, from $958,000 to $1,092,000. There are two contributing factors that support HECO's counter proposal:

1. Lower [kWh] sales based on HECO's most recent Production Simulation Run dated 4/24/09.
2. Passage of Senate Bill No. 1260 by the Hawaii State Legislature, which removes the "four thousand ton/year cap" on emission fees.

Under section 342B-29 of Hawaii Revised Statues, holders of covered source permits, such as HECO, must pay fees per ton of regulated air pollutant that are emitted annually. Prior to 2009, HECO was not assessed fees for annual air pollutant emissions greater than four thousand tons. During the current 2009 legislative session, Section 342B-29, Hawaii Revised Statutes, was amended to remove the annual cap of four thousand tons. This Senate Bill No. 1260 is included as Attachment 2A to this response. The governor is expected to sign the bill into law.

HECO performed a revised Production Simulation Run on 4/24/09 (refer to HECO T-4).

As shown in Attachment 2B, the emissions fee expenses has been recalculated to account for these two factors (i.e., no emissions cap and lower sales) and the resulting estimated emissions fee that will be paid for 2009 is $1,092,000.

THE SENATE
TWENTY-FIFTH LEGISLATURE, 2009
STATE OF HAWAII

S.B. NO. 1260 S.D. 1 H.D. 1

A BILL FOR AN ACT

RELATING TO AIR POLLUTION FEES.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. The legislature finds that financial incentives must be aligned with policies that establish societal and sustainability goals. The legislature further finds, however, that a loophole exists in Hawaii's air pollution control laws, and that this loophole inadvertently acts as a disincentive to reducing pollution from larger pollution sources.

Under section 342B-29, Hawaii Revised Statutes, covered source permit holders must pay fees per ton of regulated air pollutant emitted annually. These fees fund the clean air branch of the department of health and other programs. Covered source permit holders, however, are not assessed fees for pollution above four thousand tons. The legislature finds that this feature of the law is inequitable for covered source permit holders that emit fewer than four thousand tons, and it is a disincentive to large polluters to reduce pollution that exceeds four thousand tons annually.

The purpose of this Act is to eliminate a disincentive to pollution reduction by removing the cap on fees for air pollutant emissions.

SECTION 2. Section 342B-29, Hawaii Revised Statutes, is amended by amending subsection (c) to read as follows:

"(c) Fees for covered sources shall be based on the number of tons of regulated air pollutant, excluding carbon monoxide, allowed or emitted by the permitted source and shall not be less than $25 per ton per year. [~~A covered source shall not be assessed for emissions of a regulated air pollutant in excess of four thousand tons per year.~~]"

SECTION 3. This Act does not affect rights and duties that matured, penalties that were incurred, and proceedings that were begun, before its effective date.

SECTION 4. Statutory material to be repealed is bracketed and stricken.

SECTION 5. This Act shall take effect upon its approval.

S.B. NO. 1260
S.D. 1
H.D. 1

Report Title:
Air Pollution; Fees

Description:
Removes the exemption from fees for air pollution emissions in excess of 4,000 tons annually from covered sources. (SB1260 HD1)

HECO 2009 Emission Fee Forecast

	Total	Covered	Non-Covered	Comments
Kahe	$771,212	$620,113	$151,099	
Waiau	$278,958	$224,304	$54,655	
Honolulu	$28,264	$22,726	$5,538	
CIP	$11,526	$9,268	$2,258	
DGs	$2,500		$2,500	Assumes no new DG. No contingency. Based on $500 per site (fixed NCSP FEE), 5 sites.
TOTALS	**$1,092,460**	**$876,411**	**$216,049**	

Based on Prodsim results emailed by Generation Planning on 4/25/09, no emission fee caps.

Permit No.:	0240-01-C
Date Rec'd:	

FORM F-1

2009 ANNUAL FEE FORECAST FOR COVERED SOURCES

(FOR AIR POLLUTANTS EMITTED DURING CALENDAR YEAR 2009)

INPUT DATA IN YELLOW COLORED CELLS

1. FACILITY INFORMATION (Signature box to be signed by Responsible Official)

A. Facility Name:	HECO - Kahe Power Plant	B. Location:	92-200 Farrington Highway	C. Island:	Oahu
D. Mailing Address:	P.O. Box 2750	E. City: Honolulu	F. State: HI	G. Zip Code:	96840
H. Contact Person:	Michael DeCaprio	I. Title:	Senior Environmental Scientist	J. Telephone No.:	808-543-4535
K. Responsible Official:	Thomas C. Simmons	L. Title:	VP, Power Supply	M. Telephone No.	(808) 543-4301
N. Signature:		Date:			

Based on the information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete

2. CALCULATED EMISSIONS [Report emissions to the nearest tenth of a ton (Line 2.B.) and total annual emis. (Line 2.C.) subject to fees without the fraction(s) of a ton]

Equipment: Unit No. or Activity No.	Air Pollutant Emissions (tons/yr)												
	Other Regulated Air Pollutants Including Hazardous Air Pollutants (please specify)												Annual Total
	TSP	PM_{10}	$PM_{2.5}$	SO_2	CO	NOx	VOC	Pb	HAPs	NH_3			
K1	119.0	90.7	72.0	905.8	69.9	656.8	10.6	0.0	2.6	–			
K2	118.9	90.6	71.9	905.6	69.8	656.2	10.6	0.0	2.6	–			
K3	119.0	90.7	68.2	905.8	69.9	447.6	10.6	0.0	2.6	–			
K4	118.9	90.6	71.9	905.6	69.8	446.6	10.6	0.0	2.6	–			
A. Supplement (if appl.) A	422.4	315.5	248.7	3622.4	281.0	2144.5	42.8	0.0	10.2	–			
B. Total Report Emissions	898.2	678.1	532.7	7245.2	560.4	4351.7	85.2	0.0	20.6	–			
C. Total Emissions Subject to Fees	898			7,245		4,351	85						D. 12,579

3 ANNUAL FEE CALCULATION (Use the total annual emissions subject to fees calculated in Block 2.D.)

		Total Annual Emissions Subject to Fees (enter 2.D. value below)		Multiply	2009 $/TON	Multiply	CPI Index Adjustmnt	Equal		Total
Fee payable to:	"Clean Air Special Fund - COV"	A.	12,579	x	46.95	x	1.05	=	B.	$620,113.25
	"Clean Air Special Fund - NON"	C.	12,579	x	11.44	x	1.05	=	D.	$151,098.95
							Total	=	E.	$771,212.20

Note: 2009 $/ton charge payable to Clean Air Special Fund - COV = $46.95 x 1.05 = $46.95/ton.
2009 $/ton charge payable to Clean Air Special Fund - NON = $11.44 x 1.05 = $11.44/ton.
If the summed amount found in 3.E is less than $500, then pay the minimum amount of $500, with a check made payable to the 'Clean Air Special Fund - COV.'
If the summed amount found in 3.E is greater than $500, then pay the fee amounts found in 3.B & 3.D with two separate checks made payable to the 'Clean Air Special Fund - COV' & 'Clean Air Special Fund - NON,' respectively.
This spreadsheet is from 2007 emission fees. The spreadsheet was updated with forecast data for year 2009. Fee rates and CPI Index Adj. are based on known fee increases for the year 2009.

HECO T-7
ATTACHMENT 2B
PAGE 2 OF 11
FINAL SETTLEMENT

Permit No.:	0240-01-C
Date Rec'd:	

FORM F-2
SUPPLEMENT A
2009 ANNUAL FEE SUMMARY FOR COVERED SOURCES
(FOR AIR POLLUTANTS EMITTED DURING CALENDAR YEAR 2009)

INPUT DATA IN YELLOW COLORED CELLS

1. FACILITY INFORMATION (Signature box to be signed by Responsible Official)

A. Facility Name: HECO - Kahe Power Plant	B. Location: 92-200 Farrington Highway	C. Island: Oahu
D. Responsible Official: Thomas C. Simmons	E. Title: VP, Power Supply	F. Telephone No.: 808-543-4535
G. Signature:	Date:	

Based on the information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete

2. CALCULATED EMISSIONS (Report emissions to the nearest tenth of a ton)

Equipment: Unit No. or Activity No.	Air Pollutant Emissions (tons/yr)												
	Other Regulated Air Pollutants Including Hazardous Air Pollutants (please specify)												
	TSP	PM_{10}	$PM_{2.5}$	SO_2	CO	NOx	VOC	Pb	HAPs	NH_3			
K5	237.7	181.1	143.8	1811.2	139.7	1312.5	21.3	0.0	5.1	--			
K6	184.6	134.3	104.8	1811.2	139.7	826.2	21.3	0.0	5.1	--			
A	0.1	0.1	0.1	0.0	1.0	3.6	0.1	0.0	0.0	--			
B	0.0	0.0	0.0	0.0	0.6	2.2	0.1	0.0	0.0	--			
Supplement													
Total Report Emissions	422.4	315.5	248.7	3622.4	281.0	2144.5	42.8	0.0	10.2	--			

HECO T-7
ATTACHMENT 2B
PAGE 3 OF 11
FINAL SETTLEMENT

Inputs

No. 6 Fuel Oil			Source
Average Fuel Sulfur Content	0.400%		Kahe 2007 Average.
Average Heat Content	147,619	Btu/gal	based on heat content used in prodsim.
Density	7.98	lb/gal	Kahe 2007 Average.
No. 2 Fuel Oil			
Average Fuel Sulfur Content	0.0004%		Kahe 2007 Average.
Average Heat Content	139,524	Btu/gal	based on heat content used in prodsim.
Density	6.93	lb/gal	Kahe 2007 Average.
Propane			
Average Fuel Sulfur Content	0.004%		Kahe 2007 Average.
Average Heat Content	91,500	Btu/gal	AP-42, Section 1.5.3.1, dated 10/96.
Density	4.24	lb/gal	AP-42, Page A-7, Dated 9/85.
Used Spec Oil			
Average Fuel Sulfur Content	0.080%		Kahe 2007 Average.

	Annual Fuel Usage			
Unit	No. 6 Fuel Oil (gal/yr)	No. 2 Fuel Oil (gal/yr)	Spec Used Oil (gal/yr)	Propane (gal/yr)
Kahe 1	28,400,848	Not Applicable	31,181	1,696
Kahe 2	28,400,848	Not Applicable	1,645	1,819
Kahe 3	28,400,848	14,504	37,599	Not Applicable
Kahe 4	28,400,848	11,304	0	Not Applicable
Kahe 5	56,801,697	20,282	Not Applicable	Not Applicable
Kahe 6	56,801,697	23,266	Not Applicable	Not Applicable
Kahe A	Not Applicable	16,315	Not Applicable	Not Applicable
Kahe B	Not Applicable	9,688	Not Applicable	Not Applicable

Fuel use estimates provided by Generation Planning. Sulfur based on prior year avgs. Stack test data based on prior years data.
Fuel data provided as aggregate for plant. 50% divided over K5-6, 50% divided over K1-4. Makes no difference on emission estimate.
Note - Not Applicable means that the spreadsheet is not set-up to calculate emissions from that fuel for that unit.

Permit No.:	0239-01-C
Date Rec'd:	

FORM F-1

2009 ANNUAL FEE FORECAST FOR COVERED SOURCES

(FOR AIR POLLUTANTS EMITTED DURING CALENDAR YEAR 2009)

INPUT DATA IN YELLOW COLORED CELLS

1. FACILITY INFORMATION (Signature box to be signed by Responsible Official)

A. Facility Name:	HECO - Waiau Power Plant	B. Location:	475 Kamehameha Hwy.	C. Island:	Oahu
D. Mailing Address:	P.O. Box 2750	E. City: Honolulu	F. State: HI	G. Zip Code:	96840
H. Contact Person:	Michael DeCaprio	I. Title:	Senior Environmental Scientist	J. Telephone No.:	(808) 543-4535
K. Responsible Official:	Thomas C. Simmons	L. Title:	VP, Power Supply	M. Telephone No.	(808) 543-4301
N. Signature:		Date:			

Based on the information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete

2. CALCULATED EMISSIONS [Report emissions to the nearest tenth of a ton (Line 2.B.) and total annual emis. (Line 2.C.) subject to fees without the fraction(s) of a ton]

Equipment: Unit No. or Activity No.	Air Pollutant Emissions (tons/yr)												
	Other Regulated Air Pollutants Including Hazardous Air Pollutants (please specify)												Annual Total
	TSP	PM_{10}	$PM_{2.5}$	SO_2	CO	NOx	VOC	Pb	HAPs	NH_3			
3	28.6	21.8	17.4	205.9	17.4	163.2	2.6	0.0	0.6	--			
4	28.6	21.8	17.4	205.9	17.4	163.2	2.6	0.0	0.6	--			
5	40.4	30.8	24.6	291.4	24.6	230.9	3.7	0.0	0.9	--			
6	40.4	30.8	24.6	291.4	24.6	230.9	3.7	0.0	0.9	--			
A. Supplement (if appl.) A	208.2	159.0	127.0	1498.8	126.2	892.4	19.2	0.0	4.8	--			
B. Total Report Emissions	346.2	264.2	211.0	2493.4	210.2	1680.6	31.8	0.0	7.8	--			
C. Total Emissions Subject to Fees	346			2,493		1,680	31						D. 4,550

3 ANNUAL FEE CALCULATION (Use the total annual emissions subject to fees calculated in Block 2.D.)

		Total Annual Emissions Subject to Fees (enter 2.D. value below)		Multiply	2009 $/TON	Multiply	CPI Index Adjustmnt	Equal		Total
Fee payable to:	"Clean Air Special Fund - COV"	A.	4,550	x	46.95	x	1.05	=	B.	$224,303.63
	"Clean Air Special Fund - NON"	C.	4,550	x	11.44	x	1.05	=	D.	$54,654.60
							Total	=	E.	$278,958.23

Note: 2009 $/ton charge payable to Clean Air Special Fund - COV = $46.95 x 1.05 = $46.95/ton.
2009 $/ton charge payable to Clean Air Special Fund - NON = $11.44 x 1.05 = $11.44/ton.
If the summed amount found in 3.E is less than $500, then pay the minimum amount of $500, with a check made payable to the 'Clean Air Special Fund - COV '
If the summed amount found in 3.E is greater than $500, then pay the fee amounts found in 3.B & 3.D with two separate checks made payable to the *'Clean Air Special Fund - COV' & 'Clean Air Special Fund - NON,' respectively.*
This spreadsheet is from 2007 emission fees. The spreadsheet was updated with forecast data for year 2009. Fee rates and CPI Index Adj. are based on known fee increases for the year 2009.

HECO T-7
ATTACHMENT 2B
PAGE 5 OF 11
FINAL SETTLEMENT

Permit No.:	0239-01-C
Date Rec'd:	

FORM F-2
SUPPLEMENT A
2009 ANNUAL FEE SUMMARY FOR COVERED SOURCES
(FOR AIR POLLUTANTS EMITTED DURING CALENDAR YEAR 2009)

INPUT DATA IN YELLOW COLORED CELLS

1. FACILITY INFORMATION (Signature box to be signed by Responsible Official)

A. Facility Name: HECO - Waiau Power Plant	B. Location: 475 Kamehameha Hwy.	C. Island: Oahu
D. Responsible Official: Thomas C. Simmons	E. Title: VP, Power Supply	F. Telephone No.: (808) 543-4535
G. Signature:	Date:	

Based on the information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete

2. CALCULATED EMISSIONS (Report emissions to the nearest tenth of a ton)

Equipment: Unit No. or Activity No.	Air Pollutant Emissions (tons/yr)											
	Other Regulated Air Pollutants Including Hazardous Air Pollutants (please specify)											
	TSP	PM_{10}	$PM_{2.5}$	SO_2	CO	NOx	VOC	Pb	HAPs	NH_3		
7	103.5	78.9	62.9	746.0	62.9	402.4	9.6	0.0	2.3	--		
8	103.5	78.9	62.9	746.0	62.9	402.4	9.6	0.0	2.3	--		
9	0.6	0.6	0.6	3.4	0.2	43.8	0.0	0.0	0.1	--		
10	0.6	0.6	0.6	3.4	0.2	43.8	0.0	0.0	0.1	--		
Supplement _____												
Total Report Emissions	208.2	159.0	127.0	1498.8	126.2	892.4	19.2	0.0	4.8	--		

HECO T-7
ATTACHMENT 2B
PAGE 6 OF 11
FINAL SETTLEMENT

No. 6 Fuel Oil			Source
Average Fuel Sulfur Content	0.37%		2007 Waiau Average.
Average Heat Content	147,619	Btu/gal	based on heat content used in prodsim.
Density	7.88	lb/gal	2007 Waiau Average.
No. 2 Fuel Oil (Boilers)			
Average Fuel Sulfur Content	0.0006%		2007 Waiau Average.
Average Heat Content	139,524	Btu/gal	based on heat content used in prodsim.
Density	6.92	lb/gal	2007 Waiau Average.
No. 2 Fuel Oil (CTs)			
Average Fuel Sulfur Content	0.069%		2007 Waiau Average.
Average Heat Content	139,524	Btu/gal	based on heat content used in prodsim.
Density	6.90	lb/gal	2007 Waiau Average.
Propane			
Average Fuel Sulfur Content	0.004%		2007 Waiau Average.
Average Heat Content	91,500	Btu/gal	AP-42, Section 1.5.3.1, dated 10/96.
Density	4.24	lb/gal	AP-42, Page A-7, Dated 9/85.
Used Spec Oil			
Average Fuel Sulfur Content	0.070%		2007 Waiau Average.

	Annual Fuel Usage			
Unit	No. 6 Fuel Oil (gal/yr)	No. 2 Fuel Oil (gal/yr)	Spec Used Oil (gal/yr)	Propane (gal/yr)
Waiau 3	7,063,810	Not Applicable	202	2,755
Waiau 4	7,063,810	Not Applicable	91	2,531
Waiau 5	9,995,055	Not Applicable	129	3,820
Waiau 6	9,995,055	Not Applicable	109	3,369
Waiau 7	25,588,297	7,469	0	Not Applicable
Waiau 8	25,588,297	8,628	294	Not Applicable
Waiau 9	Not Applicable	712,720	Not Applicable	Not Applicable
Waiau 10	Not Applicable	712,720	Not Applicable	Not Applicable

Fuel use estimates provided by Generation Planning. Sulfur based on prior year avgs. .
Fuel data provided as sum for all units. Est. 60% use for W7/8. Rest est. based on desired use.
CT fuel data provided as total and split evenly over units 9&10. No effect on fees.
Note - Not Applicable means that the spreadsheet is not set-up to calculate emissions from that fuel for that unit.

Permit No.:	0238-01-C
Date Rec'd:	

FORM F-1

2009 ANNUAL FEE FORECAST FOR COVERED SOURCES

(FOR AIR POLLUTANTS EMITTED DURING CALENDAR YEAR 2009)

INPUT DATA IN YELLOW COLORED CELLS

1. FACILITY INFORMATION (Signature box to be signed by Responsible Official)

A. Facility Name:	HECO - Honolulu Generating Station	B. Location:	170 Ala Moana Blvd.	C. Island:	Oahu
D. Mailing Address:	P.O. Box 2750	E. City: Honolulu	F. State: HI	G. Zip Code:	96840
H. Contact Person:	Michael DeCaprio	I. Title:	Senior Environmental Scientist	J. Telephone No..	(808) 543-4535
K. Responsible Official:	Thomas C. Simmons	L. Title:	VP, Power Supply	M. Telephone No.	(808) 543-4301
N. Signature:		Date:			

Based on the information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete

2. CALCULATED EMISSIONS [Report emissions to the nearest tenth of a ton (Line 2.B.) and total annual emis. (Line 2.C.) subject to fees without the fraction(s) of a ton]

Equipment: Unit No. or Activity No.	Air Pollutant Emissions (tons/yr)												
	Other Regulated Air Pollutants Including Hazardous Air Pollutants (please specify)												Annual Total
	TSP	PM_{10}	$PM_{2.5}$	SO_2	CO	NOx	VOC	Pb	HAPs	NH_3			
8	16.5	12.6	10.1	117.0	10.1	95.5	1.5	0.0	0.4	--			
9	16.5	12.6	10.1	117.0	10.1	95.5	1.5	0.0	0.4	--			
A. Supplement (if appl.) _____													
B. Total Report Emissions	33	25.2	20.2	234	20.2	191	3	0.0	0.8	--			
C. Total Emissions Subject to Fees	33			234		191	3						D. 461

3 ANNUAL FEE CALCULATION (Use the total annual emissions subject to fees calculated in Block 2.D.)

		Total Annual Emissions Subject to Fees (enter 2.D. value below)		Multiply	2009 $/TON	Multiply	CPI Index Adjustmnt	Equal		Total
Fee payable to:	"Clean Air Special Fund - COV"	A.	461	x	46.95	x	1.05	=	B.	$22,726.15
	"Clean Air Special Fund - NON"	C.	461	x	11.44	x	1.05	=	D.	$5,537.53
							Total	=	E.	$28,263.68

Note: 2009 $/ton charge payable to Clean Air Special Fund - COV = $46.95 x 1.05 = $46.95/ton.
2009 $/ton charge payable to Clean Air Special Fund - NON = $11.44 x 1.05 = $11.44/ton.
If the summed amount found in 3.E is less than $500, then pay the minimum amount of $500, with a check made payable to the 'Clean Air Special Fund - COV.'
If the summed amount found in 3.E is greater than $500, then pay the fee amounts found in 3.B & 3.D with two separate checks made payable to the 'Clean Air Special Fund - COV' & 'Clean Air Special Fund - NON,' respectively.
This spreadsheet is from 2007 emission fees. The spreadsheet was updated with forecast data for year 2009. Fee rates and CPI Index Adj. are based on known fee increases for the year 2009.

HECO T-7
ATTACHMENT 2B
PAGE 8 OF 11
FINAL SETTLEMENT

Inputs

No. 6 Fuel Oil			Source
Average Fuel Sulfur Content	0.360%		2007 Honolulu Average.
Average Heat Content	147,619	Btu/gal	based on heat content used in prodsim.
Density	7.88	lb/gal	2007 Honolulu Average.
No. 2 Fuel Oil			
Average Fuel Sulfur Content	0.050%		2007 Honolulu Average.
Average Heat Content	139,524	Btu/gal	based on heat content used in prodsim.
Density	6.93	lb/gal	AP-42, Page A-6, Dated 9/85.
Propane			
Average Fuel Sulfur Content	0.004%		2007 Honolulu Average.
Average Heat Content	91,500	Btu/gal	AP-42, Section 1.5.3.1, dated 10/96.
Density	4.24	lb/gal	AP-42, Page A-7, Dated 9/85.
Spec Used Oil			
Average Fuel Sulfur Content	0.100%		2007 Honolulu Average.

	Annual Fuel Usage			
Unit	No. 6 Fuel Oil (gal/yr)	No. 2 Fuel Oil (gal/yr)	Spec Used Oil (gal/yr)	Propane (gal/yr)
H8	4,127,008	11,160	706	1,831
H9	4,127,008	10,218	734	4,398

Fuel use estimates provided by Generation Planning. Sulfur based on prior year avgs.
Fuel data provided as total for station. Divided equally over all units.

HECO T-7
ATTACHMENT 2B
PAGE 9 OF 11
FINAL SETTLEMENT

Permit No.:	
Date Rec'd:	

FORM F-1

2009 ANNUAL FEE FORECAST FOR COVERED SOURCES

(FOR AIR POLLUTANTS EMITTED DURING CALENDAR YEAR 2009)

INPUT DATA IN YELLOW COLORED CELLS

1. FACILITY INFORMATION (Signature box to be signed by Responsible Official)

A. Facility Name:	HECO: CIP	B. Location:		C. Island:	Oahu
D. Mailing Address:	P.O. Box 2750	E. City: Honolulu	F. State: HI	G. Zip Code:	96840
H. Contact Person:	Michael DeCaprio	I. Title: Senior Environmental Scientist		J. Telephone No.:	(808) 543-4535
K. Responsible Official:	Thomas C. Simmons	L. Title: VP, Power Supply		M. Telephone No.	(808) 543-4301
N. Signature:		Date:			

Based on the information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete

2. CALCULATED EMISSIONS [Report emissions to the nearest tenth of a ton (Line 2.B.) and total annual emis. (Line 2.C.) subject to fees without the fraction(s) of a ton]

Equipment: Unit No. or Activity No.	Air Pollutant Emissions (tons/yr)												
	Other Regulated Air Pollutants Including Hazardous Air Pollutants (please specify)												Annual Total
	TSP	PM_{10}	$PM_{2.5}$	SO_2	CO	NOx	VOC	Pb	HAPs	NH_3			
1	3.9	3.8	3.8	9.1	4.7	175.0	1.5	0.0	0.3	–			
A. Supplement (if appl.) _____													
B. Total Report Emissions	3.9	3.8	3.8	9.1	4.7	175	1.5	0.0	0.3004	–			
C. Total Emissions Subject to Fees	3			9		175	1						D. 188

3 ANNUAL FEE CALCULATION (Use the total annual emissions subject to fees calculated in Block 2.D.)

		Total Annual Emissions Subject to Fees (enter 2.D. value below)		Multiply	2009 $/TON	Multiply	CPI Index Adjustmnt	Equal		Total
Fee payable to:	"Clean Air Special Fund - COV"	A.	188	x	46.95	x	1.05	=	B.	$9,267.93
	"Clean Air Special Fund - NON"	C.	188	x	11.44	x	1.05	=	D.	$2,258.26
							Total	=	E.	$11,526.19

Note: 2009 $/ton charge payable to Clean Air Special Fund - COV = $46 95 x 1.05 = $46.95/ton.
2009 $/ton charge payable to Clean Air Special Fund - NON = $11.44 x 1.05 = $11.44/ton.
If the summed amount found in 3.E is less than $500, then pay the minimum amount of $500, with a check made payable to the 'Clean Air Special Fund - COV.'
If the summed amount found in 3.E is greater than $500, then pay the fee amounts found in 3.B & 3.D with two separate checks made payable to the 'Clean Air Special Fund - COV' & 'Clean Air Special Fund - NON,' respectively.
This spreadsheet is from 2007 emission fees. The spreadsheet was updated with forecast data for year 2009. Fee rates and CPI Index Adj. are based on known fee increases for the year 2009.

HECO T-7
ATTACHMENT 2B
PAGE 10 OF 11
FINAL SETTLEMENT

Inputs

BIO DIESEL			Source
Average Fuel Sulfur Content	0.050%		permit limit.
Average Heat Content	119,000	Btu/gal	based on heat content used in prodsim.
Density	6.94	lb/gal	Based on: www.biodiesel.org/pdf_files/fuelfactsheets/BTU_Content_Final_Oct2005.pdf.
No. 2 Fuel Oil			
Average Fuel Sulfur Content	0.050%		permit limit.
Average Heat Content	139,524	Btu/gal	based on heat content used in prodsim.
Density	7.00	lb/gal	AP-42 .

	Annual Fuel Usage			
Unit	Biodiesel (gal/yr)	No. 2 Fuel Oil (gal/yr)	Spec Used Oil (gal/yr)	Propane (gal/yr)
CIP 1	210,857	2,398,704		

Fuel use estimates provided by Generation Planning.

HECO T-7
ATTACHMENT 2B
PAGE 11 OF 11
FINAL SETTLEMENT

Production Labor Adjustment:

HECO's Response to the Consumer Advocate's Proposed Labor Adjustment

The Consumer Advocate proposed a negative adjustment of $508,000 to the Production Labor Expense as shown in Exhibit CA-101, Schedule C-13. The Consumer Advocate's position is that only Production Maintenance Division responsibility areas ("RAs"): PIL, PIM, PIN, PIT, PIX, and PIZ be excluded in their calculation to derive their proposed Production Labor Expense Adjustment. HECO agrees that the Production Maintenance Division RAs should be excluded. Moreover, for the reasons discussed below, HECO proposes that the Production Operating Division RAs: PIH, PIK, PIO, PIW, and PIY be excluded as well. The labor expense for the Operating Division RAs totals $11,517,000. As a result, HECO's proposed adjustment to Production O&M Labor will be reduced by $326,000, from $508,000 to $182,000. HECO agrees that the Production Labor Expense Adjustment would be applied to all Production RAs other than those in the Maintenance and Operating Divisions of the PSO&M Department.

HECO proposes to exclude the Operating Division RAs in the Production Labor Expense Adjustment for the following reasons:

1. HECO does not have the option to defer work performed by Operating Division personnel if there are vacancies in the work force. As described in the response to CA-IR-72, when there are vacancies and less than a full complement of qualified operators, HECO provides for full staffing of its steam units on a 24 X 7 basis by requiring qualified operators to work additional overtime, deferring training, deferring vacation, or a combination of these factors. The additional cost for overtime offsets the potential labor savings due to vacancies.

As described in HECO T-7, page 53, overtime hours are expected to reduce when staffing count is increased. This is validated by the updated overtime and straight time labor hours shown in CA-IR-302, Attachment 1. As Operating Division staff counts increased in 2008 (as described below) the amount of overtime labor hours in 2008 decreased to 37,870 compared to 42,714 and higher in prior years.

2. The Consumer Advocate's proposed Production Labor Expense Adjustment was based, in part, on the expectation that HECO 2009 test year estimate assumed all positions would be filled for the entire year and that there were always vacancies due to the natural "churn" of the work force (due to transfers, retirements, resignations, etc.). HECO agrees that this could be the case for many groups but not for the Operating Division. As described in HECO T-7, pages 51 and 52, HECO anticipated that it would be difficult to sustain the Operating Division work force at its full complement in a year when CIP CT-1 was being commissioned. Consequently, HECO reduced the Operating Division staff count from 163 to 158 by eliminating five Operator Trainee positions. This reduction in Operator Trainee positions is intended to address the "churn" effect in the 2009 test year estimate. As stated in HECO T-7, page 52, HECO intends to increase the Operating Division staff count to 163 in 2010 by filling the Operator Trainee positions again.

3. As shown in Attachment 4A to this response, the actual staff count for the Operating Division has been hovering at approximately 158 since September 2008. The Operating Division staff count is expected to exceed 158 by several positions when a new class of approximately ten Operator Trainees is hired effective May 26, 2009 (job offers have been

extended and accepted). An effective staff level of less than 158 due to "churning" is not evident.

4. As described in HECO's response to CA-IR-302, the combined total of 323,357 straight time and overtime labor hours in Operating Division for the 2009 test year is comparable to prior historical totals after allowing for (1) the increase of 1,497 overtime labor hours for CIP CT-1 in 2009, (2) the exclusion of 456 hours of unpaid merit overtime hours in RA: PIO, and (3) the increase of 12,704 straight time labor hours for CIP CT-1. When these amounts are subtracted from the total of 323,357 hours, the remaining amount of 308,700 hours compares closely with the recorded total of 307,792 hours in 2008 and 307,918 hours in 2007.

HECO's counter proposal for Production O&M Labor Adjustment is $182,000 as shown in Attachment 4B to this response, and discussed below.

1. The total Maintenance labor expense for RAs: PIL, PIM, PIN, PIT, PIX, and PIZ is $15,123,000. This amount is made up of the sum, by respective RA, of the direct labor charges from pages 1 and 2 of CA-IR-1, Attachment 3, and the associated on-cost from HECO-WP-101(H). CA-IR-1, Attachment 3, page 1, describes RA charges to Non-Projects; and page 2, describes RA charges to Projects. On each page, individual RAs can charge expenses to the Operations Block of Account (column "Prod Oper Amount" of CA-IR-1, Attachment 3) or the Maintenance Block of Account (column "Prod Maint Amount" of CA-IR-1, Attachment 3). The sum of charges to the Operations Block and Maintenance Block are totaled on each page for each RA. The total of both pages (non-

project and project) is the total direct labor cost for each respective RA. The on-cost amounts from HECO-WP-101(H) are added to obtain the loaded RA labor cost.

2. As stated above, Attachment 4B summarizes a total labor expense of $11,517,000 for the Operating Division RAs: PIH, PIK, PIO, PIW, and PIY. This amount is made up of the sum, by respective RA, of the direct labor charges from pages 1 and 2 of CA-IR-1, Attachment 3, and the associated on-cost from HECO-WP-101(H), in a manner similar to that described for the Maintenance RAs immediately above.
3. Subtracting the Maintenance labor expense of $15,123,000 and Operations labor expense of $11,517,000 from the Production O&M labor total of $33,439,000 results in the net amount of Production labor expense subject to the adjustment, or $6,799,000.
4. HECO T-15, Attachment 1, describes the derivation of the vacancy rate of 2.68%. Multiplying the amount of $6,799,000 by the vacancy rate of 2.68% results in the revised Production Labor Expense Adjustment of $182,000.

Hawaiian Electric Company, Inc.
2009 Rate Case
Operating Division Monthly Staff Count

PSOM Operations	01/31/08 Actual	02/29/08 Actual	03/31/08 Actual	04/30/08 Actual	05/31/08 Actual	06/30/08 Actual	07/31/08 Actual	08/31/08 Actual	09/30/08 Actual	10/31/08 Actual	11/30/08 Actual	12/31/08 Actual
IH - Hon	27	27	27	27	27	27	27	27	27	26	26	26
IK - Kahe	60	60	60	61	61	61	61	61	63	62	62	61
IO - Ops Admin	2	2	2	1	1	0	0	0	0	0	0	0
IW - Waiau	64	63	62	64	62	63	67	67	70	68	68	68
IY - CIP	0	0	0	0	0	0	0	0	0	0	0	0
Total Oper	153	152	151	153	151	151	155	155	160	156	156	155

PSOM Operations	01/31/09 Actual	02/28/09 Actual	03/31/09 Actual	04/30/09 Actual	2009 Budget
IH - Hon	26	27	25	25	26
IK - Kahe	63	63	61	61	60
IO - Ops Admin	0	0	0	0	0
IW - Waiau	68	67	63	63	65
IY - CIP	1	1	7	7	7
Total Oper	158	158	156	156	158

Hawaiian Electric Company, Inc.
2009 Rate Case

2009 Maintenance Division Labor Cost

RA	EE	Labor Cost
PIL	150	$ 2,996,244
	421	$ 339,625
PIL Total		$ 3,335,869
PIM	150	$ 76,049
	421	$ 10,285
PIM Total		$ 86,334
PIN	150	$ 835,605
	421	$ 106,275
PIN Total		$ 941,880
PIT	150	$ 6,539,146
	421	$ 776,360
PIT Total		$ 7,315,506
PIX	150	$ 2,785,026
	421	$ 338,910
PIX Total		$ 3,123,936
PIZ	150	$ 284,816
	421	$ 34,235
PIZ Total		$ 319,051
Grand Total		$ 15,122,575

2009 Operating Division Labor Cost

RA	EE	Labor Cost
PIH	150	$ 1,766,955
	421	$ 227,940
PIH Total		$ 1,994,895
PIK	150	$ 3,851,784
	421	$ 509,090
PIK Total		$ 4,360,874
PIO	150	$ 171,590
	421	$ 18,150
PIO Total		$ 189,740
PIW	150	$ 4,182,388
	421	$ 556,060
PIW Total		$ 4,738,448
PIY	150	$ 205,736
	421	$ 27,000
PIY Total		$ 232,736
Grand Total		$ 11,516,692

Source:

1) Expense element 150 amounts from HECO T-7, CA-IR-1, Attachment 3; sum of page 1 and page 2 for respective RAs.
2) Expense element 421 amounts from HECO-WP-101(H).

Hawaiian Electric Company, Inc.
2009 Rate Case

Calculation of HECO Proposed Production O&M Labor Adjustment

Total Production O&M Labor	$ 33,439,000	(from HECO T-7 Update, Attachment 1)		
Maintenance Div Labor Total	$ 15,123,000	(from page 1)		
Operating Div Labor Total	$ 11,517,000	(from page 1)		
Net Production O&M Labor	$ 6,799,000	X 2.68% (Note 1) =	$ 182,000	HECO proposed Production Labor Adjustment (without Maintenance and Operations RAs)

Note 1: Please refer to HECO T-15, Attachment 1, for the derivation of the vacancy rate of 2.68%.

HAWAIIAN ELECTRIC COMPANY, INC.
2009 Test Year ($1000s)
RATE CASE UPDATE SUMMARY - T&D O&M EXPENSE

Line		(A) OPER BUDGET	(B) BUDGET ADJ	(C) NORM	(D) TY EST @ DIRECT	(E) TOTAL ADJUST (from T-8 Upd)	(F) TY RATE CASE UPDATE	Labor Adjust	Update Results of Operations	CIS	Labor Adj	Aban Prj	Gen Infl & MV Fuel	AMI O/S	Pre Settlement	IRP Reclass	Merit Adj	TOTAL
	HECO T-8 TRANSMISSION & DISTRIBUTION																	
	TRANSMISSION																	
1	LABOR	4,985			4,985	83	5,068	(120)	4,948	60	(16)				4992		(43)	4,949
2	NON-LABOR	9,040	(58)		8,982		8,982		8,982	(8)	0		(64)		8910			8,910
3	TOTAL	14,025	(58)	0	13,967	83	14,050	(120)	13,930	52	(16)	0	(64)	0	13902	0	(43)	13,859
	DISTRIBUTION																	
4	LABOR	12,473			12,473	245	12,718	(302)	12,416	8	(39)				12385		(80)	12,305
5	NON-LABOR	18,039	(19)		18,020	80	18,100		18,100	(62)	0	(89)	(156)	(253)	17540			17,540
6	TOTAL	30,512	(19)	0	30,493	325	30,818	(302)	30,516	(54)	(39)	(89)	(156)	(253)	29925	0	(80)	29,845
7	*GRAND TOTAL*	*44,537*	*(77)*	*0*	*44,460*	*408*	*44,868*	*(422)*	*44,446*	*(2)*	*(55)*	*(89)*	*(220)*	*(253)*	*43,827*	*0*	*(123)*	*43,704*
										Reclass	Settlement	Settlement	Settlemen	Settlement			Settlement	

Column B: Adjustments due to abandoned projects and performance incentives

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ATTACHMENT 1
PAGE 1 OF 1
FINAL SETTLEMENT

October 2008 - March 2009

		Net Write-Off %	
Month	**Year**	**recorded**	**goal**
Oct	2008	0.099	0.0719
Nov	2008	0.099	0.0719
Dec	2008	0.181	0.0719
Jan	2009	0.176	0.0719
Feb	2009	0.174	0.0719
Mar	2009	0.174	0.0719
	6 Month Avg	0.1505	

NARUC ACCOUNT 904 UNCOLLECTIBLES

	Actual		Actual
	2008		**2009**
Jan	$ 74,695	Jan	$ 143,550
Feb	$ 39,871	Feb	$ 69,210
Mar	$ 125,264	Mar	$ 278,726
Apr.	$ 72,714		
May	$ 53,512		
Jun	$ 104,146		
Jul	$ 95,534		
Aug	$ 169,406		
Sep	$ 691,901		
Oct	$ 229,957		
Nov	$ 1,740,615		
Dec	$ 280,690		
TOTAL	**$ 3,678,306**	**YTD**	**$ 491,486**
		ANNUALIZED	$ 1,965,944

Note: 2008 information differs slightly from the response to CA-IR-389 as the information previously provided were based on preliminary information.

