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

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2008 NOV 26 P 3: 56
PUBLIC UTILITIES COMMISSION

Dean K. Matsuura
Manager
Regulatory Affairs

November 26, 2008

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

Dear Commissioners:

Subject: Docket No. 2008-0083 – HECO 2009 Test Year Rate Case
Rate Case Updates

Enclosed are updates to Hawaiian Electric Company, Inc.'s ("HECO") 2009 test year estimates reflected in the Application, Direct Testimonies, Exhibits, and Workpapers filed with the Commission on July 3, 2008. This first set of updates includes incorporation of certain recorded 2008 results as well as other corrections and revisions as explained in the enclosed. The updates also refer to or include revisions that the Company previously filed in its responses to information requests from the other parties. HECO is submitting these updates in advance of other updates that will be filed shortly to provide the Consumer Advocate and the Department of Defense with additional time for review. This set includes updates to the following:

- HECO T-2 – George Willoughby
- HECO T-4 – Ross H. Sakuda
- HECO T-5 – Ronald R. Cox
- HECO T-6 – Daniel S. W. Ching
- HECO T-17 – Lorie Ann Nagata

Very truly yours,

Enclosure

cc: Division of Consumer Advocacy
Michael L. Brosch, Utilitech, Inc.
Joseph A. Herz, Sawvel & Associates, Inc.
Dr. Kay Davoodi, Department of Defense
David C. Coker / Gayle B. Chestnut, Department of Defense
Ralph Smith, Larkin & Associates

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

In the Matter of the Application of	)	
	)	
HAWAIIAN ELECTRIC COMPANY, INC.	)	Docket No. 2008-0083
	)	
For Approval of Rate Increases and Revised Rate Schedule and Rules	)	
	)	

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PUBLIC UTILITIES COMMISSION

HECO
2009 TEST YEAR

Rate Case Updates

T-2, T-4, T-5, T-6, T-17

November 26, 2008

RATE CASE UPDATE

Ref.: G. Willoughby, HECO T-2, Electricity Sales and Customer Forecasts.

The sales forecast for test year 2009 was revised to reflect lowered sales expectations and an increasingly pessimistic economic outlook. Year-to-date ("YTD") 2008 actual sales were lower than anticipated in the March 2008 Sales Update. The March 2008 Sales Update was used as the basis for test year 2009 sales in direct testimony (see HECO T-2). The March 2008 Sales Update projection for 2009 sales was reduced in the September 2008 Sales Update to reflect the expectations for lower 2008 sales, the continuation of high electricity prices, and a rapidly slowing global economy. The revised sales forecast for test year 2009 is shown on page 6 and are summarized below:

	Direct Testimony Test year 2009	Rate Case Update Test year 2009	Units
Test Year Electricity Sales	7,657.8	7,484.7	GWh
Average Monthly Number of Customers	296,210	296,210	

As shown on page 7, the updated sales forecast is 173.1 GWh below the 2009 sales forecast in direct testimony. This represents a reduction of 2.3% in the estimated sales for the test year as compared to direct testimony. All rate schedules (except Schedule F – Street Lighting) are forecasted to have lower sales than anticipated in direct testimony. Residential sales are expected to be 59.8 GWh lower and commercial sales are forecasted to be 113.3 GWh lower than in direct testimony. The test year average number of customers has not been revised in the Rate Case Update. As shown on page 8, the decrease in test year residential sales is due to lower projected use per residential customer and not a change in the number of residential customers forecast for the test year. Sales are expected to be lower primarily due to the lower residential use seen in 2008, persistently high electricity prices, and the increasingly pessimistic outlook for the global, national, and local economies.

Economic Outlook

Since the March 2008 Sales Update was developed, oil prices hit new record highs exceeding $145 per barrel, the U.S. housing market crashed, and financial markets were severely impacted. In September 2008, the U.S. financial market meltdown began to spread throughout the national economy with bankruptcies, tight credit and significant job losses. In October 2008, the Dow Jones Industrial Average fell 42% from its peak in October 2007, falling by 25% in October 2008 alone. Volatility has ruled the stock market with huge swings, both up and down, in all indices. The U.S. woes rapidly spread globally to other major developed countries. The governments of the U.S. and other countries had to step in and provide public funding to bail out troubled companies, primarily in the financial sector. It is important to note that much of this turmoil had not yet occurred, and the magnitude of these events was largely unknown when the September 2008 Sales Update was developed.

The effect on Hawaii's economy has already been felt. Unemployment hit 4.5% statewide in September 2008, the highest level seen since the months immediately following the attacks of September 11, 2001, and more than 1 percentage point above the March 2008 unemployment rate of 3.1%. Visitor arrivals to the State plummeted below 2007 levels by 17.4% and 19.5% in August and September 2008, respectively. September YTD 2008, State visitor arrivals are 9.3% below the same period in 2007. Scheduled passenger seats to Hawaii for the fourth quarter of 2008 are expected to be 15.3% below the same period in 2007, representing over 321,000 fewer seats, including over 110,000 fewer seats from Hawaii's largest visitor source, California.

On September 19, 2008, the University of Hawaii Economic Research Organization ("UHERO") released its quarterly update, "A Hard Fall For Hawaii Tourism". In that report, UHERO noted that the downturn in the U.S. economy and record high oil prices had taken a huge bite out of the Hawaii tourism industry. Visitor arrivals were projected to decline 9% in

2008, the biggest annual decline since 2001, and would not begin to recover until 2010. The outlook for jobs was similarly bleak, with a 0.1% decline expected in 2008 followed by a further decline of 0.8% in 2009.

It is important to note that the UHERO September outlook was produced before the worsening of the credit and financial market crisis. The U.S. government's seizure of mortgage giants Fannie Mae and Freddie Mac, the collapse of the large insurance company AIG, the devastating decline in the stock markets, and the resulting constriction of the credit markets had not yet occurred when the UHERO forecast was developed. Consequently, the September 2008 Sales Update does not fully incorporate the full impact of these and other similar events, and it is likely that the next UHERO forecast will reflect an even more pessimistic outlook.

September Year-To-Date 2008 Sales

Recorded electricity sales through September 2008 are below 2007 levels and below the March 2008 Sales Update presented in direct testimony. As shown on page 9, September 2008 YTD recorded sales are below 2007 levels by 56.4 GWh or 1.0%. Commercial sales remain relatively flat at -0.1%, while residential sales are down 3.2%. The average number of customers September 2008 YTD is slightly higher than in the same period in 2007.

As shown on page 10, September 2008 YTD total recorded sales are 0.8% or 46.6 GWh below the March 2008 Sales Update. Commercial sales are 0.4% or 15.2 GWh below, while residential sales are 2.0% or 31.6 GWh below the level forecasted in the March 2008 Sales Update. As shown on page 11, the lower than expected residential sales can be attributed primarily to lower use per customer (down 2.0%), although year-to-date, the number of customers is slightly lower than anticipated as well (-0.1%).

Recorded sales for 2008 by month are shown on page 12, along with the comparison to the March 2008 Sales Update and 2007 recorded sales. The more pessimistic outlook for sales is

a result of the lower sales trends that began in August and have continued through September. Based on the worsening economic outlook, lower sales are expected to continue through 2010.

September 2008 Sales Update

The September 2008 Sales Update was developed in response to the outlook for a declining economy, high oil prices, and lower than expected sales in 2008. The Update was adopted by the Company for planning purposes on September 23, 2008.

The September 2008 Sales Update was developed using the same methods and procedures as described in direct testimony that were used in the development of the March 2008 Sales Update. The econometric models for residential and commercial sales were updated with actual sales data through August 2008. The model specifications are shown in the updated HECO-WP-202 and HECO-WP-203 on pages 23 - 26. Economic assumptions were also revised based on the September UHERO forecast described above, and further adjusted downward for the developing economic news in September. In addition, actual August 2008 electricity price data was used as a proxy for 2008 electricity prices, and escalated to 2009 using growth rates from on the March 2008 Sales Update's electricity price forecast. The data and assumptions used in the September 2008 Sales Update are shown in the updated HECO-204 and HECO-WP-204 on page 14 and pages 27 - 38.

The same adjustments for large known customer projects, net energy metering, and interconnection agreements used for test year 2009 in the March 2008 Sales Update were applied to the test year estimates in the September 2008 Sales Update. While future DSM impacts were assumed to remain unchanged from direct testimony, sales projections were also lowered to reflect the continuing impact of estimated above forecast DSM program activity through August 2008.

Summary

Electricity sales in test year 2009 are expected to be substantially lower than described in direct testimony. The forecast for 2009 decreased as a result of lower than forecasted YTD recorded sales in 2008, persistently high electricity prices, and a rapidly slowing global economy. The further deterioration of financial and economic conditions seen after September, which had not yet occurred when the September 2008 Sales Update was developed, have the potential to further reduce sales in the test year.

Hawaiian Electric Company, Inc.
TEST YEAR 2009 SALES FORECAST
RATE CASE UPDATE

Rate	Test Year 2009 Annual Sales (GWh)	2009 Test Year Average Monthly Number of Customers
R	2,028.6	261,899
G	376.1	26,277
J	2,042.0	6,707
H	33.1	533
P	2,967.4	353
F	37.5	441
TOTAL	7,484.7	296,210
Commercial *	5,418.6	33,870

* Excluding Schedule F

Hawaiian Electric Company, Inc.
COMPARISON OF DIRECT TESTIMONY
AND RATE CASE UPDATE
GWH SALES FORECAST

Rate	Rate Case Update TY Sales	Direct Testimony TY Sales	TY Sales Difference
R	2,028.6	2,088.4	(59.8)
G	376.1	383.1	(7.0)
J	2,042.0	2,086.1	(44.1)
H	33.1	33.7	(0.6)
P	2,967.4	3,029.0	(61.6)
F	37.5	37.5	0.0
TOTAL	7,484.7	7,657.8	(173.1)
Commercial *	5,418.6	5,531.9	(113.3)

* Excluding Schedule F

Hawaiian Electric Company, Inc.

RESIDENTIAL USE PER CUSTOMER
DIRECT TESTIMONY VS. RATE CASE UPDATE

	Rate Case Update	Direct Testimony	Difference	
			Amt	%
MWH Sales	2,028,600	2,088,400	-59,800	-2.9%
Bills	3,142,788	3,142,788	0	0.0%
KWH Use per Bill	645	665	-19.028	-2.9%

Change in Use Per Bill	x	Customers	=	Difference in Sales	
-19.028	x	3,142,788	=	-59,800,000	KWH

Hawaiian Electric Company, Inc.
COMPARISON OF 2008 VERSUS 2007
September 2008 Year-To-Date
Recorded Sales

Rate	Sep YTD 2008 GWh Sales	Sep YTD 2007 GWh Sales	2008 vs 2007 Difference	% Diff
R	1,548.1	1,598.6	(50.5)	-3.2%
G	280.0	282.3	(2.3)	-0.8%
J	1,551.0	1,535.5	15.4	1.0%
H	28.5	33.4	(4.9)	-14.5%
P	2,244.7	2,259.1	(14.3)	-0.6%
F	28.2	28.1	0.2	0.5%
TOTAL	5,680.5	5,736.9	(56.4)	-1.0%
Commercial *	4,104.2	4,110.3	(6.1)	-0.1%

Rate	Sep YTD 2008 Average No. of Customers	Sep YTD 2007 Average No. of Customers	2008 vs 2007 Difference	% Diff
R	260,513	259,749	764	0.3%
G	25,862	25,783	79	0.3%
J	6,657	6,646	11	0.2%
H	668	753	(85)	-11.3%
P	353	354	(1)	-0.3%
F	438	442	(4)	-0.9%
TOTAL	294,491	293,727	764	0.3%
Commercial *	33,540	33,536	4	0.0%

* Not including Schedule F.

Hawaiian Electric Company, Inc.
COMPARISON OF RECORDED 2008 VERSUS
MARCH 2008 SALES UPDATE *
September 2008 Year-To-Date

Rate	Recorded Sep YTD 2008 GWh Sales	Mar 08 Update * Sep YTD 2008 GWh Sales	2008 vs Mar 08 Upd Difference	% Diff
R	1,548.1	1,579.7	(31.6)	-2.0%
G	280.0	283.7	(3.7)	-1.3%
J	1,551.0	1,542.1	8.9	0.6%
H	28.5	29.3	(0.8)	-2.6%
P	2,244.7	2,264.3	(19.6)	-0.9%
F	28.2	28.0	0.2	0.7%
TOTAL	5,680.5	5,727.1	(46.6)	-0.8%
Commercial **	4,104.2	4,119.4	(15.2)	-0.4%

Rate	Actual Sep YTD 2008 Average No. of Customers	Mar 08 Update * Sep YTD 2008 Average No. of Customers	2008 vs Mar 08 Upd Difference	% Diff
R	260,513	260,652	(139)	-0.1%
G	25,862	25,985	(123)	-0.5%
J	6,657	6,667	(10)	-0.1%
H	668	635	33	5.2%
P	353	353	0	0.0%
F	438	435	3	0.7%
TOTAL	294,491	294,727	(236)	-0.1%
Commercial **	33,540	33,640	(100)	-0.3%

* March 2008 Sales Update is the forecast used for TY 2009 sales and customers in direct testimony.
** Not including Schedule F.

Hawaiian Electric Company, Inc.

RESIDENTIAL RECORDED SALES
2008 VS. MARCH 2008 UPDATE *

	Sep YTD 2008	Sep YTD 2008 Mar 08 Upd *	Difference Amt	Difference %
Recorded MWh Sales	1,548,074.1	1,579,700.0	-31,626	-2.0%
Bills	2,344,621	2,345,864	-1,243	-0.1%
kWh Use per Bill	660	673	-13	-2.0%

Change in Customers	x	Use per Bill	=	Difference in Sales	
-1,243	x	660	=	-821	MWh

Change in Use Per Bill	x	Customers	=	Difference in Sales	
-13.132	x	2,345,864	=	-30,805	MWh

Total:	-31,626	MWh

* March 2008 Sales Update was used as the TY 2009 sales forecast in direct testimony.

Hawaiian Electric Company, Inc.
COMPARISON OF RECORDED 2008 VERSUS
2007 AND MARCH 2008 SALES UPDATE *
September 2008 Year-To-Date

Month	Recorded 2008 GWh Sales	Mar 08 Update * 2008 GWh Sales	2008 vs Mar 08 Upd Difference	% Diff
Jan	611.0	611.0	0.0	0.0%
Feb	574.8	574.8	0.0	0.0%
Mar	630.8	620.3	10.5	1.7%
Apr	603.5	605.1	(1.6)	-0.3%
May	644.3	641.5	2.8	0.4%
Jun	634.0	642.1	(8.1)	-1.3%
Jul	666.3	667.0	(0.7)	-0.1%
Aug	669.1	693.3	(24.2)	-3.5%
Sep	646.7	672.0	(25.3)	-3.8%
YTD	5,680.5	5,727.1	(46.6)	-0.8%

Month	Recorded 2008 GWh Sales	Recorded 2007 GWh Sales	2008 vs 2007 Difference	% Diff
Jan	611.0	629.8	(18.8)	-3.0%
Feb	574.8	549.8	25.0	4.5%
Mar	630.8	636.2	(5.4)	-0.8%
Apr	603.5	594.3	9.2	1.5%
May	644.3	654.2	(9.9)	-1.5%
Jun	634.0	647.7	(13.7)	-2.1%
Jul	666.3	672.4	(6.1)	-0.9%
Aug	669.1	688.9	(19.8)	-2.9%
Sep	646.7	663.6	(16.9)	-2.5%
YTD	5,680.5	5,736.9	(56.4)	-1.0%

* March 2008 Sales Update is the forecast used for TY 2009 sales and customers in direct testimony.

Hawaiian Electric Company, Inc.

TEST YEAR 2009 SALES AND CUSTOMERS

Rate Schedule	2009 Test Year Annual Sales (GWh)	2009 Test Year Average Monthly Number of Customers
R	2,028.6	261,899
G	376.1	26,277
J	2,042.0	6,707
H	33.1	533
P	2,967.4	353
F	37.5	441
Total	7,484.7	296,210
Commercial *	5,418.6	33,870

* Excluding Schedule F

Reference: HECO-WP-212

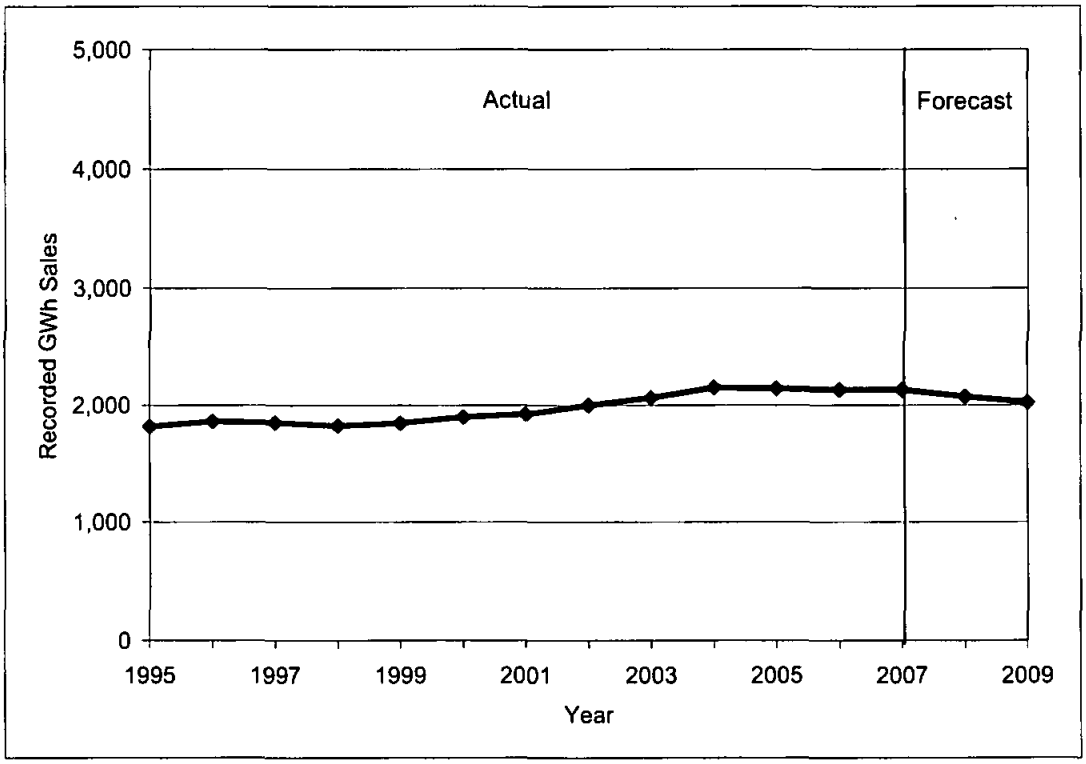
Hawaiian Electric Co., Inc.

FORECAST ASSUMPTIONS

	2007	2008	**2009**	Test Year 2009 Forecast Assumption
Explanatory Variables				
Cooling Degree Days (CDD)	4835	4750	**4750**	Annual, 1978 - 2007 Average by Month
Wet Bulb Temperature	68.9	69.8	**69.8**	Average (by month) annual 1997 - 2007 (used in 2008 short-term models)
Electricity Price				
Nominal (¢/kWh)				August 2008 update of March 2007 electricity price forecast using August 2008 electricity price for 2008. Growth rates for 2009-on applied to 2008.
Residential	20.37	32.24	**34.35**	
Commercial	16.91	28.14	**29.99**	
Real (¢/kWh) - Res	14.40	21.75	**22.52**	Base year 1992 dollars (1992 CPI-U=155.2)
Real (¢/kWh) - Comm	11.96	18.99	**19.66**	
CPI-U Honolulu	219.5	230.0	**236.7**	Preliminary 3Q 2008 UHERO Outlook (1982-84$)
LSFO (nominal $/BBL)	61.73	128.74		August 2008 inventory price (ECAC)
Personal Income Per Capita				
Real ($000)	29.8	29.8	**29.7**	Preliminary 3Q 2008 UHERO personal income and resident population forecasts for state extrapolated to Oahu based on UHERO May 2008 outlook.
Non-Farm Jobs (Honolulu)	454.5	454.7	**453.0**	Preliminary 3Q 2008 UHERO job change rate applied to Oahu jobs (half of UHERO's rate in 2009)
Dependent Variables				
Residential Use Per Customer				(Residential kWh with 1996 - 2008 installed DSM added back) ÷ average no. of residential customers
2008 forecast (short-term model)				Recorded monthly data, Jan 1997 - Aug 2008
2009 forecast (long-term model)				Billed annual data, 1976 - 2007
Commercial Sales				Commercial kWh sales with 1996 - 2008 installed DSM added back
2008 forecast (short-term model)				Recorded monthly data, Jan 1997 - Aug 2008
2009 forecast (long-term model)				Billed annual data, 1976 - 2007

Reference: HECO-WP-204

Hawaiian Electric Company, Inc.
SCHEDULE R - RESIDENTIAL SERVICE

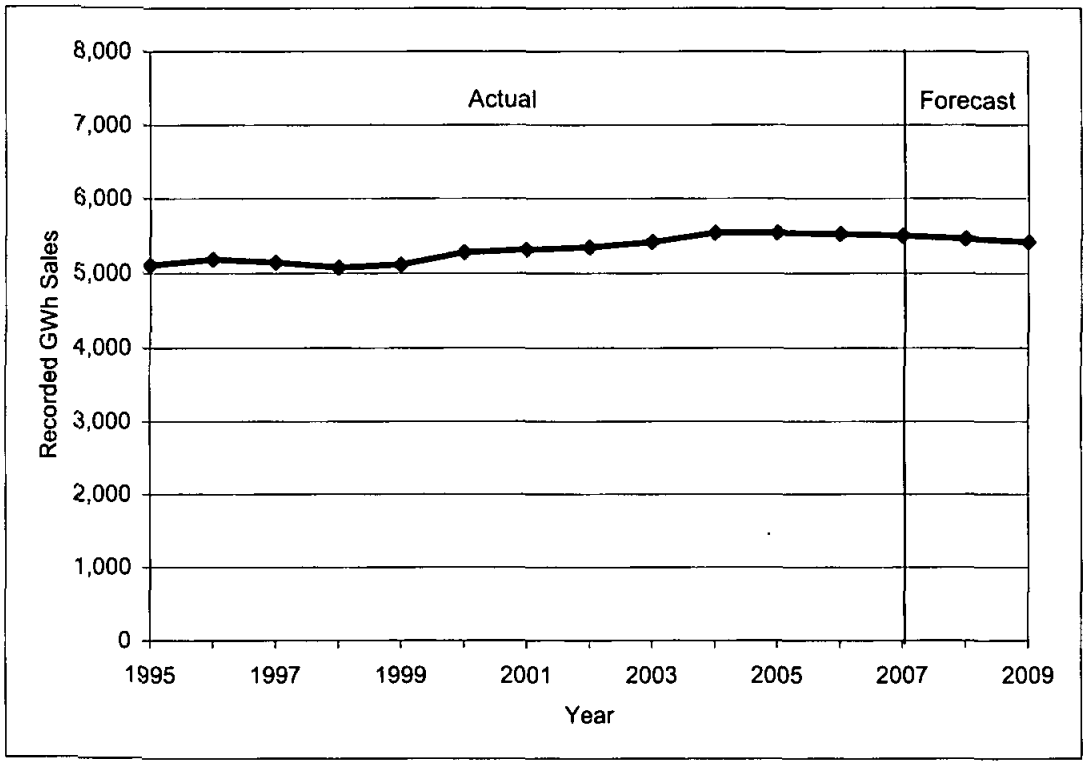


	Year	Recorded GWh Sales *	Customers	Use Per Customer
Recorded	1995	1,815.7	234,832	7,732
	1996	1,863.4	236,849	7,867
	1997	1,852.2	238,269	7,774
	1998	1,820.8	239,487	7,603
	1999	1,846.0	241,167	7,654
	2000	1,897.7	243,511	7,793
	2001	1,924.4	246,226	7,816
	2002	2,002.7	248,765	8,051
	2003	2,066.5	251,248	8,225
	2004	2,151.3	253,670	8,481
	2005	2,142.5	256,269	8,360
	2006	2,134.4	258,793	8,248
	2007	2,134.5	259,860	8,214
Forecast	2008	2,074.2	260,881	7,951
	2009	2,028.6	261,899	7,746

* 1995-2007 are recorded sales. 2008-2009 are forecasted sales assuming average weather.

Reference: *HECO-WP-205*

Hawaiian Electric Company, Inc.
TOTAL COMMERCIAL

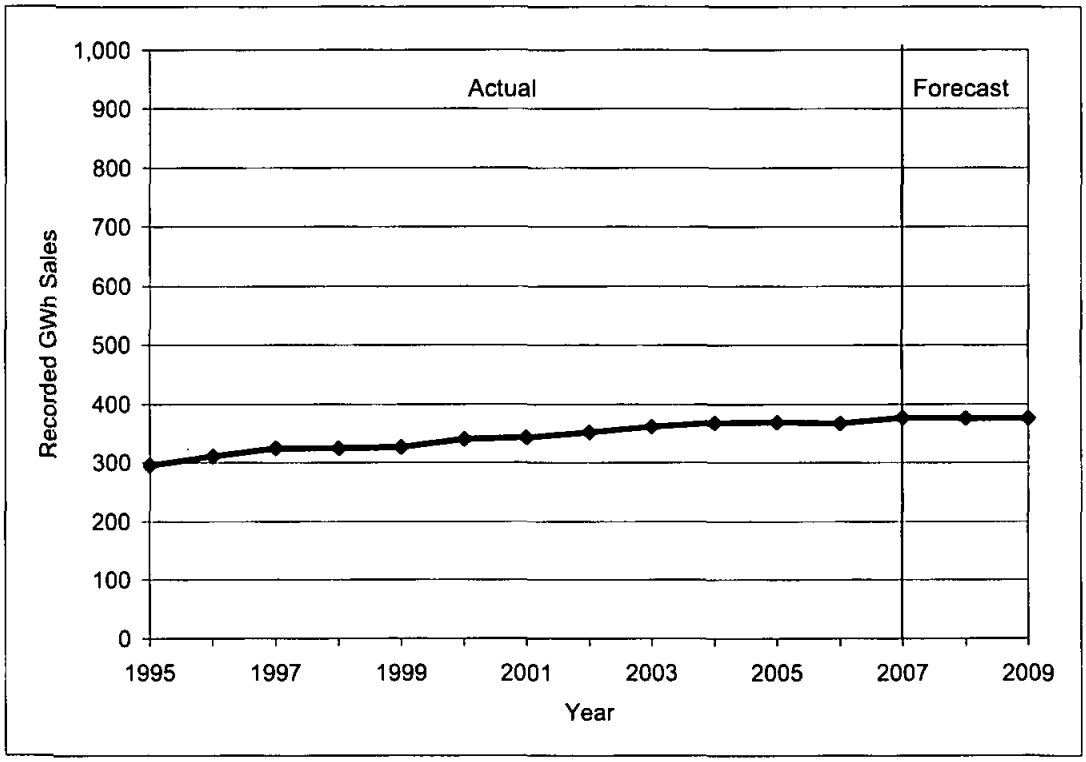


	Year	Recorded GWh Sales *	Customers
Recorded	1995	5,107.4	33,053
	1996	5,188.0	33,093
	1997	5,149.2	32,782
	1998	5,078.7	32,469
	1999	5,113.4	32,447
	2000	5,276.2	32,526
	2001	5,315.9	32,890
	2002	5,349.9	32,724
	2003	5,416.5	32,890
	2004	5,543.9	33,180
	2005	5,541.0	33,356
	2006	5,528.7	33,383
	2007	5,503.4	33,550
Forecast	2008	5,462.5	33,660
	2009	5,418.6	33,870

* 1995-2007 are recorded sales. 2008-2009 are forecasted sales assuming average weather.

Reference: HECO-WP-206

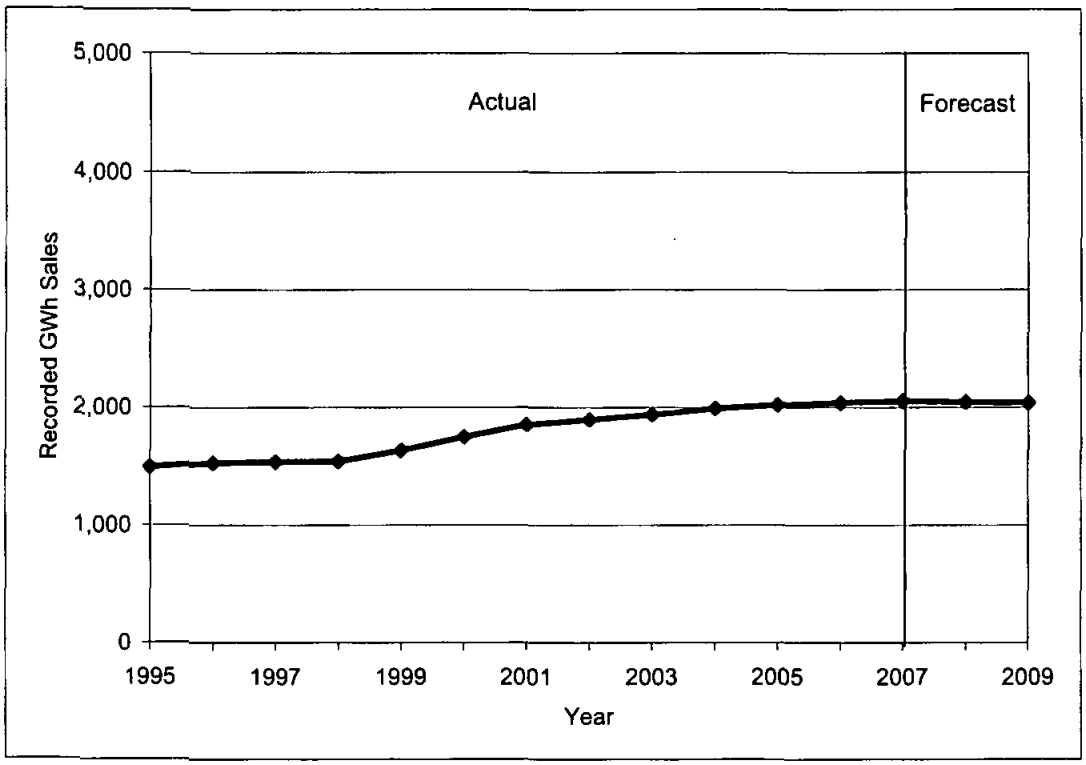
Hawaiian Electric Company, Inc.
SCHEDULE G - GENERAL SERVICE



	Year	Recorded GWh Sales *	Customers
Recorded	1995	295.7	22,793
	1996	310.8	23,075
	1997	324.2	23,176
	1998	325.0	23,181
	1999	326.8	23,274
	2000	339.7	23,605
	2001	343.2	24,507
	2002	351.5	24,710
	2003	361.4	24,952
	2004	368.8	25,245
	2005	369.5	25,533
	2006	367.5	25,590
	2007	377.2	25,806
Forecast	2008	376.4	26,004
	2009	376.1	26,277

* 1995-2007 are recorded sales. 2008-2009 are forecasted sales assuming average weather.

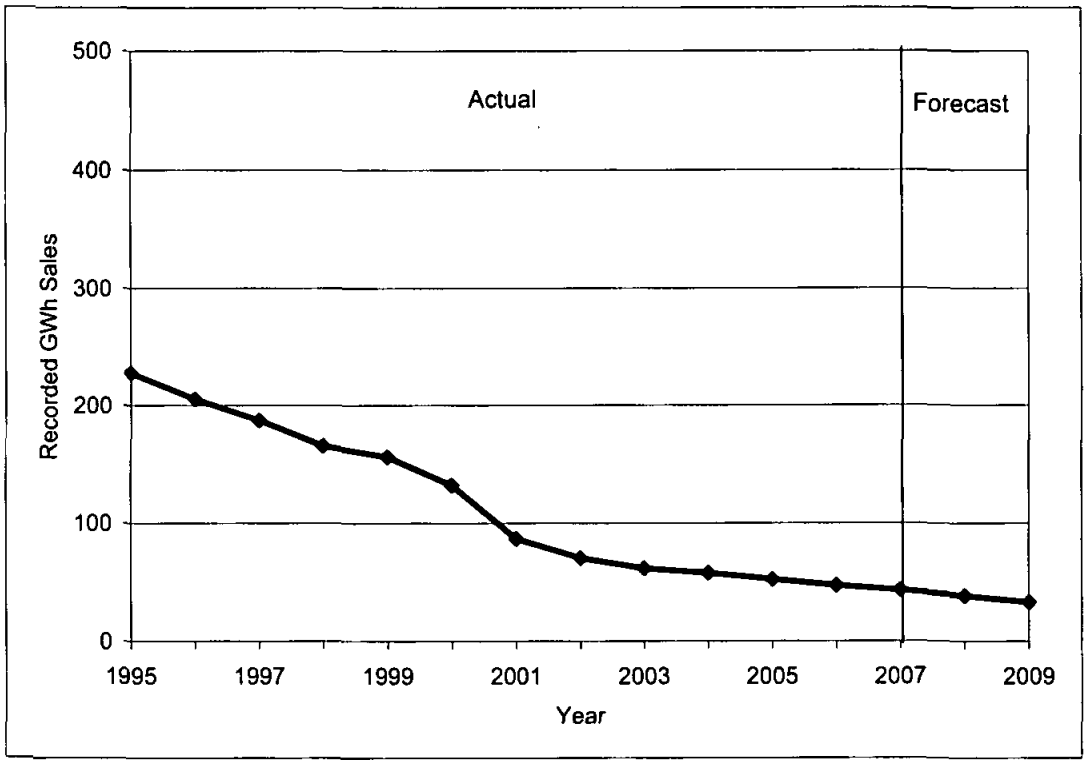
Hawaiian Electric Company, Inc.
SCHEDULE J - GENERAL SERVICE DEMAND



	Year	Recorded GWh Sales *	Customers
Recorded	1995	1,487.9	5,410
	1996	1,521.4	5,501
	1997	1,529.5	5,311
	1998	1,533.4	5,274
	1999	1,627.3	5,450
	2000	1,745.8	5,681
	2001	1,849.3	6,147
	2002	1,893.2	6,275
	2003	1,938.8	6,390
	2004	1,990.4	6,498
	2005	2,020.6	6,536
	2006	2,039.4	6,620
	2007	2,054.8	6,653
Forecast	2008	2,046.0	6,677
	2009	2,042.0	6,707

* *1995-2007 are recorded sales. 2008-2009 are forecasted sales assuming average weather.*

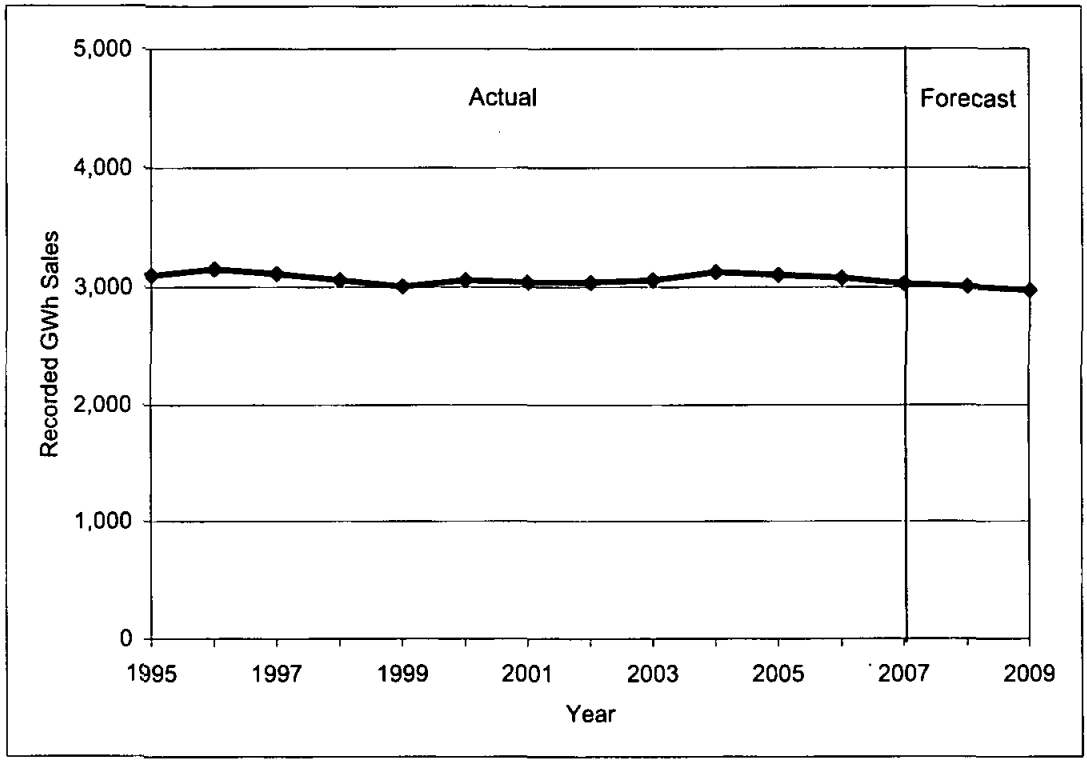
Hawaiian Electric Company, Inc.
SCHEDULE H - COMMERCIAL COOKING, AIR CONDITIONING, HEATING, AND REFRIGERATION SERVICE



	Year	Recorded GWh Sales *	Customers
Recorded	1995	227.8	4,456
	1996	205.6	4,125
	1997	187.2	3,906
	1998	165.2	3,626
	1999	155.9	3,354
	2000	132.1	2,879
	2001	87.1	1,880
	2002	70.3	1,384
	2003	61.9	1,194
	2004	57.9	1,083
	2005	52.6	931
	2006	46.9	818
	2007	43.4	737
Forecast	2008	38.5	627
	2009	33.1	533

* 1995-2007 are recorded sales. 2008-2009 are forecasted sales assuming average weather.

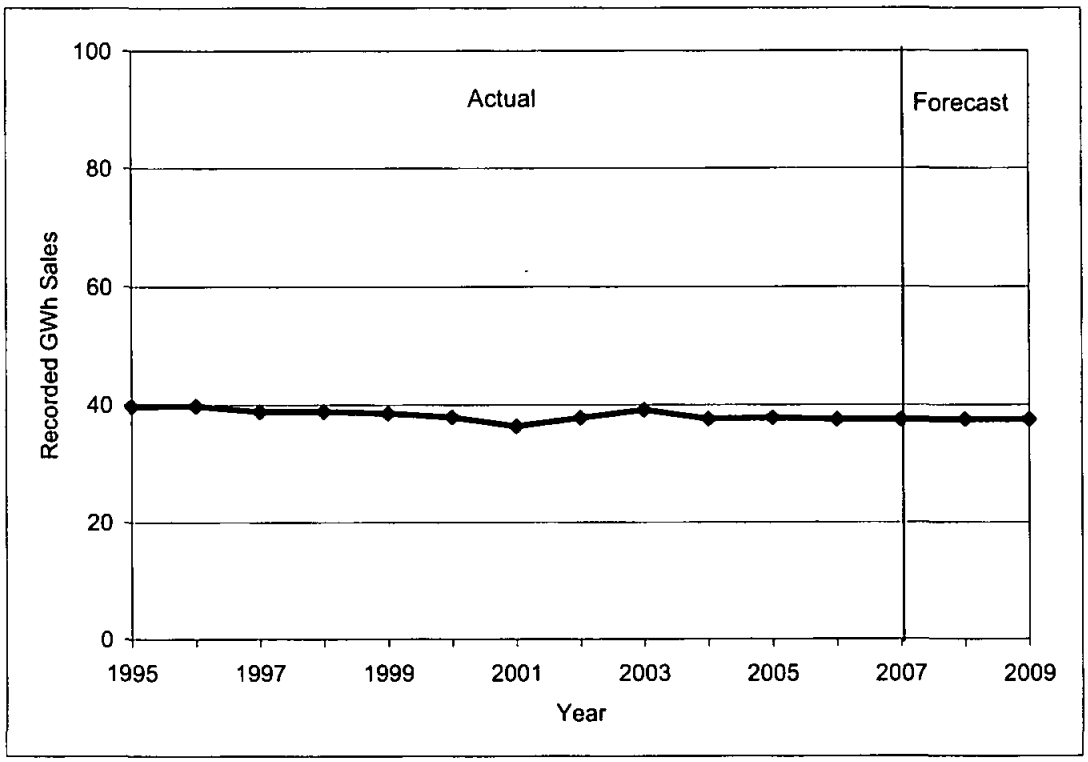
Hawaiian Electric Company, Inc.
SCHEDULE P - LARGE POWER SERVICE



	Year	Recorded GWh Sales *	Customers
Recorded	1995	3,096.1	393
	1996	3,150.2	392
	1997	3,108.3	389
	1998	3,055.0	388
	1999	3,003.4	369
	2000	3,058.6	361
	2001	3,036.4	356
	2002	3,034.9	355
	2003	3,054.3	354
	2004	3,126.8	354
	2005	3,098.4	356
	2006	3,074.8	355
	2007	3,028.0	354
Forecast	2008	3,001.6	352
	2009	2,967.4	353

* 1995-2007 are recorded sales. 2008-2009 are forecasted sales assuming average weather.

