

Hawaiian Electric Company, Inc.
Plant Roll-Forward and Book Depreciation & Amortization
2008 and 2009 (\$ in Thousands)

	Estimated Plant a/o 12/31/2008	2008 Depr & Amort	Estimated Plant a/o 12/31/2009	Estimated TY 2009 Depr & Amort
Production				
Beginning Balance	\$ 567,172		\$ 593,704	
Add: Additions	30,020		174,979	
Less: Retirements	<u>3,488</u>		<u>3,718</u>	
Ending Balance	593,704	\$ 9,580	764,965	\$ 10,016
Transmission				
Beginning Balance	581,274		596,670	
Add: Additions	16,704		17,598	
Less: Retirements	<u>1,308</u>		<u>1,343</u>	
Ending Balance	596,670	16,926	612,925	17,374
Distribution				
Beginning Balance	1,147,202		1,186,344	
Add: Additions	43,835		53,758	
Less: Retirements	<u>4,693</u>		<u>4,853</u>	
Ending Balance	1,186,344	49,317	1,235,249	50,999
General (Excl LH Improvements)				
Beginning Balance	173,200		175,088	
Add: Additions	8,208		12,887	
Less: Retirements	<u>6,320</u>		<u>4,607</u>	
Ending Balance	175,088	10,498	183,368	10,569
Vehicles				
Beginning Balance	27,214		29,439	
Add: Additions	3,616		3,027	
Less: Retirements	<u>1,391</u>		<u>1,505</u>	
Ending Balance	29,439	1,978	30,961	2,140
ARO Assets (Distribution)				
Beginning Balance	14		13	
Add: Additions	-		-	
Less: Retirements	<u>1</u>		<u>1</u>	
Ending Balance	13	-	12	-
Total - Excl. Land				
Beginning Balance	2,496,076		2,581,258	
Add: Additions	102,383		262,249	
Less: Retirements	<u>17,201</u>		<u>16,027</u>	
Ending Balance	2,581,258	88,299	2,827,480	91,098
Land (Incl LH Improvements)				
Beginning Balance	33,553		41,390	
Add: Additions	7,837		2,430	
Less: Retirements	<u>-</u>		<u>-</u>	
Ending Balance	41,390	67	43,820	67
Total - Incl Land				
Beginning Balance	2,529,629		2,622,648	
Add: Additions	110,220		264,679	
Less: Retirements	<u>17,201</u>		<u>16,027</u>	
Ending Balance	\$ 2,622,648		\$ 2,871,300	
Additional Depreciation & Amortization -				
Net Unrecovered Amortization - Note (2)		<u>3,297</u>		<u>1,924</u>
Total Depreciation & Amortization		<u>\$ 91,663</u>		<u>\$ 93,089</u>
Accumulated Depreciation Summary				
Beginning Balance	\$ 1,174,518		\$ 1,242,691	
Add: Depreciation	91,663		93,089	
Add: Estimated Salvage per HECO-WP-1403	260		276	
Less: Retirements per HECO-WP-1403	<u>17,201</u>		<u>16,027</u>	
Less: Removal Costs per HECO-WP-1403	<u>6,549</u>		<u>6,782</u>	
Ending Balance	<u>\$ 1,242,691</u>		<u>\$ 1,313,247</u>	

Note: Numbers may not total exactly due to rounding.

Note (1): Details provided on pages 2 and 3.

Note (2): Amount represents the annual amount for a five-year recovery of net unrecovered amortization as approved by the Commission in Decision and Order No. 21331, Docket No. 02-0391, dated September 3, 2004.

Hawaiian Electric Company, Inc.
Plant Roll-Forward and Book Depreciation
2008 and 2009 (\$ in Thousands)

	[A]		[B]	[A] x Beg Bal [B]	
	Note (1) 2000 Depr Study Rates	Estimated Plant a/o 12/31/2008	2008 Depr	Estimated Plant a/o 12/31/2009	Estimated TY 2009 Depr
Production					
Beginning Balance		\$ 562,075		\$ 588,732	
Add: Additions		30,020		174,979	
Less: Retirements		3,363		3,523	
Ending Balance	0.016591	588,732	\$ 9,325	760,188	\$ 9,768
Transmission					
Beginning Balance		581,274		596,670	
Add: Additions		16,704		17,598	
Less: Retirements		1,308		1,343	
Ending Balance	0.029118	596,670	16,926	612,925	17,374
Distribution					
Beginning Balance		1,147,202		1,186,344	
Add: Additions		43,835		53,758	
Less: Retirements		4,693		4,853	
Ending Balance	0.042988	1,186,344	49,317	1,235,249	50,999
General (Excl LH Improvements)					
Beginning Balance		134,353		137,032	
Add: Additions		4,584		8,374	
Less: Retirements		1,905		1,943	
Ending Balance	0.052566	137,032	7,062	143,463	7,203
Vehicles					
Beginning Balance		27,214		29,439	
Add: Additions		3,616		3,027	
Less: Retirements		1,391		1,505	
Ending Balance	0.072700	29,439	1,978	30,961	2,140
Total - Excl. Land					
Beginning Balance		2,452,118		2,538,217	
Add: Additions		98,759		257,736	
Less: Retirements		12,660		13,167	
Ending Balance		2,538,217	84,608	2,782,786	87,483
Land (Incl. LH Improvements)					
Beginning Balance		33,553		41,390	
Add: Additions		7,837		2,430	
Less: Retirements		-		-	
Ending Balance		41,390	67	43,820	67
Total - Incl Land					
Beginning Balance		2,485,671		2,579,607	
Add: Additions		106,596		260,166	
Less: Retirements		12,660		13,167	
Ending Balance		\$ 2,579,607		\$ 2,826,606	
Total Depreciation			<u>\$ 84,675</u>		<u>\$ 87,550</u>

Note: Numbers may not total exactly due to rounding.

Note (1): See HECO-WP-1405 for derivation of the composite rates.

Hawaiian Electric Company, Inc.
Plant Roll-Forward and Book Amortization
2008 and 2009 (\$ in Thousands)

	[A] Note (1) 2000 Depr Study Rates	Estimated Plant a/o 12/31/2008	2008 Amort	[B] Estimated Plant a/o 12/31/2009	[A] x Beg Bal [B] Estimated TY 2009 Amort
Production					
Beginning Balance		\$ 5,097		\$ 4,972	
Add: Additions		-		-	
Less: Retirements		125		195	
Ending Balance	0.050000	<u>4,972</u>	\$ 255	<u>4,777</u>	\$ 249
General					
Beginning Balance		38,847		38,056	
Add: Additions		3,624		4,513	
Less: Retirements		4,415		2,664	
Ending Balance	0.088445	<u>38,056</u>	3,436	<u>39,905</u>	3,366
Total					
Beginning Balance		43,944		43,028	
Add: Additions		3,624		4,513	
Less: Retirements		4,540		2,859	
Ending Balance		<u>\$ 43,028</u>	3,691	<u>\$ 44,682</u>	3,614
Additional Amortization -					
Net Unrecovered Amortization			<u>3,297</u>		<u>1,924</u>
Total Amortization			<u>\$ 6,988</u>		<u>\$ 5,538</u>

Note: Numbers may not total exactly due to rounding.

Note (1): See HECO-WP-1405 for derivation of the composite rates.

Hawaiian Electric Company, Inc.
Amortization of CIAC
Estimated 2008 and 2009 (\$ in Thousands)

	Recorded 2007	Estimated 2008	Test Year Estimate 2009
Amortization through 2006	\$ 8,488	\$ 8,315	\$ 8,263
<u>Amortization of 2007 Vintage</u>			
Receipts	\$ 20,480		
Plus: Transfers from Cust Adv	341		
Base for Amortization	<u>\$ 20,821</u>		
Divided by 30	30		
Subtotal	<u>\$ 694</u>	694	694
<u>Amortization of 2008 Vintage</u>			
Receipts	\$ 10,110		
Plus: Transfers from Cust Adv	19		
Base for Amortization	<u>\$ 10,129</u>		
Divided by 30	30		
Subtotal	<u>\$ 338</u>		<u>338</u>
Annual Amortization of CIAC		<u>\$ 9,009</u>	<u>\$ 9,295</u>

Hawaiian Electric Company, Inc.
Projected Retirements, Cost of Removal and Gross Salvage for Depreciable Plant
Recorded 2003 to 2007 (\$ in Thousands)

	Recorded 2003	Recorded 2004	Recorded 2005	Recorded 2006	Recorded 2007	Total Recorded
Depr. Plant Balances - Beginning of the Year [a]						
Production	\$ 443,528	\$ 457,074	\$ 516,558	\$ 529,205	\$ 552,031	\$ 2,498,396
Transmission	522,153	526,540	539,592	550,826	576,639	2,715,751
Distribution	913,623	947,610	998,044	1,052,098	1,097,284	5,008,659
General	121,084	130,099	125,796	146,552	177,108	700,639
Vehicles	24,575	24,542	24,402	24,924	24,622	123,065
Total	\$ 2,024,963	\$ 2,085,865	\$ 2,204,392	\$ 2,303,605	\$ 2,427,684	\$ 11,046,509

Retirements [b]						
Production	\$ 292	\$ 437	\$ 1,033	\$ 149	\$ 13,036	\$ 14,948
Transmission	2,213	859	805	615	1,622	6,114
Distribution	3,209	4,560	4,166	3,952	4,604	20,491
General	1,864	1,783	793	-	5,496	9,936
Vehicles	2,087	2,009	994	793	408	6,291
Total	\$ 9,665	\$ 9,647	\$ 7,792	\$ 5,509	\$ 25,166	\$ 57,779

Percentages of Book Retirements to Beginning Plant Balances [b] / [a]						
Production	0.000659	0.000956	0.002001	0.000282	0.023615	0.005983
Transmission	0.004238	0.001631	0.001493	0.001117	0.002813	0.002251
Distribution	0.003512	0.004812	0.004174	0.003756	0.004196	0.004091
General	0.015397	0.013702	0.006301	0.000000	0.031032	0.014181
Vehicles	0.084910	0.081864	0.040752	0.031817	0.016571	0.051121

Cost of Removal [c]						
Production	\$ 614	\$ 342	\$ 640	\$ 248	\$ 3,552	\$ 5,397
Transmission	694	896	953	1,031	719	4,293
Distribution	2,787	3,406	5,539	4,567	2,721	19,020
General	(56)	128	7	63	-	141
Vehicles	2	-	-	-	144	146
Total	\$ 4,041	\$ 4,772	\$ 7,138	\$ 5,909	\$ 7,136	\$ 28,997

Percentages of Removal Cost to Retirements [c] / [b]						
Production	2.101125	0.782806	0.619564	1.664430	0.272476	0.361034
Transmission	0.313670	1.043709	1.182786	1.676423	0.443280	0.702160
Distribution	0.868474	0.746919	1.329621	1.155617	0.591008	0.928212
General	(0.030194)	0.071772	0.008406	#DIV/0!	0.000000	0.014223
Vehicles	0.001024	0.000000	0.000000	0.000000	0.352941	0.023229

Gross Salvage [d]						
Production	\$ 6	\$ -	\$ -	\$ -	\$ -	\$ 6
Transmission	-	-	-	-	-	-
Distribution	12	69	85	135	167	469
General	8	-	-	1	25	34
Vehicles	270	209	85	85	6	656
Total	\$ 297	\$ 279	\$ 170	\$ 221	\$ 198	\$ 1,165

Percentages of Gross Salvage to Retirements [d] / [b]						
Production	0.020752	0.000000	0.000000	0.000000	0.000000	0.000406
Transmission	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Distribution	0.003808	0.015239	0.020398	0.034160	0.036273	0.022873
General	0.004364	0.000000	0.000000	#DIV/0!	0.004549	0.003436
Vehicles	0.129487	0.104185	0.085772	0.107188	0.014706	0.104242

Hawaiian Electric Company, Inc.
Projected Retirements, Cost of Removal and Gross Salvage for Depreciable Plant
Estimated 2008 to 2009 (\$ in Thousands)

	Estimated 2008	Test Year Estimate 2009
Depr Plant Balance- Beginning of the Year		
Production	\$ 562,075	\$ 588,733
Transmission	581,274	596,670
Distribution	1,147,202	1,186,344
General	134,353	137,031
Vehicles	27,214	29,438
Total	\$ 2,452,118	\$ 2,538,216

Retirements		
Production	\$ 3,363	\$ 3,522
Transmission	1,308	1,343
Distribution	4,693	4,853
General	1,905	1,943
Vehicles	1,391	1,505
Total	\$ 12,661	\$ 13,167

Cost of Removal		
Production	\$ 1,215	\$ 1,271
Transmission	919	943
Distribution	4,356	4,505
General	27	28
Vehicles	32	35
Total	\$ 6,549	\$ 6,782

Gross Salvage		
Production	\$ 1	\$ 1
Transmission	0	0
Distribution	107	111
General	7	7
Vehicles	145	157
Total	\$ 260	\$ 276

Hawaiian Electric Company, Inc.
Estimated Accrual for Regulatory Liability to Recover Future Net Salvage
Estimated 2008 and 2009 (\$ in Thousands)

Account Number	[A] 12/31/07 Recorded Plant Balances	[B] Net Salvage Rate per D&O No. 21331	[C]=[A]x[B] 2008 Estimated COR Accrual	[D]= Subtotal[C]/ Subtotal[A] Weighted Avg COR Accrual Rate	[E] 12/31/08 Est Plant Balances WP-1401 pg.2	[F]=[D]/[E] TY 2009 Estimated COR Accrual
311.00	\$ 80,821	0.00200	\$ 162			
312.00	269,384	0.00206	555			
314.00	126,873	0.00194	246			
315.00	41,001	0.00195	80			
316.00	17,026	0.00209	36			
341.00	854	0.00085	1			
342.00	4,636	0.00096	4			
343.00	10,954	0.00085	9			
344.00	6,207	0.00091	6			
345.00	3,874	0.00100	4			
346.00	445	0.00067	0			
Production	<u>562,075</u>		<u>1,103</u>	0.00196	\$ 588,732	\$ 1,155
350.10	9,585	0.00000	-			
352.00	33,202	0.00385	128			
353.00	205,649	0.00490	1,008			
354.00	17,404	0.00600	104			
355.00	150,739	0.01042	1,571			
356.00	73,611	0.02286	1,683			
357.00	45,469	0.00167	76			
358.00	43,211	0.00400	173			
359.00	2,404	0.00000	-			
Transmission	<u>581,274</u>		<u>4,742</u>	0.00816	596,670	4,868
360.10	322	0.00000	-			
361.00	23,030	0.00500	115			
362.00	135,734	0.00851	1,155			
364.00	105,278	0.01250	1,316			
365.00	87,664	0.03125	2,740			
366.00	206,620	0.00500	1,033			
367.00	238,736	0.02250	5,372			
368.00	136,977	0.01111	1,522			
369.10	38,743	0.03750	1,453			
369.20	146,268	0.02100	3,072			
370.00	27,830	0.00000	-			
Distribution	<u>1,147,202</u>		<u>17,777</u>	0.01550	1,186,344	18,383
390.00	46,804	0.01111	520			
394.00	1,765	(0.00067)	(1)			
395.00	153	0.00000	-			
397.00	84,522	0.00417	352			
398.00	1,109	0.00227	3			
General	<u>134,353</u>		<u>874</u>	0.00650	137,032	891
392.00	27,214	(0.00357)	(97)			
Vehicles	<u>27,214</u>		<u>(97)</u>	(0.00357)	29,439	(105)
Grand Total	<u>\$ 2,452,118</u>		<u>\$ 24,398</u>		<u>\$ 2,538,217</u>	<u>\$ 25,192</u>

Hawaiian Electric Company, Inc.
Calculation of 2000 Depreciation Study Rates Weighted for Depreciable Asset Balance
(\$ in Thousands)

Account	Depreciable Assets a/o 1/1/08	Straight-Line Remaining-Life Rates	Depreciation Accrual Year 2008
311	\$ 80,821	0.019270 *	\$ 1,557
312	269,384	0.017140 *	4,617
314	126,873	0.013620 *	1,728
315	41,001	0.017370 *	712
316	17,026	0.023370 *	398
Tot - Steam	535,105	0.016843	9,013
341	854	0.008900 *	8
342	4,636	0.015690 *	73
343	10,954	0.008760 *	96
344	6,207	0.011310 *	70
345	3,874	0.017760 *	69
346	445	-0.006400 *	(3)
Tot - Gas Turbine	26,970	0.011585	312
Tot - Production	562,075	0.016591	9,325
3501	9,585	0.009000 *	86
352	33,202	0.024000 *	797
353	205,649	0.025600 *	5,265
354	17,404	0.025700 *	447
355	150,739	0.030900 *	4,658
356	73,611	0.051900 *	3,820
357	45,469	0.017000 *	773
358	43,211	0.024100 *	1,041
359	2,404	0.015800 *	38
Tot - Transmission	581,274	0.029118	16,926
3601	322	0.020500 *	7
361	23,030	0.033500 *	772
362	135,734	0.029900 *	4,058
364	105,278	0.032900 *	3,464
365	87,664	0.065400 *	5,733
366	206,620	0.022000 *	4,546
367	238,736	0.054500 *	13,011
368	136,977	0.060500 *	8,287
369.1	38,743	0.072600 *	2,813
369.2	146,268	0.039500 *	5,778
370	27,830	0.030500 *	849
Tot - Distribution	1,147,202	0.042988	49,317
Tot - T & D	1,728,476		66,242
390	46,804	0.040900 *	1,914
394	1,765	0.036700 *	65
395	153	0.034500 *	5
397	84,522	0.059400 *	5,021
398	1,109	0.051800 *	57
Tot - General	134,353	0.052566	7,062
Sub-Total	2,424,904		82,630
3902 (King)	6,721	0.002870	32
3902 (CPP)	1,071	0.000850	35
3902 (Hon CI)	7	0.000000	-
Tot- LH Improvements	7,799		67
392	27,214	0.072700 *	1,978
Utility Total	\$ 2,459,917	0.034422	\$ 84,675

Note: Numbers may not total exactly due to rounding.

* Agreed to D&O No. 21331, dated September 3, 2004 Docket No. 02-0391 Attachment C

Hawaiian Electric Company, Inc.
Calculation of 2000 Amortizable Rates Weighted for Amortizable Plant Balance
(\$ in Thousands)

Account	[A] Amortizable Assets a/o 1/1/08	[B] Amortization Rates (%) Note (1)	[A]x[B] Amortization Accrual Year 2008
316 - Steam	\$ 5,097	0.050000 *	\$ 255
346 - Other Production	-	0.050000 *	-
Tot - Production	<u>5,097</u>	0.050000	<u>255</u>
3911	11,662	0.142860 *	1,666
3912	1,990	0.083340 *	166
3913	8,959	0.066670 *	597
393	1,199	0.040000 *	48
394	10,985	0.066670 *	732
395	1,321	0.066670 *	88
396	313	0.055560 *	17
398	2,418	0.050000 *	121
Tot - General	<u>38,847</u>	0.088445	<u>3,436</u>
Utility Total	<u>\$ 43,944</u>	0.083987	<u>\$ 3,691</u>

Note: Numbers may not total exactly due to rounding.

* Agreed to D&O No. 21331, dated September 3, 2004 Docket No. 02-0391 Attachment D.

AGREEMENT NO. P9S-06-014

CONSULTANT SERVICES AGREEMENT

THIS CONSULTANT SERVICES AGREEMENT (hereinafter "Agreement" or "Contract") is made on November 21, 2007 by and between HAWAIIAN ELECTRIC COMPANY, INC. (hereinafter "Company"), a Hawaii corporation, whose principal place of business and address is 900 Richards Street, Honolulu, Hawaii 96813 and whose mailing address is P. O. Box 2750, Honolulu, Hawaii 96840-0001 and UNIVERSITY OF HAWAII (hereinafter "Consultant"), whose principal place of business and mailing address is Office of Research Services, 2530 Dole Street, Sakamaki Hall D-200, Honolulu, Hawaii, 96822.

W I T N E S S E T H :

WHEREAS, Company is in the business of generation, transmission, and distribution of electrical power on the Island of Oahu, State of Hawaii; and

WHEREAS, Company requires certain professional consulting work to be accomplished in order to evaluate advanced photovoltaic technologies; and

WHEREAS, Consultant is in the business of performing professional consulting work such as that needed by Company; and

WHEREAS, Consultant represents that it is equipped and has the expertise necessary to perform the particular professional consulting work required under this Agreement.

NOW, THEREFORE, in consideration of these premises and of the mutual promises herein contained, Company and Consultant hereby agree that Consultant will perform professional consulting work for Company under the following terms and conditions:

I. SCOPE OF WORK

1.1 Project Description - Consultant agrees to furnish all labor, tools, materials, equipment, meals, lodging, transportation, and supervision necessary to complete the following work in a professional manner and to the reasonable satisfaction of Company: Maui Electrical System Analysis, which will include initial data collection and preliminary analysis of the suitability of this data for future model development (MAPS and PSLF models) of the Maui Electric Company, Ltd. (MECO) grid, as described in the attached Special Conditions at Attachment A, which Company understands will be performed by Consultant's subcontractor (hereinafter "Work"). The Special Conditions at Attachment A shall take precedence over any conflicting provisions found in this Contract.

1.2 Term - The Term of this Contract shall be from November 21, 2007 until December 31, 2008, unless terminated by written amendment hereto.

II. COMPENSATION

2.1 Time and Expenses - Compensation for Work performed and expenses incurred under this Contract shall be on a time and expenses basis. The hourly rates for the Work will be at a mutually agreeable rate and Consultant shall advise Company of hardware expenditures prior to procuring hardware. However, in no event shall the total time and expenses invoiced under this Contract inclusive of taxes exceed the sum of **\$344,000.00**.

2.2 Invoicing - Consultant may submit invoices for Work completed by Consultant and shall reference the Company's Designated Representative, the Company service order or service contract number, if any, and any additional information required as part of the Scope of Work hereunder. All invoices should be addressed as follows:

Hawaiian Electric Company, Inc.
P. O. Box 2750
Honolulu, Hawaii 96840-0001
Attention: Accounts Payable
Agreement No. P9S-06-014

NOTE: Do not include the name of the Company's Designated Representative in the address.

The ORIGINAL invoice, without attachments, must be sent directly to the Accounts Payable address listed above. ALL REQUIRED SUPPORTING DOCUMENTATION must be sent SEPARATELY to the Company's Designated

Representative. Failure to follow this procedure may cause a delay in payment.

2.3 Payments - Payment of a properly submitted invoice will be made within thirty (30) days after receipt and approval by Company. Payment will be made after each completed milestone, which payment schedule is described in Attachment A.