PERCENT NET WRITE-OFF DURING ECONOMIC DOWNTURNS - THREE FIVE-YEAR PERIODS

Jan 1982 - Dec 1986		Jan 1991 - Dec 1995		Jan 1994 - Dec 1998	
1982	0.401	1991	0.092	1994	0.149
1982	0 408	1991	0.104	1994	0.153
1982	0.408	1991	0.103	1994	0.170
1982	0.421	1991	0.114	1994	0.180
1982	0.448	1991	0.100	1994	0.189
1982	0.448	1991	0.091	1994	0.189
1982	0.456	1991	0.126	1994	0.200
1982	0 484	1991	0.131	1994	0.204
1982	0 500	1991	0.135	1994	0.208
1982	0.510	1991	0.134	1994	0.215
1982	0.502	1991	0.157	1994	0.219
1982	0.514	1991	0.158	1994	0.217
1983	0.531	1992	0.153	1995	0.208
1983	0.535	1992	0.139	1995	0.202
1983	0.512	1992	0 148	1995	0.213
1983	0.509	1992	0.158	1995	0.213
1983	0.482	1992	0.170	1995	0.212
1983	0.492	1992	0.184	1995	0.203
1983	0.481	1992	0.160	1995	0.185
1983	0.454	1992	0.161	1995	0.19
1983	0.433	1992	0.162	1995	0.188
1983	0.421	1992	0.148	1995	0.174
1983	0.405	1992	0.119	1995	0.169
1983	0.390	1992	0.120	1995	0.172
1984	0.357	1993	0.134	1996	0.172
1984	0.345	1993	0.132	1996	0.187
1984	0.357	1993	0.124	1996	0.164
1984	0.318	1993	0.104	1996	0.171
1984	0.311	1993	0.106	1996	0.17
1984	0.275	1993	0.116	1996	0.172
1984	0.256	1993	0.115	1996	0.197
1984	0 244	1993	0.117	1996	0.191
1984	0.261	1993	0.117	1996	0.186
1984	0.253	1993	0.134	1996	0.189
1984	0.229	1993	0.140	1996	0.188
1984	0.234	1993	0.142	1996	0.187
1985	0.248	1994	0.149	1997	0.192
1985	0.233	1994	0.153	1997	0.178
1985	0.225	1994	0.170	1997	0.18
1985	0.223	1994	0.180	1997	0.18
1985	0.205	1994	0.189	1997	0.178
1985	0.200	1994	0.189	1997	0.18
1985	0.210	1994	0.200	1997	0.162
1985	0.214	1994	0.204	1997	0.163
1985	0.180	1994	0.208	1997	0.172
1985	0.177	1994	0.215	1997	0.176
1985	0.186	1994	0.219	1997	0.175
1985	0.169	1994	0.217	1997	0.187
1986	0.160	1995	0 208	1998	0.183
1986	0.161	1995	0.202	1998	0.182
1986	0.163	1995	0 213	1998	0.18
1986	0.162	1995	0.213	1998	0.169
1986	0.169	1995	0.212	1998	0.163
1986	0.167	1995	0.203	1998	0.19
1986	0.154	1995	0.185	1998	0.183
1986	0.144	1995	0.19	1998	0.18
1986	0.145	1995	0.188	1998	0.173
1986	0.155	1995	0 174	1998	0.173
1986	0.169	1995	0 169	1998	0.166
1986	0.143	1995	0.172	1998	0.152
5 Year Avg	0.316	5 Year Avg	0.156	5 Year Avg	0.184

Jan.'82-Dec.'86	0.316
Jan.'91-Dec.'95	0.156
Jan.'94-Dec.98	0.184
	0.2187

CIS O&M EXPENSE IMPACT FOR REMOVAL FROM 2009 TEST YEAR

(Revised for Oncosts)

NARUC	LABOR	NONLABOR	TOTAL
163	$ 205	$ -	$ 205
163	$ 26	$ -	$ 26
163	$ 67	$ -	$ 67
184050	$ 331	$ -	$ 331
184050	$ 69	$ -	$ 69
184050	$ 141	$ -	$ 141
500020	$ -	$ (4,977)	$ (4,977)
501020	$ -	$ (1,750)	$ (1,750)
501410	$ -	$ (356)	$ (356)
502010	$ -	$ (5,278)	$ (5,278)
502020	$ -	$ (6,864)	$ (6,864)
502030	$ -	$ (9,545)	$ (9,545)
505030	$ -	$ (684)	$ (684)
506	$ (6,410)	$ -	$ (6,410)
506010	$ -	$ (2,434)	$ (2,434)
506020	$ -	$ (14,522)	$ (14,522)
512030	$ -	$ (1,039)	$ (1,039)
513030	$ -	$ (629)	$ (629)
514020	$ -	$ (21,386)	$ (21,386)
514030	$ -	$ (3,309)	$ (3,309)
549	$ -	$ (1,778)	$ (1,778)
TOTAL Power Production Expenses	**$ (5,572)**	**$ (74,552)**	**$ (80,124)**
184060	$ 1,979	$ -	$ 1,979
184060	$ 344	$ -	$ 344
184060	$ 2,616	$ -	$ 2,616
561	$ -	$ (55)	$ (55)
562	$ -	$ (191)	$ (191)
563	$ -	$ (164)	$ (164)
566	$ -	$ (7,138)	$ (7,138)
566	$ 26,416	$ -	$ 26,416
566	$ 3,320	$ -	$ 3,320
566	$ 25,259	$ -	$ 25,259
570	$ -	$ (109)	$ (109)
571	$ -	$ (246)	$ (246)
TOTAL Transmission Expenses	**$ 59,934**	**$ (7,904)**	**$ 52,030**

581	$	(84,583)	$	-	$	(84,583)
581	$	-	$	(9,599)	$	(9,599)
581/561	$	25,524	$	-	$	25,524
581/561	$	2,880	$	-	$	2,880
581/561	$	21,911	$	-	$	21,911
582	$	-	$	(273)	$	(273)
583	$	-	$	(246)	$	(246)
584	$	-	$	(273)	$	(273)
586	$	-	$	(4,348)	$	(4,348)
586	$	7,582	$	-	$	7,582
586	$	1,080	$	-	$	1,080
587	$	(109,691)	$	-	$	(109,691)
587	$	26,991	$	-	$	26,991
587	$	3,960	$	-	$	3,960
587	$	71,580	$	-	$	71,580
588	$	(51,029)	$	-	$	(51,029)
588	$	-	$	(41,187)	$	(41,187)
588	$	30,675	$	-	$	30,675
588	$	3,920	$	-	$	3,920
588	$	29,823	$	-	$	29,823
592	$	-	$	(137)	$	(137)
593	$	-	$	(410)	$	(410)
594	$	-	$	(410)	$	(410)
598	$	-	$	(5,059)	$	(5,059)
598	$	12,766	$	-	$	12,766
598	$	1,680	$	-	$	1,680
598	$	12,781	$	-	$	12,781
TOTAL Distribution Expenses	**$**	**7,851**	**$**	**(61,944)**	**$**	**(54,093)**
901	$	-	$	(58,307)	$	(58,307)
902	$	(13,904)	$	-	$	(13,904)
902	$	(2,015)	$	-	$	(2,015)
902	$	-	$	(2,051)	$	(2,051)
902	$	-	$	(235,200)	$	(235,200)
902	$	14,468	$	-	$	14,468
902	$	2,660	$	-	$	2,660
903	$	(409,580)	$	(520,238)	$	(929,818)
903	$	-	$	(976,941)	$	(976,941) Amortization Expense
903	$	(279,384)	$	-	$	(279,384)
903	$	(40,975)	$	-	$	(40,975)
903	$	-	$	(1,353,565)	$	(1,353,565)
903	$	-	$	60,468	$	60,468
903	$	-	$	(9,216)	$	(9,216)
903	$	69,893	$	-	$	69,893
903	$	12,780	$	-	$	12,780
TOTAL Customer Accounts Expense	**$**	**(646,057)**	**$**	**(3,095,050)**	**$**	**(3,741,107)**

909	$	1,924	$	-	$	1,924
909	$	160	$	-	$	160
910	$	(46,973)	$	-	$	(46,973)
910	$	-	$	(16,464)	$	(16,464)
910	$	34,848	$	-	$	34,848
910	$	4,960	$	-	$	4,960
TOTAL Customer Service Expense	**$**	**(5,082)**	**$**	**(16,464)**	**$**	**(21,545)**
920	$	(41,006)	$	-	$	(41,006)
920	$	27,057	$	-	$	27,057
920	$	3,720	$	-	$	3,720
921	$	(5,400)	$	(12,962)	$	(18,362)
921	$	-	$	(212,560)	$	(212,560)
922	$	-	$	(58,565)	$	(58,565)
922	$	-	$	32,998	$	32,998
924	$	-	$	(2,133)	$	(2,133)
925	$	(318)	$	-	$	(318)
925	$	-	$	(8,040)	$	(8,040)
926000	$	-	$	(547)	$	(547)
926010	$	-	$	(2,106)	$	(2,106)
926.020	$	-	$	(159,764)	$	(159,764)
926.020	$	-	$	(93,116)	$	(93,116)
926.020	$	-	$	90,017	$	90,017
9302	$	-	$	(2,270)	$	(2,270)
TOTAL A&G Expense	**$**	**(15,946)**	**$**	**(429,050)**	**$**	**(444,996)**
GRAND TOTAL	**$**	**(604,872)**	**$**	**(3,684,963)**	**$**	**(4,289,835)**

CIS EXPENSES TO REMOVE FROM TEST YEAR BY NARUC ACCOUNT

Summary of Changes to the HECO 2009 Test Year Due to the Delay in the Customer Information System ("CIS") In-Service Date

		NARUC	Labor	Non-Labor	Total	Source
PROJECT EXPENSES						
1 Reversal of Project Expenses - See Attach. 1A - Revised HECO-907 (line 29)	($1,506,519)	506	$ (6,410)	$ -	$ (6,410)	1 - Detail
		581	$ (84,583)	$ -	$ (84,583)	
		587	$ (109,691)	$ -	$ (109,691)	
		588	$ (51,029)	$ -	$ (51,029)	
		903	$ (409,580)	$ (520,238)	$ (929,818)	
		910	$ (46,973)	$ -	$ (46,973)	
		920	$ (41,006)	$ -	$ (41,006)	
		921	$ (5,400)	$ (12,962)	$ (18,362)	
		922	$ -	$ (58,565)	$ (58,565)	
		925	$ (318)	$ -	$ (318)	
		926.020	$ -	$ (159,764)	$ (159,764)	
		Total	$ (754,989)	$ (751,530)	$ (1,506,519)	
Reversal of Amortization - See Attach 1A - Revised HECO-907 (line 30)	($976,941)	903	$ -	$ (976,941)	$ (976,941)	
2 Expense reduction due to employees remaining on the CIS development team for the months of June through December (recorded to Deferred Expenses)						
See Attachment 1B - Productive Expense	($293,288)	902	$ (13,904)	$ -	$ (13,904)	2 - Detail
		903	$ (279,384)	$ -	$ (279,384)	
		Total	$ (293,288)	$ -	$ (293,288)	
See Attachment 1B - Non-Productive Expense	($42,990)	902	$ (2,015)	$ -	$ (2,015)	
		903	$ (40,975)	$ -	$ (40,975)	
		Total	$ (42,990)	$ -	$ (42,990)	
See Attachment 1B - Emp Benefit	($93,116)	926.020	$ -	$ (93,116)	$ (93,116)	
Total Project Expenses	($2,912,854)		$ (1,091,267)	$ (1,821,588)	$ (2,912,854)	
NON-PROJECT EXPENSES (Including new Bill Print, IVR, IWR systems/processes):						
1 Reversal of Post Go-Live Non-Project expenses						
See Attachment 2. (line 14a, "Post Go-Live Adj." column)	($1,353,565)	903	$ -	$ (1,353,565)	$ (1,353,565)	3 - Detail
2 Additional expenses for Standard Register Form						
See Attachment 2 (line 10a, "Post Go-Live Adj." column)	$60,468	903	$ -	$ 60,468	$ 60,468	3 - Detail
3 Net Reduction of ITS Costs						
See Attachment 3	($458,094)	500020	$ -	$ (4,977)	$ (4,977)	4 - Detail
		501020	$ -	$ (1,750)	$ (1,750)	
		501410	$ -	$ (356)	$ (356)	
		502010	$ -	$ (5,278)	$ (5,278)	
		502020	$ -	$ (6,864)	$ (6,864)	
		502030	$ -	$ (9,545)	$ (9,545)	
		505030	$ -	$ (684)	$ (684)	
		506010	$ -	$ (2,434)	$ (2,434)	
		506020	$ -	$ (14,522)	$ (14,522)	
		512030	$ -	$ (1,039)	$ (1,039)	
		513030	$ -	$ (629)	$ (629)	
		514020	$ -	$ (21,386)	$ (21,386)	
		514030	$ -	$ (3,309)	$ (3,309)	
		549	$ -	$ (1,778)	$ (1,778)	
		561	$ -	$ (55)	$ (55)	
		562	$ -	$ (191)	$ (191)	
		563	$ -	$ (164)	$ (164)	
		566	$ -	$ (7,138)	$ (7,138)	
		570	$ -	$ (109)	$ (109)	
		571	$ -	$ (246)	$ (246)	
		572	$ -	$ -	$ -	
		581	$ -	$ (9,599)	$ (9,599)	
		582	$ -	$ (273)	$ (273)	
		583	$ -	$ (246)	$ (246)	
		584	$ -	$ (273)	$ (273)	
		586	$ -	$ (4,348)	$ (4,348)	
		588	$ -	$ (41,187)	$ (41,187)	
		592	$ -	$ (137)	$ (137)	
		593	$ -	$ (410)	$ (410)	
		594	$ -	$ (410)	$ (410)	
		598	$ -	$ (5,059)	$ (5,059)	
		901	$ -	$ (58,307)	$ (58,307)	
		902	$ -	$ (2,051)	$ (2,051)	
		903	$ -	$ (9,216)	$ (9,216)	
		910	$ -	$ (16,464)	$ (16,464)	
		921	$ -	$ (212,560)	$ (212,560)	
		924	$ -	$ (2,133)	$ (2,133)	
		925	$ -	$ (8,040)	$ (8,040)	
		926000	$ -	$ (547)	$ (547)	
		926010	$ -	$ (2,106)	$ (2,106)	
		9302	$ -	$ (2,270)	$ (2,270)	
		Total	$ -	$ (458,094)	$ (458,094)	

4 Reversal of labor expenses for 4 temporary meter readers included in Update See response to CA-IR-398, part b	($235,200)	902	$ -	$ (235,200)	$ (235,200)	6 Detail
Total Non-Project Expenses	**($1,986,391)**		**$ -**	**$ (1,986,391)**	**$ (1,986,391)**	
ADD BACK FOR LABOR EXPENSES:						
1 See Attachment 4 - Productive Expense	$280,858	163	$ 205	$ -	$ 205	
		566	$ 26,416	$ -	$ 26,416	
		586	$ 7,582	$ -	$ 7,582	
		587	$ 26,991	$ -	$ 26,991	
		588	$ 30,675	$ -	$ 30,675	
		598	$ 12,766	$ -	$ 12,766	
		902	$ 14,468	$ -	$ 14,468	
		903	$ 69,893	$ -	$ 69,893	
		909	$ 1,924	$ -	$ 1,924	
		910	$ 34,848	$ -	$ 34,848	
		920	$ 27,057	$ -	$ 27,057	
		184050	$ 331	$ -	$ 331	
		184060	$ 1,979	$ -	$ 1,979	
		581/581	$ 25,524	$ -	$ 25,524	
		Total	$ 280,658	$ -	$ 280,658	
See Attachment 4 - Non-Productive Expense	$41,559	163	$ 26	$ -	$ 26	
		566	$ 3,320	$ -	$ 3,320	
		586	$ 1,080	$ -	$ 1,080	
		587	$ 3,960	$ -	$ 3,960	
		588	$ 3,920	$ -	$ 3,920	
		598	$ 1,680	$ -	$ 1,680	
		902	$ 2,660	$ -	$ 2,660	
		903	$ 12,780	$ -	$ 12,780	
		909	$ 160	$ -	$ 160	6 Detail
		910	$ 4,960	$ -	$ 4,960	
		920	$ 3,720	$ -	$ 3,720	
		184050	$ 69	$ -	$ 69	
		184060	$ 344	$ -	$ 344	
		581/581	$ 2,880	$ -	$ 2,880	
		Total	$ 41,559	$ -	$ 41,559	
See Attachment 4 - All other On-Cost	$287,193	163	$ 67	$ -	$ 67	
		566	$ 25,259	$ -	$ 25,259	
		586	$ -	$ -	$ -	
		587	$ 71,580	$ -	$ 71,580	
		588	$ 29,823	$ -	$ 29,823	
		598	$ 12,781	$ -	$ 12,781	
		902	$ -	$ -	$ -	
		903	$ -	$ -	$ -	
		909	$ -	$ -	$ -	
		910	$ -	$ -	$ -	
		920	$ -	$ -	$ -	
		922	$ -	$ 32,998	$ 32,998	
		926 020	$ -	$ 90,017	$ 90 017	
		184050	$ 141	$ -	$ 141	
		184060	$ 2,616	$ -	$ 2,616	
		581/581	$ 21,911	$ -	$ 21,911	
		Total	$ 164,178	$ 123,015	$ 287,193	
Total add back to test year	**$609,410**		**$ 488,395**	**$ 123,015**	**$ 609,410**	
TOTAL NET CHANGE TO TEST YEAR EXPENSES	**($4,289,835)**		**$ (604,872)**	**$ (3,684,963)**	**$ (4,289,835)**	

Hawaiian Electric Company, Inc.
Comparison of
2009 Test Year Energy Cost Adjustment Factors
Rate Case Update and Direct Testimony

Rate Case Update

(¢/kwh)

Present Rates		
Rate Case Update	Direct Testimony	Difference
0.152	7.221	-7.069

Proposed Rates		
Rate Case Update	Direct Testimony	Difference
0.000	0.000	0.000

Hawaiian Electric Company, Inc.
ENERGY COST ADJUSTMENT FILING
Present Rates
2009 RATE CASE UPDATE

Line		
1	**Effective Date**	**2009 Test Year - Rate Case Update**
2	**Supercedes Factor**	

GENERATION COMPONENT

Line		
	FUEL PRICES, ¢/MBTU	
3	Honolulu	941.57
4	Kahe	891.46
5	Waiau-Steam	891.46
6	Waiau-Waste	**0.00**
7	Waiau-Diesel	1,470.79
8	CIP-Diesel	1,506.83
9	CIP-Biodiesel	3,102.99
	BTU MIX, %	
10	Honolulu	2.54
11	Kahe	70.01
12	Waiau-Steam	26.28
13	Waiau-Waste	0.00
14	Waiau-Diesel	0.42
15	CIP-Diesel	0.70
16	CIP-Biodiesel	0.05
		100.00
17	COMPOSITE COST OF GENERATION, ¢/MBTU	900.58
18	% Input to system kWh Mix	57.23
19	Efficiency Factor, Mbtu/kWh	**0.011140**
20	WEIGHTED COMPOSITE GEN COST, ¢/KWH (Line 17 x 18 x 19)	5.74158
21	BASE GENERATION COST, ¢/Mbtu	**869.64**
22	Base % Input to System kWh Mix	**58.41**
23	Efficiency Factor, Mbtu/kWh	**0.011140**
24	WEIGHTED BASE GEN COST, ¢/KWH (Line 21 x 22 x 23)	5.65864
25	Cost Less Base (Line 20 - 24)	0.08294
26	Revenue Tax Req Multiplier	1.0975
27	GENERATION FACTOR, ¢/KWH (Line 25 x 26)	0.09103

DG ENERGY COMPONENT

Line		
28	COMPOSITE COST OF DG ENERGY, ¢/kWh	15.674
29	% Input to System kWh Mix	0.05
30	WTD COMP DG ENRGY COST, ¢/KWH (Line 28 x 29)	0.00784
31	BASE DG ENERGY COMP COST	**14.076**
32	Base % Input to System kWh Mix	**0.09**
33	WTD BASE DG ENERGY COST, ¢/KWH (Line 31 x 32)	0.01267
34	Cost Less Base (Line 30 - 33)	(0.00483)
35	Loss Factor	**1.051**
36	Revenue Tax Req Multiplier	1.0975
37	DG FACTOR, ¢/KWH (Line 34 x 35 x 36)	(0.00557)
38	TOTAL GENERATION FACTOR ¢/KWH (Line 27 + 37)	0.08546

PURCHASED ENERGY COMPONENT

Line			
	PURCHASED ENERGY PRICE - ¢/KWH		
39	THC	- On Peak	11.524
40		- Off Peak	8.180
41	HRRV	- On Peak	10.445
42		- Off Peak	7.664
43	HRRV	- On Peak (excess)	0.000
44		- Off Peak (excess)	7.664
45	Chevron	- On Peak	11.524
46		- Off Peak	8.180
47	Hoku Solar		19.000
48	Kalaeloa		7.427
49	AES-HI		2.873
	PURCHASED ENERGY KWH MIX, %		
50	THC	- On Peak	0.07
51		- Off Peak	0.05
52	HRRV	- On Peak	5.73
53		- Off Peak	2.59
54	HRRV	- On Peak (excess)	0.00
55		- Off Peak (excess)	1.51
56	Chevron	- On Peak	0.01
57		- Off Peak	0.01
58	Hoku Solar		0.01
59	Kalaeloa		44 54
60	AES-HI		45.48
			100.00
61	COMPOSITE COST OF PURCHASED ENERGY, ¢/KWH		5.543
62	% Input to System kWh Mix		42.72
63	WTD CMP PURCH ENRGY COST, ¢/KWH (Line x 61)		2.36797
64	BASE PURCH ENERGY COMP COST		**5.568**
65	Base % Input to System kWh Mix		**41.50**
66	WTD BASE PRCH ENERGY COST, ¢/KWH (Line 64 x 65)		2.31072
67	Cost Less Base (Line 63 - 66)		0.05725
68	Loss Factor		**1.051**
69	Revenue Tax Req Multiplier		**1.0975**
70	PURCHASED ENERGY FACTOR, ¢/KWH (Line 67 x 68 x 69)		0.06604

SYSTEM COMPOSITE

Line		
71	Total Generation and Purchased Energy Factor, ¢/kWh (Line 38 + 70)	0.15150
72	Adjustment, ¢/kWh	**0.000**
73	ECA Reconciliation Adjustment, ¢/kWh	**0.000**
74	ENERGY COST ADJUSTMENT FACTOR, ¢/KWH (Line 71 + 72 + 73)	0.152

Reference: Rate Case Update HECO-WP-1036

HAWAIIAN ELECTRIC COMPANY, INC.
ENERGY COST ADJUSTMENT (ECA) FILING
Proposed Rates
RATE CASE UPDATE

ENERGY COST ADJUSTMENT (ECA) FILING - 2009 Test Year - Rate Case Update (page 1 of 2)

Line		
1	Effective Date	2009 Test Year - Rate Case Update
2	Supercedes Factors of	

GENERATION COMPONENT

CENTRAL STATION

	FUEL PRICES, ¢/mmbtu	
3	Honolulu	941.57
4	Kahe	891.76
5	Waiau-Steam	891.46
6	Waiau-Diesel	1,470.79
7	CIP-Diesel	1,506.83
8	CIP-Biodiesel	3,102.99
9	Other	0.00
	BTU MIX, %	
10	Honolulu	2.54
11	Kahe	70.01
12	Waiau-Steam	26.28
13	Waiau-Diesel	0.42
14	CIP-Diesel	0.70
15	CIP-Biodiesel	0.05
16	Other	0.00
		100.00
17	COMPOSITE COST OF GENERATION, CNTRL STN + OTHER ¢/mmbtu	900.79
18	% Input to System kWh Mix	57 23

EFFICIENCY FACTOR, mmbtu/kWh

	(A) Fuel Type	(B) Eff Factor mmbtu/kwh	(C) Percent of Centrl Stn + Other	(D) Weighted Eff Factor
19	LSFO	0.011114	99.47	0.011055
20	Diesel	0 024582	0.50	0.000124
21	Biodiesel	0.016762	0.03	0.000005
22	Other	0.011184	0.00	0.000000

(Lines 19 through 22): Col(B) x Col(C) = Col(D)

23	Weighted Efficiency Factor, mmbtu/kWh [lines 19(D) + 20(D) + 21(D) + 22(D)]	0.011184
24	WGTD. COMPOSITE CNTRL STN + OTHER GEN COST, ¢/kWh (lines (17x18x23))	5.76560
25	BASE CNTRL STN + OTHER GEN. COST, ¢/mmbtu	900.79
26	Base % Input to Sys kWh Mix	57.23
27	Efficiency Factor, mmbtu/kwh	0.011184
28	WEIGHTED BASE CNTRL STN + OTHER GEN COST ¢/kWh (lines (25x26x27))	5.76560
29	COST LESS BASE (line(24-28))	0.00000
30	Revenue Tax Req Multiplier	1.0975
31	CNTRL STN + OTHER GENERATION FACTOR, ¢/kWh (line (29x30))	0.00000

DG ENERGY COMPONENT

32	COMPOSITE COST OF DG ENERGY, ¢/kWh	15.674
33	% Input to System kWh Mix	0.05
34	WTD COMP DG ENRGY COST, ¢/kWh (Lines 32 x 33)	0.00784
35	BASE DG ENERGY COMP COST	15.674
36	Base % Input to System kWh Mix	0.05
37	WTD BASE DG ENERGY COST, ¢/kWh (Line 35 x 36)	0.00784
38	Cost Less Base (Line 34 - 37)	0.00000
39	Loss Factor	1.052
40	Revenue Tax Req Multiplier	1.0975
41	DG FACTOR, ¢/kWh (Line 38 x 39 x 40)	0.00000

SUMMARY OF TOTAL GENERATION FACTOR, ¢/kWh

42	Cntrl Stn+Other (line 31)	0.00000
43	DG (line 41)	0.00000
44	TOTAL GENERATION FACTOR, ¢/kWh (lines 42 + 43)	0.00000

HAWAIIAN ELECTRIC COMPANY, INC.
ENERGY COST ADJUSTMENT (ECA) FILING
Proposed Rates
RATE CASE UPDATE

ENERGY COST ADJUSTMENT (ECA) FILING - 2009 Test Year - Rate Case Update (page 2 of 2)

Line PURCHASED ENERGY COMPONENT

Line				
	PURCHASED ENERGY PRICE, ¢/kWh			
45	THC	- On Peak		11.524
46		- Off Peak		8.180
47	HRRV	- On Peak		10.445
48		- Off Peak		7.664
49	HRRV	- On Peak	(excess)	0.000
50		- Off Peak	(excess)	7.664
51	Chevron	- On Peak		11.524
52		- Off Peak		8.180
53	Hoku Solar			19.000
54	Kalaeloa			7.427
55	AES-HI			2.873
	PURCHASED ENERGY KWH MIX, %			
56	THC	- On Peak		0.07
57		- Off Peak		0.05
58	HRRV	- On Peak		5.73
59		- Off Peak		2.59
60	HRRV	- On Peak	(excess)	0.00
61		- Off Peak	(excess)	1.51
62	Chevron	- On Peak		0.01
63		- Off Peak		0.01
64	Hoku Solar			0 01
65	Kalaeloa			44.54
66	AES-HI			45.48
				100.00
67	COMPOSITE COST OF PURCHASED ENERGY, ¢/kWh			5.543
68	% Input to System kWh Mix			42.72
69	WEIGHTED COMP. PURCH. ENERGY COST, ¢/kWh (lines (67x68))			2.36797
70	BASE PURCHASED ENERGY *COMPOSITE COST, ¢/kWh*			5.543
71	Base % Input to Sys kWh Mix			42.72
72	WEIGHTED BASE PURCH ENERGY COST, ¢/kWh (lines (70 x 71))			2.36797
73	COST LESS BASE(lines (69 - 72))			0.00000
74	Loss Factor			1.052
75	Revenue Tax Req Multiplier			1 0975
76	PURCHSD ENERGY FCTR, ¢/kWh (lines (73 x 74 x 75))			0.00000

Line	SYSTEM COMPOSITE	
77	GEN AND PURCHASED ENERGY FACTOR, ¢/kWh (lines (44 + 76))	0.00000
78	Adjustment, ¢/kWh	0.000
79	ECA Reconciliation Adjustment	0.000
80	ECA FACTOR, ¢/kWh (lines (77 + 78 + 79))	0.000

References: Rate Case Update HECO-WP-1036
Rate Case Update HECO-WP-1037

HAWAIIAN ELECTRIC COMPANY, INC.
Comparison of
Composite Cost of Generation - Central Station
At Present Rates and Proposed Rates

2009 Test Year - Rate Case Update

Line		(A) At Present Rates	(B) At Proposed Rates	(C) Difference (B) - (A)
	FUEL PRICES, ¢/mmbtu			
1	Kahe	891.46	891.76	0.30
2	Waiau-Steam	891.46	891.46	0.00
3	Honolulu	941.57	941.57	0.00
4	Waiau-Diesel	1,470.79	1,470.79	0.00
5	CIP-Diesel	1,506.83	1,506.83	0.00
6	CIP-Biodiesel	3,102.99	3,102.99	0.00
7	Other	0.00	0.00	0.00
	BTU MIX, %			
8	Kahe	70.01	70.01	0.00
9	Waiau-Steam	26.28	26.28	0.00
10	Honolulu	2.54	2.54	0.00
11	Waiau-Diesel	0.42	0.42	0.00
12	CIP-Diesel	0.70	0.70	0.00
13	CIP-Biodiesel	0.05	0.05	0.00
14	Other	0.00	0.00	0.00
		100.00	100.00	0.00
15	COMPOSITE COST OF GENERATION ¢/mmbtu	900.58	900.79	0.21

Source:
Col (A): Rate Case Update HECO-WP-1036, pg. 4
Col (B): Rate Case Update HECO-WP-1037, pg. 1

HAWAIIAN ELECTRIC COMPANY, INC.
Comparison of
Composite Cost of Generation - Central Station and DG
Rate Case Update and Direct Testimony

2009 Test Year - Rate Case Update
At Present Rates

Line		(A) Rate Case Update at Present Rates	(B) Direct Testimony at Present Rates	(C) Difference (A) - (B)
CENTRAL STATION				
	FUEL PRICES, ¢/mmbtu			
1	Kahe	891.46	1,602.06	-710.60
2	Waiau-Steam	891.46	1,602.06	-710.60
3	Honolulu	941.57	1,652.16	-710.59
4	Waiau-Diesel	1,470.79	2,366.04	-895.25
5	CIP-Diesel	1,506.83	2,402.08	-895.25
6	CIP-Biodiesel	3,102.99	4,643.68	-1540.69
	BTU MIX, %			
7	Kahe	70.01	69.33	0.68
8	Waiau	26.28	25.12	1.16
9	Honolulu	2.54	4.03	-1.49
10	Waiau-Diesel	0.42	0.57	-0.15
11	CIP-Diesel	0.70	0.88	-0.18
12	CIP-Biodiesel	0.05	0.07	-0.02
		100.00	100.00	0.00
13	COMPOSITE COST OF GENERATION - CENTRAL STATION ¢/mmbtu	900.58	1,617.60	-717.02
DG				
	FUEL PRICE, ¢/kwh			
14	COMPOSITE COST OF DG ENERGY ¢/kwh	15.674	24.993	-9.319

Source:
Col (A): Rate Case Update HECO-WP-1036 pg. 4 and HECO-WP-1036 pg.5.
Col (B): Direct Testimony HECO-WP-1037 pg. 1 and HECO-WP-1036 pg.5.

HAWAIIAN ELECTRIC COMPANY, INC.
Comparison of
Composite Cost of Generation - Central Station and DG
Rate Case Update and Direct Testimony

2009 Test Year - Rate Case Update
At Proposed Rates

Line		(A) Rate Case Update at Proposed Rates	(B) Direct Testimony at Proposed Rates	(C) Difference (A) - (B)
CENTRAL STATION				
	FUEL PRICES, ¢/mmbtu			
1	Kahe	891.76	1,602.36	-710.60
2	Waiau-Steam	891.46	1,602.06	-710.60
3	Honolulu	941.57	1,652.16	-710.59
4	Waiau - Diesel	1,470.79	2,366.04	-895.25
5	CIP-Diesel	1,506.83	2,402.08	-895.25
6	CIP-Biodiesel	3,102.99	4,643.68	-1540.69
7	Other	0.00	0.00	0.00
	BTU MIX, %			
8	Kahe	70.01	69.33	0.68
9	Waiau-Steam	26.28	25.12	1.16
10	Honolulu	2.54	4.03	-1.49
11	Waiau-Diesel	0.42	0.57	-0.15
12	CIP-Diesel	0.70	0.88	-0.18
13	CIP-Biodiesel	0.05	0.07	-0.02
14	Other	0.00	0.00	0.00
		100.00	100.00	0.00
15	COMPOSITE COST OF GENERATION - CENTRAL STATION ¢/mmbtu	900.79	1,617.81	-717.02
DG				
	FUEL PRICE, ¢/kwh			
16	COMPOSITE COST OF DG ENERGY ¢/kwh	15.674	24.993	-9.319

Source:
Col (A): Rate Case Update HECO-WP-1037, pg. 1 and HECO-WP-1036 pg.5.
Col (B): Direct Testimony HECO-WP-1037, pg. 1 and HECO-WP-1036 pg.5.

HAWAIIAN ELECTRIC COMPANY, INC.
Comparison of
Composite Cost of Purchased Energy
Rate Case Update and Direct Testimony

2009 Test Year - Rate Case Update
At Present and Proposed Rates

Line		(A) Rate Case Update	(B) Direct Testimony	(C) Difference (A) - (B)
	PAYMENT RATE, ¢/kwh			
1	Kalaeloa	7.427	14.992	(7.565)
2	AES	2.873	2.869	0.004
3	HPower - On Peak	10.445	17.132	(6.687)
4	HPower - Off Peak	7.664	12.642	(4.978)
5	HPower - On Peak-excess	0.000	0.000	0.000
6	HPower - Off Peak-excess	7.664	12.642	(4.978)
7	Tesoro - On Peak	11.524	20.440	(8.916)
8	Tesoro - Off Peak	8.180	14.990	(6.810)
9	Chevron - On Peak	11.524	20.440	(8.916)
10	Chevron - Off Peak	8.180	14.990	(6.810)
11	Hoku Solar	19.000	19.000	0.000
	KWH MIX, %			
12	Kalaeloa	44.54	44.25	0.29
13	AES	45.48	45.72	(0.24)
14	HPower - On Peak	5.73	5.76	(0.03)
15	HPower - Off Peak	2.59	2.60	(0.01)
16	HPower - On Peak-excess	0.00	0.00	0.00
17	HPower - Off Peak-excess	1.51	1.52	(0.01)
18	Tesoro - On Peak	0.07	0.07	0.00
19	Tesoro - Off Peak	0.05	0.05	0.00
20	Chevron - On Peak	0.01	0.01	0.00
21	Chevron - Off Peak	0.01	0.01	0.00
22	Hoku Solar	0.01	0.01	0.00
		100.00	100.00	0.00
22	COMPOSITE COST OF PURCHASED ENERGY, ¢/kwh	5.543	9.481	-3.938

Source:
Col (A): Rate Case Update HECO-WP-1036, pg. 6.
Col (B): Direct Testimony HECO-WP-1036, pg. 6.

Hawaiian Electric Company, Inc.
WEIGHTED EFFICIENCY FACTOR CALCULATIONS
CENTRAL STATION AND OTHER

2009 Test Year - Rate Case Update

At Proposed Rates

	LSFO	Diesel	Biodiesel	Other	Total	units
1 Fixed Efficiency Factor	0.011114	0.024582	0.016762	0.011184		mbtu/kwh
2 Gen Mwh %	99.47	0.50	0.03	0.00	100.00 %	
3 Weighted Efficiency Factor (line 1 x line 2)	0.011055	0.000124	0.000005	0.000000	0.011184	mbtu/kwh

Reference:
1 Rate Case Update HECO-WP-1037, pg. 2.
2 Rate Case Update HECO-WP-1036, pg. 3, Col C.

Hawaiian Electric Company, Inc.

Comparison of Sales Heat Rates
Rate Case Update and Direct Testimony

(btu/kwh sales)

	Rate Case Update [1]	Direct Testimony [2]	Difference
Central Station with Wind/Hydro	11,184	11,185	-1
LSFO	11,114	11,092	22
Diesel	24,582	24,358	224
Biodiesel	16,762	22,909	-6,147
Wind/Hydro	11,184	11,185	-1

1 Rate Case Update HECO-WP-1037 pg. 2.
2 Direct Testimony HECO-WP-1037 pg. 2.

Hawaiian Electric Company, Inc.
Fuel Price for ECAC Calculations

2009 Test Year - Rate Case Update

		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
		Central Station							DG
	Description	Kahe	Waiau	Honolulu	WPP Diesel	CIP-1 Diesel	Biodiesel	Total	Diesel
1	MBtu Consumed	33,540,050	12,591,067	1,218,450	198,883	334,676	25,092	47,908,218	39,252
2	Fuel Price ($/bbl)	55.2580	55.2580	55.2580	86.1462	86.1462	155.0872		86.1462
3	Trucking cost per bbl	0.0000	0.0000	3.1065	0.0000	2.1542	0.0000		2.0944
4	Inspection Cost per bbl	0.0126	0.0126	0.0126	0.0423	0.0000	0.0000		0.0000
5	Fuel Additive Cost per bbl	0 0185	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
6	Heat Content (MBtu/bbl)	6 2	6.2	6.2	5.86	5.86	4.998		5.86
	Fuel Price at Present Rates								
7	Fuel Price ($/bbl)								
8	Fuel Oil	55.2580	55.2580	55.2580	86.1462	86.1462	155.0872		86.1462
9	Trucking	0.0000	0.0000	3.1065	0.0000	2.1542	0.0000		2.0944
10	Inspection	0.0126	0.0126	0.0126	0.0423	0.0000	0 0000		0.0000
11	Fuel Additive	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
12	Fuel Price ($/bbl)	55.2706	55.2706	58.3771	86.1885	88.3004	155.0872		88.2406
13	Fuel Price per MBtu (¢/MBtu)	891.46	891.46	941.57	1,470.79	1,506.83	3,102.99		1,505.81
	Fuel Price at Proposed Rates								
14	Fuel Price ($/bbl)								
15	Fuel Oil	55.2580	55.2580	55.2580	86.1462	86.1462	155.0872		86.1462
16	Trucking	0 0000	0.0000	3.1065	0.0000	2.1542	0.0000		2.0944
17	Inspection	0.0126	0.0126	0.0126	0.0423	0.0000	0.0000		0.0000
18	Fuel Additive	0 0185	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
19	Fuel Price ($/bbl)	55 2891	55.2706	58.3771	86.1885	88.3004	155.0872		88.2406
20	Fuel Price per MBtu (¢/MBtu)	891.76	891.46	941.57	1,470.79	1,506.83	3,102.99		1,505.81

Line 1: Rate Case Update HECO-405, page 1
Line 2: Rate Case Update HECO-501, pg 1, col B
Line 3: Rate Case Update HECO-503, pg 2, col B
Line 4: Rate Case Update HECO-503, pg 3, col B
Line 5: Additive $/bbl calculations:

Additive Expense [1] ÷ Kahe bbls consumed [2]
$100,000 ÷ 5,409,685 bbls = 0.0185

[1] Rate Case Update HECO-503, pg. 1, line 4
[2] Rate Case Update HECO-501, pg. 1, line 2(A)

Hawaiian Electric Company, Inc.