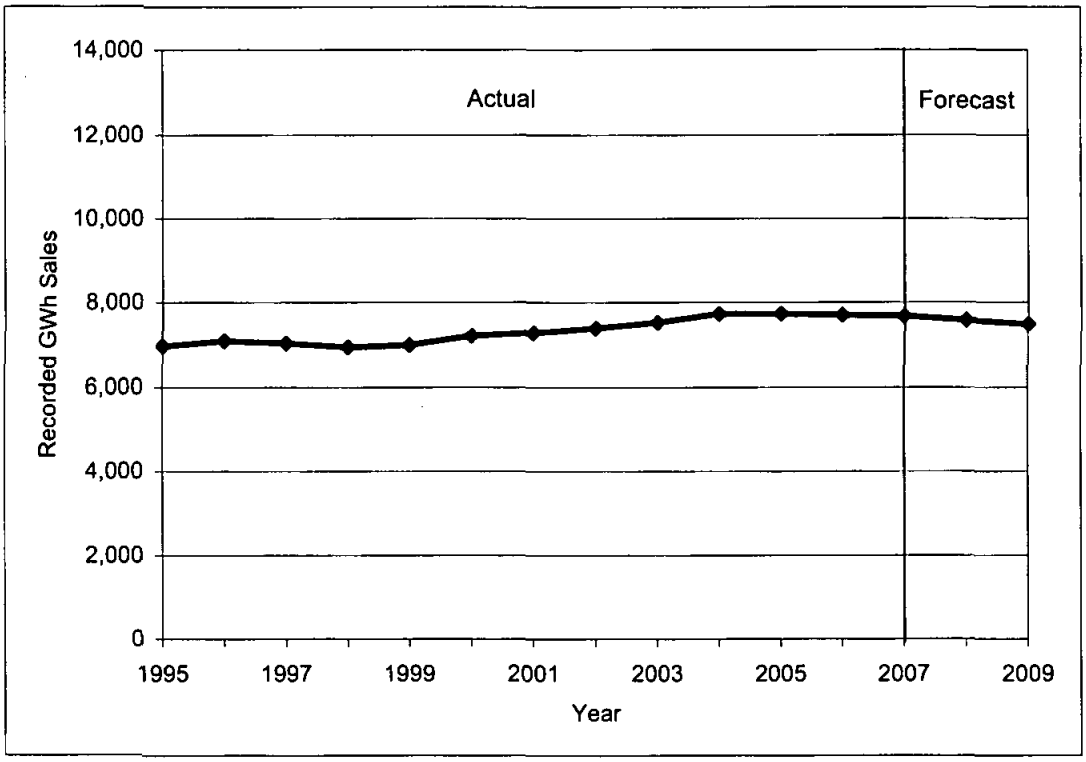
Hawaiian Electric Company, Inc.
SCHEDULE F - STREET LIGHTING



	Year	Recorded GWh Sales *	Customers
Recorded	1995	39.7	340
	1996	39.8	352
	1997	38.9	359
	1998	38.9	359
	1999	38.6	353
	2000	37.9	356
	2001	36.3	366
	2002	37.8	382
	2003	39.2	392
	2004	37.6	407
	2005	37.8	413
	2006	37.5	439
	2007	37.5	437
Forecast	2008	37.5	437
	2009	37.5	441

* 1995-2007 are recorded sales. 2008-2009 are forecasted sales assuming average weather.

Hawaiian Electric Company, Inc.
TOTAL SYSTEM SALES



	Year	Recorded GWh Sales *	Customers
Recorded	1995	6,962.8	268,225
	1996	7,091.2	270,294
	1997	7,040.3	271,410
	1998	6,938.4	272,315
	1999	6,998.0	273,967
	2000	7,211.8	276,393
	2001	7,276.6	279,482
	2002	7,390.4	281,871
	2003	7,522.2	284,530
	2004	7,732.8	287,257
	2005	7,721.3	290,038
	2006	7,700.6	292,615
	2007	7,675.4	293,847
Forecast	2008	7,574.2	294,978
	2009	7,484.7	296,210

* 1995-2007 are recorded sales. 2008-2009 are forecasted sales assuming average weather.

Reference: HECO-WP-212

Hawaiian Electric Co., Inc.

RESIDENTIAL USE PER CUSTOMER FORECAST MODELS
2008 SHORT-TERM ECONOMETRIC MODEL

Dependent Variable: LOG(RES_RCUSE_ADJ)
Method: Least Squares
Date: 09/16/08 Time: 11:52
Sample: 1997M01 2008M08
Included observations: 140

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.139368	0.482026	0.289130	0.772900
LOG(RES_RCUSE_ADJ(-6))	-0.068387	0.040095	-1.705622	0.090400
LOG(RES_RCUSE_ADJ(-12))	0.606913	0.047466	12.786340	0.000000
LOG(WETBULB_9707)	0.572813	0.077383	7.402362	0.000000
LOG(RES_RPRC_RC(-3))	-0.106043	0.025522	-4.154947	0.000100
MO_YR_TIME	0.000681	0.000092	7.372886	0.000000
M_1	0.038403	0.007773	4.940576	0.000000

R-squared	0.901497	Mean dependent var	6.516890
Adjusted R-squared	0.897053	S.D. dependent var	0.066378
S.E. of regression	0.021298	Akaike info criterion	-4.811730
Sum squared resid	0.060328	Schwarz criterion	-4.664648
Log likelihood	343.8211	Hannan-Quinn criter.	-4.7520
F-statistic	202.869300	Durbin-Watson stat	2.072866

EViews: p sep08 st update.wf1 (res_use_rprc_908upd)

Hawaiian Electric Co., Inc.

RESIDENTIAL USE PER CUSTOMER FORECAST MODELS
2009 LONG-TERM ECONOMETRIC MODEL

Dependent Variable: LOG(RES_USE_ADJ)
Method: Least Squares
Date: 09/16/08 Time: 14:43
Sample (adjusted): 1977 2007
Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.429038	0.588857	-0.728595	0.472800
LOG(RES_USE_ADJ(-1))	0.881019	0.050501	17.445480	0.000000
LOG(CDD_7807)	0.132138	0.052682	2.508213	0.018700
LOG(YPC_R_HON)	0.096428	0.032006	3.012841	0.005700
LOG(RES_R_PRICE)	-0.031784	0.015013	-2.117087	0.044000

R-squared	0.951733	Mean dependent var	8.949681
Adjusted R-squared	0.944307	S.D. dependent var	0.057044
S.E. of regression	0.013462	Akaike info criterion	-5.631199
Sum squared resid	0.004712	Schwarz criterion	-5.399911
Log likelihood	92.28359	Hannan-Quinn criter.	-5.5558
F-statistic	128.167600	Durbin-Watson stat	2.295156

EViews: p sep08 lt update.wf1 (res_uselt_ypc_908)

Hawaiian Electric Co., Inc.

COMMERCIAL SALES FORECAST MODEL
2008 SHORT-TERM ECONOMETRIC MODEL

Dependent Variable: LOG(COM_RECD_ADJ)
Method: Least Squares
Date: 10/17/08 Time: 16:01
Sample: 1997M01 2008M08
Included observations: 140

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.798600	1.097753	10.747950	0.0000
LOG(COM_RECD_ADJ(-1))	-0.198236	0.031884	-6.217410	0.0000
LOG(COM_RECD_ADJ(-4))	0.124973	0.031977	3.908221	0.0001
LOG(COM_RECD_ADJ(-12))	0.248797	0.048278	5.153406	0.0000
LOG(CDD_7807)	0.063114	0.015440	4.087718	0.0001
LOG(WETBULB_9707)	0.758627	0.093494	8.114174	0.0000
LOG(E_NF_HON(-1))	0.138254	0.082175	1.682442	0.0949
MO_YR_TIME	0.000639	0.000103	6.173620	0.0000
M_2	-0.045915	0.006398	-7.176565	0.0000
M_8	0.027969	0.005444	5.138017	0.0000
M_10	0.021499	0.005312	4.047515	0.0001

R-squared	0.959569	Mean dependent var	19.933030
Adjusted R-squared	0.956435	S.D. dependent var	0.070693
S.E. of regression	0.014755	Akaike info criterion	-5.519119
Sum squared resid	0.028086	Schwarz criterion	-5.287989
Log likelihood	397.3383	Hannan-Quinn criter.	-5.4252
F-statistic	306.164200	Durbin-Watson stat	1.887688

EViews: p sep08 st update.wf1 (com_st_enf_908upd)

Hawaiian Electric Co., Inc.

COMMERCIAL SALES FORECAST MODEL
2009 LONG-TERM ECONOMETRIC MODEL

Dependent Variable: LOG(COM_KWH_ADJ)
Method: Least Squares
Date: 09/16/08 Time: 16:48
Sample (adjusted): 1977 2007
Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.470747	1.106582	4.943825	0.0000
LOG(COM_KWH_ADJ(-1))	0.530408	0.074717	7.098868	0.0000
LOG(COM_R_PRICE)	-0.027752	0.009710	-2.857979	0.0085
LOG(CDD_7807)	0.250718	0.038066	6.586343	0.0000
LOG(E_NF_HON)	0.467832	0.091693	5.102176	0.0000
D_96ON	0.044800	0.009268	4.834045	0.0001

R-squared	0.997556	Mean dependent var	22.245870
Adjusted R-squared	0.997067	S.D. dependent var	0.175172
S.E. of regression	0.009487	Akaike info criterion	-6.305885
Sum squared resid	0.002250	Schwarz criterion	-6.028340
Log likelihood	103.7412	Hannan-Quinn criter.	-6.215412
F-statistic	2040.777	Durbin-Watson stat	1.743064

EViews: p sep08 lt update.wf1 (com_lt_enf_908)

Hawaiian Electric Co., Inc.
2008 SHORT-TERM RESIDENTIAL USE MODEL VARIABLES

Date	Res_Cust	Res_recd	Res_recd_adj	Res_rcuse_adj	res_rprc_rc	CDD_7807	Wetbulb_9707	m_1	mo_yr_time
Jan-97	237763	161245746	161801882	680.517	$ 0.12219	231	67.1	1	253
Feb-97	237767	137997201	138566103	582.781	$ 0.12485	279	67.5	0	254
Mar-97	237774	151676994	152263713	640.372	$ 0.12405	326	68.8	0	255
Apr-97	238846	150194760	150801571	631.376	$ 0.12267	346	69.1	0	256
May-97	238407	148776502	149400619	626.662	$ 0.12153	355	68.1	0	257
Jun-97	237779	153252758	153899747	647.239	$ 0.11889	489	72.0	0	258
Jul-97	238085	159184791	159860839	671.444	$ 0.11665	521	72.5	0	259
Aug-97	238226	162090514	162797768	683.375	$ 0.11863	553	73.3	0	260
Sep-97	238648	163775088	164520789	689.387	$ 0.11674	537	73.7	0	261
Oct-97	238676	160195025	160978986	674.467	$ 0.11808	492	72.7	0	262
Nov-97	238432	147718517	148538186	622.979	$ 0.11813	350	68.6	0	263
Dec-97	238825	156067600	156944030	657.151	$ 0.12515	288	66.5	0	264
Jan-98	239301	159141474	160042387	668.791	$ 0.11870	238	65.8	1	265
Feb-98	239017	134532325	135456774	566.724	$ 0.11878	227	65.1	0	266
Mar-98	239565	154007827	154953831	646.813	$ 0.11802	322	67.1	0	267
Apr-98	239483	139933078	140899768	588.350	$ 0.11341	309	66.1	0	268
May-98	239219	151310134	152297762	636.646	$ 0.11269	368	67.2	0	269
Jun-98	239094	148608567	149612843	625.749	$ 0.11219	407	69.1	0	270
Jul-98	239287	152809991	153840441	642.912	$ 0.11166	463	69.7	0	271
Aug-98	239655	161344637	162403458	677.655	$ 0.11175	506	71.9	0	272
Sep-98	239858	154586364	155669970	649.009	$ 0.11098	489	73.1	0	273
Oct-98	239872	154863932	155977300	650.252	$ 0.11103	464	72.3	0	274
Nov-98	239547	153132916	154267492	643.997	$ 0.11020	390	70.4	0	275
Dec-98	239945	156517281	157689734	657.191	$ 0.11458	310	68.2	0	276
Jan-99	240152	162531045	163722333	681.745	$ 0.10905	267	67.5	1	277
Feb-99	239708	138258256	139468279	581.826	$ 0.10456	248	66.2	0	278
Mar-99	240986	148603167	149835857	621.762	$ 0.10798	305	66.2	0	279
Apr-99	240773	146853547	148109812	615.143	$ 0.10933	317	66.9	0	280
May-99	240223	154262386	155540984	647.486	$ 0.11203	383	69.2	0	281
Jun-99	241320	150032928	151336577	627.120	$ 0.11418	417	69.4	0	282
Jul-99	241158	157186058	158512836	657.299	$ 0.11466	452	70.8	0	283
Aug-99	241128	160396080	161745822	670.788	$ 0.11548	500	70.6	0	284
Sep-99	242111	156009620	157378697	650.027	$ 0.11734	460	71.0	0	285
Oct-99	241729	156422181	157815141	652.860	$ 0.11854	421	71.4	0	286
Nov-99	242143	153598105	155019574	640.198	$ 0.12144	361	69.9	0	287
Dec-99	242579	161819621	163281613	673.107	$ 0.12292	289	69.5	0	288
Jan-00	242071	164855885	166336561	687.140	$ 0.12071	241	66.1	1	289
Feb-00	242626	146086156	147588474	608.296	$ 0.12219	256	68.1	0	290
Mar-00	243108	154213429	155767469	640.734	$ 0.12691	331	68.4	0	291
Apr-00	242569	145732974	147308363	607.284	$ 0.12668	318	67.5	0	292
May-00	243134	158535799	160127863	658.599	$ 0.12535	419	69.7	0	293
Jun-00	243131	154840095	156449941	643.480	$ 0.12686	470	71.7	0	294
Jul-00	243082	162704311	164330262	676.028	$ 0.12787	508	72.7	0	295
Aug-00	244083	166893925	168537693	690.493	$ 0.12976	517	72.6	0	296
Sep-00	243918	159202570	160864763	659.503	$ 0.12876	476	72.9	0	297
Oct-00	244763	165301860	166980635	682.214	$ 0.12867	482	72.4	0	298
Nov-00	244626	156465667	158163173	646.551	$ 0.13211	382	71.1	0	299
Dec-00	245027	162858129	164585968	671.705	$ 0.13297	307	69.4	0	300
Jan-01	245249	168199072	169937548	692.918	$ 0.12773	332	69.8	1	301
Feb-01	245336	138581466	140331587	571.998	$ 0.12714	262	68.5	0	302
Mar-01	245589	157608387	159371688	648.937	$ 0.12447	319	68.2	0	303
Apr-01	245509	151041078	152819017	622.458	$ 0.12292	356	69.2	0	304
May-01	245924	158459666	160250928	651.628	$ 0.12481	415	69.5	0	305
Jun-01	245888	156164712	157972085	642.455	$ 0.12472	451	70.4	0	306
Jul-01	246014	169050492	170872772	694.565	$ 0.12687	515	71.7	0	307
Aug-01	246497	168178830	170019487	689.743	$ 0.12424	541	72.6	0	308
Sep-01	246523	166165058	168023775	681.574	$ 0.12646	522	72.1	0	309
Oct-01	247246	165373661	167254141	676.469	$ 0.12509	467	71.4	0	310
Nov-01	247251	160728011	162630822	657.756	$ 0.12063	375	70.8	0	311
Dec-01	247672	164892692	166818762	673.547	$ 0.11327	357	69.6	0	312
Jan-02	248060	169557921	171500022	691.365	$ 0.11268	292	69.1	1	313
Feb-02	247722	144766301	146725103	592.297	$ 0.11229	234	64.8	0	314
Mar-02	248160	159218459	161191553	649.547	$ 0.11144	290	66.4	0	315
Apr-02	248466	160233968	162223035	652.898	$ 0.11470	360	69.4	0	316
May-02	248618	166975644	168977004	679.665	$ 0.11741	414	71.1	0	317
Jun-02	248129	168206655	170223495	686.028	$ 0.11984	481	71.2	0	318
Jul-02	248834	170105775	172140927	691.790	$ 0.12078	503	72.2	0	319
Aug-02	248628	180052348	182110426	732.461	$ 0.12153	539	72.9	0	320
Sep-02	249384	172985192	175057577	701.960	$ 0.12206	495	72.1	0	321
Oct-02	249565	175608795	177699564	712.037	$ 0.12431	479	71.6	0	322
Nov-02	249721	164755154	166864071	668.202	$ 0.12585	383	70.4	0	323
Dec-02	249896	170189235	172321974	689.575	$ 0.12666	329	68.0	0	324
Jan-03	250384	172348798	174505518	696.952	$ 0.12412	240	66.2	1	325
Feb-03	250128	148135121	150309447	600.930	$ 0.12690	250	65.9	0	326
Mar-03	250661	165735640	167926598	669.935	$ 0.12879	338	69.4	0	327
Apr-03	250688	163954656	166168177	662.849	$ 0.13008	374	68.6	0	328
May-03	250787	168122701	170359351	679.299	$ 0.13067	439	69.4	0	329
Jun-03	250466	171657756	173919343	694.383	$ 0.12567	471	71.0	0	330

Hawaiian Electric Co., Inc.
2008 SHORT-TERM RESIDENTIAL USE MODEL VARIABLES

Date	Res_Cust	Res_recd	Res_recd_adj	Res_rcuse_adj	res_rprc_rc	CDD_7807	Wetbulb_9707	m_1	mo_yr_time
Jul-03	251412	179035507	181316060	721.191	$ 0.12408	545	72.5	0	331
Aug-03	250927	186728189	189029732	753.326	$ 0.12363	573	72.2	0	332
Sep-03	252167	177890447	180210987	714.649	$ 0.12265	518	72.7	0	333
Oct-03	252096	185606047	187959150	745.586	$ 0.12264	504	73.9	0	334
Nov-03	252230	172174540	174544241	692.004	$ 0.12132	420	71.1	0	335
Dec-03	253033	175133060	177520429	701.570	$ 0.12353	336	68.8	0	336
Jan-04	253130	178384194	180784135	714.195	$ 0.12171	272	68.3	1	337
Feb-04	252587	161501186	163913547	648.939	$ 0.12348	323	69.7	0	338
Mar-04	253502	169972944	172402768	680.084	$ 0.12396	317	68.2	0	339
Apr-04	253152	166966002	169407904	669.194	$ 0.12374	371	70.6	0	340
May-04	253130	174811446	177267639	700.303	$ 0.12598	453	73.4	0	341
Jun-04	253328	178551997	181035446	714.629	$ 0.12440	496	72.5	0	342
Jul-04	253333	188781364	191284900	755.073	$ 0.12401	556	73.5	0	343
Aug-04	253883	197826498	200348496	789.137	$ 0.12569	558	74.0	0	344
Sep-04	254959	190684594	193224482	757.865	$ 0.12912	537	75.6	0	345
Oct-04	253878	187786033	190347728	749.761	$ 0.13291	517	72.8	0	346
Nov-04	254365	178100048	180682459	710.328	$ 0.13769	383	71.7	0	347
Dec-04	254797	177962277	180571022	708.686	$ 0.13965	324	68.7	0	348
Jan-05	255270	180689474	183311847	718.110	$ 0.12552	245	68.6	1	349
Feb-05	255086	155194921	157832384	618.742	$ 0.12338	255	66.5	0	350
Mar-05	255502	167526508	170179829	666.061	$ 0.12236	280	66.6	0	351
Apr-05	255559	168257875	170924017	668.824	$ 0.12741	419	68.6	0	352
May-05	255566	180645083	183328665	717.344	$ 0.13256	514	71.2	0	353
Jun-05	256189	181895518	184596166	720.547	$ 0.13571	537	71.7	0	354
Jul-05	256360	188023777	190745944	744.055	$ 0.14112	570	72.0	0	355
Aug-05	256883	195107511	197855134	770.215	$ 0.14165	588	72.4	0	356
Sep-05	256706	188548066	191317239	745.278	$ 0.14592	491	72.6	0	357
Oct-05	256962	182998307	185819623	723.140	$ 0.15438	430	70.7	0	358
Nov-05	257345	171894763	174761972	679.096	$ 0.15602	371	70.7	0	359
Dec-05	257804	181752384	184685482	716.379	$ 0.15383	270	67.2	0	360
Jan-06	258576	178941964	181905200	703.488	$ 0.14627	293	67.6	1	361
Feb-06	257990	150504445	153497256	594.974	$ 0.14897	205	65.0	0	362
Mar-06	258754	175927557	178946423	691.570	$ 0.14530	275	69.2	0	363
Apr-06	258533	168873157	171913974	664.959	$ 0.15051	299	66.4	0	364
May-06	258801	168187218	171248535	661.700	$ 0.14891	324	66.8	0	365
Jun-06	258575	179240101	182322248	705.104	$ 0.15468	458	69.8	0	366
Jul-06	258701	186875292	189982994	734.373	$ 0.15450	496	70.5	0	367
Aug-06	258912	195087382	198230472	765.629	$ 0.15496	509	71.2	0	368
Sep-06	259191	182645922	185821336	716.928	$ 0.15407	464	70.7	0	369
Oct-06	258889	186147572	189225614	730.914	$ 0.14536	446	71.8	0	370
Nov-06	259495	181089337	184121177	709.537	$ 0.14201	400	71.0	0	371
Dec-06	259098	180911855	183999548	710.154	$ 0.13838	352	67.4	0	372
Jan-07	259810	181842040	184986922	712.008	$ 0.12869	311	67.5	1	373
Feb-07	259400	149277839	152859528	589.281	$ 0.13154	240	65.3	0	374
Mar-07	259770	174759923	178549558	687.337	$ 0.12684	294	67.7	0	375
Apr-07	259582	166598607	170856318	658.198	$ 0.13141	356	66.5	0	376
May-07	259884	176973144	181510180	698.428	$ 0.13602	421	68.6	0	377
Jun-07	259472	180851983	185764561	715.933	$ 0.14206	478	69.8	0	378
Jul-07	259840	187927623	193171678	743.425	$ 0.14681	524	71.0	0	379
Aug-07	260019	195805174	201471217	774.833	$ 0.15225	538	71.1	0	380
Sep-07	259962	184516020	190448391	732.601	$ 0.15644	504	71.1	0	381
Oct-07	260037	184137519	190236884	731.576	$ 0.16055	477	69.9	0	382
Nov-07	259955	171945074	178463618	686.517	$ 0.16453	357	69.5	0	383
Dec-07	260583	179900211	186891796	717.206	$ 0.17817	335	68.4	0	384
Jan-08	261013	177084936	184225537	705.810	$ 0.16424	273	65.2	1	385
Feb-08	260418	156730140	164472074	631.570	$ 0.17405	291	67.1	0	386
Mar-08	260809	171594764	179834871	689.527	$ 0.17800	390	67.5	0	387
Apr-08	260769	162569637	171256093	656.735	$ 0.17959	374	67.6	0	388
May-08	260503	173407464	182536148	700.707	$ 0.18631	448	68.6	0	389
Jun-08	259968	171624468	181054271	696.448	$ 0.19291	473	69.7	0	390
Jul-08	260373	183153015	192997255	741.234	$ 0.19341	539	71.0	0	391
Aug-08	260029	179744729	189695403	729.516	$ 0.21754	520	70.6	0	392
Sep-08	261460				$ 0.21754	506	72.5	0	393
Oct-08	261231				$ 0.21754	477	71.9	0	394
Nov-08	261541				$ 0.21754	388	70.5	0	395
Dec-08	261936				$ 0.21754	313	68.3	0	396
Jan-09	261351				$ 0.22525	261	67.6	1	397
Feb-09	260949				$ 0.22525	238	66.6	0	398
Mar-09	261562				$ 0.22525	304	67.8	0	399
Apr-09	261423				$ 0.22525	345	68.1	0	400
May-09	261556				$ 0.22525	408	69.5	0	401
Jun-09	261530				$ 0.22525	464	70.8	0	402
Jul-09	261860				$ 0.22525	511	71.7	0	403
Aug-09	262058				$ 0.22525	535	72.3	0	404
Sep-09	262542				$ 0.22525	506	72.5	0	405
Oct-09	262313				$ 0.22525	477	71.9	0	406
Nov-09	262624				$ 0.22525	388	70.5	0	407
Dec-09	263020				$ 0.22525	313	68.3	0	408

Hawaiian Electric Co., Inc.
2009 LONG-TERM RESIDENTIAL USE MODEL VARIABLES

Year	res_cust	res_kwh_adj	res_use_adj	res_r_price	cdd_7807	wetbulb_9707	ypc_r_hon
1976	175157	1419044125	8101.555	$ 0.11518	4395	66.6	21.14335
1977	177722	1427941624	8034.693	$ 0.12021	4905	69.4	21.52185
1978	182887	1425647091	7795.235	$ 0.12725	4401	68.6	21.92567
1979	185080	1452093141	7845.759	$ 0.12126	4469	68.9	21.89471
1980	188761	1446129858	7661.169	$ 0.13325	4633	69.6	22.04081
1981	191112	1429139256	7478.019	$ 0.19233	4492	69.6	21.82099
1982	193627	1370713888	7079.146	$ 0.19312	4434	68.9	21.49315
1983	195952	1378616273	7035.479	$ 0.16420	4547	68.4	22.44376
1984	198542	1382680982	6964.174	$ 0.16567	4878	69.3	23.67011
1985	200638	1402649335	6990.946	$ 0.15172	4437	68.5	24.13309
1986	203903	1453470287	7128.244	$ 0.11966	4939	70.0	24.56777
1987	208501	1520876349	7294.336	$ 0.11556	4782	69.1	24.69665
1988	212675	1572318220	7393.056	$ 0.10212	5040	69.9	25.23493
1989	215076	1622612720	7544.369	$ 0.09974	4659	69.3	26.13272
1990	217471	1655465818	7612.352	$ 0.10260	4708	68.7	26.46047
1991	221505	1673525132	7555.248	$ 0.09881	4734	68.9	25.56936
1992	224418	1723321046	7679.068	$ 0.09823	4779	69.3	25.71661
1993	227616	1726361515	7584.535	$ 0.11089	4507	68.4	25.42408
1994	232010	1782248225	7681.773	$ 0.10674	5151	70.1	24.92070
1995	234832	1806563873	7693.006	$ 0.11301	5309	71.2	24.66976
1996	236849	1871196181	7900.376	$ 0.11735	5052	70.5	24.32109
1997	238269	1865175241	7828.023	$ 0.12013	4767	69.9	24.79252
1998	239487	1830059450	7641.582	$ 0.11375	4493	68.8	25.27475
1999	241167	1855240841	7692.764	$ 0.11388	4420	68.9	25.78217
2000	243511	1913595384	7858.353	$ 0.12691	4707	70.1	26.76551
2001	246226	1952982553	7931.667	$ 0.12520	4912	70.2	26.75572
2002	248765	2019702521	8118.918	$ 0.11844	4799	69.8	27.13574
2003	251248	2095327627	8339.679	$ 0.12514	5008	69.9	27.37010
2004	253670	2170240753	8555.370	$ 0.12679	5107	71.5	28.44765
2005	256269	2178657912	8501.449	$ 0.13791	4970	69.8	29.34698
2006	258793	2163768473	8361.001	$ 0.14914	4519	69.0	29.44503
2007	259860	2199790757	8465.292	$ 0.14404	4835	68.9	29.78910
2008	260881			$ 0.21754	4750	69.8	29.79011
2009	261899			$ 0.22525	4750	69.8	29.66327

Hawaiian Electric Co., Inc.
2008 SHORT-TERM COMMERCIAL SALES MODEL VARIABLES

Date	com_recd	com_recd_adj	E_NF_Hon	CDD_7807	Wetbulb_9707	m_2	m_8	m_10	mo_yr_time
Jan-97	404741122	405436005	401.7	231	67.1	0	0	0	253
Feb-97	374630595	375375109	404.8	279	67.5	1	0	0	254
Mar-97	423133614	424298922	407.2	326	68.8	0	0	0	255
Apr-97	419849501	421193652	404.4	346	69.1	0	0	0	256
May-97	422805793	424249273	406.7	355	68.1	0	0	0	257
Jun-97	432784994	434417705	407.2	489	72.0	0	0	0	258
Jul-97	456659960	458490008	398.2	521	72.5	0	0	0	259
Aug-97	454019187	455967542	400.3	553	73.3	0	1	0	260
Sep-97	461761864	463806259	396.8	537	73.7	0	0	0	261
Oct-97	469384398	471733232	401.1	492	72.7	0	0	1	262
Nov-97	421568097	424027235	405.4	350	68.6	0	0	0	263
Dec-97	407851599	410422349	409.6	288	66.5	0	0	0	264
Jan-98	407123514	409849553	399.0	238	65.8	0	0	0	265
Feb-98	366753863	369541197	402.4	227	65.1	1	0	0	266
Mar-98	427782290	430632649	404.4	322	67.1	0	0	0	267
Apr-98	393616446	396497283	402.1	309	66.1	0	0	0	268
May-98	417168069	420204336	403.1	368	67.2	0	0	0	269
Jun-98	420551314	423652192	402.2	407	69.1	0	0	0	270
Jul-98	436127836	439326613	395.1	463	69.7	0	0	0	271
Aug-98	464184470	467502953	397.1	506	71.9	0	1	0	272
Sep-98	444674977	448168220	396.9	489	73.1	0	0	0	273
Oct-98	455909950	459525935	398.7	464	72.3	0	0	1	274
Nov-98	426046863	429804566	403.0	390	70.4	0	0	0	275
Dec-98	418738594	422617585	406.9	310	68.2	0	0	0	276
Jan-99	405610414	409560042	392.3	267	67.5	0	0	0	277
Feb-99	375464669	379452440	396.7	248	66.2	1	0	0	278
Mar-99	415904991	420002875	399.8	305	66.2	0	0	0	279
Apr-99	409802325	414020790	400.8	317	66.9	0	0	0	280
May-99	434510879	438833163	402.2	383	69.2	0	0	0	281
Jun-99	424346877	428862253	403.9	417	69.4	0	0	0	282
Jul-99	436256958	440901187	396.2	452	70.8	0	0	0	283
Aug-99	460210733	464971773	399.8	500	70.6	0	1	0	284
Sep-99	445441968	450283230	400.3	460	71.0	0	0	0	285
Oct-99	449219878	454210550	403.8	421	71.4	0	0	1	286
Nov-99	420244544	425279273	408.5	361	69.9	0	0	0	287
Dec-99	436349746	441541674	413.7	289	69.5	0	0	0	288
Jan-00	396849626	402140148	399.1	241	66.1	0	0	0	289
Feb-00	399536513	404924802	406.3	256	68.1	1	0	0	290
Mar-00	434434274	439889187	409.8	331	68.4	0	0	0	291
Apr-00	402734626	408304568	409.6	318	67.5	0	0	0	292
May-00	444931131	450677510	412.9	419	69.7	0	0	0	293
Jun-00	445979790	451800790	416.1	470	71.7	0	0	0	294
Jul-00	466155473	472239935	407.6	508	72.7	0	0	0	295
Aug-00	469909910	476259915	409.0	517	72.6	0	1	0	296
Sep-00	463748817	470214580	413.1	476	72.9	0	0	0	297
Oct-00	474277746	480791066	415.3	482	72.4	0	0	1	298
Nov-00	434643199	441290292	420.3	382	71.1	0	0	0	299
Dec-00	442968883	449764262	424.5	307	69.4	0	0	0	300
Jan-01	434004326	440933726	405.9	332	69.8	0	0	0	301
Feb-01	392554395	399564716	415.2	262	68.5	1	0	0	302
Mar-01	433681739	440779558	417.9	319	68.2	0	0	0	303
Apr-01	419526085	426656391	413.2	356	69.2	0	0	0	304
May-01	449074018	456267294	414.3	415	69.5	0	0	0	305
Jun-01	441160261	448449073	419.0	451	70.4	0	0	0	306
Jul-01	466902340	474282281	409.1	515	71.7	0	0	0	307
Aug-01	480210493	487647240	410.5	541	72.6	0	1	0	308
Sep-01	465558878	473058970	412.2	522	72.1	0	0	0	309
Oct-01	462160499	469708120	408.3	467	71.4	0	0	1	310
Nov-01	434351034	441973684	410.9	375	70.8	0	0	0	311
Dec-01	436752289	444383839	413.4	357	69.6	0	0	0	312
Jan-02	417240275	424880477	401.7	292	69.1	0	0	0	313
Feb-02	382894365	390659382	408.3	234	64.8	1	0	0	314
Mar-02	432375577	440177837	411.0	290	66.4	0	0	0	315
Apr-02	426763155	434599727	404.8	360	69.4	0	0	0	316
May-02	459149712	467115722	414.6	414	71.1	0	0	0	317
Jun-02	454664215	462753320	419.7	481	71.2	0	0	0	318
Jul-02	466616152	474765058	407.8	503	72.2	0	0	0	319
Aug-02	483474992	491700265	409.3	539	72.9	0	1	0	320
Sep-02	466795547	475047406	413.0	495	72.1	0	0	0	321
Oct-02	479500444	487786737	416.5	479	71.6	0	0	1	322
Nov-02	440877432	449221212	421.2	383	70.4	0	0	0	323
Dec-02	439531241	447903628	426.2	329	68.0	0	0	0	324
Jan-03	416484856	425017044	414.4	240	66.2	0	0	0	325
Feb-03	389631183	398196590	418.8	250	65.9	1	0	0	326
Mar-03	444739190	453457802	421.0	338	69.4	0	0	0	327
Apr-03	433306704	442064976	416.6	374	68.6	0	0	0	328
May-03	454026438	462880560	421.3	439	69.4	0	0	0	329
Jun-03	455484736	464426569	421.1	471	71.0	0	0	0	330

Hawaiian Electric Co., Inc.
2008 SHORT-TERM COMMERCIAL SALES MODEL VARIABLES

Date	com_recd	com_recd_adj	E_NF_Hon	CDD_7807	Wetbulb_9707	m_2	m_8	m_10	mo_yr_time
Jul-03	475004499	484115624	414.1	545	72.5	0	0	0	331
Aug-03	490850145	500017781	414.8	573	72.2	0	1	0	332
Sep-03	472197133	481412999	417.3	518	72.7	0	0	0	333
Oct-03	487461446	496707943	421.0	504	73.9	0	0	1	334
Nov-03	452168477	461516584	426.0	420	71.1	0	0	0	335
Dec-03	445102350	454533374	430.0	336	68.8	0	0	0	336
Jan-04	426699764	436206093	418.9	272	68.3	0	0	0	337
Feb-04	427512845	437088022	423.4	323	69.7	1	0	0	338
Mar-04	439387974	449000435	426.0	317	68.2	0	0	0	339
Apr-04	439817079	449538797	426.3	371	70.6	0	0	0	340
May-04	469274910	479151584	429.8	453	73.4	0	0	0	341
Jun-04	461287588	471195075	430.2	496	72.5	0	0	0	342
Jul-04	489760066	499722067	424.6	556	73.5	0	0	0	343
Aug-04	499848257	509899649	426.0	558	74.0	0	1	0	344
Sep-04	488465098	498581804	429.3	537	75.6	0	0	0	345
Oct-04	492513583	502767802	435.1	517	72.8	0	0	1	346
Nov-04	456082505	466381939	442.4	383	71.7	0	0	0	347
Dec-04	453272475	463757752	444.4	324	68.7	0	0	0	348
Jan-05	442155077	452679240	429.9	245	68.6	0	0	0	349
Feb-05	398755418	409315454	437.1	255	66.5	1	0	0	350
Mar-05	435464639	446069014	440.1	280	66.6	0	0	0	351
Apr-05	443652464	454327415	440.7	419	68.6	0	0	0	352
May-05	481199007	491929830	443.7	514	71.2	0	0	0	353
Jun-05	466340931	477225068	444.3	537	71.7	0	0	0	354
Jul-05	482272794	493343140	437.6	570	72.0	0	0	0	355
Aug-05	501927925	513110326	441.1	588	72.4	0	1	0	356
Sep-05	485313985	496622617	444.0	491	72.6	0	0	0	357
Oct-05	485582189	497048055	446.1	430	70.7	0	0	1	358
Nov-05	456605088	468160899	451.1	371	70.7	0	0	0	359
Dec-05	461730829	473570596	456.2	270	67.2	0	0	0	360
Jan-06	443056086	454959177	439.9	293	67.6	0	0	0	361
Feb-06	398790135	410771787	449.8	205	65.0	1	0	0	362
Mar-06	453569155	465709832	452.7	275	69.2	0	0	0	363
Apr-06	424590442	436927589	449.2	299	66.4	0	0	0	364
May-06	454196782	466955412	453.6	324	66.8	0	0	0	365
Jun-06	469607046	482631029	454.8	458	69.8	0	0	0	366
Jul-06	482239893	495347662	445.4	496	70.5	0	0	0	367
Aug-06	509307517	522523444	448.8	509	71.2	0	1	0	368
Sep-06	478429470	491771935	453.9	464	70.7	0	0	0	369
Oct-06	482869883	496324802	451.8	446	71.8	0	0	1	370
Nov-06	468321655	482098796	460.3	400	71.0	0	0	0	371
Dec-06	463727572	478450950	461.6	352	67.4	0	0	0	372
Jan-07	445321289	460154109	447.2	311	67.5	0	0	0	373
Feb-07	396978747	412006379	454.2	240	65.3	1	0	0	374
Mar-07	458093444	473299394	457.2	294	67.7	0	0	0	375
Apr-07	424764538	440190010	449.5	356	66.5	0	0	0	376
May-07	474033441	489959631	457.2	421	68.6	0	0	0	377
Jun-07	463735732	479875059	458.6	478	69.8	0	0	0	378
Jul-07	481496233	498002252	447.0	524	71.0	0	0	0	379
Aug-07	489896903	506667538	448.5	538	71.1	0	1	0	380
Sep-07	475968113	492848589	454.9	504	71.1	0	0	0	381
Oct-07	488197027	505273034	455.3	477	69.9	0	0	1	382
Nov-07	452201429	469582715	460.2	357	69.5	0	0	0	383
Dec-07	452668250	470207060	464.3	335	68.4	0	0	0	384
Jan-08	430516092	448317039	452.7	273	65.2	0	0	0	385
Feb-08	415046599	433305506	457.6	291	67.1	1	0	0	386
Mar-08	455964900	474585327	460.6	390	67.5	0	0	0	387
Apr-08	437707998	456505283	453.9	374	67.6	0	0	0	388
May-08	467764160	486734113	459.6	448	68.6	0	0	0	389
Jun-08	459219007	478318999	457.6	473	69.7	0	0	0	390
Jul-08	480211293	499326490	447.0	539	71.0	0	0	0	391
Aug-08	486204462	505349056	445.8	520	70.6	0	1	0	392
Sep-08			450.0	506	72.5	0	0	0	393
Oct-08			452.0	477	71.9	0	0	1	394
Nov-08			458.3	388	70.5	0	0	0	395
Dec-08			461.7	313	68.3	0	0	0	396
Jan-09			443.0	261	67.6	0	0	0	397
Feb-09			449.8	238	66.6	1	0	0	398
Mar-09			452.7	304	67.8	0	0	0	399
Apr-09			449.6	345	68.1	0	0	0	400
May-09			454.4	408	69.5	0	0	0	401
Jun-09			455.2	464	70.8	0	0	0	402
Jul-09			446.8	511	71.7	0	0	0	403
Aug-09			449.0	535	72.3	0	1	0	404
Sep-09			453.2	506	72.5	0	0	0	405
Oct-09			455.2	477	71.9	0	0	1	406
Nov-09			461.6	388	70.5	0	0	0	407
Dec-09			465.0	313	68.3	0	0	0	408

Hawaiian Electric Co., Inc.
2009 LONG-TERM COMMERCIAL SALES MODEL VARIABLES

Year	com_kwh_adj	com_r_price	cdd_7807	wetbulb_9707	e_nf_hon	d_96on
1976	3193734467	$ 0.09254	4395	66.6	291.233	0
1977	3332208756	$ 0.09839	4905	69.4	298.433	0
1978	3448243494	$ 0.10509	4401	68.6	312.542	0
1979	3552745637	$ 0.10117	4469	68.9	325.767	0
1980	3664714846	$ 0.11679	4633	69.6	333.042	0
1981	3685181523	$ 0.17480	4492	69.6	332.300	0
1982	3608979547	$ 0.17112	4434	68.9	325.675	0
1983	3660470772	$ 0.14232	4547	68.4	330.100	0
1984	3841931769	$ 0.14248	4878	69.3	334.383	0
1985	3838763223	$ 0.12918	4437	68.5	342.275	0
1986	4080604222	$ 0.09664	4939	70.0	351.425	0
1987	4189578192	$ 0.09505	4782	69.1	366.525	0
1988	4405129557	$ 0.08212	5040	69.9	378.117	0
1989	4531545348	$ 0.08138	4659	69.3	395.550	0
1990	4727686341	$ 0.08546	4708	68.7	410.675	0
1991	4766421332	$ 0.08209	4734	68.9	415.592	0
1992	4869782447	$ 0.07913	4779	69.3	418.008	0
1993	4840502581	$ 0.08893	4507	68.4	414.792	0
1994	4968689413	$ 0.08444	5151	70.1	411.558	0
1995	5080957623	$ 0.08745	5309	71.2	408.258	0
1996	5223266020	$ 0.09108	5052	70.5	404.742	1
1997	5173632566	$ 0.09227	4767	69.9	403.617	1
1998	5113546159	$ 0.08536	4493	68.8	400.908	1
1999	5142821535	$ 0.08589	4420	68.9	401.500	1
2000	5337938668	$ 0.09985	4707	70.1	411.967	1
2001	5433693246	$ 0.09914	4912	70.2	412.463	1
2002	5437357380	$ 0.09351	4799	69.8	412.813	1
2003	5527498122	$ 0.10062	5008	69.9	419.683	1
2004	5643776802	$ 0.10295	5107	71.5	429.679	1
2005	5675815719	$ 0.11477	4970	69.8	442.642	1
2006	5667234499	$ 0.12532	4519	69.0	451.783	1
2007	5707515441	$ 0.11959	4835	68.9	454.479	1
2008		$ 0.18988	4750	69.8	454.716	1
2009		$ 0.19661	4750	69.8	452.962	1