2.4 Final Payment - Final payment of all remaining amounts due Consultant, including any and all retentions, shall be paid within sixty (60) days after all Work is completed, accepted by Company, and a proper final invoice submitted; provided, however, that payment shall be made within thirty (30) days if Company is satisfied by bond or otherwise that there are no outstanding third-party claims against the Work.

2.5 Withholding of Payments; Set-off - All payments, including the final payment, are subject to adjustment during or after termination of the Work on the basis of any final accounting which may be made by Company. Company may withhold from any payment, including the final payment: (1) any amount incorrectly invoiced; or (2) any amount in dispute either because Company has found the invoice excessive, or the Work performed unacceptable. Company further reserves the right to set-off any amounts due from Consultant, or any affiliated company of Consultant, to Company or any of its affiliated companies, against any amounts payable at any time by Company in connection with this Agreement. "Affiliated company" refers to any corporation, firm or association that controls, is controlled by or is under common control with Company or Consultant, as the case may be.

III. STATUS OF THE PARTIES

3.1 Independent Contractor - Consultant will act solely as an independent contractor of Company, and not as Company's agent or servant for any purpose. All employees of Consultant will work under the supervision of Consultant and not act as Company's agents or servants for any purpose.

3.2 Subletting or Assigning Contract - Consultant shall not assign nor sublet any portion of the Work under this Contract without first submitting the proposed subcontract or assignment to Company's Designated Representative and receiving written consent from such Representative to subcontract or assign, which consent may be granted or withheld in Company's sole discretion. A request to sublet or assign must contain the name and location of individuals or firms to whom Work will be transferred, information on the qualifications and experience of those individuals or firms

to perform the transferred Work, and an estimate of the cost of Work to be performed by the subcontractor or assignee.

IV. POINTS OF CONTACT

4.1 Company's Designated Representative - As used in this Contract, "Company's Designated Representative" shall mean either Arthur Seki (HECO) or Neal Shinyama (MECO). During the performance of the Work hereunder, he can be reached at the Company corporate offices in Honolulu, Hawaii. He shall be the point of contact for and have the authority to speak on behalf of Company concerning all matters related to this Contract, except that he shall not have the authority to amend the Contract.

4.2 Consultant's Designated Representative - As used in this Contract, "Consultant's Designated Representative" shall mean Yaa-Yin Fong, or her authorized designee. During the performance of the Work hereunder, she can be reached at the Consultant offices in Honolulu, Hawaii. She shall be the point of contact for and have the authority to speak on behalf of Consultant concerning all administrative matters related to this Contract.

4.3 Consultant's Key Personnel - The following individuals are designated as Key Personnel under this Contract:

- i) Richard Rocheleau (Principal Investigator)
- ii) Terrence Surles (Technical Program Manager)

V. PERFORMANCE STANDARDS AND WARRANTY

5.1 Performance Standards - In selecting employees to undertake the Work under this Contract, Consultant shall select only those persons who are qualified by the necessary education, training and experience to provide high quality performance of the particular Work for which each such employee is responsible. Consultant shall accomplish all Work in a professional manner and to the reasonable satisfaction of Company. Consultant's personnel shall exercise that degree of skill and care required by the highest level of accepted professional standards in Consultant's field.

5.2 Technological Developments and Remedies - Omitted.

5.3 Correction of Defective or Substandard Work - Consultant acknowledges its responsibility for insuring that the procedures used in the performance of this Contract are sufficient to satisfactorily accomplish the Work, and that review and approval by Company of any drawings, specifications or other documents prepared

by Consultant in the performance of the Work shall not relieve Consultant or any of its subcontractors or vendors of its professional responsibility for the Work. Consultant will be held to standards consistent to the industry.

5.4 Replacement of Key Personnel - Due to the critical nature of Company's operations, Consultant agrees that prior written approval must be obtained from Company for any change in Consultant's Key Personnel. Consultant will submit to Company a written request and resume, curriculum vitae, or other information relevant to the replacement's qualifications.

VI. INSURANCE AND RESPONSIBILITY

6.1 Workers' Compensation - Consultant and anyone acting under its direction or control or on its behalf shall at its own expense procure and maintain in full force at all times during the term of this Contract, Workers' Compensation, Temporary Disability, and other similar insurance required by state or federal laws. Such insurance may be on a self-insured basis.

6.2 Commercial General Liability Insurance - Omitted.

6.3 Automobile Liability Insurance - Omitted.

6.4 Professional Errors and Omissions Insurance - Omitted.

6.5 Consultant's Pollution Liability Insurance and/or Asbestos Abatement Liability Insurance and/or Lead Abatement Liability Insurance - Omitted.

6.6 Marine Insurance - Omitted.

6.7 Waiver of Subrogation - Omitted.

6.8 Company as Additional Insured - Omitted.

6.9 Statements of Self-Insurance - Upon request, Consultant shall file with the Company's Designated Representative statements of self-insurance certifying that required insurance coverage is in force, and further providing that the Company will be given thirty (30) days' written notice of any material change in, cancellation of, or intent not to renew any of the policies. Receipt of any statement showing less coverage than requested is not a waiver of the Consultant's obligation to fulfill the requirements.

6.10 Responsibility - The University of Hawaii shall be responsible for damages or injury caused by the University of Hawaii's agents, officers, and employees in the course of their

employment under this Agreement to the extent that the University of Hawaii's liability for such damage or injury has been determined by a court or otherwise agreed to by the University of Hawaii, and the University of Hawaii shall pay for such damages and injury to the extent permitted by law and approved by the Hawaii Legislature.

VII. CONFIDENTIALITY, OWNERSHIP, AND USE OF MATERIALS AND INFORMATION.

7.1 Company Confidential Information - Except as otherwise provided, any written information that is labeled as "Confidential" by Company related to Company business, including but not limited to drawings, documents, technical data, business information, customer/client information, or any other type of information whatsoever, whether or not characterized as secret or confidential, obtained by Consultant from Company under this Agreement is Company's exclusive property and shall be deemed Company's Confidential Information. Consultant shall receive and maintain Company's Confidential Information in the strictest confidence. Company's Confidential Information shall also include any compilation, modification, restatement, analysis, reworking, evaluation, report, or other expression of Company's confidential information labeled as Confidential and provided by Company to Consultant under this Agreement. Consultant shall not use Company's Confidential Information for any purpose other than the Work and shall not otherwise disclose Company's Confidential Information to others except with the Company's consent given in writing. Upon request of Company, Consultant shall return all copies of all Company's Confidential Information to Company upon completion of the Work except that Consultant may retain one copy in a secure storage for archival purposes.

7.2 Excluded Information - Company Confidential Information shall not include, and Consultant shall have no obligation to maintain in confidence, any information that:

- a. Is presently known to Consultant without a pledge of confidentiality to Company;
- b. Is presently in the public domain;
- c. Was received from third parties with no obligation of confidentiality to Company; or
- d. Is required to be disclosed by law, court order or regulation.

7.3 Discoveries and Inventions - Omitted.

7.4 Assignment of Copyright and Discoveries - Omitted.

7.5 Previous Discoveries - Omitted.

7.6 Exclusive Use and Proprietary Ownership - Any reports or documents prepared by Consultant in fulfillment of its obligations to the Work shall be considered Company proprietary information and Consultant hereby grants to Company and its subsidiaries an exclusive, paid-up, royalty-free license to use such reports or documents or information contained therein for any and all business purposes of Company and its subsidiaries, affiliates, partners, and associates including planning, research, regulatory, operational and commercial purposes. Notwithstanding the foregoing, Consultant shall retain ownership rights in all data, research results, compilations, evaluations, analyses, and other forms of information that do not constitute Company Confidential Information and that are gathered, collected, and produced by Consultant ("Consultant Proprietary Information") under this Agreement or during the Work. Further, Consultant shall retain ownership rights in all models, methods, procedures, computer software code, know-how, and any other form of intellectual property, whether patentable or not, conceived and/or reduced to practice under this Agreement or during the Work ("Consultant Intellectual Property"). Company acknowledges Consultants right to use Consultant Proprietary Information and Consultant Intellectual Property for its own purposes, including but not limited to academic, public service, consulting, and commercial purposes. Notwithstanding the foregoing, Consultant may not use, distribute, or publish any of those reports or documents that are prepared on behalf of Company under this Agreement and during the Work for any purpose without Company approval of each and every proposed use or distribution. This requirement shall survive the expiration or termination of this Agreement and the Work.

7.7 Term of Confidentiality. The provisions in this Article VII shall survive this Agreement.

VIII. TERMINATION FOR CAUSE

8.1 Conditions Allowing Termination - If any of the following conditions occur during the term of this Contract, then in such case, Company shall have the right to terminate this Contract as provided in this Article:

- (1) Consultant fails or is unable to perform its obligations under this Contract to the reasonable satisfaction of Company;
- (2) Consultant becomes involved in a labor problem which in the opinion of Company unacceptably impedes or slows down the Work;

- (3) Consultant fails to commence correction of defective Work immediately after notification of defect and to continuously and vigorously pursue correction of defect until the Work is completed to the full satisfaction of Company;
- (4) Consultant makes a general assignment for the benefit of its creditors;
- (5) Consultant has a receiver appointed because of insolvency; or
- (6) Consultant files bankruptcy or has a petition for involuntary bankruptcy filed against it.

8.2 Notice Required Before Termination - Before terminating this Contract for cause, Company shall give written notice to Consultant of the existence of one of the above conditions allowing termination for cause and of Company's intention to exercise its termination rights if the condition is not corrected to the satisfaction of Company within fifteen (15) days of such notice.

8.3 Consultant's Right to Correct Condition - Upon receipt of Company's notice of intent to terminate for cause, Consultant shall have fifteen (15) days in which to correct the noted condition to the satisfaction of Company, or, if appropriate, to provide substitute Work which meets all the requirements of this Contract.

8.4 Company's Rights Upon Termination - If Consultant fails to correct the noted condition within fifteen (15) days, Company may terminate the Contract and secure such substitute Work as it deems necessary to complete the Work under this Contract. In the event Company acquires substitute Work under this provision, Consultant agrees to pay Company upon demand, the reasonable difference between what the substitute Work actually costs Company and what Consultant would have been paid had it completed the Work itself. This provision shall survive termination of this Contract.

IX. TERMINATION FOR CONVENIENCE

9.1 Company's Rights - Company shall have the right to terminate this Contract at any time for Company's convenience by giving written notice of such to Consultant. Upon receiving notice of termination, Consultant shall discontinue the Work on the date and to the extent specified in the notice and place no further orders for subservices except as needed to continue any portion of the Work which was not terminated. Consultant shall also make every reasonable effort to cancel, upon terms satisfactory to Company, all orders or subcontracts related to the terminated Work.

9.2 Termination Prior to Commencement of Work - If this Contract is terminated prior to Consultant's having commenced any Work or preparation for Work, no payment shall be made to Consultant.

9.3 Termination After Commencement of Work - If this Contract is terminated for Company's convenience after Consultant has commenced any Work, mobilization or other off-site activities under this Contract, Consultant will be paid its actually incurred costs, including administrative and general overhead costs and demobilization costs, determined in accordance with generally accepted accounting principles consistently applied, plus an amount equal to ten percent (10%) of those costs to account for profit; provided that, if compensation under this Contract is on a time and materials basis, Consultant will be compensated at the rates and profit level specified in the Contract for Work actually accomplished prior to the notice of termination. Notwithstanding the above, Company shall not pay for time and/or costs which are excessive, given the total Work actually completed prior to notice of termination.

X. FORCE MAJEURE

10.1 Excuse of Performance - Notwithstanding anything in this Contract to the contrary, neither party shall be liable nor responsible for failure to carry out any of its obligations under this Contract caused by Force Majeure. A party rendered unable to fulfill any obligation under this Contract by reason of Force Majeure shall make reasonable efforts to remove such inability in the shortest possible time, and the other party shall be excused from performance of its obligations until the party relying on Force Majeure shall again be in full compliance with its obligations under this Contract.

10.2 Definition - The term "Force Majeure" as used herein shall mean any cause beyond the control of the party affected, and which by reasonable efforts the party affected is unable to

overcome, including without limitation the following: acts of God; fire, flood, landslide, lightning, earthquake, hurricane, tornado, storm, freeze, volcanic eruption or drought; blight, famine, epidemic or quarantine; act or failure to act of the other party; theft; casualty; war; invasion; civil disturbance; explosion; acts of public enemies; or sabotage.

XI. LAWS, REGULATIONS AND PUBLIC ORDINANCES

11.1 Compliance - Consultant shall comply with federal, state, and local statutes, regulations and public ordinances of any nature governing the Work, including without limitation, those statutes specifically referred to in this Article. In addition, Consultant, at its expense, shall obtain any and all licenses and permits required for the Work.

11.2 Taxes - Consultant assumes exclusive liability for all contributions, taxes or payments required to be made because of persons hired, employed or paid by Consultant by the federal and state Unemployment Compensation Act, Social Security Acts and all amendments, and by all other current or future acts, federal or state, requiring payment by the Consultant on account of the person hired, employed, or paid by Consultant for Work performed under this Contract. Sales, use and excise taxes applicable to the value or use of any property incorporated, furnished, or otherwise supplied by Consultant shall be stated separately from the price or rates specified in Article II (COMPENSATION), and shall not be included in any computation of profit allowed by this Contract. Consultant assumes exclusive liability for all such taxes charged or chargeable upon any such goods or materials supplied by Consultant pursuant to this Contract.

11.3 Safety and Health Regulations - Consultant shall comply with all federal, state and local laws and regulations pertaining to health, safety, sanitary facilities, and waste disposal. Consultant shall meet all requirements of the Occupational Safety and Health Act of 1970 (OSHA) including all amendments. Consultant shall also comply with any standards, rules, regulations and orders promulgated under OSHA and particularly with the agreement for State development and enforcement of Occupational Health and Safety Standards as authorized by Section 18 of the Act.

11.4 Drawings and Specifications - It is the intent of Company to have all drawings and specifications for the Work comply with all applicable statutes, regulations, and ordinances. If Consultant discovers any discrepancy or conflict between the drawings and specifications and applicable legal requirements, Consultant shall immediately report the problem in writing to Company's Designated Representative.

11.5 Equal Employment Opportunity - (Applicable to all contracts of \$10,000 or more in the whole or aggregate. 41 CFR 60-1.4 and 41 CFR 60-741.5.) Consultant is aware of and is fully informed of Consultant responsibilities under Executive Order 11246 (reference to which include amendments and orders superseding in whole or in part) and shall be bound by and agrees to the provisions as contained in Section 202 of said Executive Order and the Equal Opportunity Clause as set forth in 41 CFR 60-1.4 and 41 CFR 60-741.5(a), which clauses are hereby incorporated by reference.

11.6 Employment of Disabled Veterans and Veterans of the Vietnam Era - (Applicable to all contracts of \$10,000 or more in the whole or aggregate. 41 CFR 60-250.4 and 41 CFR 60-741.5.) Consultant agrees that it is and will remain in compliance with the rules and regulations promulgated under The Vietnam Era Veterans Readjustment Assistance Act of 1974, The Affirmative Action Clause set forth in 41 CFR 60-250.4, the Rehabilitation Act of 1973 and the Equal Opportunity Clause set forth in 41 CFR 60-741.5, which clauses are incorporated by reference herein.

XII. MISCELLANEOUS

12.1 Patents and Copyrights - Consultant agrees that in performing Work under this Contract, it will not knowingly use any process, program, design, device, or material which infringes on any United States patent or copyright or any trade secret agreement.

12.2 Security - Consultant and Consultant's employees who perform Work under this Contract shall comply with the security practices and procedures prescribed by Company to cover any Company property where Work may be performed. Consultant shall advise its employees of these practices and procedures. Company will make a copy of these practices and procedures available to Consultant upon request.

12.3 Amendments - This Contract may be amended or supplemented by and only by written instrument duly executed by each of the parties.

12.4 Severability of Provisions - In the event a court or other tribunal of competent jurisdiction at any time holds that any provision of this Contract is invalid, the remainder of this Contract shall not be affected thereby and shall continue in full force and effect.

12.5 Entire Contract - This Contract, including Attachment A, shall constitute the entire understanding between the parties, superseding any and all previous understandings, oral or written, pertaining to the subject matter contained herein. The parties have entered into this Contract in reliance upon the representations and mutual undertakings contained herein and not in reliance upon any oral or written representation or information provided to one party by any representative of the other party.

12.6 Applicable Law/Forum - This Contract is made under and shall be governed by and construed in accordance with the laws of the State of Hawaii. Each party agrees and consents that any dispute arising out of this Contract, however defined, shall be brought in the State of Hawaii in a court of competent jurisdiction.

12.7 No Waiver - The failure at any time of either party to enforce any of the provisions of this Contract, or to require at any time performance by the other party of any of the provisions hereof, shall in no way be construed to be a waiver of such provisions, nor in any way construed to affect the validity of this Contract or any part hereof, or the right of any party thereafter to enforce each and every such provision.

12.8 Access to Records - Upon request, Consultant shall make available for inspection and audit by Company in Honolulu, Hawaii any and all records and/or documents relating to Work performed under this Contract during the performance of the Work and for a period of up to two (2) years from the completion of all Work under this Contract.

12.9 Regulatory Approvals - This Contract shall be contingent upon any and all required governmental and regulatory approvals, including those of the Public Utilities Commission.

12.10 Gender and Number - The terms "Company" and "Consultant," as and when used herein, or any pronouns used in place thereof, shall mean and include the masculine, feminine and neuter, the singular or plural number, individuals, partnerships, trustees or corporations and their and each of their respective successors, heirs, personal representatives, successors in trust and assigns, according to the context thereof.

12.11 Attorneys' Fees and Costs - Omitted.

12.12 Survival of Obligations - All confidentiality obligations hereunder shall survive termination of this Contract.

XIII. COUNTERPARTS CLAUSE

The parties agree that this Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which shall together constitute one and the same instrument binding all parties notwithstanding that all of the parties are not signatories to the same counterparts. For all purposes, duplicate unexecuted and unacknowledged pages of the counterparts may be discarded and the remaining pages assembled as one document.

IN WITNESS WHEREOF, the parties hereto have caused this Contract to be signed by appropriate representatives of each as of the date indicated.

HAWAIIAN ELECTRIC COMPANY, INC.
("Company")

^{KS}
_{DML} By 
Karl E. Stahlkopf

DATE: 11/30/07

Its Sr. Vice President, Energy
Solutions and Chief Technology
Officer

^B
_{DML} By 
David G. Waller

DATE: 11/30/07

Its Vice President, Customer Solutions

UNIVERSITY OF HAWAII
("Consultant")

By 

DATE: DEC 7 2007

Its Director - Office of Research Services

ATTACHMENT A

Special Conditions - Work to be Performed

Hawaiian Electric Company, Inc. (HECO) is pleased with the Energy Assessment and Modeling efforts of the Hawaii Energy Roadmap Study for the Big Island of Hawaii which has been conducted by GE Global Research Center (GEGRC) under contract to the University of Hawaii's Hawaii Natural Energy Institute (HNEI). The results of this work and the future scenarios being developed by the team can provide a useful analytic framework for HECO in its evaluation of future projects.

HECO understands that HNEI/GEGRC has proposed, and U.S. Department of Energy (USDOE) has agreed to fund, a similar effort entitled, Maui Electrical System Analysis, which will include initial data collection and preliminary analysis of the suitability of this data for future model (MAPS and PSLF models) development of the Maui Electric Company, Ltd. (MECO) grid. As indicated to you earlier, HECO and MECO support this expanded effort and will, under appropriate non-disclosure agreement, make MECO data available.

HECO believes that development of these models for the MECO grid has the potential to provide valuable insights into critical issues for MECO such as technical and cost issues associated with increased wind penetration, the potential to improve grid dynamics via appropriate storage or buffering technologies, and strategies for further implementation of distributed generation on the MECO system. Because of these potential benefits, HECO proposes to provide up to \$344,000 to support not only the data collection and analysis but also development and validation of the system models (over 2007 and 2008 time period).

In the cooperative spirit of working together on this study, HECO will make initial payment to HNEI to begin activities related to Task 1 - Data Consolidation and Preliminary Model Feasibility Analysis upon execution of this Agreement. As discussed in the GEGRC proposal, the completion of Tasks 1 to 4 will trigger tollgate meetings with team members to discuss task results. These tollgate meetings will serve as key decision points (i.e., will result in go or no-go decisions) to ensure appropriate value to the utility and to the program. The effort described in this agreement and in the GEGRC contract to HECO dated October 4, 2007 is to be incorporated into HNEI's current agreement with DOE Agreement No. DE-FC26-06NT42847. No funds shall be expended until approval for inclusion of this work is received from DOE. In the event approval is not received, this CSA will be amended accordingly.

Details regarding the scope of work and tollgates are provided in the GEGRC proposal to HECO dated October 4, 2007 provided in Attachment B.

Subsequent task payments will be made to HNEI after each task is satisfactorily completed. Decisions on whether or not to move forward with the project will be made by the HECO and MECO team based on discussions and findings presented at each tollgate meeting (Tollgate #'s 1 through 4 as defined GEGRC proposal).

HNEI will provide HECO and MECO with all deliverable reports produced in Tasks 1-5. In addition, HNEI will provide HECO and MECO with the final simulation models developed in the project (including but not limited to PSLF and MAPS models) and populated subroutines, and training associated with the models.

The following table presents the tasks and HECO contribution.

Task	HECO Share
1. Data Consolidation and Preliminary Model Feasibility Analysis Milestone(s) for payment: Execution of Consultant Services Agreement	\$89,000
2. Data Evaluation, Manipulation and Completion Milestone(s) for payment: Decision to continue work after Tollgate #1; Completion of Task 2 (delivery of data collection report); delivery of final models and subroutines and populated subroutines for Island of Hawaii	\$47,000
3. System Model Development Milestone(s) for payment: Decision to continue work after Tollgate #2; Completion of Task 3 (delivery of report describing characteristics and capabilities of dynamic and production cost models)	\$95,000
4. Baseline Model Validation Milestone(s) for payment: Decision to continue work after Tollgate #3; Completion of Task 4 (delivery of model validation report describing validation methodology and results of dynamic and production cost models); delivery of final models and subroutines and populated subroutines for Island of Maui	\$83,000
5. Scenario Development Milestone(s) for payment: Decision to continue work after Tollgate #4; Completion of Task 5 (delivery of Phase 2 proposal and contract amendment request)	\$30,000
TOTAL	\$344,000.00

Notes:

a) Tollgate meetings are scheduled for Tasks 1 through 4.