Determination of
Percent of Central Station Generation MBTU Mix
and
Total Generation MBTU Mix

2009 Test Year - Rate Case Update
At Present and Proposed Rates

Line	Central Station Plant		(A) MBTU	(B) % to Total Central Station Plant	(C) Rate Case Update Reference
1	Kahe		33,540,050	70.01	HECO-405 page 1
2	Waiau		12,591,067	26.28	HECO-405 page 1
3	Honolulu		1,218,450	2.54	HECO-405 page 1
4		LSFO total	47,349,567	98.83	
5	Waiau-Diesel		198,883	0.42	HECO-405 page 1
6	CIP-Diesel		334,676	0.70	HECO-405 page 1
7		Diesel total	533,559	1.12	
8	CIP-Biodiesel		25,092	0.05	
9	Total Central Station Plant		47,908,218	100.00	HECO-405 page 1
10	DG		39,252		HECO-405 page 1
11	Total Generation		47,947,470		HECO-405 page 1

Hawaiian Electric Company, Inc.
Net System Percent Mix

2009 Test Year - Rate Case Update
At Present and Proposed Rates

Line		(A) 2009 Mwh Energy	(B) % to Total System	(C) % to Total Central Station Generation	(D) Rate Case Update Reference
	Central Station Generation				
1	Kahe	3,283,745			HECO-405 page 1
2	Waiau	1,102,023			HECO-405 page 1
3	Honolulu	94,852			HECO-405 page 1
4	subtotal LSFO	4,480,620	56.92	99.47	
5	Waiau-Diesel	5,211			HECO-405 page 1
6	CIP-Diesel	17,527			HECO-405 page 1
7	subtotal Diesel	22,738	0.29	0.50	
8	CIP-Biodiesel	1,301	0.02	0.03	HECO-405 page 1
9	Total Central Station Generation	4,504,659	57.23	100.00	HECO-405 page 1
10	DG	3,771	0.05		HECO-405 page 1
11	Total Generation	4,508,430			HECO-405 page 1
	Purchased Power				
12	AES Hawaii, Inc.	1,529,472			HECO-405 page 6
13	Kalaeloa Partners	1,497,729			HECO-405 page 6
14	HPower	330,750			HECO-405 page 6
15	Tesoro	4,056			HECO-WP-606
16	Chevron	712			HECO-WP-606
17	Hoku Solar	151			HECO-405 page 6
18	Total Purchased Power	3,362,870	42.72		HECO-405 page 6
19	Total Net System	7,871,300	100.00		

Hawaiian Electric Company, Inc.
Composite Cost of Generation

2009 Test Year - Rate Case Update
At Present Rates

Line	GENERATION COMPONENT	
	FUEL PRICES, ¢/mmbtu	
1	Kahe	891.46
2	Waiau-Steam	891.46
3	Honolulu	941.57
4	Waiau-Diesel	1,470.79
5	CIP-Diesel	1,506.83
6	CPP-Biodiesel	3,102.99
	BTU MIX, %	
7	Kahe	70.01
8	Waiau-Steam	26.28
9	Honolulu	2.54
10	Waiau-Diesel	0.42
11	CIP-Diesel	0.70
12	CIP-Biodiesel	0.05
		100.00
13	COMPOSITE COST OF GENERATION, ¢/mmbtu	900.58

Line 13:
(Line 1x7 + line 2x8 + line 3x9 + line 4x10 + line 5x11 + line 6x12)

Reference:
Rate Case Update HECO-WP-1036, pg. 1, line 13
Rate Case Update HECO-WP-1036, pg. 2

Hawaiian Electric Company, Inc.
Determination of Composite Cost of DG Energy

2009 Test Year - Rate Case Update
At Present and Proposed Rates

	(A)	(B)	(C)	(D)	(E) (colD ÷ colC x 100)	(F) (colD ÷ colB x 100)
Line	DG Unit Location	Net to System (Kwh)	Fuel Consumed (Mbtu)	Fuel Expense ($)	Fuel Cost (¢/mbtu)	Fuel Cost (¢/kwh)
1	Substation DG	3,771,000	39,252	591,061	1505.81	15.674
2					0.00	0.000
3					0.00	0.000
4					0.00	0.000
5	Total	3,771,000	39,252	591,061	1505.81	15.674

6	Composite DG Fuel Cost	1505.81 ¢/mbtu
7	Composite Cost of DG Energy	15.674 ¢/kwh

Col B: Rate Case Update HECO-405, pg. 7.
Col C: Rate Case Update HECO-405, pg. 7.
Col D: Rate Case Update HECO-501, pg. 2, line 10.

Hawaiian Electric Company, Inc.
Determination of Percent of Purchased Energy Mix,
Payment Rate (In ¢/kwh) and
Composite Cost of Purchased Energy (In ¢/kwh)

2009 Test Year - Rate Case Update
At Present and Proposed Rates

	(A)	(B)	(C)	(D)	(E)	(F)
No.	Producer	Gwh Purchased	% to Total PP	Payment Rate (¢/kwh)	Weighted Cost (¢/kwh) [(colF + colB) * colC * 1000]	Purch Pwr Fuel Expense ($ thous)
1	**Kalaeloa**					
	Fuel	1,497.7	44.54	7.258		108,707.7
	Additive			0.169		2,528.5
	Total	1,497.7		7.427	3.308	111,236.2
2	**AES**					
	Fuel	1,529.5	45.48	2.873	1.307	44,057.7
3	**HPower**					
	On Peak	192.9	5.73	10.445	0.598	20,152.3
	Off Peak	87.0	2.59	7.664	0.198	6,670.7
	On Peak - excess	0.0	0.00	0.000	0.000	0.0
	Off Peak - excess	50.8	1.51	7.664	0.116	3,891.2
	Total	330.7				30,714.2
4	**Tesoro**					
	On Peak	2.4	0.07	11.524	0.008	272.7
	Off Peak	1.7	0.05	8.180	0.004	138.2
	Total	4.1				410.9
5	**Chevron**					
	On Peak	0.4	0.01	11.524	0.001	47.9
	Off Peak	0.3	0.01	8.180	0.001	24.3
	Total	0.7				72.2
6	**Hoku Solar**	0.2	0.01	19.000	0.002	28.7
7	**Other**	-	-	0.000	0.000	-
8	Total	3,362.9	100.00		5.543	186,519.9
9	Composite Cost of Purchased Energy				5.543 ¢/kwh	

Line 1: Rate Case Update HECO-WP-601, pg. 1.
Line 2: Rate Case Update HECO-WP-603, pg. 1.
Line 3: Rate Case Update HECO-WP-604, pg. 2.
Lines 4&5: Rate Case Update HECO-606.
Line 6: Rate Case Update HECO-WP-606.
Line 8, Col B: Rate Case Update HECO-402, line 6.

Hawaiian Electric Company, Inc.
Composite Cost of Central Station Generation

2009 Test Year - Rate Case Update
At Proposed Rates

Line	GENERATION COMPONENT Central Station and Other	
	FUEL PRICES, ¢/mmbtu	
1	Kahe	891.76
2	Waiau	891.46
3	Honolulu	941.57
4	WPP Diesel	1,470.79
5	CIP Diesel	1,506.83
6	Biodiesel	3,102.99
7	Other	0.00
	BTU MIX, %	
8	Kahe	70.01
9	Waiau	26.28
10	Honolulu	2.54
11	WPP Diesel	0.42
12	CIP Diesel	0.70
13	Biodiesel	0.05
14	Other	0.00
		100.00
14	COMPOSITE COST OF GENERATION, Central Stn + Other ¢/mmbtu	900.79

Line 14:

(Line 1x8 + line 2x9 + line 3x10 + line 4x11 + line 5x12 + line 6x13 + line 7x14)

Reference:

Rate Case Update HECO-WP-1036, pg. 1, line 20.
Rate Case Update HECO-WP-1036, pg. 2.

Hawaiian Electric Company, Inc.
Determination of Fixed Efficiency Factor or Sales Heat Rate (Mbtu / Kwh Sales)
2009 Test Year - Rate Case Update
At Proposed Rates

Line				Rate Case Update Reference
	Total Central Station Fuel Sales Heat Rate			
1	Total Central Station Fuel Consumed	47,908,218	Mbtu	HECO-405 pg 1
2	Sales	7,484.7	Gwh	HECO-402, line 1
3	% of Central Stn to Total System	57.23	Percent	HECO-402, line 7a
4	Kwh/Gwh Conversion	1,000,000	kwh/gwh	
5	Sales Heat Rate [line 1 ÷ (line 2 x line 3 x line 4)]	0.011184	Mbtu/Kwh Sales	
	LSFO Sales Heat Rate			
6	LSFO Fuel Consumed	47,349,567	Mbtu	HECO-WP-1036 pg 2
7	Sales	7,484.7	Gwh	HECO-402, line 1
8	% of LSFO Fuel Generation to Total System	56.92	Percent	HECO-WP-1036 pg 3
9	Kwh/Gwh Conversion	1,000,000	kwh/gwh	
10	Sales Heat Rate [line 6 ÷ (line 7 x line 8 x line 9)]	0.011114	Mbtu/Kwh Sales	
	Diesel Fuel Sales Heat Rate			
11	Diesel Fuel Consumed	533,559	Mbtu	HECO-WP-1036 pg 2
12	Sales	7,484.7	Gwh	HECO-402, line 1
13	% of Diesel Fuel Generation to Total System	0.29	Percent	HECO-WP-1036 pg 3
14	Kwh/Gwh Conversion	1,000,000	kwh/gwh	
15	Sales Heat Rate [line 11 ÷ (line 12 x line 13 x line 14)]	0.024582	Mbtu/Kwh Sales	
	Biodiesel Sales Heat Rate			
16	Biodiesel Fuel Consumed	25,092	Mbtu	HECO-WP-1036 pg 2
17	Sales	7,484.7	Gwh	HECO-402, line 1
18	% of Biodiesel Fuel Generation to Total System	0.02	Percent	HECO-WP-1036 pg 3
19	Kwh/Gwh Conversion	1,000,000	kwh/gwh	
20	Sales Heat Rate [line 16 ÷ (line 17 x line 18 x line 19)]	0.016762	Mbtu/Kwh Sales	
	HECO Other Sales Heat Rate			
21	Total Central Station Fuel Consumed	47,908,218	Mbtu	
22	Sales	7,484.7	Gwh	
23	% of Central Stn to Total System	57.23	Percent	
24	Kwh/Gwh Conversion	1,000,000	kwh/gwh	
25	Sales Heat Rate [line 16 ÷ (line 17 x line 18 x line 19)]	0.011184	Mbtu/Kwh Sales	

Hawaiian Electric Company, Inc.
DG and Purchased Energy Loss Factor Calculations

2009 Test Year - Rate Case Update
At Proposed Rates

Line			Rate Case Update Reference
1	Net to System (gwh)	7,871.9	HECO-402, line 5
2	Sales (gwh)	7,484.7	HECO-402, line 1
3	DG & Purchase Power Loss Factor	1.052	Line 1 + Line 2

HECO 2009 Test Year Rate Case
Docket No. 2008-0083
HECO's Proposal - Merit Salary Reduction
Note (1) below.

Block of Accounts		Alloc.	Total O&M Labor Expense Reduction	O&M Labor Expense Reduction (alloc. by block)
A	B	C	D	E
		Note (2)		E=C*D
Production Operation & Maint	B30 & B31	24.00%	$532,000	$127,680
Transmission Oper & Maint	B32 & B33	8.00%	$532,000	$42,560
Distribution Oper	B34 & B35	15.00%	$532,000	$79,800
Customer Accounts	B36	5.00%	$532,000	$26,600
Customer Service	B37	7.00%	$532,000	$37,240
Administrative & General- Operation	B38	41.00%	$532,000	$218,120
Administrative & General- Maintnenance	B39			
Total		100.00%		$532,000

Note: (1) In direct testimony HECO T-13, page 47 and HECO T-17, pages 21 -22, the Company explained how the merit salaries were determined for the 2009 test year.
(2) *The allocation percentages are based on the merit labor dollars in the TY09 Pillar file by block.*

HAWAIIAN ELECTRIC COMPANY, INC
ADMINISTRATIVE AND GENERAL EXPENSES - Employee Benefits
($1000s)

		Rate Case Update, HECO T-13, Attachment 1						
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
Line	Account Description	Budget 2009	Adj	TY Est 2009	Update	Revised TY Est. 2009	Feb 09 Pension/OPEB Adj	Updated TY Est 2009
	926000 Employee Pensions and Benefits							
1	Qualified Pension Plan	14,283	340 (1)	14,623	0	14,623	16,866	31,489
2	Amortization of Regulatory Liability-2008	861	-1,471 (2)	-610	0	-610	305	-305
2a	Amortization of Regulatory Liability-2009						689	689
3	Total Qualified Pension Plan	15,144	-1,131	14,013	0	14,013	17,860	31,873
4	Non-Qualified Pension Plans	345	-345 (3)	0	0	0	0	0
5a	Other Postretirement Benefits	5,845	-621	5,224	0	5,224	1717 (a)	6,941
5b	Less: Executive Life Program		-873	-873		-873	-19	-892
		5,845	-1,494 (4)	4,351		4,351	1698	6,049
6	Amortization of SFAS 106 Regulatory Asset	1,302	0	1,302	0	1,302	0	1,302
		7,147	-1,494	5,653		5,653	1,698	7,351
7	Less: Electricity Discount	-498		-498		-498	0	-498
	subtotal Other postretirement benefits	6,649	-1,494	5,155		5,155	1,698	6,853
8a	Amortization of Regulatory Liability-2008	116	-271 (5)	-155	0	-155	77	-78
8b	Amortization of Regulatory Liability-2009						30	30
	Total Other Postretirement Benefits	6,765	-1,765	5,000	0	5,000	1,805	6,805
9	Long-Term Disability Benefits	546	-2 (6)	544	-91 (12)	453	0	453
10	Other Benefits/Administration	410	389 (7)	799	0	799	0	799
11	Subtotals: Non-Labor	23,210	-2,854	20,356	-91	20,265	0	39,930
12	Labor	841	0	841	0	841	0	841
13	Total 926000	24,051	-2,854	21,197	-91	21,106	19,665	40,771
	926010 Employee Benefits-Flex Credits							
14	Flex Credits Less Prices	-1,234	5 (8)	-1,229	139 (12)	-1,090	0	-1,090
15	Group Medical Plan	8,752	-33 (9)	8,719	1,152 (12)	9,871	0	9,871
16	Group Dental Plan	1,323	-5 (10)	1,318	-73 (12)	1,245	0	1,245
17	Group Vision Plan	204	0	204	2 (12)	206	0	206
18	Group Life Insurance Plan	1,072	-4 (11)	1,068	-259 (12)	809	0	809
19	Other/Administration	882	0	882	83 (13)	965	0	965
20	Subtotals: Non-Labor	10,999	-37	10,962	1,044	12,006	0	12,006
21	Labor	211	0	211	-36 (13)	175	0	175
22	Total 926010	11,210	-37	11,173	1,008	12,181	0	12,181
23	926020 Employee Benefits Transfer	-9,655	692	-8,963	-553	-9,516	-5,623 **	-15,139
24	Grand Total Charged to O&M	25,606	-2,199	23,407	364	23,771	14,042	37,813
25	Less CIP CT1 Average Cost			-125		-127	HECO T-11, Attch 1	
26	Interim Increase			23,282		23,644		
27	CIP CT1 Annualized			266		271	HECO T-11, Attch 1	
28	CIP CT 1 Step			23,548		23,915		
29	Total Employee Benefits (Total 926000 + Total 926010)							52,952

** Based on CA transfer rate of 28 59% (100% - 71 41% = 28.59%)

See HECO T-13 Rate Case Update for explanation of notes (1) through (13)

Note (a): Increase in OPEB costs	1,717	(Ref: Exhibit CA-101, Schedule C-14, line 3, column D; DOD-IR-104 Supplement 3/20/09, Attachment 3, p. 1)
Less. Executive Life Program (post retirement)	-19	(Delete executive life program to simplify and limit issues in this rate case)
	1,698	

873	(Rate Case Update, HECO T-13, Attachment 1, p. 2; DOD-IR-104 Supplement 3/20/09, Attachment 3, p. 1)
-892	(DOD-IR-104 Supplement 3/20/09, Attachment 3, p 1)
-19	

Hawaiian Electric Company, Inc.
Research and Development Expenses
2004 to Test Year 2009 Estimate ($ in Thousands)

	Recorded					TY-UPDATE
Description of R&D Activity	2004	2005	2006	2007	2008	2009
EPRI Dues	1,529	1,529	-	1,608	1,608	1,657
Advanced Meter & Customer Outage	-	177	-	-	-	-
Advanced Meter Infrastructure	-	-	146	383	453	611
Power Line Carrier	-	(11)	-	-	-	-
Broadband over Powerlines - McCully Trial	605	101	1	-	-	-
Broadband over Powerlines - Phase 1 Pilot	-	423	40	40	-	-
Residential Use per Customer Study	-	58	-	-	-	-
Sales Forecast Study	-	-	113	-	-	-
Fuel Additive Testing	-	-	488	-	-	-
Biofuel Feedstock Policy	-	-	-	75	-	-
Critical Peak Pricing	-	-	-	51	-	-
Grid Code Study	-	-	-	27	-	-
Biofuel Agriculture Crop Research	-	-	-	52	52	50
Biofuel Economic Analysis	-	-	-	-	121	-
Biofuel Co-Firing Project	-	-	-	-	-	649
Maui Electric System Analysis	-	-	-	89	225	-
Oahu Electric System Analysis	-	-	-	-	48	677
Electronic Shock Absorber	151	265	30	23	-	-
Technology Cost Allocation	18	31	31	29	31	34
Local EPRI Matching Funds - Note (3)	377	55	-	260	235	-
Renewable Energy Initiatives - Note (3)	-	77	279	157	69	-
Biofuels/Biomass Initiatives - Note (3)	-	140	(14)	105	96	-
Renewable Energy Recurring Activities	-	4	6	22	20	34
Technology Division	158	275	234	174	69	132
HNEI Fuel Cell Facility License	32	32	32	32	32	32
Other - Note (1)	97	119	51	141	196	104
Estimated GL code reversals - Note (2)	(144)	(135)	(146)	-	-	-
Total R&D	2,823	3,140	1,291	3,268	3,255	3,980
Exclude EPRI Dues	(1,529)	(1,529)	-	(1,608)	(1,608)	(1,657)
Total R&D excl EPRI Dues	1,294	1,611	1,291	1,660	1,647	2,323
Exclude TY2009 Oahu System Analysis						(677)
Total R&D excl EPRI Dues/Oahu Analysis	1,294	1,611	1,291	1,660	1,647	1,646
Amortization of AMI Outside Services - Note (4)						(244)
Final Settlement R&D (excluding EPRI Dues)						1,402
EPRI Dues						1,657
Final Settlement R&D (including EPRI Dues)						3,059

Note: Numbers may not total exactly due to rounding.
Note (1): Amounts include miscellaneous R&D costs of accounts 9302 (activities 730 and 731), account 549, and other various accounts.
Note (2): Refer to Ms. Patsy Nanbu's testimony at HECO T-11 for information related to GL code reversed amounts under account 922 - Administrative Expenses Transferred discussion. For 2007 - 2009, the GL code reversal amounts are allocated to each respective R&D project/activity within that year.
Note (3): For the 2009 test year, the budgets of these activities have been put toward the Biofuel Co-Firing Project.
Note (4): During settlement discussions, the Consumer Advocate separated AMI's $611,000 into outside services ($488,000) and Tower Gateway lease rental ($123,000) and proposed to amortize the $488,000 over two years. HECO and DOD agreed.

Confidential Information Deleted Pursuant To Protective Order, Filed on November 21, 2008.

Witness: S. Carver

HAWAIIAN ELECTRIC COMPANY, INC.
DOCKET NO. 2008-0083
OFFICE LEASE ADJUSTMENT
FOR THE FORECAST 2009 TEST YEAR
(000's)

Exhibit CA-101
Schedule C-17
Page 1 of 1

CONFIDENTIAL

LINE NO.	DESCRIPTION	REFERENCE	ANNUAL LEASE COST	LEASE EFFECTIVE DATE	2009 LEASE COST	ADJUSTMENT AMOUNT
	(A)	(B)	(C)	(D)	(E)	(F)
	Adjust December Update to Revised Level:					
1	HECO Revised 2009 Lease Cost	(a)			$ 3,765	
2	Less: HECO Lease Cost December Update	(b)			(3,903)	
3	Adjustment to Reflect Revised Lease Cost					$ (138)
	Adjust to Average Test Year:					
4	Waterhouse 105/106	(a)(c)	$ [redacted]	9/1/09	$ [redacted]	$ [redacted]
5	Waterhouse 401/402/403	(a)(c)(d)		1/1/09		
6	445/461 Cooke Street	(a)(e)		7/1/09		
7	CCP 21st Floor	(a)(e)		9/1/09		
8	Adjustment to Reflect 2009 Lease Costs		$ 626			$ (339)
9	**CA Adjustment to Lease Costs - Revised Leases and 2009 Costs**					**$ (477)**

Footnotes :

(a) Source: HECO response to CA-IR-344 (Revised 3/31/09), Attachment 2 – revised HECO-1405.
(b) Source: HECO T-14 Update, page 12 – updated HECO-1405.
(c) Source: HECO T-14 Update, Confidential Attachments 1 & 4.
(d) Lease executed November 2008 & commence January 2009 per CA-IR-344.
(e) Source: HECO response to CA-IR-344 (Revised 3/31/09), Confidential Attachments 3 & 4.

SUMMARY OF ADJUSTMENT ATTRIBUTED TO A REDUCTION IN HEADCOUNT
(Production (w/o Ops & Maint Div), T&D, Customer Acct., Customer Svc and A&G)

2.68% Vacancy Rate Block of Accounts A	Labor Expense (Note 1) B	Labor Expense Reduction Using Factor (Note 2) C=B*-2.68%	Payroll Tax Reduction (Note 3) D=C*8.29%	Employee Benefits Reduction (Note 4) E=(B/Total)*819	Total Expense Reduction F=C+D+E
Production (w/o Mtnce and Ops RAs)	$ 6,799	$ (182)	$ (15)	$ (95)	$ (292)
Transmission	$ 5,068	$ (136)	$ (11)	$ (71)	$ (218)
Distribution	$ 12,717	$ (341)	$ (28)	$ (178)	$ (547)
Customer Accounts	$ 8,102	$ (217)	$ (18)	$ (113)	$ (348)
Customer Service	$ 3,470	$ (93)	$ (8)	$ (48)	$ (149)
Administrative & General	$ 22,517	$ (603)	$ (50)	$ (314)	$ (967)
Total	$ 58,673	$ (1,572)	$ (130)	$ (819)	$ (2,521)

Note 1: See 'Net Prod O&M Labor est ' tab; HECO T-8 update, HECO-809; HECO T-9 update, HECO-901; HECO T-10 update, HECO-1005; HECO T-11 update, HECO-1101.

Note 2: See Model tab. Percent difference between predicted average using model v. 2009 test year average (13-mo. ave.):		-2.68%
Note 3: See next page for support		8.29%
Note 4: See next page for support.		$ 23.4
Difference between predicted average using model v. 2009 test year, 9-mo. ave.	# of employees	-35
Total employee benefits reduction allocated among accounts (see Model tab)	Total reduction	$ (819)

HECO RATE CASE UPDATE - LABOR ADJUSTMENT (HECO T-15, ATTACHMENT 6, PAGE 5)
SUMMARY OF ADJUSTMENT ATTRIBUTED TO A REDUCTION IN HEADCOUNT
(T&D, Customer Acct., Customer Svc and A&G)

2.37% Vacancy Rate Block of Accounts A	Labor Expense (Note 1) B	Labor Expense Reduction Using Factor (Note 2) C=B*-2.37%	Payroll Tax Reduction (Note 3) D=C*8.29%	Employee Benefits Reduction (Note 4) E=(B/Total)*397	Total Expense Reduction F=C+D+E
Transmission	$ 5,068	$ (120)	$ (10)	$ (39)	$ (169)
Distribution	$ 12,717	$ (302)	$ (25)	$ (97)	$ (424)
Customer Accounts	$ 8,102	$ (192)	$ (16)	$ (62)	$ (270)
Customer Service	$ 3,470	$ (82)	$ (7)	$ (27)	$ (116)
Administrative & General	$ 22,517	$ (534)	$ (44)	$ (172)	$ (750)
Total	$ 51,874	$ (1,230)	$ (102)	$ (397)	$ (1,729)

HECO FINAL SETTLEMENT - LABOR ADJUSTMENT
SUMMARY OF ADJUSTMENT ATTRIBUTED TO REVISED VACANCY RATE OF 2.68%
(Production (w/o Ops & Maint Div), T&D, Customer Acct., Customer Svc and A&G)

Net Change Block of Accounts A	Labor Expense (Note 1) B	Labor Expense Reduction Using Factor (Note 2) C=B*-2.68%	Payroll Tax Reduction (Note 3) D=C*8.29%	Employee Benefits Reduction (Note 4) E=(B/Total)*819	Total Expense Reduction F=C+D+E
Production (w/o Mtnce and Ops RAs)	$ 6,799	$ (182)	$ (15)	$ (95)	$ (292)
Transmission	$ 5,068	$ (16)	$ (1)	$ (32)	$ (49)
Distribution	$ 12,717	$ (39)	$ (3)	$ (81)	$ (123)
Customer Accounts	$ 8,102	$ (25)	$ (2)	$ (51)	$ (78)
Customer Service	$ 3,470	$ (11)	$ (1)	$ (21)	$ (33)
Administrative & General	$ 22,517	$ (69)	$ (6)	$ (142)	$ (217)
Total	$ 58,673	$ (342)	$ (28)	$ (422)	$ (792)

Hawaiian Electric Co., Inc.
Overall Labor Adjustment
Employee Benefits and Payroll Tax Factors

Line #	Description	Amount	Reference
1	A&G - Employee Benefits	$ 37,813,000	Revised. See HECO discussion on CA-101, Schedule C-14
2	Average Number of Employees Covered for Group Insurance Plans	1,618	Rate Case Update HECO T-13, Attachment 9
3	Estimated Benefit Cost per Employee (Ln 1/Ln2)	$ 23,400	

1	Payroll Taxes Charged to Operations	$53,090.13	Rate Case Update HECO T-11, Attachment 4, page 3 Rate Case Update HECO T-16, Attachment 1
2	Total Direct Labor Costs (note a)	$640,575.76	Rate Case Update HECO T-11, Attachment 4, page 3
3	Payroll Tax Factor (Ln 1/Ln 2)	8.29%	

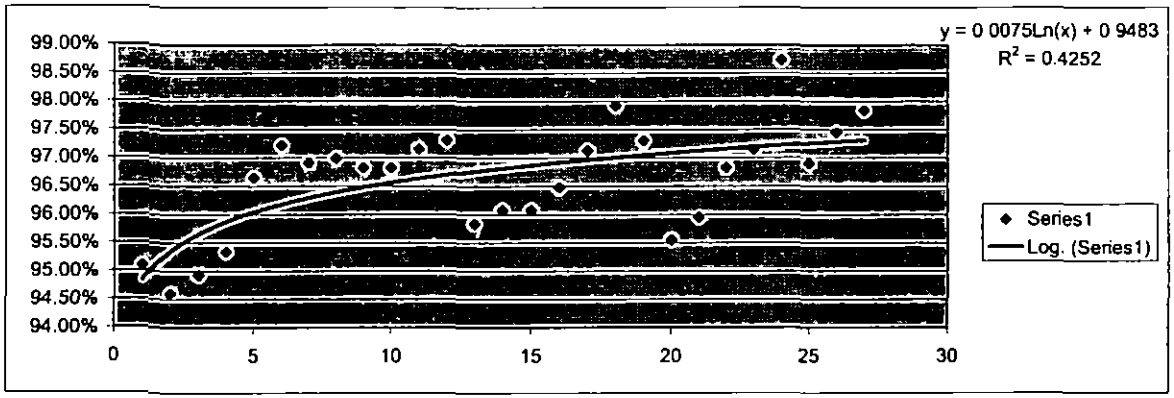
Note (a): Represents the direct labor costs only for O&M expenses that are associated with the staffing changes identified in Rate Case Update HECO T-15.

DATA INPUT:

HISTORICAL EMPLOYMENT HEADCOUNT DATA
(Excludes Power Supply Employees)

Date	Period (x) *	% Actual / Budgeted (y)	Actual	Budgeted	Difference
1/31/2007	1	95.09%	1162	1222	(60)
2/28/2007	2	94.60%	1156	1222	(66)
3/31/2007	3	**94.93%**	1160	1222	(62)
4/30/2007	4	95.34%	1165	1222	(57)
5/31/2007	5	96.64%	1181	1222	(41)
6/30/2007	6	**97.22%**	1189	1223	(34)
7/31/2007	7	96.91%	1192	1230	(38)
8/31/2007	8	96.99%	1193	1230	(37)
9/30/2007	9	96.83%	1190	1229	(39)
10/31/2007	10	96 83%	1190	1229	(39)
11/30/2007	11	97.15%	1194	1229	(35)
12/31/2007	12	**97.31%**	1196	1229	(33)
1/30/2008	13	95.84%	1197	1249	(52)
2/28/2008	14	96.08%	1201	1250	(49)
3/31/2008	15	**96.08%**	1201	1250	(49)
4/30/2008	16	96.48%	1206	1250	(44)
5/31/2008	17	97.12%	1216	1252	(36)
6/30/2008	18	**97.92%**	1226	1252	(26)
7/31/2008	19	**97.30%**	1225	1259	(34)
8/31/2008	20	95.55%	1203	1259	(56)
9/30/2008	21	**95.95%**	1208	1259	(51)
10/31/2008	22	**96.83%**	1220	1260	(40)
11/30/2008	23	97.14%	1224	1260	(36)
12/31/2008	24	98.73%	1245	1261	(16)
1/30/2009	25	96.91%	1253	1293	(40)
2/28/2009	26	97.45%	1260	1293	(33)
3/31/2009	27	97.84%	1268	1296	(28)

RESULTS OF REGRESSION ANALYSIS



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.652047943
R Square	0.42516652
Adjusted R Squar	0.402173181
Standard Error	0.007524486
Observations	27

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.001046913	0.001046913	18.49085584	0.000228539
Residual	25	0.001415447	5.66179E-05		
Total	26	0.00246236			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95 0%*
Intercept	0.948281969	0.004437132	213.7150512	2.65546E-42	0.939143524	0.957420414	0.939143524	0.957420414
X Variable 1	0.007542978	0.00175414	4.300099515	0.000228539	0.003930258	0.011155698	0.003930258	0.011155698

COMPARISON OF EMPLOYEE HEADCOUNT - 2009 TEST YEAR

Date	Period (x)	% Actual / Budgeted (y) [1]	Estimated Headcount [2]	Test Year Updates [3]	Difference
1/30/2009	25	97.24%	1257	1293	(36)
1/30/2009	25	97.24%	1257	1293	(36)
2/28/2009	26	97.27%	1261	1296	(35)
3/30/2009	27	97 30%	1268	1303	(35)
4/30/2009	28	97.33%	1268	1303	(35)
5/31/2009	29	97.36%	1270	1304	(34)
6/30/2009	30	97.38%	1275	1309	(34)
7/31/2009	31	97.41%	1277	1311	(34)
8/30/2009	32	97 43%	1277	1311	(34)
9/30/2009	33	97.45%	1276	1309	(33)
10/31/2009	34	97.47%	1276	1309	(33)
11/30/2009	35	97.50%	1276	1309	(33)
12/31/2009	36	97.52%	1277	1309	(32)

[1] Derived from the regression equation, y = 0.0075Ln(x) + 0.9483.
[2] Calculated using % actual to budgeted multiplied by 2009 test year non-PS Op & Maint employee headcount
[3] From HECO-WP-1501 updated (non-PS Ops & Maint Div (158) employees)

AVERAGE	1270	1305	(35)	-2.68%
MIDPOINT	1275	1309	(34)	-2.60%
WTD AVG	1270	1305	(35)	-2.68%

AVERAGE	
MIDPOINT	6/30/2009
WTD AVG (12 Mo.)	SUM OF ESTIMATED MONTH TIMES TEST YEAR MONTH DIVIDE BY TOTAL TEST YEAR

Hawaiian Electric Company, Inc.
2009 Rate Case

2009 Maintenance Division Labor Cost

RA	EE	Account: Operations	Account: Maintenance	Grand Total
PIL	150	$ 17,676	$ 2,978,568	$ 2,996,244
	421	$ 2,080	$ 337,545	$ 339,625
PIL Total		$ 19,756	$ 3,316,113	$ 3,335,869
PIM	150	$ 47,175	$ 28,873	$ 76,049
	421	$ 4,990	$ 5,295	$ 10,285
PIM Total		$ 52,165	$ 34,168	$ 86,334
PIN	150	$ 8,116	$ 827,489	$ 835,605
	421	$ 955	$ 105,320	$ 106,275
PIN Total		$ 9,071	$ 932,809	$ 941,880
PIT	150	$ 233,477	$ 6,305,669	$ 6,539,146
	421	$ 31,080	$ 745,280	$ 776,360
PIT Total		$ 264,557	$ 7,050,949	$ 7,315,506
PIX	150	$ 1,190	$ 2,783,837	$ 2,785,026
	421	$ 140	$ 338,770	$ 338,910
PIX Total		$ 1,330	$ 3,122,607	$ 3,123,936
PIZ	150	$ 72,836	$ 211,980	$ 284,816
	421	$ 10,155	$ 24,080	$ 34,235
PIZ Total		$ 82,991	$ 236,060	$ 319,051
Grand Total		$ 429,869	$ 14,692,706	$ 15,122,575

2009 Operating Division Labor Cost

RA	EE	Account: Operations	Account: Maintenance	Grand Total
PIH	150	$ 1,684,993	$ 81,962	$ 1,766,955
	421	$ 216,740	$ 11,200	$ 227,940
PIH Total		$ 1,901,733	$ 93,162	$ 1,994,895
PIK	150	$ 3,586,534	$ 265,250	$ 3,851,784
	421	$ 474,595	$ 34,495	$ 509,090
PIK Total		$ 4,061,129	$ 299,745	$ 4,360,874
PIO	150	$ 171,590	$ -	$ 171,590
	421	$ 18,150	$ -	$ 18,150
PIO Total		$ 189,740	$ -	$ 189,740
PIW	150	$ 4,182,388	$ -	$ 4,182,388
	421	$ 556,060	$ -	$ 556,060
PIW Total		$ 4,738,448	$ -	$ 4,738,448
PIY	150	$ 205,736	$ -	$ 205,736
	421	$ 27,000	$ -	$ 27,000
PIY Total		$ 232,736	$ -	$ 232,736
Grand Total		$ 11,123,786	$ 392,906	$ 11,516,692

Source:

1) Expense element 150 amounts from HECO T-7, CA-IR-1, Attachment 3.
2) Expense element 421 amounts from HECO-WP-101(H).

Hawaiian Electric Company, Inc.
2009 Rate Case

Calculation of HECO Proposed Production O&M Labor Adjustment

Total Production O&M Labor	$ 33,439,000	(from HECO T-7 Update, Attachment 1)
Maintenance Div Labor Total	$ 15,123,000	(from page 1)
Operating Div Labor Total	$ 11,517,000	(from page 1)
Net Production O&M Labor	$ 6,799,000	

Accumulated Deferred Income Taxes

The issue of whether tax bonus depreciation was reflected in HECO's estimated accumulated deferred income taxes ("ADIT") balances was raised by both the Consumer Advocate (CA-T-1, page 122) and the DOD (DOD T-1, page 21). In conference calls with the two parties, HECO confirmed that bonus depreciation, which was signed into law on February 17, 2009, was not included in its estimates of ADIT for the test year 2009.

HECO has developed a revised estimate of tax bonus depreciation in 2009 and its incremental impact on the ADIT balances for rate base purposes. The revised estimate of the incremental impact of bonus depreciation for 2009 is $41,132,662. The increase in ADIT associated with this tax depreciation is $14,396,431 and the impact on average rate base would be $7,198,000, or 50% of the total increase. Only the federal 35% rate is used in the calculation of ADIT because Hawaii has not adopted the federal bonus depreciation rules in prior years and is not expected to adopt the 2009 provision. See HECO T-16 Attachment 1A.

The bonus depreciation estimate was computed based on a review of 2009 plant additions (see HECO T-16 Attachment 1B and Rate Case Update, T-17, page 5). The following assumptions were used in calculating this estimate:

1) All major programs, except vehicles, will qualify for bonus depreciation.

2) All specific projects exceeding $1.0 million were reviewed and those with project costs incurred prior to 2008 were treated as non-qualified.

3) For the CIP CT-1 project, HECO assumed that the company could bifurcate the transmission line portion (and therefore take bonus depreciation) from the turbine generator portion, which was approved and began prior to 2008.

4) For those projects less than $1.0 million (not reviewed for timing of project costs incurred), HECO assumed a portion of these projects will qualify for tax bonus depreciation, based on the percentage of projects over $1.0 million that were reviewed and deemed to qualify. This additional step was not performed in calculating our original estimate of bonus depreciation.

HAWAIIAN ELECTRIC CO., INC.
BONUS DEPRECIATION
2009

	REVISED 5/7/09	
Depreciation from Rate Case Update	85,063,600.79	A
with Bonus Tax Depreciation	126,196,262.98	
Difference	(41,132,662.19)	
Deferred Tax Rate	35%	
Additional Deferred Tax Liability at 12/31/09	(14,396,431.77)	
Incremental Impact on Rate base (increase in average ADIT)	(7,198,215.88)	

NOTE A> Rate case update depreciation did not include any bonus depreciation for 2009.