Hawaiian Electric Company, Inc.
Honolulu Airport Weather Data
MONTHLY COOLING DEGREE DAYS

	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976
JAN	273	311	292	245	272	240	292	332	241	267	238	231	354	294	227	190	251	236	306	301	260	267	251	205	304	223	261	263	222	159	292	276	278
FEB	291	240	205	255	323	250	234	262	256	248	227	279	266	239	248	180	244	243	189	244	289	178	217	256	285	182	195	249	220	209	238	305	209
MAR	390	294	274	280	317	338	290	319	331	305	322	326	297	334	262	285	316	250	258	325	346	285	366	300	340	270	288	311	317	250	336	355	275
APR	374	356	299	419	371	374	360	356	318	317	309	346	453	351	337	381	327	333	354	291	373	337	384	293	366	295	318	335	340	299	361	344	311
MAY	448	421	324	514	453	439	414	415	419	383	368	355	441	428	451	387	404	404	412	425	437	337	421	364	432	335	421	385	418	412	417	396	393
JUN	473	478	458	537	496	471	481	451	470	417	407	489	494	498	486	463	495	442	456	482	482	465	457	437	438	425	442	474	442	458	418	441	402
JUL	539	524	496	570	556	545	503	515	508	452	463	521	538	572	564	491	518	508	498	521	527	537	519	521	501	461	493	463	501	500	439	498	464
AUG	520	538	509	588	558	573	539	541	517	500	506	553	560	578	606	515	540	547	543	517	537	556	561	532	527	544	514	477	504	485	489	541	498
SEP		504	464	491	537	518	495	522	476	460	489	537	502	555	575	491	495	501	525	512	520	544	521	491	494	525	499	477	503	489	473	505	479
OCT		477	446	430	517	504	479	467	482	421	464	492	525	554	547	465	452	474	501	431	478	516	491	464	475	508	452	419	476	504	401	507	446
NOV		357	400	371	383	420	383	375	382	361	390	350	365	464	481	345	369	443	377	358	455	418	433	310	425	461	326	355	395	378	298	417	315
DEC		335	352	270	324	336	329	357	307	289	310	288	257	442	367	314	368	353	289	252	336	342	318	264	291	318	225	284	295	326	239	320	325
Yr	3,308	4,835	4,519	4,970	5,107	5,008	4,799	4,912	4,707	4,420	4,493	4,767	5,052	5,309	5,151	4,507	4,779	4,734	4,708	4,659	5,040	4,782	4,939	4,437	4,878	4,547	4,434	4,492	4,633	4,469	4,401	4,905	4,395

	30-yr 78-07 Avg
JAN	261
FEB	238
MAR	304
APR	345
MAY	408
JUN	464
JUL	511
AUG	535
SEP	506
OCT	477
NOV	388
DEC	313
Yr	4,750

Rate Case Upd HECO T-2 updated WPs.xls wp-204 p7 upd 11-08
10/30/08

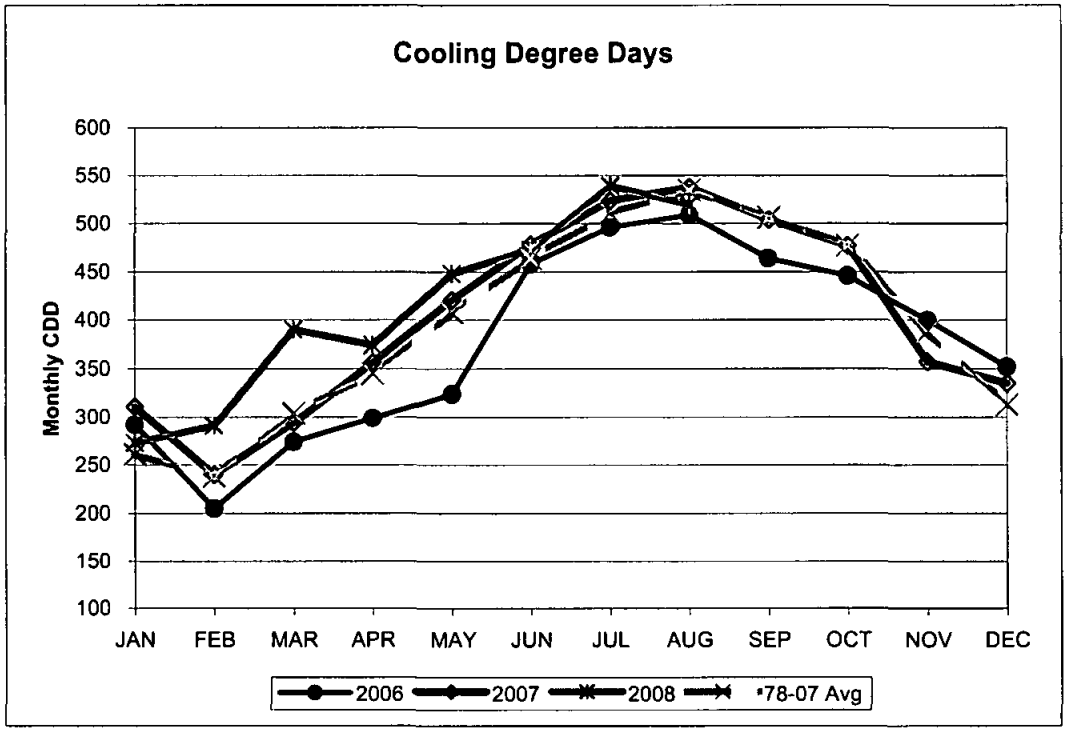
Hawaiian Electric Company, Inc.
Honolulu Airport Weather Data
MONTHLY WETBULB TEMPERATURE

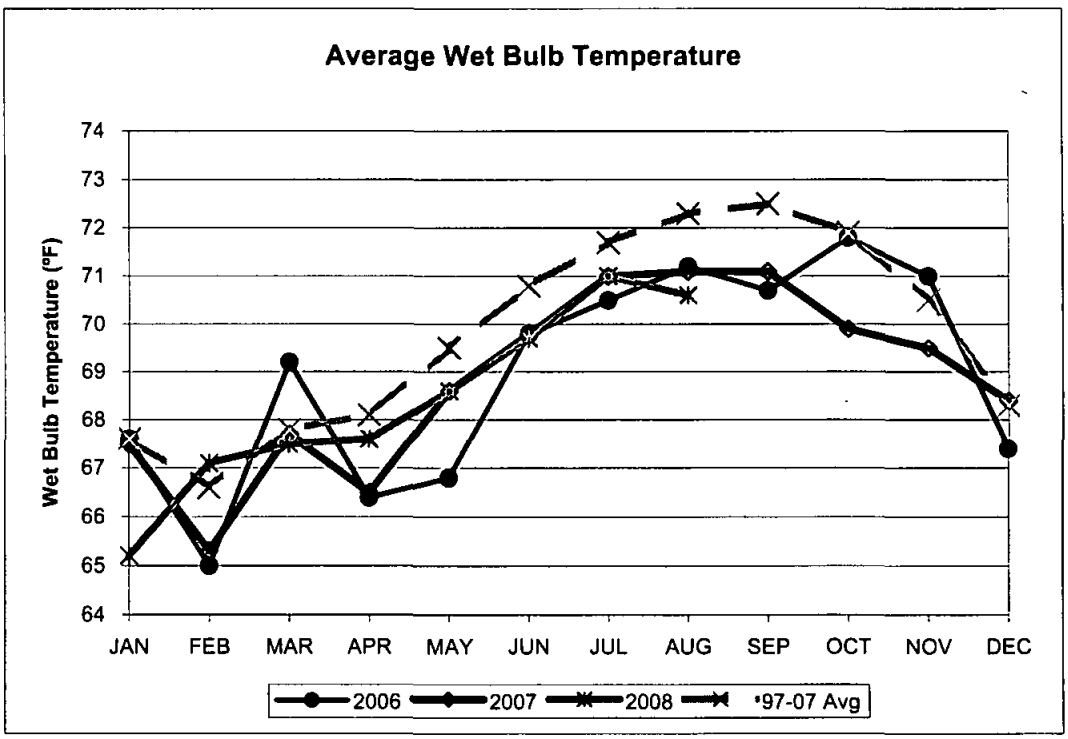
	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997
JAN	65.2	67.5	67.6	68.6	68.3	66.2	69.1	69.8	66.1	67.5	65.8	67.1
FEB	67.1	65.3	65.0	66.5	69.7	65.9	64.8	68.5	68.1	66.2	65.1	67.5
MAR	67.5	67.7	69.2	66.6	68.2	69.4	66.4	68.2	68.4	66.2	67.1	68.8
APR	67.6	66.5	66.4	68.6	70.6	68.6	69.4	69.2	67.5	66.9	66.1	69.1
MAY	68.6	68.6	66.8	71.2	73.4	69.4	71.1	69.5	69.7	69.2	67.2	68.1
JUN	69.7	69.8	69.8	71.7	72.5	71.0	71.2	70.4	71.7	69.4	69.1	72.0
JUL	71.0	71.0	70.5	72.0	73.5	72.5	72.2	71.7	72.7	70.8	69.7	72.5
AUG	70.6	71.1	71.2	72.4	74.0	72.2	72.9	72.6	72.6	70.6	71.9	73.3
SEP		71.1	70.7	72.6	75.6	72.7	72.1	72.1	72.9	71.0	73.1	73.7
OCT		69.9	71.8	70.7	72.8	73.9	71.6	71.4	72.4	71.4	72.3	72.7
NOV		69.5	71.0	70.7	71.7	71.1	70.4	70.8	71.1	69.9	70.4	68.6
DEC		68.4	67.4	67.2	68.7	68.8	68.0	69.6	69.4	69.5	68.2	66.5
Avg	**68.4**	**68.9**	**69.0**	**69.9**	**71.6**	**70.1**	**69.9**	**70.3**	**70.2**	**69.1**	**68.8**	**70.0**

	97-07 Avg
JAN	67.6
FEB	66.6
MAR	67.8
APR	68.1
MAY	69.5
JUN	70.8
JUL	71.7
AUG	72.3
SEP	72.5
OCT	71.9
NOV	70.5
DEC	68.3
Avg	**69.8**

Hawaiian Electric Co., Inc.

FORECAST ASSUMPTIONS - WEATHER





Rate Case Upd HECO T-2 updated WPs.xls
10/30/08

Hawaiian Electric Company, Inc.

AVERAGE ELECTRICITY PRICES (CENTS / KWH)
CURRENT $

Sep 2008 Informal Update

Year	Inflation Factor	R	G/J	H/K	P	Total	Comm'l	
1975	56.3	4.329	5.228	4.328	2.948	3.740	3.488	
1976	59.1	4.386	5.206	4.327	2.995	3.781	3.524	
1977	62.1	4.810	5.642	4.707	3.397	4.191	3.937	
1978	66.9	5.485	6.280	5.334	3.961	4.801	4.530	
1979	74.4	5.813	6.590	5.654	4.279	5.121	4.850	
1980	83.0	7.126	8.007	7.084	5.662	6.488	6.246	
1981	91.7	11.364	12.121	11.277	9.727	10.610	10.328	
1982	97.2	12.095	12.455	11.812	10.126	11.083	10.717	
1983	100.5	10.633	10.967	10.286	8.618	9.590	9.216	
1984	103.5	11.048	11.213	10.479	8.889	9.904	9.502	
1985	106.9	10.450	10.609	9.887	8.269	9.307	8.898	
1986	109.4	8.435	8.278	7.706	6.198	7.231	6.812	
1987	114.9	8.555	8.492	8.035	6.383	7.435	7.037	
1988	121.8	8.014	7.866	7.339	5.798	6.852	6.445	
1989	128.8	8.277	8.175	7.725	6.084	7.151	6.754	
1990	138.2	9.136	9.051	8.564	6.933	8.002	7.610	
1991	148.0	9.423	9.219	8.709	7.148	8.241	7.828	
1992	155.2	9.823	9.353	9.103	7.166	8.412	7.913	
1993	160.1	11.439	10.605	10.661	8.391	9.770	9.174	
1994	164.6	11.320	10.356	10.485	8.118	9.580	8.955	
1995	168.2	12.248	10.823	11.335	8.549	10.200	9.478	
1996	170.8	12.914	11.422	11.709	9.087	10.781	10.023	
1997	172.0	13.313	11.547	12.097	9.311	11.071	10.226	
1998	171.5	12.570	10.733	11.363	8.524	10.255	9.432	
1999	173.3	12.716	10.939	11.472	8.602	10.416	9.591	
2000	176.3	14.416	12.735	13.001	10.309	12.151	11.342	
2001	178.4	14.392	12.735	12.723	10.380	12.187	11.396	
2002	180.3	13.759	12.216	11.996	9.823	11.647	10.863	
2003	184.5	14.877	13.292	12.968	10.927	12.762	11.961	
2004	190.6	15.571	13.965	13.596	11.613	13.457	12.643	
2005	197.8	17.577	15.938	15.329	13.592	15.445	14.627	
2006	209.4	20.122	18.216	17.707	15.848	17.803	16.909	
Forecast (2007 billed with no accrued TY2005 refund and DSM incentive, 2008 is recorded Aug 2008)								3/08 Upd*
2007	219.5	20.371	18.279	17.632	15.810	17.881	16.913	17.881
2008	230.0	32.239	29.461	29.032	26.697	29.107	28.140	20.779
2009	236.7	34.353	31.393	30.936	28.448	31.016	29.986	22.142
2010	241.9	35.894	32.801	32.324	29.724	32.408	31.331	23.135
2011	249.4	36.739	33.573	33.085	30.424	33.171	32.069	23.680
2012	254.9	37.498	34.266	33.768	31.052	33.856	32.731	24.169
2013	260.8	38.351	35.045	34.536	31.758	34.626	33.476	24.718

* Mar 2008 sales update forecast growth rates used to project 2009 - 2013 prices from Aug 2008 recorded

Hawaiian Electric Company, Inc.

AVERAGE ELECTRICITY PRICES
ANNUAL PERCENT CHANGE

Sep 2008 Informal Update

Year	Inflation Factor	R	G/J	H/K	P	Total	Comm'l	
1975								
1976	5.0	1.3	-0.4	0.0	1.6	1.1	1.0	
1977	5.1	9.7	8.4	8.8	13.4	10.8	11.7	
1978	7.7	14.0	11.3	13.3	16.6	14.6	15.1	
1979	11.2	6.0	4.9	6.0	8.0	6.7	7.1	
1980	11.6	22.6	21.5	25.3	32.3	26.7	28.8	
1981	10.5	59.5	51.4	59.2	71.8	63.5	65.4	
1982	6.0	6.4	2.8	4.7	4.1	4.5	3.8	
1983	3.4	-12.1	-11.9	-12.9	-14.9	-13.5	-14.0	
1984	3.0	3.9	2.2	1.9	3.1	3.3	3.1	
1985	3.3	-5.4	-5.4	-5.6	-7.0	-6.0	-6.4	
1986	2.3	-19.3	-22.0	-22.1	-25.0	-22.3	-23.4	
1987	5.0	1.4	2.6	4.3	3.0	2.8	3.3	
1988	6.0	-6.3	-7.4	-8.7	-9.2	-7.8	-8.4	
1989	5.7	3.3	3.9	5.3	4.9	4.4	4.8	
1990	7.3	10.4	10.7	10.9	14.0	11.9	12.7	
1991	7.1	3.1	1.9	1.7	3.1	3.0	2.9	
1992	4.9	4.2	1.5	4.5	0.3	2.1	1.1	
1993	3.2	16.5	13.4	17.1	17.1	16.1	15.9	
1994	2.8	-1.0	-2.3	-1.7	-3.3	-1.9	-2.4	
1995	2.2	8.2	4.5	8.1	5.3	6.5	5.8	
1996	1.5	5.4	5.5	3.3	6.3	5.7	5.8	
1997	0.7	3.1	1.1	3.3	2.5	2.7	2.0	
1998	-0.3	-5.6	-7.0	-6.1	-8.5	-7.4	-7.8	
1999	1.0	1.2	1.9	1.0	0.9	1.6	1.7	
2000	1.7	13.4	16.4	13.3	19.8	16.7	18.3	
2001	1.2	-0.2	0.0	-2.1	0.7	0.3	0.5	
2002	1.1	-4.4	-4.1	-5.7	-5.4	-4.4	-4.7	
2003	2.3	8.1	8.8	8.1	11.2	9.6	10.1	
2004	3.3	4.7	5.1	4.8	6.3	5.4	5.7	
2005	3.8	12.9	14.1	12.7	17.0	14.8	15.7	
2006	5.9	14.5	14.3	15.5	16.6	15.3	15.6	
Forecast (2007 billed with no accrued TY2005 refund and DSM incentive, 2008 is recorded Aug 2008)								3/08 Upd*
2007	4.8	1.2	0.3	-0.4	-0.2	0.4	0.0	
2008	4.8	62.8	62.8	62.8	62.8	62.8	62.8	
2009	2.9	6.6	6.6	6.6	6.6	6.6	6.6	6.6
2010	2.2	4.5	4.5	4.5	4.5	4.5	4.5	4.5
2011	3.1	2.4	2.4	2.4	2.4	2.4	2.4	2.4
2012	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1
2013	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3

* Mar 2008 sales update forecast growth rates used to project 2009 - 2013 prices from Aug 2008 recorded

Rate Case Upd HECO T-2 updated WPs.xls
10/30/08

Hawaiian Electric Company, Inc.

AVERAGE ELECTRICITY PRICES (CENTS / KWH)
ADJUSTED FOR INFLATION (1992 $)

Sep 2008 Informal Update

Year	Inflation Factor	R	G/J	H/K	P	Total	Comm'l	
1975	56.3	11.934	14.412	11.931	8.127	10.310	9.615	
1976	59.1	11.518	13.671	11.363	7.865	9.929	9.254	
1977	62.1	12.021	14.100	11.764	8.490	10.474	9.839	
1978	66.9	12.725	14.569	12.374	9.189	11.138	10.509	
1979	74.4	12.126	13.747	11.794	8.926	10.683	10.117	
1980	83.0	13.325	14.972	13.246	10.587	12.132	11.679	
1981	91.7	19.233	20.514	19.086	16.463	17.957	17.480	
1982	97.2	19.312	19.887	18.860	16.168	17.696	17.112	
1983	100.5	16.420	16.936	15.884	13.309	14.810	14.232	
1984	103.5	16.567	16.814	15.713	13.329	14.851	14.248	
1985	106.9	15.172	15.402	14.354	12.005	13.512	12.918	
1986	109.4	11.966	11.744	10.932	8.793	10.258	9.664	
1987	114.9	11.556	11.470	10.853	8.622	10.043	9.505	
1988	121.8	10.212	10.023	9.352	7.388	8.731	8.212	
1989	128.8	9.974	9.851	9.308	7.331	8.617	8.138	
1990	138.2	10.260	10.164	9.617	7.786	8.986	8.546	
1991	148.0	9.881	9.667	9.133	7.496	8.642	8.209	
1992	155.2	9.823	9.353	9.103	7.166	8.412	7.913	
1993	160.1	11.089	10.280	10.335	8.134	9.471	8.893	
1994	164.6	10.674	9.765	9.886	7.654	9.033	8.444	
1995	168.2	11.301	9.987	10.459	7.888	9.412	8.745	
1996	170.8	11.735	10.379	10.640	8.257	9.796	9.108	
1997	172.0	12.013	10.419	10.915	8.402	9.990	9.227	
1998	171.5	11.375	9.713	10.283	7.714	9.280	8.536	
1999	173.3	11.388	9.796	10.274	7.704	9.328	8.589	
2000	176.3	12.691	11.211	11.445	9.075	10.697	9.985	
2001	178.4	12.520	11.079	11.068	9.030	10.602	9.914	
2002	180.3	11.844	10.515	10.326	8.456	10.026	9.351	
2003	184.5	12.514	11.181	10.909	9.192	10.735	10.062	
2004	190.6	12.679	11.371	11.071	9.456	10.958	10.295	
2005	197.8	13.791	12.505	12.027	10.664	12.119	11.477	
2006	209.4	14.914	13.501	13.123	11.746	13.195	12.532	
Forecast (2007 billed with no accrued TY2005 refund and DSM incentive, 2008 is recorded Aug 2008)								3/08 Upd*
2007	219.5	14.404	12.924	12.467	11.179	12.643	11.959	12.643
2008	230.0	21.754	19.880	19.590	18.015	19.641	18.988	14.169
2009	236.7	22.525	20.584	20.284	18.653	20.337	19.661	14.610
2010	241.9	23.029	21.045	20.739	19.071	20.792	20.102	14.831
2011	249.4	22.862	20.892	20.589	18.933	20.642	19.956	14.771
2012	254.9	22.831	20.863	20.560	18.907	20.614	19.929	14.647
2013	260.8	22.822	20.855	20.552	18.899	20.606	19.921	14.444

* Mar 2008 sales update forecast growth rates used to project 2009 - 2013 prices from Aug 2008 recorded

Rate Case Upd HECO T-2 updated WPs.xls 10/30/08

HAWAIIAN ELECTRIC COMPANY, INC.
RESIDENTIAL USE PER CUSTOMER MONTHLY ECONOMETRIC MODEL
SEPTEMBER 2008 SALES UPDATE

	Adjusted Recd (no DSM) kWh /Cust Use	Y-Predicted from Equation	% Change Y-predicted	Actual # Customers	Forecast # Customers	% Change in Cust	Adj Recd Sales	Forecast Sales	% Change in Sales
1997	7,808			238,269			1,860.3		
1998	7,654			239,487		0.5%	1,833.1		-1.5%
1999	7,719			241,167		0.7%	1,861.7		1.6%
2000	7,872			243,511		1.0%	1,916.9		3.0%
2001	7,904			246,226		1.1%	1,946.2		1.5%
2002	8,148			248,765		1.0%	2,026.9		4.1%
2003	8,333			251,248		1.0%	2,093.6		3.3%
2004	8,598			253,670		1.0%	2,181.1		4.2%
2005	8,488			256,269		1.0%	2,175.2		-0.3%
2006	8,389			258,793		1.0%	2,171.1		-0.2%
2007	8,447	8,447		259,860	259,860	0.4%	2,195.1	2,195.1	1.1%
2008		8,377	-0.84%		260,838	0.4%		2,184.9	-0.5%
2009		8,262	-1.36%		261,899	0.4%		2,163.9	-1.0%
2010		8,244	-0.23%		263,316	0.5%		2,170.7	0.3%

Rate Case Upd HECO T-2 updated WPs.xls
10/30/08

HAWAIIAN ELECTRIC COMPANY, INC.
RESIDENTIAL USE PER CUSTOMER ANNUAL ECONOMETRIC MODEL
SEPTEMBER 2008 SALES UPDATE

	Adjusted Billed (no DSM) kWh /Cust Use	Y-Predicted from Equation	% Change Y-predicted	Actual # Customers	Forecast # Customers	% Change in Cust	Adj Billed Sales	Forecast Sales	% Change in Sales
1976	8,102			175,157			1,419.0		
1977	8,035			177,722			1,427.9		
1978	7,795			182,887			1,425.6		
1979	7,846			185,080			1,452.1		
1980	7,661			188,761			1,446.1		
1981	7,478			191,112			1,429.1		
1982	7,079			193,627			1,370.7		
1983	7,035			195,952			1,378.6		
1984	6,964			198,542			1,382.7		
1985	6,991			200,638			1,402.6		
1986	7,128			203,903			1,453.5		
1987	7,294			208,501			1,520.9		
1988	7,393			212,675			1,572.3		
1989	7,544			215,076			1,622.6		
1990	7,612			217,471			1,655.5		
1991	7,555			221,505			1,673.5		
1992	7,679			224,418			1,723.3		
1993	7,585			227,616			1,726.4		
1994	7,682			232,010			1,782.2		
1995	7,693			234,832			1,806.6		
1996	7,900			236,849			1,871.2		
1997	7,828			238,269			1,865.2		
1998	7,642			239,487			1,830.1		
1999	7,693			241,167		0.7%	1,855.2		1.4%
2000	7,858			243,511		1.0%	1,913.6		3.1%
2001	7,932			246,226		1.1%	1,953.0		2.1%
2002	8,119			248,765		1.0%	2,019.7		3.4%
2003	8,340			251,248		1.0%	2,095.3		3.7%
2004	8,555			253,670		1.0%	2,170.2		3.6%
2005	8,501			256,269		1.0%	2,178.7		0.4%
2006	8,361			258,793		1.0%	2,163.8		-0.7%
2007	8,465	8,465	1.25%	259,860	259,860	0.4%	2,199.8	2,199.8	1.7%
2008		8,376	-1.06%		260,881	0.4%		2,185.1	-0.7%
2009		8,285	-1.08%		261,899	0.4%		2,169.9	-0.7%
2010		8,210	-0.90%		263,316	0.5%		2,161.9	-0.4%
2011		8,160	-0.61%		265,034	0.7%		2,162.7	0.0%
2012		8,130	-0.37%		266,751	0.6%		2,168.6	0.3%
2013		8,116	-0.17%		268,469	0.6%		2,178.8	0.5%

Rate Case Upd HECO T-2 updated WPs.xls wp-205 p3 upd 11-08
10/30/08

Hawaiian Electric Company, Inc.
RESIDENTIAL ANNUAL GWH SALES
September 2008 Update

Method	Recd 2005	Recd 2006	Recd 2007	2008	2009	2010	2011	2012	2013
SHORT-TERM FORECAST (MONTHLY ECONOMETRIC MODEL)									
ST Econometric Model Results kWh/yr [1]	8,488	8,389	8,447	8,377					
Average Customer Forecast	256,269	258,793	259,860	260,838					
Time Series Model Res GWh Sales				2,184.9					
Acquired DSM Impact [2]				(79.9)					
CFL Campaign [3]				(1.0)					
Raw Res GWh Sales net of acq DSM	2,175.2	2,171.1	2,195.1	2,104.0					
Forecast Adjustment				-					
Bill 53 HMEC				(1.3)					
ST Res Use model forecast	2,142.5	2,134.4	2,134.5	**2,102.7**					
% Change		-0.4%	0.0%	-1.5%					
LONG-TERM FORECAST (ANNUAL ECONOMETRIC MODEL)									
Res Use Econometric Model Results [4]				8376	8285	8210	8160	8130	8116
Average Customer Forecast	256,269	258,793	259,860	260,838	261,899	263,316	265,034	266,751	268,469
Res Use Econometric GWh Sales				2,184.8	2,169.8	2,161.8	2,162.7	2,168.7	2,178.9
Acquired DSM Impact [2]				(79.9)	(79.9)	(79.6)	(56.1)	(34.0)	(29.9)
CFL Campaign [3]				(1.0)	(0.8)	-	-	-	-
Large Projects				-	-	-	-	-	-
Bill 53 HMEC				(1.3)	(2.7)	(4.0)	(5.3)	(6.7)	(8.0)
Res Use Econmetric Model forecast				2102.6	2086.4	2078.2	2101.3	2128.0	2141.0
% Change					**-0.8%**	**-0.4%**	**1.1%**	**1.3%**	**0.6%**
Res Forecast no Adjustments [5]	2,142.5	2,134.4	2134.5	2102.7	2086.5	2078.3	2101.4	2128.1	2141.1
		-0.4%	0.0%	-1.5%	-0.8%	-0.4%	1.1%	1.3%	0.6%

[1] Source: res_use_rprc (*p Res Use ST 9-08 inf.xls*) with Aug YTD 2008 recorded with acquired DSM added back to historical (1996-2008 approvals).

[2] 1996-2007 installations approved through 2007.

[3] 2005 pilot CFL campaign.

[4] Source: res_uselt_ypc (*p Res Use LT 3-08 xt 2013.xls)* with 2007 with 1996-2007 acquired DSM added back to historical.

[5] 2008 ST monthly econometric model, 2009 - 2012 annual econometric model year-over-year percent growth. Excludes adjustments for leap year, CHP, NEM and future DSM.

Rate Case Upd HECO T-2 updated WPs.xls
[10/30/08ate]

HAWAIIAN ELECTRIC COMPANY, INC.
TOTAL COMMERCIAL SALES MONTHLY ECONOMETRIC MODEL
SEPTEMBER 2008 UPDATE

	Adjusted Recd (no DSM) kWh sales	Y-Predicted from Equation	% Change Y-predicted	Adj Recd GWh Sales	Forecast Sales	% Change in Sales
1997	5,169,417,291			5,169.4		
1998	5,117,323,082			5,117.3		-1.0%
1999	5,167,919,250			5,167.9		1.0%
2000	5,348,297,055			5,348.3		3.5%
2001	5,403,704,892			5,403.7		1.0%
2002	5,446,610,771			5,446.6		0.8%
2003	5,524,347,846			5,524.3		1.4%
2004	5,663,291,019			5,663.3		2.5%
2005	5,673,401,654			5,673.4		0.2%
2006	5,684,472,415			5,684.5		0.2%
2007	5,698,063,770	5,698,063,770	0.24%	5,698.1	5,698.1	0.2%
2008		5,759,549,307	1.08%		5,759.5	1.1%
2009		5,856,381,918	1.68%		5,856.4	1.7%
2010		5,923,756,527	1.15%		5,923.8	1.2%

Rate Case Upd HECO T-2 updated WPs.xls
10/30/08

HAWAIIAN ELECTRIC COMPANY, INC.
TOTAL COMMERCIAL SALES ANNUAL ECONOMETRIC MODEL
SEPTEMBER 2008 SALES UPDATE

	Adjusted Billed (no DSM) kWh sales	Y-Predicted from Equation	% Change Y-predicted	Adj Billed GWh Sales	Forecast Sales	% Change in Sales
1976	3,193,734,467			3,193.7		
1977	3,332,208,756			3,332.2		
1978	3,448,243,494			3,448.2		
1979	3,552,745,637			3,552.7		
1980	3,664,714,846			3,664.7		
1981	3,685,181,523			3,685.2		
1982	3,608,979,547			3,609.0		
1983	3,660,470,772			3,660.5		
1984	3,841,931,769			3,841.9		
1985	3,838,763,223			3,838.8		
1986	4,080,604,222			4,080.6		
1987	4,189,578,192			4,189.6		
1988	4,405,129,557			4,405.1		
1989	4,531,545,348			4,531.5		
1990	4,727,686,341			4,727.7		
1991	4,766,421,332			4,766.4		
1992	4,869,782,447			4,869.8		
1993	4,840,502,581			4,840.5		
1994	4,968,689,413			4,968.7		
1995	5,080,957,623			5,081.0		
1996	5,223,266,020			5,223.3		
1997	5,173,632,566			5,173.6		
1998	5,113,546,159			5,113.5		
1999	5,142,821,535		0.6%	5,142.8		0.6%
2000	5,337,938,668		3.8%	5,337.9		3.8%
2001	5,433,693,246		1.8%	5,433.7		1.8%
2002	5,437,357,380		0.1%	5,437.4		0.1%
2003	5,527,498,122		1.7%	5,527.5		1.7%
2004	5,643,776,802		2.1%	5,643.8		2.1%
2005	5,675,815,719		0.6%	5,675.8		0.6%
2006	5,667,234,499		-0.2%	5,667.2		-0.2%
2007	5,707,515,441	5,707,515,441	0.71%	5,707.5	5,707.5	0.7%
2008		5,694,807,646	-0.22%		5,694.8	-0.2%
2009		5,672,318,054	-0.39%		5,672.3	-0.4%
2010		5,662,781,151	-0.17%		5,662.8	-0.2%
2011		5,693,024,117	0.53%		5,693.0	0.5%
2012		5,748,724,023	0.98%		5,748.7	1.0%
2013		5,816,668,584	1.18%		5,816.7	1.2%

Rate Case Upd HECO T-2 updated WPs.xls wp-206 p3 upd 11-08
10/30/08

Hawaiian Electric Company, Inc.
COMMERCIAL (G,J,H,K,P) ANNUAL GWH SALES
September 2008 Update

	Recd 2005	Recd 2006	Recd 2007	2008	2009	2010	2011	2012	2013
SHORT-TERM FORECAST (MONTHLY ECONOMETRIC MODEL)									
ST Total Com'l Econometric Model [1]				5,759.5	5,856.4				
Acquired DSM Impact [2]				(199.2)	(199.2)				
ST Total Com'l Econm Model net of acq DSM				5,560.3	5,657.2				
Forecast Adjustment				0.0	0.0				
HMEC				-	-				
Bill 54 HMEC				(2.5)	(5.0)				
Energy Effic Improv				(16.2)	(31.3)				
ST Com GWh Sales net of acq DSM, HMEC, Eff Imprv				5,541.6	5,620.9				
LONG-TERM FORECAST (ANNUAL ECONOMETRIC MODEL)									
LT Total Com'l Econometric Model [3]				5,694.8	5,672.3	5,662.8	5,693.0	5,748.7	5,816.7
Acquired DSM Impact [2]				(199.2)	(199.2)	(199.2)	(196.8)	(179.9)	(161.7)
LT Total Com'l Econm Model net of acq DSM				*5,495.6*	*5,473.1*	*5,463.6*	*5,496.2*	*5,568.8*	*5,655.0*
HMEC				-	-	-	-	-	-
Bill 54 HMEC				(2.5)	(5.0)	(7.5)	(9.9)	(12.5)	(14.9)
Energy Effic Improv				(16.2)	(31.3)	(47.5)	(65.0)	(81.1)	(98.6)
LT Com GWh Sales net of acq DSM, HMEC, Eff Imprv				5,476.9	5,436.8	5,408.6	5,421.3	5,475.2	5,541.5
Large Projects [4]				(50.9)	(19.7)	54.9	101.3	137.5	237.6
ST Com GWh Sales forecast				5,490.7					
% Change									
LT Com GWh Sales forecast				5,426.0	5,417.1	5,463.5	5,522.6	5,612.7	5,779.1
% Change					-0.2%	0.9%	1.1%	1.6%	3.0%
Com GWh Forecast no Adj [5]	5,541.0	5,528.7	5,503.4	5,490.7	5,481.7	5,528.7	5,588.5	5,679.7	5,848.1
% Incr.		-0.2%	-0.5%	-0.2%	-0.2%	0.9%	1.1%	1.6%	3.0%

[1] Source: com_st_enf (*p Com kWh ST 9-08 inf.xls*) with Aug 2008 YTD recorded with acquired DSM added back to historical (1996-2007 approvals).
[2] 1996-2007 installations approved through 2007.
[3] Source: com_lt_enf model (*p Com Sales LT 3-08 xt 2013.xls*) with 2007 billed data with acquired DSM added back.
[4] Large project impacts not included in historical trends from March 2008 update, *lg proj feb08.xls*, incremental above 2007. Adjusted for mass transit assumptions.
[5] 2008 ST monthly econometric model, 2009 - 2012 annual econometric model year-over-year percent growth. Excludes adjustments for leap year, CHP, NEM and future DSM.

Hawaiian Electric Company, Inc.
September 2008 Sales Update

	Recd 2007	2008	2009	2010	2011	2012	2013
Sales Forecast No Adjustments							
Residential	2,134.5	2,102.7	2,086.5	2,078.3	2,101.4	2,128.1	2,141.1
% chg		-1.5%	-0.8%	-0.4%	1.1%	1.3%	0.6%
Commercial	5,503.4	5,490.7	5,481.7	5,528.7	5,588.5	5,679.7	5,848.1
% chg		-0.2%	-0.2%	0.9%	1.1%	1.6%	3.0%
Sched F	37.5	37.5	37.5	37.5	37.5	37.5	37.5
% chg		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	7,675.4	7,630.9	7,605.7	7,644.5	7,727.4	7,845.3	8,026.7
% chg		-0.6%	-0.3%	0.5%	1.1%	1.5%	2.3%
Leap Year Impacts							
Residential		0.0	0.0	0.0	0.0	5.8	0.0
Commercial		0.0	0.0	0.0	0.0	15.6	0.0
Sched F		0.0	0.0	0.0	0.0	0.1	0.0
Total		0.0	0.0	0.0	0.0	21.5	0.0
NEM & Customer PV							
Residential		-1.0	-1.5	-2.1	-2.9	-3.7	-4.6
Commercial		-2.6	-8.2	-27.8	-36.6	-43.8	-52.4
Total		-3.6	-9.7	-29.9	-39.5	-47.5	-57.0

Hawaiian Electric Company, Inc.
September 2008 Sales Update

	Recd 2007	2008	2009	2010	2011	2012	2013
Sales Forecast with Adjustments, No Future DSM							
Residential	2,134.5	2,101.7	2,085.0	2,076.2	2,098.5	2,130.2	2,136.5
% chg		-1.5%	-0.8%	-0.4%	1.1%	1.5%	0.3%
Commercial	5,503.4	5,488.1	5,473.5	5,500.9	5,551.9	5,651.5	5,795.7
% chg		-0.3%	-0.3%	0.5%	0.9%	1.8%	2.6%
Sched F	37.5	37.5	37.5	37.5	37.5	37.6	37.5
% chg		0.0%	0.0%	0.0%	0.0%	0.3%	-0.3%
Total	7,675.4	7,627.3	7,596.0	7,614.6	7,687.9	7,819.3	7,969.7
% chg		-0.6%	-0.4%	0.2%	1.0%	1.7%	1.9%
Future DSM							
Residential		-20.9	-44.4	-54.1	-57.2	-58.3	-63.4
Commercial		-16.0	-45.3	-74.4	-103.3	-131.0	-157.6
Total		-36.9	-89.7	-128.5	-160.5	-189.3	-221.0
YTD DSM exceeding forecast							
Residential		-6.6	-12.0	-12.0	-12.0	-12.0	-12.0
Commercial		-9.6	-9.6	-9.6	-9.6	-9.6	-9.6
Total		-16.2	-21.6	-21.6	-21.6	-21.6	-21.6
Recommended Sales Forecast with Future DSM							
Residential	2,134.5	2,074.2	2,028.6	2,010.1	2,029.3	2,059.9	2,061.1
% chg		-2.8%	-2.2%	-0.9%	1.0%	1.5%	0.1%
Commercial	5,503.4	5,462.5	5,418.6	5,416.9	5,439.0	5,510.9	5,628.5
% chg		-0.7%	-0.8%	0.0%	0.4%	1.3%	2.1%
Sched F	37.5	37.5	37.5	37.5	37.5	37.6	37.5
% chg		0.0%	0.0%	0.0%	0.0%	0.3%	-0.3%
Total	7,675.4	7,574.2	7,484.7	7,464.5	7,505.8	7,608.4	7,727.1
% chg		-1.3%	-1.2%	-0.3%	0.6%	1.4%	1.6%

Rate Case Upd HECO T-2 updated WPs.xls
10/30/08

Hawaiian Electric Company, Inc.
SEPTEMBER 2008 SALES UPDATE

SALES FORECAST (WITHOUT ANY ADJUSTMENTS)

Rate	Recorded 2007	2008	2009	2010	2011	2012	2013
R	2,134.5	2,102.7	2,086.5	2,078.3	2,101.4	2,128.1	2,141.1
% Incr.		-1.5%	-0.8%	-0.4%	1.1%	1.3%	0.6%
G	377.2	377.3	377.4	381.9	388.3	394.0	401.7
% Incr.		0.0%	0.0%	1.2%	1.7%	1.5%	2.0%
J	2,054.8	2,055.1	2,060.5	2,084.6	2,119.4	2,161.8	2,207.6
% Incr.		0.0%	0.3%	1.2%	1.7%	2.0%	2.1%
H	43.4	38.5	33.2	28.8	25.1	22.0	19.5
% Incr.		-11.3%	-13.8%	-13.3%	-12.8%	-12.4%	-11.4%
P	3,028.0	3,019.8	3,010.6	3,033.4	3,055.7	3,101.9	3,219.3
% Incr.		-0.3%	-0.3%	0.8%	0.7%	1.5%	3.8%
F	37.5	37.5	37.5	37.5	37.5	37.5	37.5
% Incr.		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TOTAL	7,675.4	7,630.9	7,605.7	7,644.5	7,727.4	7,845.3	8,026.7
% Incr.		-0.6%	-0.3%	0.5%	1.1%	1.5%	2.3%
LEAP YEAR IMPACTS							
R		0.0	0.0	0.0	0.0	5.8	0.0
G		0.0	0.0	0.0	0.0	1.1	0.0
J		0.0	0.0	0.0	0.0	5.9	0.0
H		0.0	0.0	0.0	0.0	0.1	0.0
P		0.0	0.0	0.0	0.0	8.5	0.0
F		0.0	0.0	0.0	0.0	0.1	0.0
TOTAL		0.0	0.0	0.0	0.0	21.5	0.0
NEM & CUSTOMER PV							
R		(1.0)	(1.5)	(2.1)	(2.9)	(3.7)	(4.6)
J		(1.4)	(2.6)	(5.0)	(8.0)	(11.6)	(15.5)
P		(1.2)	(5.6)	(22.8)	(28.6)	(32.2)	(36.9)
TOTAL		(3.6)	(9.7)	(29.9)	(39.5)	(47.5)	(57.0)

Rate Case Upd HECO T-2 updated WPs.xls
10/30/08

Hawaiian Electric Company, Inc.
SEPTEMBER 2008 SALES UPDATE

RECOMMENDED FORECAST (NOT REDUCED BY FUTURE DSM)

Rate	Recorded 2007	2008	2009	2010	2011	2012	2013
R	2,134.5	2,101.7	2,085.0	2,076.2	2,098.5	2,130.2	2,136.5
% Incr.		-1.5%	-0.8%	-0.4%	1.1%	1.5%	0.3%
G	377.2	377.3	377.4	381.9	388.3	395.1	401.7
% Incr.		0.0%	0.0%	1.2%	1.7%	1.8%	1.7%
J	2,054.8	2,053.7	2,057.9	2,079.6	2,111.4	2,156.1	2,192.1
% Incr.		-0.1%	0.2%	1.1%	1.5%	2.1%	1.7%
H	43.4	38.5	33.2	28.8	25.1	22.1	19.5
% Incr.		-11.3%	-13.8%	-13.3%	-12.8%	-12.0%	-11.8%
P	3,028.0	3,018.6	3,005.0	3,010.6	3,027.1	3,078.2	3,182.4
% Incr.		-0.3%	-0.4%	0.2%	0.5%	1.7%	3.4%
F	37.5	37.5	37.5	37.5	37.5	37.6	37.5
% Incr.		0.0%	0.0%	0.0%	0.0%	0.3%	-0.3%
TOTAL	7,675.4	7,627.3	7,596.0	7,614.6	7,687.9	7,819.3	7,969.7
% Incr.		-0.6%	-0.4%	0.2%	1.0%	1.7%	1.9%
FUTURE DSM							
R		(20.9)	(44.4)	(54.1)	(57.2)	(58.3)	(63.4)
G		(0.5)	(1.3)	(2.1)	(2.9)	(3.7)	(4.5)
J		(3.9)	(11.1)	(18.4)	(25.6)	(32.4)	(38.9)
H		0.0	(0.1)	(0.1)	(0.2)	(0.3)	(0.3)
P		(11.6)	(32.8)	(53.8)	(74.6)	(94.6)	(113.9)
TOTAL		(36.9)	(89.7)	(128.5)	(160.5)	(189.3)	(221.0)
YTD DSM EXCEEDING FORECAST							
R		(6.6)	(12.0)	(12.0)	(12.0)	(12.0)	(12.0)
G		(0.4)	0.0	0.0	0.0	0.0	0.0
J		(3.8)	(4.8)	(4.8)	(4.8)	(4.8)	(4.8)
H		0.0	0.0	0.0	0.0	0.0	0.0
P		(5.4)	(4.8)	(4.8)	(4.8)	(4.8)	(4.8)
TOTAL		(16.2)	(21.6)	(21.6)	(21.6)	(21.6)	(21.6)
RECOMMENDED FORECAST (REDUCED BY FUTURE DSM)							
R	2,134.5	2,074.2	2,028.6	2,010.1	2,029.3	2,059.9	2,061.1
% Incr.		-2.8%	-2.2%	-0.9%	1.0%	1.5%	0.1%
G	377.2	376.4	376.1	379.8	385.4	391.4	397.2
% Incr.		-0.2%	-0.1%	1.0%	1.5%	1.6%	1.5%
J	2,054.8	2,046.0	2,042.0	2,056.4	2,081.0	2,118.9	2,148.4
% Incr.		-0.4%	-0.2%	0.7%	1.2%	1.8%	1.4%
H	43.4	38.5	33.1	28.7	24.9	21.8	19.2
% Incr.		-11.3%	-14.0%	-13.3%	-13.2%	-12.4%	-11.9%
P	3,028.0	3,001.6	2,967.4	2,952.0	2,947.7	2,978.8	3,063.7
% Incr.		-0.9%	-1.1%	-0.5%	-0.1%	1.1%	2.9%
F	37.5	37.5	37.5	37.5	37.5	37.6	37.5
% Incr.		0.0%	0.0%	0.0%	0.0%	0.3%	-0.3%
TOTAL	7,675.4	7,574.2	7,484.7	7,464.5	7,505.8	7,608.4	7,727.1
% Incr.		-1.3%	-1.2%	-0.3%	0.6%	1.4%	1.6%

RATE CASE UPDATE

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

HECO Response:

For HECO T-4, an adjustment to decrease the 2009 test year total fuel expense from $816,654,000 to $784,033,000 or a total reduction of $32,621,000 is being made. The adjustment is the result of changes to the following production simulation assumptions:

1. Sales and Peak ("S&P") Forecast (HECO-402). The Rate Case Update is based on the September 2008 Sales and Peak Forecast which projects lower sales for the 2009 test year. HECO's Direct Testimony was based on the March 2008 Sales and Peak Forecast.