- b) USDOE is providing cost share funding of \$60,000 (\$20,000 each for Tasks 2-4).
- c) HNEI is providing coordination/management of this study valued at \$20,000.
- d) Models for Island of Hawaii and Island of Maui are to be used for analysis of those island grids only.

ATTACHMENT B
GEGRC Proposal (dated October 4, 2007)



GE
Global Research

One Research Circle
Niskayuna, NY 12309
USA

October 4, 2007

Richard Rocheleau
Director, Hawaii Natural Energy Institute
1680 East West Road, POST 109
University of Hawaii at Manoa
Honolulu, HI 96822

Subject: GE-GRC Proposal 5125.030 – Maui Electrical System Analysis

GE Global Research Center (GE-GRC) is pleased to offer this proposal in response to your Request for Proposal to carry out a program on Maui Electrical System Analysis. Our cost-reimbursement quotation offered on a best efforts basis in accordance with the attached work statement is \$403,914. This estimate is based on a start date of 11/01/2007. A Standard Form 1448 and supporting cost details are attached. It is estimated that the work can be completed within 9 months after authorization to proceed. This proposal will expire 12/03/2007.

GE-GRC's overhead, bid and proposal, and external administrative cost rates are approved by the DCMC-Pittsfield Administrative Contracting Officer. Details of direct costs are available to the DCAA Resident Auditor, Mr. Joseph Cook, (518) 377-9970.

This proposal is based on the understanding that the resultant contract will contain mutually acceptable terms and conditions in accordance with applicable Government Regulations (including Patent Rights Retention by the Contractor, FAR 52.227-12) or Standard Patent right Clause (37CFR401.14).

For further information concerning this proposal, contact Eliot Assimakopoulos at (518) 387-7639.

Should you elect to favor us with an order, please furnish all applicable provisions from the contract under which the order is placed, refer to the above proposal number and send to GE Global Research Center, Attn: Dave Wardwell, Contract Administrator, One Research Circle, Bldg. KW Room C247, Niskayuna, NY 12309 (518) 387-7010.

We look forward to working with the University of Hawaii at Manoa on these technology developments.

A handwritten signature in black ink, appearing to read 'Eric Butterfield'.

Eric Butterfield
GE Energy Business Programs Manager

CRD 5125.030

PROPOSAL COVER SHEET <i>(Cost of Pricing Data Not Required)</i>		1. SOLICITATION/CONTRACT/MODIFICATION NUMBER		OMB NO.: 9000-0013 Expires 9/30/98		
Public reporting burden for this collection of information is estimated to average 4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the FAR Secretariat (VRS), Office of Federal Acquisition Policy, GSA, Washington, DC 20405.						
2a. NAME OF OFFEROR		3a. NAME OF OFFEROR'S POINT OF CONTACT		3c. TELEPHONE		
GENERAL ELECTRIC COMPANY		E. Assimakopoulos				
2b. FIRST LINE ADDRESS		3b. TITLE OF OFFEROR'S POINT OF CONTACT		AREA CODE	NUMBER	
GE Global Research Center		Business Development Manager		518	387-7639	
2c. STREET ADDRESS		4. TYPE OF CONTRACT ACTION (Check)				
One Research Circle						
2d. CITY	2e. STATE	2f. ZIP CODE				
Niskayuna	NY	12309				
5. Type of Contract (Check)						
<input type="checkbox"/> FFP	<input type="checkbox"/> CPFF	<input type="checkbox"/> CPIF	<input checked="" type="checkbox"/> a. New Contract	<input type="checkbox"/> d. Letter Contract		
<input type="checkbox"/> FPI	<input checked="" type="checkbox"/> Cost Reimbursement	<input type="checkbox"/> CPAF	<input type="checkbox"/> b. Change Order	<input type="checkbox"/> e. Unpriced Order		
			<input type="checkbox"/> c. Price Revision/Redetermination	<input type="checkbox"/> f. Other (Specify)		
6. PERFORMANCE						
PLACE (S)	a.	Schenectady, NY			PERIOD(S)	
	b.					a.
	c.					b.
					c.	
7. List and reference the identification, quantity and total price proposed for each contract line item. <i>(Continue on reverse, if necessary. Use same headings)</i>						
a. LINE ITEM NO.	b. IDENTIFICATION		c. QUANTITY	d. TOTAL PRICE	e. PROP. REF. PAGE	
	Maui Electrical System Analysis		N/A	\$403,914	See attached computer outputs for details	
8. PROVIDE THE FOLLOWING <i>(if available)</i>						
NAME OF CONTRACT ADMINISTRATION OFFICE			NAME OF AUDIT OFFICE			
Defense Contract Management Agency			DCAA Upstate New York Branch Mr. Joseph A Cook, Branch Manager			
STREET ADDRESS			STREET ADDRESS			
100 Plastics Avenue			433 State St. Suite 201			
CITY	STATE	ZIP CODE	CITY	STATE	ZIP CODE	
Pittsfield	MA	01201-3677	Schenectady	NY	12304	
TELEPHONE	AREA CODE	NUMBER	TELEPHONE	AREA CODE	NUMBER	
	413	494-5231		518	377-9922	
This proposal is submitted in response to the solicitation, contract, modification, etc. in Item 1. By submitting this proposal, the offeror, if selected for discussions, grants the contracting officer or an authorized representative the right to examine, at any time before award, any of those books, records, documents, or other records directly pertinent to the information requested or submitted. See instructions at Table 15-3.						
9a. NAME OF OFFER (Typed)			10. NAME OF FIRM			
Eric Butterfield			GE Global Research Center			
9b. TITLE OF OFFER (Typed)						
GE Energy - Business Programs Manager						
11. SIGNATURE				12. DATE OF SUBMISSION		
				10/04/07		

GE Global Research

Maui Electrical System Analysis

A Statement of Work delivered to:

Karl Stahlkopf
Senior Vice President
Hawaiian Electric Company, Inc.
P. O. Box 2750
Honolulu, HI 96840-0001
United States of America

Administrative and Technical Contacts at GE-Global Research

Administrative: Eliot Assimakopoulos
Business Development Manager
One Research Circle, Niskayuna, NY, 12309
Phone: 518-387-7639
FAX: 518-387-5449
e-mail: assimako@research.ge.com

Technical: Juan de Bedout
Manager, Electric Power and Propulsion Lab
One Research Circle, Niskayuna, NY, 12309
Phone: 518-387-5676
FAX: 518-387-7592
e-mail: debedout@research.ge.com

Revision Date: October 4, 2007
GE Research 5125.030

GE PROPRIETARY INFORMATION

1. Introduction

The island of Maui is currently operating with a significant content of as-available energy resources, primarily associated with a 30 MW wind farm at Kaheawa, which came online in August 2006. Since that time, the MECO system operators and the Kaheawa wind farm operators have been learning to operate their systems to best integrate this new as-available resource onto the MECO grid. As a result, several system modifications have been identified as needed to optimize the system operation.

A high cost of electricity and aggressive renewable energy targets from the state make expansion of as-available energy resources likely. UPC Wind has the desire to add additional wind turbines at the Kaheawa site and Shell has the desire to add 40 MW of wind power at the remote corner of 'Ulupalakua Ranch on Haleakala. Additionally, significant solar energy projects appear likely in future years. GE proposes an analytical approach to assessing the technical and economic impact of current and future renewables on Maui, with the following objectives:

- Review the current system operations versus the planned system operations and determine if the data based on the current system operations is sufficient to develop and validate a model to be used to assess the planned future.
- Assess the technical and economic impact of the current penetration of wind energy resources on the Maui grid, assuming the planned system operating practices.
- Assess the technical and economic impact of additional renewable resources integrated into the Maui grid, in sequential capacity increments
- Assess the role of mitigating measures, such as energy storage via Electronic Shock Absorbers, Batteries, or Pumped Hydro Storage on the ability of the Maui grid to absorb additional as-available resources

The proposed project is partitioned into phases. Prior to the commencement of the first phase, an assessment will be conducted to determine the feasibility of developing a valid future state model given the data available using the current operating practices. Phase 1 will only commence if GE, HNEI and MECO determine that a valid model can be developed. In Phase 1, a detailed technical and economic model of the existing electrical infrastructure of the MECO grid will be developed, using information and models provided by MECO, to establish a baseline condition. The transient and production cost models will be validated against MECO historical data to achieve confidence in the fidelity of the approach. After completing validation of the baseline model, the project will proceed to a sequence of subsequent phases analyzing the technical and economic impact of infrastructure expansion scenarios relative to the baseline condition. The parameters and evaluation criteria for each of these

GE Global Research

Maui Electrical System Analysis

subsequent phases will be formulated jointly by HNEI, GE and MECO, based on the results obtained from prior phase analyses and the needs of MECO. This proposal covers the work scope for the baseline model development. It is envisioned that work on subsequent phases will be performed through contractual amendments.

2. Scope of Work

The increasing content of renewable energy resources on Maui is creating regulation, load following, dispatch and unit commitment challenges to the operation of the MECO grid. The intermittent nature of the current wind farm's output has identified the need for several system modifications to optimize operations in order to accommodate the wind farm production. The main objective of the proposed effort is to develop a baseline model of the electrical infrastructure on the MECO grid to characterize these challenges today, and to serve as a reference point for future scenario analyses exploring different renewable energy and mitigating measure configurations of interest to the MECO planners. Specifically, the study will develop stability and production cost models to identify the impact on technical performance and operating economics associated with as-available generation on the Maui grid.

Adequate modeling of the MECO grid is an essential first step of the work needed to investigate grid operation with a high content of as-available energy. This proposal addresses this need, whereby detailed transient performance and production cost models of the MECO system will be developed. The project will start *after* obtaining existing data and operational information from MECO and a joint review of the data has been performed. A detailed data request is provided in Appendix 2.

In the first task, GE, HNEI and MECO will determine the feasibility of developing system models that can be used for future state analysis given the planned system modifications and the absence of data from such a future state operation. If it is determined that such future state analysis can be performed given the existing data, system models will be prepared and exercised using this information, and subsequently validated against historical data from the MECO grid. The scope of the Phase 1 program ends with a final report deliverable, which shall summarize the model characteristics and capabilities, along with validation and verification details of the dynamic and production cost modeling efforts.

The fidelity of the system models of course depends on the fidelity of the data and sub-system models used in their development. MECO has expressed confidence in existing governor models for generation units in the system. Based on this, GE does not propose to perform extensive governor validation. Governor models and parameters will be verified against typical characteristics of similar units GE has tested in other systems. A simplified representation of the MECO AGC will be used in the system model development as well, and therefore some level of validation of the AGC model for dynamic analysis is proposed.

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Maui Electrical System Analysis

A detailed description of tasks and deliverables for this proposal is provided in Section 3. General Electric will lead the project. Travel to Hawaii is included in the program plan and will include working sessions with MECO and other stakeholders, as needed. Successful completion of the tasks and deliverables by GE will require significant collaboration and teamwork between GE, HNEI and MECO (the parties).

3. Statement of Work

GE will lead and execute the following tasks.

Task 1.0: Data Consolidation and Preliminary Model Feasibility Analysis

After receipt of the primary power flow and production cost databases, from MECO, detailed in Appendix 2, it is proposed that a three-day meeting (Tollgate # 1) be held to discuss the data, any missing information, any required assumptions, MECO's current and planned system capabilities and operating rules (unit commitment, balancing/settlement, etc), and other relevant items.

Deliverable #1: A data summary document will be delivered to HNEI by GE, detailing the data status prior to commencement of Task 2.

Tollgate #1. Upon completion of Deliverable #1, GE, HNEI, and MECO will each have had the opportunity to evaluate the adequacy of the available data for the subsequent work. At this time, each party will be afforded the opportunity to make a decision to either continue or stop the work, based on the data adequacy.

Task 2.0: Data Evaluation, Completion and Manipulation

Task 2 will commence after mutual agreement among the parties at Tollgate # 1. As outlined in Appendix 2, significant data is required to perform the study, including characteristics of transmission infrastructure, generation units and wind resources. Historical data from the EMS and/or SCADA system will also be required. In this Task, GE will define and obtain additional data that will be required for the baseline model development effort in Task 3. The GE team will analyze the data and work to establish educated estimates for data that is missing from the data collection process. Assumptions will be documented. Some specific data aspects are highlighted below. In general the modeling activities will require significant engineering judgment and interaction with MECO. GE will work with MECO to establish whether reasonable approximations to missing data can be made, or whether estimates will unacceptably compromise the fidelity of results.

Load Flow Data

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Load Flow Data

It is expected that load flow data of the MECO system will be provided in an industry-standard format (such as PSSE or PSLF). GE foresees that the database may have to be improved and checked for the proposed analysis. The study year of the project will be selected by MECO.

Dynamic Data for Generators and Generator Controls

GE will convert available PSSE databases with generator, excitation controls and governor models to PSLF. For data that is not available, GE will provide estimates using experience from previous studies and similar equipment knowledge. GE will not perform field tests and associated model identification work. Information for generator, generator/turbine controls and turbine characteristics will be provided by MECO.

AGC

GE will interact with MECO to collect information regarding the operation of the AGC and its structure. GE will consider regulation, economic dispatch and pulsating logic, and focus on aspects relevant to the time frames of the simulation work and the objectives of the project. GE will not attempt to reproduce the specific AGC code in the simulation tools. AGC model parameters will be tuned to better approximate historical data.

Load Variability Data

Load variations will be modeled based on EMS/SCADA historical data.

Wind Resource Data

Wind data is a crucial element for this study. While acquiring data in the constrained time frame of this study will be difficult, the fidelity of the results will be higher with higher fidelity data. Wind data is required for the time frames of analysis (frequency regulation and load following). GE has, for other studies, contracted with third parties to develop wind speed and wind power profiles. Given that a single existing wind farm significantly affects the study, GE would like to augment the fidelity of wind data with field measurements from Maui. GE understands that some data is sensitive to resource owners.

Underfrequency Load shedding

GE will consider for the study the present load shedding scheme. Frequency excursions will be calculated in the simulation effort and can be used as performance criteria. MECO will provide UFLS relay settings and locations referred to loads in PSSE database or PSSE UFLS models.

Power plant data

The effort will particularly focus on data needed for modeling of load following and maneuvering capability (up/down) of generating units. For data that is not available or validated, GE will provide estimates using experience from previous studies and

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equipment knowledge. This includes estimates of heat rates, availability and other variable costs for generation resources.

Deliverable #2: A data collection report delivered to HNEI by GE, outlining the data to be used in the system model development.

Tollgate #2. After the completion of Deliverable #2, it is proposed that a tollgate meeting be held to discuss the data set to be used for model development in Task 3. If a mutually agreeable level of model fidelity is not achieved after Task 2 is completed, each party will have the option to either continue or stop the work in later tasks.

Task 3.0: System Model Development

The data provided by HECO/MECO, and augmented by GE in Task 2, will be used to populate different simulation models to analyze different aspects of the Maui power system. The models are:

1. Transient dynamic system model in PSLF, for

- Steady-state or load flow analyses
- Transient stability analyses, including generation assets and their excitation and governor controls
- Long-term dynamic analyses, especially suited for analysis of the impact of wind generation in the minutes timescale. The model includes governor controls of generating units and the regulation function of AGC.

The system details captured in the PSLF model will include:

- Electrical characteristics of transmission network assets
- Generator rotor flux transients and inertial effect
- Generator controls. Governor models and excitations systems
- Relevant characteristics of wind turbines with doubly fed inductions generators and power electronic converters
- Relevant characteristics of power electronic interfaced storage devices.

2. Production cost model, in MAPS, capturing

- Hourly Dispatch and Unit Commitment
- Fuel consumption
- NO_x, SO_x, CO₂ Emissions
- Variable cost of production (actual production cost, rather than purchase price from IPPs to MECO)

The system details captured in the MAPS model will include:

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- Unit Dispatch and Commitment rules
- Unit heat rate; variable O&M costs.
- Hourly wind power profiles, by wind plant
- Hourly load power profiles, by subtransmission node
- Transmission thermal and other specified constraints
- Transmission losses

GE's PSLF and MAPS tools, further described in Appendix 1, are state-of-the-art software tools. Some extensions to these tools especially suited to address generation variability will also be used. Approximations and simplifications will be documented. For example, each wind farm will be represented as a single equivalent machine with a transformer to the interconnection bus. The study will also assume present state-of-the-art wind turbine-generator (WTG) and wind farm technology.

Deliverable #3: A report describing the characteristics and capabilities of the dynamic and production cost models developed in Task 3 will be delivered to HNEI.

Tollgate #3. Each party will perform a review of the model details and assumptions outlined in Deliverable # 3, prior to the commencement of Task 4, the baseline model validation. It is proposed that a tollgate meeting be held to establish specific targets and objectives that the baseline model will be validated against in Task 4. Each party will have the option to either continue or stop the work in the later tasks.

Task 4.0: Baseline Model Validation

This Task will provide a validation analysis of the model performance. Validation will be performed over three analytical time frames:

1. Regulation (seconds to minutes). Validation of the models in this timeframe will be demonstrated by performing the following comparisons between model predictions and historical results:
 - The PSLF model will be driven with historical wind production and load data. Predicted system frequency will be compared against historical system frequency for the same time window.
2. Load-following (minutes to hours). Validation of the models in this timeframe will be demonstrated by performing the following comparisons between model predictions and historical results:
 - The PSLF model will be driven with historical wind production and load data. Predicted system frequency will be compared against historical system frequency for the same time window.

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Variation of historical data of power productions of generators will be compared with PSLF results.

3. Unit commitment and dispatch (hours to days). Validation of the models in this timeframe will be demonstrated by performing the following comparisons between model predictions and historical results:

- The MAPS model will be driven with one year's worth of hourly historical wind production and load data. Predicted system dispatch, energy production, and fuel consumption will be compared against historical system dispatch for the same time window.

Deliverable #4: A model validation report describing the validation methodology and results for the dynamic and production cost models developed in Task 3 will be delivered to HNEI.

Tollgate #4. A Tollgate review meeting will be held in Hawaii with HNEI and MECO. This will allow HNEI and MECO to assess the model validation results and establish whether the fidelity of the developed models warrants proceeding to the subsequent project phases, where infrastructure evolution scenarios will be analyzed. At Tollgate #4, each party will have the option to either continue or stop the work outlined in Task 5.

Task 5.0: Preparation of Phase 2 Proposal

GE will work with HNEI and MECO to establish the parameters and objectives for the Phase 2 scenario analysis.

Deliverable #5: Phase 2 Proposal and Contract Amendment Request

Appendix 1– Electric Power System Modeling Tools

MAPS - 'multi area production simulation' package. It calculates the locational marginal price of electricity, subject to economic and physical constraints of a power system. Efficiency, cost of fuel, variable costs of operation, transmission constraints, unit minima and maxima and host of other real-world constraints are included. The price of electricity at every node and generator is typically calculated at every hour for a year. This tool is used to make strategic decisions about where/what/how to make investment in generation and transmission infrastructure.

PSLF - 'positive sequence load flow' package. It estimates power flow and grid dynamics for a given system, including transmission, generation and load centers. The package influences reliability and pricing simulations.

Appendix 2- Detailed Data Request

This Appendix describes information necessary for GE to begin the development of transient and production cost models of the MECO system.

System Regulation and Load Following Modeling

- Load Flow and Dynamic data bases:
 - loadflow and stability data sets of the system (and for study years). Files in PSSE format
 - Load flow database for peak and low load
 - Dynamic database including generators, AVRs, governors, frequency load shedding.
 - EMS description (regulating functions)
 - Units are under AGC control. AGC MW Limits for economic dispatch and regulation for controlled units. AGC MW/min limits for controlled units.
- Critical contingency list
- Qualitative information on operating constraints; most difficult performance issues; modes of failure
- Transmission Planning Criteria

- Historical data:
 - Historical Performance Data for a time window with significant frequency fluctuations and wind power variations. Dat should include:
 - Hourly (or 15 min) data including system generation and power output of main units
 - Fast (2 second) data for the time window of interest with system frequency, system generation and power output of main units. If available, AGC signals to generating units.