HECO T-16
ATTACHMENT 1B
PAGE 1 OF 4
FINAL SETTLEMENT

HAWAIIAN ELECTRIC CO., INC.
ESTIMATE OF BONUS DEPRECIATION
2009

Project #	Project Title	Plant Addition Date	Func Cat	Proj Type	2009		Land	Programs	CT1	Bonus Projects Reviewed excluding CT1	No Bonus	Projects not reviewed	34%
P1505000	Other Misc Comm Fac SOD	n/a	Communication	Pgm	212,930	Bonus		212,930					-
P1251000	Misc Tel Eqpt NT	n/a	Communication	Pgm	10,936	Bonus		10,936					-
P1500000	Misc CM Fac-Op & Ctrl (TD)	n/a	Communication	Pgm	294,609	Bonus		294,609					-
P9028000	Mobile Radio F1/F2 Replace	n/a	Communication	Pgm	843,470	Bonus		843,470					-
P0001167	Waiau-Ewa Nui Fiber Optic Replace	2009/06	Communication	Proj	1,566,474						1,566,474		-
P0001705	Wrd undgd security cabling	2009/01	Communication	Proj	367,338							367,338	126,106
P0001134	CIP1 Unit Addition-Fiber	2009/04	Communication	Proj	531,769	Bonus			531,769				-
P0001136	CIP1 Unit Addition-Kahe Bkrs	2009/05	Communication	Proj	1,720,778	Bonus			1,720,778				-
P0001137	CIP1 Unit Addition-Kalaeloa	2009	Communication	Proj	289,912	Bonus			289,912				-
P0000839	Comm. Links FI-Maklpa	20060313	Communication	Proj	196,030							196,030	67,296
P0001400	Ewa Nui-CIP Fiber Repl	2008/12	Communication	Proj	4,180							4,180	1,435
P0000500	Misc Office Furniture	n/a	Comp/Off/Furn/Tools	Pgm	196,805	Bonus		196,805					-
P0000501	Misc Office Equipment	n/a	Comp/Off/Furn/Tools	Pgm	20,997	Bonus		20,997					-
P4150000	Monitoring Services	2007/12	Comp/Off/Furn/Tools	Pgm	46,574	Bonus		46,574					-
P0000653	Collaborative Communications	n/a	Comp/Off/Furn/Tools	Pgm	35,867	Bonus		35,867					-
P0000652	Enterprise Computing	n/a	Comp/Off/Furn/Tools	Pgm	13,670	Bonus		13,670					-
P0000692	CSD Technical Support Prgrm	n/a	Comp/Off/Furn/Tools	Pgm	92,498	Bonus		92,498					-
P0001529	Power Supply - Capital Tools		Comp/Off/Furn/Tools	Pgm	600,386	Bonus		600,386					-
P1081000	ED Capitalized Tools & Equip	n/a	Comp/Off/Furn/Tools	Pgm	290,902	Bonus		290,902					-
P1243000	PCs, Servers & Network	n/a	Comp/Off/Furn/Tools	Pgm	1,421,680	Bonus		1,421,680					-
P1244000	Copiers/Faxes/Printers	n/a	Comp/Off/Furn/Tools	Pgm	43,744	Bonus		43,744					-
P0001547	Ward ITS Generator Repl	2009/12	Comp/Off/Furn/Tools	Proj	358,940							358,940	123,223
P0001708	Environmental Lab Expansion	2009/05	Comp/Off/Furn/Tools	Proj	194,837							194,837	66,887
P0001350	Baseyards Priority 2 - 2009	2009/12	Comp/Off/Furn/Tools	Proj	159,797							159,797	54,858
P0001354	MEVA Priority 1 - 2009	2009/12	Comp/Off/Furn/Tools	Proj	108,566							108,566	37,270
P0001683	Waiau Security Enhancements	2009/08	Comp/Off/Furn/Tools	Proj	17,237							17,237	5,917
P0001684	Ewa Nui Security Enhancement	2009/07	Comp/Off/Furn/Tools	Proj	85,423							85,423	29,325
P0001685	Kahe Security Enhancements	2009/08	Comp/Off/Furn/Tools	Proj	5,034							5,034	1,728
P0001014	Ward Avenue Security Enhancements	20041223	Comp/Off/Furn/Tools	Proj	63,000							63,000	21,628
P0000571	CIS Replacement	2009/05	Comp/Off/Furn/Tools	Proj	595,977							595,977	204,597
P0001565	EMESA Implementation	2009/09	Comp/Off/Furn/Tools	Proj	10,472							10,472	3,595
P0001010	HR Suite Phase 1	2009/04	Comp/Off/Furn/Tools	Proj	164,040							164,040	56,314
P1700000	Misc UG Svc & Extn (CID)	n/a	Distribution	Pgm	10,165,646	Bonus		10,165,646					-
P1820000	Minor UG Addns (CID)	n/a	Distribution	Pgm	579,576	Bonus		579,576					-
P3400000	Prev OH Dist Repl	n/a	Distribution	Pgm	3,116,786	Bonus		3,116,786					-
P1510000	Misc OH Svc & Extn (CID)	n/a	Distribution	Pgm	1,200,539	Bonus		1,200,539					-
P0000120	Corr (Inc Emg) OH Trsf Rpl	n/a	Distribution	Pgm	429,787	Bonus		429,787					-
P0000121	Corr (Inc Emg) UG Trsf Rpl	n/a	Distribution	Pgm	486,371	Bonus		486,371					-
P0000122	Cor (Inc Emg) Mis Cable Rpl	n/a	Distribution	Pgm	6,363,111	Bonus		6,363,111					-
P0000123	Corr (Inc Emg) OH Dist Rpl	n/a	Distribution	Pgm	2,788,210	Bonus		2,788,210					-
P1580000	Minor OH Dist Addn (CID)	n/a	Distribution	Pgm	1,115,193	Bonus		1,115,193					-
P1990000	*Minor T&D System Programs*	*n/a*	*Distribution*	*Pgm*	*1,700,000*	*Bonus*		*1,700,000*					-
P1810000	Prev Misc Cable Failure Rpl	n/a	Distribution	Pgm	4,211,882	Bonus		4,211,882					-
P0001309	Net Energy Metering	2006/12	Distribution	Pgm	58,377	Bonus		58,377					-
P1680000	Tsf & Equip Pur (CID)	n/a	Distribution	Pgm	5,545,377	Bonus		5,545,377					-
P1789000	Preventive OH Transf Repl	n/a	Distribution	Pgm	301,207	Bonus		301,207					-
P1793000	Preventive UG Transf Repl	n/a	Distribution	Pgm	255,174	Bonus		255,174					-
P1670000	P&I&Test Meters & Mtr Eq	n/a	Distribution	Pgm	894,126	Bonus		894,126					-
P1480000	Minor Dist Sub Addns	n/a	Distribution	Pgm	1,188,820	Bonus		1,188,820					-
P0000335	Intl Savings & Loan Vault	2009/07 su	Distribution	Proj	406,723							406,723	139,626
P0001081	Auahi Street 12kV OH to UG	ciac su	Distribution	Proj	191,624							191,624	65,784
P0001121	Maunalani Hts Reliab Impvmts	2009/12	Distribution	Proj	1,598,758						1,598,758		-
P0001358	Queens Medical Center Upgrd	2009	Distribution	Proj	139,183							139,183	47,781
P0001404	Kal Hwy at Makapuu - 12kV UG	ciac	Distribution	Proj	265,563							265,563	91,167
P0001490	Ahuimanu Pl OH & UG Cbl Upgr	2008/12	Distribution	Proj	163,979							163,979	56,293

HAWAIIAN ELECTRIC CO., INC.
ESTIMATE OF BONUS DEPRECIATION
2009

Project #	Project Title	Plant Addition Date	Func Cat	Proj Type	2009		Land	Programs	CT1	Bonus	No Bonus	Projects not reviewed	34%
										Projects Reviewed excluding CT1			
P0001560	Waiakamilo Tsf #2 Replace	2009/05	Distribution	Proj	731,756							731,756	251,209
P0001561	Kamokila #4 12 kV Line Ext	2009/02	Distribution	Proj	395,459							395,459	135,760
P0001572	Bougainville Subd SV4613	2009/01	Distribution	Proj	165,000							165,000	56,644
P0001580	2008 Spare 8% Tsf #1	2009/05	Distribution	Proj	677,029							677,029	232,421
P0001591	2008 Spare 15kV Switchgear#1	2009/02	Distribution	Proj	323,735							323,735	111,137
P0001594	Allure Waikiki 12kV UG Reloc	2009/12	Distribution	Proj	425,096							425,096	145,934
P0001682	Kapolei IC, Ph1-12kV OH & UG	2009/03 c	Distribution	Proj	394,572							394,572	135,455
P0001686	Kapolei IC, Ph1-12kV OH Conv	2009/09 c	Distribution	Proj	18,800							18,800	6,454
P0001690	Ironwoods - 12kV OH to UG	2009/10 c	Distribution	Proj	492,304							492,304	169,006
P0001691	Waiakamilo Tsf #1 Replace	2009/01	Distribution	Proj	802,287							802,287	275,422
P0000192	Waikiki Rehabilitation Project 3	2009/04	Distribution	Proj	1,928,447						1,928,447		-
P0001100	Aina Haina Subd-Cable Ph3	2009/12	Distribution	Proj	703,161							703,161	241,392
P0001314	St Lib V6422 Trayer Sw Repl	2009	Distribution	Proj	20,292							20,292	6,966
P0001315	Capitol Ctr V6608 Trayer Sw Rpl	2009	Distribution	Proj	12,710							12,710	4,363
P0001316	Inn Prk V4322 Trayer Sw Repl	2009	Distribution	Proj	5,848							5,848	2,008
P0001318	Honvest V6193 Trayer Sw Repl	2008/10	Distribution	Proj	6,912							6,912	2,373
P0001482	Mikilua Sub T&D Work	2009/12	Distribution	Proj	326,173							326,173	111,974
P0001483	Mikilua Sub Tsf #3 Work	2009/10	Distribution	Proj	1,798,033						1,798,033		-
P0001520	Barbers Pt TF Tsf #2 Install	2009/04	Distribution	Proj	1,601,724						1,601,724		-
P0001522	Barbers Pt TF 12kV Ckt	2009/04	Distribution	Proj	395,457							395,457	135,759
P0001563	Kamokila Tsf #3 Install	2009/05	Distribution	Proj	1,839,542	Bonus				1,839,542			-
P0001564	Kamokila SS Tsf #3 Circuiting	2009/05	Distribution	Proj	704,106							704,106	241,717
P0001568	Ocean Pointe Tsf 2 Circuits	2009/08	Distribution	Proj	147,289							147,289	50,564
P0001569	Ocean Pointe SS Tsf 2	2009/08	Distribution	Proj	1,392,329					1,392,329			-
P0001710	Chevron Telecom		Distribution	Proj	631,922							631,922	216,936
P0001711	Chevron Electrical Upgrade		Distribution	Proj	671,847							671,847	230,642
P0001567	Airport Dist Feeders 2B & 3B	2009/12	Distribution	Proj	1,458,836					1,458,836			-
P1370000	Distr R/W Purch (Blanket)	n/a	Land	Pgm	65,000		65,000						-
P1373000	46kv R/W Purch (blanket)	n/a	Land	Pgm	36,000		36,000						-
P0000062	Ce-Terminating Trust Esmnts	2003	Land	Proj	56,573		56,573						-
P0001109	Wahiawa 46Kv Ln-Schofield	2009/12	Land	Proj	230,000		230,000						-
P0001504	Kaloi Sub Land Transf	2009/12	Land	Proj	2,296,439		2,296,439						-
P0001334	W10 Inlet Air Filtration	2009/11	Non-Steam Production	Proj*	1,660,248						1,660,248		-
P4900000	CIP1 Unit 1 Addition	2009/07	Non-Steam Production	Proj*	143,809,745				143,809,745				-
P1870000	PROG Power Station Misc	n/a	Steam Production	Pgm	392,830	Bonus		392,830					-
P1429000	PROG Misc Power Plant Adds	n/a	Steam Production	Pgm	2,471,858	Bonus		2,471,858					-
P0000056	H8 Blr Elec Warm Sys	2008/12	Steam Production	Proj	1,042,211						1,042,211		-
P0000086	W0 Waiau WW Oil Detectors	2009/08 su	Steam Production	Proj	111,027							111,027	38,115
P0000620	K0 Kahe Fire Water Tank 2	2009/06	Steam Production	Proj	1,292,072						1,292,072		-
P0000635	K1 Elec Brkr Rm Ventilation	2009/09	Steam Production	Proj	174,592							174,592	59,937
P0000661	W0 W2 Maint Laydown Area	2009	Steam Production	Proj	3,674							3,674	1,261
P0000680	W0 Waiau Waste Oil Recover	2009/06	Steam Production	Proj	404,398							404,398	138,828
P0000787	K5&6 Lube water pump	2009	Steam Production	Proj	110,667							110,667	37,992
P0000797	W3-W4 Svc Air Compr	2009	Steam Production	Proj	372,914							372,914	128,020
P0000798	W6 Instr Air Compr	2009	Steam Production	Proj	128,404							128,404	44,081
P0000956	W0 WWTF Chem Feed Upgrades	2009/08	Steam Production	Proj	1,533,432						1,533,432		-
P0000981	K5/6 Brkr Deck AC	2009	Steam Production	Proj	461,847							461,847	158,550
P0001132	K6 Kahe FWH 64 Replace	2009/07	Steam Production	Proj	934,765							934,765	320,901
P0001141	W3 Waiau 3 Blowoff Tank	2009/09	Steam Production	Proj	196,053							196,053	67,304
P0001142	W4 Waiau 4 Blowoff Tank	2009/09	Steam Production	Proj	180,268							180,268	61,885
P0001381	K5 Kahe FWH 53 Replace	2009/02	Steam Production	Proj	773,913							773,913	265,681
P0001392	W0 WWTF Filter Press	2009/08	Steam Production	Proj	1,884,388						1,884,388		-
P0001441	K2 FWH Turb. Wtr. Ind. Pvt.	2009/06	Steam Production	Proj	901,600							901,600	309,516
P0001442	K5/K6 Diesel Tank Expansion	2009/11	Steam Production	Proj	250,487							250,487	85,991
P0001444	K6 Seal Air Dmpr Drv Replace	2009/03	Steam Production	Proj	147,749							147,749	50,722

HAWAIIAN ELECTRIC CO., INC.
ESTIMATE OF BONUS DEPRECIATION
2009

Project #	Project Title	Plant Addition Date	Func Cat	Proj Type	2009		Land	Programs	CT1	Bonus	No Bonus	Projects not reviewed	34%
										Projects Reviewed excluding CT1			
P0001473	K6 Voltage Regulator Upgrade	2009/03	Steam Production	Proj	671,300							671,300	230,455
P0001474	K5 Voltage Regulator Upgrade	2009	Steam Production	Proj	668,863							668,863	229,618
P0001533	W8 SW/Fire Pump Replacement	2009/09	Steam Production	Proj	162,065							162,065	55,636
P0001534	BPT FO Tk131 FloorRenovation	2009/04	Steam Production	Proj	4,165,481						4,165,481		-
P0001536	W3&4 Phase Shift Transformer	2009/01	Steam Production	Proj	227,400							227,400	78,066
P0001538	K3 PCT Upgrade	2009/10	Steam Production	Proj	350,521							350,521	120,332
P0001573	K1 BFP 12 Motor Replacement	2009/06	Steam Production	Proj	237,844							237,844	81,651
P0001574	K2 Repl H2 Purity Meter	2009/06	Steam Production	Proj	138,274							138,274	47,469
P0001575	K1 Repl H2 Purity Meter	2009/08	Steam Production	Proj	145,442							145,442	49,930
P0001577	K3 Biofuel Co-Firing	2009/10	Steam Production	Proj	2,211,814	Bonus				2,211,814			-
P0001614	W5 CWP No. 52 Replacement	2009	Steam Production	Proj	327,932							327,932	112,578
P0001625	K3 Exciter Air Conditioning	2009	Steam Production	Proj	139,555							139,555	47,909
P0001639	K1 Service Water Strainer	2009/09	Steam Production	Proj	91,211							91,211	31,312
P0001640	K2 Service Water Strainer	2009/06	Steam Production	Proj	93,817							93,817	32,207
P0001687	K3 BFP 32 Motor Replacement	2009/10	Steam Production	Proj	236,346							236,346	81,137
P0001688	W5 BFP 51 Motor Replacement	2009/11	Steam Production	Proj	240,414							240,414	82,533
P0001689	Kahe Technical Trailer	2009/01	Steam Production	Proj	446,250							446,250	153,196
P0001169	CIP0 Kahe RO Water Project	2009/08	Steam Production	Proj	1,174,781						1,174,781		-
P0001174	K2 BFP Automated Test	2009	Steam Production	Proj	109,417							109,417	37,562
P0001251	K3 Condensate Pump	2009/11	Steam Production	Proj	331,079							331,079	113,658
P0001252	K4 Condensate Pump	2009/11	Steam Production	Proj	331,079							331,079	113,658
P0001257	K0 Kahe Tank #11 Lvl Gauge	2009	Steam Production	Proj	35,153							35,153	12,068
P0001258	K0 Kahe Tank #12 Lvl Gauge	2009	Steam Production	Proj	11,048							11,048	3,793
P0001260	K0 Kahe Tank #14 Lvl Gauge	2009	Steam Production	Proj	17,530							17,530	6,018
P0001219	K1 FWH 11 Press/Temp Instr	2009	Steam Production	Proj	87,514							87,514	30,043
P0001220	K1 FWH 12 Press/Temp Instr	2009	Steam Production	Proj	87,514							87,514	30,043
P0000980	H8 Battery Bank Replacement	2009	Steam Production	Proj	267,445							267,445	91,813
P0001131	H9 Honolulu FWH 94 Replace	2009	Steam Production	Proj	825,655							825,655	283,444
P0000854	K1 Excitation System	2009/08 su	Steam Production	Proj	1,189,355						1,189,355		-
P0000301	K1 Kahe FWH 12 Replace	2009/09	Steam Production	Proj	746,546							746,546	256,286
P0000494	K1 Kahe FWH 11 Replace	2009/09	Steam Production	Proj	739,253							739,253	253,783
P0000861	K1 Annunciator Replacement	2009/09	Steam Production	Proj	930,836							930,836	319,552
P0000871	K1 Sootblower Controls	2009/09	Steam Production	Proj	483,678							483,678	166,045
P0000799	K2 Operator Console Upgrade	2009/06	Steam Production	Proj	430,935							430,935	147,938
P0000853	K2 Excitation System	2009/06	Steam Production	Proj	1,460,511						1,460,511		-
P0000873	K2 Sootblower Controls	2009/06	Steam Production	Proj	807,820							807,820	277,321
P0000890	K5 Ignitor Atomization	2009	Steam Production	Proj	575,194							575,194	197,462
P0000809	K6 Annunciator Replacement	2009/03	Steam Production	Proj	1,175,741						1,175,741		-
P0000484	W7 Waiau FWH 75 Replace	2008/11	Steam Production	Proj	1,040,894						1,040,894		-
P0001324	K1 UPS Panel Upgrade	2009/09	Steam Production	Proj	74,273							74,273	25,498
P0001329	K6 UPS Panel Upgrade	2009/03	Steam Production	Proj	73,932							73,932	25,381
P0001332	K2 UPS Panel Upgrade	2009/06	Steam Production	Proj	75,300							75,300	25,850
P0000632	K3 Exciter/Regulator Upgrade	20070919	Steam Production	Proj	1,946							1,946	668
P0000827	K3 DCS Balance of Plant I/O	20070919	Steam Production	Proj	6,328							6,328	2,172
P9539000	K3 Boiler Control Upgrade	20070919	Steam Production	Proj	13,441							13,441	4,614
P0000636	W0 Waiau Chlorine Dioxide	20080730	Steam Production	Proj	200							200	69
P0000637	K0 Kahe Chlorine Dioxide	20080403	Steam Production	Proj	200							200	69
P0001263	K5 Air Htr Rotor Stop Alarm	2008/12	Steam Production	Proj	1,328							1,328	456
P0001531	W0 Startup Transformer	20080414	Steam Production	Proj	2,595							2,595	891
P0001197	K5 Hydrogen Gas Dryer	2008/12	Steam Production	Proj	4,268							4,268	1,465
P0000856	W7 Main Transformer	20080714	Steam Production	Proj	4,572							4,572	1,570
P0000812	K5 Annunciator Replacement	2008/12	Steam Production	Proj	5,250							5,250	1,802
P0001183	K5 Gen Protective Relay	2008/12	Steam Production	Proj	6,703							6,703	2,301
P0000858	H8 Annunciator Replacement	20080804	Steam Production	Proj	11,918							11,918	4,091
P0000502	Waiau Minor Gen Addns	n/a	Structural	Pgm	74,455	Bonus		74,455					-

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ATTACHMENT 1B
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FINAL SETTLEMENT

HAWAIIAN ELECTRIC CO., INC.
ESTIMATE OF BONUS DEPRECIATION
2009

Project #	Project Title	Plant Addition Date	Func Cat	Proj Type	2009		Land	Programs	CT1	Bonus	No Bonus	Projects not reviewed	34%
										Projects Reviewed excluding CT1			
P0000503	Ward Ave Minor Addns	n/a	Structural	Pgm	888,264	Bonus		888,264					-
P0000504	King St Minor Addns	n/a	Structural	Pgm	84,343	Bonus		84,343					-
P0000505	Other Minor Gen Plt Addns	n/a	Structural	Pgm	170,325	Bonus		170,325					-
P0001422	New Ward MW Battery Rm	2009	Structural	Proj	586,145							586,145	201,221
P0001287	Ward bldg 1/2 Atrium Roof	2009/12	Structural	Proj	549,497							549,497	188,640
P1690000	Minor T&D Customer Programs	n/a	Transmission	Pgm	426,000	Bonus		426,000					-
P0000124	Cor (Inc Emg) OH Subtrn Rpl	n/a	Transmission	Pgm	508,369	Bonus		508,369					-
P3401000	Prev OH Subtrans Repl	n/a	Transmission	Pgm	1,864,849	Bonus		1,864,849					-
P0000733	Trns Sub RTU Migration Pgm	n/a su	Transmission	Pgm	435,866	Bonus		435,866					-
P0000125	Cor (Inc Emg) OH Trans Rpl	n/a	Transmission	Pgm	0	Bonus		0					-
P1470000	Minor Trans Sub Addns	n/a	Transmission	Pgm	909,411	Bonus		909,411					-
P3402000	Prev OH Trans Repl	n/a	Transmission	Pgm	823,457	Bonus		823,457					-
P0001500	Kahe 138kV Bkr 133 Replace	2009/06	Transmission	Proj	327,148							327,148	112,309
P0001503	Kahe 138 kV Bkr 172 Replace	2009/04	Transmission	Proj	323,125							323,125	110,928
P0001549	School-Iwilei 138kV SW Repl	2009/12	Transmission	Proj	107,274							107,274	36,827
P0001551	P28X Waiau-Mak #1 138kV 2412	2009	Transmission	Proj	179,904							179,904	61,760
P0001552	Kahe-Permanente 46kVNanakuli	2009	Transmission	Proj	2,174,053	Bonus				2,174,053			-
P0001553	Halawa-Iwilei Shield Wire	2009/07	Transmission	Proj	890,948							890,948	305,859
P0001562	Archer Bkr Rupture Disk Inst	2009/03	Transmission	Proj	876,500							876,500	300,899
P0001592	Kah Per 46kV Improv Nanakuli	2009/02	Transmission	Proj	474,971							474,971	163,056
P0001644	Waiau-Wahiawa SW OPGW	2009	Transmission	Proj	2,653,759	Bonus				2,653,759			-
P0001681	Halawa-School OPGW	2009/08	Transmission	Proj	1,246,101					1,246,101			-
P0001415	Archer Breaker 6050 Repl	2009/03	Transmission	Proj	588,577							588,577	202,056
P0001050	CIP1 AES-CEIP#2 Trans. Line	2009/04	Transmission	Proj	5,790,887	Bonus			5,790,887				-
P0001051	CIP1 AES Substation Add	2009/04	Transmission	Proj	3,153,110				3,153,110				-
P0001499	Kahe 138kV Bkr 247 Replace	2008/12	Transmission	Proj	105							105	36
P0001519	Mak-Airport 138kV SW Repl	2008/11	Transmission	Proj	1,885							1,885	647
P0001052	CIP1 CEIP Substation Mod	2008/12	Transmission	Proj	3,890				3,890				-
P0001514	Airport Iwilei Shield Wire	2008/11	Transmission	Proj	674,067	Bonus				674,067			-
P0001525	Tesoro Electrical Upgrade	ciac	Transmission	Proj	405,492							405,492	139,204
P0001557	Makakilo C&D Ph1 46kV UG	ciac	Transmission	Proj	570,400							570,400	195,816
P1250000	Vehicle Purchases	n/a	Vehicles	Pgm	3,150,760			3,150,760				Vehicles not depreciated	
													-
					288,334,402		2,684,012	56,726,037	155,300,091	13,650,501	26,112,550	33,861,211	11,624,422
					Rate Case Update, T-17, page 5		Total projects reviewed			39,763,051			
	Summary of Bonus qualified projects						% qualifying for bonus			34%			
		Programs less vehicles			53,575,277								
		CIP1			9,317,261								
		<$1 million projects			13,650,501								
		>$1 million projects @ 34%			11,624,422								
					88,167,461								
NOTE 1>	Assumed all programs (except vehicles) qualified for bonus depreciation.												
NOTE 2>	Assumed the same % of bonus qualified projects for the projects less than $1 million.												

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ATTACHMENT 1B
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FINAL SETTLEMENT

Hawaiian Electric Company, Inc.
Campbell Industrial Park Generating Station and Transmission Additions
Plant Additions

Project No.	Description	2008	2009	2010	Total		Life	Bonus
P0001052	CIP1 CEIP Substation Mod	456,832	3,890		460,722	Trans	20	460,722
P0001135	CIP1 Unit Addition-Microwave	523,193			523,193	Comm	20	523,193
P0001137	CIP1 Unit Addition-Kalaeloa		289,912		289,912	Comm	20	289,912
P0001340	CIP1 Unit Addition-Easements	4,857,924			4,857,924	Land		
P0001585	CIP1 Land - Gen Station	1,261,761			1,261,761	Land		
P0001050	CIP1 AES-CEIP#2 Trans Line		5,790,887		5,790,887	Trans	15	5,790,887
P0001051	CIP1 AES Substation Add		3,153,110		3,153,110	Trans	20	
P0001134	CIP1 Unit Addition-Fiber		531,769		531,769	Comm	20	531,769
P0001136	CIP1 Unit Addition-Kahe Bkrs		1,720,778		1,720,778	Comm	20	1,720,778
P4900000	CIP1 Unit 1 Addition		143,809,745	50,000	143,859,745	Oth Prod	15	
	Plant Additions	7,099,710	155,300,091	50,000	162,449,801			9,317,261
P0001084	Parcel between Hanua Street and AES Substation (TMK 9-1-26:38) included in Property Held for Future Use				1,809,875	ND		
	Total Project Cost				164,259,676			

Hawaiian Electric Company
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ALL ASSETS
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Tax Year : 2009

Vintage	Beginning Asset Balance	Additions/ Retirements	Depreciable Base	Beginning Reserve	Depreciation	Capitalized Depreciation	Gain/ (Loss)	Salvage	Cost of Removal	Ending Asset Balance	Ending Reserve
V1903	$14,121.00	$0.00	$14,121.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$14,121.00	$0.00
V1914	$835.48	$0.00	$0.00	$835.48	$0.00	$0.00	$0.00	$0.00	$0.00	$835.48	$835.48
V1915	$553.83	$0.00	$553.83	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$553.83	$0.00
V1916	$4,444.00	$0.00	$4,444.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$4,444.00	$0.00
V1917	$107,378.00	$0.00	$107,378.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$107,378.00	$0.00
V1918	$89,648.00	$0.00	$89,648.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$89,648.00	$0.00
V1919	$24,164.48	$0.00	$23,845.00	$319.48	$0.00	$0.00	$0.00	$0.00	$0.00	$24,164.48	$319.48
V1920	$246,140.38	$0.00	$32,614.56	$213,525.82	$0.00	$0.00	$0.00	$0.00	$0.00	$246,140.38	$213,525.82
V1921	$8,582.31	$0.00	$2,013.00	$6,569.31	$0.00	$0.00	$0.00	$0.00	$0.00	$8,582.31	$6,569.31
V1922	$148,531.03	$0.00	$25,364.00	$123,167.03	$0.00	$0.00	$0.00	$0.00	$0.00	$148,531.03	$123,167.03
V1923	$22,353.04	$0.00	$0.00	$22,353.04	$0.00	$0.00	$0.00	$0.00	$0.00	$22,353.04	$22,353.04
V1924	$23,827.72	$0.00	$7.97	$23,819.75	$0.00	$0.00	$0.00	$0.00	$0.00	$23,827.72	$23,819.75
V1925	$89,212.77	$0.00	$21,830.00	$67,382.77	$0.00	$0.00	$0.00	$0.00	$0.00	$89,212.77	$67,382.77
V1926	$34,675.00	$0.00	$1,165.00	$33,510.00	$0.00	$0.00	$0.00	$0.00	$0.00	$34,675.00	$33,510.00
V1927	$112,280.15	$0.00	$59,895.94	$52,384.21	$0.00	$0.00	$0.00	$0.00	$0.00	$112,280.15	$52,384.21
V1928	$58,679.47	$0.00	$8,279.33	$50,400.14	$0.00	$0.00	$0.00	$0.00	$0.00	$58,679.47	$50,400.14
V1929	$51,784.28	$0.00	$281.00	$51,503.28	$0.00	$0.00	$0.00	$0.00	$0.00	$51,784.28	$51,503.28
V1930	$319,128.22	$0.00	$412.00	$318,716.22	$0.00	$0.00	$0.00	$0.00	$0.00	$319,128.22	$318,716.22
V1931	$94,948.53	$0.00	$2,140.00	$92,808.53	$0.00	$0.00	$0.00	$0.00	$0.00	$94,948.53	$92,808.53
V1932	$150,166.37	$0.00	$4,829.00	$145,337.37	$0.00	$0.00	$0.00	$0.00	$0.00	$150,166.37	$145,337.37
V1933	$130,796.25	$0.00	$1,409.09	$129,387.16	$0.00	$0.00	$0.00	$0.00	$0.00	$130,796.25	$129,387.16
V1934	$78,969.36	$0.00	$353.00	$78,616.36	$0.00	$0.00	$0.00	$0.00	$0.00	$78,969.36	$78,616.36
V1935	$115,670.01	$0.00	$3,277.00	$112,393.01	$0.00	$0.00	$0.00	$0.00	$0.00	$115,670.01	$112,393.01
V1936	$140,272.28	$0.00	$1,504.30	$138,767.98	$0.00	$0.00	$0.00	$0.00	$0.00	$140,272.28	$138,767.98
V1937	$293,512.03	$0.00	$16,861.71	$276,650.32	$0.00	$0.00	$0.00	$0.00	$0.00	$293,512.03	$276,650.32
V1938	$780,729.41	$0.00	$52,587.58	$728,141.83	$0.00	$0.00	$0.00	$0.00	$0.00	$780,729.41	$728,141.83
V1939	$220,063.74	$0.00	$87,102.22	$132,961.52	$0.00	$0.00	$0.00	$0.00	$0.00	$220,063.74	$132,961.52
V1940	$750,726.88	$0.00	$201,885.84	$548,841.04	$0.00	$0.00	$0.00	$0.00	$0.00	$750,726.88	$548,841.04
V1941	$795,031.54	$0.00	$29,003.00	$766,028.54	$0.00	$0.00	$0.00	$0.00	$0.00	$795,031.54	$766,028.54
V1942	$329,777.26	$0.00	$52.00	$329,725.26	$0.00	$0.00	$0.00	$0.00	$0.00	$329,777.26	$329,725.26
V1943	$318,314.71	$0.00	$3,367.38	$314,947.33	$0.00	$0.00	$0.00	$0.00	$0.00	$318,314.71	$314,947.33

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ALL ASSETS
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Tax Year : 2009

Vintage	Beginning Asset Balance	Additions/ Retirements	Depreciable Base	Beginning Reserve	Depreciation	Capitalized Depreciation	Gain/ (Loss)	Salvage	Cost of Removal	Ending Asset Balance	Ending Reserve
V1944	$1,640,675.73	$0.00	$116,042.09	$1,562,758.64	$0.00	$0.00	$0.00	$0.00	$0.00	$1,640,675.73	$1,562,758.64
V1945	$571,388.10	$0.00	$180,769.91	$390,618.19	$0.00	$0.00	$0.00	$0.00	$0.00	$571,388.10	$390,618.19
V1946	$804,175.43	$0.00	$4,655.99	$799,519.44	$0.00	$0.00	$0.00	$0.00	$0.00	$804,175.43	$799,519.44
V1947	$7,051,163.34	$0.00	$43,962.92	$7,007,200.42	$0.00	$0.00	$0.00	$0.00	$0.00	$7,051,163.34	$7,007,200.42
V1948	$1,161,251.15	$0.00	$53,559.89	$1,152,360.07	$0.00	$0.00	$0.00	$0.00	$0.00	$1,161,251.15	$1,152,360.07
V1949	$850,578.96	$0.00	$28,461.82	$822,117.14	$0.00	$0.00	$0.00	$0.00	$0.00	$850,578.96	$822,117.14
V1950	$4,862,347.05	$0.00	$6,291.95	$4,856,055.10	$0.00	$0.00	$0.00	$0.00	$0.00	$4,862,347.05	$4,856,055.10
V1951	$1,554,214.34	$0.00	$22,468.45	$1,531,745.89	$0.00	$0.00	$0.00	$0.00	$0.00	$1,554,214.34	$1,531,745.89
V1952	$925,644.22	$0.00	$10,034.68	$915,609.54	$0.00	$0.00	$0.00	$0.00	$0.00	$925,644.22	$915,609.54
V1953	($163,534.79)	$0.00	$56,010.58	($227,698.59)	$0.00	$0.00	$0.00	$0.00	$0.00	($163,534.79)	($227,698.59)
V1954	($26,240.00)	$0.00	$0.00	($26,240.00)	$0.00	$0.00	$0.00	$0.00	$0.00	($26,240.00)	($26,240.00)
V1954 H1	$4,050,327.18	$0.00	$0.00	$4,050,327.18	$0.00	$0.00	$0.00	$0.00	$0.00	$4,050,327.18	$4,050,327.18
V1954 H2	$6,512,547.96	$0.00	$236,919.08	$6,276,100.11	$0.00	$0.00	$0.00	$0.00	$0.00	$6,512,547.96	$6,276,100.11
V1955	$1,678,019.93	$0.00	$25,649.49	$1,556,846.31	$0.00	$0.00	$0.00	$0.00	$0.00	$1,678,019.93	$1,556,846.31
V1956	$1,412,225.70	$0.00	$27,457.01	$1,313,571.55	$0.00	$0.00	$0.00	$0.00	$0.00	$1,412,225.70	$1,313,571.55
V1957	$8,210,906.58	$0.00	$100,587.61	$8,099,842.74	$0.00	$0.00	$0.00	$0.00	$0.00	$8,210,906.58	$8,099,842.74
V1958	$2,834,301.90	$0.00	$34,322.88	$2,793,345.30	$0.00	$0.00	$0.00	$0.00	$0.00	$2,834,301.90	$2,793,345.30
V1959	$11,176,809.27	$0.00	$263,952.94	$10,709,269.95	$0.00	$0.00	$0.00	$0.00	$0.00	$11,176,809.27	$10,709,269.95
V1960	$7,354,529.31	$0.00	$2,246,651.95	$4,759,618.91	$0.00	$0.00	$0.00	$0.00	$0.00	$7,354,529.31	$4,759,618.91
V1961	$12,403,474.57	$0.00	$59,161.46	$11,903,243.12	$0.00	$0.00	$0.00	$0.00	$0.00	$12,403,474.57	$11,903,243.12
V1962	$6,867,423.16	$0.00	$484,015.86	$5,958,466.88	$0.00	$0.00	$0.00	$0.00	$0.00	$6,867,423.16	$5,958,466.88
V1963	$18,750,657.15	$0.00	$169,523.62	$18,270,345.49	$0.00	$0.00	$0.00	$0.00	$0.00	$18,750,657.15	$18,270,345.49
V1964	$13,517,261.25	$0.00	$77,340.00	$13,079,965.44	$0.00	$0.00	$0.00	$0.00	$0.00	$13,517,261.25	$13,079,965.44
V1965	$7,243,775.69	$0.00	$543,742.90	$6,379,524.34	$6,401.31	$0.00	$0.00	$0.00	$0.00	$7,243,775.69	$6,385,925.65
V1966	$21,427,013.67	$0.00	$453,020.36	$20,332,999.08	$827.87	$0.00	$0.00	$0.00	$0.00	$21,427,013.67	$20,333,826.95
V1967	$7,572,265.31	$0.00	$415,426.17	$6,692,304.08	$5,058.28	$0.00	$0.00	$0.00	$0.00	$7,572,265.31	$6,697,362.36
V1968	$18,268,034.99	$0.00	$142,885.06	$17,573,330.85	$1,112.65	$0.00	$0.00	$0.00	$0.00	$18,268,034.99	$17,574,443.51
V1969	$9,286,377.73	$0.00	$207,812.73	$8,537,005.09	$743.27	$0.00	$0.00	$0.00	$0.00	$9,286,377.73	$8,537,748.36
V1970	$31,873,073.95	$0.00	$1,658,773.81	$29,481,235.71	$74,386.24	$0.00	$0.00	$0.00	$0.00	$31,873,073.95	$29,555,621.95
V1971	$15,629,550.93	$0.00	$15,512,953.16	$15,189,275.09	$7,234.81	$0.00	$0.00	$0.00	$0.00	$15,629,550.93	$15,196,509.90
V1972	$33,867,211.20	$0.00	$33,856,648.20	$31,844,004.67	$2,487.24	$0.00	$0.00	$0.00	$0.00	$33,867,211.20	$31,846,491.91

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Tax Year : 2009

Vintage	Beginning Asset Balance	Additions/ Retirements	Depreciable Base	Beginning Reserve	Depreciation	Capitalized Depreciation	Gain/ (Loss)	Salvage	Cost of Removal	Ending Asset Balance	Ending Reserve
V1973	$34,154,286.39	$0.00	$32,664,481.48	$32,321,742.21	$1,877.23	$0.00	$0.00	$0.00	$0.00	$34,154,286.39	$32,323,619.44
V1974	$58,133,601.00	$0.00	$51,222,885.07	$55,651,337.44	$1,296.25	$0.00	$0.00	$0.00	$0.00	$58,133,601.00	$55,652,633.69
V1975	$22,490,879.21	$0.00	$19,650,361.92	$22,481,639.48	$840.73	$0.00	$0.00	$0.00	$0.00	$22,490,879.21	$22,482,480.21
V1976	$26,950,667.44	$0.00	$24,588,921.58	$24,857,864.63	$4,015.44	$0.00	$0.00	$0.00	$0.00	$26,950,667.44	$24,861,880.07
V1977	$11,663,546.76	$0.00	$10,130,050.70	$10,975,140.35	$1,109.59	$0.00	$0.00	$0.00	$0.00	$11,663,546.76	$10,976,249.94
V1978	$16,906,345.34	$0.00	$14,931,186.25	$16,207,834.49	$5,822.92	$0.00	$0.00	$0.00	$0.00	$16,906,345.34	$16,213,657.41
V1979	$19,910,523.91	$0.00	$15,984,170.43	$19,698,066.06	$5,598.31	$0.00	$0.00	$0.00	$0.00	$19,910,523.91	$19,703,664.37
V1980	$33,919,658.54	$0.00	$29,289,817.33	$30,548,985.43	$4,748.12	$0.00	$0.00	$0.00	$0.00	$33,919,658.54	$30,553,733.55
V1981	$65,044,643.87	$0.00	$65,044,643.87	$64,751,187.13	$3,243.51	$0.00	$0.00	$0.00	$0.00	$65,044,643.87	$64,754,430.64
V1982	$16,923,468.53	$0.00	$16,923,468.53	$16,822,761.17	$1,086.14	$0.00	$0.00	$0.00	$0.00	$16,923,468.53	$16,823,847.31
V1983	$15,192,345.55	$0.00	$15,192,345.55	$15,176,860.16	$968.14	$0.00	$0.00	$0.00	$0.00	$15,192,345.55	$15,177,828.30
V1984	$17,469,163.39	$0.00	$17,469,163.39	$17,180,786.66	$6,319.03	$0.00	$0.00	$0.00	$0.00	$17,469,163.39	$17,187,105.69
V1985	$25,918,953.69	$0.00	$25,918,953.69	$25,678,370.67	$181.81	$0.00	$0.00	$0.00	$0.00	$25,918,953.69	$25,678,552.48
V1986	$26,236,158.18	$0.00	$26,236,158.18	$26,223,147.68	$473.12	$0.00	$0.00	$0.00	$0.00	$26,236,158.18	$26,223,620.80
V1987	$32,626,285.64	$0.00	$32,626,285.64	$32,421,626.92	$16,121.43	$0.00	$0.00	$0.00	$0.00	$32,626,285.64	$32,437,748.35
V1988	$47,187,045.75	$0.00	$47,187,045.75	$45,872,445.75	$110,171.35	$0.00	$0.00	$0.00	$0.00	$47,187,045.75	$45,982,617.10
V1989	$55,139,195.40	$0.00	$55,139,195.40	$49,675,320.10	$1,348,015.28	$0.00	$0.00	$0.00	$0.00	$55,139,195.40	$51,023,335.38
V1990	$94,515,072.92	$0.00	$94,515,072.92	$67,519,573.59	$3,415,451.83	$0.00	$0.00	$0.00	$0.00	$94,515,072.92	$70,935,025.42
V1991	$46,448,481.43	$0.00	$46,448,481.43	$35,162,243.19	$1,769,999.70	$0.00	$0.00	$0.00	$0.00	$46,448,481.43	$36,932,242.89
V1992	$71,663,994.21	$0.00	$71,663,994.21	$55,283,752.74	$2,912,275.51	$0.00	$0.00	$0.00	$0.00	$71,663,994.21	$58,196,028.25
V1993	$99,283,129.65	$0.00	$99,283,129.65	$68,047,971.60	$3,744,021.50	$0.00	$0.00	$0.00	$0.00	$99,283,129.65	$71,791,993.10
V1994	$103,798,515.81	$0.00	$103,798,515.81	$63,496,636.38	$3,919,142.40	$0.00	$0.00	$0.00	$0.00	$103,798,515.81	$67,415,778.78
V1995	$111,033,296.43	$0.00	$111,033,296.43	$61,716,302.83	$4,119,743.37	$0.00	$0.00	$0.00	$0.00	$111,033,296.43	$65,836,046.20
V1996 Q1	$19,496,124.90	$0.00	$19,496,124.90	$7,970,686.46	$598,876.71	$0.00	$0.00	$0.00	$0.00	$19,496,124.90	$8,569,563.17
V1996 Q2	$13,248,693.01	$0.00	$13,248,693.01	$6,171,008.15	$462,604.48	$0.00	$0.00	$0.00	$0.00	$13,248,693.01	$6,633,612.62
V1996 Q3	$30,821,295.85	$0.00	$30,821,295.85	$12,285,816.87	$828,419.43	$0.00	$0.00	$0.00	$0.00	$30,821,295.85	$13,114,338.30
V1996 Q4	$31,523,355.43	$0.00	$31,523,355.43	$15,167,482.63	$1,129,752.61	$0.00	$0.00	$0.00	$0.00	$31,523,355.43	$16,297,235.22
V1997	$70,531,228.74	$0.00	$70,531,228.74	$38,439,994.96	$2,760,589.39	$0.00	$0.00	$0.00	$0.00	$70,531,228.74	$41,200,584.34
V1998	$88,594,043.85	$0.00	$88,594,043.85	$48,338,880.28	$3,686,248.56	$0.00	$0.00	$0.00	$0.00	$88,594,043.85	$52,025,128.84
V1999 Q1	$10,344,730.91	$0.00	$10,344,730.91	$5,262,268.70	$454,747.19	$0.00	$0.00	$0.00	$0.00	$10,344,730.91	$5,717,015.89
V1999 Q2	$3,057,217.27	$0.00	$3,057,217.27	$1,577,675.29	$143,529.04	$0.00	$0.00	$0.00	$0.00	$3,057,217.27	$1,721,204.33