	Direct Testimony (March 2008 S&P)	Rate Case Update (September 2008 S&P)
Sales, GWh	7,657.8	7,484.7
Net Peak (MW)	1,274	1,246

   For further discussion on HECO's updated Electricity Sales and Customer Forecasts, see HECO T-2 Update.

2. Biodiesel Fuel Price (HECO-502). The biodiesel fuel price estimate was corrected. The biodiesel price is confidential and is provided in HECO-502 (UPDATED). See HECO T-5 Update for further discussion on the biodiesel fuel price and updates to fuel related expenses.

As a result of the changes noted above, below is a summary of the results:

SUMMARY OF RESULTS

	HECO Direct Testimony (A)	HECO Update (B)
Total Fuel Oil Expense ($000)	$ 809,058	$ 776,579
Total Fuel Related Expense ($000)	$ 7,596	$ 7,454
Total Fuel Expense ($000)	$ 816,654	$ 784,033
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	3,335.8
Net HECO (GWH)	4,708.0	4,536.1
Central Station	4,702.6	4,532.4
Substation DG	5.4	3.8
Total Central Station Net Heat Rate (BTU/Net KWH)	10,635	10,618
Steam Net Heat Rate (BTU/Net KWH)	10,547	10,551
Diesel Net Heat Rate (BTU/Net KWH)	23,457	23,381
Biodiesel Net Heat Rate (BTU/Net KWH)	19,236	19,271
Total Central Station Sales Heat Rate (BTU/KWH Sales)	0.011185	0.011166

As a part of this filing, HECO T-4 is submitting a complete set of its exhibits and workpapers which contains both updated exhibits and workpapers and those that have not changed from direct testimony. Exhibits and workpapers that have been updated are labeled as "UPDATED" (e.g. HECO-401 (UPDATED)). The Summary of Results shown above will also be submitted as a new workpaper:

Item	Description	Reason
HECO-WP-415 (see page 121)	Summary of Results	Provides high-level comparison of Direct Testimony and Update

In addition, the P-MONTH input data files that were used in the production simulation for the rate case update are also being provided. Please refer to the electronic files because these files

do not translate well to a hard copy. The files provided are as follows and can be viewed in any text editing program (e.g., Word):

1)	H09TYD0.ARA	Area Summary File
2)	H09TYD0.QLP	Quick Load Pickup Input File
3)	H09TYDO.RFC	Report Control Summary File
4)	H09TYDO.SPN	Spinning Reserve File
5)	H09TYD0.STU	System Study Summary File
6)	H09TY0.UBA	Thermal Basic Summary File
7)	H09TYD0.UMT	Thermal Maintenance Summary File
8)	H09TYD1.PLT	Plant Summary File
9)	H09TYD4.FCL	Fuel Class Summary File
10)	H09TYD4.TRF	Fixed Energy Transaction Summary File
11)	H09TYD4.UPF	Thermal Performance Summary File
12)	H09TYD6.UCS	Thermal Cost and Variable Summary File
13)	H09TYD10.MCS	Monte Carlo Scenario File
14)	H09TYU0.EEI	Load Summary File
15)	H09TYU0.SFU	Spot Fuel Summary File
16)	PTN1.HCP	Hourly Capacity Multiplier File
17)	PTN2.HCP	Hourly Capacity Multiplier File
18)	PTN2.HTR	Hourly Capacity Multiplier File
19)	PTN3.HCP	Hourly Capacity Multiplier File
20)	PTN4.HCP	Hourly Capacity Multiplier File
21)	PTN5.HCP	Hourly Capacity Multiplier File

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	$776,579
2.	**Total Fuel Related Expense**	HECO-503 (UPDATED), p. 1, Line 5	$7,454
3.	**TOTAL FUEL EXPENSE**		$784,033

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	$761,785
2.	**Diesel Fuel Oil**	HECO-501 (UPDATED), p. 1, Line 7	$12,686
3.	**Biodiesel Fuel Oil**	HECO-501 (UPDATED), p. 1, Line 8	$1,180
4.	**Sub. DG Diesel Fuel Oil**	HECO-501 (UPDATED), p. 1, Line 10	$929
5.	**TOTAL FUEL OIL EXPENSE**		$776,579

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]	3,335.8	42.38%
7.	Net HECO	4,536.1	57.62%
7a.	Central Station	4,532.4	57.58%
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**	4,535.5	Net GWh
2.	**Central Station Generated Energy**	4,531.8	Net GWh
3.	**Steam Generated Energy**	4,507.5	Net GWh
4.	**CT Generated Energy (w/ Diesel)**	22.9	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**	48,157,686	MBtu
9.	**Central Station Fuel Consumed**	48,118,423	MBtu
10.	**Steam Fuel Consumed**	47,556,459	MBtu
11.	**CT Fuel Consumed (Diesel)**	536,333	MBtu
12.	**CT Fuel Consumed (Biodiesel)**	25,631	MBtu
13.	**Sub. DG Fuel Consumed**	39,263	MBtu
	HEAT RATE		
14.	**Total Heat Rate**	10,618	Btu/kWh
15.	**Central Station Heat Rate**	10,618	Btu/kWh
16.	**Steam Heat Rate**	10,551	Btu/kWh
17.	**CT Heat Rate (w/ Diesel)**	23,381	Btu/kWh
18.	**CT Heat Rate (w/ Biodiesel)**	19,271	Btu/kWh
19.	**Sub. DG Heat Rate**	10,409	Btu/kWh
20.	**HECO Central Station Generation of Net System Input**	57.58%	Percent
21.	**Sales Heat Rate - Central Station**	0.011166	MBtu/kWh Sales[1]

Reference

[1] 48,118,423 MBtu / (7,484.7 GWh x 57.58% x 1,000,000 kWh/GWh) = 0.011166 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	10,551	[1]
2.	**Percent Increase**		1.2%	0.8%	-0.7%	0.4%	-0.3%	
3.	**Central Station Diesel**	21,081	21,327	20,985	22,716	36,556	23,381	[2]
4.	**Percent Increase**		1.2%	-1.6%	8.3%	60.9%	-36.0%	
5.	**Central Station Biodiesel**						19,271	[3]
6.	**Central Station Average**	10,452	10,621	10,690	10,582	10,649	10,618	[4]
7.	**Percent Increase**		1.6%	0.7%	-1.0%	0.6%	-0.3%	
8.	**Substation DG**			10,081	10,243	10,525	10,409	[5]
9.	**Percent Increase**				1.6%	2.7%	-1.1%	

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

Hawaiian Electric Company, Inc.

2009 Production Simulation - (Rate Case - 2009 Test Year - Direct Testimony)

Sales and Peak Forecast dated September 2008

2009 Normalized Planned Maintenance Schedule

Fuel Prices April 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	2,466,184	1,003,813	107,245	16,108	-	-	3,593,350
Feb	2,405,696	822,771	172,518	20,028	-	-	3,421,012
Mar	2,730,824	808,505	129,651	9,327	-	-	3,678,306
Apr	2,992,474	1,069,531	192,256	35,671	-	-	4,289,932
May	2,904,884	1,137,239	210,584	23,778	-	-	4,276,486
Jun	2,763,816	970,288	162,634	16,010	-	-	3,912,747
Jul	2,837,707	1,071,440	131,858	40,084	-	-	4,081,089
Aug	2,945,451	1,102,688	222,505	13,077	108,389	-	4,392,110
Sep	2,950,871	1,060,141	203,116	6,746	80,536	-	4,301,410
Oct	3,208,671	894,763	175,958	7,853	68,231	-	4,355,476
Nov	2,742,016	1,023,451	85,913	7,261	79,589	-	3,938,229
Dec	2,867,245	939,089	42,665	3,645	-	25,631	3,878,275
Total	33,815,837	11,903,719	1,836,903	199,588	336,745	25,631	48,118,423
Sub. DG							39,263
HECO w/ DG							48,157,686

	Net MWh Generation							Net Heat Rate
	Kahe	**Waiau**	**Honolulu**	**WPP Diesel**	**CIP Diesel**	**Biodiesel**	**Total**	
Jan	238,889	86,716	8,253	380	-	-	334,238	10,751
Feb	235,307	73,013	13,508	509	-	-	322,337	10,613
Mar	266,333	72,745	10,028	232	-	-	349,338	10,529
Apr	293,585	94,894	15,298	994	-	-	404,771	10,598
May	286,097	100,542	16,742	655	-	-	404,036	10,584
Jun	270,702	86,531	12,838	371	-	-	370,442	10,562
Jul	279,153	94,280	10,553	1,088	-	-	385,074	10,598
Aug	290,887	97,794	17,753	383	5,715	-	412,532	10,647
Sep	289,697	94,159	16,048	179	4,207	-	404,290	10,639
Oct	314,877	77,204	13,858	228	3,581	-	409,748	10,630
Nov	268,351	88,572	6,569	195	4,138	-	367,825	10,707
Dec	279,426	83,067	3,222	84	-	1,330	367,129	10,564
Total	3,313,304	1,049,517	144,670	5,298	17,641	1,330	4,531,760	10,618
% of Total	73.1%	23.2%	3.2%	0.1%	0.4%	0.0%	100.0%	
Unit Heat Rate	10,206	11,342	12,697	37,672	19,089	19,271		
Sub. DG							3,772	10,409
HECO w/ DG							4,535,532	10,618

Note: Totals may not add exactly due to rounding.

AES Hawaii, Inc

2009 Production Simulation - (Rate Case - 2009 Test Year - Direct Testimony)

Sales and Peak Forecast dated September 2008

2009 Normalized Planned Maintenance Schedule

Fuel Prices April 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 - Direct Testimony)

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

Month	2 CT Operation			1 CT Operation		
	MWh	Hrs	Avg MW	MWh	Hrs	Avg MW
Jan	121,121	624	194.26	9,840	109	90.00
Feb	111,952	567	197.32	8,510	95	90.00
Mar	119,927	629	190.54	9,308	103	90.00
Apr	15,422	82	188.64	40,513	450	90.00
May	80,934	402	201.39	27,659	307	90.00
Jun	122,498	615	199.30	8,510	95	90.00
Jul	127,034	635	199.95	8,776	98	90.00
Aug	125,441	618	203.11	10,372	115	90.00
Sep	123,143	615	200.35	8,510	95	90.00
Oct	115,378	573	201.26	12,500	139	90.00
Nov	121,612	606	200.75	9,308	103	90.00
Dec	123,693	638	193.79	8,510	95	90.00
Total	1,308,153	6,603	198.10	162,318	1,804	90.00

Note: Totals may not add exactly due to rounding.

HPOWER

2009 Production Simulation - (Rate Case - 2009 Test Year - Direct Testimony)

Sales and Peak Forecast dated September 2008
2009 Normalized Planned Maintenance Schedule
Fuel Prices April 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 - Direct Testimony)

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

Month	System Level MWh
Jan	20
Feb	21
Mar	26
Apr	27
May	30
Jun	30
Jul	31
Aug	30
Sep	27
Oct	24
Nov	20
Dec	19
Total	305

IPP Summary

2009 Production Simulation - (Rate Case - 2009 Test Year - Direct Testimony)

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

	MWh
AES	1,529,472
KPLP	1,470,471
HPOWER	330,750
NonFirm	4,768
Archer PV	305
Total IPP	3,335,766

Substation DG Generation

2009 Production Simulation - (Rate Case - 2009 Test Year - Direct Testimony)

Sales and Peak Forecast dated September 2008
2009 Normalized Planned Maintenance Schedule
Fuel Prices April 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	254	2,644
Sep	139	1,447
Oct	141	1,468
Nov	196	2,040
Dec	89	926
Total	3,772	39,263
Net Heat Rate (Btu/kWh)	10,409	

Note: Totals may not add exactly due to rounding.

Index of Workpapers for HECO Rate Case - Direct Testimony
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
\# Added 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	4,507,491	7,670,397	47,556,459	10,551
2.	Diesel - Central Station	22,939	91,524	536,333	23,381
3.	Biodiesel	1,330	5,128	25,631	19,271
4.	Diesel - DG	(Treated Separately In the ECAF)			
5.	Total	4,531,760	7,767,049	48,118,423	10,618

SALES PROVIDED BY COMPANY GENERATION

6.	Test Year Sales	7,484,700
7.	Company Generated	57.58%
8.	Sales Provided by Company	4,309,462

SALES FUEL EFFICIENCY

		Company Sales	Company MBtu Consumed
9.	Company Sales and Fuel	4,309,462	48,118,423
10.	Sales Heat Rate	**0.011166**	

[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 - Direct Testimony)

	Simulated							Calibrated						
								1.013	1.003	0.989	1.203	1.1	1.1	
	Bbl Consumption							Bbl Consumption						
Month	Kahe	Waiau	Honolulu	WPP Diesel	CIP Diesel	Biodiesel	Sub DG	Kahe	Waiau	Honolulu	WPP Diesel	CIP Diesel	Biodiesel	Sub DG
Jan	392,667	161,421	17,490	2,285	-	-		397,772	161,905	17,298	2,749	-	-	
Feb	383,036	132,308	28,135	2,841	-	-		388,015	132,705	27,826	3,418	-	-	
Mar	434,803	130,014	21,144	1,323	-	-		440,455	130,404	20,911	1,592	-	-	
Apr	476,463	171,989	31,354	5,060	-	-		482,657	172,505	31,009	6,087	-	-	
May	462,517	182,877	34,343	3,373	-	-		468,530	183,426	33,965	4,058	-	-	
Jun	440,056	156,030	26,523	2,271	-	-		445,777	156,498	26,231	2,732	-	-	
Jul	451,821	172,296	21,504	5,686	-	-		457,695	172,813	21,267	6,840	-	-	
Aug	468,976	177,321	36,287	1,855	16,815	-		475,073	177,853	35,888	2,232	18,497	-	
Sep	469,839	170,479	33,125	957	12,494	-		475,947	170,990	32,761	1,151	13,743	-	
Oct	510,886	143,885	28,696	1,114	10,585	-		517,528	144,317	28,380	1,340	11,644	-	
Nov	436,585	164,579	14,011	1,030	12,347	-		442,261	165,073	13,857	1,239	13,582	-	
Dec	456,524	151,013	6,958	517	-	4,662		462,459	151,466	6,881	622	-	5,128	
Total	5,384,173	1,914,212	299,570	28,312	52,241	4,662	6,700	5,454,167	1,919,955	296,275	34,059	57,465	5,128	6,700

	Derived							Calibrated						
								1.013	1.003	0.989	1.203	1.1	1.1	
	Mbtu Consumption							Mbtu Consumption						
Month	Kahe	Waiau	Honolulu	WPP Diesel	CIP Diesel	Biodiesel	Total	Kahe	Waiau	Honolulu	WPP Diesel	CIP Diesel	Biodiesel	Total
Jan	2,434,535	1,000,810	108,438	13,390	-	-	3,557,174	2,466,184	1,003,813	107,245	16,108	-	-	3,593,350
Feb	2,374,823	820,310	174,437	16,648	-	-	3,386,218	2,405,696	822,771	172,518	20,028	-	-	3,421,012
Mar	2,695,779	806,087	131,093	7,753	-	-	3,640,711	2,730,824	808,505	129,651	9,327	-	-	3,678,306
Apr	2,954,071	1,066,332	194,395	29,652	-	-	4,244,449	2,992,474	1,069,531	192,256	35,671	-	-	4,289,932
May	2,867,605	1,133,837	212,927	19,766	-	-	4,234,135	2,904,884	1,137,239	210,584	23,778	-	-	4,276,486
Jun	2,728,347	967,386	164,443	13,308	-	-	3,873,484	2,763,816	970,288	162,634	16,010	-	-	3,912,747
Jul	2,801,290	1,068,235	133,325	33,320	-	-	4,036,170	2,837,707	1,071,440	131,858	40,084	-	-	4,081,089
Aug	2,907,651	1,099,390	224,979	10,870	98,536	-	4,341,427	2,945,451	1,102,688	222,505	13,077	108,389	-	4,392,110
Sep	2,913,002	1,056,970	205,375	5,608	73,215	-	4,254,169	2,950,871	1,060,141	203,116	6,746	80,536	-	4,301,410
Oct	3,167,493	892,087	177,915	6,528	62,028	-	4,306,052	3,208,671	894,763	175,958	7,853	68,231	-	4,355,476
Nov	2,706,827	1,020,390	86,868	6,036	72,353	-	3,892,474	2,742,016	1,023,451	85,913	7,261	79,589	-	3,938,229
Dec	2,830,449	936,281	43,140	3,030	-	23,301	3,836,199	2,867,245	939,089	42,665	3,645	-	25,631	3,878,275
Total	33,381,873	11,868,114	1,857,334	165,908	306,132	23,301	47,602,662	33,815,837	11,903,719	1,836,903	199,588	336,745	25,631	48,118,423
Sub DG							39,263							39,263
HECO w/ DG							47,641,925							48,157,686

LSFO heat content = 6.2 million BTU per barrel
Diesel heat content = 5.86 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 - Direct Testimony)

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: h09tyu0
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:	h09tyu0.sfu
Contract Fuel Data:	
Thermal Basic Data:	h09tyd0.uba
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:	h09tyd4.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	3611.2	17.84	83.478	1049.5	241	0	0	17.3374	0	0	198.61	207.69	12572
2	Honolu 9	54.4	1	2523.5	12.83	61.191	807.8	259	0	0	13.3451	0	0	204.8	218.09	13202
3	Waiau 3	46.6	1	947.9	7.33	29.937	410.2	135	0	0	6.5706	0	0	195.06	219.48	13702
4	Waiau 4	46.6	1	1772	9.94	40.587	572.6	228	0	0	9.1722	0	0	195.72	225.99	14108
5	Waiau 5	54.5	1	4347.1	21.35	101.965	1328.9	330	0	0	21.2864	0	0	194.41	208.76	13033
6	Waiau 6	53.5	1	3202.6	16.04	75.229	997.4	276	0	0	15.9771	0	0	196.11	212.38	13258
7	Waiau 7	82.9	1	8207	49.03	356.27	3894.7	4	0	0	62.3879	0	0	174.2	175.11	10932
8	Waiau 8	86.1	1	7685.3	59.04	445.529	4664.3	5	0	0	74.7155	0	0	166.83	167.7	10469
9	Waiau 9	52.9	1	208.7	0.42	1.926	58.3	46	0	0	1.3802	0	0	710.34	716.6	30296
10	Waiau 10	49.9	1	420.7	0.77	3.371	107.6	81	0	0	2.5441	0	0	748.38	754.65	31905
11	Kahe 1	82.1	1	7009.4	47.15	339.27	3531.3	3	0	0	56.5665	0	0	165.97	166.73	10409
12	Kahe 2	82.1	1	7010.6	52.76	379.631	3873.2	3	0	0	62.0428	0	0	162.75	163.43	10203
13	Kahe 3	86.1	1	7737.8	71.5	539.544	5321.5	5	0	0	85.2423	0	0	157.26	157.99	9863
14	Kahe 4	85.3	1	7826.4	69.55	519.985	5280	5	0	0	84.5777	0	0	161.88	162.65	10154
15	Kahe 5	134.3	1	7872.5	76.68	902.595	8856.9	4	0	0	141.8752	0	0	156.88	157.19	9813
16	Kahe 6	134.4	1	7373.5	53.67	632.279	6518.9	3	0	0	104.424	0	0	164.36	165.15	10310
17	Kala CC	90	1	6600.7	74.39	586.776	5046.1	92	0	0	86.2605	0	0	147.01	147.01	8600
18	Kala CC	90	1	8408.4	94.37	744.406	6410.7	8	0	0	109.5877	0	0	147.22	147.22	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	Kala CC	28	1	6603	56.76	139.29	1200.4	92	0	0	20.5199	0	0	147.32	147.32	8618
22	CIP1	113	1	478.1	1.92	18.972	329.4	75	0	0	8.3139	0	0	425.56	438.23	17365
23	DG Sub1	9.8	1	269.4	1.6	1.38	14.4	62	0	0	0.3448	0	0	249.93	249.93	10409
24	DG Sub2	9.8	1	244.1	1.44	1.243	12.9	58	0	0	0.3106	0	0	249.93	249.93	10409
25	DG Sub3	9.8	1	222.6	1.33	1.149	12	55	0	0	0.2871	0	0	249.93	249.93	10409
	System					7866.223	89611	2080	0	0	1028.9248	0	0	129.62	130.8	11392

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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	0.305	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
S	pat:								
1	WLSFO	1049.517	1914.212	Bbl	11868.1	190.1098	181.14	11308	1601.85
2	KLSFO	3313.303	5384.171	Bbl	33381.9	534.7285	161.39	10075	1601.85
3	HLSFO	144.669	299.571	Bbl	1857.3	30.6824	212.09	12839	1651.96
4	DG SUB	3.771	6.699	Bbl	39.3	0.9426	249.93	10409	2401.05
5	WDIESEL	5.297	28.312	Bbl	165.9	3.9243	740.81	31320	2365.31
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	1470.471	2109.529	Bbl	12657.2	216.3681	147.14	8608	1709.45
9	BIODIESEL	18.972	56.903	Bbl	284.5	8.3139	438.23	14997	2922.13
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	4507.49	7597.954	Bbl	47107.3	755.5208	167.61	10451	1603.8
2	DIESEL	5.297	28.312	Bbl	165.9	3.9243	740.81	31320	2365.3
4	AES	1529.471	26524.244	Bbl	26524.2	43.8554	28.67	17342	165.3
5	KALAELOA	1470.471	2109.529	Bbl	12657.2	216.3681	147.14	8608	1709.4
6	BIODIESEL	18.972	56.903	Bbl	284.5	8.3139	438.23	14997	2922.1
7	REFUSE	330.751	449.617	Bbl	2787.6	0	0	8428	0
9	DG SUB	3.771	6.699	Bbl	39.3	0.9426	249.93	10409	2401.1

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System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply --	GWh	Cost M$	Cost $/MWh
Load:	7871.56			Therml Gen:	7866.22	1028.9248	130.8
				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:	5.08	0.3085	60.77
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 Reductn:	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	1029.2477	130.76
				System Net:		1029.2477	130.76
				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	62.6	3313.3035	33381.9	23	0	534.7285	0	161.39
2	Waiau	25.5	1054.8147	12034	1105	0	194.0341	0	183.95
3	Kalaeloa	80.7	1470.4712	12657.2	192	0	216.3681	0	147.14
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	15.3	144.6693	1857.3	501	0	30.6824	0	212.09
8	CIP	4.6	18.9716	329.4	75	0	8.3139	0	438.23
9	DG Sub	1.5	3.7714	39.3	174	0	0.9426	0	249.93

Fiscal Year: 2009

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

Off P	Shoulder Peak	Priority Peak	Total
332	488.301483	208.182114	1028.922485

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

Off P	Shoulder Peak	Priority Peak	Total
332	488.301483	208.182114	1028.922485

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HECO Rate Case 2009 Test Year - Direct Testimony

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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
1	Honolu 8	53.4	1	135.3	7.66	3.045	38.6	10.	0.	0.0000	0.6379	0.0000	0.0000	199.20	209.50
2	Honolu 9	54.4	1	224.1	12.86	5.208	69.8	25.	0.	0.0000	1.1535	0.0000	0.0000	206.22	221.50
3	Waiau 3	46.6	1	67.4	6.04	2.095	29.5	12.	0.	0.0000	0.4728	0.0000	0.0000	195.37	225.62
4	Waiau 4	46.6	1	139.2	9.10	3.157	46.0	22.	0.	0.0000	0.7375	0.0000	0.0000	195.86	233.60
5	Waiau 5	54.5	1	421.9	23.84	9.673	125.9	29.	0.	0.0000	2.0164	0.0000	0.0000	194.94	208.46
6	Waiau 6	53.5	1	317.8	18.30	7.290	97.9	30.	0.	0.0000	1.5685	0.0000	0.0000	196.70	215.17
7	Waiau 7	82.9	1	695.0	46.02	28.401	316.7	1.	0.	0.0000	5.0725	0.0000	0.0000	175.36	178.60
8	Waiau 8	86.1	1	694.3	56.32	36.100	384.8	1.	0.	0.0000	6.1638	0.0000	0.0000	168.10	170.74
9	Waiau 9	52.9	1	14.8	0.29	0.116	4.0	5.	0.	0.0000	0.0940	0.0000	0.0000	799.33	811.34
10	Waiau 10	49.9	1	38.1	0.71	0.264	9.4	10.	0.	0.0000	0.2227	0.0000	0.0000	832.91	842.46
11	Kahe 1	82.1	1	725.3	54.20	33.125	350.1	1.	0.	0.0000	5.6086	0.0000	0.0000	166.68	169.32
12	Kahe 2	82.1	1	720.2	57.86	35.360	367.1	1.	0.	0.0000	5.8810	0.0000	0.0000	163.83	166.32
13	Kahe 3	86.1	1	695.8	71.70	45.956	458.4	1.	0.	0.0000	7.3435	0.0000	0.0000	157.68	159.79
14	Kahe 4	85.3	1	696.7	66.81	42.421	437.4	1.	0.	0.0000	7.0062	0.0000	0.0000	162.87	165.16
15	Kahe 5	134.3	1	709.4	78.67	78.651	777.0	1.	0.	0.0000	12.4466	0.0000	0.0000	157.19	158.25
16	Kahe 6	134.4	1	48.0	3.37	3.376	44.4	1.	0.	0.0000	0.7118	0.0000	0.0000	166.85	210.86
17	Kala CC	90.0	1	621.0	81.46	54.577	471.0	10.	0.	0.0000	8.0522	0.0000	0.0000	147.54	147.54
18	Kala CC	90.0	1	729.8	94.82	63.524	550.1	1.	0.	0.0000	9.4041	0.0000	0.0000	148.04	148.04
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
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
21	Kala CC	28.0	1	622.2	61.70	12.860	110.8	10.	0.	0.0000	1.8945	0.0000	0.0000	147.32	147.32
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
23	DG Sub1	9.8	1	17.9	1.24	0.091	0.9	6.	0.	0.0000	0.0227	0.0000	0.0000	249.93	249.93
24	DG Sub2	9.8	1	19.0	1.29	0.095	1.0	7.	0.	0.0000	0.0237	0.0000	0.0000	249.93	249.93
25	DG Sub3	9.8	1	20.6	1.44	0.105	1.1	7.	0.	0.0000	0.0263	0.0000	0.0000	249.93	249.93
	System					627.953	7238.	196.	0.	0.0000	80.3478	0.0000	0.0000	125.80	127.95

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
2	ArcherPV	HOURLY	PURC	0.020	0.0000	0.0000	0.0000	0.00

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	86.716	161.421	Bbl	1000.8	16.0315	184.87	11541.	1601.85
2 KLSFO	238.889	392.667	Bbl	2434.5	38.9976	163.25	10191.	1601.85
3 HLSFO	8.253	17.490	Bbl	108.4	1.7914	217.07	13140.	1651.96
4 DG SUB	0.291	0.517	Bbl	3.0	0.0727	249.93	10409.	2401.05
5 WDIESEL	0.380	2.285	Bbl	13.4	0.3168	832.98	35216.	2365.31
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	130.960	188.664	Bbl	1132.0	19.3507	147.76	8644.	1709.45
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	333.858	571.578	Bbl	3543.8	56.8205	170.19	10615.	1603.4
2 DIESEL	0.380	2.285	Bbl	13.4	0.3168	832.98	35216.	2365.3
4 AES	132.192	2290.510	Bbl	2290.5	3.7871	28.65	17327.	165.3
5 KALAELOA	130.960	188.664	Bbl	1132.0	19.3507	147.76	8644.	1709.4
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	0.0727	249.93	10409.	2401.1

PPC Proprietary Program Licensed to HECO Till 12/2099
HECO Rate Case 2009 Test Year - Direct Testimony

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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			Thermal Gen:	627.95	80.3478	127.95
				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	61.65
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	80.3742	127.91
				System Net:		80.3742	127.91
				LOLH(hr):	0.03		

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	53.1	238.8891	2434.5	7.	0.0000	38.9976	0.0000	163.25
2	Waiau	24.7	87.0966	1014.2	111.	0.0000	16.3483	0.0000	187.70
3	Kalaeloa	84.6	130.9602	1132.0	21.	0.0000	19.3507	0.0000	147.76
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	10.3	8.2525	108.4	35.	0.0000	1.7914	0.0000	217.07
8	CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9	DG Sub	1.3	0.2910	3.0	20.	0.0000	0.0727	0.0000	249.93

Year: 2009 Month: Jan

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

Off Peak	Shoulder Peak	Priority Peak	Total
26.401505	37.437645	16.508635	80.347778

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
1	Honolu 8	53.4	1	357.4	22.57	8.104	102.5	26.	0.	0.0000	1.6932	0.0000	0.0000	199.03	208.92
2	Honolu 9	54.4	1	231.0	14.77	5.404	71.9	24.	0.	0.0000	1.1884	0.0000	0.0000	206.04	219.91
3	Waiau 3	46.6	1	72.6	7.21	2.259	31.7	12.	0.	0.0000	0.5083	0.0000	0.0000	195.35	225.03
4	Waiau 4	46.6	1	145.4	10.59	3.318	47.8	21.	0.	0.0000	0.7653	0.0000	0.0000	195.80	230.67
5	Waiau 5	54.5	1	317.3	20.00	7.329	97.2	29.	0.	0.0000	1.5576	0.0000	0.0000	194.78	212.54
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
7	Waiau 7	82.9	1	630.0	47.15	26.281	288.1	0.	0.	0.0000	4.6157	0.0000	0.0000	174.89	175.63
8	Waiau 8	86.1	1	629.8	58.43	33.827	355.4	0.	0.	0.0000	5.6932	0.0000	0.0000	167.68	168.30
9	Waiau 9	52.9	1	20.5	0.49	0.174	5.6	5.	0.	0.0000	0.1325	0.0000	0.0000	754.60	762.77
10	Waiau 10	49.9	1	43.6	1.00	0.335	11.0	10.	0.	0.0000	0.2613	0.0000	0.0000	772.07	779.77
11	Kahe 1	82.1	1	652.1	54.48	30.070	313.2	0.	0.	0.0000	5.0172	0.0000	0.0000	166.55	166.85
12	Kahe 2	82.1	1	654.0	60.35	33.314	340.3	0.	0.	0.0000	5.4507	0.0000	0.0000	163.40	163.61
13	Kahe 3	86.1	1	631.7	73.50	42.548	419.7	0.	0.	0.0000	6.7227	0.0000	0.0000	157.55	158.00
14	Kahe 4	85.3	1	630.0	68.85	39.486	401.9	0.	0.	0.0000	6.4377	0.0000	0.0000	162.55	163.04
15	Kahe 5	134.3	1	648.0	80.48	72.673	713.4	0.	0.	0.0000	11.4282	0.0000	0.0000	157.09	157.25
16	Kahe 6	134.4	1	210.2	19.05	17.216	186.3	1.	0.	0.0000	2.9848	0.0000	0.0000	164.74	173.37
17	Kala CC	90.0	1	569.9	83.15	50.312	433.6	8.	0.	0.0000	7.4127	0.0000	0.0000	147.33	147.33
18	Kala CC	90.0	1	666.5	96.33	58.289	504.0	0.	0.	0.0000	8.6154	0.0000	0.0000	147.80	147.80
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
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
21	Kala CC	28.0	1	567.4	63.01	11.861	102.2	8.	0.	0.0000	1.7474	0.0000	0.0000	147.32	147.32
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
23	DG Sub1	9.8	1	22.5	1.74	0.115	1.2	7.	0.	0.0000	0.0288	0.0000	0.0000	249.93	249.93
24	DG Sub2	9.8	1	23.9	1.83	0.121	1.3	7.	0.	0.0000	0.0302	0.0000	0.0000	249.93	249.93
25	DG Sub3	9.8	1	14.8	1.11	0.074	0.8	6.	0.	0.0000	0.0184	0.0000	0.0000	249.93	249.93
	System					574.335	6476.	167.	0.	0.0000	75.3171	0.0000	0.0000	129.87	131.14

Year: 2009 Month: Feb

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
2	ArcherPV	HOURLY	PURC	0.021	0.0000	0.0000	0.0000	0.00

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	73.013	132.308	Bbl	820.3	13.1401	179.97	11235.	1601.85
2 KLSFO	235.307	383.036	Bbl	2374.8	38.0412	161.67	10092.	1601.85
3 HLSFO	13.508	28.135	Bbl	174.4	2.8816	213.32	12913.	1651.96
4 DG SUB	0.310	0.550	Bbl	3.2	0.0774	249.93	10409.	2401.06
5 WDIESEL	0.509	2.841	Bbl	16.6	0.3938	773.96	32721.	2365.31
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	120.463	173.306	Bbl	1039.8	17.7755	147.56	8632.	1709.45
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	321.829	543.479	Bbl	3369.6	54.0629	167.99	10470.	1604.4
2 DIESEL	0.509	2.841	Bbl	16.6	0.3938	773.96	32721.	2365.3
4 AES	104.133	1818.981	Bbl	1819.0	3.0075	28.88	17468.	165.3
5 KALAELOA	120.463	173.306	Bbl	1039.8	17.7755	147.56	8632.	1709.4
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	0.0774	249.93	10409.	2401.1

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:	574.34	75.3171	131.14
				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	0.0237	61.13
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	75.3412	131.09
				System Net:		75.3412	131.09
				LOLH(hr):	0.15		

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	57.9	235.3073	2374.8	2.	0.0000	38.0412	0.0000	161.67
2 Waiau	23.1	73.5222	837.0	79.	0.0000	13.5339	0.0000	184.08
3 Kalaeloa	86.2	120.4628	1039.8	16.	0.0000	17.7755	0.0000	147.56
4 AES	86.1	104.1331	1819.0	0.	0.0000	3.0075	0.0000	28.88
5 HPOWER	87.6	27.0920	228.2	0.	0.0000	0.0000	0.0000	0.00
6 Honolulu	18.6	13.5084	174.4	49.	0.0000	2.8816	0.0000	213.32
8 CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9 DG Sub	1.6	0.3097	3.2	20.	0.0000	0.0774	0.0000	249.93

Year: 2009 Month: Feb

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

Off Peak	Shoulder Peak	Priority Peak	Total
24.421045	35.380199	15.515627	75.316872

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
1	Honolu 8	53.4	1	303.2	17.30	6.876	88.3	29.	0.	0.0000	1.4586	0.0000	0.0000	199.03	212.12
2	Honolu 9	54.4	1	135.4	7.78	3.152	42.8	18.	0.	0.0000	0.7070	0.0000	0.0000	206.19	224.29
3	Waiau 3	46.6	1	40.6	3.70	1.284	17.4	5.	0.	0.0000	0.2794	0.0000	0.0000	195.02	217.60
4	Waiau 4	46.6	1	73.4	4.83	1.675	24.2	11.	0.	0.0000	0.3870	0.0000	0.0000	195.80	231.02
5	Waiau 5	54.5	1	228.7	12.96	5.256	71.2	26.	0.	0.0000	1.1398	0.0000	0.0000	194.90	216.84
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
7	Waiau 7	82.9	1	698.4	46.04	28.413	312.5	0.	0.	0.0000	5.0057	0.0000	0.0000	175.35	176.17
8	Waiau 8	86.1	1	697.4	56.35	36.116	380.8	0.	0.	0.0000	6.1005	0.0000	0.0000	168.20	168.91
9	Waiau 9	52.9	1	10.4	0.22	0.085	2.8	2.	0.	0.0000	0.0665	0.0000	0.0000	772.98	780.03
10	Waiau 10	49.9	1	19.7	0.39	0.146	4.9	4.	0.	0.0000	0.1169	0.0000	0.0000	792.43	798.94
11	Kahe 1	82.1	1	720.2	52.28	31.951	334.2	0.	0.	0.0000	5.3539	0.0000	0.0000	167.14	167.56
12	Kahe 2	82.1	1	721.4	56.86	34.748	356.6	0.	0.	0.0000	5.7129	0.0000	0.0000	164.03	164.41
13	Kahe 3	86.1	1	698.2	70.26	45.031	445.5	0.	0.	0.0000	7.1355	0.0000	0.0000	157.94	158.46
14	Kahe 4	85.3	1	386.6	36.53	23.196	237.1	0.	0.	0.0000	3.7976	0.0000	0.0000	163.13	163.72
15	Kahe 5	134.3	1	714.0	77.21	77.188	759.5	0.	0.	0.0000	12.1655	0.0000	0.0000	157.45	157.61
16	Kahe 6	134.4	1	716.4	54.19	54.219	562.9	0.	0.	0.0000	9.0170	0.0000	0.0000	165.79	166.31
17	Kala CC	90.0	1	626.4	80.82	54.150	470.0	9.	0.	0.0000	8.0350	0.0000	0.0000	148.38	148.38
18	Kala CC	90.0	1	730.8	93.39	62.569	545.0	0.	0.	0.0000	9.3170	0.0000	0.0000	148.91	148.91
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
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
21	Kala CC	28.0	1	630.1	60.05	12.516	107.9	9.	0.	0.0000	1.8438	0.0000	0.0000	147.32	147.32
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
23	DG Sub1	9.8	1	13.3	0.93	0.068	0.7	4.	0.	0.0000	0.0170	0.0000	0.0000	249.93	249.93
24	DG Sub2	9.8	1	13.3	0.94	0.069	0.7	4.	0.	0.0000	0.0172	0.0000	0.0000	249.93	249.93
25	DG Sub3	9.8	1	10.3	0.71	0.052	0.5	3.	0.	0.0000	0.0130	0.0000	0.0000	249.93	249.93
	System					632.371	7165.	126.	0.	0.0000	81.2312	0.0000	0.0000	127.66	128.45