- Wind:
 - Hourly wind energy production for **existing** sites for at least one year.
 - If available, hourly wind energy production for **future** sites for at least one year.
 - Recordings with 2 second sampling of wind power fluctuations

Commitment and Dispatch/Energy Production:

- Pmonth (or any other production cost software) model of the MECO system
- Historical Data with load per areas for past 3 years
- Historical Data of wind power and run-of-the-river hydro for past 3 years
- Peak load and energy forecast for 2008 and other horizon year: Future load shapes are based off of scaling a base hourly load shape to meet forecasted peak and energy forecasts.
- Monthly fuel price forecasts for 2008 and horizon year: By unit if available; by fuel type as a minimum.
- Thermal unit data and operational constraints:
 - Unit min/max capacity
 - Unit heat rate (Incremental heat rate curve if available)
 - Variable Operation and Maintenance cost (\$/MWh)
 - Unit start-up cost
 - Minimum down-time
 - Minimum up-time
 - Unit ramp-up/down rates
 - Planned and forced outage rates
 - Scheduled maintenance
 - SO₂, NO_x, CO₂ Emission rates (lbs/MMBtu Fuel)
- Energy limited unit data (Conventional Hydro Electric):
 - Average monthly energy generation
 - Minimum capacity (for run-of-river)
- Firm power contracts (contract rules, Capacity, time and duration)
- System spinning reserve requirement (synchronized and quick-start)
- Information related to the operation of units that may appear out of merit due to system constraints (i.e. RMR, cogeneration, load regulation etc.)
- Planned new builds, re-powering: dates of completion, new capacity
- Planned unit retirements.
- Energy Production Model Benchmark
 - Hourly wind generation by farm

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- o Unit generation (hourly data is ideal, but not feasible. Monthly energy is sufficient. Least favorable is generation by fuel type, as the data may not provide sufficient resolution.)
- o Unit fuel consumption (monthly)

Thu Oct 4 11:39:28 2007 GE Global Research Proposal Estimating System
Proposal: 5125-030, Option: 0, Addendum: 0, Revision: 0

Offeror: 1 Research Circle, Niskayuna, NY 12309
Priced Date: 10/ 4/2007
Division(s) and Location(s) where work is to be performed: GE Global Research Center
Period of Performance: 11/ 1/2007 through: 7/31/2008

Project Total	Estimated Cost (\$)	Total Estimated Reference Cost (\$)
1) Direct Material		
a) Purchased Parts		
b) Other		
Total Direct Material		\$20,177.00 Exhibit A
2) Subcontracted Effort		\$233,570.00 Exhibit A
3) Interdivisional Effort		
4) Equipment Rental/Lease		
5) Purchased Special Equipment		
6) Consultants		
7) Outside Special Testing		
8) Travel and Living		
9) Other Direct Costs		\$27,344.00 Exhibit A
10) Direct Labor		
a) Senior Project Engineer	Est Hrs Rate/hr Direct Labor Benefit Dollars	
b) Project Engineer	140 \$83.57 \$8,539.95 \$3,159.77 \$11,699.72	
c) Project Support	400 \$54.71 \$15,972.83 \$5,909.90 \$21,882.73	
d) Interns		
e) Sub Contracting		
Sub Totals	540 \$24,512.78 \$9,069.67 \$33,582.45	\$33,582.45
11) Total Labor and Overhead		\$69,515.67
12) Total Direct Cost + Overhead		\$350,606.67
13) Total Indirect Costs		\$53,307.02
14) Total		\$403,913.69

Thu Oct 4 11:39:28 2007 GE Global Research Proposal Estimating System
Proposal: 5125.030, Option: 0, Addendum: 0, Revision: 0

Offeror: 1 Research Circle, Niskayuna, NY 12309
Priced Date: 10/ 4/2007
Division(s) and Location(s) where work is to be performed: GE Global Research Center
Period of Performance: 11/ 1/2007 through: 7/31/2008

TASK: 1 POP: 11/ 1/2007 - 1/31/2008 DESCRIPTION: Data Consolidation and Preliminary Model Feasibility Analysis
Estimated Total Estimated Reference
Cost (\$) Cost (\$)

1) Direct Material					
a) Purchased Parts					
b) Other					
Total Direct Material					\$11,796.00 Exhibit A
2) Subcontracted Effort					\$43,540.00 Exhibit A
3) Interdivisional Effort					
4) Equipment Rental/Lease					
5) Purchased Special Equipment					
6) Consultants					
7) Outside Special Testing					
8) Travel and Living					
9) Other Direct Costs					
10) Direct Labor					\$13,672.00 Exhibit A
a) Senior Project Engineer	Est Hrs	Rate/Hr	Direct Labor	Benefit Dollars	
b) Project Engineer	10	\$82.93	\$829.36	\$829.34	
c) Project Support	60	\$54.27	\$3,256.94	\$879.44	\$3,256.38
d) Interns					
e) Sub Contracting					
Sub Totals			\$2,982.30	\$1,103.42	\$4,085.72
11) Total Labor and Overhead					\$8,457.44
12) Total Direct Cost + Overhead					\$77,465.44
13) Total Indirect Costs					\$11,525.92
14) Total					\$88,991.36

General Electric Company: Confidential or Restricted Information

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Proposal: 5125.030, Option: 0, Addendum: 0, Revision: 0

Offeror: 1 Research Circle, Niskayuna, NY 12309
Priced Date: 10/ 4/2007
Division(s) and Location(s) where work is to be performed: GE Global Research Center
Period of Performance: 11/ 1/2007 through: 7/31/2008

TASK: 2 POP: 1/ 1/2008 - 2/28/2008 DESCRIPTION: Data Evaluation, Completion and Manipulation
Estimated Total Estimated Reference
Cost (\$) Cost (\$)

1) Direct Material						
a) Purchased Parts						
b) Other						
Total Direct Material						\$2,793.00 Exhibit A
2) Subcontracted Effort						\$-40,360.00 Exhibit A
3) Interdivisional Effort						
4) Equipment Rental/Lease						
5) Purchased Special Equipment						
6) Consultants						
7) Outside Special Testing						
8) Travel and Living						
9) Other Direct Costs						
10) Direct Labor	Est Hrs	Rate/Hr	Direct Labor	Benefit Dollars		
a) Senior Project Engineer	40	\$63.22	\$2,429.69	\$698.99	\$3,328.68	
b) Project Engineer	70	\$54.47	\$2,782.91	\$1,029.69	\$3,812.60	
c) Project Support						
d) Interns						
e) Sub Contracting						
Sub Totals			\$5,212.60	\$1,928.68	\$7,141.28	\$7,141.28
11) Total Labor and Overhead						\$14,782.45
12) Total Direct Cost + Overhead						\$57,935.45
13) Total Indirect Costs						\$8,929.01
14) Total						\$66,864.45

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Proposal: 5125-030, Option: 0, Addendum: 0, Revision: 0

Offeror: 1 Research Circle, Niskayuna, NY 12309
Priced Date: 10/ 4/2007
Division(s) and Location(s) where work is to be performed: GE Global Research Center
Period of Performance: 11/ 1/2007 through: 7/31/2008

TASK: 3	POP: 2/ 1/2008 - 5/31/2008	DESCRIPTION: System Model Development	Estimated Cost (\$)	Total Estimated Reference Cost (\$)	
1) Direct Material					
a) Purchased Parts					
b) Other					
Total Direct Material				\$2,794.00 Exhibit A	
2) Subcontracted Effort				\$74,360.00 Exhibit A	
3) Interdivisional Effort					
4) Equipment Rental/Lease					
5) Purchased Special Equipment					
6) Consultants					
7) Outside Special Testing					
8) Travel and Living					
9) Other Direct Costs					
10) Direct Labor					
a) Senior Project Engineer	30	\$83.77	\$1,834.27	\$676.68	\$2,512.95
b) Project Engineer	150	\$54.82	\$6,002.00	\$2,220.75	\$8,222.75
c) Project Support					
d) Interns					
e) Sub Contracting					
Sub Totals	180		\$7,836.27	\$2,899.43	\$10,735.70
11) Total Labor and Overhead					\$10,735.70
12) Total Direct Cost + Overhead					\$22,222.90
13) Total Indirect Costs					\$99,376.90
14) Total					\$15,201.50
					\$114,578.40

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Proposal: 5125-030, Option: 0, Addendum: 0, Revision: 0

Offeror: 1 Research Circle, Niskayuna, NY 12309
Priced Date: 10/ 4/2007
Division(s) and Location(s) where work is to be performed: GE Global Research Center
Period of Performance: 11/ 1/2007 through: 7/31/2008

TASK: 4	POP: 3/ 1/2008 - 6/30/2008	DESCRIPTION: Baseline Model Validation	Estimated Cost (\$)	Total Estimated Cost (\$)	Reference
1) Direct Material					
a) Purchased Parts					
b) Other					
Total Direct Material					
2) Subcontracted Effort				\$2,794.00	Exhibit A
3) Interdivisional Effort				\$60,540.00	Exhibit A
4) Equipment Rental/Lease					
5) Purchased Special Equipment					
6) Consultants					
7) Outside Special Testing					
8) Travel and Living					
9) Other Direct Costs				\$13,672.00	Exhibit A
10) Direct Labor					
a) Senior Project Engineer	Est Hrs	Rate/Hr	Direct Labor	Benefit Dollars	
b) Project Engineer	20	\$84.02	\$1,226.61	\$453.84	\$1,680.45
c) Project Support	80	\$54.99	\$3,210.92	\$1,188.04	\$4,398.96
d) Interns					
e) Sub Contracting					
Sub Totals			\$4,437.53	\$1,641.88	\$6,079.41
11) Total Labor and Overhead				\$6,079.41	
12) Total Direct Cost + Overhead				\$12,584.38	
13) Total Indirect Costs				\$89,590.38	
14) Total				\$13,432.35	
				\$103,022.73	

Thu Oct 4 11:39:28 2007 GE Global Research Proposal Estimating System
 Proposal: 5125.030, Option: 0, Addendum: 0, Revision: 0

Offeror: 1 Research Circle, Niskayuna, NY 12309
 Priced Date: 10/ 4/2007
 Division(s) and Location(s) where work is to be performed: GE Global Research Center
 Period of Performance: 11/ 1/2007 through: 7/31/2008

TASK: 5 POP: 11/ 1/2007 - 7/31/2008 DESCRIPTION: Preparation of Phase 2 Proposal
 Estimated Cost (\$) Total Estimated Reference Cost (\$) Exhibit A

1) Direct Material					
a) Purchased Parts					
b) Other					
Total Direct Material					\$14,770.00
2) Subcontracted Effort					Exhibit A
3) Interdivisional Effort					
4) Equipment Rental/Lease					
5) Purchased Special Equipment					
6) Consultants					
7) Outside Special Testing					
8) Travel and Living					
9) Other Direct Costs					
10) Direct Labor					
a) Senior Project Engineer	Est Hrs	Rate/Hr	Direct Labor	Benefit Dollars	
b) Project Engineer	40	\$83.71	\$2,444.02	\$904.28	\$3,348.30
c) Project Support	40	\$54.80	\$1,600.06	\$591.98	\$2,192.04
d) Interns					
e) Sub Contracting					
Sub Totals	80		\$4,044.08	\$1,496.26	\$5,540.34
11) Total Labor and Overhead					\$5,540.34
12) Total Direct Cost + Overhead					\$11,468.50
13) Total Indirect Costs					\$26,238.50
14) Total					\$4,218.24
					\$30,456.74

Thu Oct 4 11:38:33 2007 GE Global Research Proposal Estimating System
Maui Electrical System Analysis
Proposal: 5125.030, Option: 0, Addendum: 0, Revision: 0

Exhibit A

Task	Year	Cost Element Description	Total
1	2007 2	Sentech Effort	\$7,821.00
	2007 3	GE Energy Consulting	\$19,891.00
	2007 8	1T-4P-10D to Maui, HI	\$13,672.00
	2007 3	Germany Labor (Sebastian Achilles)	\$3,162.00
	2007 3	Germany Labor (Emad Ahmed)	\$3,162.00
	2007 3	Germany Labor (402-LP)	\$2,652.00
	2008 2	Sentech Effort	\$3,975.00
	2008 3	GE Energy Consulting	\$10,109.00
	2008 3	Germany Labor (Sebastian Achilles)	\$1,608.00
	2008 3	Germany Labor (Emad Ahmed)	\$1,608.00
Task sub-total			\$69,008.00
2	2008 2	Sentech Effort	\$2,793.00
	2008 3	GE Energy Consulting	\$30,000.00
	2008 3	Germany Labor (Sebastian Achilles)	\$3,180.00
	2008 3	Germany Labor (Emad Ahmed)	\$3,180.00
	2008 3	Germany Labor (402 - LP)	\$4,000.00
Task sub-total			\$43,153.00
3	2008 2	Sentech Effort	\$2,794.00
	2008 3	GE Energy Consulting	\$60,000.00
	2008 3	Germany Labor (Sebastian Achilles)	\$3,180.00
	2008 3	Germany Labor (Emad Ahmed)	\$3,180.00
	2008 3	Germany Labor (402 - LP)	\$8,000.00
Task sub-total			\$77,154.00
4	2008 2	Sentech Effort	\$2,794.00
	2008 3	GE Energy Consulting	\$45,000.00
	2008 6	1T-4P-10D to Maui, HI	\$13,672.00
	2008 3	Germany Labor (Sebastian Achilles)	\$4,770.00
	2008 3	Germany Labor (Emad Ahmed)	\$4,770.00
	2008 3	Germany Labor (402 - LP)	\$6,000.00
Task sub-total			\$77,006.00
5	2007 3	Germany Labor (Sebastian Achilles)	\$530.00
	2007 3	Germany Labor (Emad Ahmed)	\$530.00
	2007 3	GE Energy Consulting	\$2,225.00
	2008 3	Germany Labor (Sebastian Achilles)	\$1,855.00
	2008 3	Germany Labor (Emad Ahmed)	\$1,855.00
	2008 3	GE Energy Consulting	\$7,775.00
Task sub-total			\$14,770.00
Total			\$281,091.00

Maui Electrical System Analysis

	Person - Mo.	Salary	Fringe	Total
A. Senior Personnel				
Subtotal A		0	0	0
B. Other Personnel				
1. Post doctoral fellows	0	0	0	0
2. Other professionals	0	0	0	0
3. Research assistants	0	0	0	0
4. Student assistant - \$8.50/hr.	0	0	0	0
Subtotal B		0	0	0
Total Salary, Wages, and Fringe		0	0	0
C. Materials and Supplies				
D. Permanent Equipment				
E. Travel				
1. Domestic				0
2. Foreign				0
F. Subcontracts				
				337,275
G. Other Direct Costs				
				0
H. Total Direct Costs (A-G)				
				337,275
I. Indirect Costs @ 26.9				
				6,725
J. Total Direct and Indirect Costs				
				344,000

**Confidential Information Deleted
Pursuant To Protective Order,
Filed on _____**

HECO-WP-1407
DOCKET NO. 2008-0083
PAGES 1-69 OF 69

HECO-WP-1407 is confidential and will be provided
after a Protective Order is issued in this proceeding.



Three separate projects are outlined in Agreement No. PNR-07-008-01-01-01. The University of Hawaii-Manoa, the University of Hawaii-Hilo, and the Hawaii Agriculture Research Center are each responsible for one project from this Agreement. As of April 30, 2008, the status of each project is as follows:

1. HARC – The establishment of test plots of *Moringa oleifera* on Molokai has been completed at the larger, low-elevation site in Hoolehua. The test site is approximately 1.2 acres in size, with over 650 moringa seedlings and approximately 150 jatropa seedlings. The jatropa seedlings were a last-minute addition to the site. The field was prepared and planted from January-February 2008. An irrigation system using individual emitters was installed to control the flow of water to each tree and minimize competition from weeds and grasses. The flow rate is 1 gallon per hour per tree. Seedlings were planted from a small nursery that had been established with moringa and jatropa materials. After all seedlings were used, direct-seeding was the method of establishment. Irrigation rates were lowered from 6-7 hours per cycle to 4 hours per cycle in late March. In late March the germination rate for the moringa lines was ~80%, and the rate for the jatropa lines was ~55%. The second site (Kalae) has about 75 moringa trees and 30 jatropa seedlings already in the ground (~6 months old) or awaiting transplant. Development at Kalae has been slow due to lower temperatures and a greater number of cloudy days. Growth measurements will begin in June 2008. The project will enter Phase II this summer with soil testing and fertilization regime introduction to determine nutrient utilization for each species at the Hoolehua site. Growth and overall tree performance will be monitored prior to, during, and following the fertilization trial.
2. UH-Manoa (CTAHR) – The goal of this project is to develop a method to produce genetically identical Jatropa trees to increase uniformity of growth and yield in the field. The major

accomplishments toward this goal were the hiring of a plant scientist and locating a suitable test plant. Ms. Gail Uruu has been appointed to carry out the tissue culture research.

All available literature on jatropha tissue culture has been evaluated and a selection made as to the procedure with the greatest promise. Leaf tissue from the jatropha tree at Pearl City Urban Garden Center has been taken to check the sterilization protocol and test the selected tissue culture media. The Pearl City line was chosen as it has larger seeds than other lines and consistently gives uniform off-spring. It is anticipated that some changes will be necessary in the media for the Pearl City line.

3. UH-Hilo (CAFNR) – The Waters of Life Charter School (WOLS) whose screen houses are provided free and were to be used to grow out the 10,000 seedlings of oil palm fell into financial difficulties in December. Delays in moving forward were experienced until the Board of Education determined whether they could continue operations or if they had to shut down the school. That decision has now been made to leave the WOLS in place, but a new WOLS school board has been elected and re-approval by that new board must be sought. That meeting is set for May 30, 2008.

The seeds of different palm hybrids were ordered in November 2007. The funds and the order seemed to have disappeared during the transaction from Hawaii to New York City to Costa Rica until last week. Word (and an apology) was received from ASD in Costa Rica; they acknowledge receiving my order and the funds for the hybrid seeds. They had sent their existing seeds of the hybrids requested to S. America and were waiting for the next batch to be prepared. They expect to ship in May sometime. Once the seed arrives and re-approval is gained from WOLS to use the shade houses, all the plants should be growing by September.

(END)

Subsequent project reports will provide more detailed analysis of the progress for each project. The HARC and UH-Hilo portions should transition into the Phase II efforts with significant carry-over from Phase I. The UH-Manoa Phase II will be a significantly different project from Phase I. Each component will continue to be reported as separate projects inasmuch as possible.

The information contained in this report is to be used only for the purposes of conveying an update to HECO with regards to Agreement No. PNR-07-008-01-01-01. Any other use of this information by parties involved in this Agreement is prohibited unless otherwise specified. HARC, UH-Manoa, and UH-Hilo are providing this update in accordance to the specified Agreement. The research financed under this Agreement is non-proprietary.



Supplemental Project Agreement

- 1. Project Title; Agreement, Funder and Project Numbers:** This Supplemental Project Agreement applies to the Project entitled: ***“Co-Firing in Boiler Testing: Phase 4 HECO Biofuels Program”***. The Parties will reference Supplemental Project Agreement number **CF 012121-11156 (Project ID No. 066202)** in all correspondence. The terms and conditions of the Master Agreement between the Parties dated January 3, 2007 are incorporated herein and govern all Work hereunder. Any Purchase Order issued by Member pursuant to this Agreement is solely for Member’s internal accounting requirements and, as such, the terms and conditions of such Purchase Order are superseded by the terms and conditions set forth in this Agreement.

2. Contact Information:

Contact	Name	Phone/Fax	Email
EPRI Project Manager:	Anthony Facchiano	650-855-2492	afacchia@epri.com
EPRI Contracts:	Josephine M. Erickson	650-855-2003 / 1032	jerickson@epri.com
EPRI Sector Account Executive:	Richard Menar	650-855-2898	rmenar@epri.com
Member Contracts	Arthur Seki	808-543-7987 / 808-203-1581	arthur.seki@heco.com
Member Project Manager:	Darren Ishimura	808-543-7817 / 7099	darren.ishimura@heco.com

3. Project Funding in U.S. Dollars:

Funding Year	-2007-	-2008-	-2009-	-2010-	TOTAL
Funder Cofunding	\$200,000	\$300,000			\$500,000
Total U.S. Dollars	\$200,000	\$300,000			\$500,000

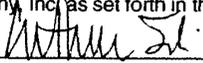
- 4. Project Objectives, Tasks and Deliverables:** See Attached Exhibit 1, incorporated herein by reference.
- 5. Invoicing:** Funder will be invoiced \$100,000 in 2007, the balance of \$100,000 will be paid from Funder’s deposit account. Funder will be invoiced \$150,000 in 2008, the balance of \$150,000 will be paid from Funder’s deposit account.

Current year payment enclosed (This form is the invoice for the current year).

Address invoices to: Arthur Seki, Director of Technology
Hawaiian Electric Company, Inc.
820 Ward Ave (M/S WA4-NR)
Honolulu, HI 96840-0001
Phone/Fax: 808-543-7987 / 808-203-1581
E-mail: Arthur.Seki@heco.com

HAWAIIAN ELECTRIC COMPANY, INC.

IN WITNESS WHEREOF, the parties hereto have caused this Supplemental Project Agreement to be executed by their duly authorized representatives.

Approval / HAWAIIAN ELECTRIC COMPANY, INC. 820 Ward Ave (M/S WA4-NR) Honolulu, HI 96840-0001 Phone/Fax: 808-543-7987 / 808-203-1581	Approval / ELECTRIC POWER RESEARCH INSTITUTE, INC. Post Office Box 10412 3420 Hillview Avenue Palo Alto, Ca 94303 Phone/Fax: 650-855-2003 / 1032
Signature:  Name: Karl Stahlkopf Title: Sr. VP and CTO Date: 8-8-07	Signature:  Name: Josephine M. Erickson, Title: Revenue Contract Negotiator Date: August 8, 2007
ENDORSEMENT: EPRI is hereby authorized to release Tailored Collaboration Matching Funds from the account of the Hawaiian Electric Company, Inc. as set forth in this Agreement.	
Done By:  Arthur Seki, Director of Technology	Date: 8/8/07

HAWAIIAN ELECTRIC COMPANY, INC.

Exhibit 1
To
Supplemental Project Agreement
CF 012121-11156 (Project ID No. 066202)

“Co-Firing in Boiler Testing: Phase 4 HECO Biofuels Program”

A. Background and Objectives:

The blending of biofuels in oil-fired electric power generating units represents a potential option to reduce reliance on fossil fuels. However, information and experience regarding the utilization of biofuels in steam generation boilers is limited and consequentially, there exists a need to build the knowledge base. Before oil / biofuel co-firing can be utilized on a commercial basis, the technical and economic viability needs to be assessed. This assessment needs to include: (1) screening and resource evaluation of various biofuel options; (2) evaluation of generating unit performance and emissions; (3) investigation of key operational, environmental, and regulatory issues; and (4) demonstration of biofuels in utility power generating units.

The objective of this project is to demonstrate and gain operational experience of co-firing vegetable oil-based biodiesel with Low Sulfur Fuel Oil (LSFO) at HECO's steam generating units on Oahu. The use of higher blend levels and longer testing periods compared to tests conducted at NYPA's Poletti power plant is targeted. Research and evaluation of fuel delivery/storage, unit operation and performance, and emissions will provide the power industry with valuable first-hand experience related to biofuels for power generation.

B. Tasks:

Towards meeting the above objectives, five major tasks are planned:

Task 1 – Fuel Compatibility Evaluation

Task 2 – Biodiesel Co-firing Test Plan

Task 3 – Design, Procurement and Installation

Task 4 – Shakedown and Testing

Task 5 – Test Data Reduction and Analysis

These tasks will be further defined by HECO and EPRI as the project moves forward.

C. Deliverables: The non-proprietary results of this work will be incorporated into EPRI R&D program P71, Combustion Performance and NOx Control, and made available to funding members of that program and to the public, for purchase or otherwise.

The deliverables targeted for this project are reports for each task. The final report for Task 5 will include findings of all project tasks.

D. Estimated Period of Performance / Estimated Schedule: The project is scheduled to start in September, 2007 and continue through to September 2008. The schedule for 2008 will be determined at a later date.



**Amendment No. 1
To
Project Funding Agreement
Hawaiian Electric Company, Inc.**

1. **Project Title, Contract - Funder and Project Numbers:** This EPRI Project Funding Agreement applies to the Project entitled: **"Co-Firing in Boiler Testing: Phase 4 HECO Biofuels Program"**. The Parties will reference Contract Number **CF 012121-11156** and **Project ID No. 066202** in all correspondence. Any Purchase Order issued by Funder pursuant to this Agreement is solely for Funder's internal accounting requirements and, as such, the terms and conditions of such Purchase Order are superseded by the terms and conditions set forth in this Agreement.