Hawaiian Electric Company
PowerTax Depreciation Summary Report 7
HECO 2008 2009 RATE CASE UPDATE
Rpt # 17 ROLLUP 5/7/2009 10:07 AM
ALL ASSETS
Grouped By: Total Tax Classes

Tax Book : Federal
Tax Year : 2009

Vintage	Beginning Asset Balance	Additions/ Retirements	Depreciable Base	Beginning Reserve	Depreciation	Capitalized Depreciation	Gain/ (Loss)	Salvage	Cost of Removal	Ending Asset Balance	Ending Reserve
V1999 Q3	$7,708,722.60	$0.00	$7,708,722.60	$4,150,023.87	$423,787.15	$0.00	$0.00	$0.00	$0.00	$7,708,722.60	$4,573,811.02
V1999 Q4	$15,575,331.22	$0.00	$15,575,331.22	$6,926,182.14	$813,254.09	$0.00	$0.00	$0.00	$0.00	$15,575,331.22	$7,739,436.23
V2000	$65,822,358.09	$0.00	$65,822,358.09	$28,806,394.18	$2,381,196.91	$0.00	$0.00	$0.00	$0.00	$65,822,358.09	$31,187,591.09
V2001	$81,861,787.42	$0.00	$81,861,787.42	$34,672,099.92	$3,101,459.09	$0.00	$0.00	$0.00	$0.00	$81,861,787.42	$37,773,559.01
V2001_JC	$785,067.17	$0.00	$785,067.17	$488,492.23	$23,716.24	$0.00	$0.00	$0.00	$0.00	$785,067.17	$512,208.47
V2002	$58,854,634.11	$0.00	$58,854,634.11	$16,425,341.26	$2,058,585.98	$0.00	$0.00	$0.00	$0.00	$58,854,634.11	$18,483,927.24
V2002_JC	$15,916,289.42	$0.00	$15,916,289.42	$7,558,444.00	$730,562.35	$0.00	$0.00	$0.00	$0.00	$15,916,289.42	$8,289,006.35
V2003	$24,572,301.60	$0.00	$24,572,301.60	$5,801,804.19	$802,017.90	$0.00	$0.00	$0.00	$0.00	$24,572,301.60	$6,603,822.09
V2003_JC	$16,210,233.12	$0.00	$16,210,233.12	$6,639,770.92	$756,783.57	$0.00	$0.00	$0.00	$0.00	$16,210,233.12	$7,396,554.49
V2003_JGT	$7,521,537.42	$0.00	$7,521,537.42	$3,715,120.94	$313,937.58	$0.00	$0.00	$0.00	$0.00	$7,521,537.42	$4,029,058.52
V2004	$69,836,116.83	$0.00	$69,836,116.83	$18,082,500.98	$3,278,425.15	$0.00	$0.00	$0.00	$0.00	$69,836,116.83	$21,360,926.13
V2004_JC	$15,075,685.72	$0.00	$15,075,685.72	$4,685,302.71	$798,877.11	$0.00	$0.00	$0.00	$0.00	$15,075,685.72	$5,484,179.82
V2004_JGT	$23,626,282.75	$0.00	$23,626,282.75	$8,180,138.13	$1,031,755.60	$0.00	$0.00	$0.00	$0.00	$23,626,282.75	$9,211,893.73
V2005	$102,535,362.04	$0.00	$102,535,362.04	$23,744,958.58	$5,368,713.62	$0.00	$0.00	$0.00	$0.00	$102,535,362.04	$29,113,672.20
V2005_JC	$3,104,639.53	$0.00	$3,104,639.53	$747,395.47	$177,368.06	$0.00	$0.00	$0.00	$0.00	$3,104,639.53	$924,763.53
V2005_JGT	$512,003.39	$0.00	$512,003.39	$140,037.70	$29,250.75	$0.00	$0.00	$0.00	$0.00	$512,003.39	$169,288.45
V2006 Q1	$63,083,391.52	$0.00	$63,083,391.52	$12,440,544.94	$3,553,699.97	$0.00	$0.00	$0.00	$0.00	$63,083,391.52	$15,994,244.91
V2006 Q2	$21,117,733.33	$0.00	$21,117,733.33	$4,018,533.67	$1,263,283.09	$0.00	$0.00	$0.00	$0.00	$21,117,733.33	$5,281,816.76
V2006 Q3	$16,364,247.19	$0.00	$16,364,247.19	$3,107,885.80	$1,083,396.47	$0.00	$0.00	$0.00	$0.00	$16,364,247.19	$4,191,282.27
V2006 Q4	$30,586,450.78	$0.00	$30,586,450.78	$5,920,551.78	$2,119,898.35	$0.00	$0.00	$0.00	$0.00	$30,586,450.78	$8,040,450.13
V2007	$102,506,757.73	$0.00	$102,506,757.73	$10,983,461.71	$6,449,793.16	$0.00	$0.00	$0.00	$0.00	$102,506,757.73	$17,433,254.87
V2008	$55,212,266.00	$0.00	$55,212,266.00	$1,402,464.43	$2,675,315.66	$0.00	$0.00	$0.00	$0.00	$55,212,266.00	$4,077,780.07
V2008_SA	$22,773,735.50	$0.00	$22,773,735.50	$1,028,868.88	$1,921,718.76	$0.00	$0.00	$0.00	$0.00	$22,773,735.50	$2,950,587.64
V2009	$0.00	$280,866,638.00	$280,866,638.00	$0.00	$12,351,262.39	$0.00	$0.00	$0.00	$0.00	$280,866,638.00	$12,351,262.39
[redacted]											
HECO	2,406,111,651.97	$280,866,638.00	2,454,423,414.97	1,450,995,590.94	$85,063,600.79	$0.00	$0.00	$0.00	$0.00	2,686,978,289.97	1,536,059,191.68
Tax Year:	2,406,111,651.97	$280,866,638.00	2,454,423,414.97	1,450,995,590.94	$85,063,600.79	$0.00	$0.00	$0.00	$0.00	2,686,978,289.97	1,536,059,191.68

Hawaiian Electric Company
PowerTax Depreciation Summary Report 7
HECO 2008 2009 RATE CASE UPDATED F
Rpt # 17 ROLLUP 5/6/2009 2:19 PM
ALL ASSETS
Grouped By: Total Tax Classes

Tax Book : Federal
Tax Year : 2009

Vintage	Beginning Asset Balance	Additions/ Retirements	Depreciable Base	Beginning Reserve	Depreciation	Capitalized Depreciation	Gain/ (Loss)	Salvage	Cost of Removal	Ending Asset Balance	Ending Reserve
V1903	$14,121.00	$0.00	$14,121.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$14,121.00	$0.00
V1914	$835.48	$0.00	$0.00	$835.48	$0.00	$0.00	$0.00	$0.00	$0.00	$835.48	$835.48
V1915	$553.83	$0.00	$553.83	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$553.83	$0.00
V1916	$4,444.00	$0.00	$4,444.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$4,444.00	$0.00
V1917	$107,378.00	$0.00	$107,378.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$107,378.00	$0.00
V1918	$89,648.00	$0.00	$89,648.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$89,648.00	$0.00
V1919	$24,164.48	$0.00	$23,845.00	$319.48	$0.00	$0.00	$0.00	$0.00	$0.00	$24,164.48	$319.48
V1920	$246,140.38	$0.00	$32,614.56	$213,525.82	$0.00	$0.00	$0.00	$0.00	$0.00	$246,140.38	$213,525.82
V1921	$8,582.31	$0.00	$2,013.00	$6,569.31	$0.00	$0.00	$0.00	$0.00	$0.00	$8,582.31	$6,569.31
V1922	$148,531.03	$0.00	$25,364.00	$123,167.03	$0.00	$0.00	$0.00	$0.00	$0.00	$148,531.03	$123,167.03
V1923	$22,353.04	$0.00	$0.00	$22,353.04	$0.00	$0.00	$0.00	$0.00	$0.00	$22,353.04	$22,353.04
V1924	$23,827.72	$0.00	$7.97	$23,819.75	$0.00	$0.00	$0.00	$0.00	$0.00	$23,827.72	$23,819.75
V1925	$89,212.77	$0.00	$21,830.00	$67,382.77	$0.00	$0.00	$0.00	$0.00	$0.00	$89,212.77	$67,382.77
V1926	$34,675.00	$0.00	$1,165.00	$33,510.00	$0.00	$0.00	$0.00	$0.00	$0.00	$34,675.00	$33,510.00
V1927	$112,280.15	$0.00	$59,895.94	$52,384.21	$0.00	$0.00	$0.00	$0.00	$0.00	$112,280.15	$52,384.21
V1928	$58,679.47	$0.00	$8,279.33	$50,400.14	$0.00	$0.00	$0.00	$0.00	$0.00	$58,679.47	$50,400.14
V1929	$51,784.28	$0.00	$281.00	$51,503.28	$0.00	$0.00	$0.00	$0.00	$0.00	$51,784.28	$51,503.28
V1930	$319,128.22	$0.00	$412.00	$318,716.22	$0.00	$0.00	$0.00	$0.00	$0.00	$319,128.22	$318,716.22
V1931	$94,948.53	$0.00	$2,140.00	$92,808.53	$0.00	$0.00	$0.00	$0.00	$0.00	$94,948.53	$92,808.53
V1932	$150,166.37	$0.00	$4,829.00	$145,337.37	$0.00	$0.00	$0.00	$0.00	$0.00	$150,166.37	$145,337.37
V1933	$130,796.25	$0.00	$1,409.09	$129,387.16	$0.00	$0.00	$0.00	$0.00	$0.00	$130,796.25	$129,387.16
V1934	$78,969.36	$0.00	$353.00	$78,616.36	$0.00	$0.00	$0.00	$0.00	$0.00	$78,969.36	$78,616.36
V1935	$115,670.01	$0.00	$3,277.00	$112,393.01	$0.00	$0.00	$0.00	$0.00	$0.00	$115,670.01	$112,393.01
V1936	$140,272.28	$0.00	$1,504.30	$138,767.98	$0.00	$0.00	$0.00	$0.00	$0.00	$140,272.28	$138,767.98
V1937	$293,512.03	$0.00	$16,861.71	$276,650.32	$0.00	$0.00	$0.00	$0.00	$0.00	$293,512.03	$276,650.32
V1938	$780,729.41	$0.00	$52,587.58	$728,141.83	$0.00	$0.00	$0.00	$0.00	$0.00	$780,729.41	$728,141.83
V1939	$220,063.74	$0.00	$87,102.22	$132,961.52	$0.00	$0.00	$0.00	$0.00	$0.00	$220,063.74	$132,961.52
V1940	$750,726.88	$0.00	$201,885.84	$548,841.04	$0.00	$0.00	$0.00	$0.00	$0.00	$750,726.88	$548,841.04
V1941	$795,031.54	$0.00	$29,003.00	$766,028.54	$0.00	$0.00	$0.00	$0.00	$0.00	$795,031.54	$766,028.54
V1942	$329,777.26	$0.00	$52.00	$329,725.26	$0.00	$0.00	$0.00	$0.00	$0.00	$329,777.26	$329,725.26
V1943	$318,314.71	$0.00	$3,367.38	$314,947.33	$0.00	$0.00	$0.00	$0.00	$0.00	$318,314.71	$314,947.33

Hawaiian Electric Company
PowerTax Depreciation Summary Report 7
HECO 2008 2009 RATE CASE UPDATED F
Rpt # 17 ROLLUP 5/6/2009 2:19 PM
ALL ASSETS
Grouped By: Total Tax Classes

Tax Book : Federal
Tax Year : 2009

Vintage	Beginning Asset Balance	Additions/ Retirements	Depreciable Base	Beginning Reserve	Depreciation	Capitalized Depreciation	Gain/ (Loss)	Salvage	Cost of Removal	Ending Asset Balance	Ending Reserve
V1944	$1,640,675.73	$0.00	$116,042.09	$1,562,758.64	$0.00	$0.00	$0.00	$0.00	$0.00	$1,640,675.73	$1,562,758.64
V1945	$571,388.10	$0.00	$180,769.91	$390,618.19	$0.00	$0.00	$0.00	$0.00	$0.00	$571,388.10	$390,618.19
V1946	$804,175.43	$0.00	$4,655.99	$799,519.44	$0.00	$0.00	$0.00	$0.00	$0.00	$804,175.43	$799,519.44
V1947	$7,051,163.34	$0.00	$43,962.92	$7,007,200.42	$0.00	$0.00	$0.00	$0.00	$0.00	$7,051,163.34	$7,007,200.42
V1948	$1,161,251.15	$0.00	$53,559.89	$1,152,360.07	$0.00	$0.00	$0.00	$0.00	$0.00	$1,161,251.15	$1,152,360.07
V1949	$850,578.96	$0.00	$28,461.82	$822,117.14	$0.00	$0.00	$0.00	$0.00	$0.00	$850,578.96	$822,117.14
V1950	$4,862,347.05	$0.00	$6,291.95	$4,856,055.10	$0.00	$0.00	$0.00	$0.00	$0.00	$4,862,347.05	$4,856,055.10
V1951	$1,554,214.34	$0.00	$22,468.45	$1,531,745.89	$0.00	$0.00	$0.00	$0.00	$0.00	$1,554,214.34	$1,531,745.89
V1952	$925,644.22	$0.00	$10,034.68	$915,609.54	$0.00	$0.00	$0.00	$0.00	$0.00	$925,644.22	$915,609.54
V1953	($163,534.79)	$0.00	$56,010.58	($227,698.59)	$0.00	$0.00	$0.00	$0.00	$0.00	($163,534.79)	($227,698.59)
V1954	($26,240.00)	$0.00	$0.00	($26,240.00)	$0.00	$0.00	$0.00	$0.00	$0.00	($26,240.00)	($26,240.00)
V1954 H1	$4,050,327.18	$0.00	$0.00	$4,050,327.18	$0.00	$0.00	$0.00	$0.00	$0.00	$4,050,327.18	$4,050,327.18
V1954 H2	$6,512,547.96	$0.00	$236,919.08	$6,276,100.11	$0.00	$0.00	$0.00	$0.00	$0.00	$6,512,547.96	$6,276,100.11
V1955	$1,678,019.93	$0.00	$25,849.49	$1,556,846.31	$0.00	$0.00	$0.00	$0.00	$0.00	$1,678,019.93	$1,556,846.31
V1956	$1,412,225.70	$0.00	$27,457.01	$1,313,571.55	$0.00	$0.00	$0.00	$0.00	$0.00	$1,412,225.70	$1,313,571.55
V1957	$8,210,906.58	$0.00	$100,587.61	$8,099,842.74	$0.00	$0.00	$0.00	$0.00	$0.00	$8,210,906.58	$8,099,842.74
V1958	$2,834,301.90	$0.00	$34,322.88	$2,793,345.30	$0.00	$0.00	$0.00	$0.00	$0.00	$2,834,301.90	$2,793,345.30
V1959	$11,176,809.27	$0.00	$263,952.94	$10,709,269.95	$0.00	$0.00	$0.00	$0.00	$0.00	$11,176,809.27	$10,709,269.95
V1960	$7,354,529.31	$0.00	$2,246,651.95	$4,759,618.91	$0.00	$0.00	$0.00	$0.00	$0.00	$7,354,529.31	$4,759,618.91
V1961	$12,403,474.57	$0.00	$59,161.46	$11,903,243.12	$0.00	$0.00	$0.00	$0.00	$0.00	$12,403,474.57	$11,903,243.12
V1962	$6,867,423.16	$0.00	$484,015.88	$5,958,466.88	$0.00	$0.00	$0.00	$0.00	$0.00	$6,867,423.16	$5,958,466.88
V1963	$18,750,657.15	$0.00	$169,523.62	$18,270,345.49	$0.00	$0.00	$0.00	$0.00	$0.00	$18,750,657.15	$18,270,345.49
V1964	$13,517,261.25	$0.00	$77,340.00	$13,079,965.44	$0.00	$0.00	$0.00	$0.00	$0.00	$13,517,261.25	$13,079,965.44
V1965	$7,243,775.69	$0.00	$543,742.90	$6,379,524.34	$8,401.31	$0.00	$0.00	$0.00	$0.00	$7,243,775.69	$6,385,925.65
V1966	$21,427,013.67	$0.00	$453,020.36	$20,332,999.08	$827.87	$0.00	$0.00	$0.00	$0.00	$21,427,013.67	$20,333,826.95
V1967	$7,572,265.31	$0.00	$415,426.17	$6,692,304.08	$5,058.28	$0.00	$0.00	$0.00	$0.00	$7,572,265.31	$6,697,362.36
V1968	$18,268,034.99	$0.00	$142,885.06	$17,573,330.85	$1,112.65	$0.00	$0.00	$0.00	$0.00	$18,268,034.99	$17,574,443.51
V1969	$9,286,377.73	$0.00	$207,812.73	$8,537,005.09	$743.27	$0.00	$0.00	$0.00	$0.00	$9,286,377.73	$8,537,748.36
V1970	$31,873,073.95	$0.00	$1,658,773.81	$29,481,235.71	$74,386.24	$0.00	$0.00	$0.00	$0.00	$31,873,073.95	$29,555,621.95
V1971	$15,629,550.93	$0.00	$15,512,953.16	$15,189,275.09	$7,234.81	$0.00	$0.00	$0.00	$0.00	$15,629,550.93	$15,196,509.90
V1972	$33,867,211.20	$0.00	$33,856,648.20	$31,844,004.67	$2,487.24	$0.00	$0.00	$0.00	$0.00	$33,867,211.20	$31,846,491.91

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HECO 2008 2009 RATE CASE UPDATED F
Rpt # 17 ROLLUP 5/6/2009 2:19 PM
ALL ASSETS
Grouped By: Total Tax Classes

Tax Book : Federal
Tax Year : 2009

Vintage	Beginning Asset Balance	Additions/ Retirements	Depreciable Base	Beginning Reserve	Depreciation	Capitalized Depreciation	Gain/ (Loss)	Salvage	Cost of Removal	Ending Asset Balance	Ending Reserve
V1973	$34,154,286.39	$0.00	$32,664,481.48	$32,321,742.21	$1,877.23	$0.00	$0.00	$0.00	$0.00	$34,154,286.39	$32,323,619.44
V1974	$58,133,601.00	$0.00	$51,222,885.07	$55,851,337.44	$1,296.25	$0.00	$0.00	$0.00	$0.00	$58,133,601.00	$55,852,633.69
V1975	$22,490,879.21	$0.00	$19,650,361.92	$22,481,639.48	$840.73	$0.00	$0.00	$0.00	$0.00	$22,490,879.21	$22,482,480.21
V1976	$26,950,667.44	$0.00	$24,588,921.58	$24,857,864.63	$4,015.44	$0.00	$0.00	$0.00	$0.00	$26,950,667.44	$24,861,880.07
V1977	$11,663,546.76	$0.00	$10,130,050.70	$10,975,140.35	$1,109.59	$0.00	$0.00	$0.00	$0.00	$11,663,546.76	$10,976,249.94
V1978	$16,906,345.34	$0.00	$14,931,186.25	$16,207,834.49	$5,822.92	$0.00	$0.00	$0.00	$0.00	$16,906,345.34	$16,213,657.41
V1979	$19,910,523.91	$0.00	$15,984,170.43	$19,698,066.06	$5,598.31	$0.00	$0.00	$0.00	$0.00	$19,910,523.91	$19,703,664.37
V1980	$33,919,658.54	$0.00	$29,289,817.33	$30,548,985.43	$4,748.12	$0.00	$0.00	$0.00	$0.00	$33,919,658.54	$30,553,733.55
V1981	$65,044,643.87	$0.00	$65,044,643.87	$64,751,187.13	$3,243.51	$0.00	$0.00	$0.00	$0.00	$65,044,643.87	$64,754,430.64
V1982	$16,923,468.53	$0.00	$16,923,468.53	$16,822,761.17	$1,086.14	$0.00	$0.00	$0.00	$0.00	$16,923,468.53	$16,823,847.31
V1983	$15,192,345.55	$0.00	$15,192,345.55	$15,176,860.16	$968.14	$0.00	$0.00	$0.00	$0.00	$15,192,345.55	$15,177,828.30
V1984	$17,469,163.39	$0.00	$17,469,163.39	$17,180,786.66	$6,319.03	$0.00	$0.00	$0.00	$0.00	$17,469,163.39	$17,187,105.69
V1985	$25,918,953.69	$0.00	$25,918,953.69	$25,678,370.67	$181.81	$0.00	$0.00	$0.00	$0.00	$25,918,953.69	$25,678,552.48
V1986	$26,236,158.18	$0.00	$26,236,158.18	$26,223,147.68	$473.12	$0.00	$0.00	$0.00	$0.00	$26,236,158.18	$26,223,620.80
V1987	$32,626,285.64	$0.00	$32,626,285.64	$32,421,626.92	$16,121.43	$0.00	$0.00	$0.00	$0.00	$32,626,285.64	$32,437,748.35
V1988	$47,187,045.75	$0.00	$47,187,045.75	$45,872,445.75	$110,171.35	$0.00	$0.00	$0.00	$0.00	$47,187,045.75	$45,982,617.10
V1989	$55,139,195.40	$0.00	$55,139,195.40	$49,675,320.10	$1,348,015.28	$0.00	$0.00	$0.00	$0.00	$55,139,195.40	$51,023,335.38
V1990	$94,515,072.92	$0.00	$94,515,072.92	$67,519,573.59	$3,415,451.83	$0.00	$0.00	$0.00	$0.00	$94,515,072.92	$70,935,025.42
V1991	$46,448,481.43	$0.00	$46,448,481.43	$35,162,243.19	$1,769,999.70	$0.00	$0.00	$0.00	$0.00	$46,448,481.43	$36,932,242.89
V1992	$71,663,994.21	$0.00	$71,663,994.21	$55,283,752.74	$2,912,275.51	$0.00	$0.00	$0.00	$0.00	$71,663,994.21	$58,196,028.25
V1993	$99,283,129.65	$0.00	$99,283,129.65	$68,047,971.60	$3,744,021.50	$0.00	$0.00	$0.00	$0.00	$99,283,129.65	$71,791,993.10
V1994	$103,798,515.81	$0.00	$103,798,515.81	$63,496,636.38	$3,919,142.40	$0.00	$0.00	$0.00	$0.00	$103,798,515.81	$67,415,778.78
V1995	$111,033,296.43	$0.00	$111,033,296.43	$61,716,302.83	$4,119,743.37	$0.00	$0.00	$0.00	$0.00	$111,033,296.43	$65,836,046.20
V1996 Q1	$19,496,124.90	$0.00	$19,496,124.90	$7,970,686.46	$598,876.71	$0.00	$0.00	$0.00	$0.00	$19,496,124.90	$8,569,563.17
V1996 Q2	$13,248,693.01	$0.00	$13,248,693.01	$6,171,008.15	$462,604.48	$0.00	$0.00	$0.00	$0.00	$13,248,693.01	$6,633,612.62
V1996 Q3	$30,821,295.85	$0.00	$30,821,295.85	$12,285,918.87	$828,419.43	$0.00	$0.00	$0.00	$0.00	$30,821,295.85	$13,114,338.30
V1996 Q4	$31,523,355.43	$0.00	$31,523,355.43	$15,167,482.63	$1,129,752.61	$0.00	$0.00	$0.00	$0.00	$31,523,355.43	$16,297,235.22
V1997	$70,531,228.74	$0.00	$70,531,228.74	$38,439,994.96	$2,760,589.39	$0.00	$0.00	$0.00	$0.00	$70,531,228.74	$41,200,584.34
V1998	$88,594,043.85	$0.00	$88,594,043.85	$48,338,880.28	$3,686,248.56	$0.00	$0.00	$0.00	$0.00	$88,594,043.85	$52,025,128.84
V1999 Q1	$10,344,730.91	$0.00	$10,344,730.91	$5,262,268.70	$454,747.19	$0.00	$0.00	$0.00	$0.00	$10,344,730.91	$5,717,015.89
V1999 Q2	$3,057,217.27	$0.00	$3,057,217.27	$1,577,675.29	$143,529.04	$0.00	$0.00	$0.00	$0.00	$3,057,217.27	$1,721,204.33

Hawaiian Electric Company
PowerTax Depreciation Summary Report 7
HECO 2008 2009 RATE CASE UPDATED F
Rpt # 17 ROLLUP 5/6/2009 2:19 PM
ALL ASSETS
Grouped By: Total Tax Classes

Tax Book : Federal
Tax Year : 2009

Vintage	Beginning Asset Balance	Additions/ Retirements	Depreciable Base	Beginning Reserve	Depreciation	Capitalized Depreciation	Gain/ (Loss)	Salvage	Cost of Removal	Ending Asset Balance	Ending Reserve
V1999 Q3	$7,708,722.60	$0.00	$7,708,722.60	$4,150,023.87	$423,787.15	$0.00	$0.00	$0.00	$0.00	$7,708,722.60	$4,573,811.02
V1999 Q4	$15,575,331.22	$0.00	$15,575,331.22	$6,926,182.14	$813,254.09	$0.00	$0.00	$0.00	$0.00	$15,575,331.22	$7,739,436.23
V2000	$65,822,358.09	$0.00	$65,822,358.09	$28,806,394.18	$2,381,196.91	$0.00	$0.00	$0.00	$0.00	$65,822,358.09	$31,187,591.09
V2001	$81,861,787.42	$0.00	$81,861,787.42	$34,672,099.92	$3,101,459.09	$0.00	$0.00	$0.00	$0.00	$81,861,787.42	$37,773,559.01
V2001_JC	$785,067.17	$0.00	$785,067.17	$488,492.23	$23,716.24	$0.00	$0.00	$0.00	$0.00	$785,067.17	$512,208.47
V2002	$58,854,634.11	$0.00	$58,854,634.11	$16,425,341.26	$2,058,585.98	$0.00	$0.00	$0.00	$0.00	$58,854,634.11	$18,483,927.24
V2002_JC	$15,916,289.42	$0.00	$15,916,289.42	$7,558,444.00	$730,562.35	$0.00	$0.00	$0.00	$0.00	$15,916,289.42	$8,289,006.35
V2003	$24,572,301.60	$0.00	$24,572,301.60	$5,801,804.19	$802,017.90	$0.00	$0.00	$0.00	$0.00	$24,572,301.60	$6,603,822.09
V2003_JC	$16,210,233.12	$0.00	$16,210,233.12	$6,639,770.92	$756,783.57	$0.00	$0.00	$0.00	$0.00	$16,210,233.12	$7,396,554.49
V2003_JGT	$7,521,537.42	$0.00	$7,521,537.42	$3,715,120.94	$313,937.58	$0.00	$0.00	$0.00	$0.00	$7,521,537.42	$4,029,058.52
V2004	$69,836,116.83	$0.00	$69,836,116.83	$18,082,500.98	$3,278,425.15	$0.00	$0.00	$0.00	$0.00	$69,836,116.83	$21,360,926.13
V2004_JC	$15,075,685.72	$0.00	$15,075,685.72	$4,685,302.71	$798,877.11	$0.00	$0.00	$0.00	$0.00	$15,075,685.72	$5,484,179.82
V2004_JGT	$23,626,282.75	$0.00	$23,626,282.75	$8,180,138.13	$1,031,755.60	$0.00	$0.00	$0.00	$0.00	$23,626,282.75	$9,211,893.73
V2005	$102,535,362.04	$0.00	$102,535,362.04	$23,744,958.58	$5,368,713.62	$0.00	$0.00	$0.00	$0.00	$102,535,362.04	$29,113,672.20
V2005_JC	$3,104,639.53	$0.00	$3,104,639.53	$747,395.47	$177,368.06	$0.00	$0.00	$0.00	$0.00	$3,104,639.53	$924,763.53
V2005_JGT	$512,003.39	$0.00	$512,003.39	$140,037.70	$29,250.75	$0.00	$0.00	$0.00	$0.00	$512,003.39	$169,288.45
V2006 Q1	$63,083,391.52	$0.00	$63,083,391.52	$12,440,544.94	$3,553,699.97	$0.00	$0.00	$0.00	$0.00	$63,083,391.52	$15,994,244.91
V2006 Q2	$21,117,733.33	$0.00	$21,117,733.33	$4,018,533.67	$1,263,283.09	$0.00	$0.00	$0.00	$0.00	$21,117,733.33	$5,281,816.76
V2006 Q3	$16,364,247.19	$0.00	$16,364,247.19	$3,107,885.80	$1,083,396.47	$0.00	$0.00	$0.00	$0.00	$16,364,247.19	$4,191,282.27
V2006 Q4	$30,586,450.78	$0.00	$30,586,450.78	$5,920,551.78	$2,119,898.35	$0.00	$0.00	$0.00	$0.00	$30,586,450.78	$8,040,450.13
V2007	$102,506,757.73	$0.00	$102,506,757.73	$10,983,461.71	$6,449,793.16	$0.00	$0.00	$0.00	$0.00	$102,506,757.73	$17,433,254.87
V2008	$55,212,266.00	$0.00	$55,212,266.00	$1,402,464.43	$2,675,315.66	$0.00	$0.00	$0.00	$0.00	$55,212,266.00	$4,077,780.07
V2008_SA	$22,773,735.50	$0.00	$22,773,735.50	$1,028,868.88	$1,921,718.76	$0.00	$0.00	$0.00	$0.00	$22,773,735.50	$2,950,587.64
V2009	$0.00	$194,900,551.00	$194,900,551.00	$0.00	$8,650,499.76	$0.00	$0.00	$0.00	$0.00	$194,900,551.00	$8,650,499.76
V2009_ARRA	$0.00	$42,983,043.50	$42,983,043.50	$0.00	$44,833,424.82	$0.00	$0.00	$0.00	$0.00	$42,983,043.50	$1,850,381.30
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
HECO	2,406,111,651.97	$237,883,594.50	2,411,440,371.47	1,450,995,590.94	$126,196,262.98	$0.00	$0.00	$0.00	$0.00	2,643,995,246.47	1,534,208,810.35
Tax Year:	2,406,111,651.97	$237,883,594.50	2,411,440,371.47	1,450,995,590.94	$126,196,262.98	$0.00	$0.00	$0.00	$0.00	2,643,995,246.47	1,534,208,810.35

Bonus	$42,983,043.50	basis not included in above
Total	$280,866,638.00	

Attachment Schedule G

Hawaiian Electric Company
Tax Depreciation Report
HECO 2008 2009 RATE CASE UPDATED F
Rpt # 4 ROLLUP 5/7/2009 10:08 AM
ALL ASSETS
Grouped By: Total Tax Classes

Tax Book : Federal
Tax Year : 2009

Tax Class	Month	Tax Rate Applied	Est Salv	Life	Rate Convention	Beginning Asset Basis	Activity	Beginning Reserve	Recovery Basis	Job Creation Depreciation	Current Depreciation	Ending Reserve
Vintage : V2009												
12106 - E-Bus Plat Equip		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
310 - Land		NONE	0.00%	60.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
310 - Land CPI		NONE	0.00%	60 00	Half	$0.00	$0 00	$0.00	$0.00	$0.00	$0.00	$0.00
311-316 Steam		MACRS_20	0.00%	20.00	Half	$0.00	$8,454,840.00	$0.00	$8,454,840.00	$0.00	$317,056.50	$317,056.50
311-316 Steam (rb)		SL_28	0.00%	28.00	Half	$0.00	$16,386,784.00	$0.00	$16,386,784 00	$0 00	$292,667.96	$292,667.96
311-316 Steam (rb) CPI		SL_28	0.00%	28 00	Half	$0.00	$1,000,578 00	$0.00	$1,000,578 00	$0 00	$17,870.32	$17,870.32
311-316 Steam CPI		MACRS_20	0.00%	20.00	Half	$0 00	$516,253.00	$0.00	$516,253.00	$0.00	$19,359.49	$19,359.49
316 - MACRS_7		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
316 - MACRS_7 CPI		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
316 - SL_12 (rb for 7yr MACRS		SL_12	0.00%	12.00	Half	$0.00	$0.00	$0.00	$0 00	$0.00	$0.00	$0.00
316 - SL_12 (rb for 7yr MACRS		SL_12	0.00%	12.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
341-346 - OP		MACRS_15	0.00%	15.00	Half	$0.00	$135,101,038.00	$0.00	$135,101,038.00	$0.00	$6,755,051.90	$6,755,051.90
341-346 - OP (rb)		SL_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
341-346 - OP (rb) CPI		SL_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
341-346 - OP CPI		MACRS_15	0.00%	15.00	Half	$0.00	$8,249,271.00	$0.00	$8,249,271 00	$0.00	$412,463.55	$412,463.55
350 - Land		NONE	0.00%	60.00	Half	$0.00	$2,684,012.00	$0.00	$2,684,012.00	$0.00	$0.00	$0.00
350 - Land CPI		NONE	0.00%	60.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
350.1 - Rights of Way		SL_50	0.00%	50.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
350.1 - Rights of Way CPI		SL_50	0.00%	50.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
35030 - Land (CPI)		NONE	0.00%	60.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
351-359 Trans		MACRS_20	0 00%	20.00	Half	$0.00	$500,252.00	$0.00	$500,252.00	$0.00	$18,759.45	$18,759.45
351-359 Trans 15 Yr		MACRS_15	0.00%	15.00	Half	$0.00	$1,363,652.00	$0.00	$1,363,652.00	$0.00	$68,182.60	$68,182.60
351-359 Trans 15 Yr CPI		MACRS_15	0.00%	15.00	Half	$0.00	$83,265 00	$0.00	$83,265.00	$0.00	$4,163.25	$4,163.25
351-359 Trans 481(a)		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
351-359 Trans CIAC		MACRS_20	0.00%	20.00	Half	$0.00	$8,475,660.00	$0.00	$8,475,660.00	$0.00	$317,837.25	$317,837.25
351-359 Trans CIAC InKind		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
351-359 Trans CPI		MACRS_20	0.00%	20.00	Half	$0.00	$795,353.00	$0.00	$795,353.00	$0.00	$29,825.74	$29,825.74
352 - Land Improvement (rb)		SL_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
352 - MACRS_15		MACRS_15	0.00%	15.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
352 - MACRS_15 CPI		MACRS_15	0.00%	15.00	Half	$0.00	$0.00	$0.00	$0 00	$0.00	$0.00	$0.00
352 - MACRS_7		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
352 - Service Building		MACRS_39_OC	0.00%	39.00	October	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
352 - Service Building (rb)		SL_40	0.00%	40.00	October	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
352 - Service Building (rb) CPI		SL_40	0.00%	40.00	October	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
352 - Service Building CPI		MACRS_39_OC	0.00%	39.00	October	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
352 - SL_12 (rb for 7yr MACRS		SL_12	0.00%	12.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
352-359 Trans (rb)		SL_30	0.00%	30.00	Half	$0.00	$5,290,396.00	$0.00	$5,290,396.00	$0.00	$88,190.90	$88,190.90
352-359 Trans (rb) CPI		SL_30	0.00%	30.00	Half	$0.00	$323,032.00	$0.00	$323,032.00	$0 00	$5,384.94	$5,384 94

Attachment Schedule G

Hawaiian Electric Company
Tax Depreciation Report
HECO 2008 2009 RATE CASE UPDATED F
Rpt # 4 ROLLUP 5/7/2009 10:08 AM
ALL ASSETS
Grouped By: Total Tax Classes

Tax Book : Federal
Tax Year : 2009

Tax Class	Month	Tax Rate Applied	Est Salv	Life	Rate Convention	Beginning Asset Basis	Activity	Beginning Reserve	Recovery Basis	Job Creation Depreciation	Current Depreciation	Ending Reserve
Vintage : V2009												
359 - MACRS_7		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
360 - Land		NONE	0.00%	60.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
360.1 - Rights of Way		SL_50	0.00%	50.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
360.1 - Rights of Way CPI		SL_50	0.00%	50.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
360.1 - Rights of Way CPI		SL_50	0.00%	50.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
361 - Distr (rb)		SL_30	0.00%	30.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
361 - Distr (rb) CPI		SL_30	0.00%	30.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
361 - Land Improvement (rb)		SL_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
361 - Land Improvement (rb) C		SL_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
361 - MACRS_15		MACRS_15	0.00%	15.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
361 - MACRS_15 CPI		MACRS_15	0.00%	15.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
361 - Service Building		MACRS_39_OC	0.00%	39.00	October	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
361 - Service Building (rb)		SL_40	0.00%	40.00	October	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
361 - Service Building CPI		MACRS_39_OC	0.00%	39.00	October	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
361-370 Distr		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
361-370 Distr CIAC		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
361-370 Distr CIAC InKind		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
361-370 Distr CPI		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
362 - Land Improvement (rb)		SL_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
362-370 Distr (rb)		SL_30	0.00%	30.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
362-370 Distr (rb) CPI		SL_30	0.00%	30.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390 - MACRS_15		MACRS_15	0.00%	15.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390 - MACRS_15 CPI		MACRS_15	0.00%	15.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390 - MACRS_5		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390 - MACRS_7		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390 - MACRS_7 CPI		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390 - Service Bldg MACRS_2		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390 - Service Bldg CPI MACR:		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390 - Service Building		MACRS_39_OC	0.00%	39.00	October	$0.00	$692,622.00	$0.00	$692,622.00	$0.00	$3,698.60	$3,698.60
390 - Service Building (rb)		SL_40	0.00%	40.00	October	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390 - Service Building (rb) CPI		SL_40	0.00%	40.00	October	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390 - Service Building CPI		MACRS_39_OC	0.00%	39.00	October	$0.00	$42,292.00	$0.00	$42,292.00	$0.00	$225.84	$225.84
390.10 - LHI		MACRS_39_OC	0.00%	39.00	October	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390.10 - LHI CPI		MACRS_39_OC	0.00%	39.00	October	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390.10 - MACRS_7		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390.10 - MACRS_7 CPI		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390-398 General		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390-398 General CPI		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Attachment Schedule G

Hawaiian Electric Company
Tax Depreciation Report
HECO 2008 2009 RATE CASE UPDATED F
Rpt # 4 ROLLUP 5/7/2009 10:08 AM
ALL ASSETS
Grouped By: Total Tax Classes