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
2	ArcherPV	HOURLY	PURC	0.026	0.0000	0.0000	0.0000	0.00

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	72.745	130.014	Bbl	806.1	12.9123	177.50	11081.	1601.85
2	KLSFO	266.333	434.803	Bbl	2695.8	43.1824	162.14	10122.	1601.85
3	HLSFO	10.028	21.144	Bbl	131.1	2.1656	215.95	13072.	1651.96
4	DG SUB	0.189	0.335	Bbl	2.0	0.0472	249.93	10409.	2401.05
5	WDIESEL	0.232	1.323	Bbl	7.8	0.1834	791.98	33483.	2365.31
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	129.235	187.154	Bbl	1122.9	19.1958	148.53	8689.	1709.45
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	349.107	585.961	Bbl	3633.0	58.2603	166.88	10406.	1603.7
2	DIESEL	0.232	1.323	Bbl	7.8	0.1834	791.98	33483.	2365.3
4	AES	123.250	2143.807	Bbl	2143.8	3.5446	28.76	17394.	165.3
5	KALAELOA	129.235	187.154	Bbl	1122.9	19.1958	148.53	8689.	1709.4
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	0.335	Bbl	2.0	0.0472	249.93	10409.	2401.1

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:	632.37	81.2312	128.45
				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	60.70
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	81.2574	128.41
				System Net:		81.2574	128.41
				LOLH(hr):	0.03		

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	59.2	266.3335	2695.8	1.	0.0000	43.1824	0.0000	162.14
2	Waiau	20.7	72.9765	813.8	49.	0.0000	13.0957	0.0000	179.45
3	Kalaeloa	83.5	129.2349	1122.9	18.	0.0000	19.1958	0.0000	148.53
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	12.5	10.0283	131.1	47.	0.0000	2.1656	0.0000	215.95
8	CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9	DG Sub	0.9	0.1887	2.0	10.	0.0000	0.0472	0.0000	249.93

Year: 2009 Month: Mar

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

Off Peak	Shoulder Peak	Priority Peak	Total
26.552225	38.193687	16.485067	81.230980

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
1 Honolu 8	53.4	1	382.6	23.54	9.056	113.5	26.	0.	0.0000	1.8746	0.0000	0.0000	198.10	206.99
2 Honolu 9	54.4	1	242.4	15.93	6.242	80.9	22.	0.	0.0000	1.3368	0.0000	0.0000	202.90	214.17
3 Waiau 3	46.6	1	105.0	10.11	3.393	45.5	13.	0.	0.0000	0.7291	0.0000	0.0000	194.63	214.86
4 Waiau 4	46.6	1	186.9	12.93	4.341	59.5	19.	0.	0.0000	0.9526	0.0000	0.0000	195.54	219.45
5 Waiau 5	54.5	1	370.2	22.75	8.930	115.7	28.	0.	0.0000	1.8535	0.0000	0.0000	193.77	207.55
6 Waiau 6	53.5	1	253.5	15.94	6.143	80.7	21.	0.	0.0000	1.2923	0.0000	0.0000	195.43	210.37
7 Waiau 7	82.9	1	673.7	50.95	30.429	331.1	0.	0.	0.0000	5.3041	0.0000	0.0000	173.67	174.31
8 Waiau 8	86.1	1	673.4	67.16	41.657	433.8	0.	0.	0.0000	6.9493	0.0000	0.0000	166.30	166.82
9 Waiau 9	52.9	1	38.5	1.09	0.415	11.3	7.	0.	0.0000	0.2681	0.0000	0.0000	640.80	645.42
10 Waiau 10	49.9	1	71.4	1.61	0.579	18.3	13.	0.	0.0000	0.4332	0.0000	0.0000	742.88	748.66
11 Kahe 1	82.1	1	697.0	60.48	35.771	370.0	0.	0.	0.0000	5.9264	0.0000	0.0000	165.40	165.67
12 Kahe 2	82.1	1	466.3	44.35	26.231	266.4	0.	0.	0.0000	4.2669	0.0000	0.0000	162.39	162.67
13 Kahe 3	86.1	1	673.7	77.20	47.885	470.8	0.	0.	0.0000	7.5420	0.0000	0.0000	157.13	157.50
14 Kahe 4	85.3	1	605.3	67.77	41.645	426.1	1.	0.	0.0000	6.8258	0.0000	0.0000	161.53	163.90
15 Kahe 5	134.3	1	686.9	82.15	79.480	778.8	0.	0.	0.0000	12.4746	0.0000	0.0000	156.79	156.95
16 Kahe 6	134.4	1	697.4	64.63	62.573	642.0	0.	0.	0.0000	10.2843	0.0000	0.0000	164.07	164.36
17 Kala CC	90.0	1	83.2	11.02	7.146	62.1	1.	0.	0.0000	1.0623	0.0000	0.0000	148.65	148.65
18 Kala CC	90.0	1	531.1	72.90	47.263	406.3	2.	0.	0.0000	6.9459	0.0000	0.0000	146.96	146.96
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
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
21 Kala CC	28.0	1	82.3	7.57	1.526	13.2	1.	0.	0.0000	0.2249	0.0000	0.0000	147.32	147.32
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
23 DG Sub1	9.8	1	47.0	3.36	0.239	2.5	8.	0.	0.0000	0.0596	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	44.2	3.16	0.224	2.3	8.	0.	0.0000	0.0560	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	47.4	3.50	0.248	2.6	8.	0.	0.0000	0.0620	0.0000	0.0000	249.93	249.93
System					618.957	7202.	180.	0.	0.0000	80.3988	0.0000	0.0000	128.68	129.89

Year: 2009 Month: Apr

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: 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	94.894	171.989	Bbl	1066.3	17.0811	180.00	11237.	1601.85
2 KLSFO	293.585	476.463	Bbl	2954.1	47.3199	161.18	10062.	1601.85
3 HLSFO	15.298	31.354	Bbl	194.4	3.2114	209.92	12707.	1651.96
4 DG SUB	0.711	1.263	Bbl	7.4	0.1776	249.93	10409.	2401.05
5 WDIESEL	0.994	5.060	Bbl	29.7	0.7013	705.52	29828.	2365.31
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	55.936	80.270	Bbl	481.6	8.2331	147.19	8610.	1709.45
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	403.777	679.806	Bbl	4214.8	67.6123	167.45	10438.	1604.2
2 DIESEL	0.994	5.060	Bbl	29.7	0.7013	705.52	29828.	2365.3
4 AES	128.261	2222.392	Bbl	2222.4	3.6745	28.65	17327.	165.3
5 KALAELOA	55.936	80.270	Bbl	481.6	8.2331	147.19	8610.	1709.5
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	0.711	1.263	Bbl	7.4	0.1776	249.93	10409.	2401.1

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:	618.96	80.3988	129.89
				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:	0.42	0.0254	60.53
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	80.4301	129.84
				System Net:		80.4301	129.84
				LOLH(hr):	1.06		

Year: 2009 Month: Apr

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	67.5	293.5848	2954.1	2.	0.0000	47.3199	0.0000	161.18
2	Waiau	28.2	95.8885	1096.0	101.	0.0000	17.7824	0.0000	185.45
3	Kalaeloa	37.4	55.9362	481.6	4.	0.0000	8.2331	0.0000	147.19
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	19.7	15.2980	194.4	48.	0.0000	3.2114	0.0000	209.92
8	CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9	DG Sub	3.3	0.7108	7.4	25.	0.0000	0.1776	0.0000	249.93

Year: 2009 Month: Apr

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

Off Peak	Shoulder Peak	Priority Peak	Total
25.202965	38.686066	16.509771	80.398796

Year: 2009 Month: May

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
1 Honolu 8	53.4	1	445.2	25.92	10.304	128.8	26.	0.	0.0000	2.1272	0.0000	0.0000	198.59	206.46
2 Honolu 9	54.4	1	258.6	15.90	6.439	84.2	25.	0.	0.0000	1.3902	0.0000	0.0000	203.94	215.92
3 Waiau 3	46.6	1	95.5	8.87	3.078	41.6	12.	0.	0.0000	0.6661	0.0000	0.0000	194.67	216.39
4 Waiau 4	46.6	1	175.0	11.70	4.058	56.8	22.	0.	0.0000	0.9097	0.0000	0.0000	195.57	224.19
5 Waiau 5	54.5	1	428.8	25.03	10.153	131.3	30.	0.	0.0000	2.1036	0.0000	0.0000	194.22	207.19
6 Waiau 6	53.5	1	356.6	21.20	8.444	111.6	30.	0.	0.0000	1.7874	0.0000	0.0000	195.96	211.67
7 Waiau 7	82.9	1	696.2	50.69	31.283	340.3	0.	0.	0.0000	5.4516	0.0000	0.0000	173.62	174.27
8 Waiau 8	86.1	1	692.4	67.91	43.526	452.2	0.	0.	0.0000	7.2440	0.0000	0.0000	166.02	166.43
9 Waiau 9	52.9	1	18.8	0.49	0.193	5.4	3.	0.	0.0000	0.1286	0.0000	0.0000	661.24	665.79
10 Waiau 10	49.9	1	55.4	1.24	0.462	14.3	10.	0.	0.0000	0.3389	0.0000	0.0000	728.23	733.78
11 Kahe 1	82.1	1	724.3	61.22	37.417	386.6	0.	0.	0.0000	6.1935	0.0000	0.0000	165.24	165.53
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
13 Kahe 3	86.1	1	700.6	79.40	50.888	499.9	0.	0.	0.0000	8.0072	0.0000	0.0000	156.92	157.35
14 Kahe 4	85.3	1	699.4	76.32	48.461	489.6	0.	0.	0.0000	7.8431	0.0000	0.0000	161.42	161.84
15 Kahe 5	134.3	1	716.2	84.22	84.196	824.1	0.	0.	0.0000	13.2013	0.0000	0.0000	156.63	156.79
16 Kahe 6	134.4	1	721.0	65.10	65.134	667.3	0.	0.	0.0000	10.6898	0.0000	0.0000	163.89	164.12
17 Kala CC	90.0	1	401.3	53.87	36.088	309.2	7.	0.	0.0000	5.2854	0.0000	0.0000	146.46	146.46
18 Kala CC	90.0	1	711.5	95.42	63.930	547.9	2.	0.	0.0000	9.3656	0.0000	0.0000	146.50	146.50
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
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
21 Kala CC	28.0	1	401.5	41.14	8.575	73.9	7.	0.	0.0000	1.2632	0.0000	0.0000	147.32	147.32
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
23 DG Sub1	9.8	1	37.1	2.63	0.192	2.0	7.	0.	0.0000	0.0481	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	34.7	2.41	0.176	1.8	7.	0.	0.0000	0.0440	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	26.7	1.89	0.139	1.4	6.	0.	0.0000	0.0346	0.0000	0.0000	249.93	249.93
System					656.224	7549.	196.	0.	0.0000	87.8968	0.0000	0.0000	132.83	133.94

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
2	ArcherPV	HOURLY	PURC	0.030	0.0000	0.0000	0.0000	0.00

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	100.542	182.877	Bbl	1133.8	18.1624	180.65	11277.	1601.85
2	KLSFO	286.097	462.517	Bbl	2867.6	45.9348	160.56	10023.	1601.85
3	HLSFO	16.742	34.343	Bbl	212.9	3.5175	210.10	12718.	1651.96
4	DG SUB	0.507	0.901	Bbl	5.3	0.1267	249.93	10409.	2401.06
5	WDIESEL	0.655	3.373	Bbl	19.8	0.4675	713.73	30175.	2365.31
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	108.593	155.160	Bbl	931.0	15.9143	146.55	8573.	1709.45
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	403.381	679.738	Bbl	4214.4	67.6148	167.62	10448.	1604.4
2	DIESEL	0.655	3.373	Bbl	19.8	0.4675	713.73	30175.	2365.3
4	AES	131.717	2282.276	Bbl	2282.3	3.7735	28.65	17327.	165.3
5	KALAELOA	108.593	155.160	Bbl	931.0	15.9143	146.55	8573.	1709.4
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	0.901	Bbl	5.3	0.1267	249.93	10409.	2401.1

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:	656.22	87.8968	133.94
				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	60.17
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	87.9242	133.89
				System Net:		87.9242	133.89
				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	63.6	286.0967	2867.6	1.	0.0000	45.9348	0.0000	160.56
2 Waiau	28.8	101.1969	1153.6	107.	0.0000	18.6300	0.0000	184.10
3 Kalaeloa	70.2	108.5931	931.0	16.	0.0000	15.9143	0.0000	146.55
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	20.9	16.7422	212.9	50.	0.0000	3.5175	0.0000	210.10
8 CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9 DG Sub	2.3	0.5071	5.3	21.	0.0000	0.1267	0.0000	249.93

Year: 2009 Month: May

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

Off Peak	Shoulder Peak	Priority Peak	Total
28.286421	42.104057	17.506054	87.896530

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
1	Honolu 8	53.4	1	392.1	23.16	8.908	112.3	26.	0.	0.0000	1.8552	0.0000	0.0000	198.99	208.27
2	Honolu 9	54.4	1	162.0	10.03	3.930	52.1	18.	0.	0.0000	0.8614	0.0000	0.0000	204.76	219.17
3	Waiau 3	46.6	1	66.4	6.23	2.092	28.2	8.	0.	0.0000	0.4521	0.0000	0.0000	195.09	216.12
4	Waiau 4	46.6	1	40.0	2.68	0.900	12.7	5.	0.	0.0000	0.2040	0.0000	0.0000	195.98	226.76
5	Waiau 5	54.5	1	352.5	20.80	8.166	107.1	28.	0.	0.0000	1.7154	0.0000	0.0000	194.68	210.07
6	Waiau 6	53.5	1	270.1	16.24	6.258	83.5	24.	0.	0.0000	1.3376	0.0000	0.0000	196.42	213.73
7	Waiau 7	82.9	1	678.0	49.31	29.450	321.5	0.	0.	0.0000	5.1499	0.0000	0.0000	174.10	174.87
8	Waiau 8	86.1	1	680.9	63.95	39.666	414.3	0.	0.	0.0000	6.6372	0.0000	0.0000	166.74	167.33
9	Waiau 9	52.9	1	18.5	0.35	0.134	4.8	3.	0.	0.0000	0.1142	0.0000	0.0000	844.65	851.27
10	Waiau 10	49.9	1	34.6	0.66	0.237	8.5	6.	0.	0.0000	0.2006	0.0000	0.0000	840.65	846.75
11	Kahe 1	82.1	1	697.2	57.16	33.808	351.0	0.	0.	0.0000	5.6218	0.0000	0.0000	165.95	166.28
12	Kahe 2	82.1	1	159.6	13.55	8.014	86.8	1.	0.	0.0000	1.3911	0.0000	0.0000	163.51	173.59
13	Kahe 3	86.1	1	670.8	75.46	46.805	461.0	0.	0.	0.0000	7.3838	0.0000	0.0000	157.27	157.75
14	Kahe 4	85.3	1	675.1	72.78	44.724	453.6	0.	0.	0.0000	7.2667	0.0000	0.0000	161.94	162.48
15	Kahe 5	134.3	1	687.1	81.35	78.709	771.8	0.	0.	0.0000	12.3633	0.0000	0.0000	156.89	157.08
16	Kahe 6	134.4	1	701.0	60.57	58.642	604.1	0.	0.	0.0000	9.6774	0.0000	0.0000	164.60	165.03
17	Kala CC	90.0	1	613.4	84.67	54.893	471.0	8.	0.	0.0000	8.0520	0.0000	0.0000	146.69	146.69
18	Kala CC	90.0	1	709.9	97.32	63.100	542.6	0.	0.	0.0000	9.2758	0.0000	0.0000	147.00	147.00
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
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
21	Kala CC	28.0	1	612.5	64.52	13.015	112.2	8.	0.	0.0000	1.9174	0.0000	0.0000	147.32	147.32
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
23	DG Sub1	9.8	1	21.4	1.53	0.108	1.1	5.	0.	0.0000	0.0271	0.0000	0.0000	249.93	249.93
24	DG Sub2	9.8	1	18.5	1.31	0.093	1.0	5.	0.	0.0000	0.0233	0.0000	0.0000	249.93	249.93
25	DG Sub3	9.8	1	15.6	1.12	0.080	0.8	4.	0.	0.0000	0.0199	0.0000	0.0000	249.93	249.93
	System					657.502	7448.	152.	0.	0.0000	85.1943	0.0000	0.0000	128.55	129.57

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
2	ArcherPV	HOURLY	PURC	0.030	0.0000	0.0000	0.0000	0.00

Year: 2009 Month: Jun

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	86.531	156.030	Bbl	967.4	15.4961	179.08	11180.	1601.85
2 KLSFO	270.702	440.056	Bbl	2728.3	43.7041	161.45	10079.	1601.85
3 HLSFO	12.838	26.523	Bbl	164.4	2.7166	211.60	12809.	1651.96
4 DG SUB	0.281	0.499	Bbl	2.9	0.0702	249.93	10409.	2401.05
5 WDIESEL	0.371	2.271	Bbl	13.3	0.3148	848.38	35868.	2365.31
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	131.008	187.635	Bbl	1125.8	19.2452	146.90	8593.	1709.45
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	370.071	622.609	Bbl	3860.2	61.9168	167.31	10431.	1604.0
2 DIESEL	0.371	2.271	Bbl	13.3	0.3148	848.38	35868.	2365.3
4 AES	127.310	2205.925	Bbl	2205.9	3.6473	28.65	17327.	165.3
5 KALAELOA	131.008	187.635	Bbl	1125.8	19.2452	146.90	8593.	1709.4
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	0.0702	249.93	10409.	2401.1

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:	657.50	85.1943	129.57
				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:	0.42	0.0254	60.08
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	85.2196	129.53
				System Net:		85.2196	129.53
				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	62.2	270.7018	2728.3	2.	0.0000	43.7041	0.0000	161.45
2	Waiau	25.5	86.9022	980.7	76.	0.0000	15.8109	0.0000	181.94
3	Kalaeloa	87.5	131.0077	1125.8	16.	0.0000	19.2452	0.0000	146.90
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	16.5	12.8380	164.4	44.	0.0000	2.7166	0.0000	211.60
8	CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9	DG Sub	1.3	0.2810	2.9	13.	0.0000	0.0702	0.0000	249.93

Year: 2009 Month: Jun

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

Off Peak	Shoulder Peak	Priority Peak	Total
27.925615	40.636353	16.632099	85.194069

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
1	Honolu 8	53.4	1	391.0	23.19	9.219	115.6	26.	0.	0.0000	1.9089	0.0000	0.0000	198.19	207.06
2	Honolu 9	54.4	1	55.2	3.29	1.333	17.8	6.	0.	0.0000	0.2935	0.0000	0.0000	204.92	220.13
3	Waiau 3	46.6	1	119.5	10.94	3.796	51.2	15.	0.	0.0000	0.8209	0.0000	0.0000	194.93	216.26
4	Waiau 4	46.6	1	190.0	12.65	4.389	60.3	20.	0.	0.0000	0.9663	0.0000	0.0000	195.58	220.13
5	Waiau 5	54.5	1	363.9	21.62	8.771	114.0	28.	0.	0.0000	1.8258	0.0000	0.0000	193.81	208.16
6	Waiau 6	53.5	1	294.6	17.89	7.124	94.4	27.	0.	0.0000	1.5114	0.0000	0.0000	195.46	212.18
7	Waiau 7	82.9	1	696.2	48.66	30.028	328.5	0.	0.	0.0000	5.2618	0.0000	0.0000	174.48	175.23
8	Waiau 8	86.1	1	697.0	62.68	40.172	419.9	0.	0.	0.0000	6.7254	0.0000	0.0000	166.89	167.42
9	Waiau 9	52.9	1	44.1	1.09	0.429	12.5	9.	0.	0.0000	0.2968	0.0000	0.0000	686.84	692.10
10	Waiau 10	49.9	1	80.9	1.77	0.659	20.8	13.	0.	0.0000	0.4913	0.0000	0.0000	740.49	745.76
11	Kahe 1	82.1	1	94.1	6.81	4.163	43.4	0.	0.	0.0000	0.6959	0.0000	0.0000	167.17	167.17
12	Kahe 2	82.1	1	726.5	63.67	38.910	396.1	0.	0.	0.0000	6.3446	0.0000	0.0000	162.87	163.06
13	Kahe 3	86.1	1	696.7	74.87	47.990	472.6	0.	0.	0.0000	7.5698	0.0000	0.0000	157.33	157.74
14	Kahe 4	85.3	1	697.4	72.00	45.721	463.7	0.	0.	0.0000	7.4284	0.0000	0.0000	162.03	162.47
15	Kahe 5	134.3	1	717.1	81.81	81.788	801.8	0.	0.	0.0000	12.8430	0.0000	0.0000	156.91	157.03
16	Kahe 6	134.4	1	723.6	60.55	60.582	623.7	0.	0.	0.0000	9.9909	0.0000	0.0000	164.65	164.92
17	Kala CC	90.0	1	634.7	85.14	57.044	488.8	8.	0.	0.0000	8.3561	0.0000	0.0000	146.49	146.49
18	Kala CC	90.0	1	733.7	98.20	65.788	564.2	0.	0.	0.0000	9.6439	0.0000	0.0000	146.59	146.59
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
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
21	Kala CC	28.0	1	635.9	62.26	12.978	111.8	8.	0.	0.0000	1.9118	0.0000	0.0000	147.32	147.32
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
23	DG Sub1	9.8	1	50.2	3.61	0.265	2.8	11.	0.	0.0000	0.0662	0.0000	0.0000	249.93	249.93
24	DG Sub2	9.8	1	36.3	2.55	0.187	1.9	8.	0.	0.0000	0.0467	0.0000	0.0000	249.93	249.93
25	DG Sub3	9.8	1	40.0	2.89	0.212	2.2	9.	0.	0.0000	0.0530	0.0000	0.0000	249.93	249.93
	System					683.716	7749.	191.	0.	0.0000	88.8333	0.0000	0.0000	128.97	129.93

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	94.280	172.296	Bbl	1068.2	17.1116	181.50	11331.	1601.85
2 KLSFO	279.153	451.821	Bbl	2801.3	44.8725	160.75	10035.	1601.85
3 HLSFO	10.553	21.504	Bbl	133.3	2.2025	208.71	12634.	1651.96
4 DG SUB	0.664	1.179	Bbl	6.9	0.1658	249.93	10409.	2401.05
5 WDIESEL	1.088	5.686	Bbl	33.3	0.7881	724.60	30634.	2365.31
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	135.809	194.134	Bbl	1164.8	19.9118	146.62	8577.	1709.45
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	383.985	645.621	Bbl	4002.9	64.1866	167.16	10425.	1603.5
2 DIESEL	1.088	5.686	Bbl	33.3	0.7881	724.60	30634.	2365.3
4 AES	131.976	2286.767	Bbl	2286.8	3.7810	28.65	17327.	165.3
5 KALAELOA	135.809	194.134	Bbl	1164.8	19.9118	146.62	8577.	1709.5
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	0.1658	249.93	10409.	2401.1

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	88.8333	129.93
				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	88.8658	129.88
				System Net:		88.8658	129.88
				LOLH(hr):	1.00		

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	62.1	279.1526	2801.3	1.	0.0000	44.8725	0.0000	160.75
2 Waiau	27.1	95.3671	1101.6	113.	0.0000	17.8996	0.0000	187.69
3 Kalaeloa	87.8	135.8093	1164.8	16.	0.0000	19.9118	0.0000	146.62
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	13.2	10.5526	133.3	33.	0.0000	2.2025	0.0000	208.71
8 CIP	0.0	0.0000	0.0	0.	0.0000	0.0000	0.0000	0.00
9 DG Sub	3.0	0.6636	6.9	28.	0.0000	0.1658	0.0000	249.93

Year: 2009 Month: Jul

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

Off Peak	Shoulder Peak	Priority Peak	Total
28.527958	42.723660	17.581635	88.833252

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
1 Honolu 8	53.4	1	453.9	26.93	10.705	133.4	26.	0.	0.0000	2.2042	0.0000	0.0000	198.17	205.90
2 Honolu 9	54.4	1	273.8	17.40	7.048	91.6	26.	0.	0.0000	1.5124	0.0000	0.0000	202.83	214.58
3 Waiau 3	46.6	1	15.8	1.42	0.493	7.1	3.	0.	0.0000	0.1131	0.0000	0.0000	195.23	229.14
4 Waiau 4	46.6	1	181.7	12.07	4.186	59.7	25.	0.	0.0000	0.9560	0.0000	0.0000	195.58	228.39
5 Waiau 5	54.5	1	419.6	24.95	10.124	130.3	28.	0.	0.0000	2.0873	0.0000	0.0000	193.71	206.18
6 Waiau 6	53.5	1	363.9	21.76	8.666	114.1	30.	0.	0.0000	1.8275	0.0000	0.0000	195.69	210.89
7 Waiau 7	82.9	1	694.3	50.97	31.453	342.2	0.	0.	0.0000	5.4818	0.0000	0.0000	173.54	174.29
8 Waiau 8	86.1	1	690.0	66.89	42.873	446.0	0.	0.	0.0000	7.1450	0.0000	0.0000	166.05	166.66
9 Waiau 9	52.9	1	11.5	0.32	0.126	3.4	2.	0.	0.0000	0.0803	0.0000	0.0000	633.11	638.09
10 Waiau 10	49.9	1	28.3	0.69	0.257	7.5	5.	0.	0.0000	0.1768	0.0000	0.0000	682.35	687.81
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
12 Kahe 2	82.1	1	724.1	68.62	41.939	425.0	0.	0.	0.0000	6.8080	0.0000	0.0000	162.06	162.33
13 Kahe 3	86.1	1	694.8	80.01	51.279	503.6	0.	0.	0.0000	8.0677	0.0000	0.0000	156.79	157.33
14 Kahe 4	85.3	1	692.9	75.76	48.108	486.0	0.	0.	0.0000	7.7848	0.0000	0.0000	161.33	161.82
15 Kahe 5	134.3	1	712.1	85.58	85.563	836.6	0.	0.	0.0000	13.4015	0.0000	0.0000	156.44	156.63
16 Kahe 6	134.4	1	715.9	63.97	63.999	656.4	0.	0.	0.0000	10.5143	0.0000	0.0000	163.87	164.29
17 Kala CC	90.0	1	620.3	83.32	55.825	478.2	10.	0.	0.0000	8.1742	0.0000	0.0000	146.42	146.42
18 Kala CC	90.0	1	735.6	98.82	66.204	567.1	0.	0.	0.0000	9.6939	0.0000	0.0000	146.43	146.43
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
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
21 Kala CC	28.0	1	619.8	66.13	13.784	118.8	10.	0.	0.0000	2.0307	0.0000	0.0000	147.32	147.32
22 CIP1	113.0	1	143.4	6.79	5.715	98.5	19.	0.	0.0000	2.3307	0.0000	0.0000	398.14	407.83
23 DG Sub1	9.8	1	17.7	1.19	0.087	0.9	4.	0.	0.0000	0.0217	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	18.2	1.29	0.095	1.0	3.	0.	0.0000	0.0237	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	14.5	0.99	0.072	0.8	3.	0.	0.0000	0.0180	0.0000	0.0000	249.93	249.93
System					711.334	8057.	198.	0.	0.0000	94.2456	0.0000	0.0000	131.38	132.49

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	97.794	177.321	Bbl	1099.4	17.6107	180.08	11242.	1601.85
2 KLSFO	290.887	468.976	Bbl	2907.7	46.5763	160.12	9996.	1601.85
3 HLSFO	17.753	36.287	Bbl	225.0	3.7166	209.35	12673.	1651.96
4 DG SUB	0.254	0.451	Bbl	2.6	0.0634	249.93	10409.	2401.05
5 WDIESEL	0.383	1.855	Bbl	10.9	0.2571	671.48	28388.	2365.31
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	135.813	194.008	Bbl	1164.0	19.8988	146.52	8571.	1709.45
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	5.715	16.815	Bbl	98.5	2.3307	407.83	17242.	2365.31

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	406.434	682.584	Bbl	4232.0	67.9036	167.07	10413.	1604.5
2 DIESEL	6.098	18.670	Bbl	109.4	2.5878	424.39	17942.	2365.3
4 AES	132.365	2293.504	Bbl	2293.5	3.7921	28.65	17327.	165.3
5 KALAELOA	135.813	194.008	Bbl	1164.0	19.8988	146.52	8571.	1709.4
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	0.254	0.451	Bbl	2.6	0.0634	249.93	10409.	2401.1

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	94.2456	132.49
				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	94.2722	132.45
				System Net:		94.2722	132.45
				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	64.7	290.8867	2907.7	1.	0.0000	46.5763	0.0000	160.12
2	Waiau	27.9	98.1768	1110.3	95.	0.0000	17.8678	0.0000	182.00
3	Kalaeloa	87.8	135.8132	1164.0	20.	0.0000	19.8988	0.0000	146.52
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	22.1	17.7532	225.0	53.	0.0000	3.7166	0.0000	209.35
8	CIP	6.8	5.7148	98.5	19.	0.0000	2.3307	0.0000	407.83
9	DG Sub	1.2	0.2538	2.6	10.	0.0000	0.0634	0.0000	249.93

Year: 2009 Month: Aug

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

Off Peak	Shoulder Peak	Priority Peak	Total
30.296724	45.058975	18.889576	94.245277

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
1 Honolu 8	53.4	1	415.6	24.85	9.560	119.8	26.	0.	0.0000	1.9798	0.0000	0.0000	198.71	207.08
2 Honolu 9	54.4	1	271.6	16.55	6.487	85.5	26.	0.	0.0000	1.4130	0.0000	0.0000	205.25	217.80
3 Waiau 3	46.6	1	110.2	10.36	3.479	47.3	15.	0.	0.0000	0.7569	0.0000	0.0000	195.04	217.55
4 Waiau 4	46.6	1	187.6	12.66	4.250	59.8	23.	0.	0.0000	0.9582	0.0000	0.0000	195.88	225.47
5 Waiau 5	54.5	1	224.8	13.32	5.231	67.7	15.	0.	0.0000	1.0843	0.0000	0.0000	194.53	207.28
6 Waiau 6	53.5	1	362.3	22.01	8.483	112.1	30.	0.	0.0000	1.7963	0.0000	0.0000	196.16	211.76
7 Waiau 7	82.9	1	675.4	50.81	30.345	330.0	0.	0.	0.0000	5.2857	0.0000	0.0000	173.52	174.18
8 Waiau 8	86.1	1	678.2	68.31	42.371	440.1	0.	0.	0.0000	7.0497	0.0000	0.0000	165.98	166.38
9 Waiau 9	52.9	1	10.1	0.20	0.076	2.6	3.	0.	0.0000	0.0626	0.0000	0.0000	815.76	824.43
10 Waiau 10	49.9	1	11.2	0.29	0.103	3.0	2.	0.	0.0000	0.0701	0.0000	0.0000	672.85	679.00
11 Kahe 1	82.1	1	560.4	48.24	28.530	299.7	1.	0.	0.0000	4.8014	0.0000	0.0000	165.32	168.29
12 Kahe 2	82.1	1	692.9	69.76	41.257	417.6	0.	0.	0.0000	6.6888	0.0000	0.0000	161.81	162.12
13 Kahe 3	86.1	1	363.4	42.30	26.237	257.8	0.	0.	0.0000	4.1298	0.0000	0.0000	157.01	157.41
14 Kahe 4	85.3	1	676.1	77.41	47.568	480.0	0.	0.	0.0000	7.6897	0.0000	0.0000	161.25	161.66
15 Kahe 5	134.3	1	690.5	85.38	82.599	807.7	0.	0.	0.0000	12.9378	0.0000	0.0000	156.50	156.63
16 Kahe 6	134.4	1	701.0	65.59	63.506	650.2	0.	0.	0.0000	10.4146	0.0000	0.0000	163.74	163.99
17 Kala CC	90.0	1	611.3	84.84	55.005	471.2	8.	0.	0.0000	8.0546	0.0000	0.0000	146.43	146.43
18 Kala CC	90.0	1	702.7	97.32	63.096	540.8	0.	0.	0.0000	9.2455	0.0000	0.0000	146.53	146.53
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
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
21 Kala CC	28.0	1	613.7	67.19	13.552	116.8	8.	0.	0.0000	1.9965	0.0000	0.0000	147.32	147.32
22 CIP1	113.0	1	106.5	5.17	4.207	73.2	17.	0.	0.0000	1.7318	0.0000	0.0000	399.73	411.61
23 DG Sub1	9.8	1	10.5	0.74	0.052	0.5	3.	0.	0.0000	0.0131	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	8.6	0.61	0.043	0.4	2.	0.	0.0000	0.0107	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	8.4	0.61	0.044	0.5	2.	0.	0.0000	0.0109	0.0000	0.0000	249.93	249.93
System					692.115	7829.	181.	0.	0.0000	91.8189	0.0000	0.0000	131.50	132.66

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	94.159	170.479	Bbl	1057.0	16.9311	179.81	11225.	1601.85
2 KLSFO	289.697	469.839	Bbl	2913.0	46.6620	161.07	10055.	1601.85
3 HLSFO	16.048	33.125	Bbl	205.4	3.3927	211.42	12798.	1651.96
4 DG SUB	0.139	0.247	Bbl	1.4	0.0347	249.93	10409.	2401.05
5 WDIESEL	0.179	0.957	Bbl	5.6	0.1327	740.63	31312.	2365.31
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	131.653	188.136	Bbl	1128.8	19.2965	146.57	8574.	1709.45
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	4.207	12.494	Bbl	73.2	1.7318	411.61	17402.	2365.31

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	399.904	673.443	Bbl	4175.3	66.9859	167.50	10441.	1604.3
2 DIESEL	4.387	13.451	Bbl	78.8	1.8644	425.04	17970.	2365.3
4 AES	126.965	2199.937	Bbl	2199.9	3.6374	28.65	17327.	165.3
5 KALAELOA	131.653	188.136	Bbl	1128.8	19.2965	146.57	8574.	1709.5
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	0.0347	249.93	10409.	2401.1

Year: 2009 Month: Sep

System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	692.55			Therml Gen:	692.12	91.8189	132.66
				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	91.8443	132.62
				System Net:		91.8443	132.62
				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	66.6	289.6969	2913.0	2.	0.0000	46.6620	0.0000	161.07
2 Waiau	27.7	94.3385	1062.6	88.	0.0000	17.0638	0.0000	180.88
3 Kalaeloa	87.9	131.6528	1128.8	16.	0.0000	19.2965	0.0000	146.57
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	20.7	16.0477	205.4	51.	0.0000	3.3927	0.0000	211.42
8 CIP	5.2	4.2074	73.2	17.	0.0000	1.7318	0.0000	411.61
9 DG Sub	0.7	0.1389	1.4	7.	0.0000	0.0347	0.0000	249.93

Year: 2009 Month: Sep

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

Off Peak	Shoulder Peak	Priority Peak	Total
29.497110	43.855213	18.466394	91.818718

Year: 2009 Month: Oct

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
1 Honolu 8	53.4	1	334.9	19.37	7.701	96.7	21.	0.	0.0000	1.5978	0.0000	0.0000	198.73	207.48
2 Honolu 9	54.4	1	254.3	15.20	6.157	81.2	25.	0.	0.0000	1.3413	0.0000	0.0000	204.86	217.84
3 Waiau 3	46.6	1	99.0	9.01	3.124	43.3	15.	0.	0.0000	0.6928	0.0000	0.0000	195.10	221.75
4 Waiau 4	46.6	1	175.5	11.57	4.013	56.5	22.	0.	0.0000	0.9052	0.0000	0.0000	195.76	225.58
5 Waiau 5	54.5	1	405.8	23.54	9.549	124.1	30.	0.	0.0000	1.9882	0.0000	0.0000	194.34	208.20
6 Waiau 6	53.5	1	351.1	20.68	8.236	109.1	30.	0.	0.0000	1.7480	0.0000	0.0000	196.17	212.23
7 Waiau 7	82.9	1	691.9	49.93	30.815	335.4	0.	0.	0.0000	5.3724	0.0000	0.0000	173.72	174.35
8 Waiau 8	86.1	1	360.2	33.49	21.466	223.7	0.	0.	0.0000	3.5833	0.0000	0.0000	166.51	166.93
9 Waiau 9	52.9	1	10.7	0.24	0.094	2.9	3.	0.	0.0000	0.0694	0.0000	0.0000	729.23	736.52
10 Waiau 10	49.9	1	13.2	0.36	0.133	3.6	3.	0.	0.0000	0.0850	0.0000	0.0000	631.93	636.92
11 Kahe 1	82.1	1	719.8	59.41	36.306	375.8	0.	0.	0.0000	6.0190	0.0000	0.0000	165.47	165.78
12 Kahe 2	82.1	1	725.8	69.47	42.459	429.9	0.	0.	0.0000	6.8863	0.0000	0.0000	161.99	162.19
13 Kahe 3	86.1	1	540.7	60.51	38.780	385.7	1.	0.	0.0000	6.1780	0.0000	0.0000	157.06	159.31
14 Kahe 4	85.3	1	697.0	75.95	48.225	487.3	0.	0.	0.0000	7.8060	0.0000	0.0000	161.46	161.87
15 Kahe 5	134.3	1	715.4	84.48	84.462	826.5	0.	0.	0.0000	13.2388	0.0000	0.0000	156.62	156.74
16 Kahe 6	134.4	1	718.8	64.61	64.644	662.4	0.	0.	0.0000	10.6105	0.0000	0.0000	163.86	164.14
17 Kala CC	90.0	1	575.0	77.18	51.709	443.0	7.	0.	0.0000	7.5731	0.0000	0.0000	146.46	146.46
18 Kala CC	90.0	1	715.4	95.75	64.153	550.1	2.	0.	0.0000	9.4040	0.0000	0.0000	146.59	146.59
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
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
21 Kala CC	28.0	1	571.6	57.65	12.016	103.5	7.	0.	0.0000	1.7701	0.0000	0.0000	147.32	147.32
22 CIP1	113.0	1	88.9	4.26	3.581	62.0	16.	0.	0.0000	1.4671	0.0000	0.0000	396.01	409.65
23 DG Sub1	9.8	1	10.4	0.71	0.052	0.5	3.	0.	0.0000	0.0130	0.0000	0.0000	249.93	249.93
24 DG Sub2	9.8	1	9.2	0.63	0.046	0.5	2.	0.	0.0000	0.0116	0.0000	0.0000	249.93	249.93
25 DG Sub3	9.8	1	8.7	0.59	0.043	0.4	2.	0.	0.0000	0.0108	0.0000	0.0000	249.93	249.93
System					700.073	7945.	191.	0.	0.0000	92.1489	0.0000	0.0000	130.42	131.63

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	77.204	143.885	Bbl	892.1	14.2899	185.09	11555.	1601.85
2 KLSFO	314.877	510.886	Bbl	3167.5	50.7386	161.14	10059.	1601.85
3 HLSFO	13.858	28.696	Bbl	177.9	2.9390	212.08	12838.	1651.96
4 DG SUB	0.142	0.252	Bbl	1.5	0.0354	249.93	10409.	2401.05
5 WDIESEL	0.228	1.114	Bbl	6.5	0.1544	678.15	28670.	2365.31
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	127.877	182.780	Bbl	1096.7	18.7472	146.60	8576.	1709.45
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	3.581	10.585	Bbl	62.0	1.4671	409.65	17319.	2365.31

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	405.939	683.467	Bbl	4237.5	67.9676	167.43	10439.	1604.0
2 DIESEL	3.809	11.699	Bbl	68.6	1.6215	425.70	17998.	2365.3
4 AES	131.847	2284.521	Bbl	2284.5	3.7772	28.65	17327.	165.3
5 KALAELOA	127.877	182.780	Bbl	1096.7	18.7472	146.60	8576.	1709.4
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	0.0354	249.93	10409.	2401.1

Year: 2009 Month: Oct

System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	700.51			Thermal Gen:	700.07	92.1489	131.63
				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	92.1751	131.58
				System Net:		92.1751	131.58
				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	70.0	314.8770	3167.5	2.	0.0000	50.7386	0.0000	161.14
2 Waiau	22.0	77.4314	898.6	103.	0.0000	14.4443	0.0000	186.54
3 Kalaeloa	82.6	127.8775	1096.7	16.	0.0000	18.7472	0.0000	146.60
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	17.3	13.8580	177.9	47.	0.0000	2.9390	0.0000	212.08
8 CIP	4.3	3.5814	62.0	16.	0.0000	1.4671	0.0000	409.65
9 DG Sub	0.6	0.1416	1.5	7.	0.0000	0.0354	0.0000	249.93