2. **Contact Information:**

Contact	Name	Phone/Fax	Email
Funder TC Coordinator	Arthur Seki	808-543-7987 / 808-203-1581	arthur.seki@heco.com
Funder Project Manager:	Darren Ishimura	808-543-7817 / 7099	darren.ishimura@heco.com
EPRI Project Manager:	Anthony Facchiano	650-855-2492	afacchia@epri.com
EPRI Contract Negotiator:	Josephine Erickson	650-855-2003 / 1032	jerickson@epri.com
EPRI Sector Account Exec:	Richard Menar	650-855-2898	rmenar@epri.com

3. **Project Funding in U.S. Dollars:
REVISIONS TO PROJECT FUNDING PER THIS AMENDMENT**

Funding Year	Prior Years	-2007-	-2008-	-2009-	TOTAL
Funder Cofunding		\$96,918			\$96,918
Total U.S. Dollars		\$96,918			\$96,918

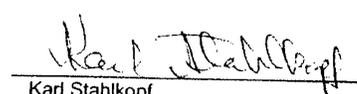
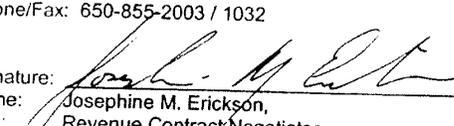
TOTAL REVISED PROJECT FUNDING

Funding Year	Prior Years	-2007-	-2008-	-2009-	TOTAL
Funder Cofunding		\$296,918	\$300,000		\$596,918
Total U.S. Dollars		\$296,918	\$300,000		\$596,918

4. **Project Objectives, Tasks and Deliverables:** There is no change to the Exhibit 1. Additional funds are to cover anticipated shortfall.
5. **Invoicing:** Funder will not be invoiced for additional funds of \$96,918. Funds are being paid from Funder's deposit account.

All other Terms and Conditions to the original Agreement remain in full force and effect and are unchanged by this Amendment.

Intending to be legally bound, the parties' duly authorized representatives have executed this Agreement below:

Approval / HAWAIIAN ELECTRIC COMPANY, INC. 820 Ward Ave (M/S WA4-NR) Honolulu, HI 96840-0001 Phone/Fax: 808-543-7987 / 808-203-1581	Approval / ELECTRIC POWER RESEARCH INSTITUTE, INC. Post Office Box 10412 3420 Hillview Avenue Palo Alto, Ca 94303 Phone/Fax: 650-855-2003 / 1032
Signature:  Name: Karl Stahlkopf Title: Sr. VP and Chief Technology Officer Date:	Signature:  Name: Josephine M. Erickson, Title: Revenue Contract Negotiator Date: December 18, 2007



**Amendment No. 2
To
Project Funding Agreement**

Hawaiian Electric Company, Inc.

1. **Project Title, Contract - Funder and Project Numbers:** This EPRI Project Funding Agreement applies to the Project entitled: *“Co-Firing in Boiler Testing: Phase 4 HECO Biofuels Program”*. The Parties will reference Contract Number TC/CF 012121-11156 and Project ID No. 066202 in all correspondence. Any Purchase Order issued by Funder pursuant to this Agreement is solely for Funder's internal accounting requirements and, as such, the terms and conditions of such Purchase Order are superseded by the terms and conditions set forth in this Agreement.

2. **Contact Information:**

Contact	Name	Phone/Fax	Email
Funder TC Coordinator	Arthur Seki	808-543-7987 / 808-203-1581	arthur.seki@heco.com
Funder Project Manager:	Darren Ishimura	808-543-7814 / 7099	darren.ishimura@heco.com
EPRI Project Manager:	Anthony Facchiano	650-855-2492	afacchia@epri.com
EPRI Contract Negotiator:	Josephine Erickson	650-855-2003 / 1032	jerickson@epri.com
EPRI Sector Account Exec:	Richard Menar	650-855-2898	rmenar@epri.com

3. **Project Funding in U.S. Dollars:**

REVISIONS TO PROJECT FUNDING PER THIS AMENDMENT

Funding Year	Prior Years	-2008-	-2009-	-2010-	TOTAL
Funder Cofunding		-\$204,500			-\$204,500
Funder TC Funds		\$50,000			\$50,000
EPRI TC Match		\$50,000			\$50,000
Total U.S. Dollars		-\$104,500			-\$104,500

TOTAL REVISED PROJECT FUNDING

Funding Year	Prior Years	-2008-	-2009-	-2010-	TOTAL
Funder Cofunding	\$296,918	\$95,500			\$392,418
Funder TC Funds	\$0	\$50,000			\$50,000
EPRI TC Match	\$0	\$50,000			\$50,000
Total U.S. Dollars	\$296,918	\$195,500			\$492,418

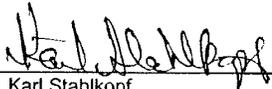
4. **Project Objectives, Tasks and Deliverables:** There is no change to Exhibit 1.
5. **Invoicing:** Funder will use \$2,250 of 2008 Deposit Account to pay a portion of the 2008 Cofunding (this is a reduction from the \$150,000 of 2008 Deposit Account funds specified in the original Supplemental Project Agreement). Funder will be invoiced for \$143,250.



- Current year payment enclosed (This form is the invoice for the current year).
- Address invoices to: Arthur Seki, Director of Technology
Hawaiian Electric Company, Inc.
820 Ward Ave (M/S WA4-NR)
Honolulu, HI 96840-0001
Phone/Fax: 808-543-7987 / 808-203-1581
E-mail: Arthur.Seki@heco.com

All other Terms and Conditions to the original Agreement remain in full force and effect and are unchanged by this Amendment.

Intending to be legally bound, the parties' duly authorized representatives have executed this Agreement below:

Approval / HAWAIIAN ELECTRIC COMPANY, INC. 820 Ward Ave (M/S WA4-NR) Honolulu, HI 96840-0001 Phone/Fax: 808-543-7987 / 808-203-1581 Signature:  Name: Karl Stahlkopf Title: Sr. VP, Energy Solutions & CTO Date: _____	Approval / ELECTRIC POWER RESEARCH INSTITUTE, INC. Post Office Box 10412 3420 Hillview Avenue Palo Alto, Ca 94303 Phone/Fax: 650-855-2003 / 1032 Signature:  Name: Josephine M. Erickson, Title: Revenue Contract Negotiator Date: February 1, 2008
ENDORSEMENT: EPRI is hereby authorized to release Tailored Collaboration Matching Funds from the account of the Hawaiian Electric Company, Inc. as set forth in this Agreement.	
By: _____ Date: _____ Arthur Seki, Director of Technology	

*SOURCE: EXCERPT FROM CPP 700 LEASE
AMENDMENT*

FOURTH AMENDMENT OF LEASE

THIS AMENDMENT, made this 26th day of October, 2007, by and between CENTRAL PACIFIC BANK, a Hawaii corporation, doing business as CENTRAL PACIFIC PLAZA, whose principal place of business and post office address is 220 South King Street, Honolulu, Hawaii 96813, hereinafter called "Landlord," and HAWAIIAN ELECTRIC COMPANY, INC., a Hawaii corporation, whose principal place of business and post office address is 900 Richards Street, Honolulu, Hawaii 96813, hereinafter called "Tenant,"

WITNESSETH:

WHEREAS, by that certain unrecorded Central Pacific Plaza Office Lease dated August 30, 1988, said Lease sometimes referred to herein as "Lease", Landlord's predecessor in interest, CKSS Associates, demised and leased to Hawaiian Electric Industries, Inc., as tenant, all of that certain premises situated on the 7th floor of that certain building known as "Central Pacific Plaza" and located at 220 South King Street, Honolulu, Hawaii 96813, being Suite 700; and

WHEREAS, said Lease was assigned to Tenant herein by unrecorded Assignment of Lease dated November 27, 1991, effective as of December 1, 1991; and

WHEREAS, a short form of said Lease, as assigned, which Memorandum of Lease is dated November 27, 1991, was filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii as Document No. 1874499 and is noted on Transfer Certificate of Title No. 595,207, and was also recorded in the Bureau of Conveyances of the State of Hawaii as Document No. 91-176842; and

WHEREAS, said Lease was amended by First Amendment of Lease dated January 11, 1995, effective as of December 1, 1994, filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii as Document No. 2344303 and is noted on Transfer Certificate of Title No. 595,207, and was also recorded in the Bureau of Conveyances of the State of Hawaii as Document No. 96-154114; and

WHEREAS, said Lease was amended further by Second Amendment of Lease dated February 9, 1999, effective as of January 1, 1999, filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii as Document No. 2538199 and also recorded in the Bureau of Conveyances of the State of Hawaii as Document No. 99-063606; and

WHEREAS, said Lease was amended further by unrecorded Third Amendment of Lease dated October 28, 2005, effective as of March 1, 2005; and

WHEREAS, the parties hereto desire to, among other things, extend the term of the Lease, upon the following terms and conditions;

NOW, THEREFORE, the parties hereto hereby mutually covenant and agree to amend further the Lease in this Fourth Amendment of Lease as follows:

1. Section 1.5 of the Lease is hereby amended by adding the following:

The term of this lease shall be extended for an additional ten (10) years, commencing on December 1, 2007, and ending on November 30, 2017, inclusive, subject to the provisions of Section 8 hereof.

2. Section 1.6.1 of the Lease is hereby amended by adding the following:

Base rent in the amount of \$12,156.80 per month for the period December 1, 2007, to and including November 30, 2008.

Base rent in the amount of \$12,643.07 per month for the period December 1, 2008, to and including November 30, 2009.

Base rent in the amount of \$13,148.79 per month for the period December 1, 2009, to and including November 30, 2010.

Base rent in the amount of \$13,674.74 per month for the period December 1, 2010, to and including November 30, 2011.

Base rent in the amount of \$14,221.73 per month for the period December 1, 2011, to and including November 30, 2012.

Base rent for any period(s) commencing on or after December 1, 2012, and ending on or before November 30, 2017, shall be determined by mutual agreement of the parties at least two hundred ten (210) calendar days prior to November 30, 2012, or if they are unable to agree then the base rent shall be the prevailing fair market rental value for the Central Business District of Honolulu, as determined in accordance with Section 5.5 of this Lease. In no event, however, shall the monthly base rent to be paid by Tenant to Landlord for any such period(s) be less than the monthly base rent for the immediately preceding period.

3. Section 1.6.2 of the Lease is hereby amended to read as follows:

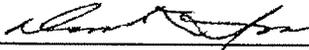
TEST YEAR 2009
x 11 = \$ 139,073.77

x 1 = \$ 13,148.79

\$ 152,222.56

IN WITNESS WHEREOF, the parties hereto have executed this instrument the day and year first above written.

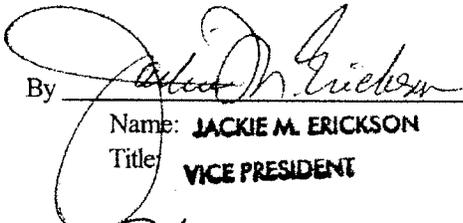
CENTRAL PACIFIC BANK

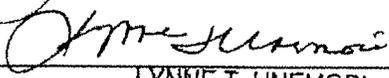
By 
Name: DENIS K. ISONO
Title: Executive Vice President

By 
Name: CURTIS A. OKAZAKI
Title: Sr. Vice President and
Manager, Properties Division

Landlord

HAWAIIAN ELECTRIC COMPANY, INC.

By  
Name: JACKIE M. ERICKSON
Title: VICE PRESIDENT

By 
Name: LYNNE T. UNEMORI
Title: VICE PRESIDENT

Tenant

SOURCE: EXCERPT FROM CPP 1300 LEASE
AMENDMENT.

SIXTH AMENDMENT OF LEASE

THIS AMENDMENT, made this 8th day of January, 2007, by and between CENTRAL PACIFIC BANK, a Hawaii corporation, doing business as CENTRAL PACIFIC PLAZA, whose principal place of business and post office address is 220 South King Street, Honolulu, Hawaii 96813, hereinafter called "Landlord," and HAWAIIAN ELECTRIC COMPANY, INC., a Hawaii corporation, whose principal place of business and post office address is 900 Richards Street, Honolulu, Hawaii 96813, hereinafter called "Tenant,"

WITNESSETH:

WHEREAS, by that certain unrecorded Central Pacific Plaza Office Lease dated December 29, 1983, said Lease sometimes referred to herein as "Lease", Landlord's predecessor in interest, CKSS Associates, demised and leased to Main Hurdman, as tenant, all of that certain premises situated on the 13th floor of that certain building known as "Central Pacific Plaza" and located at 220 South King Street, Honolulu, Hawaii 96813, being Suite 1300; and

WHEREAS, said Lease was assigned to Hawaiian Electric Industries, Inc. by Assignment of Lease dated April 30, 1987, effective as of July 1, 1987, and was amended by Amendment of Lease dated May 13, 1987, effective as of July 1, 1987; and

WHEREAS, said Lease, as amended, was assigned to Tenant herein by unrecorded Assignment of Lease dated November 27, 1991, effective as of December 1, 1991; and

WHEREAS, a short form of said Lease, as amended and assigned, which Memorandum of Lease is dated November 27, 1991, was filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii as Document No. 1874501 and noted on Transfer Certificate of Title No. 234,411 and also recorded in the Bureau of Conveyances of the State of Hawaii as Document No. 91-176844; and

WHEREAS, said Lease was amended further by Second Amendment of Lease dated January 11, 1995, effective as of December 1, 1994, filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii as Document No. 2353824 and noted on Transfer Certificate of Title No. 234,411 and also recorded in the Bureau of Conveyances of the State of Hawaii as Document No. 96-176025; and

WHEREAS, said Lease was amended further by Third Amendment of Lease dated February 9, 1999, effective as of January 1, 1999, filed in the Office of the Assistant Registrar of the Land Court of the

State of Hawaii as Document No. 2538200 and noted on Transfer Certificate of Title No. 234,411 and also recorded in the Bureau of Conveyances of the State of Hawaii as Document No. 99-063607; and

WHEREAS, said Lease was amended further by unrecorded Fourth Amendment of Lease dated June 26, 2001, effective as of December 1, 2000; and

WHEREAS, said Lease was amended further by unrecorded Fifth Amendment of Lease dated October 28, 2005, effective as of September 1, 2004; and

WHEREAS, the parties hereto desire to amend further the Lease, to extend the term thereof, in exercise of the option provided in said Third Amendment of Lease, upon the following terms and conditions;

NOW, THEREFORE, the parties hereto hereby mutually covenant and agree to amend further the Lease in this Sixth Amendment of Lease as follows:

1. Section 1.5 of the Lease is hereby amended by adding the following:

The term of this lease shall be extended for an additional ten (10) years, commencing on June 1, 2007, and ending on May 31, 2017, inclusive, subject to the provisions of Section 8 hereof.

2. Section 1.6.1 of the Lease is hereby amended by adding the following:

Base rent in the amount of \$14,401.50 per month for the period June 1, 2007, to and including May 31, 2008.

Base rent in the amount of \$14,833.55 per month for the period June 1, 2008, to and including May 31, 2009.

Base rent in the amount of \$15,278.56 per month for the period June 1, 2009, to and including May 31, 2010.

Base rent in the amount of \$15,736.92 per month for the period June 1, 2010, to and including May 31, 2011.

Base rent in the amount of \$16,209.03 per month for the period June 1, 2011, to and including May 31, 2012.

1.50
3% Annual INCREASES
TV 2009
→ x 5 MONTHS = \$ 74,167.75
→ x 7 MONTHS = \$ 106,949.92
\$ 181,117.67

Base rent for the period commencing June 1, 2012, to and including May 31, 2017, shall be determined by mutual agreement of the parties at least one hundred twenty (120) days months prior to the commencement of such period, or if they are unable to agree then the base rent shall be the prevailing fair market rental value for the Central Business District of Honolulu, as determined in accordance with Section 5.5 of this Lease. In no event, however, shall the monthly rent to be paid by Tenant to Landlord be less than the rental rate for the period immediately preceding.

3. Section 1.6.2 of the Lease is hereby deleted in its entirety and the following substituted in lieu thereof:

1.6.2. Additional rent of \$9,889.03, representing Tenant's share of estimated operating expenses subject to adjustment as set forth in Section 30 hereinbelow; and

4. Landlord shall pay Tenant the sum of up to SEVENTY-SIX THOUSAND AND NO/100 DOLLARS (\$76,000.00) to reimburse Tenant for all or a portion of Tenant's improvements to the Premises, such sum to include construction costs, architectural and engineering fees, construction management fees, costs for space planning, construction drawings and permitting and all other costs related to construction in the Premises.

Any portion of the said sum of \$76,000.00 that is not used for improvements as described above cannot be used by Tenant for any other purposes and shall instead be forfeited. Upon production by Tenant to Landlord of invoices indicating the costs and completion of said improvements, prior to August 31, 2007, Landlord shall make payment directly to Tenant's contractors, subcontractors and materialmen upon satisfaction of the lien period or earlier if lien releases satisfactory to Landlord are provided by all contractors, subcontractors and materialmen. If Tenant has previously paid such invoices, Landlord will reimburse Tenant, provided Tenant produces proof of payment having been made, along with said lien releases. Any invoices not presented for reimbursement prior to August 31, 2005, shall not be reimbursed and any portion of the allowance that would have been allocated to such invoices shall be forfeited.

All improvement work must meet with Landlord's requirements under the Lease and City and County code requirements, be done under a valid building permit, and be performed by an insured, licensed and bonded contractor. All building plans are to be submitted prior to construction for Landlord's written approval, which will not be unreasonably withheld.

5. Section 16 of the General Provisions of this Lease is hereby deleted in its entirety and the following substituted in lieu thereof:

*SOURCE: EXCERPT FROM CPP 1520/1530
LEASE AMENDMENT*

SIXTH AMENDMENT OF LEASE

THIS AMENDMENT, made this 26th day of October, 2007, by and between CENTRAL PACIFIC BANK, a Hawaii corporation, whose principal place of business and post office address is 220 South King Street, Honolulu, Hawaii 96813, hereinafter called "Landlord," and HAWAIIAN ELECTRIC COMPANY, INC., a Hawaii corporation, whose principal place of business and post office address is 900 Richards Street, Honolulu, Hawaii 96813, hereinafter called "Tenant,"

WITNESSETH:

WHEREAS, by that certain unrecorded Central Pacific Plaza Office Lease dated January 3, 1990, said Lease sometimes referred to herein as "Lease", CKSS Associates, Landlord's predecessor-in-interest, demised and leased to Hawaiian Electric Industries, Inc., as tenant, all of that certain premises situated on the 15th floor of that certain building known as "Central Pacific Plaza" and located at 220 South King Street, Honolulu, Hawaii 96813, being Suites 1520 and 1530; and

WHEREAS, said Lease was assigned to Tenant herein by unrecorded Assignment of Lease dated November 27, 1991, effective as of January 1, 1992; and

WHEREAS, a short form of said Lease, as assigned, which Memorandum of Lease is dated November 27, 1991, was filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii as Document No. 1874505 and noted on Transfer Certificate of Title No. 234,411 and also recorded in the Bureau of Conveyances of the State of Hawaii as Document No. 91-176848; and

WHEREAS, said Lease was amended by Amendment of Lease dated February 14, 1992, effective as of February 15, 1992, filed as aforesaid as Document No. 1896558 and also recorded as aforesaid as Document No. 92-037628, adding Suite 1515 of Central Pacific Plaza, among other things; and

WHEREAS, said Lease was amended further by Second Amendment of Lease dated January 11, 1995, effective as of December 1, 1994, filed as aforesaid as Document No. 2353828 and also recorded as aforesaid as Document No. 96-176029; and

WHEREAS, said Lease was amended further by Third Amendment of Lease dated February 9, 1999, effective as of January 1, 1999, filed as aforesaid as Document No. 2538207 and also recorded as aforesaid as Document No. 99-063624; and

WHEREAS, said Lease was amended further by an unrecorded Fourth Amendment of Lease dated October 28, 2005, effective as of March 1, 2004; and

WHEREAS, said Lease was amended further by Fifth Amendment of Lease dated September 18, 2006, a memorandum of which is dated January 8, 2007, and filed as aforesaid as Document No. 3548355, and noted on Transfer Certificate of Title No. 595,207, and also recorded as aforesaid as Document No. 2007-015613; ; and

WHEREAS, the parties hereto desire to, among other things, extend the term of the Lease for Suites 1520 and 1530, upon the following terms and conditions;

NOW, THEREFORE, the parties hereto hereby mutually covenant and agree to amend further the Lease in this Sixth Amendment of Lease as follows:

1. Section 1.5 of the Lease is hereby amended by adding the following:

The term of this lease for Suites 1520 and 1530 shall be extended for an additional ten (10) years, commencing on December 1, 2007, and ending on November 30, 2017, inclusive, subject to the provisions of Section 8 hereof.

2. Section 1.6.1 of the Lease is hereby amended to reflect the agreed upon rental for Suites 1520 and 1530, by adding the following:

Base rent for Suites 1520 and 1530 shall be as follows:

Base rent in the amount of \$3,921.60 per month for the period December 1, 2007, to and including November 30, 2008.

Base rent in the amount of \$4,078.46 per month for the period December 1, 2008, to and including November 30, 2009.

Base rent in the amount of \$4,241.60 per month for the period December 1, 2009, and including November 30, 2010.

Base rent in the amount of \$4,411.26 per month for the period December 1, 2010, and including November 30, 2011.

Base rent in the amount of \$4,587.71 per month for the period December 1, 2011, and including November 30, 2012.

Base rent for any period(s) commencing on or after December 1, 2012, and ending on or before November 30, 2017, shall be determined by mutual agreement of the parties at least two

$$\begin{array}{r} \text{TEST YEAR 2009} \\ \hline x \ 11 = \$ \ 44,863.06 \\ \hline x \ 1 = \ 4,241.60 \\ \hline \hline 49,104.66 \end{array}$$

hundred ten (210) calendar days prior to November 30, 2012, or if they are unable to agree then the base rent shall be the prevailing fair market rental value for the Central Business District of Honolulu, as determined in accordance with Section 5.5 of this Lease. In no event, however, shall the monthly base rent to be paid by Tenant to Landlord for any such period(s) be less than the monthly base rent for the immediately preceding period.

3. Section 1.6.2 of the Lease is hereby amended by adding the following:

Additional rent for Suites 1520 and 1530 of \$2,720.61, representing Tenant's share of estimated operating expenses subject to adjustment as set forth in Section 29 hereinbelow; and

4. With respect to Sections 1.6.3 and 5.6 of the Lease, Tenant agrees and acknowledges that so long as the County Surcharge on State Tax imposed by Act 247, Session Laws of Hawaii 2005, shall remain in effect, all references in the Lease and any amendments thereto to Hawaii's general excise tax shall mean and include the County Surcharge. Including the County Surcharge, as of the date of this Fourth Amendment of Lease, the effective general excise tax rate shall be 4.712%.