Tax Book : Federal
Tax Year : 2009

Tax Class	Month	Tax Rate Applied	Est Salv	Life	Rate Convention	Beginning Asset Basis	Activity	Beginning Reserve	Recovery Basis	Job Creation Depreciation	Current Depreciation	Ending Reserve
Vintage : V2009												
391.1 - Info Sys (rb)		SL_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
391.1 - Info Sys (rb) CPI		SL_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
391.1 - Info Systems		MACRS_5	0.00%	5.00	Half	$0.00	$505,983.00	$0.00	$505,983.00	$0.00	$101,196.60	$101,196.60
391.1 - Info Systems CPI		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
391.2 - Data Handling		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
391.2 - Data Handling CPI		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
391.3 - FF&E		MACRS_7	0.00%	7.00	Half	$0.00	$651,998.00	$0.00	$651,998.00	$0.00	$93,144.43	$93,144.43
391.3 - FF&E CPI		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
392 - 5 yr MACRS		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
392 - 7 yr MACRS		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
392 - Live Line Trailer		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
392 - Live Line Trailer CPI		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
392 - Vehicles		NONE	0.00%	60.00	Half	$0.00	$3,150,760.00	$0.00	$3,150,760.00	$0.00	$0.00	$0.00
392 - Vehicles CPI		NONE	0.00%	60.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
394.2 - Tools		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
394.2 - Tools CPI		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - Communications		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - Communications (rb)		SL_30	0.00%	30.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - Communications (rb) CP		SL_30	0.00%	30.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - Communications CPI		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - MACRS_15		MACRS_15	0.00%	15.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - MACRS_15 CPI		MACRS_15	0.00%	15.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - MACRS_5		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - MACRS_5 CPI		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - MACRS_7		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - MACRS_7 (rb)		SL_12	0.00%	12.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - MACRS_7 (rb) CPI		SL_12	0.00%	12.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - MACRS_7 CPI		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
398 - MACRS_ 20 CPI		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
398 - MACRS_ 7 CPI		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
398 - MACRS_20		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
398 - MACRS_5		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
398 - MACRS_5 CPI		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
398 - MACRS_7		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DSM - MACRS_5		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DSM - MACRS_7		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DSM Software		SL_3	0.00%	3.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DSM Software - Amort		SL_3 NOV	0.00%	3.00	November	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Attachment Schedule G

Hawaiian Electric Company
Tax Depreciation Report
HECO 2008 2009 RATE CASE UPDATED F
Rpt # 4 ROLLUP 5/7/2009 10:08 AM
ALL ASSETS
Grouped By: Total Tax Classes

Tax Book : Federal
Tax Year : 2009

Tax Class	Month	Tax Rate Applied	Est Salv	Life	Rate Convention	Beginning Asset Basis	Activity	Beginning Reserve	Recovery Basis	Job Creation Depreciation	Current Depreciation	Ending Reserve
Vintage : V2009												
IRP Notebook Port Replicator		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
RAR - Transformer/Meters		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Software - Amort		SL_3	0.00%	3.00	Half	$0.00	$632,510.00	$0.00	$632,510.00	$0.00	$105,420.44	$105,420.44
Total Tax Classes						**$0.00**	**$194,900,551.00**	**$0.00**	**$194,900,551.00**	**$0.00**	**$8,650,499.76**	**$8,650,499.76**
					Vintage Total:	**$0.00**	**$194,900,551.00**	**$0.00**	**$194,900,551.00**	**$0.00**	**$8,650,499.76**	**$8,650,499.76**
Vintage : V2009_ARRA												
12106 - E-Bus Plat Equip		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
311-316 Steam		MACRS_20	0.00%	20.00	Half	$0.00	$4,976,412.00	$0.00	$4,976,412.00	$4,976,412.00	$5,163,027.45	$186,615.45
311-316 Steam CPI		MACRS_20	0.00%	20.00	Half	$0.00	$303,860.00	$0.00	$303,860.00	$303,860.00	$315,254.75	$11,394.75
351-359 Trans		MACRS_20	0.00%	20.00	Half	$0.00	$30,336,704.50	$0.00	$30,336,704.50	$30,336,704.50	$31,474,330.92	$1,137,626.42
351-359 Trans 15 Yr		MACRS_15	0.00%	15.00	Half	$0.00	$2,862,760.50	$0.00	$2,862,760.50	$2,862,760.50	$3,005,898.53	$143,138.02
351-359 Trans 15 Yr CPI		MACRS_15	0.00%	15.00	Half	$0.00	$174,800.50	$0.00	$174,800.50	$174,800.50	$183,540.53	$8,740.02
351-359 Trans CIAC		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
351-359 Trans CPI		MACRS_20	0.00%	20.00	Half	$0.00	$1,852,359.50	$0.00	$1,852,359.50	$1,852,359.50	$1,921,822.98	$69,463.48
361-370 Distr		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
361-370 Distr CIAC		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
361-370 Distr CPI		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390 - MACRS_7		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390 - MACRS_7 CPI		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390 - Service Building		MACRS_39_OC	0.00%	39.00	October	$0.00	$746,342.50	$0.00	$746,342.50	$746,342.50	$750,327.97	$3,985.47
390 - Service Building CPI		MACRS_39_OC	0.00%	39.00	October	$0.00	$45,571.50	$0.00	$45,571.50	$45,571.50	$45,814.85	$243.35
390-398 General		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
390-398 General CPI		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
391.1 - Info Systems		MACRS_5	0.00%	5.00	Half	$0.00	$849,928.00	$0.00	$849,928.00	$849,928.00	$1,019,913.60	$169,985.60
391.1 - Info Systems CPI		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
391.2 - Data Handling		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
391.2 - Data Handling CPI		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
391.3 - FF&E		MACRS_7	0.00%	7.00	Half	$0.00	$834,304.50	$0.00	$834,304.50	$834,304.50	$953,493.24	$119,188.74
391.3 - FF&E CPI		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
392 - 5 yr MACRS		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
394.2 - Tools		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
394.2 - Tools CPI		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - Communications		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - Communications CPI		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - MACRS_7		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
397 - MACRS_7 CPI		MACRS_7	0.00%	7.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
398 - MACRS_20 CPI		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Hawaiian Electric Company
Tax Depreciation Report
HECO 2008 2009 RATE CASE UPDATED F
Rpt # 4 ROLLUP 5/7/2009 10:08 AM
ALL ASSETS
Grouped By: Total Tax Classes

Tax Book : Federal
Tax Year : 2009

Tax Class	Month	Tax Rate Applied	Est Salv	Life	Rate Convention	Beginning Asset Basis	Activity	Beginning Reserve	Recovery Basis	Job Creation Depreciation	Current Depreciation	Ending Reserve
Vintage : V2009_ ARRA												
398 - MACRS_20		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0 00	$0.00	$0.00
DSM - MACRS_5		MACRS_5	0.00%	5.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DSM - MACRS_7		MACRS_7	0.00%	7 00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
RAR - Transformer/Meters		MACRS_20	0.00%	20.00	Half	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Software - Amort		SL_3	0.00%	3.00	Half	$0.00	$0.00	$0 00	$0.00	$0.00	$0.00	$0.00
		Total Tax Classes				$0.00	$42,983,043.50	$0.00	$42,983,043.50	$42,983,043.50	$44,833,424.82	$1,850,381.30
					Vintage Total:	$0.00	$42,983,043.50	$0.00	$42,983,043.50	$42,983,043.50	$44,833,424.82	$1,850,381.30
					Federal Total:	$0.00	$237,883,594.50	$0.00	$237,883,594.50	$42,983,043.50	$53,483,924.58	$10,500,881.06
					Company Total:	$0.00	$237,883,594.50	$0.00	$237,883,594.50	$42,983,043.50	$53,483,924.58	$10,500,881.06

State General Excise Tax Credit

Impact of Hawaii State Senate Bill 199

The 2009 Hawaii State Legislature is expected to pass a bill, S.B. 199, SD1, HD1, CD2, which will suspend the 4% capital goods excise tax credit ("state ITC") for the 2009 tax year. See Section 3 of the attached bill (HECO T-16 Attachment 2A). This measure would eliminate the addition of an estimated $8.6 million of 2009 state ITC earned.

This change would impact the 2009 test year rate base only, since the amortization of state ITC earned begins in the following year. As a result of this measure, the Unamortized State ITC balance at 12/31/09 would be $8.6 million less and consequently, would increase rate base by the same amount. The deferred income taxes associated with this State ITC adjustment would decrease year end rate base by $3.35 million ($8.6 x 38.91%).

The Company proposes to adjust rate base by the net of the state ITC and related ADIT at year end, which increases test year end rate base by $5.25 million, under the assumption that this bill will be passed into law. Accordingly, the impact on average test year rate base would be $2.625 million. If the bill should not be enacted into law, HECO would reverse this adjustment.

CONFERENCE COMMITTEE REP. NO. 132

Honolulu, Hawaii
MAY 01 2009, 2009

RE: S.B. No. 199
S.D. 1
H.D. 1
C.D. 2

Honorable Colleen Hanabusa
President of the Senate
Twenty-Fifth State Legislature
Regular Session of 2009
State of Hawaii

Honorable Calvin K.Y. Say
Speaker, House of Representatives
Twenty-Fifth State Legislature
Regular Session of 2009
State of Hawaii

Madam and Sir:

Your Committee on Conference to which was recommitted S.B. No. 199, S.D. 1, H.D. 1, C.D. 1, entitled:

"A BILL FOR AN ACT RELATING TO TAXATION,"

having met, and after full and free discussion, has agreed to recommend and does recommend to the respective Houses the final passage of this bill in an amended form.

As originally received, this measure limits claims for business tax credits for taxable years beginning January 1, 2009, and ending before January 1, 2011, to seventy-five per cent of the taxpayer's liability for the taxable year in which the credit is claimed. The measure also exempts certain tax credits from this limitation.

The measure in its amended form limits claims for the high technology business investment tax credit and the technology infrastructure renovation tax credit for taxable years beginning January 1, 2009, and ending before January 1, 2011, to ninety per cent of the taxpayer's liability for the taxable year in which the credit is claimed.

In addition, this measure:

(1) Prohibits tax credit carryovers into subsequent taxable years of any high technology business investment tax credit and technology infrastructure renovation tax credit generated between January 1, 2009, and December 31, 2010;

(2) Provides for the temporary treatment of pass-through entities for income tax credit allocation purposes;

(3) Temporarily removes the partner distributive share tax incentive for the high technology business investment tax credit; and

(4) Temporarily suspends the capital goods excise tax credit for one year to coincide with the federal capital goods excise tax credit under section 179 of the Internal Revenue Code.

Upon reconsideration, your Committee has further amended this measure by:

(1) Changing the amount of the tax credit claim limitation from ninety per cent to eighty per cent of a taxpayer's tax liability;

(2) Removing the provisions for the temporary treatment of pass-through entities for income tax credit allocation purposes;

(3) Clarifying that the investment credit allocation ratio shall be 1 to 1 for any investment made on or after May 1, 2009;

(4) Specifying that applicable sections of the measure apply to investments made, renovation costs incurred, or eligible tangible property placed in service on or after May 1, 2009;

(5) Prohibiting tax credit carryover for any tax credits claimed for taxable years beginning on or after January 1, 2009 to December 31, 2010;

(6) Removing the measure's sunset date; and

(7) Making technical, nonsubstantive amendments for the purposes of consistency, clarity, and style.

As affirmed by the record of votes of the managers of your Committee on Conference that is attached to this report, your Committee on Conference is in accord with the intent and purpose of S.B. No. 199, S.D. 1, H.D. 1, C.D. 1, as amended herein, and recommends that it pass Final Reading in the form attached hereto as S.B. No. 199, S.D. 1, H.D. 1, C.D. 2.

Respectfully submitted on behalf of the managers:

ON THE PART OF THE HOUSE

MARCUS R. OSHIRO, Chair

ON THE PART OF THE SENATE

DONNA MERCADO KIM, Chair

Hawaii State Legislature

CCR 132

Record of Votes of a Conference Committee

Bill / Concurrent Resolution No.:	Date/Time:
SB 199, SD 1, HD 1, CD 1	4/30/09 3:00pm

☑ The recommendation of the House and Senate managers is to pass with amendments (CD).

☐ The Committee is reconsidering its previous decision.

☐ The recommendation of the Senate Manager(s) is to AGREE *to the House amendments made to the Senate Measure*

☐ The recommendation of the House Manager(s) is to AGREE *to the Senate amendments made to the House Measure.*

Senate Managers	A	WR	N	E	House Managers	A	WR	N	E
KIM, Donna Mercado, Chr.	✓				OSHIRO, Marcus R., Chr.	✓			
FUKUNAGA, Carol			✓		CHONG, Pono	✓			
KOKUBUN, Russell S.	✓				CHOY, Isaac W.	✓			
TSUTSUI, Shan S.	✓				LEE, Marilyn B.	✓			
HEMMINGS, Fred	✓				WARD, Gene		✓		
TOTAL	4		1		TOTAL	4	1		

A = Aye WR = Aye with Reservations N = Nay E = Excused

Senate Recommendation is:	House Recommendation is:
☑ Adopted ☐ Not Adopted	☑ Adopted ☐ Not Adopted
Senate Lead Chair's or Designee's Signature: Donna Mercado Kim	House Lead Chair's or Designee's Signature:

Distribution: **Original** *File with Conference Committee Report* **Yellow** *House Clerk's Office* **Pink** *Senate Clerk's Office* **Goldenrod** *Drafting Agency*

THE SENATE
TWENTY-FIFTH LEGISLATURE, 2009
STATE OF HAWAII

S.B. NO. 199 S.D. 1 H.D. 1 C.D. 2

A BILL FOR AN ACT

RELATING TO TAXATION.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. Chapter 235, Hawaii Revised Statutes, is amended by adding a new section to be appropriately designated and to read as follows:

"**§235-A Credits against income; claim limitation.** (a) Notwithstanding any law to the contrary providing for a tax credit that may be claimed against a taxpayer's tax liability under section 235-110.51, 235-110.9, 241-4.8, or 431:7-209 for taxable years beginning on or after January 1, 2009, and ending before January 1, 2011, no claim for these tax credits shall exceed eighty per cent of the taxpayer's tax liability for the taxable year in which the credit is claimed, and any tax credits claimed shall not result in any credit carryovers.

(b) This section shall apply to investments made, renovation costs incurred, or eligible depreciable tangible property placed in service on or after May 1, 2009."

SECTION 2. Section 235-2.45, Hawaii Revised Statutes, is amended by amending subsection (d) to read as follows:

"(d) Section 704 of the Internal Revenue Code (with respect to a partner's distributive share) shall be operative for purposes of this chapter; except that section 704(b)(2) shall not apply to:

(1) Allocations of the high technology business investment tax credit allowed by section 235-110.9[~~;~~] for investments made before May 1, 2009;

(2) Allocations of net operating loss pursuant to section 235-111.5;

(3) Allocations of the attractions and educational facilities tax credit allowed by section 235-110.46; or

(4) Allocations of low-income housing tax credits among partners under section 235-110.8."

SECTION 3. Section 235-110.7, Hawaii Revised Statutes, is *amended by amending subsection (a) to read as follows:*

"(a) There shall be allowed to each taxpayer subject to the tax imposed by this chapter a capital goods excise tax credit which shall be deductible from the taxpayer's net income tax liability, if any, imposed by this chapter for the taxable year in which the credit is properly claimed.

The amount of the tax credit shall be determined by the application of the following rates against the cost of the eligible depreciable tangible personal property used by the taxpayer in a trade or business and placed in service within Hawaii after December 31, 1987. For calendar years beginning after:

(1) December 31, 1987, the applicable rate shall be three per cent;

(2) December 31, 1988, [~~and thereafter,~~] the applicable rate shall be four per cent[~~.~~];

(3) December 31, 2008, the applicable rate shall be zero per cent; and

(4) December 31, 2009, and thereafter, the applicable rate shall be four per cent.

For taxpayers with fiscal taxable years, the applicable rate shall be the rate for the calendar year in which the eligible depreciable tangible personal property used in the trade or business is placed in service within Hawaii.

In the case of a partnership, S corporation, estate, or trust, the tax credit allowable is for eligible depreciable tangible personal property which is placed in service by the entity. The cost upon which the tax credit is computed shall be

determined at the entity level. Distribution and share of credit shall be determined by rules.

In the case of eligible depreciable tangible personal property for which a credit for sales or use taxes paid to another state is allowable under section 238-3(i), the amount of the tax credit allowed under this section shall not exceed the amount of use tax actually paid under chapter 238 relating to such tangible personal property.

If a deduction is taken under section 179 (with respect to election to expense certain depreciable business assets) of the Internal Revenue Code of 1954, as amended, no tax credit shall be allowed for that portion of the cost of property for which the deduction was taken."

SECTION 4. Section 235-110.9, Hawaii Revised Statutes, is amended to read as follows:

"**§235-110.9 High technology business investment tax credit.** (a) There shall be allowed to each taxpayer subject to the taxes imposed by this chapter a high technology business investment tax credit that shall be deductible from the taxpayer's net income tax liability, if any, imposed by this chapter for the taxable year in which the investment was made

and the following four years provided the credit is properly claimed. The tax credit shall be as follows:

(1) In the year the investment was made, thirty-five per cent;

(2) In the first year following the year in which the investment was made, twenty-five per cent;

(3) In the second year following the investment, twenty per cent;

(4) In the third year following the investment, ten per cent; and

(5) In the fourth year following the investment, ten per cent;

of the investment made by the taxpayer in each qualified high technology business, up to a maximum allowed credit in the year the investment was made, $700,000; in the first year following the year in which the investment was made, $500,000; in the second year following the year in which the investment was made, $400,000; in the third year following the year in which the investment was made, $200,000; and in the fourth year following the year in which the investment was made, $200,000.

(b) The credit allowed under this section shall be claimed against the net income tax liability for the taxable year. For

1 the purpose of this section, "net income tax liability" means
2 net income tax liability reduced by all other credits allowed
3 under this chapter. By accepting an investment for which the
4 credit allowed under this section may be claimed, a qualified
5 high technology business consents to the public disclosure of
6 the qualified high technology business' name and status as a
7 beneficiary of the credit under this section.
8 (c) If the tax credit under this section exceeds the
9 taxpayer's income tax liability for any of the five years that
10 the credit is taken, the excess of the tax credit over liability
11 may be used as a credit against the taxpayer's income tax
12 liability in subsequent years until exhausted. Every claim,
13 including amended claims, for a tax credit under this section
14 shall be filed on or before the end of the twelfth month
15 following the close of the taxable year for which the credit may
16 be claimed. Failure to comply with the foregoing provision
17 shall constitute a waiver of the right to claim the credit.
18 (d) If at the close of any taxable year in the five-year
19 period in subsection (a):
20 (1) The business no longer qualifies as a qualified high
21 technology business;

(2) The business or an interest in the business has been sold by the taxpayer investing in the qualified high technology business; or

(3) The taxpayer has withdrawn the taxpayer's investment wholly or partially from the qualified high technology business;

the credit claimed under this section shall be recaptured. The recapture shall be equal to ten per cent of the amount of the total tax credit claimed under this section in the preceding two taxable years. The amount of the credit recaptured shall apply only to the investment in the particular qualified high technology business that meets the requirements of paragraph (1), (2), or (3). The recapture provisions of this subsection shall not apply to a tax credit claimed for a qualified high technology business that does not fall within the provisions of paragraph (1), (2), or (3). The amount of the recaptured tax credit determined under this subsection shall be added to the taxpayer's tax liability for the taxable year in which the recapture occurs under this subsection.

(e) Every taxpayer, before March 31 of each year in which an investment in a qualified high technology business was made

in the previous taxable year, shall submit a written, certified statement to the director of taxation identifying:

(1) Qualified investments, if any, expended in the previous taxable year; and

(2) The amount of tax credits claimed pursuant to this section, if any, in the previous taxable year.

(f) The department shall:

(1) Maintain records of the names and addresses of the taxpayers claiming the credits under this section and the total amount of the qualified investment costs upon which the tax credit is based;

(2) Verify the nature and amount of the qualifying investments;

(3) Total all qualifying and cumulative investments that the department certifies; and

(4) Certify the amount of the tax credit for each taxable year and cumulative amount of the tax credit.

Upon each determination made under this subsection, the department shall issue a certificate to the taxpayer verifying information submitted to the department, including qualifying investment amounts, the credit amount certified for each taxable year, and the cumulative amount of the tax credit during the

1 credit period. The taxpayer shall file the certificate with the
2 taxpayer's tax return with the department.
3 The director of taxation may assess and collect a fee to
4 offset the costs of certifying tax credits claims under this
5 section. All fees collected under this section shall be
6 deposited into the tax administration special fund established
7 under section 235-20.5.
8 (g) As used in this section:
9 "Investment tax credit allocation ratio" means, with
10 respect to a taxpayer that has made an investment in a qualified
11 high technology business, the ratio of:
12 (1) The amount of the credit under this section that is,
13 or is to be, received by or allocated to the taxpayer
14 over the life of the investment, as a result of the
15 investment; to
16 (2) The amount of the investment in the qualified high
17 technology business.
18 "Qualified high technology business" means a business,
19 employing or owning capital or property, or maintaining an
20 office, in this State; provided that:
21 (1) More than fifty per cent of its total business
22 activities are qualified research; and provided

1 further that the business conducts more than seventy-
2 five per cent of its qualified research in this State;
3 or
4 (2) More than seventy-five per cent of its gross income is
5 derived from qualified research; and provided further
6 that this income is received from:
7 (A) Products sold from, manufactured in, or produced
8 in this State; or
9 (B) Services performed in this State.
10 "Qualified research" means the same as defined in section
11 235-7.3.
12 (h) Common law principles, including the doctrine of
13 economic substance and business purpose, shall apply to any
14 investment. There exists a presumption that a transaction
15 satisfies the doctrine of economic substance and business
16 purpose to the extent that the special allocation of the high
17 technology business tax credit has an investment tax credit
18 ratio of 1.5 or less of credit for every dollar invested.
19 Transactions for which an investment tax credit allocation
20 ratio greater than 1.5 but not more than 2.0 of credit for every
21 dollar invested and claimed may be reviewed by the department

for applicable doctrines of economic substance and business purpose.

Businesses claiming a tax credit for transactions with investment tax credit allocation ratios greater than 2.0 of credit for every dollar invested shall substantiate economic merit and business purpose consistent with this section.

(i) For investments made on or after May 1, 2009, notwithstanding any other law to the contrary, no allocations, special or otherwise, of credits under this section may exceed the amount of the investment made by the taxpayer ultimately claiming this credit; and investment tax credit allocation ratios greater than 1.0 of credit for every dollar invested shall not be allowed. In addition, the credit shall be allowed only in accordance with subsection (a).

(j) For investments made on or after May 1, 2009, this section shall be subject to section 235-A.

[~~(i)~~] (k) This section shall not apply to taxable years beginning after December 31, 2010."

SECTION 5. Section 241-4.5, Hawaii Revised Statutes, is amended to read as follows:

"[~~[~~]**§241-4.5**[~~]~~] **Capital goods excise tax credit.** The capital goods excise tax credit provided under section 235-110.7

shall be operative for this chapter after December 31, 1987[~~.~~]; provided that the capital goods excise tax credit shall be inoperative after December 31, 2008, and before January 1, 2010."

SECTION 6. Section 241-4.8, Hawaii Revised Statutes, is amended to read as follows:

"[~~[~~]**§241-4.8**[~~]~~] **High technology business investment tax credit.** (a) The high technology business investment tax credit provided under section 235-110.9 shall be operative for this chapter on July 1, 1999.

(b) For investments made on or after May 1, 2009, this section shall be subject to section 235-A."

SECTION 7. Section 431:7-209, Hawaii Revised Statutes, is amended to read as follows:

"[~~[~~]**§431:7-209**[~~]~~] **High technology business investment tax credit.** (a) The high technology business investment tax credit provided under section 235-110.9 shall be operative for this chapter on July 1, 1999.

(b) For investments made on or after May 1, 2009, this section shall be subject to section 235-A."

SECTION 8. In codifying the new section added by section 1 of this Act, the revisor of statutes shall substitute the

appropriate section number for the letter used in designating the new section in this Act.

SECTION 9. Statutory material to be repealed is bracketed and stricken. New statutory material is underscored.

SECTION 10. This Act shall take effect upon its approval, and shall apply to investments made, renovation costs incurred, or eligible depreciable tangible property placed in service on or after May 1, 2009.

S.B. NO. 199
S.D. 1
H.D. 1
C.D. 2

Report Title:
Tax Credits; Partner's Distributive Share

Description:
Establishes a temporary 80% tax credit cap and restricts carryover credits for the high technology business investment tax credit and the technology infrastructure renovation tax credit for investments made after May 1, 2009 and ending before January 1, 2011. Removes the partner distributive share tax incentive for the high technology business investment tax credit. Limits investment credit allocation ratio to 1 to 1. Temporarily suspends the capital goods excise tax credit for one year. (SB199 CD2)

Hawaii State Legislature
2009 Regular Session
SB199 SD1 HD1 CD2

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Measure Title: RELATING TO TAXATION.

Report Title: Tax Credits; Partner's Distributive Share

Description: Establishes a temporary 80% tax credit cap and restricts carryover credits for the high technology business investment tax credit and the technology infrastructure renovation tax credit for investments made after May 1, 2009 and ending before January 1, 2011. Removes the partner distributive share tax incentive for the high technology business investment tax credit. Limits investment credit allocation ratio to 1 to 1. Temporarily suspends the capital goods excise tax credit for one year. (SB199 CD2)

Companion:

Package: None

Current Referral: FIN

Introducer(s): HOOSER

Date		Status Text
1/23/2009	S	Introduced.
1/26/2009	S	Passed First Reading.
1/28/2009	S	Referred to WAM.
2/2/2009	S	The committee(s) on WAM has scheduled a public hearing on 02-05-09 9:30am in conference room 211.
2/5/2009	S	The committee on WAM deferred the measure.
2/28/2009	S	The committee(s) on WAM will hold a public decision making on 03-04-09 9:30am in conference room 211.
3/4/2009	S	The committee(s) on WAM recommend(s) that the measure be PASSED, WITH AMENDMENTS. The votes in WAM were as follows: 10 Aye(s): Senator(s) Kim, English, Galuteria, Hooser, Kidani, Kokubun, Tokuda, Hemmings; Aye(s) with reservations: Senator

		(s) Chun Oakland, Fukunaga ; 0 No(es): none; and 2 Excused: Senator(s) Tsutsui, Hee.
3/6/2009	S	Reported from WAM (Stand. Com. Rep. No. 595) with recommendation of passage on Second Reading, as amended (SD 1) and placement on the calendar for Third Reading.
3/6/2009	S	Report adopted; Passed Second Reading, as amended (SD 1).
3/6/2009	S	48 Hrs. Notice 03-10-09.
3/10/2009	S	Passed Third Reading, as amended (SD 1). Ayes, 25; Aye(s) with reservations: Senator(s) Baker, Fukunaga, Gabbard, Ige, Ihara, Tokuda . Noes, 0 (none). Excused, 0 (none). Transmitted to House.
3/10/2009	H	Received from Senate (Sen. Com. No. 118) in amended form (SD 1).
3/12/2009	H	Pass First Reading
3/12/2009	H	Referred to FIN, referral sheet 28
3/23/2009	H	Bill scheduled to be heard by FIN on Wednesday, 03-25-09 4:00 PM in House conference room 308.
3/25/2009	H	The committee(s) recommends that the measure be deferred.
4/1/2009	H	Bill scheduled for decision making on Friday, 04-03-09 5:00 PM in conference room 308.
4/3/2009	H	The committees on FIN recommend that the measure be PASSED, WITH AMENDMENTS. The votes were as follows: 15 Ayes: Representative(s) M. Oshiro, M. Lee, Aquino, Brower, Choy, Coffman, Har, C. Lee, Nishimoto, Sagum, Tokioka, Wooley, Yamashita; Ayes with reservations: Representative(s) Pine, Ward; Noes: none; and 2 Excused: Representative(s) Awana, Keith-Agaran.
4/8/2009	H	Reported from FIN (Stand. Com. Rep. No. 1608) as amended in HD 1, recommending passage on Second Reading and placement on the calendar for Third Reading.
4/9/2009	H	Passed Second Reading as amended in HD 1; placed on the calendar for Third Reading with none voting no (0) and Berg, Herkes, Karamatsu, Keith-Agaran, McKelvey, Mizuno, Morita, Takai, Tokioka excused (9).
4/14/2009	H	Passed Third Reading with none voting no (0) and Representative(s) Morita, Takai excused (2). Transmitted to Senate.
4/16/2009	S	Received from House (Hse. Com. No. 435).
4/16/2009	S	Senate disagrees with House amendments.
4/16/2009	H	Received notice of disagreement (Sen. Com. No. 650).
4/17/2009	H	House conferees appointed: M. Oshiro Chair; Chong, Choy, M. Lee, Ward.
4/17/2009	S	Senate Conferees appointed: Kim, Chair; Kokubun, Hemmings.
4/17/2009	H	Received notice of Senate conferees (Sen. Com. No. 659).
4/17/2009	H	Bill scheduled for Conference Committee Meeting on Saturday, 04-18-09 4:00pm in conference room 309.

4/18/2009	S	Conference committee meeting to reconvene on 04-18-09 at 5:30 pm in conference room 309.
4/18/2009	S	The Conference committee recommends that the measure be PASSED, WITH AMENDMENTS. The votes of the Senate Conference Managers were as follows: 3 Aye(s): Senator(s) Kim, Kokubun, Hemmings; Aye(s) with reservations: none ; 0 No(es): none; and 0 Excused: none.
4/18/2009	H	The Conference Committee recommends that the measure be Passed, with Amendments. The votes were as follows: 5 Ayes: Representative(s) M. Oshiro, Chong, Choy, M. Lee; Ayes with reservations: Representative(s) Ward; 0 Noes: none; and 0 Excused: none.
4/20/2009	S	Received notice of appointment of House conferees (Hse. Com. No. 586).
4/20/2009	H	Reported from Conference Committee (Conf Com. Rep. No. 51) as amended in (CD 1).
4/20/2009	S	Reported from Conference Committee as amended CD 1 (Conf. Com. Rep. No. 51).
4/20/2009	H	Forty-eight (48) hours notice Wednesday, 04-22-09.
4/20/2009	S	48 Hrs. Notice (as amended CD 1) 04-22-09.
4/22/2009	S	Recommitted to Conference Committee.
4/22/2009	H	Recommitted to Conference committee with none voting no and Representative(s) Bertram, Brower, Mizuno, Takai, Tsuji, Ward excused.
4/22/2009	S	Senator(s) Fukunaga, Tsutsui added as conferee(s).
4/22/2009	H	Received notice of change in Senate conferees (Sen. Com. No. 729).
4/23/2009	S	Conference committee meeting scheduled for 04-24-09 3:00PM in conference room 309.
4/27/2009	S	Conference committee meeting to reconvene on 04-28-09 2:45pm in conference room 309.
4/28/2009	S	Conference committee meeting to reconvene on 04-30-09 2:45 PM in conference room 309.
4/30/2009	S	The Conference committee recommends that the measure be PASSED, WITH AMENDMENTS. The votes of the Senate Conference Managers were as follows: 4 Aye(s): Senator(s) Kim, Kokubun, Tsutsui, Hemmings; Aye(s) with reservations: none ; 1 No(es): Senator(s) Fukunaga; and 0 Excused: none.
4/30/2009	H	The Conference Committee recommends that the measure be Passed, with Amendments. The votes were as follows: 5 Ayes: Representative(s) M. Oshiro, Chong, Choy, M. Lee; Ayes with reservations: Representative(s) Ward; 0 Noes: none; and 0 Excused: none.
5/1/2009	S	Reported from Conference Committee as amended CD 2 (Conf. Com. Rep. No. 132).
5/1/2009	S	48 Hrs. Notice (as amended CD 2) 05-05-09.
5/1/2009	H	Reported from Conference Committee (Conf Com. Rep. No. 132) as amended in (CD 2).
5/1/2009	H	Forty-eight (48) hours notice Tuesday 05-05-2009.
5/5/2009	H	Floor Amendment No. 15 offered by Rep. Wakai.

5/5/2009	H	Floor amendment failed following Roll Call vote: Ayes, 18. Noes, 31 (Representative(s) Aquino, Cabanilla, Carroll, Chang, Chong, Choy, Coffman, Evans, Har, Herkes, Ito, Karamatsu, M. Lee, Magaoay, Manahan, Marumoto, Mizuno, Nakashima, B. Oshiro, M. Oshiro, Pine, Rhoads, Sagum, Say, Souki, Takumi, Tokioka, Tsuji, Wooley, Yamane, Yamashita). Excused, 2 (Representative(s) Bertram, Takai).
5/5/2009	S	Floor Amendment No. 17 offered.
5/5/2009	S	Floor amendment failed following Roll Call vote: Ayes, 7. Noes, 18 (Senator(s) English, Espero, Gabbard, Galuteria, Green, Hanabusa, Hee, Hemmings, Hooser, Kidani, Kim, Kokubun, Nishihara, Sakamoto, Takamine, Taniguchi, Tokuda, Tsutsui). Excused, 0 (none).
5/5/2009	S	Deferred until 05-07-09.
5/5/2009	H	Passed Final Reading as amended in CD 2 with Representative(s) Belatti, Berg, Brower, Ching, Finnegan, Hanohano, Keith-Agaran, Luke, McKelvey, Morita, Saiki, Thielen, Wakai, Ward voting no (14) and Representative(s) Bertram, Takai excused (2).
5/6/2009	S	Received notice of passage on Final Reading in House (Hse. Com. No. 727).
5/7/2009	S	*Passed Final Reading, as amended (CD 2). 17 Aye(s); Aye(s) with reservations: Senator(s)* Gabbard . 8 No(es): Senator(s) Baker, Bunda, Chun Oakland, Fukunaga, Hee, Ige, Ihara, Slom. 0 Excused: none.
5/7/2009	H	Received notice of Final Reading (Sen. Com. No. 788).
5/8/2009	S	Enrolled to Governor.

S = Senate
H = House
D = Data Systems
$ = Appropriation measure
ConAm = Constitutional Amendment

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SB199 SD1 HD1 CD2

Hawaiian Electric Company, Inc.

Materials & Supplies Inventory

($ in thousands)

	12/31/2008	12/31/2009	Average for 2009	HECO Reference
Production Inventory	8,809	8,809	8,809	703
Adjustment to Inventory related to Accounts Payable	(405)	(405)	(405)	WP-1803, p.1
Adjusting for 2008 Year End Actuals	(399)			HECO T-18 Att. 2, Page 2
Adjusted Production Inventory	8,005	8,404	8,205	(a)
Transmission & Distribution Inventory	8,211	8,211	8,211	803
Adjustment to Inventory related to Accounts Payable	(601)	(601)	(601)	WP-1803, p.1
Adjusting for 2008 Year End Actuals	776			HECO T-18 Att. 2, Page 2
Adjusted T&D Inventory	8,386	7,610	7,998	(b)
Total Materials & Supplies	16,392	16,015	16,203	(a) + (b)

NOTE: Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.
2009 Test Year
(Amounts in Dollars)

HECO INVENTORY REPORT

MONTH END	ENDING INVENTORY $			ISSUES $			RECEIPTS $			INVENTORY ADJUSTMENT $		
	T&D MAT'L	POWER SUPPLY	TOTAL	T&D MAT'L	POWER SUPPLY	TOTAL	T&D MAT'L	POWER SUPPLY	TOTAL	T&D MAT'L	POWER SUPPLY	T&D P/S TOTAL
Jan-07	6,166,038	6,764,579	12,930,617	754,695	559,135	1,313,830	566,348	470,486	1,036,834	-6,151	4,099	-2,052
Feb-07	6,570,022	6,988,990	13,559,012	725,860	279,950	1,005,810	1,091,017	501,315	1,592,332	38,827	3,047	41,874
Mar-07	6,689,649	7,041,363	13,731,012	774,685	483,257	1,257,942	898,040	536,200	1,434,240	-3,728	-570	-4,298
Apr-07	6,524,230	7,262,982	13,787,212	727,822	395,017	1,122,839	571,078	631,041	1,202,119	-8,675	-14,404	-23,079
May-07	6,326,484	7,136,730	13,463,214	1,481,214	656,677	2,137,891	1,244,222	531,266	1,775,488	39,247	-736	38,511
Jun-07	6,574,450	7,196,026	13,770,476	686,073	459,359	1,145,432	944,443	520,600	1,465,043	-10,403	-1,944	-12,347
Jul-07	6,581,090	6,952,801	13,533,891	630,126	581,329	1,211,455	616,457	334,354	950,811	20,966	3,749	24,715
Aug-07	6,716,063	7,298,054	14,014,117	758,566	517,722	1,276,288	908,788	872,154	1,780,942	-15,324	-9,179	-24,503
Sep-07	6,809,383	7,487,454	14,296,837	643,912	346,914	990,826	732,885	532,149	1,265,034	4,586	3,926	8,512
Oct-07	7,213,799	7,754,143	14,967,942	593,308	288,129	881,437	978,350	560,663	1,539,013	19,374	-5,844	13,530
Nov-07	7,161,019	7,882,944	15,043,963	850,411	297,752	1,148,163	776,543	440,339	1,216,882	21,088	-13,786	7,302
Dec-07	6,851,537	8,267,514	15,119,051	1,179,474	231,040	1,410,514	839,122	621,283	1,460,405	30,868	-5,673	25,195
Jan-08	7,151,888	8,226,424	15,378,312	561,736	642,479	1,204,215	882,195	600,642	1,482,837	-20,107	745	-19,362
Feb-08	7,296,480	8,229,574	15,526,054	574,619	491,294	1,065,913	707,905	490,385	1,198,290	11,305	4,056	15,361
Mar-08	7,532,358	8,222,902	15,755,260	700,253	371,803	1,072,056	919,884	374,907	1,294,791	15,247	-9,775	5,472
Apr-08	7,592,180	8,216,717	15,808,897	629,113	429,855	1,058,968	653,851	426,759	1,080,610	35,084	-3,089	31,995
May-08	7,672,074	8,118,612	15,790,686	664,354	512,162	1,176,516	713,551	410,098	1,123,649	30,697	3,958	34,655
Jun-08	7,787,694	8,310,223	16,097,917	531,395	385,960	917,355	636,278	574,469	1,210,747	10,736	3,101	13,837
Jul-08	7,736,512	8,587,694	16,324,206	762,087	414,575	1,176,662	695,822	703,676	1,399,498	15,083	-11,630	3,453
Aug-08	8,177,880	8,245,838	16,423,718	678,906	773,496	1,452,402	1,066,829	430,296	1,497,125	53,437	1,344	54,781
Sep-08	8,478,263	8,202,609	16,680,872	684,097	340,428	1,024,525	961,054	302,571	1,263,625	23,422	-5,365	18,057
Oct-08	8,608,445	8,026,800	16,635,245	997,235	578,389	1,575,624	1,073,382	405,628	1,479,010	54,041	-3,047	50,994
Nov-08	8,460,927	8,019,666	16,480,593	766,336	503,152	1,269,488	597,386	493,724	1,091,110	21,431	2,292	23,723
Dec-08	8,385,796	8,005,284	16,391,080	1,062,807	871,827	1,934,634	988,240	863,932	1,852,172	-563	-6,487	-7,050
Jan-09	8,397,744	8,411,415	16,809,159	715,320	410,830	1,126,150	692,198	819,039	1,511,237	35,070	-2,076	32,994
Feb-09	8,566,680	8,668,210	17,234,890	825,623	271,393	1,097,016	989,153	512,807	1,501,960	5,404	15,380	20,784

Tax and Accounting Center

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NOTICE 2009-22, 2009-14 I.R.B. 741 (4/6/2009)

Part III – Administrative, Procedural and Miscellaneous

Asset Valuation under Section 430(g)(3)(B) as amended by WRERA

Notice 2009-22

I. PURPOSE

This notice provides interim rules regarding asset valuation methods that are permitted to be used by single employer defined benefit pension plans for minimum funding purposes pursuant to changes made by the Worker, Retiree, and Employer Recovery Act of 2008, Public Law 110-458 (WRERA). This notice also provides automatic approval for a change in asset valuation method for plan years beginning during 2009 to adopt any permissible asset valuation method.