Year: 2009 Month: Oct

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

Off Peak	Shoulder Peak	Priority Peak	Total
29.199480	44.057972	18.891314	92.148766

Year: 2009 Month: Nov

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
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
2	Honolu 9	54.4	1	277.5	16.76	6.569	86.9	27.	0.	0.0000	1.4350	0.0000	0.0000	205.60	218.46
3	Waiau 3	46.6	1	110.6	10.24	3.437	47.6	17.	0.	0.0000	0.7631	0.0000	0.0000	195.40	222.04
4	Waiau 4	46.6	1	194.1	13.21	4.435	62.5	25.	0.	0.0000	1.0016	0.0000	0.0000	195.75	225.83
5	Waiau 5	54.5	1	465.7	27.62	10.844	139.5	28.	0.	0.0000	2.2342	0.0000	0.0000	194.61	206.03
6	Waiau 6	53.5	1	391.0	23.53	9.069	119.2	29.	0.	0.0000	1.9100	0.0000	0.0000	196.44	210.60
7	Waiau 7	82.9	1	679.2	50.89	30.392	330.7	0.	0.	0.0000	5.2979	0.0000	0.0000	173.55	174.32
8	Waiau 8	86.1	1	494.9	49.00	30.395	320.8	1.	0.	0.0000	5.1383	0.0000	0.0000	166.10	169.05
9	Waiau 9	52.9	1	7.1	0.15	0.058	1.9	2.	0.	0.0000	0.0450	0.0000	0.0000	763.92	771.91
10	Waiau 10	49.9	1	15.9	0.38	0.136	4.1	4.	0.	0.0000	0.0978	0.0000	0.0000	709.67	717.26
11	Kahe 1	82.1	1	698.6	59.29	35.066	362.9	0.	0.	0.0000	5.8124	0.0000	0.0000	165.43	165.76
12	Kahe 2	82.1	1	695.3	69.23	40.943	414.6	0.	0.	0.0000	6.6415	0.0000	0.0000	161.90	162.21
13	Kahe 3	86.1	1	678.5	79.84	49.522	486.7	0.	0.	0.0000	7.7957	0.0000	0.0000	156.93	157.42
14	Kahe 4	85.3	1	674.9	76.37	46.928	474.4	0.	0.	0.0000	7.5994	0.0000	0.0000	161.41	161.94
15	Kahe 5	134.3	1	298.8	35.50	34.342	336.7	0.	0.	0.0000	5.3929	0.0000	0.0000	156.88	157.03
16	Kahe 6	134.4	1	695.5	63.57	61.549	631.6	0.	0.	0.0000	10.1175	0.0000	0.0000	163.95	164.38
17	Kala CC	90.0	1	606.6	83.71	54.276	465.8	9.	0.	0.0000	7.9619	0.0000	0.0000	146.69	146.69
18	Kala CC	90.0	1	711.1	97.46	63.191	543.5	0.	0.	0.0000	9.2901	0.0000	0.0000	147.02	147.02
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
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
21	Kala CC	28.0	1	608.2	66.70	13.453	115.9	9.	0.	0.0000	1.9819	0.0000	0.0000	147.32	147.32
22	CIP1	113.0	1	105.2	5.08	4.138	72.4	18.	0.	0.0000	1.7113	0.0000	0.0000	400.60	413.53
23	DG Sub1	9.8	1	14.1	1.05	0.074	0.8	3.	0.	0.0000	0.0185	0.0000	0.0000	249.93	249.93
24	DG Sub2	9.8	1	13.2	0.98	0.070	0.7	3.	0.	0.0000	0.0174	0.0000	0.0000	249.93	249.93
25	DG Sub3	9.8	1	9.8	0.74	0.052	0.5	3.	0.	0.0000	0.0130	0.0000	0.0000	249.93	249.93
	System					655.287	7476.	179.	0.	0.0000	85.9436	0.0000	0.0000	129.88	131.15

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	88.572	164.579	Bbl	1020.4	16.3451	184.54	11520.	1601.85
2 KLSFO	268.351	436.585	Bbl	2706.8	43.3594	161.58	10087.	1601.85
3 HLSFO	6.569	14.011	Bbl	86.9	1.4350	218.46	13225.	1651.96
4 DG SUB	0.196	0.348	Bbl	2.0	0.0490	249.93	10409.	2401.05
5 WDIESEL	0.195	1.030	Bbl	6.0	0.1428	733.63	31016.	2365.31
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	130.920	187.525	Bbl	1125.2	19.2339	146.91	8594.	1709.45
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	4.138	12.347	Bbl	72.4	1.7113	413.53	17483.	2365.31

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	363.491	615.174	Bbl	3814.1	61.1395	168.20	10493.	1603.0
2 DIESEL	4.333	13.377	Bbl	78.4	1.8541	427.91	18091.	2365.3
4 AES	128.002	2217.901	Bbl	2217.9	3.6671	28.65	17327.	165.3
5 KALAELOA	130.920	187.525	Bbl	1125.2	19.2339	146.91	8594.	1709.4
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	0.0490	249.93	10409.	2401.1

Year: 2009 Month: Nov

System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	655.72			Therml Gen:	655.29	85.9436	131.15
				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	85.9691	131.11
				System Net:		85.9691	131.11
				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	61.7	268.3506	2706.8	1.	0.0000	43.3594	0.0000	161.58
2 Waiau	26.1	88.7664	1026.4	106.	0.0000	16.4879	0.0000	185.74
3 Kalaeloa	87.4	130.9202	1125.2	18.	0.0000	19.2339	0.0000	146.91
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	8.5	6.5686	86.9	27.	0.0000	1.4350	0.0000	218.46
8 CIP	5.1	4.1384	72.4	18.	0.0000	1.7113	0.0000	413.53
9 DG Sub	0.9	0.1959	2.0	9.	0.0000	0.0490	0.0000	249.93

Year: 2009 Month: Nov

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

Off Peak	Shoulder Peak	Priority Peak	Total
27.556265	40.674213	17.712847	85.943321

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
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
2	Honolu 9	54.4	1	137.8	7.96	3.222	43.1	16.	0.	0.0000	0.7126	0.0000	0.0000	206.00	221.18
3	Waiau 3	46.6	1	45.3	4.05	1.406	19.7	8.	0.	0.0000	0.3160	0.0000	0.0000	195.40	224.81
4	Waiau 4	46.6	1	83.0	5.38	1.866	26.8	12.	0.	0.0000	0.4288	0.0000	0.0000	195.99	229.84
5	Waiau 5	54.5	1	347.9	19.57	7.939	104.9	30.	0.	0.0000	1.6804	0.0000	0.0000	195.04	211.66
6	Waiau 6	53.5	1	241.6	13.85	5.516	74.8	25.	0.	0.0000	1.1980	0.0000	0.0000	196.79	217.19
7	Waiau 7	82.9	1	698.6	46.96	28.981	317.7	0.	0.	0.0000	5.0888	0.0000	0.0000	174.92	175.59
8	Waiau 8	86.1	1	696.7	58.29	37.360	392.4	0.	0.	0.0000	6.2859	0.0000	0.0000	167.69	168.25
9	Waiau 9	52.9	1	3.6	0.06	0.025	0.9	1.	0.	0.0000	0.0221	0.0000	0.0000	865.01	875.41
10	Waiau 10	49.9	1	8.5	0.16	0.059	2.1	2.	0.	0.0000	0.0495	0.0000	0.0000	827.43	836.00
11	Kahe 1	82.1	1	720.5	54.10	33.061	344.4	0.	0.	0.0000	5.5165	0.0000	0.0000	166.59	166.86
12	Kahe 2	82.1	1	724.6	59.65	36.456	372.8	0.	0.	0.0000	5.9712	0.0000	0.0000	163.52	163.79
13	Kahe 3	86.1	1	693.1	72.74	46.623	459.9	0.	0.	0.0000	7.3666	0.0000	0.0000	157.55	158.00
14	Kahe 4	85.3	1	695.0	68.51	43.503	442.8	0.	0.	0.0000	7.0924	0.0000	0.0000	162.57	163.03
15	Kahe 5	134.3	1	577.0	62.96	62.943	623.1	1.	0.	0.0000	9.9817	0.0000	0.0000	157.35	158.58
16	Kahe 6	134.4	1	724.6	56.81	56.840	587.5	0.	0.	0.0000	9.4112	0.0000	0.0000	165.29	165.57
17	Kala CC	90.0	1	637.7	83.21	55.750	482.1	8.	0.	0.0000	8.2410	0.0000	0.0000	147.82	147.82
18	Kala CC	90.0	1	730.3	94.48	63.299	549.1	0.	0.	0.0000	9.3865	0.0000	0.0000	148.29	148.29
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
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
21	Kala CC	28.0	1	637.9	63.11	13.154	113.4	8.	0.	0.0000	1.9379	0.0000	0.0000	147.32	147.32
22	CIP1	113.0	1	34.1	1.58	1.330	23.3	6.	0.	0.0000	1.0730	0.0000	0.0000	782.35	806.91
23	DG Sub1	9.8	1	7.3	0.49	0.036	0.4	2.	0.	0.0000	0.0090	0.0000	0.0000	249.93	249.93
24	DG Sub2	9.8	1	5.0	0.34	0.025	0.3	1.	0.	0.0000	0.0062	0.0000	0.0000	249.93	249.93
25	DG Sub3	9.8	1	5.7	0.39	0.028	0.3	2.	0.	0.0000	0.0071	0.0000	0.0000	249.93	249.93
	System					656.356	7475.	122.	0.	0.0000	85.5484	0.0000	0.0000	129.39	130.34

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	83.067	151.013	Bbl	936.3	14.9978	180.55	11271.	1601.85
2 KLSFO	279.426	456.524	Bbl	2830.4	45.3397	162.26	10130.	1601.85
3 HLSFO	3.222	6.958	Bbl	43.1	0.7126	221.18	13389.	1651.96
4 DG SUB	0.089	0.159	Bbl	0.9	0.0223	249.93	10409.	2401.05
5 WDIESEL	0.084	0.517	Bbl	3.0	0.0716	847.78	35842.	2365.31
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	132.204	190.757	Bbl	1144.5	19.5654	147.99	8657.	1709.45
9 BIODIESEL	1.330	4.662	Bbl	23.3	1.0730	806.91	17531.	4602.67
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	365.715	614.495	Bbl	3809.9	61.0501	166.93	10418.	1602.4
2 DIESEL	0.084	0.517	Bbl	3.0	0.0716	847.78	35842.	2365.3
4 AES	131.454	2277.724	Bbl	2277.7	3.7660	28.65	17327.	165.3
5 KALAELOA	132.204	190.757	Bbl	1144.5	19.5654	147.99	8657.	1709.4
6 BIODIESEL	1.330	4.662	Bbl	23.3	1.0730	806.91	17531.	4602.7
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	0.0223	249.93	10409.	2401.1

Year: 2009 Month: Dec

System Energy and Cost Summary

Demand	GWh	Cost M$	Cost $/MWh	Supply	GWh	Cost M$	Cost $/MWh
Load:	656.79			Thermal Gen:	656.36	85.5484	130.34
				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	85.5746	130.29
				System Net:		85.5746	130.29
				LOLH(hr):	0.00		

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	62.2	279.4264	2830.4	2.	0.0000	45.3397	0.0000	162.26
2 Waiau	23.6	83.1515	939.3	78.	0.0000	15.0695	0.0000	181.23
3 Kalaeloa	85.4	132.2036	1144.5	16.	0.0000	19.5654	0.0000	147.99
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	4.0	3.2219	43.1	16.	0.0000	0.7126	0.0000	221.18
8 CIP	1.6	1.3297	23.3	6.	0.0000	1.0730	0.0000	806.91
9 DG Sub	0.4	0.0893	0.9	5.	0.0000	0.0223	0.0000	249.93

Year: 2009 Month: Dec

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

Off Peak	Shoulder Peak	Priority Peak	Total
28.571535	39.493431	17.483110	85.548080

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 Hr1	WDPk Hrn	WEPk Hr1	WEPk Hrn	I26	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
9	DG SUB	2009	1	1

Spot Fuel Summary

ID	NAME	YR	PRD	FuelClass	FuelCost	CmtCost	CostEsc	HeatCont	Sox	CO2	ROG	Other
1	WLSFO	2009	1	1	1601.9	0.0	0.0	6.2	0.0000	0.0000	0.0000	0.0000
2	KLSFO	2009	1	1	1601.9	0.0	0.0	6.2	0.0000	0.0000	0.0000	0.0000
3	HLSFO	2009	1	1	1652.0	0.0	0.0	6.2	0.0000	0.0000	0.0000	0.0000
4	DG SUB	2009	1	9	2401.1	0.0	0.0	5.86	0.0000	0.0000	0.0000	0.0000
5	WDIESEL	2009	1	2	2365.3	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	1709.5	0.0	0.0	6	0.0000	0.0000	0.0000	0.0000
9	BIODIESEL	2009	1	6	4602.7	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	2365.3	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 Resr
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	I26	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	NAME	YR	PRD	Cap1	Cap2	Cap3	Cap4	MinLdHR	HROption	HR1	HR2	HR3	FOR	MOR
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	8.9484000	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	88.2107000	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	19.9000000	34.9000000	49.9000000	0	1	191.3958000	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	89.3444000	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	317.8767817	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	30	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	WDPk Hrl	WDPk Hrn	WEPk Hrl	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	0.22	0.020	0.00	0.0	0.0	0.0	7	1	24	1	24
2	ArcherPV	2009	2	1	8	1	1	0.00	0.22	0.021	0.00	0.0	0.0	0.0	7	1	24	1	24
2	ArcherPV	2009	3	1	8	1	1	0.00	0.22	0.026	0.00	0.0	0.0	0.0	7	1	24	1	24
2	ArcherPV	2009	4	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	5	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	6	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	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	602.1	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	951.0	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	861.0	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	769.0
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	1053.0	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

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	968.0	1003.0	1037.0	1042.0	1059.0	1062.0	1062.0	1066.0	1043.0	1041.0	1115.0	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	1011.0	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	979.0	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	994.0	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	818.7	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	1085.0	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	1038.0	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	703.6	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	682.0	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	686.0	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	691.0	653.0	633.0	623.0	628.0	659.0	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	707.0	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	911.0	794.0
5/19/09	702.0	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	703.0	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	706.0	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	736.0	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	749.5	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	740.0	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	738.0	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	717.0	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	641.0	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	1111.0	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	1018.0	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	887.0	783.0
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	951.0	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	1018.0	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	697.0	688.0	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	695.0	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	1219.0	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	681.0	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	818.0	918.0	982.0	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	716.0	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	968.0	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	686.0	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	1115.0	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	880.0	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	1112.0	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	1128.0	1161.0	1092.0	1016.0	929.0	817.0
11/13/09	735.0	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	1053.0	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	924.0	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	996.0	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	925.2	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	1017.0	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	912.0	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	912.0	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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
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	0.1000	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
3/12/09	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	0.0000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.1000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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	0.0000	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
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	0.0000	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	0.1000	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	0.0000	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

File PTN1.HCP PTN3.HCP PTN5.HCP

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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	19	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	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	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 Update (B)
Total Fuel Oil Expense ($000)	$ 809,058	$ 776,579
Total Fuel Related Expense ($000)	$ 7,596	$ 7,454
Total Fuel Expense ($000)	$ 816,654	$ 784,033
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	3,335.8
Net HECO (GWH)	4,708.0	4,536.1
Central Station	4,702.6	4,532.4
Substation DG	5.4	3.8
Total Central Station Net Heat Rate (BTU/Net KWH)	10,635	10,618
Steam Net Heat Rate (BTU/Net KWH)	10,547	10,551
Diesel Net Heat Rate (BTU/Net KWH)	23,457	23,381
Biodiesel Net Heat Rate (BTU/Net KWH)	19,236	19,271
Total Central Station Sales Heat Rate (BTU/KWH Sales)	0.011185	0.011166

NOTE: TOTALS MAY NOT ADD EXACTLY DUE TO ROUNDING

RATE CASE UPDATE

Ref: R. Cox, HECO T-5, Fuel Price, Fuel Related Expense, and Fuel Inventory

HECO Response:

For HECO T-5, adjustments were made as a consequence of the lower system demand which resulted in a lower fuel consumption volume. The lower volume of fuel consumed from 8,084,105 barrels in direct testimony to 7,773,749 barrels (decrease of 310,356 barrels) reduced fuel purchase expense directly and reduced the fuel trucking, petrospect inspection and Kahe 6 fuel additive expenses which are variable with respect to the volume of fuel consumed. The lower volume of LSFO consumed reduced the LSFO fuel inventory value which is variable with the daily rate of LSFO consumption. A correction in the tax applied to the estimated April 2008 CIP Biodiesel price lowered its after-tax per unit cost and expense amounts referencing this price, including fuel expense and also biodiesel inventory value. Please also refer to HECO T-4 Rate Case Update for discussion about the updated production simulation run and the total reduction to the 2009 test year fuel expense.

CIP BIODIESEL PRICE

The correction in the tax applied to the estimated April 2008 CIP Biodiesel price resulted in a 0.9% reduction in the total after-tax price from $232.0913 to $230.0413 per barrel. The derivation of the corrected CIP Biodiesel price is shown in an updated HECO-WP-502, Page 2 and discussed in HECO's response to CA-IR-173. The corrected price computation was provided in Mr. Ron Cox's rebuttal testimony, HECO RT-2, in the Imperium Biodiesel Supply Contract proceeding, Docket No. 2007-0346 and was deemed Level Two Confidential Information and provided under Protective Order No. 24145 to only the Consumer Advocate and the Commission.

FUEL RELATED EXPENSE

The adjustments in fuel trucking expense, petroleum inspection (Petrospect) expenses and Kahe 6 additive expense reflect the lower volume of fuel consumed during the test year. The total test year fuel related expenses was reduced in aggregate by $141,000 from $7,595,000 in direct testimony to $7,454,000 as shown in the updated HECO-503.

The largest component of the total expense adjustment is the reduction in trucking expense of $133,000. As shown on Page 2 of the updated HECO-503, the trucking cost adjustment is comprised of 1) a reduction of $89,000 in Barbers Point Tank Farm (BPTF) to Iwilei Tank Farm LSFO trucking costs, a result of the lower adjusted consumption of Honolulu Plant of 28,622 barrels; 2) a reduction of $38,000 in trucking for diesel delivered by truck to BPTF reflecting the lower forecast diesel consumption of CIP 1 of 17,627 barrels; and 3) a reduction of $6,000 in trucking cost for diesel delivered to the various Distributed Generation sites reflecting a reduction in their forecast aggregate consumption of 2,871 barrels during the test year.

Total petroleum inspection (Petrospect) expense has been adjusted downwards by $4,000 as shown in Page 3 of the updated HECO-503, which is comprised of 1) a reduction of expense of approximately $4,000 reflecting the 272,978 barrel reduction in LSFO consumption forecast in the test year; and 2) a reduction in expense of approximately $1,000 reflecting the 14,989 barrels reduction in diesel consumption at Waiau Plant where diesel is assumed to be delivered in bulk by pipeline.

The approximate $4,000 reduction in Kahe 6 fuel additive expense is a reflection of the reduction in Kahe 6 annual generation and correspondingly lower forecast fuel consumption of that unit by 1,561,167 gallons as shown in the updated HECO-WP-512. This in turn reduced the forecast amount of fuel additive expense by approximately 391 gallons, each priced at $9.039 per gallon.

FUEL INVENTORY

The average annual total fuel inventory declines by $2,638,000, from $82,683,000 in direct testimony to $80,045,000 as shown in the updated HECO-505. This decline in inventory value reflects a reduction in the average annual LSFO inventory of $2,609,000, due primarily to a reduced number of average barrels, and to a lesser extent, due to a slight reduction in the average residual oil price per unit as shown in HECO-505, Page 1. A decline in average annual inventory value of $60,000 reflects the revaluing of the end-year CIP 1 Biodiesel inventory with the corrected lower Biodiesel price per unit.

Of the total reduction in LSFO inventory value, about $2,609,000 is a result of the reduction of the average annual LSFO inventory volume by 26,177 barrels, which is the result of a decline in system LSFO consumption of approximately 748 barrels per day multiplied by 35, the number of days of consumption in inventory as shown in the updated HECO-506. The balance of the adjustment is due to a slight reduction in the average residual fuel oil price (from $99.4545 in direct testimony to $99.4475), derived in updated HECO-505, lines 8, 9 and 10. The reduction in the average residual fuel oil price reflects a reduced weighting of Honolulu Plant LSFO consumption, which has a relatively higher cost due to the addition of trucking expense, from 4.09% to 3.86%, in the test year total LSFO consumption as shown in the updated HECO-503, Page 2.

As part of this filing, HECO T-5 is submitting a complete set of its exhibits and workpapers which contains both updated exhibits and workpapers and those that have not changed from direct testimony. Exhibits and workpapers that have been updated are labeled as "UPDATED" (e.g., HECO-501(UPDATED).

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	296,275	99.3149	$ 29,424
2.	Kahe	5,454,167	99.3149	$ 541,680
3.	Waiau-Steam	1,919,955	99.3149	$ 190,680
4.	Subtotal	7,670,397		$ 761,785
5.	Waiau-Diesel	34,059	138.6074	$ 4,721
6.	CIP-Diesel	57,465	138.6074	$ 7,965
7.	Subtotal	91,524		$ 12,686
8.	Biodiesel	5,128	230.0413	$ 1,180
9.	Central Station Total	7,767,049		$ 775,650
10	Substation DG	6,700	138.6074	$ 929
11	Grand Total	7,773,749		$ 776,579
		Composite Fuel Price		99.8976 $/bbl

[1] See HECO-502 (UPDATED) and HECO-WP-502 (UPDATED), PAGE 2.

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	296,275	102.4340	$ 30,349
2.	Kahe	5,454,167	99.3275	$ 541,749
3.	Waiau-Steam	1,919,955	99.3275	$ 190,704
4.	Subtotal	7,670,397		$ 762,801
5.	Waiau-Diesel	34,059	138.6497	$ 4,722
6.	CIP-Diesel	57,465	140.7616	$ 8,089
7.	Subtotal	91,524		$ 12,811
8.	Biodiesel	5,128	230.0413	$ 1,180
9.	Central Station Total	7,767,049		$ 776,792
10.	Substation DG	6,700	140.7018	$ 943
11.	Grand Total	7,773,749		$ 777,735
		Composite Fuel Price		100.0463 $/bbl

[1] See HECO-502 (UPDATED).

Page 6 contains confidential information and is being provided

subject to Protective Order, filed on November 21, 2008.

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**	$ 1,058	HECO-503 (UPDATED), Page 2
3.	**Petrospect Expenses**	$ 98	HECO-503 (UPDATED), Page 3; HECO-WP-503
4.	**Kahe 6 Fuel Additive Expense**	$ 101	HECO-WP-512 (UPDATED)
5.	**Total**	$ 7,454	

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	296,275	3.1065	$ 920
2.	Kahe	5,454,167	-	$ -
3.	Waiau-Steam	1,919,955	-	$ -
4.	Subtotal	7,670,397		$ 920
5.	Waiau-Diesel	34,059	-	$ -
6.	CIP-Diesel	57,465	2.1542	$ 124
7.	Biodiesel	5,128	-	$ -
8.	Subtotal	96,653		$ 124
9.	Central Station Total	7,767,049		$ 1,044
10.	Substation DG	6,700	2.0944	$ 14
11.	Grand Total	7,773,749		$ 1,058

[1] See HECO-502, Line 6; HECO-502 (UPDATED), Line 7.

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	296,275	0.0126	$ 4
2.	Kahe	5,454,167	0.0126	$ 69
3.	Waiau-Steam	1,919,955	0.0126	$ 24
4.	Subtotal	7,670,397		$ 96
5.	Waiau-Diesel	34,059	0.0423	$ 1
6.	CIP-Diesel	57,465	-	$ -
7.	Biodiesel	5,128	-	$ -
8.	Subtotal	96,653		$ 1
9.	Central Station Total	7,767,049		$ 98
10.	Substation DG	6,700	-	$ -
11.	Grand Total	7,773,749		$ 98

[1] See HECO-502, Line 8; HECO-502 (UPDATED), Line 9 and HECO-WP-503.

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**	735,517	99.4475	$	73,145
2.	**Diesel Oil**	31,624	139.0914	$	4,399
3.	**TOTAL INVENTORY**	**767,141**		**$**	**77,544**
	End of Year With CIP1:				
4.	**Residual Fuel Oil**	735,517	99.4475	$	73,145
5.	**Diesel Oil**	19,144	139.3794	$	2,668
6.	**Biodiesel**	29,266	230.0413	$	6,732
7.	**TOTAL INVENTORY**	**783,927**		**$**	**82,546**
7A.	**AVERAGE ANNUAL TOTAL INVENTORY**	**775,534**		**$**	**80,045**
	AVERAGE RESIDUAL FUEL OIL PRICE				
8.	Residual Fuel Oil Expense (HECO-501 (UDPATED) , p. 2, Line 4, Column C)			$	762,801
9.	Barrels of Residual Fuel Oil (HECO-501 (UPDATED), p. 2, Line 4, Column A)				7,670,397
10.	Average Price per Barrel (Line 8 ÷ Line 9)			$	99.4475
	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)			$	138.6497
16.	BP Diesel Oil Price (HECO-501, Page 2, Line 6, Column B)			$	140.7616
17.	Substation DG Diesel Oil Price (HECO-501, Page 2, Line 10, Column B)			$	140.7018
18.	No BP-CT Waiau CT Diesel Oil Inventory Value (Line 11 * Line 15)			$	3,460,835
19.	With BP-CT Waiau CT Diesel Oil Inventory Value (Line 12 * Line 15)			$	1,730,417
20.	BP Diesel Oil Inventory Value (Line 13 * Line 16)			$	696,770
21.	Substation DG Diesel Oil Inventory Value (Line 14 * Line 17)			$	241,022
22.	No BP-CT Total Diesel Inventory Value (Line 18 + Line 20 + Line 21)			$	4,398,627
23.	With BP-CT Total Diesel Inventory Value (Line 19 + Line 20 + Line 21)			$	2,668,209
24.	No BP-CT Diesel Inventory Average Value (Line 22/Line 2, Column A)			$	139.0914
25.	With BP-CT Diesel Inventory Average Value (Line 23/Line 5, Column A)			$	139.3794
	AVERAGE BIODIESEL PRICE				
26.	Biodiesel Expense (HECO-501 (UPDATED), p. 2, Line 8, Column C)			$	1,180
27.	Barrels of Biodiesel (HECO-501 (UPDATED), p. 2, Line 8, Column A)				5,128
28.	Average Price per Barrel (Line 26/Line 27)			$	230.0413

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

Hawaiian Electric Company, Inc.

DERIVATION OF RESIDUAL FUEL OIL INVENTORY

Line				
1.	**Forecast Residual Fuel Oil Consumption**[1]		7,670,397	Barrels
2.	**Burn Rate (Line 1 / 365 days)**		21,015	Barrels/Day
3.	**35 Day Inventory (Line 2 X 35 days)**		735,517	Barrels
4.	**Fuel Price**[2]	$	99.4475	$/Barrel
5.	**Residual Fuel Oil Inventory (Line 3 x Line 4)**	$	73,145	$000

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

HECO-507, PAGE 1 OF 2 - SAME AS DIRECT TESTIMONY

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).

HECO-507, PAGE 2 OF 2 - SAME AS 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

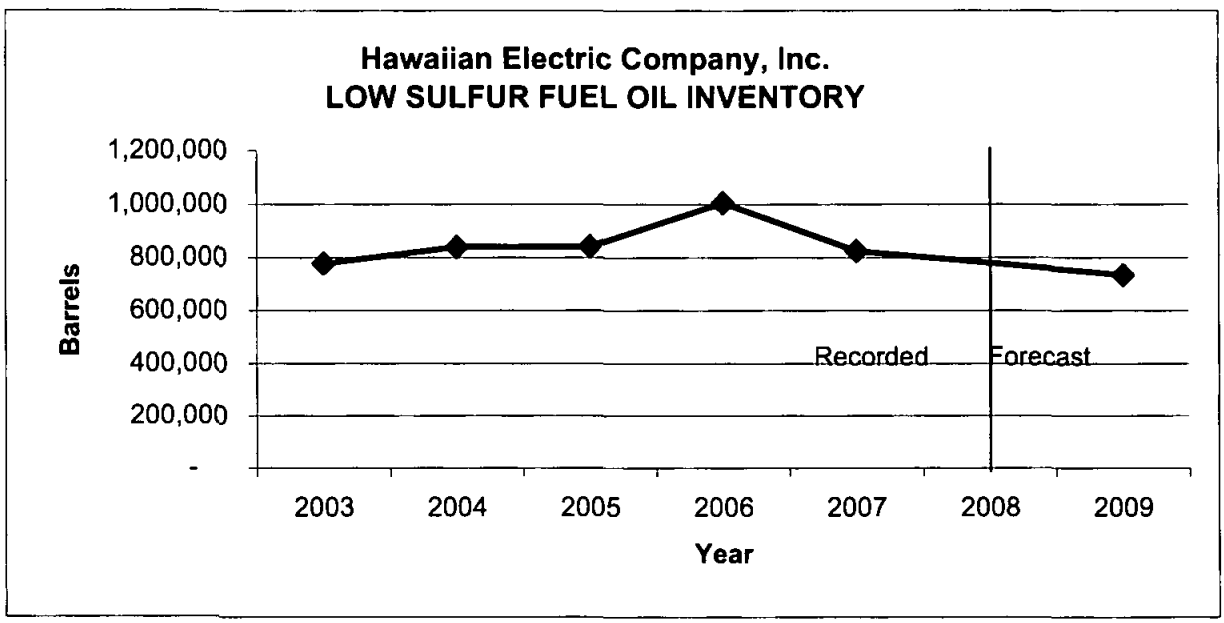
[1] Average month end inventory for emergency pipeline displacement since tank fill start in 2/2005.
[2] Average month end inventory since full build out (5/2007 - 4/2008).

HECO-508, PAGE 1 OF 1 - SAME AS 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

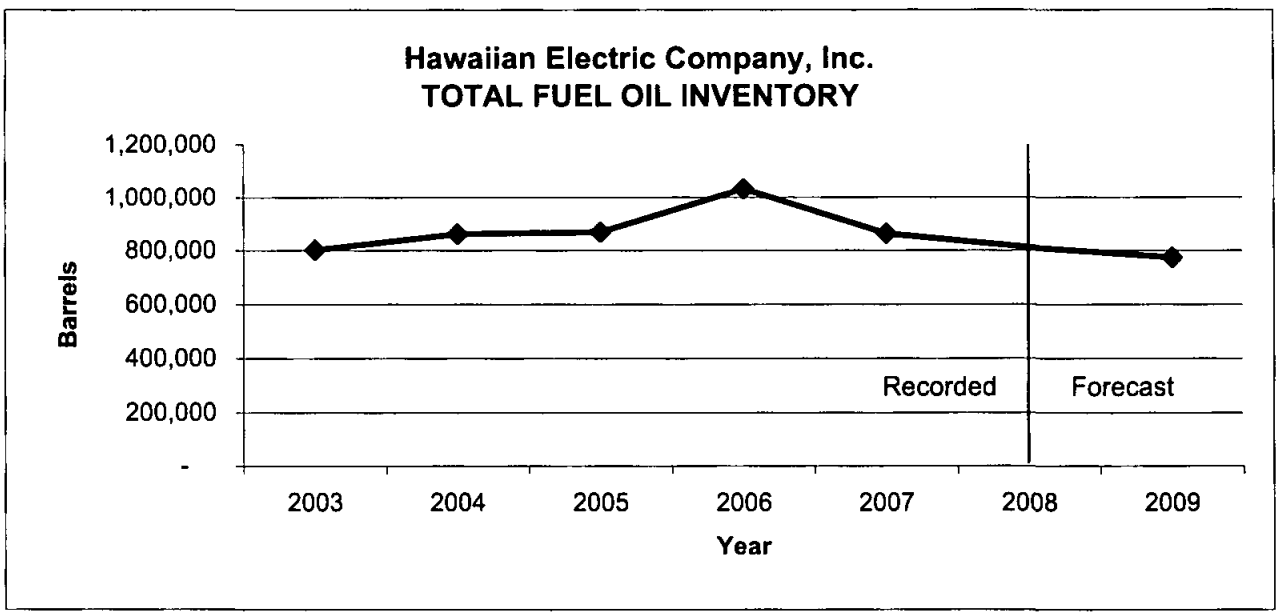


HECO-509, PAGE 1 OF 1 - SAME AS DIRECT TESTIMONY

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 - HECO T-5, November 2008 Update
TEST YEAR 2009

Header	Page	Description
HECO-501(UPDATED)	1	DERIVATION OF FUEL EXPENSE (Contract Fuel Prices)
HECO-501 (UPDATED)	2	DERIVATION OF FUEL EXPENSE (Incl. Trucking & Petrospect Costs)
HECO-502 (UPDATED)	1	CONFIDENTIAL - FUEL PRICES FOR 2009 TEST YEAR
HECO-503 (UPDATED)	1	TEST YEAR FUEL RELATED EXPENSES
HECO-503 (UPDATED)	2	DERIVATION OF FUEL EXPENSE (Trucking Costs)
HECO-503 (UPDATED)	3	DERIVATION OF FUEL EXPENSE (Petrospect Costs)
HECO-504	1	TEST YEAR FUEL HANDLING EXPENSES
HECO-505 (UPDATED)	1	TEST YEAR FUEL INVENTORY
HECO-506 (UPDATED)	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 (UPDATED)	1	Index
HECO-WP-502	1	CONFIDENTIAL - HECO FUEL PRICES
HECO-WP-502 (UPDATED)	2	CONFIDENTIAL LEVEL 2 - BIODIESEL PRICE COMPUTATION
HECO-WP-503	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 (UPDATED)	1	Derivation of Calcium Nitrate Additive Expense For Kahe Unit 6

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

Pages 18 to 20 contain confidential information and are being provided

subject to Protective Order, filed on November 21, 2008.

HECO-WP-504, PAGE 1 OF 1 - SAME AS 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

HECO-WP-505, PAGE 1 OF 1 - SAME AS 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

HECO-WP-506, PAGE 1 OF 1 - SAME AS 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

HECO-WP-507, PAGE 1 OF 1 - SAME AS 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

HECO-WP-508, PAGE 1 OF 1 - SAME AS 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

HECO-WP-509, PAGE 1 OF 1 - SAME AS 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

HECO-WP-510, PAGE 1 OF 2 - SAME AS 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

HECO-WP-510, PAGE 2 OF 2 - SAME AS 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

HECO-WP-511, PAGE 1 OF 1 - SAME AS 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 632,280 MWH, and the estimated annual fuel usage at Kahe 6 of 6,603,544 MBTU.

The annual fuel usage in gallons is calculated to be:
6,603,544 MBTU ÷ 6.2 MBTU per bbl x 42 gallons per bbl
= 44,733,685 gallons of Fuel Oil

Fuel additive usage is 1 gallon of additive per 4000 gallons of Fuel Oil

Estimated annual fuel additive usage:
44,733,685 ÷ 4000 = **11,183 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 11,183 = $61,618

b) tax = $61,618 x 4.5% = $2,773

c) materials on-cost is 10.53%
($61,618+ $2,773) x 10.53% = $6,780

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
11,183 gallons x $2.675 = $29,915

The total estimated annual cost of the fuel additive is:
$61,618 + $2,773 + $6,780 + $29,915 = **$101,086**

per gallon: **$9.039**

RATE CASE UPDATE

Ref: D. Ching, HECO T-6, Purchased Power Expense

HECO Response:

For HECO T-6, adjustments were made to decrease the 2009 test year total purchased power expense from $477,055,480 to $474,819,264 or a total reduction of $2,236,216. See HECO T-6 Rate Case Update, page 4. The expense reduction is comprised of 1) a decrease of $2,184,838 to energy payments, and 2) a decrease of $51,378 to capacity payments. The updated test year estimate of energy purchases from independent power producers ("IPPs") decreases from 3,345 GWh to 3,335 GWh (or a total reduction of 10 GWh) and is derived from HECO's updated production simulation dated October 9, 2008 ("October 2008") . The updated production simulation is based on HECO's revised September 2008 Sales and Peak Forecast which reflects a lower sales projection for the 2009 test year. Please refer to HECO T-2 and HECO T-4 Rate Case Updates for further discussions on HECO's updated Electricity Sales and Customer Forecasts, and production simulation, respectively. See also HECO T-6 Rate Case Update, page 5 for a comparison of the 2009 test year purchased energy forecast at direct versus the rate case update.

ENERGY PAYMENTS

HECO's total energy payments for the 2009 test year rate case update are estimated to reduce from $369,123,533 to $366,938,695. See HECO T-6 Rate Case Update, page 4. The decrease of $2,184,838 from direct testimony resulted primarily from decreases of $1,485,428 to Kalaeloa's energy payment and $785,531 to H-POWER's energy payment, offset by an increase of $101,253 to AES Hawaii's energy payment. See HECO T-6 Rate Case Update, page 7 for the breakdown of the 2009 test year estimated energy payments to each IPP.

For Kalaeloa, the October 2008 production simulation run dispatched Kalaeloa 10 GWh less than in the May 2008 run for direct testimony purposes. This purchased GWh energy reduction offset by a slight increase to the Gross National Product Implicit Price Deflator ("GNPIPD") escalator, resulted in the decreased Kalaeloa energy payment. See HECO T-6 Rate Case Update, pages 11-13 for calculations for Kalaeloa purchased energy payment, and capacity payment as discussed below.

For AES-Hawaii, there was no increase in MWH purchased in the October 2008 production simulation run as compared to the May 2008 run. However, there was a slight increase to the GNPIPD escalator, which resulted in the increased AES-Hawaii energy payment. See HECO T-6 Rate Case Update, pages 14-17 for calculations for AES-Hawaii purchased energy payment, and capacity payment as discussed below.

For H-POWER, there was no increase in MWH purchased in the October 2008 production simulation run as compared to the May 2008 run. However, there was a slight increase to the off-peak energy payment rate which was offset by a slightly greater decrease to the on-peak energy payment rate, which resulted in the decreased H-POWER energy payment. See HECO T-6 Rate Case Update, pages 18-21 for calculations for H-Power purchased energy payment, and capacity payment as discussed below.

CAPACITY PAYMENTS

HECO's total firm capacity payments for the 2009 test year rate case update are estimated to reduce from $107,931,947 to $107,880,569. See HECO T-6 Rate Case Update, page 4. The decrease of $51,378 from direct testimony resulted from the projected decrease in bonus payment to AES-Hawaii of $59,447 offset by an increase in capacity payments to H-Power of $8,069. Capacity

payments to Kalaeloa and AES-Hawaii did not change from direct testimony and remained at $32,719,000 and $67,454,079, respectively. See HECO T-6 Rate Case Update, page 8.

H-POWER capacity payment increased by $8,069 from $6,716,935 to $6,725,004 due to a slightly higher forecast of contract availability. For the AES-Hawaii bonus payment, the $59,447 decrease from $1,041,933 to $982,486 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.

Hawaiian Electric Company, Inc.

TOTAL PURCHASED POWER EXPENSES
Recorded 2007, 2009 Test Year Estimate @ Direct and Rate Case Update
(In Dollars)

	Reference	2007 Recorded	2009 Test Year Estimate @ Direct	Adjustment	2009 Test Year Estimate @ Rate Case Update
Energy Payments	HECO-607	$261,963,245	$369,123,533	-$2,184,838	$366,938,695
Firm Capacity Payments	HECO-608	$106,847,767	$107,931,947	-$51,378	$107,880,569
Total Purchased Power Expenses		$368,811,012	$477,055,480	-$2,236,216	$474,819,264

Note:
[illegible]als 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 @ Rate Case Update (GWh)
As-available			
1. Chevron USA (Note 2)	1	0	1
2. Tesoro (Note 2)	4	0	4
3. Hoku Solar (Note 3)	0	0	0
Subtotal	5	0	5
Firm Power			
1. H-POWER	331	0	331
2. Kalaeloa	1,480	-10	1,470
3. AES Hawaii	1,529	0	1,529
Subtotal	3,340	-10	3,331
TOTAL TEST YEAR PURCHASED ENERGY (GWh)	3,345	-10	3,335

Notes:

1. Totals may not add due to rounding.
2. Refer to HECO-604.
3. Refer to HECO-605.

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 @ Rate Case Update
As-available	8	4	4	5	4	5	0	5
Firm Energy	3,232	3,205	3,379	3,245	3,235	3,340	-10	3,331
Total	3,240	3,208	3,383	3,250	3,238	3,345	-10	3,335

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 @ Rate Case Update
Kalaeloa- Fuel	137,723	219,439	-1,426	218,013
Additive	2,283	2,492	-13	2,479
Non-Fuel	20,079	22,074	-46	22,028
Shortfall	0	0	0	0
Total	160,084	244,005	-1,485	242,520
AES Hawaii- Fuel	41,302	43,880	60	43,940
O&M	28,165	29,838	41	29,879
Total	69,466	73,718	101	73,819
H-POWER- Energy	31,930	50,476	-786	49,691
Other				
Chevron	2	129	-2	127
Tesoro	482	737	-13	724
Hoku Solar	0	58	0	58
Total	483	924	-15	909
Total Energy	261,963	369,124	-2,185	366,939

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 @ Rate Case Update
Kalaeloa	32,719	32,719	0	32,719
AES Hawaii	66,772	67,454	0	67,454
H-POWER	6,200	6,717	8	6,725
AES Hawaii bonus	1,157	1,042	-59	982
TOTAL	106,848	107,932	-51	107,881

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 APRIL 1, 2008

Line		On-Peak	Off-Peak	
(1)	Avoided Fuel Cost	19.347	14.797	¢/kwh
(2)	Avoided O&M Cost	0.168	0.024	¢/kwh
(3)	Avoided Working Cash	0.181	0.137	¢/kwh
(4)	Avoided Fuel Inventory	0.130	0.130	¢/kwh
(5)	Total Avoided Energy Cost Rates	19.826	15.088	¢/kwh

Total Weighted Avoided energy Cost Rate*	17.852	¢/kwh

* Weighted 14/24 On-peak, 10/24 Off-peak

Hawaiian Electric Company, Inc.