5. As to Suites 1520 and 1530 only, Landlord shall pay Tenant the sum of up to EIGHT THOUSAND FIVE HUNDRED FIFTY-SIX AND NO/100 DOLLARS (\$8,556.00) to reimburse Tenant for all or a portion of Tenant's permanent improvements to the Premises, such sum shall include construction costs, architectural and engineering fees, construction management fees, costs for space planning, construction drawings and permitting all other costs related to construction in the Premises.

Any portion of the said sum of \$8,556.00 that is not used for improvements as described above cannot be used by Tenant for any other purposes and shall instead be forfeited. Upon production by Tenant to Landlord of invoices indicating the costs and completion of said improvements, prior to May 31, 2008, Landlord shall make payment directly to Tenant's contractors, subcontractors and materialmen upon satisfaction of the lien period or earlier if lien releases satisfactory to Landlord are provided by all contractors, subcontractors and materialmen. If Tenant has previously paid such invoices, Landlord will reimburse Tenant, provided Tenant produces proof of payment having been made, along with said lien releases. Any invoices not presented for reimbursement prior to May 31, 2008, shall not be reimbursed and any portion of the allowance that would have been allocated to such invoices shall be forfeited.

All improvement work must meet with Landlord's requirements under the Lease and City and County code requirements, be done under a valid building permit, and be performed by an insured, licensed and bonded contractor. All building plans are to be submitted prior to construction for Landlord's written approval, which will not be unreasonably withheld.

6. Section 3.3, as amended in its entirety by the Third Amendment of Lease, and Section 4 of the Third Amendment of Lease, pertaining to a previous tenant improvement allowance, are hereby deleted and of no further force or effect.

All of the other terms, covenants and conditions as contained in the Lease, as amended by said Amendment of Lease, Second Amendment of Lease, Third Amendment of Lease, Fourth Amendment of Lease and Fifth Amendment of Lease shall remain in full force and effect. Landlord and Tenant hereby mutually covenant and agree to observe and perform faithfully all of the terms, covenants and conditions which are or ought to be observed and performed by Landlord and Tenant, respectively, as contained in the Lease, as amended by said Amendment of Lease, Second Amendment of Lease, Third Amendment of Lease, Fourth Amendment of Lease, Fifth Amendment of Lease and as herein amended.

IN WITNESS WHEREOF, the parties hereto have executed this instrument the day and year first above written.

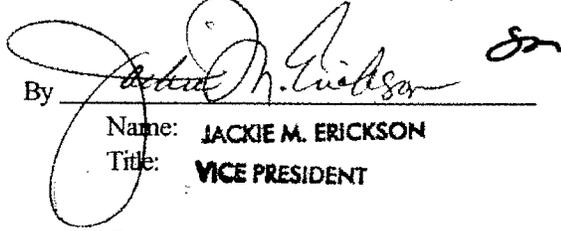
CENTRAL PACIFIC BANK

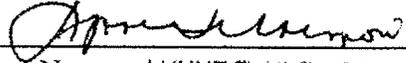
By 
Name: DENIS K. ISONO
Title: Executive Vice President

By 
Name: CURTIS A. OKAZAKI
Title: Sr. Vice President and
Manager, Properties Division

Landlord

HAWAIIAN ELECTRIC COMPANY, INC.

By 
Name: JACKIE M. ERICKSON
Title: VICE PRESIDENT

By 
Name: LYNNE T. UNEMORI
Title: VICE PRESIDENT

Tenant

Hawaiian Electric Industries, Inc.
 Training Room #1, #2 and #3 Charges, as applicable

ADM010

TOTAL 2008 TRAINING ROOM ANNUAL EXPENSE:

	(A) Rent	(B) Insurance	(C) Misc	(D) Admin	(A)+(B)+(C)+(D) 2007 Actual Totals	2008 Annual (2007 Actuals Plus 3.8% Inflation Rate)
TR1 (HEI/HECO/ASB)	\$ 52,349.18	\$ 1,358.08	\$ 11,108.75	\$ 10,281.55	\$ 75,097.56	\$ 77,951.27
TR2 (HEI/HECO/ASB)	\$ 104,210.64	\$ 2,703.51	\$ 22,114.00	\$ 10,281.55	\$ 139,309.70	\$ 144,603.47
TR3 (HEI/ASB)	\$ 24,079.18	\$ 624.68	\$ 5,109.71	\$ 10,281.55	\$ 40,095.12	\$ 41,618.73
	<u>\$ 180,639.00</u>	<u>\$ 4,686.27</u>	<u>\$ 38,332.46</u>	<u>\$ 30,844.65</u>	<u>\$ 254,502.38</u>	<u>\$ 264,173.47</u>

	ASB Alloc %	ASB	HECO Alloc %	HECO	HEI Alloc %	HEI	Totals
TR1 (HEI/HECO/ASB)	33.33%	\$ 25,981.16	33.33%	\$ 25,981.16	33.34%	\$ 25,988.95	\$ 77,951.27
TR2 (HEI/HECO/ASB)	33.33%	\$ 48,196.34	33.33%	\$ 48,196.34	33.34%	\$ 48,210.79	\$ 144,603.47
TR3 (HEI/ASB)	50.00%	\$ 20,809.36			50.00%	\$ 20,809.37	\$ 41,618.73
Total annual rent:		<u>\$ 94,986.86</u>		<u>\$ 74,177.50</u>		<u>\$ 95,009.11</u>	<u>\$ 264,173.47</u>

Monthly rent: \$ 7,915.57 \$ 6,181.46 \$ 7,917.43

Actual for Jan & Feb '08 \$ 15,831.14 \$ 12,362.92 \$ 15,834.86

Billed for January 2008 \$ 4,860.59 \$ 4,893.48 \$ -

Billed for February 2008 \$ 4,860.59 \$ 4,860.59 \$ -

\$ 9,721.18 \$ 9,754.07 \$ -

Adjustment for Jan & Feb \$ 6,109.96 \$ 2,608.85 \$ 15,834.86

Billing for March 2008 \$ 7,915.57 \$ 6,181.46 \$ 7,917.43

Add: Jan & Feb Adjustment \$ 6,109.96 \$ 2,608.85 \$ 15,834.86

Total to be billed for March 2008 \$ 14,025.53 \$ 8,790.31 \$ 23,752.29

APR - NOV 2008 \$ 7,915.57 \$ 6,181.46 ^{monthly} \$ 7,917.43

DEC 2008 \$ 7,915.59 \$ 6,181.44 \$ 7,917.38

NOTE 1: After hours air conditioning and excess electricity to be billed separately as requested.

Reviewed/Approved By:

Curtis Y. Harada
 Curtis Y. Harada, HEI Controller

4/18/08
 Date

SOURCE : HEI

TOTAL FY 2009 ASB TRAINING ROOM

COST ALLOCATION :

① * 12 MONTHS = \$ 74,178

INFLATION FACTOR x 1.025

\$ 76,032

*SOURCE: EXCERPT FROM HONOLULU CLUB
LEASE AMENDMENT*

**HONOLULU CLUB OFFICE BUILDING
FOURTH AMENDMENT OF LEASE**

THIS FOURTH AMENDMENT OF LEASE is made this 31 day of December, 2007 (this "Amendment"), by and between **GOLD STONE INVESTMENT INC.**, a Delaware corporation, registered to do business in the State of Hawaii, hereinafter called "Lessor", and **HAWAIIAN ELECTRIC COMPANY, INC.**, a Hawaii corporation, whose post office address P.O. Box 2750, Honolulu, Hawaii 96840, hereinafter called "Lessee".

WHEREAS, H CLUB CORPORATION, a Hawaii corporation, predecessor in interest to Lessor by way of mesne conveyances, entered into that certain Office Lease dated December 24, 1991, but effective on January 1, 1992 (the "lease"), demising Suite Number 101, consisting of approximately 2,544 square feet, in the building located at 932 Ward Avenue, Honolulu, Hawaii, of which a Short Form of Lease dated December 24, 1991 was filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii as Document No. 1877726 and noted on Transfer Certificate of Title No. 545,738;

WHEREAS, the lease was amended by that certain Amendment of Office Lease dated March 20, 1997 (the "**First Amendment**"), filed in said Office as Document No. 2384371;

WHEREAS, the lease was further amended by that certain Honolulu Club Office Building Second Amendment of Lease dated ----, 1999 (the "**Second Amendment**"), filed in said Office on September 27, 1999 as Document No. 2577585;

WHEREAS, the lease was further amended by that certain Honolulu Club Office Building Third Amendment of Lease dated ----, 2004 (the "**Third Amendment**"), filed in said Office on October 27, 2004 as Document No. 3184687 (the lease, the First Amendment, the Second Amendment, and the Third Amendment are hereinafter collectively called the "**Lease**"); and

WHEREAS, Lessor and Lessee mutually agreed to further amend the Lease upon the terms and conditions more fully set forth herein.

NOW, THEREFORE, Lessor and Lessee do hereby mutually agree as follows:

1. Subparagraphs (f) and (h) under Section 1.01. Specific Provisions of the Lease are deleted in their entirety and replaced with the following:

- (f) The initial term of this Lease was for five (5) years, commencing January 1, 1992, and terminating on December 31, 1996. Pursuant to the First Amendment, the term was extended for three (3) additional years, from January 1, 1997 to December 31, 1999. Pursuant to the Second Amendment, the term was extended for five (5)

additional years from January 1, 2000 to December 31, 2004. Pursuant to the Third Amendment, the term was extended for three (3) additional years, commencing on January 1, 2005 and terminating on December 31, 2007. The term is now further extended for five (5) additional years, commencing on January 1, 2008 and terminating on December 31, 2012.

(h) Rent:

- (1) Current monthly rent through December 31, 2007 is \$6,232.80, at a rate of \$2.45 per square foot, plus General Excise Tax (currently 4.712%) as provided in Section 3.04.
- (2) Monthly rent for the period commencing January 1, 2008 through December 31, 2008, shall be \$6,996.00, at a rate of \$2.75 per square foot, plus General Excise Tax as provided in Section 3.04.
- (3) Monthly rent for the period commencing January 1, 2009 through December 31, 2009, shall be \$7,310.82 (\$6,996.00 + 4.5%) plus General Excise Tax as provided in Section 3.04.
- (4) Monthly rent for the period commencing January 1, 2010 through December 31, 2010, shall be \$7,639.81 (\$7,310.82 + 4.5%) plus General Excise Tax as provided in Section 3.04.
- (5) Monthly rent for the period commencing January 1, 2011 through December 31, 2011, shall be \$7,983.60 (\$7,639.81 + 4.5%) plus General Excise Tax as provided in Section 3.04.
- (6) Monthly rent for the period commencing January 1, 2012 through December 31, 2012, shall be \$8,342.86 (\$7,983.60 + 4.5%) plus General Excise Tax as provided in Section 3.04.

TEST YEAR 2009
 $\times 12 = \underline{\underline{\$87,729.84}}$

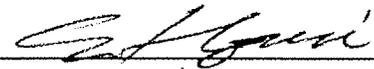
Except as amended by this Amendment, all other terms and provisions contained in the Lease shall remain in full force and effect.

Lessor and Lessee agree that this Amendment may be executed in counterparts, each of which shall be deemed an original, and said counterparts shall together constitute one and the same instrument, binding upon Lessor and Lessee, notwithstanding both Lessor and Lessee are

not signatory to the original or the same counterparts. For all purposes, including, without limitation, recordation, filing and delivery of this instrument, duplicate unexecuted and unacknowledged pages of the counterparts may be discarded and the remaining pages assembled as one document.

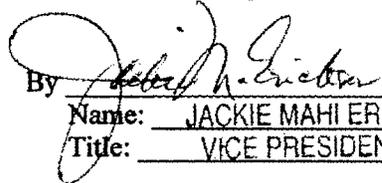
IN WITNESS WHEREOF, Lessor and Lessee have executed this Amendment as of the date first above written.

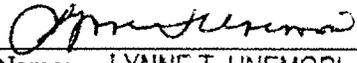
GOLD STONE INVESTMENT INC.,
a Delaware corporation

By 
Name: S. HORUMI
Title: Secretary

Lessor

HAWAIIAN ELECTRIC COMPANY,
INC., a Hawaii corporation

By  
Name: JACKIE MAHI ERICKSON
Title: VICE PRESIDENT

By 
Name: LYNNE T. UNEMORI
Title: VICE PRESIDENT

Lessee

WATERHOUSE SUITE 101

FIRST AMENDMENT TO LEASE AGREEMENT

LEASE AGREEMENT DATED MARCH 1, 2005
BY AND BETWEEN WATERHOUSE, INC.
AND HAWAIIAN ELECTRIC COMPANY, INC.
FOR SPACE IN THE 770 KAPIOLANI BUILDING

THIS FIRST AMENDMENT TO LEASE AGREEMENT is made this ____ day of January 2007 by and between WATERHOUSE, INC., (Landlord) and Hawaiian Electric Company, Inc.

Premises: Suite 101 consisting of approximately, 1,806 rentable square feet.
Term: The term shall be extended by twenty-four (24) months commencing May 1, 2007 and ending April 30, 2009.

Rent: Base rent per month will be as follows:
For period commencing May 1, 2007 ending on and including April 30, 2008 the monthly base rent will be:
One Thousand eight hundred ninety-six and 30/100 dollars (\$1,896.30). ^{1.05}

TEST YEAR 2009

For period commencing May 1, 2008 ending on and including April 30, 2009 the monthly base rent will be:

One Thousand nine hundred eighty-six and 60/100 dollars (\$1,986.60). ^{1.10} x 4 = \$7,946.40
^{\$2,257.50 (MAY 2009 - DEC 2009 : \$1.25/SQ. FT.)} x 8 = 18,060.00

\$26,006.40

Common Area Maintenance charges are currently \$0.61 per rentable sq. ft. (\$1,101.66) and are adjusted in accordance with Building expenses. (Excludes charges for air conditioning service to the Premises). Subject to adjustment per lease agreement.

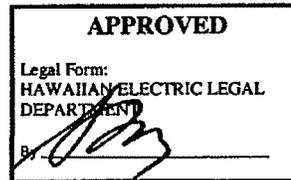
All rents (base & CAM) are subject to the State Excise Tax, currently 4.712%.

Improvements: Tenant accepts the premises in "as is" condition.

Except as hereinabove amended all other terms and conditions of the Lease shall remain in full force and effect.

AGREED AND ACCEPTED:

HAWAIIAN ELECTRIC COMPANY, INC.



By [Signature]
Its Vice President

Date FEB -7 2007

WATERHOUSE, INC.

By _____
Its President

Date _____

This is a copy of Bureau of Conveyances
Document No. _____, and / or
Land Court Document No. 3584398,
affecting Certificate of Title No. _____
recorded on 4/5/2007 at 8:01 o'clock am.

TITLE GUARANTY OF HAWAII, INCORPORATED

LAND COURT SYSTEM

REGULAR SYSTEM

After Recordation, Return By: Mail Pickup

Hawaiian Electric Company, Inc.
Survey Division
P. O. Box 2750
Honolulu, HI 96840-0001

This document consists of 4 page(s).

76 HECO # 551

HECO WO# FA000591

TMK (1) 2-1-044:022

SHORT FORM FIRST AMENDMENT TO LEASE AGREEMENT

THIS SHORT FORM FIRST AMENDMENT TO LEASE AGREEMENT is made this 12th day of February, 2007, by and among **WATERHOUSE, INC.**, a Hawaii corporation, hereinafter called the "Landlord", and **HAWAIIAN ELECTRIC COMPANY, INC.**, a Hawaii corporation, whose business and post office address is P.O. Box 2750, Honolulu, Hawaii 96840, hereinafter called the "Tenant".

W I T N E S S E T H :

WHEREAS, Landlord and Tenant entered into that certain Lease Agreement dated March 1, 2005, a short form of which is filed as Land Court Document No. 3252058 in the Office of the Registrar of the Land Court of the State of Hawaii and noted on Transfer Certificate of Title No. 223,154 (the "Lease"), relating to Suite 101 of the 770 Kapiolani Building;

WHEREAS, Landlord and Tenant also entered into that certain First Amendment to Lease Agreement dated February 12th, 2007 (the "First Amendment") by which the Lease was amended to: (1) extend the term of the Lease by twenty-four (24) months commencing on May 1, 2007, and ending on April 30, 2009, and (2) revise the base rent and CAM charges; and,

WHEREAS, the parties have agreed to put the within Short Form First Amendment of Lease Agreement of record.

NOW, THEREFORE, in consideration of the premises and the mutual covenants and conditions contained in the First Amendment, the parties agree as follows:

1. Term. The term of the Lease shall be extended by twenty-four (24) months commencing on May 1, 2007 and ending on April 30, 2009.
2. Purpose. The sole purpose of this instrument is to give notice of the First Amendment and all of its terms, covenants and conditions, which are incorporated herein by reference, to the same extent as if said First Amendment were fully set forth herein. In the event of a conflict between the terms of this Short Form First Amendment to Lease Agreement and the First Amendment, the terms of the First Amendment shall control.
3. Binding Effect. The conditions, covenants and agreements contained in this instrument shall be binding upon and inure to the benefit of all parties hereto, their respective successors and assigns. All covenants and agreements of this instrument and the First Amendment shall run with the Land.
4. Counterparts. The parties agree that this instrument may be executed in counterparts, each of which shall be deemed an original, and the counterparts shall together constitute one and the same instrument, binding all parties notwithstanding that all of the parties are not signatory to the same counterparts. For all purposes, including, without limitation, recordation, filing and delivery of this instrument, duplicate unexecuted and unacknowledged pages of the counterparts may be discarded and the remaining pages assembled as one document.

[Signatures begin on the following page]

IN WITNESS WHEREOF the undersigned have executed this instrument as of the day and year first above mentioned.

WATERHOUSE, INC.,
A Hawaii corporation

By: Scott Whiting
Name: Scott Whiting
Title: President

"Landlord"

STATE OF HAWAII)
)
CITY AND COUNTY OF HONOLULU)
 : ss.

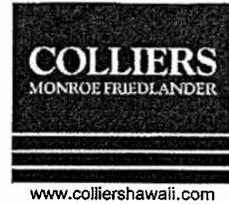
Waterhouse, Inc.

On this 12th day of February, 2007, before me appeared Scott Whiting, to me personally known, who, being by me duly sworn, did say that such person is the President, of **WATERHOUSE, INC.**, a Hawaii corporation, and that said instrument was signed on behalf of said corporation by authority of its Board of Directors, and said Officer acknowledged said instrument to be the free act and deed of said corporation.

Joanne S. Onizuka
Type or print name: Joanne S. Onizuka
Notary Public, State of Hawaii



My commission expires: 12/17/2010



**CENTRAL PACIFIC PLAZA
2008 Operating Expenses**

CAM Expenses	2008 Budget
A/C Maintenance	36,828
Depreciation	173,325
Electrical Maintenance	36,560
Electricity	783,240
Elevator Maintenance	129,619
Energy Management	5,100
Fire Alarm Service	12,100
General Maintenance - Engineering Services	212,593
General Maintenance - Other	33,600
Insurance	163,685
Janitorial Maintenance	328,029
Landscaping	13,108
Management Fee	167,120
Miscellaneous	3,600
Pest Control	2,283
Professional Fees	10,471
Real Property Tax	540,495 ←
Refuse Collections	27,406
Restroom Supplies	67,925
Security	309,000
Water & Sewage	31,500
Total CAM Expenses - Normalized	\$3,087,587 ←

1.10/cf / month

**Bishop Square Associates
Bishop Square - Pauahi Tower
2008 Operating Expense Estimate**

Suite:	<u>3020-0500</u>	Lease RSF:	<u>15,892</u>	Eff Date:	<u>02/01/05</u>
Tenant:	<u>Hawaiian Electric Company</u>	Pro-Rata Share:	<u>0.03623</u>	Base Year:	<u>N/A</u>

Current Year Expenses: 7,120,659.59

Less: Real Property Tax 1,342,794.00

Difference: 5,777,865.59

Pro-Rata Share 0.03623

Tenant's Share 209,332.07

Monthly Amount 17,444.34

= 15,892[ⓑ] SF / 438,591 SF

or 1.0977^{ⓐ/ⓑ} / SF - CAM

*Waterhouse Properties, Inc.
 dba 770 Kapiolani Building
 670 Queen Street, Suite 200
 Honolulu, HI 96813*

TENANT:
*Ms. Cheryl K. Fujiwara
 Director, Facilities Operations & Planning
 Hawaiian Electric Company
 P.O. Box 2750
 Honolulu, HI 96840-0001*

Suites 101, 404, 506

February 19, 2008

DATE	DESCRIPTION	CHARGES	CREDITS	BALANCE
01/21/08	PREVIOUS BALANCE			\$12,798.12
02/07/08	PAYMENT #74018		\$12,798.12	\$0.00
02/19/08	March 2008 CHARGES:			
	RENT Suite 101	\$1,985.65		\$1,985.65
\$3706	(\$1,896.30 + TAX @ 4.712%)			
	OPER EXP RENT	\$1,720.90		\$3,706.55
	(1806 SQ FT @ \$.91 + TAX @ 4.712%)			
	RENT Suite 404	\$1,983.96		\$5,690.51
\$3568	(\$1,894.68 + TAX @ 4.712%)			
	OPER EXP RENT	\$1,583.69		\$7,274.20
	(1,662 SQ FT @ \$.91 + TAX @ 4.712%)			
	RENT Suite 506	\$2,584.29		\$9,858.49
\$5524	(\$2,468.00 + TAX @ 4.712%)			
	OPER EXP RENT	\$2,939.63		\$12,798.12
	(3085 SQ FT @ \$.91 + TAX @ 4.712%)			
				<u>\$12,798.12</u>

PLEASE SUBMIT PAYMENT TO THE ADDRESS BELOW BY:

March 1, 2008

*Waterhouse Properties, Inc.
 dba 770 Kapiolani Building
 670 Queen Street, Suite 200
 Honolulu, HI 96813*