II. BACKGROUND

Section 412 of the Internal Revenue Code (the Code) provides minimum funding requirements that generally apply for defined benefit pension plans. Section 412(d)(1) provides that any change in funding method is permitted to take effect only if it is approved by the Secretary. A change in the plan's funding method includes a change in the method for determining the value of the plan's assets, a change in the method for determining the plan's liabilities, or a change in the plan's valuation date.

Section 430, which was added by the Pension Protection Act of 2006, Public Law 109-280 (PPA '06), provides rules for the determination of the minimum required contribution applicable to single employer pension plans (including multiple employer plans) pursuant to §412. Section 430 is generally effective for plan years beginning on or after January 1, 2008.

Section 430(g)(1) provides that all determinations made under §430 for a plan year must be made as of the plan's valuation date. Section 430(g)(2) provides that the valuation date for a plan year must be the first day of the plan year, except in the case of a plan with 100 or fewer participants (determined as provided in §430(g)(2)(B) and (C)).

Section 430(g)(3) provides rules regarding the determination of the value of plan assets for purposes of §430. Under §430(g)(3)(A), except as provided in §430(g)(3)(B), the fair market value of plan assets must be used for this purpose. As an alternative to the use of fair market value, §430(g)(3)(B) permits the use of an actuarial value of assets based on the average of fair market values, but only if such method is permitted under regulations prescribed by the Secretary, does not provide for averaging of such values over more than the period beginning on the last day of the 25th month preceding the month in which the valuation date occurs and ending on the valuation date (or a similar period in the case of a valuation date that is not the 1st day of a month), and does not result in a determination of the actuarial value of plan assets that, at any time, is lower than 90 percent or greater than 110 percent of the fair market value of plan assets as of the valuation date.

Section 436 provides certain limitations on a defined benefit plan that are based on the funded status of the plan. For this purpose, the funding status of the plan is based on the adjusted funding target attainment percentage, which in turn is based in part on the value of plan assets as determined under §430.

Prior to amendment by WRERA, the last sentence of §430(g)(3)(B) provided that any averaging under §430(g)(3)(B) must be adjusted for contributions and distributions (as provided by the Secretary). Section 121(b) of WRERA amended the last sentence of §430(g)(3)(B) to provide that any averaging under §430(g)(3)(B) must be adjusted for contributions, distributions, and expected earnings (as determined by the plan's actuary on the basis of an assumed earnings rate specified by the actuary, but not in excess of the third segment rate applicable under §430(h)(2)(C)(iii)), as specified by the Secretary. This WRERA change is effective for the same periods as the PPA '06 provision that it

amends.

On December 31, 2007, proposed regulations under §§430(d), 430(g), 430(h), and 430(l) were published in the Federal Register (72 FR 74215) (the proposed regulations). Section 1.430(g)-1(c)(2) of the proposed regulations provides rules for a permissible asset valuation method based on the average of fair market values of plan assets, in accordance with §430(g)(3)(B), prior to amendment by WRERA. Under this asset valuation method, the actuarial value of assets is the average of the fair market value of assets on the valuation date and the adjusted fair market value of assets determined as of one or more earlier determination dates. The adjusted fair market value of assets as of a determination date is the fair market value of plan assets on that date, increased for contributions included in the plan's asset balance on the valuation date that were not included in the plan's asset balance on the determination date, and decreased for benefits and administrative expenses paid from plan assets between that determination date and the valuation date. Because the proposed regulations were issued prior to the enactment of WRERA, the proposed regulations do not provide for an adjustment for expected earnings in determining the adjusted fair market value as of an earlier determination date. Section 1.430(g)-1(f)(4) of the proposed regulations provides that any change in a plan's valuation date or asset valuation method that is made for the first plan year for which §430 applies to the plan and that is not inconsistent with the requirements of §430 is treated as having been approved by the Commissioner and does not require the Commissioner's specific prior approval.

The proposed regulations are proposed to be effective for plan years beginning on or after January 1, 2009. The preamble of the proposed regulations provides that plans may rely on the proposed regulations for plan years beginning during 2008. Notice 2008-21, 2008-7 I.R.B. 431, states generally that the Service will not challenge a reasonable interpretation of an applicable statutory provision under §430 or §436 for plan years beginning during 2008, but noted that the use of averaging methods in determining the value of plan assets under §430(g)(3)(B) is permitted only in accordance with a method prescribed in regulations.

Part III of this notice describes the rules expected to be incorporated in future regulations for adjusting asset values for expected earnings, pursuant to §430(g)(3)(B), as amended by WRERA, using an assumed rate of return. Taxpayers may rely on the rules described in Part III of this notice for plan years beginning during 2008 and 2009.

The rules in Part III of this notice modify the determination of the adjusted fair market value of plan assets for a prior determination date that is used in determining the average of fair market values under §430(g)(3)(B) as provided in the proposed regulations. The other rules for the asset valuation method under §430(g)(3)(B) set forth in the proposed regulations continue to apply. For example, the period of time between each of the determination dates (treating the valuation date as a determination date) must be equal and the method of determining the value of plan assets (including the selection of the determination dates) is part of the plan's funding method.

The guidance provided in this notice with respect to §430(g)(3)(B) of the Code also applies for purposes of the parallel provision in section 303(g)(3)(B) of the Employee Retirement Income Security Act of 1974, as amended (ERISA). (Under section 101 of the Reorganization Plan No. 4 of 1978 (43 FR 47713), the Secretary of the Treasury has interpretive authority over the subject matter addressed in this notice for purposes of ERISA, as well as the Code.)

III. INTERIM RULES FOR APPLICATION OF NEW ASSET VALUATION METHOD

A. Adjustment for expected earnings.

The adjustment for expected earnings that is made to the fair market value of plan assets for a determination date is the sum of the expected earnings separately determined for each period between the determination date and the valuation date. The expected earnings for a period that is 12 months in length is equal to the product of the assumed rate of return for the 12 months and the fair market value of assets as of the determination date that is the beginning of the period, adjusted to reflect any contributions, benefits, and administrative expenses paid during the period (other than contributions for a plan year that ends with or prior to the determination date). If the period for which expected earnings is being determined is less than 12 months, then the expected earnings must be reduced to reflect the length of the shorter period. The fair market value of assets as of a determination date includes any contribution for a plan year that ends with or prior to the determination date that is receivable as of the determination date (provided that the contribution is actually made within $8^1/_2$ months after the end of the applicable plan year). If the contribution that is receivable as of a determination date is for a plan year beginning on or after January 1, 2008, then only the present value as of that determination date (determined using the effective interest rate for

the plan year for which the contribution is made) is included in the fair market value of assets. The adjustment to the calculation of expected earnings for a period to reflect any other contributions, and to reflect benefits and administrative expenses paid during the period must take into account the timing of those contributions, benefits, and expenses.

The assumed rate of return for a period must be the actuary's best estimate of the anticipated annual rate of return on plan assets from the valuation date until all benefits are expected to be paid, limited so that the assumed rate of return does not exceed the interest rate limitation determined under section III.B or III.C of this notice, as applicable for the plan year that contains the period. If the period between one determination date and the next includes portions of more than one plan year, then the limitation on the assumed rate of return is the lower of the applicable limitations for those plan years.

B. Determination of the limitation on the assumed rate of return for periods within plan years for which either the funding target or the target normal cost is determined using the three segment interest rates under §430(h)(2)(C).

If either the funding target or target normal cost for a plan year is determined (either for purposes of determining minimum required contributions under §430 or for purposes of the disclosure requirement under section 101(f) of ERISA) using the three segment interest rates described in §430(h)(2)(C) (determined with or without the application of the transition rule under §430(h)(2)(G)), then the assumed rate of return applicable for periods within the plan year must be limited so that it does not exceed the third segment interest rate used in that determination. This rule does not apply when the full yield curve is used to determine the funding target and target normal cost, but the rule does apply in most other cases with respect to periods in plan years beginning on or after January 1, 2008.

C. Determination of the limitation on the assumed rate of return for periods within plan years for which neither the funding target nor the target normal cost is determined using the three segment interest rates under §430(h)(2)(C).

If neither the funding target nor the target normal cost for a plan year is determined using the three segment interest rates described in §430(h)(2)(C) (determined with or without the application of the transition rule under §430(h)(2)(G)), then the limitation on the assumed rate of return applicable for periods within the plan year cannot be determined using the rules described in section III.B of this notice. This is the case, for example, when: (1) the plan year which contains the period for which expected earnings are being determined begins before January 1, 2008; (2) the funding target and target normal cost are determined using the full yield curve described in §430(h)(2)(D)(ii); or (3) in the case of a plan with respect to which an election has been made under section 402(a)(1) of PPA '06 (which is generally available only for the pension plan of a commercial passenger airline under which accruals are frozen), the minimum required contribution is determined under section 402(e) of PPA '06.

If the limitation on the assumed rate of return applicable for periods within the plan year cannot be determined using the rules described in section III.B of this notice, then the assumed rate of return for periods within the plan year generally must be limited so that it does not exceed the average of the third segment rates for the 24-month period ending with the month preceding the month that contains the valuation date for the plan year. However, if the Service has not published the 24-month average of the third segment rate for the month preceding the month that contains the valuation date for the plan year (i.e., the 24-month period ends before August 2007), then the spot third segment rate for the month preceding the month that contains the valuation date is used as the limitation on the assumed rate of return for the plan year.

D. Application of the 90 to 110 percent corridor.

The rules for accounting for contribution receipts under §430(g)(4) are applied prior to the application of the 90 to 110 percent corridor under §430(g)(3)(B)(iii). Thus, for example, in the case of a plan with a calendar plan year, a contribution receivable for the 2008 plan year which is made in 2009 will increase the upper end of the 90 to 110 percent corridor by 110% of the present value, determined as of January 1, 2009, of that contribution receivable.

E. Special rule for plan years beginning during 2008.

The actuarial value of plan assets for a plan year that begins during 2008 is permitted to be determined using an asset averaging method that complies with the rules described in §1.430(g)-1(f)(4) of the proposed regulations (notwithstanding that this determination results in a lower value of plan assets than under §430(g)(3)(B) as amended by WRERA). Accordingly, no adjustment for expected earnings is required to be applied for purposes of determining the actuarial value of assets under §430(g)(3)(B) for

a plan year that begins during 2008. Thus, for a plan year that begins in 2008, no retroactive changes to the actuarial value of assets need be made to comply with the amendments to §430(g)(3)(B) made by WRERA in the case of a plan that has complied with applicable requirements for that plan year (such as quarterly contribution requirements under §430(j) and benefit restrictions under §436) based on the asset averaging method permitted before the enactment of WRERA.

For a plan year that begins in 2008, a plan for which the actuarial value of plan assets for purposes of §§430 and 436 was determined based on the proposed regulations is permitted to have the actuarial value of plan assets redetermined pursuant to §430(g)(3)(B), as amended by WRERA. However, plans should take into account the risk that any such redetermination may result in plan operations for the plan year having been inconsistent with the requirements of section 206(g) of ERISA (the provision that parallels §436 of the Code).

F. Examples.

The following examples illustrate the application of this section III:

Example 1 – Actuarial value of assets calculated as of January 1, 2009, using the average of the value on the valuation date and the two prior valuation dates

Facts

All assets of Plan A are invested in a trust fund, the plan year is the calendar year, and the valuation date is January 1. The actuarial value of assets is determined by averaging the fair market value as of the valuation date and the adjusted fair market values as of the preceding two valuation dates. Benefit payments and administrative expenses are paid evenly throughout the year, and accordingly are assumed to be made mid-year. The plan is not required to make quarterly contributions, and contributions for a plan year are made on September 15 following each plan year.

The fair market value of assets in trust and the contribution amounts are summarized below:

	2007	2008	2009
Fair market value Jan. 1:			
Assets in trust as of Jan. 1.....	$135,500	$176,000	$162,000
Contribution for prior plan year paid Sept. 15	$ 61,000	$ 62,000	$68,781
Effective interest rate for prior plan year	N/A	N/A	6.00%
Discounted prior plan year contribution receivable as of Jan. 1	$ 61,000	$ 62,000	$ 66,000
Fair market value as of Jan. 1 including contrib. receivable..	$196,500	$238,000	$228,000

An actuarial valuation is performed as of January 1, 2009. The fair market value of assets, plan contributions, benefit payments, and other relevant items for January 1, 2007 through January 1, 2009 are as follows:

	2007	2008
Fair market value January 1 including contributions receivable	$196,500	$238,000
Contributions for current year.....	$ 62,000	$ 66,000*

Benefit payments	$ (24,000)	$ (25,000)
Expenses	$ (7,000)	$ (7,500)
Interest and dividends	$ 7,500	$ 7,000
Net realized gains (losses)	$ 6,000	$ (8,500)
Balancing item	$ (3,000)	$ (42,000)
Fair market value: Dec. 31	$ 238,000	$228,000

*Present value as of January 1, 2009

Computation of expected earnings

The plan sponsor elects to determine present values and other computations under §430 using the 24-month average of segment rates for the fourth month preceding the month that contains the valuation date, without applying the transition rules in §430(h)(2)(G). The actuary's best estimate of the anticipated rate of return on plan assets is 6.25% for 2007 and is 6.25% for 2008. However, the assumed rate of return used for determining expected earnings for each of these plan years is equal to the lesser of the anticipated rate of return on assets for the plan year and the applicable limitation for the plan year.

The January 1, 2007 valuation was performed based on the funding rules in effect prior to PPA '06, and therefore did not use the segment rates. Accordingly, the limitation on the assumed rate of return for 2007 is determined under section III.C of this notice. Furthermore, the Service did not publish the 24-month average of the third segment rates for the 24-month period that ended with the month prior to the valuation date (December 2006). Therefore, in accordance with section III.C of this notice, the assumed rate of return applicable for periods in 2007 is limited so that it does not exceed the spot third segment rate for the month prior to the valuation date (December 2006), or 6.09% (per Table II of Notice 2007-81, 2007-2 C.B. 899). Because this rate is lower than the actuary's best estimate of the anticipated rate of return on plan assets for 2007, the assumed rate of return for 2007 is limited to 6.09%.

For 2008, the third segment rate used to limit the assumed rate of return is the rate used for the January 1, 2008 valuation. Because the plan sponsor has elected to use the segment rates for the fourth month preceding the valuation date (September 2007) without transition, the third segment rate is 6.38%. Because this rate is higher than the actuary's best estimate of the anticipated rate of return on plan assets for 2008, the assumed rate of return for 2008 is equal to 6.25% (the actuary's best estimate of the anticipated rate of return on plan assets).

Expected earnings are calculated as follows for each year:

2007: ($196,500 x .0609) + [$62,000 x $(1.0609^0 - 1)$] - [($24,000 + $7,000) x $(1.0609^{(1/2)} - 1)$] = $11,037

2008: ($238,000 x .0625) + [$66,000 x $(1.0625^0 - 1)$] - [($25,000 + $7,500) x $(1.0625^{(1/2)} - 1)$] = $13,875

Computation of adjusted fair market value of assets

The adjusted fair market values of assets for the January 1, 2007 and January 1, 2008 determination dates are computed as follows:

Adjusted values	2007	2008
Fair market value January 1:	$196,500	$ 238,000
Net adjustments:		
Contributions for 2007	$ 62,000	n/a
Contributions for 2008	$ 66,000*	$ 66,000*
Benefit payments for 2007.....	$ (24,000)	n/a
Benefit payments for 2008.....	$ (25,000)	$ (25,000)

Expenses for 2007	$ (7,000)	n/a
Expenses for 2008	$ (7,500)	$ (7,500)
Expected earnings for 2007.....	$ 11,037	n/a
Expected earnings for 2008.....	$ 13,875	$ 13,875
Adjusted fair market value	$285,912	$285,375

*Present value as of January 1, 2009

Computation of actuarial value of assets

Average of adjusted fair market value at earlier determination dates and fair market value at valuation date: ($285,912 + $285,375 + $228,000) ÷ 3 = $266,429

This preliminary average as of January 1, 2009 must be limited so that it satisfies the 90-110 percent corridor rules under §430(g)(3)(B)(iii). Because 110% of $228,000 equals $250,800, the actuarial value of assets for Plan A must be limited to $250,800 (rather than $266,429). Thus, the actuarial value of assets as of January 1, 2009 is $250,800.

Algebraically equivalent determination of actuarial value of assets

Note that the above calculation of the preliminary average as of January 1, 2009 is algebraically equivalent to the method under Approval 15 of Rev. Proc. 2000-40, 2000-2 C.B. 357, using the assumed rate of return for each year as described above and a smoothing period of three years. This equivalency is demonstrated as follows:

2007		2008
Actual earnings:		
Interest and dividends	$ 7,500	$ 7,000
Net realized gains (losses)	$ 6,000	$ (8,500)
Balancing item	$ (3,000)	$ (42,000)
Total actual earnings	$ 10,500	$ (43,500)
Expected earnings	$ 11,037	$ 13,875
Gain (loss) equal to actual earnings minus expected earnings	$ (537)	$(57,375)

Preliminary actuarial value of assets as of January 1, 2009 equals: $228,000 + one-third of the 2007 loss (1/3 x $537) + two-thirds of the 2008 loss (2/3 x $57,375) = $266,429

As noted above, this preliminary actuarial value of assets must be limited so that the actuarial value of assets as of January 1, 2009 satisfies the 90-110 percent corridor rules under §430(g)(3)(B)(iii). Because the preliminary actuarial value of assets exceeds 110% of the fair market value of plan assets as of the valuation date, the actuarial value of assets as of January 1, 2009 is $250,800.

Example 2 – Actuarial value of assets calculated as of January 1, 2010, using the average of the value on the valuation date and four earlier quarterly determination dates

Facts

The facts are the same as in Example 1, except that the actuarial value of assets is calculated by averaging the fair market value as of the current valuation date and adjusted fair market values as of the beginning of the four preceding calendar quarters. Two contributions are made for the 2009 plan year—a contribution of $10,000 made on May 1, 2009, and a contribution of $60,000 made on

September 15, 2010. The effective interest rate for the 2009 plan year is 6.10%. Benefits are paid on the 15th day of each month, and so benefits for the quarter are assumed to be made at the midpoint of each quarter. During 2009, administrative expenses are paid at the beginning of each quarter.

An actuarial valuation is performed as of January 1, 2010. For each determination date for which the contribution of $68,781 paid on September 15, 2009 is a contribution receivable for the 2008 plan year, the contribution receivable is discounted to the determination date using the 2008 effective interest rate of 6.00%. The contribution of $60,000 paid on September 15, 2010 for the 2009 plan year is reflected in the fair market value of assets as of January 1, 2010, discounted to that date using the 2009 effective interest rate of 6.1% ($60,000 ÷ $1.061^{(8.5/12)}$ = $57,536), as illustrated in the table below:

Quarter beginning	1/1/2009	4/1/2009	7/1/2009	10/1/2009	1/1/2010
Fair market value:					
Assets in trust at beginning of quarter	$162,000	$143,232	$153,649	$215,300	$216,900
Contributions receivable for prior plan year	$ 68,781	$ 68,781	$ 68,781	$ 0	$ 60,000
Effective interest rate for prior plan year	6.00%	6.00%	6.00%	6.00%	6.10%
Discounted prior plan year contributions receivable at beginning of quarter	$ $ 66,000	$ 66,968	$ 67,951	$ 0	$ 57,536
Total fair market value at beginning of quarter, including contributions receivable	$228,000	$210,200	$221,600	$215,300	$274,436

The fair market value of assets, plan contributions, benefit payments, and other relevant items for the four quarters of 2009 are shown in the table below:

Quarter beginning	1/1/2009	4/1/2009	7/1/2009	10/1/2009
Total fair market value at beginning of quarter, including contributions receivable	$228,000	$210,200	$221,600	$215,300
Contributions	$ 0	$ 10,000	$ 0	$ 57,536**
Benefit payments	$ (6,000)	$ (6,500)	$ (6,300)	$ (6,400)
Expenses	$ (2,100)	$ (1,900)	$ (2,300)	$ (1,800)
Interest and dividends	$ 2,300	$ 1,800	$ 2,000	$ 2,800
Net realized gains (losses)...	$ 3,000	$ 3,000	$ 3,000	$ 3,000
Balancing item*	$(15,000)	$ 5,000	$ (2,700)	$ 4,000

Fair market value at end of quarter, including contributions receivable.....	$210,200	$221,600	$215,300	$274,436

* Includes the change in discounted value of the contribution receivable.

** Discounted value of contribution receivable for the 2009 plan year, paid after the end of the 2009 plan year. This discounted amount is treated as if it is paid on December 31, 2009, for the purpose of calculating the fair market value and the average value of assets.

Computation of expected earnings

The plan sponsor elects to determine present values and other computations under §430 using the 24-month segment rates for the fourth month preceding the month that contains the valuation, without applying the transition rules in §430(h)(2)(G). The actuary's best estimate of the anticipated rate of return on plan assets is 6.25% for 2009. This rate is compared with the third segment rate for the 2009 plan year of 6.56% (based on the rates published for September 2008); because the third segment rate is higher than the actuary's best estimate of the anticipated rate of return on plan assets, the actuary's assumed rate of return is not restricted.

Expected earnings are calculated for each quarter, taking into account the timing of contributions, benefit payments, and administrative expenses during each quarter, as follows:

Quarter beginning 1/1/2009:

$[\$228{,}000 \times (1.0625^{(3/12)} - 1)] - [\$6{,}000 \times (1.0625^{(1.5/12)} - 1)] - [\$2{,}100 \times (1.0625^{(3/12)} - 1)] = \$3{,}404$

Quarter beginning 4/1/2009:

$[\$210{,}200 \times (1.0625^{(3/12)} - 1)] + [\$10{,}000 \times (1.0625^{(2/12)} - 1)] - [\$6{,}500 \times (1.0625^{(1.5/12)} - 1)] - [\$1{,}900 \times (1.0625^{(3/12)} - 1)] = \$3{,}233$

Quarter beginning 7/1/2009:

$[\$221{,}600 \times (1.0625^{(3/12)} - 1)] - [\$6{,}300 \times (1.0625^{(1.5/12)} - 1)] - [\$2{,}300 \times (1.0625^{(3/12)} - 1)] = \$3{,}301$

Quarter beginning 10/1/2009:

$[\$215{,}300 \times (1.0625^{(3/12)} - 1)] + [\$57{,}536 \times (1.0625^{0} - 1)] - [\$6{,}400 \times (1.0625^{(1.5/12)} - 1)] - [\$1{,}800 \times (1.0625^{(3/12)} - 1)] = \$3{,}212$

Computation of average value of assets

The average value of assets as of January 1, 2010, is computed as follows:

Determination date	1/1/2009	4/1/2009	7/1/2009	10/1/2009
Total fair market value at beginning of quarter, including contributions receivable	$228,000	$210,200	$221,600	$215,300
Net adjustments*				
Contributions	$ 67,536	$ 67,536	$ 57,536	$ 57,536*
Benefit payments	$ (25,200)	$ (19,200)	$ (12,700)	$ (6,400)

Expenses	$ (8,100)	$ (6,000)	$ (4,100)	$ (1,800)
Expected earnings:				
1/1/2009 - 3/31/2009	$ 3,404	N/A	N/A	N/A
4/1/2009 - 6/30/2009	$ 3,233	$ 3,233	N/A	N/A
7/1/2009 - 9/30/2009	$ 3,301	$ 3,301	$ 3,301	N/A
10/2009 - 12/31/2009	$ 3,212	$ 3,212	$ 3,212	$ 3,212
Adjusted fair market value	$275,386	$262,282	$268,849	$267,848

* Entries reflect the sum of the amounts for the current and later quarters, as illustrated for expected earnings.

Average of adjusted fair market value of assets at earlier determination dates and fair market value at valuation date: ($275,386 + $262,282 + $268,849 + $267,848 + $274,436) ÷ 5 = $269,760

This average must be limited so that the actuarial value of assets as of January 1, 2010 satisfies the 90-110 percent corridor rules under §430(g)(3)(B)(iii). Because the average of adjusted fair market values of $269,760 falls between 90% and 110% of $274,436, the actuarial value of assets as of January 1, 2010 is $269,760.

IV. AUTOMATIC APPROVAL FOR CHANGE IN ASSET VALUATION METHOD

This notice provides approval by the Commissioner for a change in a plan's asset valuation method to adopt an asset valuation method that is permitted under §430(g)(3), as amended by WRERA, that is made for a plan year that begins during 2009. In addition, the approval that would apply under the proposed regulations for a change in funding method for a plan year that begins during 2008 will apply to a change in a plan's asset valuation method made to adopt the asset valuation method permitted by §430(g)(3)(B), as amended by WRERA, that is made for such a plan year.

V. DRAFTING INFORMATION

The principal authors of this notice are Carolyn Zimmerman of the Employee Plans, Tax Exempt and Government Entities Division, and Michael P. Brewer and Linda S. F. Marshall of the Office of the Division Counsel/Associate Chief Counsel (Tax Exempt and Government Entities). For further information regarding this notice, please contact the Employee Plans taxpayer assistance answering service at 1-877-829-5500 (a toll free number), Mr. Brewer or Ms. Marshall at (202) 622-6090 (not a toll free number), or e-mail Ms. Zimmerman, at RetirementPlanQuestions@irs.gov.

Contact us at http://www.bna.com/contact/index.html or call 1-800-372-1033

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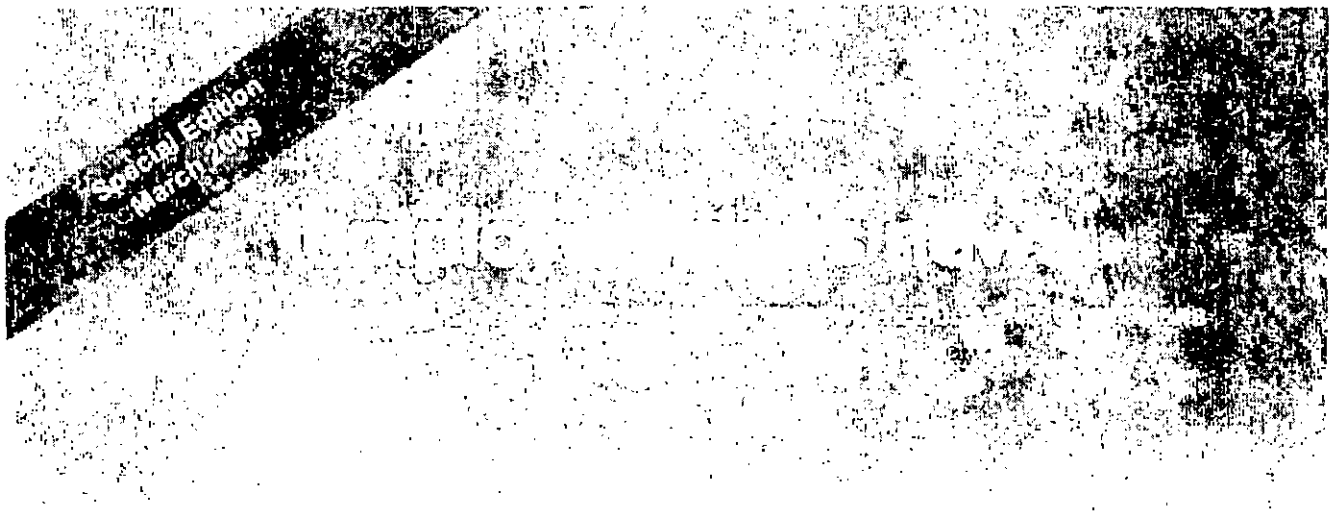

Plans May Use Reasonable Interpretation in Selecting a Yield Curve

Final regulations are being drafted concerning interest rates to be used to value pension liabilities under **§430**. The final regulations generally will not be effective for plan years beginning before they are issued.

In accordance with Part 3 of **Notice 2008-21**, for plan years beginning before the effective date of the final regulations, plan sponsors must follow applicable statutory provisions and can rely on the proposed regulations for compliance with those statutory provisions. For such plan years, taking into account the items with respect to which guidance is provided in Part III(A) of Notice 2008-21, the IRS will not challenge a reasonable interpretation of an applicable statutory provision under **§§430** or **436**, as amended in 2008. Therefore in selecting which month's yield curve is permitted to be used for purposes of valuing pension liabilities in order to determine funding obligations for a plan year that begins before issuance of final regulations, employers may rely on a reasonable interpretation of the funding rules. Determining the plan's liabilities for such a plan year using interest rates under the corporate bond yield curve (determined without regard to 24 month averaging) for any applicable month represents a reasonable interpretation of the new funding rules in the statute. Thus, for a calendar year plan with a January 1, 2009 valuation date, the IRS will not challenge the use of the monthly yield curve for January 2009, or any one of the four months immediately preceding January 2009.

It is anticipated that the final regulations will provide approval for any change in an interest rate election under **§430(h)(2)** for plan years beginning in 2009.

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Hawaiian Electric Company, Inc.
Working Cash Study
O&M Non-Labor Payment Lag

Source: Per Supporting Worksheets

	Test Year Expense ($000's) Note A	% of Total	Total Payment Lag Days	Reference	Weighted Average
Pension Expense[1]		0%		HECO-WP-1806, p. 32	0 days
Pension Expense[1] - contributed	$2,740	2%	14	Page 2	0 days
OPEB Expense[2]	$5,071	4%	66	HECO-WP-1806, p. 33	3 days
Pension Regulatory Liability amort.[3]		0%		HECO-WP-1806, p. 32	0 days
OPEB Regulatory Liability amort.[4]		0%		HECO-WP-1806, p. 32	0 days
System Devel. Costs Amortization[5]		0%		HECO-1117	0 days
Regulatory Commission Expense[6]		0%		HECO-1403	0 days
Waiau Water Well Amortization[7]		0%		HECO T-7	0 days
Emission Fees[7]	$1,092	1%	252	HECO-WP-1806, p. 34	2 days
EPRI Dues[8]	$1,657	1%	(3)	HECO-WP-1806, p. 35	0 days
Other Non-Labor O&M[9]	$111,790	91%	30	HECO-WP-1806, p. 36-37	28 days
	$122,350	100%			
O&M Non-Labor Payment Lag					**33 days**

NOTE: Totals may not add exactly due to rounding.

Note A

[1] Pension expense estimate based on revised 2009 Pension Accrual of $31,488k (per DOD-IR-101) x 74% (based on 2007 % of Employee Benefits charged to O&M expense). As agreed to by the Parties it is excluded from the calculation. Contribution total of $2.74M is comprised of two contributions of $1,369,667 made in February and March.

[2] OPEB expense estimate based on revised 2009 OPEB expense of $6,941k (per DOD-IR-101) x 74% (based on 2007 % of Employee Benefits charged to O&M expense). Includes $1,302k of SFAS 106 Reg. Asset amortization.

[3] Per HECO-1124. As agreed to by the Parties, it is excluded from the calculation.

[4] Per HECO-1125. As agreed to by the Parties, it is excluded from the calculation.

[5] Per HECO-1117. As agreed to by the Parties, it is excluded from the calculation.

[6] Per HECO-1403. As agreed to by the Parties, it is excluded from the calculation.

[7] Per HECO T-7. Emissions fees as agreed upon by the Parties. As agreed to by the Parties, Waiau Water Well amortization is excluded from the calculation.

[8] Per HECO-1406

[9] Other Non-Labor O&M = Adjusted total O&M Non-Labor expense of $122,350k (Settlement) lee other items noted above.

Hawaiian Electric Company
Working Cash Study
Pension Payment Lag

Source: Forecast monthly payments.

PENSION

	SERVICE PERIOD							
	BEGIN	END	AVE SERVICE PERIOD (DAYS)	PAYMENT DATE [1]	END DATE TO PAY DATE (DAYS)	PAYMENT LAG DAYS	INVOICE ($) [1]	WEIGHTED AVERAGE
January	1/1/09	1/31/09	15.5	1/30/09	(1.5)	14.0	100	1,400
February	2/1/09	2/28/09	14.0	2/27/09	(1.5)	12.5	100	1,250
March	3/1/09	3/31/09	15.5	3/31/09	(0.5)	15.0	100	1,500
April	4/1/09	4/30/09	15.0	4/30/09	(0.5)	14.5	100	1,450
May	5/1/09	5/31/09	15.5	5/29/09	(2.5)	13.0	100	1,300
June	6/1/09	6/30/09	15.0	6/30/09	(0.5)	14.5	100	1,450
July	7/1/09	7/31/09	15.5	7/31/09	(0.5)	15.0	100	1,500
August	8/1/09	8/31/09	15.5	8/31/09	(0.5)	15.0	100	1,500
September	9/1/09	9/30/09	15.0	9/30/09	(0.5)	14.5	100	1,450
October	10/1/09	10/31/09	15.5	10/30/09	(1.5)	14.0	100	1,400
November	11/1/09	11/30/09	15.0	11/30/09	(0.5)	14.5	100	1,450
December	12/1/09	12/31/09	15.5	12/30/09	(1.5)	14.0	100	1,400
							1,200	17,050

Pension Payment Lag **14.2**

[1] Assuming equal monthly contributions made on the last business day of the month.

Revenue Tax Payment Lag

The Company's position is the revenue collection lag represents the average days between when the Company provides service to customers and the date the payment for this service is received. The revenue collection lag captures the working cash impact as customers receive the benefit of this electric service provided, in advance of paying for this service. Further, the Company's position is the payment lag represents the average days between when the Company incurs an obligation to pay for an item or service and the date the payment for the item or service is made (and clears the bank). The Company calculated a 66 day payment lag for revenue taxes as presented in direct testimony and as illustrated in HECO-WP-1806, pages 44-46.

The Consumer Advocate's position is the obligation to pay the Public Service Company Tax ("PSC Tax") and Public Utility Fee ("PU Fee") arise at the time billed revenues are known. Additionally, the Consumer Advocate's position is that the obligation to pay the Franchise Tax arises at the time collected revenues are known. Further, the Consumer Advocate's position is these obligations arise subsequent to the periods in which the service is provided to customers. The Consumer Advocate recommended an adjustment to the revenue tax payment lag days calculated by the Company, but reflected this as an adjustment to the revenue collection lag days. The Consumer Advocate recommended that the revenue collection lag days be reduced from 37 days to 13.5 days to reflect the time HECO must wait to collect the related revenues from customers from the point where the customers are billed (for the PSC Tax and PU Fee) or from the point where payment is received from the customers (Franchise Tax). (See CA-T-3 pages 102-104 and CA-101, Schedule B-5.)

This subject was discussed extensively by the Consumer Advocate and HECO during the settlement process.

The Consumer Advocate asserts the purpose of a lead lag study is to measure the cash flows through the utility. Recognizing that different expense elements have different payment patterns, the typical lead lag study stratifies utility costs into common pools or types of costs for which revenue and expense lags can be separately quantified. Using revenue lag and expense lag data compiled during lead lag study assembly, the objective of such study is to determine on average whether the utility must disburse cash in payment of each expense category before or after it receives cash as revenues are collected from customers.

As a general matter, the Consumer Advocate does not disagree that HECO bills and collects electric revenues in arrears or that the entire revenue lag is measured from the mid-point of the service period until revenue is collected from the customer. However, the Consumer Advocate does not concur that the entire revenue lag should be automatically applied to each category of expense set forth in the lead lag study. Further, the Consumer Advocate has not taken issue with the revenue tax payment dates presented in the Company's lead lag study.

In response to discovery (CA-IR-435), HECO has stated that the amount of revenue taxes due are based on either "as billed" revenues (PSC Tax and PU Fees) or "as collected" revenues

(Franchise Tax). This response was relied upon by the Consumer Advocate in quantifying the weighted revenue lag of 13.5 days applied to revenue taxes on CA-101 Schedule B-5.

The Consumer Advocate believes HECO's revenue tax workpapers (HECO-WP-1806, pages 45-46) primarily rely on calendar year 2007 for purposes of quantifying the expense lag for each revenue tax component. Contrary to the midpoint of the service period approach HECO proposes to apply in quantifying the revenue lag, the expense lag calculations do not focus on when "service" was provided to ratepayers in relation to the revenue tax payment dates, but rather center on calendar periods (i.e., midpoint of the calendar year vs. payment date). HECO seeks to recognize the average service period and billing period in determining the revenue lag but overlooks this earlier period in quantifying the expense lag.

The Consumer Advocate recognizes that the revenue tax approach recommended in the current proceeding is different from HECO's last two rate case proceedings. However, the Consumer Advocate also offers that a decision to not pursue a specific adjustment or approach in a prior rate case does not prohibit an adjustment or approach from being raised in subsequent proceedings.

In an attempt to simplify the presentation, the Consumer Advocate calculations focused on quantifying a shorter revenue lag rather than a longer expense lag. The Consumer Advocate proposed an alternative approach which adjusted the payment lag rather than the collection lag. This alternative approach resulted in increasing the revenue tax payment lag days for the PSC Tax and PU Fee by 18 days and the Franchise Tax by 37 days which resulted in a composite revenue tax payment lag of 89 days (compared to 66 days as presented by the Company). The Consumer Advocate submits that either approach (i.e., shortening the revenue lag or lengthening the expense lag) will result in the same net lag as presented by the Consumer Advocate on CA-101 Schedule B-5.

HECO does not agree with the adjustment to the revenue collection lag days on the basis that: (1) it is not consistent with the definition of the revenue collection lag days and (2) it is not consistent with prior rate case treatment of the revenue collection lag days.

At this point in the settlement discussions, the Consumer Advocate and HECO were in agreement on the definition of payment lag days. The Parties disagreed on when the Company incurs the obligation for revenue taxes. In addition, the Parties agreed to focus on the adjustment to the revenue tax payment lag rather than the adjustment to the revenue collection lag.

HECO believes the calculation of the revenue tax payment lag is supported by the following: (1) properly reflects the revenue tax obligation that is incurred for the right to do business in the test year, (2) properly treats the revenue taxes as normalized for the test year, (3) properly measures the time between when the Company incurs an obligation and when the obligation is paid (and clears the bank), (4) is consistent with numerous prior rate cases, and (5) is consistent with prior Commission orders on this issue.

First, the Company's revenue tax payment lag study (HECO-WP-1806, pages 45-46) properly reflects the fact that the Company incurs an obligation to pay revenue taxes upon the provision of service within the year. The obligation is not triggered by the rendering of a electricity bill (as the Consumer Advocate claims is the trigger for the PSC tax and PU fee obligations) or collection of revenue (as the Consumer Advocate claims is the trigger for the Franchise Tax obligation). This revenue tax obligation is incurred and paid by the Company in accordance with the deadlines described in the Hawaii Revised Statutes ("HRS").

1. Public Service Company Tax - HRS 239-9 "The tax imposed by this chapter applies to every public service company: (1) which is in business at the commencement of a calendar year, as of January 1 of that year."

   HRS 239-7 states "the taxes so levied shall be payable in twelve equal installments, in which case the first installment shall be paid on or before the tenth day of the first month following the close of the taxable year, and the remaining installments shall be paid on or before the tenth day of each calendar month after such date.

2. Franchise Tax - HRS 240-1 "Every person operating in the State an electric light or power business as a public utility, whose franchise does not provide for the payment to the county in which the public utility operates of a tax, or a tax of less than two and one-half per cent, based upon the gross receipts of such person from all electric light or power furnished to consumers during each calendar year, shall file with the director of finance of the county in which the public utility operates, within one month after the expiration of each calendar year, a detailed statement showing all gross receipts from all electric light or power furnished to consumers during the preceding calendar year."