DERIVATION OF SCHEDULE Q PAYMENT RATES

Schedule "Q" Rate - Under 100 KW

Line		On-Peak	Off-Peak	
(1)	Avoided Fuel Cost	19.347	14.797	¢/kwh
(2)	Avoided O&M Cost	0.168	0.024	¢/kwh
(3)	Power Factor Adjustment	-0.120	-0.280	¢/kwh
(4)	Pre Time-Weighted "Q" Payment Rate (line 1 + 2 + 3)	19.395	14.541	¢/kwh
(5)	Hour Weighting	14/24	10/24	Hours/Hours
(6)	Time-weighted Peak Time-Related Schedule "Q" Energy Payment Rate (line 4 x 5)	11.31	6.06	¢/kwh
(7)	Time-weighted "Q" ON PEAK Payment Rate	11.31	¢/kwh	
(8)	Time-weighted "Q" OFF PEAK Payment Rate	6.06	¢/kwh	
(9)	Schedule "Q" Energy Payment Rate (line 7 + 8)	17.37	¢/kwh	
(10)	Base 2005 Schedule "Q" Energy Payment	10.63	¢/kwh	
(11)	Difference between 2009 Test Year November 2008 Update and Base Sch "Q" Rates (line 9 - 10)	6.74	¢/kwh	

Note

Calculations based on:

Docket No. 7310 - *Instituting a Proceeding to Investigate the Proxy Method* and the Proxy Method Formula Used to Calculate Avoided Energy Costs and Schedule Q Rates of the Electric Utilities in the State of Hawaii

Updated Stipulation and Decision Order No. 24086 dated 3/11/08.

Worksheet Modified: 18-Jun-08
Latest Data Input: 21-Oct-08
Print: 26-Nov-08

Kalaeloa 2009 Rate Case Forecasted Expenses
10/9/2008 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	123.063
4Q 2008 GNPIPD	123.063	O&M (Non-fuel) Base per kWh, up to minimum purc	$0.0096	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	$0.0006	Variable O&M credit applied to	May
2009 LSFO Fuel Pric	$102.5670	< 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	9,840	109	90.000	121,121	624	194.258	98.50%	98.50%	130,961	$19,309,177	$220,796	$19,529,973	$2,092,367			$2,465,250	$261,333	$24,348,923
Feb	8,510	95	90.000	111,952	567	197.320	98.50%	98.50%	120,462	$17,748,624	$203,095	$17,951,719	$1,924,624			$2,465,250	$261,333	$22,602,926
Mar	9,308	103	90.000	119,927	629	190.537	98.50%	98.50%	129,235	$19,045,354	$217,886	$19,263,240	$2,064,790			$2,465,250	$261,333	$24,054,613
Apr	40,513	450	90.000	15,422	82	188.636	44.60%	85.02%	55,935	$9,090,180	$94,305	$9,184,485	$893,675			$2,465,250	$261,333	$12,804,743
May	27,659	307	90.000	80,934	402	201.389	80.49%	84.09%	108,593	$16,463,899	$183,084	$16,646,983	$1,734,993	($1,466,126)		$2,465,250	$261,333	$19,642,434
Jun	8,510	95	90.000	122,498	615	199.300	98.50%	86.48%	131,008	$19,285,152	$220,875	$19,506,028	$2,093,117			$2,465,250	$261,333	$24,325,728
Jul	8,778	98	90.000	127,034	635	199.951	98.50%	88.24%	135,810	$19,990,967	$228,971	$20,219,939	$2,169,839			$2,465,250	$261,333	$25,116,361
Aug	10,372	115	90.000	125,441	618	203.112	98.50%	89.55%	135,813	$20,028,451	$228,977	$20,257,428	$2,189,887			$2,465,250	$261,333	$25,153,898
Sep	8,510	95	90.000	123,143	615	200.349	98.50%	90.53%	131,653	$19,379,127	$221,963	$19,601,090	$2,103,423			$2,465,250	$261,333	$24,431,096
Oct	12,500	139	90.000	115,378	573	201.264	92.15%	90.70%	127,878	$18,921,735	$215,598	$19,137,334	$2,043,109			$2,465,250	$261,333	$23,907,026
Nov	9,308	103	90.000	121,612	606	200.754	98.50%	91.40%	130,920	$19,290,854	$220,727	$19,511,581	$2,091,712			$2,465,250	$261,333	$24,329,876
Dec	8,510	95	90.000	123,693	638	193.790	98.50%	92.00%	132,203	$19,459,261	$222,890	$19,682,151	$2,112,210			$2,465,250	$261,333	$24,520,945
Total	162,318	1,804	90.000	1,308,153	6,603	198.102		92.00%	1,470,471	$218,012,781	$2,479,169	$220,491,950	$23,493,745	($1,466,126)	$0	$29,583,000	$3,136,000	$275,238,569

Total Shortfall Cost $0

Total Expense $275,238,569

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 1/1/88 per the Kalaeloa PPA, p50. This value is the 4th quarter 1987 GNPIPD as updated per Bureau of Economic Analysis publication as of March 27, 2008. Value is consistent with the June 30, 2003 letter agreement with KPLP.
3. 4Q 2008 GNPIPD in cell E(10) is based on the GDP Chain-type Price Index escalation per Energy Information Administration / AEO 2008 (Table A19, Macroeconomic Indicators) from the Internet. (http://www.eia.doe.gov/oiaf/aeo/pdf/appa.pdf.).
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 A. Goto 5/23/2008 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, in 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 Analysis publication as of March 27, 2008.
12. The additive transition multiplier in cell R(10) is from the Kalaeloa PPA Amendment 5, p. 7
13. 4Q 2008 Current Additive GNPIPDin 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 10/9/08.
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)) .* 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.
26. 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).

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Wo[illegible] Modified: 18-Jun-08
Latest Data Input: 27-May-08
Print: 26-Nov-08

Kalaeloa 2009 Rate Case Forecasted Expenses
10/9/2008 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	17.060035	$1,662,143	$16,590	$1,678,733	2.770000	14.738371	$17,647,034	$204,206	$17,851,240
Feb	28	0.00	10.08	3.211394	17.060035	$1,437,529	$14,348	$1,451,877	2.770000	14.738371	$16,311,095	$188,747	$16,499,842
Mar	31	0.00	11.16	3.211394	17.060035	$1,572,297	$15,693	$1,587,991	2.770000	14.738371	$17,473,058	$202,193	$17,675,249
Apr	30	394.00	4.89	3.211394	17.060035	$6,843,237	$68,304	$6,911,540	2.770000	14.738371	$2,246,943	$26,001	$2,272,944
May	31	136.00	9.12	3.211394	17.060035	$4,671,969	$46,632	$4,718,601	2.770000	14.738371	$11,791,930	$136,453	$11,928,382
Jun	30	0.00	10.80	3.211394	17.060035	$1,437,529	$14,348	$1,451,877	2.770000	14.738371	$17,647,623	$206,527	$18,054,150
Jul	31	0.00	11.16	3.211394	17.060035	$1,482,452	$14,797	$1,497,248	2.770000	14.738371	$18,508,516	$214,175	$18,722,690
Aug	31	0.00	11.16	3.211394	17.060035	$1,751,988	$17,487	$1,769,475	2.770000	14.738371	$18,276,463	$211,490	$18,487,952
Sep	30	0.00	10.80	3.211394	17.060035	$1,437,529	$14,348	$1,451,877	2.770000	14.738371	$17,941,598	$207,615	$18,149,213
Oct	31	48.00	10.44	3.211394	17.060035	$2,111,371	$21,074	$2,132,445	2.770000	14.738371	$16,810,365	$194,524	$17,004,889
Nov	30	0.00	10.80	3.211394	17.060035	$1,572,297	$15,693	$1,587,991	2.770000	14.738371	$17,718,557	$205,034	$17,923,591
Dec	31	0.00	11.16	3.211394	17.060035	$1,437,529	$14,348	$1,451,877	2.770000	14.738371	$18,021,732	$208,542	$18,230,274
Total	365	578	122.73			$27,417,869	$273,663	$27,691,533			$190,594,912	$2,205,505	$192,800,417

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	1,470.471	GWh
Shortfall	(133.765)	GWh
O&M Base Shortfall Cost	$0	
Fuel Shortfall Cost	$0	
Total Shortfall Cost	$0	

ABOVE MINIMUM PURCHASE

133,765	MWH	
108,593	MWH	May 2009
25,172	MWH	Part of April 2009

	Energy (MWh at < 180 MW	Energy (MWH) at >= 180 MW	Total
May	37,347	71,139	108,486
			-
May subtotal	37,347	71,139	108,486
			-
April 12-30	24,166	0	24,166
April 11 (partial day	1,080	0	1,080
April subtotal	25,246	0	25,246
			-
March			-
			-
March subtotal	0	0	-
Total	62,593	71,139	133,732

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 10/9/08. The monthly totals may differ from respective cells in A:K due to minor roundoffs.

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		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	1.166			
	2		1.00486		
	3		1.00486		
	4		1.00486		
2007	1		1.00486		
	2		1.00486		
	3		1.00486		
	4		1.00486		
2008	1		1.00486		
	2		1.00486	121.876	(121.876 is actual***)
	3		1.00486	122.468	
	4		1.00486	123.063	
2009	1		1.00486	123.661	
	2		1.00486	124.261	
	3		1.00486	124.865	
	4		1.00486	125.472	
2010	1	1.260	1.00486	126.081	
	2		1.00438	126.633	
	3		1.00438	127.187	
	4		1.00438	127.744	
2011	1		1.00438	128.303	
	2		1.00438	128.864	
	3		1.00438	129.428	
	4		1.00438	129.995	
2012	1		1.00438	130.564	
	2		1.00438	131.135	
	3		1.00438	131.709	
	4		1.00438	132.286	
2013	1		1.00438	132.865	
	2		1.00438	133.446	
	3		1.00438	134.030	
	4		1.00438	134.617	
2014	1		1.00438	135.206	
	2		1.00438	135.798	
	3		1.00438	136.392	
	4		1.00438	136.989	
2015	1	1.375	1.00438	137.588	

* GDP Chain-Type Price Index per Energy Information Administration / Annual Energy Outlook 2008 (Table A19, Macroeconomic Indicators) from the Internet (http://www.eia.doe.gov/oiaf/aeo/pdf/appa.pdf; visited site on 3/10/2008).
Assumed GDP Chain-Type Price Index is for the first quarter of the year.

** e.g., (1.260/1.166)^(1/16) = 1.00486

*** Second quarter 2008 final GNPIPD (2000=100) of 121.876 is from the Bureau of Economic Analysis on 9/26/2008.

AES base GNPIPD=First Quarter 1987 GNPIPD = 72.465 (2000=100), based on 9/26/2008 BEA information.

Workbook Modified: 12-Aug-06
Latest Data Input: 20-Oct-08
Print: 26-Nov-08

AES Hawaii, Inc. 2009 Operational/Budget Forecasted Expenses
10/9/2008 Production Simulation Update

Assumptions:

Forced Outage Rate	1.50%	3rd Q 2008 GNPIPD	122.468
Base GNPIPD	72.465	1st Q 2009 GNPIPD	123.661
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	$3,775,596	$111,704	$2,452,272	$5,816,624	$12,156,197
Feb	14,893	165	90.000	89,240	496	179.839	86.19%	92.66%	104,133	$2,998,498	$87,994	$1,938,086	$4,597,010	$9,621,588
Mar	8,510	95	90.000	114,740	637	180.142	92.15%	92.48%	123,250	$3,534,270	$104,148	$2,294,061	$5,441,358	$11,373,837
Apr	0	0	0.000	128,261	713	179.990	98.50%	93.99%	128,261	$3,663,311	$108,382	$2,373,167	$5,628,991	$11,773,852
May	0	0	0.000	131,717	732	179.990	98.50%	94.91%	131,717	$3,762,020	$111,303	$2,452,272	$5,816,624	$12,142,219
Jun	0	0	0.000	127,310	707	179.994	98.50%	95.51%	127,310	$3,636,153	$107,579	$2,373,167	$5,628,991	$11,745,890
Jul	0	0	0.000	131,976	733	180.000	98.50%	95.94%	131,976	$3,806,146	$112,608	$2,476,161	$5,816,624	$12,211,539
Aug	0	0	0.000	132,365	735	179.990	98.50%	96.27%	132,365	$3,817,355	$112,940	$2,476,161	$5,816,624	$12,223,080
Sep	0	0	0.000	126,965	705	179.990	98.50%	96.52%	126,965	$3,661,621	$108,332	$2,396,284	$5,628,991	$11,795,229
Oct	0	0	0.000	131,847	733	179.996	98.50%	96.72%	131,847	$3,802,421	$112,498	$2,476,161	$5,816,624	$12,207,704
Nov	0	0	0.000	128,002	711	180.006	98.50%	96.88%	128,002	$3,691,542	$109,217	$2,396,284	$5,628,991	$11,826,035
Dec	0	0	0.000	131,454	730	180.000	98.50%	97.02%	131,454	$3,791,091	$112,163	$2,476,161	$5,816,624	$12,196,039
Total	23,404	260	90.000	1,506,068	8,367	179.998		97.02%	1,529,472	$43,940,024	$1,298,869	$28,580,237	$67,454,079	$141,273,209

Bonus: $982,486

Total Expense: $142,255,695

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, Amendmer 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 based on the GDP Chain-Type Price Index escalation per *Energy Information Administration / Annual Energy Outlook2008 (Table A19,* Macroeconomic Indicators) from the Internet (http://www.eia.doe.gov/oiaf/aeo/pdf/appa.pdf).
6. 1st Q 2009 GNPIPD in cell K(10) is determined in same manner as presented in note above.
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 10/92008.
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: 20-Oct-08
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AES Hawaii, Inc. 2009 Operational/Budget Forecasted Expenses
10/9/2008 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	1.690030	0.000000	$0	1.689997	$3,775,596
Feb	28	84	8.82	104,252	1.690030	1.786989	$449,784	1.689928	$2,548,714
Mar	31	48	10.44	123,401	1.690030	1.786989	$257,020	1.690059	$3,277,250
Apr	30	0	10.80	127,656	1.690030	0.000000	$0	1.689993	$3,663,311
May	31	0	11.16	131,911	1.690030	0.000000	$0	1.689993	$3,762,020
Jun	30	0	10.80	127,656	1.690030	0.000000	$0	1.689995	$3,636,153
Jul	31	0	11.16	131,911	1.706493	0.000000	$0	1.689997	$3,806,146
Aug	31	0	11.16	131,911	1.706493	0.000000	$0	1.689993	$3,817,355
Sep	30	0	10.80	127,656	1.706493	0.000000	$0	1.689993	$3,661,621
Oct	31	0	11.16	131,911	1.706493	0.000000	$0	1.689995	$3,802,421
Nov	30	0	10.80	127,656	1.706493	0.000000	$0	1.690000	$3,691,542
Dec	31	0	11.16	131,911	1.706493	0.000000	$0	1.689997	$3,791,091
Total	365	132	129.42	1,529,744			$706,804		$43,233,220

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.

page 3 of 3 (BONUS sheet)

Workbook Modified:	12-Aug-06
Latest Data Input:	20-Oct-08
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AES Hawaii, Inc. 2009 Operational/Budget Forecasted Expenses
10/9/2008 Production Simulation Update
AES Availability Bonus

Two Year Running Avg.
Equivalent Availability Factor (EAF): 95.93%

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)	123.661	
GNPIPD base	72.465	
GNPIPD Adjustment Factor	1.7065	
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)	4.8426	cents/kWh
((C+U)/(C+E))	0.783308148	
EAF > 91% (truncated to nearest 0.1%)	4.9%	
Bonus uncorrected	$735,000	
Bonus Corrected	**$982,486**	

Workbook Modified: 12-Aug-06
Latest Data Input: 20-Oct-08
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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	131,911,200	98.50%	98.50%
Nov-08	129,600,000	127,656,000	98.50%	98.50%
Dec-08	133,920,000	131,911,200	98.50%	98.50%
Jan-09	133,920,000	131,911,200	98.50%	98.50%
Feb-09	120,960,000	104,252,400	86.19%	96.22%
Mar-09	133,920,000	123,400,800	92.15%	95.52%
Apr-09	129,600,000	127,656,000	98.50%	95.94%
May-09	133,920,000	131,911,200	98.50%	96.27%
Jun-09	129,600,000	127,656,000	98.50%	96.52%
Jul-09	133,920,000	131,911,200	98.50%	96.72%
Aug-09	133,920,000	131,911,200	98.50%	96.88%
Sep-09	129,600,000	127,656,000	98.50%	97.02%
Totals	1,576,800,000	1,529,744,400		**97.02%**

Notes

1. 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		**95.93%**
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 =	4.84
	GNPIPD Current value assumed (on payment date)=	**123.661**
GNPIPD adjustment factor =	Current value / 1987 1st Qtr value (72.465) =	1.7065
(C + U) / (C + E) =		0.783308148
PPA BONUS PAYMENT CORRECTED	((C +U)/(C +E)) * GNPIPD adjustment factor * Uncorrected Bonus	$982,485.79
EAF BONUS	*CONTRACT YEARS 16 AND 17* Payable November, 2009	**$982,485.79**

Workbook Modified: 30-May-08
Latest Data Input: 23-Oct-08
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Page 1 of 3 (SUMMARY sheet)

HPOWER 2009 Operational/Budget Forecasted Expenses
10/9/2008 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	$0.16672	/kWh purch
On Peak Energy Rate-Excess MWh/day	$0.16672	/kWh purch
Off Peak Energy Rate-1st 250 MWh/day	$0.12716	/kWh purch
Off Peak Energy Rate-Excess MWh/day	$0.12716	/kWh purch

	On-Peak MWh	Off-Peak MWh	Total MWh	Total Energy	Capacity	Total Expenses
Jan	17,658.08	12,612.92	30,271	$4,547,814	$613,182.16	$5,160,996
Feb	15,803.67	11,288.33	27,092	$4,070,212	$557,438.33	$4,627,650
Mar	17,710.00	12,650.00	30,360	$4,561,185	$613,182.16	$5,174,367
Apr	17,078.83	12,199.17	29,278	$4,398,629	$613,182.16	$5,011,811
May	6,633.08	4,737.92	11,371	$1,708,341	$209,039.37	$1,917,381
Jun	16,602.25	11,858.75	28,461	$4,275,886	$585,310.25	$4,861,196
Jul	17,613.17	12,580.83	30,194	$4,536,246	$621,054.08	$5,157,300
Aug	17,716.42	12,654.58	30,371	$4,562,838	$585,310.25	$5,148,148
Sep	16,956.33	12,111.67	29,068	$4,367,079	$613,182.16	$4,980,262
Oct	17,767.75	12,691.25	30,459	$4,576,059	$613,182.16	$5,189,241
Nov	16,534.58	11,810.42	28,345	$4,258,458	$571,374.29	$4,829,833
Dec	14,863.33	10,616.67	25,480	$3,828,030	$529,566.41	$4,357,597
Total	192,938	137,813	**330,750**	**$49,690,778**	**$6,725,004**	

Total Expense	**$56,415,781**

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, 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 April 1st 2008 (Docket No. 7310), 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 10/9/2008.
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 Operational/Budget Forecasted Expenses

10/9/2008 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	$2,943,956	0	$0	$2,943,956	7,750	$985,490	4,863	$618,368	$1,603,858
Feb	28	20	280	0	32	248	18,032	$2,634,787	0	$0	$2,634,787	7,000	$890,120	4,288	$545,304	$1,435,424
Mar	31	22	308	0	35	273	19,964	$2,952,611	0	$0	$2,952,611	7,750	$985,490	4,900	$623,084	$1,608,574
Apr	30	22	308	0	35	273	19,320	$2,847,383	0	$0	$2,847,383	7,500	$953,700	4,699	$597,546	$1,551,246
May	31	21	294	189	12	93	7,406	$1,105,868	0	$0	$1,105,868	3,820	$485,751	918	$116,722	$602,473
Jun	30	22	308	14	34	260	18,676	$2,767,927	0	$0	$2,767,927	7,460	$948,614	4,399	$559,345	$1,507,959
Jul	31	23	322	0	37	285	19,964	$2,936,467	0	$0	$2,936,467	7,750	$985,490	4,831	$614,289	$1,599,779
Aug	31	21	294	0	34	260	19,964	$2,953,681	0	$0	$2,953,681	7,750	$985,490	4,905	$623,667	$1,609,157
Sep	30	22	308	0	35	273	19,320	$2,826,960	0	$0	$2,826,960	7,500	$953,700	4,612	$586,420	$1,540,120
Oct	31	22	308	0	35	273	19,964	$2,962,239	0	$0	$2,962,239	7,750	$985,490	4,941	$628,329	$1,613,819
Nov	30	21	294	7	33	254	18,676	$2,756,646	0	$0	$2,756,646	7,460	$948,614	4,350	$553,199	$1,501,813
Dec	31	23	322	56	31	235	16,744	$2,478,015	0	$0	$2,478,015	7,550	$960,058	3,067	$389,957	$1,350,015
Total	365	261	3,654	266	389	2,999	217,994	$32,166,540	0	$0	$32,166,540	87,040	$11,068,006	50,773	$6,456,231	$17,524,238

Contract availability 87.4% | Sanction payment $ 20,000

DATA SOURCES AND NOTES: See SUMMARY sheet and below

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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%

HPOWER 2009 Operational/Budget Forecasted Expenses
10/9/2008 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)

H-POWER ENERGY RATE CALCULATION

Filed Quarterly Avoided Energy Cost

April1, 2008 (Docket 7310 numbers)

On-Peak	$0.19826	/kWh	(rounded to 4 decimal places)
Off-Peak	$0.15088	/kWh	(rounded to 4 decimal places)

Applicable Rate for Quarter

On-Peak		
	<= 644,000 kWh/day	$0.16672
	Excess	$0.16672
Off-Peak		
	<= 250,000 kWH/day	$0.12716
	Excess	$0.12716

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

On-Peak				Discount
	$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: 19.826 cents/kWh
   Off-Peak: 15.088 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:	305,272 kWh

Purchased expense (rounded to dollars):

Tesoro:
On-peak energy expense = 4,056,155 * 14/24 * 0.19826 = $469,101
Off-peak energy expense = 4,056,155 * 10/24 * 0.15088 = $254,997
Total energy expense = $724,098

Chevron:
On-peak energy expense = 712,072 * 14/24 * 0.19826 = $82,352
Off-peak energy expense = 712,072 * 10/24 * 0.15088 = $44,766
Total energy expense = $127,118

Hoku Solar:
Total energy expense = 305,272 * 0.19 = $58,002

Hawaiian Electric Company, Inc.

AVOIDED FUEL COST RATES
ADJUSTED FOR FUEL PRICES EFFECTIVE APRIL 1, 2008

Line		
	On-Peak Avoided Fuel Cost Rates	
(1)	On-Peak Avoided Cost Rate	19.347 ¢/kwh
(2)	On-Peak Adjustment Factor (Line 17)	1.000
(3)	Adjusted On-Peak Avoided Cost Rate (Line 1 x Line 2)	19.347 ¢/kwh
	Off-Peak Avoided Fuel Cost Rates	
(4)	Off-Peak Avoided Cost Rate	14.797 ¢/kwh
(5)	Off-Peak Adjustment Factor (Line 28)	1.000
(6)	Adjusted Off-Peak Avoided Cost Rate (Line 4 x Line 5)	14.797 ¢/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]	1652.16	1652.16	1.0000	8.79%	0.0879
(8)	Kahe[1]	1602.35	1602.35	1.0000	52.43%	0.5243
(9)	Waiau[1]	1602.06	1602.06	1.0000	30.83%	0.3083
(10)	Waiau Diesel (W9-10)[1]	2366.04	2366.04	1.0000	1.65%	0.0165
(11)	CIP1 Diesel[1]	2402.08	2402.08	1.0000	3.62%	0.0362
(12)	CIP1 Biodiesel[1]	4602.67	4602.67	1.0000	0.43%	0.0043
(13)	Substation DG[2]	24.993	24.993	1.0000	1.35%	0.0135
(14)	AES[2]	2.873	2.873	1.0000	0.00%	0.0000
(15)	Kalaeloa[2]	14.995	14.995	1.0000	0.90%	0.0090
(16)	H-Power[2,3]	16.672	0.000	NA	0.00%	0.0000
(17)	Total				100.00%	1.0000
	Off-Peak					
		Fuel Price		Fuel Price	% of	Wtd Fuel
	Generating Facility	ECA Filing	Prod Sim *	Ratio	Avoid Gen	Price Ratio
(18)	Honolulu[1]	1652.16	1652.16	1.0000	2.38%	0.0238
(19)	Kahe[1]	1602.35	1602.35	1.0000	60.59%	0.6059
(20)	Waiau[1]	1602.06	1602.06	1.0000	18.09%	0.1809
(21)	Waiau Diesel (W9-10)[1]	2366.04	2366.04	1.0000	0.11%	0.0011
(22)	CIP1 Diesel[1]	2402.08	2402.08	1.0000	-0.05%	-0.0005
(23)	CIP1 Biodiesel[1]	4602.67	4602.67	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	18.72%	0.1872
(27)	H-Power[2,3]	12.716	0.000	NA	0.00%	0.0000
(28)	Total				100.00%	1.0000

[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	81.06%	0.028	0.000	0.028	0.023
CT/DG	0.22%	0.000	0.425	0.425	0.001
AES	0.00%	0.000	0.000	0.000	0.000
KPLP	18.72%	0.000	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000	0.000
Total	100.00%				0.024

ON-PEAK					
UNIT TYPE	% Avoided MWH	Rate (¢/kwh)			
		Consum.	Maint.	Total	Net
HECO					
Steam	92.05%	0.028	0.000	0.028	0.026
CT/DG	7.05%	1.807	0.214	2.021	0.142
AES	0.00%	0.000	0.000	0.000	0.000
KPLP	0.90%	0.000	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000	0.000
Total	100.00%				0.168

TOTAL					
UNIT TYPE	% Avoided MWH	Rate (¢/kwh)			
		Consum.	Maint.	Total	Net
HECO					
Steam	87.47%	0.028	0.000	0.028	0.024
CT/DG	4.20%	1.768	0.219	1.987	0.083
AES	0.00%	0.000	0.000	0.000	0.000
KPLP	8.33%	0.000	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000	0.000
Total	100.00%				0.107

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)	19.347	14.797
(8)	avoided fuel working cash (¢/kwh)	0.180	0.137

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)	0.168	0.024
(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)	0.181	0.137

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:

$$= \frac{\text{days of fuel inventory}}{365} \times \text{million btus (mbtus) avoided} \times \$/\text{mbtu}$$

$$\times \frac{(\text{rate of return on rate base}) - (\text{weighted cost of debt} \times \text{composite income tax rate})}{(1 - \text{composite income tax rate})}$$

$$/ \quad \text{as-available QF energy}$$

		On and Off-Peak	
		LSFO	Diesel Fuel
(1)	days of fuel inventory (a)	35	35
(2)	fuel avoided (MBTU) (b)	77,776	7,330
(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)	0.113	0.017
(9)	total avoided fuel inventory (¢/kwh)	0.130	

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.	Maint.	Consum.	Maint.	Total
Honolulu								(¢/kwh)	($/Hr)			
Steam Units												
Honolulu 8	13,531	13,507	24	0.66%	602.2	601.2	1.0	0.028	0.00	7	0	7
Honolulu 9	5,976	5,913	63	1.73%	259.6	256.9	2.7	0.028	0.00	18	0	18
Total	19,507	19,420	87	2.38%	861.8	858.1	3.7			25	0	25
Kahe												
Steam Units												
Kahe 1	113,933	113,788	145	3.97%	2,920.5	2,920.5	0.0	0.028	0.00	41	0	41
Kahe 2	113,299	113,142	157	4.30%	2,921.0	2,921.0	0.0	0.028	0.00	44	0	44
Kahe 3	172,250	171,815	435	11.92%	3,224.0	3,224.0	0.0	0.028	0.00	122	0	122
Kahe 4	166,424	166,042	382	10.47%	3,260.9	3,260.9	0.0	0.028	0.00	107	0	107
Kahe 5	301,369	300,629	740	20.28%	3,280.1	3,280.1	0.0	0.028	0.00	207	0	207
Kahe 6	208,243	207,891	352	9.65%	3,072.2	3,072.2	0.0	0.028	0.00	99	0	99
Total	1,075,518	1,073,307	2,211	60.59%	18,678.7	18,678.7	0.0			620	0	620
Waiau												
Steam Units												
Waiau 3	3,338	3,289	49	1.34%	108.5	106.9	1.6	0.028	0.00	14	0	14
Waiau 4	4,422	4,393	29	0.79%	196.9	195.6	1.3	0.028	0.00	8	0	8
Waiau 5	14,325	14,259	66	1.81%	630.3	627.5	2.8	0.028	0.00	18	0	18
Waiau 6	8,702	8,567	135	3.70%	382.1	376.2	5.9	0.028	0.00	38	0	38
Waiau 7	122,640	122,507	133	3.64%	3,419.5	3,419.5	0.0	0.028	0.00	37	0	37
Waiau 8	146,233	145,985	248	6.80%	3,202.1	3,202.1	0.0	0.028	0.00	69	0	69
Total	299,660	299,000	660	18.09%	7,939.4	7,927.8	11.6			184	0	184
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	150	148	2	0.05%	20.4	20.2	0.2	0.000	85.639	0	17	17
CIP1	1,726	1,726	0	0.00%	43.6	43.6	0.0	3.143	0.000	0	0	0
Substation DG	181	177	4	0.11%	36.1	35.4	0.7	0.000	0.000	0	0	0
Total	2,134	2,126	8	0.22%	108.9	107.8	1.1			0	34	34
Total	301,794	301,126	668	18.31%	8,048.3	8,035.6	12.7			184	34	218
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	523,320	522,637	683	18.72%	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	1,298,407	1,297,724	683	18.72%	14,794.8	14,794.8	0.0			0	0	0
TOTAL	2,695,226	2,691,577	3,649	100.00%	42,383.6	42,367.2	16.4			829	34	863

Total Avoided Cost, ¢/kwh	0.024

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	81.06%	0.028	0.000	0.028	0.023
CT/DG	0.22%	0.000	0.425	0.425	0.001
AES	0.00%	0.000	0.000	0.000	0.000
KPLP	18.72%	0.000	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000	0.000
TOTAL	100.00%				0.024

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	69,996	69,946	50	0.98%	3,009.9	3,009.9	0.0	0.028	0.000	14	0	14
Honolulu 9	55,416	55,017	399	7.81%	2,271.2	2,256.4	14.8	0.028	0.000	112	0	112
Total	125,412	124,963	449	8.79%	5,281.1	5,266.3	14.8			126	0	126
Kahe												
Steam Units												
Kahe 1	225,544	225,247	297	5.82%	4,088.7	4,088.7	0.0	0.028	0.000	83	0	83
Kahe 2	266,835	266,160	675	13.22%	4,089.4	4,089.4	0.0	0.028	0.000	189	0	189
Kahe 3	367,701	367,377	324	6.35%	4,513.6	4,513.6	0.0	0.028	0.000	91	0	91
Kahe 4	354,008	353,647	361	7.07%	4,565.3	4,565.3	0.0	0.028	0.000	101	0	101
Kahe 5	601,745	601,520	225	4.41%	4,592.2	4,592.2	0.0	0.028	0.000	63	0	63
Kahe 6	424,741	423,946	795	15.57%	4,301.1	4,301.1	0.0	0.028	0.000	223	0	223
Total	2,240,574	2,237,897	2,677	52.43%	26,150.3	26,150.3	0.0			750	0	750
Waiau												
Steam Units												
Waiau 3	26,760	26,493	267	5.23%	844.4	836.2	8.2	0.028	0.000	75	0	75
Waiau 4	36,258	35,881	377	7.38%	1,578.8	1,562.8	16.0	0.028	0.000	106	0	106
Waiau 5	87,746	87,688	58	1.14%	3,720.0	3,720.2	-0.2	0.028	0.000	16	0	16
Waiau 6	66,603	66,550	53	1.04%	2,822.7	2,822.5	0.2	0.028	0.000	15	0	15
Waiau 7	233,875	233,544	331	6.48%	4,787.3	4,787.3	0.0	0.028	0.000	93	0	93
Waiau 8	299,724	299,236	488	9.56%	4,483.0	4,483.0	0.0	0.028	0.000	137	0	137
Total	750,966	749,392	1574	30.83%	18,236.2	18,212.0	24.2			442	0	442
CT/DG Units												
Waiau 9	1,866	1,835	31	0.61%	201.7	198.6	3.1	0.000	85.639	0	265	265
Waiau 10	3,250	3,197	53	1.04%	403.5	397.6	5.9	0.000	85.639	0	505	505
CIP1	17,368	17,161	207	4.05%	437.5	432.4	5.1	3.143	0.000	6,506	0	6,506
Substation DG	3,623	3,554	69	1.35%	707.1	693.8	13.3	0.000	0.000	0	0	0
Total	26,107	25,747	360	7.05%	1,749.8	1,722.4	27.4			6,506	770	7,276
Total	777,073	775,139	1934	37.88%	19,986.0	19,934.4	51.6			6,948	770	7,718
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	947,527	947,481	46	0.90%	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	2,032,655	2,032,609	46	0.90%	22,878.1	22,878.1	0.0			0	0	0
TOTAL	5,175,714	5,170,608	5,106	100.00%	74,295.5	74,229.1	66.4			7,824	770	8,594

Total Avoided Cost, ¢/kwh	0.168

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	92.05%	0.028	0.000	0.028	0.026
CTs	7.05%	1.807	0.214	2.021	0.142
AES	0.00%	0.000	0.000	0.000	0.000
KPLP	0.90%	0.000	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000	0.000
TOTAL	100.00%				0.168

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	83,527	83,453	74	0.85%	3,612.1	3,611.1	1.0	0.028	0.000	21	0	21
Honolulu 9	61,392	60,930	462	5.28%	2,530.8	2,513.3	17.5	0.028	0.000	129	0	129
Total	144,919	144,383	536	6.12%	6,142.9	6,124.4	18.5			150	0	150
Kahe												
Steam Units												
Kahe 1	339,477	339,035	442	5.05%	7,009.2	7,009.2	0.0	0.028	0.000	124	0	124
Kahe 2	380,134	379,302	832	9.50%	7,010.4	7,010.4	0.0	0.028	0.000	233	0	233
Kahe 3	539,951	539,192	759	8.67%	7,737.6	7,737.6	0.0	0.028	0.000	213	0	213
Kahe 4	520,432	519,689	743	8.49%	7,826.2	7,826.2	0.0	0.028	0.000	208	0	208
Kahe 5	903,114	902,149	965	11.02%	7,872.3	7,872.3	0.0	0.028	0.000	270	0	270
Kahe 6	632,984	631,837	1147	13.10%	7,373.3	7,373.3	0.0	0.028	0.000	321	0	321
Total	3,316,092	3,311,204	4,888	55.83%	44,829.0	44,829.0	0.0			1,369	0	1,369
Waiau												
Steam Units												
Waiau 3	30,098	29,782	316	3.61%	952.9	943.1	9.8	0.028	0.000	88	0	88
Waiau 4	40,680	40,274	406	4.64%	1,775.7	1,758.4	17.3	0.028	0.000	114	0	114
Waiau 5	102,071	101,947	124	1.42%	4,350.3	4,347.7	2.6	0.028	0.000	35	0	35
Waiau 6	75,305	75,117	188	2.15%	3,204.8	3,198.7	6.1	0.028	0.000	53	0	53
Waiau 7	356,515	356,051	464	5.30%	8,206.8	8,206.8	0.0	0.028	0.000	130	0	130
Waiau 8	445,957	445,221	736	8.41%	7,685.1	7,685.1	0.0	0.028	0.000	206	0	206
Total	1,050,626	1,048,392	2234	25.52%	26,175.6	26,139.8	35.8			626	0	626
CT/DG Units												
Waiau 9	1,943	1,910	33	0.38%	210.5	207.2	3.3	0.000	85.639	0	283	283
Waiau 10	3,400	3,345	55	0.63%	423.9	417.8	6.1	0.000	85.639	0	522	522
CIP1	19,094	18,887	207	2.36%	481.1	476.0	5.1	3.143	0.000	6,506	0	6,506
Substation DG	3,804	3,731	73	0.83%	743.2	729.2	14.0	0.000	0.000	0	0	0
Total	28,241	27,873	368	4.20%	1,858.7	1,830.2	28.5			6,506	805	7,311
Total	1,078,867	1,076,265	2602	29.72%	28,034.3	27,970.0	64.3			7,132	805	7,937
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	1,470,847	1,470,118	729	8.33%	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	3,331,062	3,330,333	729	8.33%	37,672.9	37,672.9	0.0			0	0	0
TOTAL	7,870,940	7,862,185	8,755	100.00%	116,679.1	116,596.3	82.8			8,651	805	9,456

Total Avoided Cost, ¢/kwh	0.108

HECO Avoided Total O&M based on 1 MW Simulation

SUMMARY STATISTICS

UNIT TYPE	% Avoided MWH	Rate (¢/kwh)			
		Consum.	Maint.	Total	Net
HECO					
Steam	87.47%	0.028	0.000	0.028	0.024
CTs	4.20%	1.768	0.219	1.987	0.083
AES	0.00%	0.000	0.000	0.000	0.000
KPLP	8.33%	0.000	0.000	0.000	0.000
H-POWER	0.00%	0.000	0.000	0.000	0.000
TOTAL	100.00%				0.107

Note:
Unit Rates = Total O&M $/Avoided Unit MWH
Net Rates = Unit Rates * % Avoided MWH

RATE CASE UPDATE

Ref.: L. Nagata, HECO T-17, Plant Additions, Property Held for Future Use, Contributions in Aid of Construction, and Customer Advances.

As a result of discussions with the Consumer Advocate, the Company agreed to update its estimates for plant additions and Contributions in Aid of Construction ("CIAC") for 2008 and for the 2009 test year. The Company took the latest snapshot of its capital budget and requested the users review the cost estimates and plant addition dates for their respective projects. Based on that review, the updated plant addition estimates (as shown on the attached updated exhibit HECO-1701) are $103,523,000 and $288,334,000 for 2008 and the 2009 test year, respectively, a decrease of $6,697,000 for 2008 and increase of $23,655,000 for the 2009 test year. While the changes to the plant addition estimates result in a net increase of $16,958,000 for both 2008 and 2009, the impact of the net increase on the test year 2009 revenue requirements are much lower as revenue requirements associated with rate base items are for the return of and return on the investment as compared to revenue requirements for expenses which cover the costs included in the test year and associated revenue taxes.

The $6,697,000 decrease in plant additions for 2008 consists of a decrease of $8,054,000 for projects, offset by an increase of $1,358,000 for programs. The $23,655,000 increase in plant additions for test year 2009 consist of an increase of $24,967,000 for projects, offset by a decrease of $1,312,000 for programs. Said another way, for the two-year period of 2008 and the test year 2009, there is a net increase in plant additions of $16,913,000 and $46,000 for projects and programs, respectively. HECO-WP-1701, pages 1-10, have been updated and are attached.

The changes in the plant addition estimates for projects are primarily due to 1) the addition of new projects since the time of the forecast used in direct testimony; 2) projects that

were estimated to be completed in 2008 and are now forecast to be completed in 2009; and 3) updates in project schedules and cost estimates.

Of the $24,967,000 increase in 2009 test year plant additions, there were four projects with plant addition estimates greater than $750,000 that were initiated after the estimates for the direct testimony were finalized. Those four projects are:

1) Airport Dist Feeders 2B & 3B (P0001567) for $1,458,836;

2) Waiau-Wahiawa SW OPGW (P0001644) for $2,653,759;

3) Halawa-School OPGW (P0001681) for $1,246,101; and

4) Waiakamilo Tsf#1 Replace (P0001691) for $802,287.

There were also four projects with costs greater than $750,000 that were estimated to be completed in 2008 and are now forecast to be completed in 2009. Those four projects are:

1) H8 Blr Elec Warm Sys (P0000056) - this project is now expected to be completed in 2009 for $1,042,211, compared to the 2008 direct testimony plant addition estimate of $890,343, due to an increase in scope which resulted in the delay in the project completion date.

2) W7 Waiau FWH 75 Replace (P0000484) - this project is now expected to be completed in 2009 for $1,040,894, compared to the 2008 direct testimony plant addition estimate of $901,517, due to the late delivery of materials, completion of the design and procurement of an installation contractor.

3) H9 Honolulu FWH 94 Replace (P0001131) - this project is now expected to be completed in 2009 for $825,655, compared to the 2008 direct testimony plant addition

estimate of $859,658, due to the late completion of the design and procurement of an installation contractor.