FA000591-570
Approved by: <i>Cheryl Fujiwara</i> 2008/2/25/08 Date

Dept	Jan-09	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
Comp & Ben	11	11	11	11	11	11	11	11	11	11	11	11	11
Ind Rel	9	9	9	9	9	9	9	9	9	9	9	9	9
SSF	53	53	53	53	53	53	53	53	53	53	53	53	53
VP-Corp Exc	5	5	5	5	5	5	4	4	4	4	4	4	4
WFSD	25	25	25	25	25	25	25	25	25	25	25	25	25
	103	103	103	103	103	103	102						
Corp Comm	9	9	9	9	9	9	9	9	9	9	9	9	9
VP-Corp Rel	3	3	3	3	3	3	3	3	3	3	3	3	3
	12												
CustTechAp	10	10	10	10	10	10	10	10	10	10	10	10	10
Engy Svcs	19	19	19	19	19	19	19	19	19	19	19	19	19
Fcst&Res	10	10	10	10	10	10	10	10	10	10	10	10	10
Mktg Svcs	12	12	12	12	12	12	12	12	12	12	12	12	12
VP-Cust Sol	2	2	2	2	2	2	2	2	2	2	2	2	2
	53												
C&M	220	220	220	220	220	220	220	220	220	220	220	220	220
Engineering	85	85	85	85	85	85	85	85	85	85	85	85	85
Supp Svcs	85	85	85	85	85	85	85	85	85	85	85	85	85
Sys Op	118	118	118	118	118	118	118	118	118	118	118	118	118
VP-En Del	2	2	2	2	2	2	2	2	2	2	2	2	2
	510												
CID	55	55	55	55	55	55	55	55	55	55	55	55	55
Engy Proj	9	9	9	9	9	9	9	9	9	9	9	9	9
SVP-EnSol	4	4	4	4	4	4	4	4	4	4	4	4	4
Tech	3	3	3	3	3	3	3	3	3	3	3	3	3
	71												
Gen Acctg	27	27	27	27	27	27	27	27	27	27	27	27	27
InfoTech	97	97	97	97	97	97	97	97	97	97	97	97	97
MAFS	22	22	22	22	22	22	22	22	22	22	22	22	22
RiskMgt	9	9	9	9	9	9	9	9	9	9	9	9	9
SVP Finance & Admin	3	3	3	3	3	3	3	3	3	3	3	3	3
	158												
Legal	17	17	17	17	17	17	17	17	17	17	17	17	17
VPGen	2	2	2	2	2	2	2	2	2	2	2	2	2
	19												
Ed & Cons Aff	8	8	8	8	8	8	8	8	8	8	8	8	8
Reg Affairs	15	15	15	15	15	15	15	15	15	15	15	15	15
VP-Gov & Com	7	7	7	7	7	7	7	7	7	7	7	7	7
	30												
Cust Svc	148	148	148	148	148	148	148	148	148	148	148	148	148
SVP-Oper	2	2	2	2	2	2	2	2	2	2	2	2	2
	150												
CorpAudComp	11	11	11	11	11	11	15	15	15	13	13	13	13
President	4	4	4	4	4	4	4	4	4	4	4	4	4
	15	15	15	15	15	15	19	19	19	17	17	17	17
Gov Rel	3	3	3	3	3	3	3	3	3	3	3	3	3
IRP	6	6	6	6	6	6	6	6	6	6	6	6	6
EVP-Pub Aff	2	2	2	2	2	2	2	2	2	2	2	2	2
	11												
Environ	25	25	25	25	25	25	25	25	25	25	25	25	25
Pwr Sup O&M	375	375	375	375	375	375	375	375	375	375	375	375	375
Pwr Sup Services	15	15	15	15	15	15	15	15	15	15	15	15	15
PwrSup Eng	52	52	52	52	52	52	52	52	52	52	52	52	52
Sys Planning	22	22	22	22	22	22	22	22	22	22	22	22	22
VP-Pwr Sup	3	3	3	3	3	3	3	3	3	3	3	3	3
	492												
Sr EVP	2	2	2	2	2	2	2	2	2	2	2	2	2
	2												
	1626	1626	1626	1626	1626	1626	1629	1629	1629	1627	1627	1627	1627

Hawaiian Electric Company, Inc.
2009 Test Year Average Calculation

Dept	Jan-09	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Total		Test Year Average
Comp & Ben	11	11	11	11	11	11	11	11	11	11	11	11	11	143	11.00	11
Ind Rel	9	9	9	9	9	9	9	9	9	9	9	9	9	117	9.00	9
SSF	53	53	53	53	53	53	53	53	53	53	53	53	53		53.00	
Adjustment	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	676	52.00	52
VP-Corp Exc	5	5	5	5	5	5	4	4	4	4	4	4	4	58	4.46	4
WFSD	25	25	25	25	25	25	25	25	25	25	25	25	25	325	25.00	25
	102	102	102	102	102	102	101	101	101	101	101	101	101	1319	101.46	101
Corp Comm	9	9	9	9	9	9	9	9	9	9	9	9	9	117	9.00	9
VP-Corp Rel	3	3	3	3	3	3	3	3	3	3	3	3	3	39	3.00	3
	12	12	12	12	12	12	12	12	12	12	12	12	12	156	12.00	12
CustTechAp	10	10	10	10	10	10	10	10	10	10	10	10	10	130	10.00	
Tsf to Engy Svcs	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-13	-1.00	9
Engy Svcs	19	19	19	19	19	19	19	19	19	19	19	19	19	247	19.00	
Rcv from CustTech	1	1	1	1	1	1	1	1	1	1	1	1	1	13	1.00	
Less DSM	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-65	-5.00	15
Fcst&Res	10	10	10	10	10	10	10	10	10	10	10	10	10	130	10.00	10
Mktg Svcs	12	12	12	12	12	12	12	12	12	12	12	12	12	156	12.00	12
VP-Cust Sol	2	2	2	2	2	2	2	2	2	2	2	2	2	26	2.00	2
	48	48	48	48	48	48	48	48	48	48	48	48	48	624	48.00	48
C&M	220	220	220	220	220	220	220	220	220	220	220	220	220	2860	220.00	220
Engineering	85	85	85	85	85	85	85	85	85	85	85	85	85	1105	85.00	85
Supp Svcs	85	85	85	85	85	85	85	85	85	85	85	85	85	1105	85.00	85
Sys Op	118	118	118	118	118	118	118	118	118	118	118	118	118	1534	118.00	118
VP-En Del	2	2	2	2	2	2	2	2	2	2	2	2	2	26	2.00	2
	510	510	510	510	510	510	510	510	510	510	510	510	510	6630	510.00	510
CID	55	55	55	55	55	55	55	55	55	55	55	55	55	715	55.00	55
Engy Proj	9	9	9	9	9	9	9	9	9	9	9	9	9	117	9.00	9
SVP-EnSol	4	4	4	4	4	4	4	4	4	4	4	4	4	52	4.00	4
Tech	3	3	3	3	3	3	3	3	3	3	3	3	3	39	3.00	3
	71	71	71	71	71	71	71	71	71	71	71	71	71	923	71.00	71
Gen Acctg	27	27	27	27	27	27	27	27	27	27	27	27	27	351	27.00	27
InfoTech	97	97	97	97	97	97	97	97	97	97	97	97	97	1261	97.00	97
MAFS	22	22	22	22	22	22	22	22	22	22	22	22	22	286	22.00	22
RiskMgt	9	9	9	9	9	9	9	9	9	9	9	9	9	117	9.00	9
SVP Finance & Admin	3	3	3	3	3	3	3	3	3	3	3	3	3	39	3.00	3
	158	158	158	158	158	158	158	158	158	158	158	158	158	2054	158.00	158
Legal	17	17	17	17	17	17	17	17	17	17	17	17	17	221	17.00	17
VPGen	2	2	2	2	2	2	2	2	2	2	2	2	2	26	2.00	2
	19	19	19	19	19	19	19	19	19	19	19	19	19	247	19.00	19
Ed & Cons Aff	8	8	8	8	8	8	8	8	8	8	8	8	8	104	8.00	8
Reg Affairs	15	15	15	15	15	15	15	15	15	15	15	15	15	195	15.00	15
VP-Gov & Com	7	7	7	7	7	7	7	7	7	7	7	7	7	91	7.00	7
	30	30	30	30	30	30	30	30	30	30	30	30	30	390	30.00	30
Cust Svc	148	148	148	148	148	148	148	148	148	148	148	148	148	1924	148.00	148
SVP-Oper	2	2	2	2	2	2	2	2	2	2	2	2	2	26	2.00	2
	150	150	150	150	150	150	150	150	150	150	150	150	150	1950	150.00	150
CorpAudComp	11	11	11	11	11	11	15	15	15	13	13	13	13	163	12.54	13
President	4	4	4	4	4	4	4	4	4	4	4	4	4	52	4.00	4
	15	15	15	15	15	15	19	19	19	17	17	17	17	215	16.54	17
Gov Rel	3	3	3	3	3	3	3	3	3	3	3	3	3	39	3.00	3
IRP	6	6	6	6	6	6	6	6	6	6	6	6	6	78	6.00	6
EVP-Pub Aff	2	2	2	2	2	2	2	2	2	2	2	2	2	26	2.00	2
	11	11	11	11	11	11	11	11	11	11	11	11	11	143	11.00	11
Environ	25	25	25	25	25	25	25	25	25	25	25	25	25	325	25.00	25
Pwr Sup O&M	375	375	375	375	375	375	375	375	375	375	375	375	375	4875	375.00	375
Pwr Sup Services	15	15	15	15	15	15	15	15	15	15	15	15	15	195	15.00	15
PwrSup Eng	52	52	52	52	52	52	52	52	52	52	52	52	52	676	52.00	52
Sys Planning	22	22	22	22	22	22	22	22	22	22	22	22	22	286	22.00	22
VP-Pwr Sup	3	3	3	3	3	3	3	3	3	3	3	3	3	39	3.00	3
	492	492	492	492	492	492	492	492	492	492	492	492	492	6396	492.00	492
SrEVP	2	2	2	2	2	2	2	2	2	2	2	2	2	26	2.00	2
	2	2	2	2	2	2	2	2	2	2	2	2	2	26	2.00	2
	1620	1620	1620	1620	1620	1620	1623	1623	1623	1621	1621	1621	1621	21073	1621.00	1621

*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge adjustment docket from all years

HAWAIIAN ELECTRIC CO., INC.
TAX RATES

	<u>2009</u>
Franchise Royalty Tax Rate	2.5000%
Public Service Company Tax Rate	5.8850%
Public Utility Commission Fees Rate	0.5000%
State Income Tax Rate (Effective)	6.0150%
Federal Income Tax Rate (Effective)	32.8947%

HAWAIIAN ELECTRIC CO., INC.
PAYROLL TAXES CHARGED TO OPERATIONS
TEST YEAR 2009

(\$Thousands)

	A BASE CASE	B Adjustment	(A+B) C INTERIM INCREASE	D Adjustment	(A+D) E CIP CT-1 STEP			
<u>Summary of Payroll Taxes Charged to Operations</u>								
1 FICA	7,267	(41)	7,226	46	7,313			
2 Federal Unemployment Taxes	66		66		66			
3 State Unemployment Taxes	0		0		0			
4 Total Payroll Taxes Charged to Operations	7,333	(41)	7,292	46	7,379			
<u>Allocation of Payroll Taxes Based on Labor Dollars Charged</u>								
5 Capital	1,374		1,374		1,374			
6 Operations	7,333	(41)	7,292	46	7,379			
7 Others	1,404		1,404		1,404			
Total Payroll Taxes	10,111	(41)	10,070	46	10,157			
<u>Breakdown of Total Payroll Taxes</u>								
		Total Payroll Taxes (HECO-WP-1601)	Calculated Percentages					
8 FICA		10,182	99.11%	7,267	(41)	7,226	46	7,313
9 FUTA		91	0.89%	66		66		66
10 SUTA		0	0.00%	0		0		0
11 Total Payroll Taxes		10,273	100.0%	7,333	(41)	7,292	46	7,379

HAWAIIAN ELECTRIC CO., INC.
PAYROLL TAXES CHARGED TO OPERATIONS
TEST YEAR 2009

FICA

		(A)		
	Est	Effective	Total	
<u>Pay Date</u>	<u>Gross Pay</u>	<u>Rate</u>	<u>FICA</u>	
1	1/7/2009	1,072,546	7.55%	81,010
2	1/21/2009	5,362,727	7.55%	405,052
3	2/4/2009	5,362,730	7.55%	405,052
4	2/19/2009	5,569,000	7.55%	420,632
5	3/4/2009	5,569,000	7.55%	420,632
6	3/18/2009	5,505,450	7.55%	415,832
7	4/1/2009	5,505,450	7.51%	413,448
8	4/15/2009	5,354,546	7.51%	402,116
9	4/29/2009	5,316,820	7.51%	399,283
10	5/13/2009	5,317,300	7.51%	399,319
11	5/28/2009	5,317,620	7.51%	399,343
12	6/10/2009	5,260,630	7.51%	395,063
13	6/24/2009	5,203,640	7.51%	390,783
14	7/8/2009	5,190,419	7.44%	386,337
15	7/22/2009	5,159,570	7.44%	384,041
16	8/5/2009	5,159,570	7.44%	384,041
17	8/19/2009	5,269,520	7.44%	392,224
18	9/2/2009	5,269,520	7.44%	392,224
19	9/16/2009	5,233,547	7.44%	389,547
20	9/30/2009	5,229,550	6.93%	362,488
21	10/15/2009	5,196,139	6.93%	360,172
22	10/28/2009	5,181,820	6.93%	359,180
23	11/12/2009	5,220,195	6.93%	361,840
24	11/25/2009	5,258,570	6.93%	364,499
25	12/9/2009	5,286,622	6.93%	366,444
26	12/23/2009	5,328,700	6.93%	369,361
27	1/6/2010	4,795,830	7.55%	362,233
28		<u>138,497,031</u>		<u>10,182,196</u>

2006 Form 941			
<u>Pay Date</u>	<u>FICA</u>	<u>Gross Pay</u>	<u>Eff Rate</u>
Quarter 1	1,866,261	24,631,457	7.58%
Quarter 2	2,182,934	28,971,614	7.53%
Quarter 3	1,861,582	25,651,695	7.26%
Quarter 4	2,073,578	30,067,083	6.90%

2007 Form 941			
<u>Pay Date</u>	<u>FICA</u>	<u>Gross Pay</u>	<u>Eff Rate</u>
Quarter 1	1,993,456	26,392,584	7.55%
Quarter 2	2,290,620	30,501,743	7.51%
Quarter 3	1,954,451	26,257,975	7.44%
Quarter 4	2,160,906	31,175,010	6.93%

Rounded
10,182

Federal Unemployment Taxes

	<u>Rate</u>	<u>\$ Max</u>	<u>No. Employees at Year End</u>	<u>FUTA Tax</u>	
29	0.8%	7,000	1,627	91,112	91

State Unemployment Taxes

	<u>Rate</u>	<u>\$ Max</u>	<u>No. Employees at Year End</u>	<u>FUTA Tax</u>	
30	0.00%	13,000	1,627	0	0

31 Total Payroll Taxes (Line 28 + Line 29 + Line 30) 10,273

HAWAIIAN ELECTRIC COMPANY, INC.
CALCULATION OF COMPOSITE EFFECTIVE INCOME TAX RATES
FEDERAL AND STATE

COMPOSITE FEDERAL AND STATE EFFECTIVE INCOME TAX RATE

Federal Effective Income Tax Rate	32.8947368%
State Effective Income Tax Rate	6.0150376%
	<u>38.9097744%</u>

CALCULATION OF EFFECTIVE RATES

Assumptions: ST = State Income Tax Expense
FT = Federal Income Tax Expense
Pre-Tax Income = \$1.00
State Statutory Income Tax Rate = 6.4% *
Federal Statutory Income Tax Rate = 35% **

Calculation of State Effective Income Tax Rate

$$\begin{aligned} \text{State Income Tax Expense} &= \text{Statutory Rate} \times (\text{Pre-Tax Income} - \text{State Income Tax Expense}) \\ \text{ST} &= .064 \times (1 - \text{ST}) \\ \text{ST} &= .064 - .064(\text{ST}) \\ 1.064(\text{ST}) &= .064 \\ \text{ST} &= .060150376 \text{ or } 6.0150376\% \text{ of Pre-Tax Income} \end{aligned}$$

Calculation of Federal Effective Income Tax Rate

$$\begin{aligned} \text{Federal Income Tax Expense} &= \text{Statutory Rate} \times (\text{Pre-Tax Income} - \text{State Income Tax Expense}) \\ \text{FT} &= .35 \times (1 - \text{ST}) \\ \text{FT} &= .35 \times (1 - .060150376) \\ \text{FT} &= .35 - .0210526316 \\ \text{FT} &= .328947368 \text{ or } 32.8947368\% \text{ of Pre-Tax Income} \end{aligned}$$

* Hawaii Revised Statutes §235.71 was amended for tax years beginning after 1986.

** The Revenue Reconciliation Act of 1993 changed the Federal tax rate for tax years beginning on or after January 1, 1993.

HAWAIIAN ELECTRIC CO., INC.
INTEREST SYNCHRONIZATION
TEST YEAR 2009

(\$ Thousand)

	A BASE CASE	B Adjustment	(A+B) C INTERIM INCREASE	D Adjustment	(A+D) E CIP CT-1 STEP
1 Rate Base	1,332,636	(74,281)	1,258,355	75,343	1,407,979
2 Weighted Cost of Debt	2.39%	2.39%	2.39%	2.39%	2.39%
3 Synchronized Interest Expense	31,837	(1,775)	30,062	1,800	33,637

Calculation of Weighted Cost of Debt

	A Cost Rate	B Capital Ratio	A x B Weighted Cost	Reference
4 Short Term Debt	3.25%	1.49%	0.05%	HECO-2001
5 Long Term Debt	5.75%	38.27%	2.20%	HECO-2001
6 Hybrid Securities	7.41%	1.89%	0.14%	HECO-2001
7 TOTAL			<u>2.39%</u>	

HAWAIIAN ELECTRIC CO., INC.
NON-DEDUCTIBLE MEALS AND ENTERTAINMENT
TEST YEAR 2009

Meals & Entertainment Expense (1)	156,000
Less: Deductible Portion (50%)	(78,000)
Non-Deductible Meals & Entertainment Adjustment	<u>78,000</u>

NOTE (1) From Forecasted Meals & Entertainment (cost type 521),
Management Accounting

HAWAIIAN ELECTRIC CO., INC.
DOMESTIC PRODUCTION ACTIVITIES DEDUCTION (DPAD)
TEST YEAR 2009 - BASE CASE
(\$ THOUSANDS)

	<u>BASE CASE</u>	<u>Generation</u>	
Electric Sales Revenue	1,949,212	1,165,280.02	(C) See note (1).
Other Operating Revenue	4,598		
Gain on Sale of Land	615		
	<u>1,954,425</u>	<u>1,165,280.02</u>	
Power production expense-Fuel	(816,654)	(816,654.00)	
Power production expense-Purchased Power	(477,055) (A)		
Power production expense-Production	(80,391)	(80,391.00)	
Transmission expense	(13,967)	-	
Distribution expense	(30,491)	-	
Customer accounts expense	(15,954)	(13,040.40)	Allocation based on note (2) below.
Allowance for Uncoll Accounts	(1,401)	(1,145.14)	Allocation based on note (2) below.
Customer service	(7,007)	(5,727.34)	Allocation based on note (2) below.
A & G expense	(76,708)	(62,699.18)	Allocation based on note (2) below.
Miscellaneous		-	Allocation based on note (2) below.
Total O&M expense	<u>(1,519,628)</u>	<u>(979,657.07)</u>	
Depreciation expense	(83,183)	-	
Amort of State ITC	1,462	-	
Taxes other than income taxes	(180,689)	(109,427.21)	
Interest on Customer Deposits	(471)	(384.98)	Allocation based on note (2) below.
Income taxes	(54,512)	-	
Miscellaneous		-	Allocation based on note (2) below.
Other operating expense	<u>(317,393)</u>	<u>(109,812.19)</u>	
Net utility operating income	<u>117,404</u>	<u>75,810.76</u>	
Tax Adjustments:			
Interest	(31,836)	(7,492.27)	Allocation based on note (5) below.
Estimated Current State ITC on Production Assets		3,722.89	See note (4) below.
Estimated State Tax Depreciation on Production Assets		(20,652.00)	See note (3) below.
State Pretax Income		51,389.38	(F)
Less: State Tax Deduction		(3,091.09)	(F) * 6.0150376% state tax rate
State Taxable Income		48,298.29	
Add: Federal State Tax Depreciation Difference		672.00	See note (3) below.
Estimated taxable income for generation activity		<u>48,970.29</u>	
Estimated Domestic Production Activities Deduction (6%)		<u>2,938.22</u>	
Estimated Federal Tax Effect at 35%		<u>1,028.38</u>	

NOTES:

(1) <u>Calculation of Revenue Attributable to Purchased Power:</u>			
Power Production Expense-Purchased Power		477,055.00	(A)
Divided by: Revenue Tax Gross Up (1-.08885)		0.91	
Purchased Power Revenue Grossed Up		<u>523,574.60</u>	(B)
<u>Electric Sales Revenue Net of Purchased Power Revenues</u>			
Electric Sales Revenue		1,949,212.00	(C)
Less: Electric Sales Revenues Related to Purchased Power		(523,574.60)	(B)
Electric Sales Revenue, Net of Purchased Power Revenue		<u>1,425,637.40</u>	(D)
<u>Production Sales Net of Purchased Power Revenues</u>			
Total Production Sales	1,211,509.8/1,398,278.7	87%	1,688,854.62
Less: Production Sales Revenues Related to Purchased Power			(523,574.60) (B)
Production Sales Revenue, Net of Purchased Power Revenue			<u>1,165,280.02</u> (E)
(2) <u>Allocation based on current cost of service workpapers as adjusted for purchased power revenues.</u>			
Production Sales / Electric Sales Revenue	1,165,280.02 / 1,425,637.40		(E) / (D)
Production Cost of Service Percentage Calculated		81.7375%	
(3) 2009 State Tax Depreciation of Production Assets	(20,652)		
2009 Federal Tax Depreciation of Production Assets	(19,980)		
Federal State Depreciation Adjustment	<u>672</u>		
(4) 2009 Production Tax Additions	161,091		
5 yr avg O/S & Materials	57.7762%		
State ITC rate	4%		
December 2009 Estimated State ITC	<u>3,723</u>		
(5) Average Tax Basis of Production Assets	246,585,195		
Average Tax Basis of Total Assets	1,047,785,150		
Interest Allocation Based on Tax Basis %	23.5339%		

HAWAIIAN ELECTRIC CO., INC.
TAXES OTHER THAN INCOME FOR DPAD CALCULATION
TEST YEAR 2009 - BASE CASE
(\$ THOUSANDS)

PSC Tax Calculation

Electric Sales Revenue	1,165,280
Less: Bad Debt Deduction	(1,145)
PSC Tax Base	<u>1,164,135</u>
PSC Tax Rate	<u>5.885%</u>
PSC Taxes	<u><u>68,509</u></u>

PUC Fee Calculation

Electric Sales Revenue	1,165,280
Less: Bad Debt Deduction	(1,145)
PUC Fee Base	<u>1,164,135</u>
PUC Fees Rate	<u>0.5%</u>
PUC Fees	<u><u>5,821</u></u>