3. Public Utility Fee – HRS 269-30 "There also shall be paid to the commission in each of the months of July and December of each year, by each public utility subject to investigation by the commission, a fee equal to one-fourth of one per cent of the gross income from the public utility's business during the preceding year, or the sum of $30, whichever is greater."

These revenue taxes are obligations incurred for the right to do business in the year. The Commission affirmed this interpretation of the tax law in Decision and Order No. 11893 in Docket No. 6999: "We agree with HELCO that, for tax purposes, the public service company tax liability is based on the gross utility revenues of the prior year and that the taxes paid in any given year are for the right to do business in that year. The basis is the same for the public utility fee." The Commission reaffirmed its holding in Decision and Order No. 13762 in Docket No. 7764 and in Decision and Order No. 14412 in Docket No. 7766. The Company's calculation of the payment lag days properly reflects the fact that the payment of revenue taxes are for the right to do business in the year.

The revenue tax obligation incurred is correlated with the test year revenues for the test year on a normalized basis. The concept of normalization of revenue tax payments was addressed in prior Commission orders. In Decision and Order No. 13762 in Docket No. 7764, the Commission

stated: "In a ratemaking setting, revenues and other expenses are normalized for the test year, and revenue taxes are calculated on current test year revenues rather than on prior years' actual revenues. This results in a representative allowance for normal and necessary utility functions." The Commission again reaffirmed its holding in Decision and Order No. 14412 in Docket No. 7766 stating "We said in Decision and Order No. 13762 that for ratemaking purposes, revenues and other expenses are normalized for the test year, and revenue taxes are calculated on a current test year revenues, rather than on prior years' actual revenues. This avoids the mismatching of test year revenues and expenses, and results in a representative allowance for normal and necessary utility functions." Therefore, the Commission has stated that revenue taxes are paid for the right to do business in that year and that the test year revenue taxes are normalized in the test year.

The payment dates for each of the respective revenue tax items is consistent with the tax laws cited above. In the case of the PSC Tax this obligation is paid in twelve monthly installments by the tenth day of each month in accordance with HRS 239-7. For the Franchise Tax this obligation is paid within one month after the expiration of the calendar year in accordance with HRS 240-1. The PU Fee obligation is paid in July and December of the year in accordance with HRS 269-30. For purposes of the lead lag study, actual revenue tax payments from 2007 were studied to reflect the timing of historical payments made by the Company and to measure the appropriate check clearing lag. For the PSC Tax the twelve monthly installment payments made in 2007 were studied. For the Franchise Tax the payment made in January 2007 was studied. The PU Fee payments made in July and December of 2007 were studied. The Company projects that the historical experience in 2007 is representative of the expectations for the 2009 test year. Historical experience of check clearing lags were determined and added to the payment lag. In summary, the Company believes the calculation of the 66 day revenue tax payment lag days properly captures the lag between when the Company incurs the obligation and the date the payment is made (and the check cleared).

The Company's calculation of the revenue tax payment lag days is also consistent with numerous rate cases including the following:

1.	HECO 2007 test year (Docket No. 2006-0386)	66 days
2.	MECO 2007 test year (Docket No. 2006-0387)	68 days
3.	HELCO 2006 test year (Docket No. 05-0315)	74 days
4.	HECO 2005 test year (Docket No. 04-0113)	90 days
5.	HELCO 2000 test year (Docket No. 99-0207)	94 days
6.	MECO 1999 test year (Docket No. 97-0346)	94 days
7.	MECO 1997 test year (Docket No. 96-0040)	94 days
8.	MECO 1996 test year (Docket No. 94-0345)	94 days
9.	HELCO 1996 test year (Docket No. 94-0140)	94 days
10.	HECO 1995 test year (Docket No. 7766)	87 days
11.	HELCO 1994 test year (Docket No. 7764)	94 days
12.	HECO 1994 test year (Docket No. 7700)	86 days
13.	MECO 1993 test year (Docket No. 7000)	97 days

14.	HELCO 1992 test year (Docket No. 6999)	95 days
15.	HECO 1992 test year (Docket No. 6998)	95 days

Over the years, the revenue tax payment lag days have shortened primarily as a result of faster check processing by the State. The tax payment requirements have not changed.

Finally, the Commission investigated the revenue tax payment lag days extensively in HELCO 1992 test year (Docket No. 6999), HELCO 1994 (Docket No. 7764) and HECO 1995 test year (Docket No. 7766) and affirmed HECO's (or HELCO's) calculation of revenue tax payment lag days indicated above.

For purposes of settlement in this proceeding, and with the acknowledgement that settlement on this item does not reflect any party's position, the Parties agreed to reflect the revenue tax revenue collection lag at 37 days, the revenue tax payment lag at 66 days, and include a $7,500,000 downward adjustment to working cash to reflect the approximate impact resulting from the differences in the revenue tax payment lag days between the Parties' positions.

Hawaiian Electric Company, Inc.

Composite Embedded Cost of Capital
Test Year 2009 Average
($ Thousands)

		(A)	(B) = (A)/Total(A)	(C)	(D) = (B)*(C)
		Capitalization			
	WP Series Reference	Amount	Percent of Total	Earnings Requirement	Weighted Earnings Requirements
Short-Term Debt	HECO-2002	$ (22,011)	-1.58%	0.75%	-0.01%
Long-Term Debt	HECO-2003	576,569	41.40%	5.81%	2.41%
Hybrid Securities	HECO-2004	27,775	1.99%	7.41%	0.15%
Preferred Stock	HECO-2005	20,696	1.49%	5.48%	0.08%
Common Equity	HECO-2006	789,519	56.70%	10.70%	6.07%
Total Capitalization		$ 1,392,549	100.00%		8.69%
Estimated 2009 Test Year Composite Cost of Capital					**8.69%**

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

Composite Embedded Cost of Capital
Test Year 2009 Beginning, Ending, and Average Balances
($ Thousands)

	Reference	12/31/08 Balance	12/31/09 Balance	2009 Average Balance
Short-Term Debt	HECO-2002	$ (8,450)	$ (35,572)	$ (22,011)
Long-Term Debt				
Net Proceeds	HECO-2003	551,580	641,580	596,580
Unamortized Costs, Revenue Bonds	WP-2003 p. 1	(19,780)	(19,119)	(19,450)
Unamortized Costs, First Mtg Bonds	WP-2003 p. 7	(528)	(461)	(494)
Unamortized Costs, SCF	WP-2003 p. 8	(86)	(48)	(67)
Net Long-Term Debt		531,186	621,952	576,569
Hybrid Securities				
Net Proceeds	HECO-2004	30,000	30,000	30,000
Unamortized Costs	WP-2004	(2,280)	(2,170)	(2,225)
Net Hybrid Securities		27,720	27,830	27,775
Preferred Stock				
Net Proceeds	HECO-2005	22,293	22,293	22,293
Unamortized Costs	WP-2005	(1,625)	(1,569)	(1,597)
Net Preferred Stock		20,668	20,724	20,696
Common Equity	HECO-2006	751,810	827,228	789,519
Total Capitalization		$ 1,322,935	$ 1,462,162	$ 1,392,549

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

Short-Term Borrowings
Test Year 2009 Average
($ Thousands)

	WP Reference	Total
Short-Term Borrowings as of December 31, 2008	WP-2002, p.1	$ (8,450) (A)
2009 Estimated Net Change in Short-Term Borrowings		(27,122)
Short-Term Borrowings as of December 31, 2009		$ (35,572) (B)
Test Year 2009 Average = [(A)+(B)]/2		**$ (22,011)**
Earnings Requirement		0.75%
Annual Debt Requirement		**$ (165)**

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

Short-Term Borrowings
2008 Recorded

Account Description	General Ledger Account		12/31/08 Balance
Notes Payable - MECO	233020	$	12,000,000
Notes Payable - HEI	233100	$	41,550,000
Commercial Paper	231010	$	-
Total Notes Payable		$	53,550,000
Total Notes Receivable - HELCO	145020	$	(62,000,000)
Total Short-Term Borrowings as of December 31, 2008, net		**$**	**(8,450,000)**

Hawaiian Electric Company, Inc.

Embedded Cost of Long-Term Debt
Test Year 2009 Average
($ Thousands)

Long-Term Debt	(A) Rate	(B) Net Proceeds	(C) = (A)*(B) Annual Interest	(D) = WP-2003, p.2 Annual Amortization & Insurance Premium	(F) = (C)+(D) Annual Requirement
Special Purpose Revenue Bonds (Refunded Issue):					
Series 1993	5.45%	$ 50,000	$ 2,725	$ 89	$ 2,814
Series 1997A	5.65%	50,000	2,825	76	2,901
Refunding Series 1998A (1987)	4.95%	42,580	2,108	254	2,362
Refunding Series 1999B (1988)	5.75%	30,000	1,725	118	1,843
Series 1999C	6.20%	35,000	2,170	63	2,233
Refunding Series 1999D (1990A)	6.15%	16,000	984	115	1,099
Refunding Series 2000 (1990B&C)	5.70%	46,000	2,622	115	2,737
Series 2002A	5.10%	40,000	2,040	120	2,160
Refunding Series 2003B (1992)	5.00%	40,000	2,000	195	2,195
Refunding Series 2005A (1995A)	4.80%	40,000	1,920	158	2,078
Series 2007A	4.65%	100,000	4,650	127	4,777
Refunding Series 2007B (1996A&B)	4.60%	62,000	2,852	188	3,040
New Series 2009*	7.00%	45,000	3,150	16	3,166
		596,580	31,771	1,634	33,404
Unamortized Costs, Revenue Bonds **		(19,450)			
Unamortized Costs, First Mtg Bonds ***		(494)		67	67
Unamortized Costs, SCF ****		(67)		38	38
Test Year 2009 Average		**$ 576,569**	**$ 31,771**	**$ 1,738**	**$ 33,509**
Effective Rate = Total(F)/Total(B)					**5.81%**

* Additional long-term debt issuance of $90 million expected in 2009. Average test year balance of $45 million.

** Issuance costs, redemption costs, issuance discounts, and investment income differentials are included in this amount. Refer to WP-2003, p.1 for detail.

*** Unamortized costs relate to HECO's First Mortgage Bonds which were redeemed prior to December 31, 2007. Refer to WP-2003, p.7 for First Mortgage Bonds unamortized costs.

**** Unamortized costs relate to HECO's share of the issuance costs for the Multi-year Syndicated Credit Facility (SCF). Refer to WP-2003, p. 8 for SCF issuance costs.

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

Revenue Bonds
Summary of Unamortized Balances

Unamortized Costs	WP Reference	12/31/08 Unamortized Balance	12/31/09 Unamortized Balance
Issuance and Redemption	WP-2003 p.3	$ 14,227,251	$ 13,919,877
Investment Income Differential	WP-2003 p.4	3,468,067	3,246,765
Issuance Discount	WP-2003 p.5	2,085,027	1,952,160
Total		$ 19,780,345	$ 19,118,802
		(X)	(Y)
Test Year 2009 Average = [(X) + (Y)]/2			**$ 19,449,573**

Totals may not add due to rounding

Hawaiian Electric Company, Inc.
Revenue Bonds
Summary of 2009 Annual Amortizations & Insurance

Series (Refunded Issue)		(A) = WP-2003, p.3 Issuance and Redemption	(B) Note (1) Annual Insurance	(C) = WP-2003, p.4 Investment Income Differential	(D) = WP-2003, p.5 Discount	(E) = (A)+(B)+(C)+(D) Total
1993		$ 44,604		$ 10,665	$ 33,651	$ 88,919
1997A		13,822	45,000	17,037	-	75,859
Refunding 1998A		54,247		-	-	54,247
(1982)		45,762		35,977	-	81,739
(1987)		116,739		1,200	-	117,939
Refunding 1999B		39,627		-	17,953	57,580
(1988)		17,243		-	-	17,243
(1988 Conv)		43,030		-	-	43,030
1999C		37,330		26,168	-	63,498
Refunding 1999D		20,830		-	-	20,830
(1990A)		29,573		(1,162)	-	28,411
Refunding 2000		59,427		-	5,847	65,274
(1990B)		36,597		(399)	-	36,198
(1990C)		51,386		27,660	-	79,046
2002A		58,939		50,664	10,548	120,152
Refunding 2003B		78,137		-	-	78,137
(1992)		70,239		46,261	-	116,500
Refunding 2005A		82,056		-	-	82,056
(1995A)		48,914		1,281	25,784	75,978
2007A	(A)	123,481		3,384	-	126,865
Refunding 2007B		86,872		-	-	86,872
(1996A)		39,893		2,018	37,422	79,334
(1996B)		20,038		549	1,661	22,247
New Series 2009		15,600		-	-	15,600
Total		$ 1,234,387	$ 45,000	$ 221,303	$ 132,867	$ 1,633,556

Note (A) Series 2007A was not fully drawn as of 12/31/07, but is expected to be fully drawn by 12/31/08

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.
Revenue Bonds
Schedule of Issuing Expenses (Includes Amortization Differential)

Series (Refunded Issue)	(A) 2008 Annual Amortization	(B) 12/31/08 Unamortized Balance	(C) 2009 Annual Amortization	(D)=(B)-(C) 12/31/09 Unamortized Balance
1993	$ 44,604	$ 661,624	$ 44,604	$ 617,020
1997A	13,822	292,913	13,822	279,092
Refunding 1998A	54,247	176,304	54,247	122,057
(1982)	45,762	148,727	45,762	102,965
(1987)	116,739	379,400	116,739	262,661
Refunding 1999B	39,627	392,968	39,627	353,341
(1988)	17,243	597,710	17,243	537,436
(1988 Conv)	43,030	(incld. above)	43,030	(incld. above)
1999C	37,330	777,719	37,330	740,389
Refunding 1999D	20,830	229,134	20,830	208,304
(1990A)	29,573	325,303	29,573	295,730
Refunding 2000	59,427	683,413	59,427	623,986
(1990B)	36,597	420,868	36,597	384,271
(1990C)	51,386	612,347	51,386	560,961
2002A	58,939	1,394,888	58,939	1,335,948
Refunding 2003B	78,137	1,087,406	78,137	1,009,269
(1992)	70,239	977,506	70,239	907,267
Refunding 2005A	82,056	757,238	82,056	675,181
(1995A)	48,914	782,616	48,914	733,703
2007A	118,915	1,530,330	123,481	1,406,848
Refunding 2007B	86,872	939,358	86,872	852,486
(1996A)	39,893	691,483	39,893	651,589
(1996B)	20,038	359,011.32	20,038	338,973
New Series 2009 *	-	8,986	15,600	920,400
Total	$ 1,214,221	$ 14,227,251	$ 1,234,387	$ 13,919,877

* Estimated issuance cost of $936,000 (1.04% of face) amortized over 360 months (30 year bond). 2009 amortization of 6 months ($936,000/360 months * 6 months = $15,600)

Hawaiian Electric Company, Inc.
Revenue Bonds
Schedule of Investment Income Differential

Series (Refunded Issue)	(A) 2008 Annual Amortization	(B) 12/31/08 Unamortized Balance	(C) 2009 Annual Amortization	(D)=(B)-(C) 12/31/09 Unamortized Balance
1993	$ 10,665	$ 158,189	$ 10,665	$ 147,525
1997A	17,037	319,442	17,037	302,405
Refunding 1998A	-	-	-	-
(1982)	35,977	116,926	35,977	80,948
(1987)	1,200.12	3,900	1,200	2,700
Refunding 1999B	-	-	-	-
(1988)	-	-	-	-
(1988 Conv)	-	-	-	-
1999C	26,168	545,176	26,168	519,007
Refunding 1999D	-	-	-	-
(1990A)	(1,162)	(12,781)	(1,162)	(11,619)
Refunding 2000	-	-	-	-
(1990B)	(399)	(4,593)	(399)	(4,193)
(1990C)	27,660	329,620	27,660	301,960
2002A	50,664	1,199,042	50,664	1,148,378
Refunding 2003B	-	-	-	-
(1992)	46,261	643,794	46,261	597,533
Refunding 2005A	-	-	-	-
(1995A)	1,281	20,494	1,281	19,213
2007A	79,883	104,046	3,384	100,662
Refunding 2007B	-	-	-	-
(1996A)	2,018	34,982	2,018	32,964
(1996B)	548.64	9,830	549	9,281
New Series 2009	-	-	-	-
Total	$ 297,802	$ 3,468,067	$ 221,303	$ 3,246,765

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.
Revenue Bonds
Schedule of Issuance Discount

Series (Refunded Issue)	(A) 2008 Annual Amortization	(B) 12/31/08 Unamortized Balance	(C) 2009 Annual Amortization	(D)=(B)-(C) 12/31/09 Unamortized Balance
1993	$ 33,651	$ 499,150	$ 33,651	$ 465,499
1997A	-	-	-	-
Refunding 1998A	-	-	-	-
(1982)	-	-	-	-
(1987)	-	-	-	-
Refunding 1999B	17,953	178,038	17,953	160,085
(1988)	-	-	-	-
(1988 Conv)	-	-	-	-
1999C	-	-	-	-
Refunding 1999D	-	-	-	-
(1990A)	-	-	-	-
Refunding 2000	5,847	67,246	5,847	61,398
(1990B)	-	-	-	-
(1990C)	-	-	-	-
2002A	10,548	249,646	10,548	239,097
Refunding 2003B	-	-	-	-
(1992)	-	-	-	-
Refunding 2005A	-	-	-	-
(1995A)	25,784	412,541	25,784	386,758
2007A	-	-	-	-
Refunding 2007B	-	-	-	-
(1996A)	37,422	648,649	37,422	611,227
(1996B)	1,661	29,756	1,661	28,096
New Series 2009	-	-	-	-
Total	$ 132,867	$ 2,085,027	$ 132,867	$ 1,952,160
Outstanding	$ 68,000	$ 994,080	$ 68,000	$ 926,080
Redeemed	64,867	1,090,947	64,867	1,026,080
Total	$ 132,867	$ 2,085,027	$ 132,867	$ 1,952,160

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.
Revenue Bonds
General Ledger Accounting Codes

Series (Refunded Issue)	Issuance and Redemption Unamortized Costs	Issuance and Redemption Amortization Costs	Inv Inc Differential Unamortized Costs	Inv Inc Differential Amortization Costs	Discount Unamortized Costs	Discount Amortization Costs
1993	18130000/04	42812000	25338000/04	40303009	18150000/04	42812000
1997A	18134000/04	42816000	25342000/04	40303013	n/a	n/a
Refunding 1998A	18135000/04	42817000	n/a	n/a	n/a	n/a
(1982)	18671P00/04	42802000	18675000/04	40303001	n/a	n/a
(1987)	18671R00/04	42804000	18675020/24	40303001	n/a	n/a
Refunding 1999B	18138000/04	42820000	n/a	n/a	18156000/04	42820000
(1988)	18671Y00/04; 18675030/34	42805000	n/a	n/a	n/a	n/a
(1988 Conv)	n/a	42806000	n/a	n/a	n/a	n/a
1999C	18136000/04	42821000	25344000/04	40303014	n/a	n/a
Refunding 1999D	18139000/04	42822000	n/a	n/a	n/a	n/a
(1990A)	18671Z00/04	42807000	18675040/44	40303005	n/a	n/a
Refunding 2000	18140000/04	42823000	n/a	n/a	18157000/04	42823000
(1990B)	18671200/04; 18675060/64	42808000	18675050/54	40303006	n/a	n/a
(1990C)	18671300/04; 18675080/84	42809000	18675070/74	40303007	n/a	n/a
2002A	18141000/04	42824000	25345000/04	40303015	18158000/04	42824000
Refunding 2003B	18142000/04	42826000	n/a	n/a	n/a	n/a
(1992)	18671400/04; 18675100/04	42810000	18675090/94	40303008	n/a	n/a
Refunding 2005A	18144300/04	42827000	n/a	n/a	n/a	n/a
(1995A)	18671410/14	42813000	18675110/14	40303010	18671420/24	42813000
2007A	18144500/04	42829000	25346000/04	40303016	n/a	n/a
Refunding 2007B	18144600/04	42830000	n/a	n/a	n/a	n/a
(1996A)	18671430/34	42814000	25340000/04	40303011	18152000/04	42814000
(1996B)	18671450/54	42815000	18675130/34	40303012	18153000/04	42815000

Hawaiian Electric Company, Inc.

Redeemed First Mortgage Bonds
Schedule of Unamortized Costs *

First Mortgage Bond	(A) 2008 Annual Amortization	(B) 12/31/08 Unamortized Balance	(C) 2009 Annual Amortization	(D)=(B)-(C) 12/31/09 Unamortized Balance
Series X	66,633	527,505	66,633	460,872
Total	$ 66,633	$ 527,505	$ 66,633	$ 460,872
		(X)		(Y)
Test Year 2009 Average = [(X) + (Y)]/2				**$ 494,188**

* Unamortized costs include issuance costs, redemption costs and/or issuance discounts. These costs are recorded in the following accounts:

Series	Unamortized Costs	Amortization Costs
Series X	18671O00/04	42801000

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

Syndicated Credit Facility (SCF) Issuance Costs
Test Year 2009 Estimate

	(A) 2008 Annual Amortization	(B) 12/31/08 Unamortized Balance	(C) 2009 Annual Amortization	(D)=(B)-(C) 12/31/09 Unamortized Balance
SCF Issuance Costs	37,732	85,712	37,732	47,980
		(X)		(Y)
Test Year 2009 Average = [(X) + (Y)]/2				**$ 66,846**

	Unamortized Costs	Amortization Costs
These costs are recorded in the following accounts:	18102000/04	42801100

Hawaiian Electric Company, Inc.

Embedded Cost of Hybrid Securities
Test Year 2009 Average
($ Thousands)

	(A)	(B)	(C) = (A)*(B)	(D) = (A)*(B)	(E)	(F) = (C)+(D)+(E)
Hybrid Security	Rate/ Return	2009 Test Year Average	Interest Expense	Equity in Net Income of Trust	Annual Amortization	Annual Requirement
Series 2004	6.50%	$ 31,546	$ 2,051			$ 2,051
Investment in HECO Capital Trust III *	6.50% **	(1,546)		$ (101)		(101)
Unamortized Issuance Costs ***		(2,225)			$ 109	109
Test Year 2009 Average		**$ 27,775**	**$ 2,051**	**$ (101)**	**$ 109**	**$ 2,059**
Effective Rate = Total(F)/Total(B)						**7.41%**

* Represents HECO's common stock investment in HECO Capital Trusts (Trusts), unconsolidated subsidiaries of HECO. The purpose of the Trusts, among other things, are to issue Trust securities and to invest the proceeds of the trust securities and common stock securities in Junior Subordinated Deferrable Interest Debentures, issued by HECO and its subsidiaries.

** Estimated based on the 6.5% Cumulative Quarterly Income Preferred Securities, Series 2004 issued by HECO Capital Trust III.

*** Includes unamortized issuance costs of current and previously redeemed hybrid securities. Refer to HECO-WP-2004, p.1.

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

Hybrid Securities
Schedule of Issuance Costs

Hybrid (Redeemed Series)	(A) 2008 Annual Amortization	(B) 12/31/08 Unamortized Balance	(C) 2009 Annual Amortization	(D)=(B)-(C) 12/31/09 Unamortized Balance
Series 2004	$ 31,099	$ 783,948	$ 31,099	$ 752,849
(Series 1997)	40,416	737,581	40,416	697,165
(Series 1998)	37,899	757,988	37,899	720,089
Total	$ 109,414	$ 2,279,517	$ 109,414	$ 2,170,103
		(X)		(Y)
Test Year 2009 Average = [(X) + (Y)]/2				**$ 2,224,810**

These costs are recorded in the following a	Unamortized Costs	Amortization Costs
Series 2004	18144200/04	428QUID3
Series 1997	18671500/04	428QUID1
Series 1998	18671600/04	428QUID2

Hawaiian Electric Company, Inc.

Embedded Cost of Preferred Stock
Test Year 2009 Average
($ Thousands)

	(A)	(B)	(C) = (A)*(B)	(D)	(E) = (C)+(D)
Preferred Stock	Rate	2009 Test Year Average	Annual Dividends	Annual Amortization	Annual Requirement
Perpetual Series *:					
Series C	4 1/4%	$ 3,000	$ 128	$ -	$ 128
Series D	5%	1,000	50	-	50
Series E	5%	3,000	150	-	150
Series H	5 1/4%	5,000	263	-	263
Series I	5%	1,793	90	-	90
Series J	4 3/4%	5,000	238	-	238
Series K	4.65%	3,500	163	-	163
		22,293	1,080	0	1,080
Unamortized Costs **		(1,597)		55	55
Test Year 2009 Average		**$ 20,696**	**$ 1,080**	**$ 55**	**$ 1,135**
Effective Rate = Total(E)/Total(B)					**5.48%**

* Represents preferred stock not subject to mandatory redemption. Therefore, issuance costs are not amortized.

** Refer to WP-2005, p.1 for detail.

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

Preferred Stock
Schedule of Issuance and Redemption Costs

Preferred Stock	Unamortized Balance G/L Account	(A) 2008 Annual Amortization	(B) 12/31/08 Unamortized Balance	(C) 2009 Annual Amortization	(D)=(B)-(C) 12/31/09 Unamortized Balance
Perpetual *:					
Series C	21423000	$ -	$ 70,404	$ -	$ 70,404
Series D	21424000	-	55,071	-	55,071
Series E	21425000	-	183,556	-	183,556
Series H	21428000	-	59,679	-	59,679
Series I	21429000	-	64,701	-	64,701
Series J	21430000	-	49,654	-	49,654
Series K	21431000	-	39,755	-	39,755
Subtotal		-	522,820	-	522,820
Redeemed:					
Series M **	18674M00	7,110	142,208	7,110	135,098
Series Q **	18674Q00	28,154	563,091	28,154	534,937
Series R **	18674R00	19,821	396,420	19,821	376,599
Subtotal		55,085	1,101,718	55,085	1,046,633
		$ 55,085	$ 1,624,538 (X)	$ 55,085	$ 1,569,453 (Y)
Test Year 2009 Average = [(X) + (Y)]/2					**$ 1,596,996**

* Represents preferred stock not subject to mandatory redemption. As such, issuance costs are not amorti

** Amortization expense recorded to G/L Account Code #42501000.

Totals may not add exactly due to rounding.

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Hawaiian Electric Company, Inc.

Common Equity
2009 Average
($ Thousands)

	WP Reference		Total	
Book Common Equity as of December 31, 2008	WP-2006, p.1	$	751,810	(A)
Restoration	WP-2006 p.2		523	
Reversal of AOCI adj related to nonqualified plans			(812)	
Common Stock Issuance	*		100,000	
Less: additional capital investments in subsidiaries				
Hawaii Electric Light Company, Inc.			(23,500)	
Maui Electric Company, Ltd.			(5,000)	
Renewable Hawaii, Inc.			(440)	
2009 Estimated Net Change in Retained Earnings	HECO-2007		4,648	
Common Equity as of December 31, 2009		$	827,228	(B)
Test Year 2009 Average = [(A)+(B)]/2		**$**	**789,519**	

Totals may not add exactly due to rounding.

* Common stock issuance of $100 million expected in 2009.

Hawaiian Electric Company, Inc.

Common Equity
2008 Recorded

Account Description	G/L Account	12/31/08 Balance	
Common Stock Issued	20100000	$ 85,387,140	
Premium on Capital Stock	20700000	303,135,446	
Misc Paid in Capital	211	1,650,978	
Capital Stock Expense - Common	21401000	(3,526,923)	
Preferred Stock Expense	2143	(394,693)	
Net Income for Common	n/a	-	closed to Retained Earnings
Retained Earnings	216	802,590,542	
Dividends, net	43800000	-	closed to Retained Earnings
Common Stock Equity of HECO		$ 1,188,842,490	
Investment in Subsidiary - MECO	12301000	$ (215,381,379)	
Investment in Subsidiary - HELCO	12302000	(221,405,040)	
Investment in Subsidiary - UBC	12303000	(141,470)	
Investment in Subsidiary - RHI	12306000	(105,088)	
Investment in Subsidiaries *		$ (437,032,977)	
Common Equity as of December 31, 2008		$ 751,809,513	

* Does not include $1,546,400 of equity investment in the HECO Capital Trust III (Capital Trust) subsidiary. The investment in the Capital Trust is offset against HECO's Hybrid securities which were purchased by the Capital Trust. Refer to WP-2004, p.1 for the adjustment to the Hybrid securities.

Hawaiian Electric Company, Inc.

Common Equity Restoration
2008 Recorded

	G/L Account	12/31/08 Balance
Unamortized Issuance Costs - Preferred Stock *	2143	522,820
Total Common Equity Restoration		**$ 522,820**

* For financial statement purposes, the unamortized issuance costs of the outstanding preferred stock is shown as a reduction to common equity. For ratemaking purposes, however, these cost are shown as a deduction to preferred stock rather than common equity since these costs relate to preferred stock. Refer to WP-2005, p.1 and HECO-2005.

HECO's general ledger balance for account 2143 adjusts the preferred issuance costs for HELCO and MECO

HECO Oahu only	522,820
HELCO (reflected in investment in subsidiary)	(57,159)
MECO (reflected in investment in subsidiary)	(70,968)
	394,693

Hawaiian Electric Company, Inc.

Sources and Applications of Funds
($ Thousands)

	Recorded 2008	Forecast 2009
Application of Funds:		
Capital Expenditures	$ 169,923	$ 206,733
Less: CIAC & Advances	11,340	10,526
Less: AFUDC	9,269	14,271
Net Capital Expenditures	$ 149,314	$ 181,936
Debt Redemption	$ -	$ -
Hybrid Redemption	-	-
Investment in subsidiaries	100	28,940
Total Applications	$ 149,414	$ 210,876
Sources of Funds:		
Internal Sources:		
Retained Earnings	$ 77,886	$ 4,648
Depreciation & Amortization	87,263	89,732
Deferred Taxes & ITC	4,012	(6,313)
Other (Misc. Net Changes in Working Capital)	(31,513)	(40,069)
Total Internal Sources	$ 137,648	$ 47,998
External Sources:		
Increase (Decrease) in Short-Term Borrowings	$ -	$ (27,122)
Drawdown of Revenue Bond Proceeds	14,407	90,000
Common Stock Issuance	-	100,000
Temporary Investments	(2,641)	-
Total External Financing	$ 11,766	$ 162,878
Total Sources	$ 149,414	$ 210,876

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

Composite Embedded Cost of Capital
Test Year 2009 Average
($ Thousands)

		(A)	(B) = (A)/Total(A)	(C)	(D) = (B)*(C)
		Capitalization			
	WP Series Reference	Amount	Percent of Total	Earnings Requirement	Weighted Earnings Requirements
Short-Term Debt	HECO-2002	$ -	0.00%	0.75%	0.00%
Long-Term Debt	HECO-2003	576,569	40.76%	5.81%	2.37%
Hybrid Securities	HECO-2004	27,775	1.96%	7.41%	0.15%
Preferred Stock	HECO-2005	20,696	1.46%	5.48%	0.08%
Common Equity	HECO-2006	789,519	55.81%	10.50%	5.86%
Total Capitalization		$ 1,414,560	100.00%		8.46%
Estimated 2009 Test Year Composite Cost of Capital					**8.46%**

Totals may not add exactly due to rounding.

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REVENUE BALANCING ACCOUNT ("RBA") PROVISION

ILLUSTRATIVE EXAMPLE FOR HAWAIIAN ELECTRIC COMPANY, INC.

Supplement To:

Schedule R - Residential Service
Schedule E - Electric Service For Employees
Schedule G - General Service Non-Demand
Schedule J - General Service Demand
Schedule H - Commercial Cooking, Heating, Air Conditioning, and Refrigeration Service
Schedule PS - Large Power Secondary Voltage Service
Schedule PP - Large Power Primary Voltage Service
Schedule PT - Large Power Transmission Voltage Service
Schedule F - Public Street Lighting, Highway Lighting and Park and Playground Floodlighting
Schedule U - Time of Use Service
Schedule TOU-R - Residential Time-of-Use Service
Schedule TOU-C - Commercial Time-of-Use Service
Schedule SS - Standby Service

All terms and provisions of Schedules R, E, G, J, H, PS, PP, PT, F, U, TOU-R, TOU-C, and SS are applicable except that the total base rate charges for each billing period shall be adjusted by the Revenue Balancing Account Rate Adjustments shown below:

A: PURPOSE:

The purpose of the Revenue Balancing Account ("RBA") is to record: 1) the difference between the Hawaiian Electric Company's (HECO's) target revenue and recorded adjusted revenue, and 2) monthly interest applied to the simple average of the beginning and ending month balances in the RBA. In addition, the recovery provision of this tariff provides for collection or return of the calendar year-end balance in the RBA over the subsequent June 1st through May 31st period. The RBA is established in accordance with the Commission order in Docket No. 2008-0083 and is modified to conform with the Commission order in Docket No. 2008-0274.

B: TARGET REVENUE:

For the purpose of the RBA, the **target revenue** is the most recent Authorized Base Revenue approved by the Public Utilities Commission (PUC), adjusted to remove amounts for applicable revenue taxes. The target revenue will exclude revenue for fuel and purchased power expenses that are recovered either in base rates or in a purchased power adjustment clause and all revenue being separately tracked or recovered through any other surcharge or rate tracking mechanism. The target revenue is allocated to separate RBA sub-accounts, one for residential customers and one for all commercial and industrial

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REVENUE BALANCING ACCOUNT ("RBA") PROVISION

customers collectively, based on the approved rate design that implements an approved revenue requirement from a rate case.

Monthly Allocation Factors for the Target Revenue are as follows:

	Residential	Commercial & Industrial
January	8.40%	7.83%
February	7.27%	7.31%
March	8.00%	8.05%
April	7.88%	7.86%
May	8.17%	8.41%
June	8.37%	8.36%
July	8.68%	8.70%
August	9.08%	9.03%
September	8.72%	8.83%
October	8.75%	8.95%
November	8.26%	8.36%
December	8.42%	8.31%
Total	100.00%	100.00%

These factors are based on the mWh sales forecast approved by the Commission in HECO's test year 2009 rate case and shall be updated in any subsequent test year rate case.

C: BALANCING ACCOUNT ENTRIES:

Entries to the RBA residential sub-account and commercial and industrial sub-account will be recorded monthly. A debit entry to the RBA will be made equal to the target revenue as defined in Section B. above, times the appropriate monthly allocation factor in the table above. A credit entry to the RBA will be made equal to the recorded adjusted revenue. The **recorded adjusted revenue** is defined to include the electric sales revenue from authorized base rates, plus revenue from any authorized interim rate increase, plus revenue from any RBA rate adjustment, but excluding revenue for fuel and purchased power expenses, IRP/DSM, any Commission Ordered one-time rate refunds or credits or other surcharges, and adjusted to remove amounts for applicable revenue taxes.

Interest will be recorded monthly to the RBA sub-accounts by multiplying the simple average of the beginning and ending month balance in the RBA sub-account times the Interest Rate divided by 12. The Interest Rate shall be 6 percent.

D: RECOVERY OF BALANCING ACCOUNT AMOUNTS:

At March 31st of each calendar year, the Company will file with the Commission a statement of the previous calendar year-end balance in each RBA sub-account and supporting calculations. The amortization of the previous calendar year-end balance in the RBA sub-accounts will be recovered through separate per-kWh **RBA rate adjustments**, one for residential customers and one for commercial and industrial customers,

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respectively, over the 12 months from June 1 of the current calendar year to May 31 of the succeeding calendar year. The residential RBA adjustment will recover the previous calendar year-end balance in the residential RBA sub-account and the commercial/industrial RBA adjustment will recover the previous calendar year-end balance in the commercial/industrial RBA sub-account.

E: REVENUE BALANCING ACCOUNT RATE ADJUSTMENTS:

The RBA rate adjustments are comprised of the calculated values from Section D above, adjusted to include amounts for applicable revenue taxes. The RBA rate adjustments are calculated based on the Company's forecast of mWh sales over the RBA rate adjustment recovery period.

Effective June 1, 20__ to May 31, 20__

Residential RBA Adjustment

Rate Schedules R, E, TOU-R.....0.0000 ¢/kWh

Commercial/Industrial RBA Adjustment

Rate Schedules G,J,H,PS,PP,PT,F,U,TOU-C,SS.....0.0000 ¢/kWh

HECO TY 2009

Rate Design Settlement for Final Rates

Schedule R:

Customer charge single phase $8.00 (Consumer Advocate's position)
Customer charge three phase $17.00 (Consumer Advocate's position) Minimum charge single phase $16.00 (Consumer Advocate's position)
Minimum charge three phase $22.00 (Consumer Advocate's position)

Balance of revenue increase assigned to base fuel energy charge and non-fuel energy charges.

Non-fuel energy charges will be set in three tiers, first 350 kWh, next 850 kWh, over 1200 kWh per month.

Limit bill increase (above current effective rates) to no more than 3% for usages in first tier (350 kWh and below) (per HECO-2216; settlement)

Customers in LIHEAP program are waived from the two higher tiers of the non-fuel energy charges; pay only at the first tier non-fuel energy charge rate.

Schedule G:

Customer charge single phase $32.00 (HECO position)
Customer charge three phase $61.00 (HECO position)
Minimum charge single phase $32.00 (HECO position)
Minimum charge single phase $61.00 (HECO position)

Primary supply voltage service discount -2.1% for distribution primary (DP) customers and -0.5% for distribution secondary (DS) customers.

Balance of revenue increase assigned to energy charge.

Schedule J:

Customer charge single phase $55.00 (Consumer Advocate's position)
Customer charge three phase $77.00 (Consumer Advocate's position)
Demand charge $10.63 per kWb (Consumer Advocate's position)

Transmission supply voltage service discount -2.9% for transmission primary (TP) customers and -2.4% for transmission secondary (TS) customers.
Distribution supply voltage service discount -2.1% for distribution primary (DP) customers and -0.5% for distribution secondary (DS) customers.

Balance of revenue increase assigned to energy charge.

Customers who have 12 consecutive months of load of 5,000 kWh or less and 25 kW or less to be changed to Schedule G effective the next billing month.

Schedule DS:

Customer charge $400.00(No change, HECO position)
Demand Charge $18.00 per kWb (HECO position and settlement)

Balance of revenue increase assigned to energy charge.

Schedule P:

Customer charge $350.00 (no change, HECO position)
Demand Charge $19.37 per kWb (settlement)

Transmission supply voltage service discount -2.9% for transmission primary (TP) customers and -2.4% for transmission secondary (TS) customers.
Distribution supply voltage service discount -2.1% for distribution primary (DP) customers and -0.5% for distribution secondary (DS) customers.

Balance of revenue increase assigned to energy charge.

Customers who have 12 consecutive months of demand below 300 kW to be changed to Schedule J.

Schedule F:

Customer charge $22.00 (HECO position)
Minimum charge $35.00 (no change, HECO position)

Balance of revenue increase assigned to energy charge.

Other Rates and Rate Options

Rider I - - close to new customers.

Rider M - - - modify availability clause to make Rider M available to customers on Schedule J, Schedule P or Schedule DS, but not in conjunction with Schedule TOU-J.

Rider T - - - modify availability clause to make Rider T available to customers on Schedule J, Schedule P or Schedule DS, but not in conjunction with Schedule TOU-J.

Schedule SS - - - align with cost of service based on final revenue requirement.

Schedule Q - - - align with energy cost levels stipulated in this agreement.

Integrated Resource Planning Cost Recovery provision - - - retained for reconciliation of IRP program cost collections.

Time of Use Rate Options - - - apply rate structures as proposed by HECO for Schedule TOU-R, Schedule TOU-G, Schedule TOU-J, and Schedule U. Rate levels for customer, energy, demand, and minimum charges should be adjusted from HECO proposed levels to the appropriate conforming levels relative to the final rates established for Schedules R, G, J, DS, and P per this agreement.

Returned payment charge - - - increase the returned payment charge from $16.00 to $22.00.