4) Kahe-Permanente 46kV Nanakuli (P0001552) - this project is now expected to be completed in 2009 for $2,174,053, compared to the 2008 direct testimony plant addition estimate of $785,541. The project cost increase of $1,388,512 and delayed completion is due to a number of factors including softer than expected soil conditions requiring more extensive footing, longer than anticipated permit approval turnarounds, and a no bid on the construction work that forced HECO to assume the role of general contractor with subcontractors working on a time and material basis.

The Maunalani Hts Reliab Impvmts (P0001121) 2009 plant addition cost estimate also increased by $1,030,344 to $1,598,758 because about $1 million of costs were erroneously forecast as plant additions in 2010 (rather than 2009) at the time the estimates for the direct testimony were finalized.

CIAC was updated to reflect more current information that is available. Please see the attached updated HECO-1706, page 1, and HECO-WP-1706 pages 1-4. The updated In-Kind CIAC estimates are $3,805,000 and $3,998,000 for 2008 and the 2009 test year, respectively, resulting in decreases of $59,000 and $206,000 for 2008 and for the 2009 test year, respectively. The updated Cash CIAC estimates are $8,945,000 and $8,460,000 for 2008 and the 2009 test year, respectively. The $2,699,000 increase in Cash CIAC for 2008 reflects annualizing the September 2008 year-to-date Cash CIAC for the Customer Installation Department. The 2009 test year Cash CIAC increase of $1,706,000 is due in large part to the addition of the Chevron

Electrical Upgrade project that was not known at the time the estimates for the direct testimony were prepared.

After the plant addition and Cash CIAC updates were finalized, and after succeeding update calculations were already underway, the Company was notified that the opening of the new University of Hawaii West Oahu campus has been deferred one year, from fall 2010 to fall 2011. As a result, HECO has deferred making significant material and construction commitments until early 2010. While the land transfer for the Kaloi Substation is still estimated to be effective in 2009, the costs for the land will be recorded in Property Held for Future Use ("PHFFU") until such time that construction begins. Because this information became known after the plant addition and CIAC updates were finalized, because the Company wants to submit the update information as expeditiously as possible, and because there is no net impact on rate base, the Company decided to not change the classification of the costs for the land transfer for the Kaloi Substation from plant additions to PHFFU.

Hawaiian Electric Company, Inc.

2008 and 2009

PLANT ADDITIONS

($ Thousands)

	2008	2009	Reference
Projects	$54,453	$231,507	HECO-WP-1701
Programs	$49,070	$56,827	HECO-WP-1701
Total	$103,523	$288,334	

Totals may not add due to rounding.

Hawaiian Electric Company, Inc.
Campbell Industrial Park Generating Station and Transmission Additions
Plant Additions

Project No.	Description	2008	2009	2010	Total
P0001052	CIP1 CEIP Substation Mod	456,832	3,890		460,722
P0001135	CIP1 Unit Addition-Microwave	523,193			523,193
P0001340	CIP1 Unit Addition-Easements	4,857,924			4,857,924
P0001585	CIP1 - Land - Gen Station	1,261,761			1,261,761
P0001050	CIP1 AES-CEIP#2 Trans. Line		5,790,887		5,790,887
P0001051	CIP1 AES Substation Add		3,153,110		3,153,110
P0001134	CIP1 Unit Addition-Fiber		531,769		531,769
P0001136	CIP1 Unit Addition-Kahe Bkrs		1,720,778		1,720,778
P0001137	CIP1 Unit Addition-Kalaeloa		289,912		289,912
P4900000	CIP1 Unit 1 Addition		143,809,745	50,000	143,859,745
	Plant Additions	7,099,710	155,300,091	50,000	162,449,801
P0001084	Parcel between Hanua Street and AES Substation (TMK 9-1-26:38) included in Property Held for Future Use				1,809,875
	Total Project Cost				164,259,676

Hawaiian Electric Company, Inc.

2008 and 2009

CONTRIBUTIONS IN AID OF CONSTRUCTION

($ Thousands)

	2008	2009	Reference
Contributions in aid of construction:			
In-Kind	$ 3,805	$ 3,998	HECO-WP-1706
Cash CIAC:			
Customer Installations	$ 6,151	$ 3,638	HECO-WP-1706
Energy Delivery	$ 2,794	$ 4,822	HECO-WP-1706
Total	$ 8,945	$ 8,460	HECO-WP-1706
Customer Advances:			
Receipts	$ 105	$ 110	
Refunds	$ (119)	$ (124)	
Transfers	$ (19)	$ (67)	

Note: Estimates for Customer Advances were not updated.

Hawaiian Electric Company, Inc.

2008 PLANT ADDITIONS - PROJECTS

Grand parent	Project #	Project Title	Expenditures: Project to Date Recorded 12/31/07	2008	2009	Total
	P0000465	K1&2 Service Air Compressors	271,437	88,865	0	360,302
	P0000490	H8&9 Emergency Generator	204,101	31,015	0	235,116
	P0000634	W7&8 Boiler Wash Sump Pump	341,250	85,809	0	427,059
	P0000636	W0 Waiau Chlorine Dioxide	258,206	420,035	200	678,441
	P0000637	K0 Kahe Chlorine Dioxide	413,281	472,788	200	886,269
	P0000786	K1 Kahe 1 BW Sump Upgrade	195,755	(10,477)	0	185,278
	P0000788	K2 Kahe 2 BW Sump Upgrade	159,920	8,444	0	168,364
	P0000789	K3 Kahe 3 BW Sump Upgrade	358,004	92,437	0	450,441
	P0000790	K4 Kahe 4 BW Sump Upgrade	183,009	9,214	0	192,223
	P0000791	K5 Kahe 5 BW Sump Upgrade	167,007	10,187	0	177,194
	P0000792	K6 Kahe 6 BW Sump Upgrade	165,392	9,404	0	174,796
	P0000990	Waiau-Makalapa FO Replacemen	429,397	200,304	0	629,701
	P0000997	Two-Way Radio Upgrade	82,626	643	0	83,269
	P0001108	Upper Kipapa Sound Lev Reduc	0	323,112	0	323,112
	P0001112	Waiau Chem Lab	214,037	65,450	0	279,487
	P0001120	HECO PV Ward Project	16,128	136,830	0	152,958
	P0001155	150 Feet Aerial Platform Trk	928,253	(4,077)	0	924,176
	P0001285	W6 Waiau FWH 64 Replace	333,371	141,540	0	474,911
	P0001300	W8 Waiau FWH 85 Replace	13,308	862,558	0	875,866
	P0001304	Archer Sub Chiller Change	657,272	846,583	0	1,503,855
	P0001341	Ellipse Migration to Unix	118,951	15,625	0	134,576
	P0001357	Kapolei Pkwy Ext. OH to UG	25,388	107,192	0	132,580
	P0001364	Ewa Nui & Kamokila Ckt Rearr	1,660,086	19,205	0	1,679,291
	P0001380	Kuilima Sub Access Road	176,224	94,793	0	271,017
	P0001382	W3 Waiau FWH 34 Replace	47,313	153,373	0	200,686
	P0001383	W5 Waiau 52 FWH Replace	272,963	433,530	0	706,493
	P0001391	K1 Opacity Monitor	154,551	154,593	0	309,144
	P0001400	Ewa Nui-CIP Fiber Repl	38,290	510,895	4,180	553,365
	P0001401	Spare 10% Tsf 2007 #1	517,509	51,869	0	569,378
	P0001405	Enterprise Reporting System	137,890	0	0	137,890
	P0001421	School St #1 Swgr Repl	258,839	307,461	0	566,300
	P0001429	Lagoon #1 Tsf Replacement	604,144	132	0	604,276
	P0001443	CEIP46 Recond	0	563,795	0	563,795
	P0001475	H8/H9 Elevator Replacement	254,382	108,189	0	362,571
	P0001477	Manana Swgr Installation	9,767	182,875	0	192,642
	P0001478	Waiau 138KV Bkr 107&108 Repl	185,002	266,834	0	451,836
	P0001479	HPP 46KV Bkr 4552 Replace	74,925	195,916	0	270,841
	P0001484	Makakilo Tsf #2 Replace	23,063	722,941	0	746,004
	P0001499	Kahe 138kV Bkr 247 Replace	2,748	319,642	105	322,495
	P0001501	HPP 46kV Bkr 4553 Replace	3,320	281,452	0	284,772
	P0001514	Airport Iwilei Shield Wire	0	675,592	674,067	1,349,659
	P0001516	Ilaniwai St 46 kV Cable Replc	30,242	173,563	0	203,805
	P0001519	Makalapa-Airport 138kV SW Repl	0	395,446	1,885	397,331
	P0001525	Tesoro Electrical Upgrade	64,442	341,050	0	405,492
	P0001531	W0 Startup Transformer	2,205	560,329	2,595	565,129
	P0001535	W5 CWP #51 Column Repl	1,212	105,432	0	106,644
	P0001537	2008 Spare 10MVA(10%) Tsf #1	0	524,546	0	524,546

Hawaiian Electric Company, Inc.

2008 PLANT ADDITIONS - PROJECTS

Grand parent	Project #	Project Title	Expenditures: Project to Date Recorded 12/31/07	2008	2009	Total
	P0001539	Waiau 2 Office	0	225,556	0	225,556
	P0001550	Spare 80mva Tsf #1	0	522,684	0	522,684
	P0001557	Makakilo C&D Ph1 46kV UG	0	497,147	570,400	1,067,547
	P0001566	Mamala Tsf Paralleling	0	82,361	0	82,361
	P0001582	K6 BFP 61 Motor Replacement	0	111,795	0	111,795
	P0001584	Chevron Refinery 12kV Reloc	0	19,397	0	19,397
	P0001596	Wah2 138kV Tsf Replacement	0	314,455	0	314,455
	P0001597	CEIP3 138kV Tsf Replacement	0	373,315	0	373,315
	P0001698	Check Processing Upgrade	0	277,290	0	277,290
	P0001699	ICONA AMI Pilot	0	141,000	0	141,000
Y00030	P0000795	Parking-C&M,SysOp,&Employee	147,569	111,519	0	259,088
Y00044	P0000946	KoOlina SS Tsf#1 Install	1,660,159	314,902	0	1,975,061
Y00044	P0000947	KoOlina 46kV lines	2,707,131	316,009	0	3,023,140
Y00044	P0000948	KoOlina 12kV lines	20,841	3,948	0	24,789
Y00047	P0001037	Puuloa Rd Widening - UG	278,971	224,804	0	503,775
Y00064	P0001170	CIP0 AQ Monitoring Stns	51,563	840,395	0	891,958
Y00066	P0001183	K5 Gen Protective Relay	27,940	68,426	6,703	103,069
Y00067	P0001197	K5 Hydrogen Gas Dryer	0	114,247	4,268	118,515
Y00068	P0001201	W5 Hydrogen Gas Dryer	96,403	58,221	0	154,624
Y00068	P0001204	W8 Hydrogen Gas Dryer	0	93,326	0	93,326
Y00071	P0001215	W5 Turbine Drains	86,219	209,647	0	295,866
Y00071	P0001218	W8 Turbine Drains	272,941	180,105	0	453,046
Y00075	P0001263	K5 Air Htr Rotor Stop Alarm	9,309	42,300	1,328	52,937
Y00075	P0001266	W8 Air Htr Rotor Stop Alarm	13,001	27,691	0	40,692
Y00077	P0001294	Ward 1/2 Safety Access Impvm	13,497	281,017	0	294,514
Y00079	P0000486	H8 Honolulu FWH 85 Replace	11,634	920,207	0	931,841
Y00079	P0000487	H8 Honolulu FWH 82 Replace	22,636	591,247	0	613,883
Y00079	P0000807	H8 Turbine Supervisory Instrumentation Upgrade	28,707	453,234	0	481,941
Y00079	P0000814	H8 Volt Reg/Exciter Replace	413,724	814,508	0	1,228,232
Y00079	P0000831	H8 Operator Console Upgrade	178,294	386,540	0	564,834
Y00079	P0000858	H8 Annunciator Replacement	289,698	538,056	11,918	839,672
Y00079	P0000895	H8 Main Xfmr Replacement	45,430	1,595,523	0	1,640,953
Y00083	P0000622	K1 Kahe 13 FWH Replace	412,035	207,065	0	619,100
Y00083	P0000644	K1 Kahe FWH 14 Replace	700,273	111,361	0	811,634
Y00090	P0000812	K5 Annunciator Replacement	0	925,343	5,250	930,593
Y00095	P0000802	W5 Operator Console Upgrade	245,806	117,961	0	363,767
Y00097	P0000856	W7 Main Transformer	1,801,383	443,615	4,572	2,249,570
Y00099	P0000819	W8 Exciter/Regulator Repl	28,084	1,231,282	0	1,259,366
Y00100	P0000564	W9 DCS Processor Upgrade	253,062	129,439	0	382,501
Y00104	P0001327	W5 UPS Panel Upgrade	31,723	48,972	0	80,695
Y00116	P0001486	School-Bkr4568 Rly Up	64,148	15,021	0	79,169
Y00116	P0001487	Halawa 2 & 3 Tap	67,143	156,766	0	223,909
Y00116	P0001488	Kamoho Sub Sw Upgrd	24,324	373	0	24,697
Y00120	P0001010	HR Suite Phase 1	0	466,473	164,040	630,513
Y49000	P0001052	CIP1 CEIP Substation Mod	34,168	422,664	3,890	460,722
Y49000	P0001135	CIP1 Unit Addition-Microwave	12,703	510,490	0	523,193
Y49000	P0001340	CIP1 Unit Addition-Easements	7,200	4,850,724	0	4,857,924

Hawaiian Electric Company, Inc.

2008 PLANT ADDITIONS - PROJECTS

Grand parent	Project #	Project Title	Expenditures: Project to Date Recorded 12/31/07	2008	2009	Total
Y49000	P0001585	CIP1 - Land - Gen Station	0	1,261,761	0	1,261,761
			20,112,929	32,707,116	1,455,601	54,275,646

2008 Straggling Costs:Pre-2008 (HECO-WP-1701, page 8)	1,633,101
2009 Plant Additions	(1,455,601)
Total projects	54,453,146

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Hawaiian Electric Company, Inc.

2009 PLANT ADDITIONS - PROJECTS

Grand parent	Project #	Project Title	Project to Date Recorded 12/31/07	Expenditures 2008	2009	2010	2011	2012	Total
	P0000056	H8 Blr Elec Warm Sys	855,771	138,568	47,872	0	0	0	1,042,211
	P0000086	W0 Waiau WW Oil Detectors	63,561	0	47,466	0	0	0	111,027
	P0000335	Intl Savings & Loan Vault	91,980	0	314,743	0	0	0	406,723
	P0000571	CIS Replacement	556,133	9,223	30,621	0	0	0	595,977
	P0000620	K0 Kahe Fire Water Tank 2	53,400	121,380	1,117,292	0	0	0	1,292,072
	P0000635	K1 Elec Brkr Rm Ventilation	0	10,145	164,447	1,364	0	0	175,956
	P0000661	W0 W2 Maint Laydown Area	(8)	3,682	0	0	0	0	3,674
	P0000680	W0 Waiau Waste Oil Recover	49,620	61,488	293,290	0	0	0	404,398
	P0000787	K5&6 Lube Water Pump	37,691	64,774	8,202	0	0	0	110,667
	P0000797	W3-W4 Svc Air Compr	122,854	113,932	136,128	0	0	0	372,914
	P0000798	W6 Instr Air Compr	14,605	7,962	105,837	0	0	0	128,404
	P0000956	W0 WWTF Chem Feed Upgrades	349,645	129,432	1,054,355	0	0	0	1,533,432
	P0000981	K5/6 Brkr Deck AC	51,654	31,845	378,348	731	0	0	462,578
	P0001081	Auahi Street 12kV OH to UG	16,461	(77)	175,240	0	0	0	191,624
	P0001109	Wahiawa 46Kv Ln-Schofield	31,000	0	199,000	0	0	0	230,000
	P0001121	Maunalani Hts Reliab Impvmts	185,242	113,272	1,300,244	85,133	0	0	1,683,891
	P0001132	K6 Kahe FWH 64 Replace	0	31,918	902,847	0	0	0	934,765
	P0001141	W3 Waiau 3 Blowoff Tank	81,578	24,563	89,912	0	0	0	196,053
	P0001142	W4 Waiau 4 Blowoff Tank	57,382	10,447	112,439	0	0	0	180,268
	P0001167	Waiau-Ewa Nui Fiber Optic Replace	384,540	431,160	750,774	0	0	0	1,566,474
	P0001334	W10 Inlet Air Filtration	63,986	33,543	1,562,719	0	0	0	1,660,248
	P0001358	Queens Medical Center Upgrd	9,222	5,768	124,193	0	0	0	139,183
	P0001381	K5 Kahe FWH 53 Replace	0	36,359	737,554	0	0	0	773,913
	P0001392	W0 WWTF Filter Press	67,905	248,671	1,567,812	0	0	0	1,884,388
	P0001404	Kal Hwy at Makapuu - 12kV UG	14,804	31,299	219,460	313,157	0	0	578,720
	P0001422	New Ward MW Battery Rm	69,688	446,149	70,308	0	0	0	586,145
	P0001441	K2 FWH Turb. Wtr. Ind. Pvt.	0	168,480	733,120	0	0	0	901,600
	P0001442	K5/K6 Diesel Tank Expansion	0	0	250,487	0	0	0	250,487
	P0001444	K6 Seal Air Dmpr Drv Replace	0	92,934	54,815	0	0	0	147,749
	P0001473	K6 Voltage Regulator Upgrade	0	367,260	304,040	0	0	0	671,300
	P0001474	K5 Voltage Regulator Upgrade	1,901	648,925	18,037	0	0	0	668,863
	P0001490	Ahuimanu Pl OH & UG Cbl Upgr	960	144,286	18,733	0	0	0	163,979
	P0001500	Kahe 138kV Bkr 133 Replace	10,652	199,562	116,934	0	0	0	327,148
	P0001503	Kahe 138 kV Bkr 172 Replace	3,134	205,247	114,744	0	0	0	323,125
	P0001525	Tesoro Electrical Upgrade	64,442	341,050	0	0	0	0	405,492
	P0001533	W8 SW/Fire Pump Replacement	1,674	548	159,843	0	0	0	162,065
	P0001534	BPT FO Tk131 FloorRenovation	706,601	2,309,205	1,149,675	0	0	0	4,165,481
	P0001536	W3&4 Phase Shift Transformer	0	11,164	216,236	0	0	0	227,400
	P0001538	K3 PCT Upgrade	0	188,982	161,539	2,776	0	0	353,297
	P0001547	Ward ITS Generator Repl	0	0	358,940	0	0	0	358,940
	P0001549	School-Iwilei 138kV SW Repl	0	0	107,274	0	0	0	107,274
	P0001551	P28X Waiau-Mak #1 138kV 2412	0	179,074	830	0	0	0	179,904
	P0001552	Kahe-Permanente 46kVNanakuli	0	1,158,665	1,015,388	0	0	0	2,174,053
	P0001553	Halawa-Iwilei Shield Wire	0	94,557	796,391	0	0	0	890,948
	P0001560	Waiakamilo Tsf #2 Replace	0	2,762	728,994	0	0	0	731,756
	P0001561	Kamokila #4 12 kV Line Ext	0	83,061	312,398	0	0	0	395,459
	P0001562	Archer Bkr Rupture Disk Inst	0	4,315	872,185	0	0	0	876,500
	P0001565	eMESA Implementation	0	0	10,472	0	0	0	10,472
	P0001567	Airport Dist Feeders 2B & 3B	0	148,190	1,310,646	0	0	0	1,458,836
	P0001572	Bougainville Subd SV4613	0	55,201	109,799	0	0	0	165,000
	P0001573	K1 BFP 12 Motor Replacement	0	3,271	234,573	0	0	0	237,844
	P0001574	K2 Repl H2 Purity Meter	0	16,645	121,629	0	0	0	138,274
	P0001575	K1 Repl H2 Purity Meter	0	13,103	132,339	0	0	0	145,442

Hawaiian Electric Company, Inc.

2009 PLANT ADDITIONS - PROJECTS

Grand parent	Project #	Project Title	Project to Date Recorded 12/31/07	Expenditures 2008	2009	2010	2011	2012	Total
	P0001577	K3 Biofuel Co-Firing	0	0	2,211,814	0	0	0	2,211,814
	P0001580	2008 Spare 8% Tsf #1	0	466	676,563	0	0	0	677,029
	P0001591	2008 Spare 15kV Switchgear#1	0	0	323,735	0	0	0	323,735
	P0001592	Kah Per 46kV Improv Nanakuli	0	402,092	72,879	0	0	0	474,971
	P0001594	Allure Waikiki 12kV UG Reloc	0	7,831	417,265	0	0	0	425,096
	P0001614	W5 CWP No. 52 Replacement	0	308,494	19,438	0	0	0	327,932
	P0001625	K3 Exciter Air Conditioning	0	8,084	131,471	11,715	12,699	1,104	165,073
	P0001639	K1 Service Water Strainer	0	17,858	73,353	0	0	0	91,211
	P0001640	K2 Service Water Strainer	0	25,456	68,361	0	0	0	93,817
	P0001644	Waiau-Wahiawa SW OPGW	0	0	2,653,759	0	0	0	2,653,759
	P0001681	Halawa-School OPGW	0	41,745	1,204,356	0	0	0	1,246,101
	P0001682	Kapolei IC, Ph1-12kV OH & UG	0	135,851	258,721	401,960	0	0	796,532
	P0001686	Kapolei IC, Ph1-12kV OH Conv	0	9,097	9,703	65,509	157,632	0	241,941
	P0001687	K3 BFP 32 Motor Replacement	0	3,271	233,075	0	0	0	236,346
	P0001688	W5 BFP 51 Motor Replacement	0	3,271	237,143	0	0	0	240,414
	P0001689	Kahe Technical Trailer	0	279,187	167,063	0	0	0	446,250
	P0001690	Ironwoods - 12kV OH to UG	0	27,490	464,814	385,958	0	0	878,262
	P0001691	Waiakamilo Tsf #1 Replace	0	19,195	783,092	0	0	0	802,287
	P0001705	Wrd undgd security cabling	0	130,333	237,005	0	0	0	367,338
	P0001708	Environmental Lab Expansion	0	15,302	179,535	0	0	0	194,837
Y00017	P0000192	Waikiki Rehabilitation Project 3	168,176	499,522	1,260,749	0	0	0	1,928,447
Y00060	P0001100	Aina Haina Subd-Cable Ph3	0	0	703,161	982	0	0	704,143
Y00064	P0001169	CIP0 Kahe RO Water Project	580,238	1,174,457	(579,914)	0	0	0	1,174,781
Y00065	P0001174	K2 BFP Automated Test	0	4,518	104,899	0	0	0	109,417
Y00073	P0001251	K3 Condensate Pump	0	0	331,079	0	0	0	331,079
Y00073	P0001252	K4 Condensate Pump	0	0	331,079	0	0	0	331,079
Y00074	P0001257	K0 Kahe Tank #11 Lvl Gauge	0	0	35,153	0	0	0	35,153
Y00074	P0001258	K0 Kahe Tank #12 Lvl Gauge	0	0	11,048	0	0	0	11,048
Y00074	P0001260	K0 Kahe Tank #14 Lvl Gauge	0	0	17,530	0	0	0	17,530
Y00076	P0001219	K1 FWH 11 Press/Temp Instr	55	(55)	87,514	0	0	0	87,514
Y00076	P0001220	K1 FWH 12 Press/Temp Instr	41	(41)	87,514	0	0	0	87,514
Y00077	P0001287	Ward bldg 1/2 Atrium Roof	23,959	1,970	523,568	0	0	0	549,497
Y00079	P0000980	H8 Battery Bank Replacement	21,932	171,251	74,262	0	0	0	267,445
Y00081	P0001131	H9 Honolulu FWH 94 Replace	38,158	562,155	225,342	0	0	0	825,655
Y00083	P0000854	K1 Excitation System	11,752	249,860	927,743	706	0	0	1,190,061
Y00084	P0000301	K1 Kahe FWH 12 Replace	0	98,675	647,871	0	0	0	746,546
Y00084	P0000494	K1 Kahe FWH 11 Replace	0	97,967	641,286	0	0	0	739,253
Y00084	P0000861	K1 Annunciator Replacement	0	7,949	922,887	4,140	0	0	934,976
Y00084	P0000871	K1 Sootblower Controls	0	71,615	412,063	0	0	0	483,678
Y00085	P0000799	K2 Operator Console Upgrade	0	165,743	265,192	0	0	0	430,935
Y00085	P0000853	K2 Excitation System	25,722	314,166	1,120,623	0	0	0	1,460,511
Y00085	P0000873	K2 Sootblower Controls	258,831	148,008	400,981	0	0	0	807,820
Y00090	P0000890	K5 Ignitor Atomization	0	539,332	35,862	0	0	0	575,194
Y00091	P0000809	K6 Annunciator Replacement	544,043	385,007	246,691	0	0	0	1,175,741
Y00097	P0000484	W7 Waiau FWH 75 Replace	28,654	875,999	136,241	0	0	0	1,040,894
Y00103	P0001314	St Lib V6422 Trayer Sw Repl	2,961	17,331	0	0	0	0	20,292
Y00103	P0001315	Capitol Ctr V6608 Trayer Sw Rpl	12,044	666	0	0	0	0	12,710
Y00103	P0001316	Inn Prk V4322 Trayer Sw Repl	5,542	306	0	0	0	0	5,848
Y00103	P0001318	Honvest V6193 Trayer Sw Repl	6,550	362	0	0	0	0	6,912
Y00104	P0001324	K1 UPS Panel Upgrade	0	1,291	72,982	0	0	0	74,273
Y00104	P0001329	K6 UPS Panel Upgrade	0	26,092	47,840	0	0	0	73,932
Y00104	P0001332	K2 UPS Panel Upgrade	0	23,153	52,147	0	0	0	75,300
Y00106	P0001350	Baseyards Priority 2 - 2009	0	0	159,797	0	0	0	159,797

Hawaiian Electric Company, Inc.

2009 PLANT ADDITIONS - PROJECTS

Grand parent	Project #	Project Title	Project to Date Recorded 12/31/07	Expenditures 2008	2009	2010	2011	2012	Total
Y00107	P0001354	MEVA Priority 1 - 2009	0	0	108,566	0	0	0	108,566
Y00112	P0001415	Archer Breaker 6050 Repl	78,397	22,869	487,311	0	0	0	588,577
Y00115	P0001482	Mikilua Sub T&D Work	0	39,186	286,987	8,324	0	0	334,497
Y00115	P0001483	Mikilua Sub Tsf #3 Work	17,569	62,733	1,717,731	80,882	0	0	1,878,915
Y00119	P0001504	Kaloi Sub Land Transf	0	0	2,296,439	0	0	0	2,296,439
Y00121	P0001520	Barbers Pt TF Tsf #2 Install	72,721	1,245,657	283,346	0	0	0	1,601,724
Y00121	P0001522	Barbers Pt TF 12kV Ckt	622	184,685	210,150	0	0	0	395,457
Y00123	P0001563	Kamokila Tsf #3 Install	0	1,095,683	743,859	0	0	0	1,839,542
Y00123	P0001564	Kamokila SS Tsf #3 Circuiting	0	135,882	568,224	0	0	0	704,106
Y00124	P0001568	Ocean Pointe Tsf 2 Circuits	0	1,041	146,248	0	0	0	147,289
Y00124	P0001569	Ocean Pointe SS Tsf 2	0	22,450	1,369,879	0	0	0	1,392,329
Y00130	P0001683	Waiau Security Enhancements	0	0	17,237	0	0	0	17,237
Y00130	P0001684	Ewa Nui Security Enhancement	0	0	85,423	0	0	0	85,423
Y00130	P0001685	Kahe Security Enhancements	0	0	5,034	0	0	0	5,034
Y00132	P0001170	Chevron Telecom	0	53,446	578,476	0	0	0	631,922
Y00132	P0001171	Chevron Electrical Upgrade	0	24,518	647,329	0	0	0	671,847
Y49000	P0001050	CIP1 AES-CEIP#2 Trans. Line	224,217	1,260,709	4,305,961	0	0	0	5,790,887
Y49000	P0001051	CIP1 AES Substation Add	359,890	2,320,176	473,044	0	0	0	3,153,110
Y49000	P0001134	CIP1 Unit Addition-Fiber	10,987	108,703	412,079	0	0	0	531,769
Y49000	P0001136	CIP1 Unit Addition-Kahe Bkrs	85,613	1,208,499	426,666	0	0	0	1,720,778
Y49000	P0001137	CIP1 Unit Addition-Kalaeloa	0	285,243	4,669	0	0	0	289,912
Y49000	P4900000	CIP1 Unit 1 Addition	19,559,672	66,072,788	58,177,285	50,000	0	0	143,859,745
			26,156,424	89,558,580	113,999,442	1,413,337	170,331	1,104	231,299,218

2009 Straggling Costs:Pre-2008 (HECO-WP-1701, page 8)	337,318
2009 Straggling Costs:2008 Plt Adds (HECO-WP-1701, page 3)	1,455,601
2010 Plant Additions	*(1,413,337)*
2011 Plant Additions	(170,331)
2012 Plant Additions	(1,104)
Total Projects	231,507,365

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Hawaiian Electric Company, Inc.

2008 and 2009 PLANT ADDITIONS

Straggling Costs for Projects with Plant Addition Dates Pre-2008

Grand parent	Project #	Project Title	Expenditures 2008	Expenditures 2009
	P0000062	Ce-Terminating Trust Esmnts	0	56,573
	P0000078	K5 Boiler Controls Upgrade	355	0
	P0000267	K5 Data Acq & Monitoring	213	0
	P0000474	WSC Privatization	2,420	0
	P0000485	W3 Waiau FWH 35 Replace	75	0
	P0000507	Kam Hy Resurf Waiahole-Cr Ln	23,301	0
	P0000542	Ward Disaster Generator	80,982	0
	P0000598	Kahekili Hy Ltg OH/UG Conv	25,273	0
	P0000640	H0 Honolulu Demin Upgrade	70,920	0
	P0000690	W5 Annunciator Upgrade	38,473	0
	P0000813	K3&4 Control Room AC	367,461	0
	P0000828	Outage Management System	2,348	0
	P0000983	W5 Waiau 5/6 Elevator Upgrd	586	0
	P0001014	Ward Avenue Security Enhancements	0	63,000
	P0001133	W8 Waiau FWH 83 Replace	76,216	0
	P0001144	Helemano - Substation DG	103,199	0
	P0001145	Ewa Nui - Substation DG	38,124	0
	P0001146	Iwilei Tank Farm DG	18,147	0
	P0001152	W0 Waiau Shft Supervisor Off	20,654	0
	P0001158	Waiau-Koolau #1 Line Repl	467	0
	P0001161	W0 Waiau Solar FS Upgrade	49,099	0
	P0001166	Shared UNIX Infrastructure	22,775	0
	P0001284	W8 Waiau FWH 84 Replace	338	0
	P0001301	Kalaeloa Pole Yard DG	22,027	0
	P0001336	Camp Catlin Tsf Upgrade	494	0
	P0001339	Halawa Quarry Tsf Repl	784	0
	P0001385	Fort St Mall-Campbell Ducts	518	0
	P0001398	Mamala Phase 3	58	0
	P0001411	Waiau 138KV Bkr 111 Replace	734	0
	P0001412	Kahe 138KV Bkr 169 Replace	2,820	0
	P0001526	H9 BFP 93 Motor Replacement	3,229	0
	P0001530	W4 #41 Scrn Wash Pmp Replmnt	477	0
	P8470000	Koolau/Tripler MWR Repl	183,725	0
Y00023	P0001117	Ward A/C Sys Op & Bsment	1,236	0
Y00030	P0000713	Dispatch Center Building	14,594	0
Y00030	P0000715	Dispatch Boards	16,963	0
Y00030	P0000716	Telecomm Extensions	17,912	0
Y00030	P0000717	EMS Replacement	43,388	0
Y00030	P0000793	Field Service/Meter Reading	2,497	0

Hawaiian Electric Company, Inc.

2008 and 2009 PLANT ADDITIONS

Straggling Costs for Projects with Plant Addition Dates Pre-2008

Grand parent	Project #	Project Title	Expenditures 2008	Expenditures 2009
Y00030	P0000794	Call Center-1st floor	11,034	0
Y00039	P0000833	Mamala Substation	16,288	0
Y00039	P0000834	46kV Fdrs to Mamala Sub	785	0
Y00040	P0000839	Comm. Links FI-Maklpa	65,236	196,030
Y00053	P0000299	W9 Compressor Wash	4,383	0
Y00053	P0000939	W9 Waiau CT Separation	31,815	0
Y00063	P0001157	Honouliuli Reservoir 12kV Line	(758)	0
Y00066	P0001181	K3 Gen Protective Relay	11,984	0
Y00068	P0001203	W7 Hydrogen Gas Dryer	6,519	0
Y00072	P0001244	K3 Process Parameter Monitor	14,196	0
Y00075	P0001261	K3 Air Htr Rotor Stop Alarm	76	0
Y00076	P0001225	K3 FWH 31 Press/Temp Instr	537	0
Y00076	P0001226	K3 FWH 32 Press/Temp Instr	537	0
Y00076	P0001227	K3 FWH 33 Press/Temp Instr	537	0
Y00076	P0001228	K3 FWH 35 Press/Temp Instr	230	0
Y00081	P0000091	H9 Attemperator Block Valve	4,000	0
Y00081	P0000815	H9 Volt Reg/Exciter Replace	5,085	0
Y00083	P0000957	K1 MS Replacement	30,826	0
Y00086	P0000632	K3 Exciter/Regulator Upgrade	(50,636)	1,946
Y00086	P0000808	K3 Annunciator Replacement	56,302	0
Y00086	P0000827	K3 DCS Balance of Plant I/O	29,540	6,328
Y00086	P9539000	K3 Boiler Control Upgrade	99,062	13,441
Y00088	P9454000	K4 Boiler Control Upgrade	1,765	0
Y00093	P8820000	W4 Exciter Upgrade	4,019	0
Y00097	P0000857	W7 Aux Transformer	1,350	0
Y00108	P0001356	Mamala Phase 2 - Mamala	10,367	0
Y00111	P0001394	AMI - Ocean Point	9,405	0
Y00117	P0001491	HECO CLS - Capital	15,735	0
			1,633,101	337,318
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Hawaiian Electric Company, Inc.

PLANT ADDITIONS - PROGRAMS

Grand parent	Project #	Project Title	2008	2009
	P0000500	Misc Office Furniture	195,559	196,805
	P0000501	Misc Office Equipment	19,890	20,997
	P0000502	Waiau Minor Gen Addns	14,753	74,455
	P0000503	Ward Ave Minor Addns	184,924	888,264
	P0000504	King St Minor Addns	38,405	84,343
	P0000505	Other Minor Gen Plt Addns	69,558	170,325
	P0000652	Enterprise Computing	14,274	13,670
	P0000653	Collaborative Communications	32,222	35,867
	P0000692	CSD Technical Support Prgrm	119,372	92,498
	P0000733	Trns Sub RTU Migration Pgm	104,871	435,866
	P0001309	Net Energy Metering	48,935	58,377
	P0001529	Power Supply - Capital Tools	479,488	600,386
	P1081000	ED Capitalized Tools & Equip	531,820	290,902
	P1243000	PCs, Servers & Network	1,181,216	1,421,680
	P1244000	Copiers/Faxes/Printers	40,981	43,744
	P1250000	Vehicle Purchases	2,891,417	3,150,760
	P1251000	Misc Tel Eqpt NT	10,706	10,936
	P1370000	Distr R/W Purch (Blanket)	70,000	65,000
	P1373000	46kv R/W Purch (blanket)	31,000	36,000
	P1470000	Minor Trans Sub Addns	495,430	909,411
	P1480000	Minor Dist Sub Addns	1,813,322	1,188,820
	P1500000	Misc CM Fac-Op & Ctrl (TD)	493,748	294,609
	P1505000	Other Misc Comm Fac SOD	211,581	212,930
	P1510000	Misc OH Svc & Extn (CID)	1,232,867	1,200,539
	P1580000	Minor OH Dist Addn (CID)	1,473,656	1,115,193
	P1680000	Tsf & Equip Pur (CID)	4,492,759	5,545,377
	P1690000	Minor T&D Customer Programs	426,046	426,000
	P1700000	Misc UG Svc & Extn (CID)	10,124,805	10,165,646
	P1820000	Minor UG Addns (CID)	1,342,292	579,576
	P1990000	Minor T&D System Programs	1,735,301	1,700,000
	P4150000	Monitoring Services	24,305	46,574
	P9028000	Mobile Radio F1/F2 Replace	0	843,470
Y00005	P0000120	Corr (Inc Emg) OH Trsf Rpl	288,489	429,787
Y00005	P0000121	Corr (Inc Emg) UG Trsf Rpl	367,964	486,371
Y00005	P0000122	Cor (Inc Emg) Mis Cable Rpl	5,222,684	6,363,111
Y00005	P0000123	Corr (Inc Emg) OH Dist Rpl	2,289,066	2,788,210
Y00005	P0000124	Cor (Inc Emg) OH Subtrn Rpl	403,176	508,369
Y00005	P0000125	Cor (Inc Emg) OH Trans Rpl	34,925	0
Y00006	P1789000	Preventive OH Transf Repl	124,685	301,207
Y00006	P1793000	Preventive UG Transf Repl	391,156	255,174
Y00006	P1810000	Prev Misc Cable Failure Rpl	739,917	4,211,882

Hawaiian Electric Company, Inc.

PLANT ADDITIONS - PROGRAMS

Grand parent	Project #	Project Title	2008	2009
Y00006	P3400000	Prev OH Dist Repl	1,676,254	3,116,786
Y00006	P3401000	Prev OH Subtrans Repl	2,739,685	1,864,849
Y00006	P3402000	Prev OH Trans Repl	1,026,983	823,457
Y14300	P1429000	PROG Misc Power Plant Adds	1,786,468	2,471,858
Y16700	P1670000	P&I&Test Meters & Mtr Eq	1,744,219	894,126
Y18700	P1870000	PROG Power Station Misc	288,692	392,830
			49,069,866	56,827,037

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Hawaiian Electric Company, Inc.
Contributions in Aid of Construction

	2008	2009	Reference
Cash CIAC:			
Customer Installations	$ 6,150,775	$ 3,638,360	HECO-WP-1706, page 2
Energy Delivery	2,794,000	4,822,000	HECO-WP-1706, page 3
	$ 8,944,775	$ 8,460,360	
In-Kind CIAC	$ 3,804,500	$ 3,998,300	HECO-WP-1706, page 4

Hawaiian Electric Company, Inc.
Cash Contributions in Aid of Construction
Customer Installations

PROJ #	DESCRIPTION	2008	2009
P1510	Minor OH	$ 8,882	$ 45,840
P1580	Misc OH Addn	$ 50,424	$ 74,586
P1700	Minor UG	$ 5,999,217	$ 3,440,484
P1820	Misc UG Addn	$ 92,253	$ 77,451
	Total	$ 6,150,775	$ 3,638,360

Hawaiian Electric Company, Inc.
Energy Delivery Projects
Contributions in Aid of Construction

CASH *($ Thousands)*

Project#	Description	2008 Estimate	2009 Estimate
P0000507	Kam Hwy Resurf, Waiahole to Crouching Lion	862	0
P0000575	Nimitz Hwy Rehabilitation	2	0
P0000598	Kahekili Hwy Lighting Improvements	33	0
P0000672	Kakaako Makai-Kewalo 25kV	0	456
P0000764	H1 Widening Waimalu Relocation	-41	0
P0001037	Puuloa Rd Widening, UG	0	387
P0001075	Kam Hwy Kokololio Bridge	0	231
P0001357	Kapolei Parkway Extension OH to UG	77	0
P0001385	Fort St Mall - Campbell Ducts	43	0
P0001502	North South Road Ph. UG Conversion	0	232
P0001504	Kaloi Sub Land Transfer	0	2,174
P0001525	Tesoro Electrical Upgrade	535	0
P0001557	Makakilo C&D Ph. 1 46kV UG	640	0
P0001566	Mamala Tsf Paralleling	68	0
P0001584	Chevron Refinery 12kV Relocation	169	0
P0001690	Ironwoods 12kV OH to UG	15	0
P1690000	Minor T&D Customer Programs	266	216
Y00132	Chevron Electrical Upgrade	125	1,126
	TOTALS	2,794	4,822

Hawaiian Electric Company, Inc.
In-Kind CIAC

Project #	Project	2008	2009
P0000507	Kam Hwy resurfacing	23,000	0
P0000598	Kahekili Hy Ltg OH/UG Conv	25,000	0
P0000764	H-1 Widening Waimalu Reloc	143,000	0
P0001037	Puuloa Rd Widening - UG	0	104,000
P0001081	Auahi Street 12kV OH to UG	0	34,000
P0001342	Walmart Manana OH Relocation	0	12,000
P0001357	Kapolei Pkwy Ext. OH to UG	55,000	0
P0001502	North South Road Ph. 1B UG Conv	0	213,000
P0001525	Tesoro Electrical Upgrade	25,000	0
P0001557	Makakilo C&D Ph1 46kV UG	0	570,000
P1690000	Minor T&D Customer Programs	125,000	0
P1700000	Misc UG Svc & Extn	3,408,500	3,048,300
Y00132	Chevron Electrical Upgrade	0	17,000
		3,804,500	3,998,300