Franchise Royalty Tax Calculation

Electric Sales Revenue	1,165,280
Less: Bad Debt Deduction	(1,145)
Franchise Royalty Tax Base	<u>1,164,135</u>
Franchise Royalty Tax Rate	<u>2.5%</u>
Franchise Royalty Taxes	<u><u>29,103</u></u>

Payroll Taxes

Total Payroll Taxes	7,333.00
Allocation Factor	<u>81.7375%</u>
Payroll Taxes allocated to Production	<u><u>5,994</u></u>

Total Taxes Other Than Income	<u><u>109,427</u></u>
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NOTE 1> Calculation of Bad Debt Deduction

Total Bad Debt (tax)	1,401.00
Production Cost of Service Percentage	<u>81.7375%</u>
Bad Debt allocated to Production	<u><u>1,145</u></u>

HAWAIIAN ELECTRIC CO., INC.
DOMESTIC PRODUCTION ACTIVITIES DEDUCTION (DPAD)
TEST YEAR 2009 - INTERIM INCREASE
(\$ THOUSANDS)

	<u>INTERIM INCREASE</u>	<u>Generation</u>	
Electric Sales Revenue	1,936,881	1,154,596.08	(C) See note (1).
Other Operating Revenue	4,587		
Gain on Sale of Land	615		
	<u>1,942,083</u>	<u>1,154,596.08</u>	
Power production expense-Fuel	(816,654)	(816,654.00)	
Power production expense-Purchased Power	(477,055)		(A)
Power production expense-Production	(78,902)	(78,902.00)	
Transmission expense	(13,967)	-	
Distribution expense	(30,491)	-	
Customer accounts expense	(15,954)	(13,033.57)	Allocation based on note (2) below.
Allowance for Uncoll Accounts	(1,392)	(1,137.19)	Allocation based on note (2) below.
Customer service	(7,007)	(5,724.35)	Allocation based on note (2) below.
A & G expense	(76,583)	(62,564.23)	Allocation based on note (2) below.
Miscellaneous	-	-	Allocation based on note (2) below.
Total O&M expense	<u>(1,518,005)</u>	<u>(978,015.34)</u>	
Depreciation expense	(83,183)	-	
Amort of State ITC	1,462	-	
Taxes other than income taxes	(179,554)	(108,442.01)	
Interest on Customer Deposits	(471)	(384.78)	Allocation based on note (2) below.
Income taxes	(51,474)	-	
Miscellaneous	-	-	Allocation based on note (2) below.
Other operating expense	<u>(313,220)</u>	<u>(108,826.80)</u>	
Net utility operating income	<u>110,858</u>	<u>67,753.94</u>	
Tax Adjustments:			
Interest	(30,062)	(5,534.11)	Allocation based on note (5) below.
Estimated Current State ITC on Production Assets		3,722.89	See note (4) below.
Estimated State Tax Depreciation on Production Assets		(20,652.00)	See note (3) below.
State Pretax Income		45,290.72	(F)
Less: State Tax Deduction		(2,724.25)	(F) * 6.0150376% state tax rate
State Taxable Income		42,566.46	
Add: Federal State Tax Depreciation Difference		672.00	See note (3) below.
Estimated taxable income for generation activity		<u>43,238.46</u>	
Estimated Domestic Production Activities Deduction (6%)		<u>2,594.31</u>	
Estimated Federal Tax Effect at 35%		<u>908.01</u>	

NOTES:

- (1) Calculation of Revenue Attributable to Purchased Power:
- | | | |
|---|-------------------|-----|
| Power Production Expense-Purchased Power | 477,055.00 | (A) |
| Divided by: Revenue Tax Gross Up (1-.08885) | 0.91 | |
| Purchased Power Revenue Grossed Up | <u>523,574.60</u> | (B) |
- Electric Sales Revenue Net of Purchased Power Revenues
- | | | |
|--|---------------------|-----|
| Electric Sales Revenue | 1,936,881.00 | (C) |
| Less: Electric Sales Revenues Related to Purchased Power | (523,574.60) | (B) |
| Electric Sales Revenue, Net of Purchased Power Revenue | <u>1,413,306.40</u> | (D) |
- Production Sales Net of Purchased Power Revenues
- | | | | |
|--|-------------------------|-----|---------------------|
| Total Production Sales | 1,211,509.8/1,398,278.7 | 87% | 1,678,170.68 |
| Less: Production Sales Revenues Related to Purchased Power | | | (523,574.60) |
| Production Sales Revenue, Net of Purchased Power Revenue | | | <u>1,154,596.08</u> |
- (2) Allocation based on current cost of service workpapers as adjusted for purchased power revenues.
- | | | |
|--|-----------------------------|-----------|
| Production Sales / Electric Sales Revenue | 1,154,596.08 / 1,413,306.40 | (E) / (D) |
| Production Cost of Service Percentage Calculated | 81.6947% | |
- (3) 2009 State Tax Depreciation of Production Assets (20,652)
2009 Federal Tax Depreciation of Production Assets (19,980)
Federal State Depreciation Adjustment 672
- (4) 2009 Production Tax Additions 161,091
5 yr avg O/S & Materials 57.7762%
State ITC rate 4%
December 2009 Estimated State ITC 3,723
- (5) Average Tax Basis of Production Assets 179,123,530
Average Tax Basis of Total Assets 973,021,455
Interest Allocation Based on Tax Basis % 18.4090%

HAWAIIAN ELECTRIC CO., INC.
TAXES OTHER THAN INCOME FOR DPAD CALCULATION
TEST YEAR 2009 - INTERIM INCREASE
(\$ THOUSANDS)

PSC Tax Calculation

Electric Sales Revenue	1,154,596
Less: Bad Debt Deduction	(1,137)
PSC Tax Base	<u>1,153,459</u>
PSC Tax Rate	<u>5.885%</u>
PSC Taxes	<u><u>67,881</u></u>

PUC Fee Calculation

Electric Sales Revenue	1,154,596
Less: Bad Debt Deduction	(1,137)
PUC Fee Base	<u>1,153,459</u>
PUC Fees Rate	<u>0.5%</u>
PUC Fees	<u><u>5,767</u></u>

Franchise Royalty Tax Calculation

Electric Sales Revenue	1,154,596
Less: Bad Debt Deduction	(1,137)
Franchise Royalty Tax Base	<u>1,153,459</u>
Franchise Royalty Tax Rate	<u>2.5%</u>
Franchise Royalty Taxes	<u><u>28,836</u></u>

Payroll Taxes

Total Payroll Taxes	7,292.00
Allocation Factor	<u>81.6947%</u>
Payroll Taxes allocated to Production	<u><u>5,957</u></u>

Total Taxes Other Than Income	<u><u>108,442</u></u>
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NOTE 1> Calculation of Bad Debt Deduction

Total Bad Debt (tax)	1,392.00
Production Cost of Service Percentage	<u>81.6947%</u>
Bad Debt allocated to Production	<u><u>1,137</u></u>

HAWAIIAN ELECTRIC CO., INC.
DOMESTIC PRODUCTION ACTIVITIES DEDUCTION (DPAD)
TEST YEAR 2009 - CIP CT-1 STEP
(\$ THOUSANDS)

	<u>CIP CT-1 STEP</u>	<u>Generation</u>	
Electric Sales Revenue	1,961,298	1,175,751.68	(C) See note (1).
Other Operating Revenue	4,609		
Gain on Sale of Land	615		
	<u>1,966,522</u>	<u>1,175,751.68</u>	
Power production expense-Fuel	(816,654)	(816,654.00)	
Power production expense-Purchased Power	(477,055)	(A)	
Power production expense-Production	(81,500)	(81,500.00)	
Transmission expense	(13,967)	-	
Distribution expense	(30,491)	-	
Customer accounts expense	(15,954)	(13,046.98)	Allocation based on note (2) below.
Allowance for Uncoll Accounts	(1,410)	(1,153.08)	Allocation based on note (2) below.
Customer service	(7,007)	(5,730.23)	Allocation based on note (2) below.
A & G expense	(76,849)	(62,846.12)	Allocation based on note (2) below.
Miscellaneous	-	-	Allocation based on note (2) below.
Total O&M expense	<u>(1,520,887)</u>	<u>(980,930.41)</u>	
Depreciation expense	(83,183)	-	
Amort of State ITC	1,462	-	
Taxes other than income taxes	(181,810)	(110,397.54)	HECO-WP-1602, page 9
Interest on Customer Deposits	(471)	(385.18)	Allocation based on note (2) below.
Income taxes	(57,593)	-	
Miscellaneous	-	-	Allocation based on note (2) below.
Other operating expense	<u>(321,595)</u>	<u>(110,782.72)</u>	
Net utility operating income	<u>124,040</u>	<u>84,038.54</u>	
Tax Adjustments:			
Interest	(33,636)	(7,915.88)	Allocation based on note (5) below.
Estimated Current State ITC on Production Assets		3,722.89	See note (4) below.
Estimated State Tax Depreciation on Production Assets		(20,652.00)	See note (3) below.
State Pretax Income		59,193.55	(F)
Less: State Tax Deduction		(3,560.51)	(F) * 6.0150376% state tax rate
State Taxable Income		55,633.04	
Add: Federal State Tax Depreciation Difference		672.00	See note (3) below.
Estimated taxable income for generation activity		<u>56,305.04</u>	
Estimated Domestic Production Activities Deduction (6%)		<u>3,378.30</u>	
Estimated Federal Tax Effect at 35%		<u>1,182.41</u>	

NOTES:

- (1) Calculation of Revenue Attributable to Purchased Power:
- | | | |
|---|-------------------|-----|
| Power Production Expense-Purchased Power | 477,055.00 | (A) |
| Divided by: Revenue Tax Gross Up (1-.08885) | 0.91 | |
| Purchased Power Revenue Grossed Up | <u>523,574.60</u> | (B) |
- Electric Sales Revenue Net of Purchased Power Revenues
- | | | |
|--|---------------------|-----|
| Electric Sales Revenue | 1,961,298.00 | (C) |
| Less: Electric Sales Revenues Related to Purchased Power | (523,574.60) | (B) |
| Electric Sales Revenue, Net of Purchased Power Revenue | <u>1,437,723.40</u> | (D) |
- Production Sales Net of Purchased Power Revenues
- | | | | |
|--|-------------------------|-----|---------------------|
| Total Production Sales | 1,211,509.8/1,398,278.7 | 87% | 1,699,326.28 |
| Less: Production Sales Revenues Related to Purchased Power | | | (523,574.60) |
| Production Sales Revenue, Net of Purchased Power Revenue | | | <u>1,175,751.68</u> |
- (2) Allocation based on current cost of service workpapers as adjusted for purchased power revenues.
- | | | |
|--|-----------------------------|-----------|
| Production Sales / Electric Sales Revenue | 1,175,751.68 / 1,437,723.40 | (E) / (D) |
| Production Cost of Service Percentage Calculated | 81.7787% | |
- (3) 2009 State Tax Depreciation of Production Assets (20,652)
2009 Federal Tax Depreciation of Production Assets (19,980)
Federal State Depreciation Adjustment 672
- (4) 2009 Production Tax Additions 161,091
5 yr avg O/S & Materials 57.7762%
State ITC rate 4%
December 2009 Estimated State ITC 3,723
- (5) Average Tax Basis of Production Assets 246,585,195
Average Tax Basis of Total Assets 1,047,785,150
Interest Allocation Based on Tax Basis % 23.5339%

HAWAIIAN ELECTRIC CO., INC.
TAXES OTHER THAN INCOME FOR DPAD CALCULATION
TEST YEAR 2009 - CIP CT-1 STEP
(\$ THOUSANDS)

PSC Tax Calculation

Electric Sales Revenue	1,175,752
Less: Bad Debt Deduction	(1,153)
PSC Tax Base	<u>1,174,599</u>
PSC Tax Rate	<u>5.885%</u>
PSC Taxes	<u><u>69,125</u></u>

PUC Fee Calculation

Electric Sales Revenue	1,175,752
Less: Bad Debt Deduction	(1,153)
PUC Fee Base	<u>1,174,599</u>
PUC Fees Rate	<u>0.5%</u>
PUC Fees	<u><u>5,873</u></u>

Franchise Royalty Tax Calculation

Electric Sales Revenue	1,175,752
Less: Bad Debt Deduction	(1,153)
Franchise Royalty Tax Base	<u>1,174,599</u>
Franchise Royalty Tax Rate	<u>2.5%</u>
Franchise Royalty Taxes	<u><u>29,365</u></u>

Payroll Taxes

Total Payroll Taxes	7,379.00
Allocation Factor	<u>81.7787%</u>
Payroll Taxes allocated to Production	<u><u>6,034</u></u>

Total Taxes Other Than Income	<u><u>110,398</u></u>
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NOTE 1> Calculation of Bad Debt Deduction

Total Bad Debt (tax)	1,410.00
Production Cost of Service Percentage	<u>81.7787%</u>
Bad Debt allocated to Production	<u><u>1,153</u></u>

HAWAIIAN ELECTRIC CO., INC.
PREFERRED STOCK DIVIDEND DEDUCTION
TEST YEAR 2009

		<u>Reference</u>
Total Series C dividends paid	127,500	HECO-2005
Percentage of Series C proceeds used to redeem Series A	<u>60%</u>	
Dividend on Series C	76,500	
Dividend on Series I	<u>89,657</u>	HECO-2005
Total Dividends	166,157	
14% / 35% as allowed under IRC §247	<u>40%</u>	
Dividend Deduction Allowed	<u><u>66,463</u></u>	
Federal Tax Rate	<u>35%</u>	
Federal Tax Effect of Deductible Preferred Stock Dividend	<u><u>23,262</u></u>	

HAWAIIAN ELECTRIC CO., INC.
AMORTIZATION OF FED ITC
1971 REV ACT

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	81-84 RAR	1991	1992	1993	1994	90-91 RAR	Total
Balance 12/31/82	3,103,365	4,050,332	2,856,908	2,024,612															21,753,555
Amortization	(114,939)	(144,655)	(98,514)	(67,487)															(844,184)
Additions	(2,774)	(6,202)	(7,280)	(3,405)	1,833,433														1,805,812
Balance 12/31/83	2,985,651	3,899,476	2,751,114	1,953,720	1,833,433	-	-	-	-	-	-	-	-	-	-	-	-	-	22,715,183
Amortization	(114,833)	(144,425)	(98,254)	(67,370)	(61,114)														(904,264)
Additions	(4,718)	(2,782)	(18,816)	(4,059)	(828)	1,395,519													1,362,818
Balance 12/31/84	2,866,100	3,752,269	2,634,044	1,882,292	1,771,491	1,395,519	-	-	-	-	-	-	-	-	-	-	-	-	23,173,738
Amortization	(114,644)	(144,318)	(97,557)	(67,225)	(61,086)	(46,517)													(949,552)
Additions	(1,309)	(1,064)	(910)	(2,692)	(1,650)	(2,565)	2,245,087												2,234,897
Balance 12/31/85	2,750,147	3,606,887	2,535,577	1,812,375	1,708,755	1,346,437	2,245,087	-	-	-	-	-	-	-	-	-	-	-	24,459,082
Amortization	(114,644)	(144,318)	(97,557)	(67,225)	(61,086)	(46,517)	(74,836)												(1,024,389)
Additions								913,156											913,156
Balance 12/31/86	2,635,503	3,462,569	2,438,020	1,745,150	1,647,669	1,299,919	2,170,250	913,156	-	-	-	-	-	-	-	-	-	-	24,347,849
Amortization	(114,644)	(144,318)	(97,557)	(67,225)	(61,086)	(46,517)	(74,836)	(30,439)											(1,054,827)
Additions																			-
Balance 12/31/87	2,520,859	3,318,251	2,340,463	1,677,925	1,586,584	1,253,402	2,095,414	882,717	-	-	-	-	-	-	-	-	-	-	23,293,022
Amortization	(114,644)	(144,318)	(97,557)	(67,225)	(61,086)	(46,517)	(74,836)	(30,439)	(10,199)										(1,065,027)
Additions									305,982	44,950									350,932
Balance 12/31/88	2,406,215	3,173,933	2,242,905	1,610,700	1,525,498	1,206,885	2,020,578	852,279	295,783	44,950	-	-	-	-	-	-	-	-	22,578,928
Amortization	(114,644)	(144,318)	(97,557)	(67,225)	(61,086)	(46,517)	(74,836)	(30,439)	(10,199)	(1,498)									(1,066,525)
Additions											3,997								3,997
Balance 12/31/89	2,291,571	3,029,615	2,145,348	1,543,476	1,464,412	1,160,368	1,945,742	821,840	285,583	43,452	3,997	-	-	-	-	-	-	-	21,516,400
Amortization	(114,644)	(144,318)	(97,557)	(67,225)	(61,086)	(46,517)	(74,836)	(30,439)	(10,199)	(1,498)	(133)								(1,066,658)
Additions												11,021							11,021
Adjustment 81-84 RAR													(17,328)						(17,328)
Balance 12/31/90	2,176,927	2,885,297	2,047,791	1,476,251	1,403,326	1,113,850	1,870,905	791,402	275,384	41,953	3,864	11,021	(17,328)	-	-	-	-	-	20,443,435
Amortization	(114,644)	(144,318)	(97,557)	(67,225)	(61,086)	(46,517)	(74,836)	(30,439)	(10,199)	(1,498)	(133)	(367)							(1,067,025)
Additions														668					668
Balance 12/31/91	2,062,283	2,740,979	1,950,234	1,409,026	1,342,240	1,067,333	1,796,069	760,963	265,184	40,455	3,731	10,654	(17,328)	668	-	-	-	-	19,377,078
Amortization	(114,644)	(144,318)	(97,557)	(67,225)	(61,086)	(46,517)	(74,836)	(30,439)	(10,199)	(1,498)	(133)	(367)		(22)					(1,067,048)
Additions															(3)				(3)
Balance 12/31/92	1,947,639	2,596,661	1,852,677	1,341,802	1,281,154	1,020,816	1,721,233	730,525	254,985	38,957	3,598	10,286	(17,328)	646	(3)	-	-	-	18,310,027
Amortization	(114,644)	(144,318)	(97,557)	(67,225)	(61,086)	(46,517)	(74,836)	(30,439)	(10,199)	(1,498)	(133)	(367)		(22)	(0)				(1,067,048)
Additions																1,778			1,778
Balance 12/31/93	1,832,995	2,452,343	1,755,120	1,274,577	1,220,068	974,298	1,646,397	700,086	244,786	37,458	3,465	9,919	(17,328)	623	(3)	1,778	-	-	17,244,757
Amortization	(114,644)	(144,318)	(97,557)	(67,225)	(61,086)	(46,517)	(74,836)	(30,439)	(10,199)	(1,498)	(133)	(367)		(22)	0	(59)			(1,067,107)
Balance 12/31/94	1,718,351	2,308,025	1,657,562	1,207,352	1,158,982	927,781	1,571,561	669,648	234,586	35,960	3,332	9,552	(17,328)	601	(3)	1,719	-	-	16,177,651
Amortization	(114,644)	(144,318)	(97,557)	(67,225)	(61,086)	(46,517)	(74,836)	(30,439)	(10,199)	(1,498)	(133)	(367)		(22)	0	(59)			(1,067,107)
Balance 12/31/95	1,603,707	2,163,707	1,560,005	1,140,128	1,097,896	881,264	1,496,724	639,209	224,387	34,462	3,199	9,184	(17,328)	579	(3)	1,659	-	-	15,110,544
Amortization	(114,644)	(144,318)	(97,557)	(67,225)	(61,086)	(46,517)	(74,836)	(30,439)	(10,199)	(1,498)	(133)	(367)		(22)	0	(59)			(1,067,107)
1985-87 RAR adjt							(15,252)	(38,298)	(8,755)										(62,305)
Balance 12/31/96	1,489,063	2,019,388	1,462,448	1,072,903	1,036,810	834,746	1,406,636	570,473	205,432	32,963	3,065	8,817	(17,328)	557	(2)	1,600	-	-	13,981,133
Reclass 81-84 RAR			(48,290)	22,704	8,258								17,328						-
Adj amort 81-84 RAR to 96			15,365	(10,595)	(3,579)														1,191
Adj 97 amort 81-84 RAR			2,195	(757)	(275)														1,163
Adj 97 amort 85-87 RAR							803	1,915	417										3,135
Adj recapture amort to 96	600	468	385	1,097	648	973													4,171
Adj 97 recapture amort	55	43	35	100	59	88													379
Amortization	(114,644)	(144,318)	(97,557)	(67,225)	(61,086)	(46,517)	(74,836)	(30,439)	(10,199)	(1,498)	(133)	(367)		(22)	0	(59)			(1,067,107)
Balance 12/31/97	1,375,074	1,875,581	1,334,581	1,018,227	980,836	789,290	1,332,603	541,949	195,650	31,465	2,932	8,449	-	534	(2)	1,541	-	-	12,924,065
Reclass 90-91 RAR																		(11,280)	(11,280)
Adj amort 90-91 RAR to 98																		3,008	3,008
Amortization	(114,589)	(144,275)	(95,327)	(67,882)	(61,302)	(46,429)	(74,033)	(28,524)	(9,782)	(1,498)	(133)	(367)		(22)	0	(59)			(1,062,430)
Balance 12/31/98	1,260,484	1,731,306	1,239,254	950,345	919,534	742,862	1,258,569	513,425	185,867	29,967	2,799	8,082	-	512	(2)	1,482	-	(8,272)	11,853,363
Amortization	(114,589)	(144,275)	(95,327)	(67,882)	(61,302)	(46,429)	(74,033)	(28,524)	(9,782)	(1,498)	(133)	(367)		(22)	0	(59)		376	(1,062,054)
Balance 12/31/99	1,145,895	1,587,030	1,143,926	882,463	858,232	696,433	1,184,536	484,902	176,085	28,468	2,666	7,715	-	490	(1)	1,422	-	(7,896)	10,791,309
Amortization	(114,589)	(144,275)	(95,327)	(67,882)	(61,302)	(46,429)	(74,033)	(28,524)	(9,782)	(1,498)	(133)	(367)		(22)	0	(59)		376	(1,062,054)
Balance 12/31/00	1,031,305	1,442,755	1,048,599	814,581	796,930	650,004	1,110,502	456,378	166,303	26,970	2,533	7,347	-	468	(1)	1,363	-	(7,520)	9,729,255
Amortization	(114,589)	(144,275)	(95,327)	(67,882)	(61,302)	(46,429)	(74,033)	(28,524)	(9,782)	(1,498)	(133)	(367)		(22)	0	(59)		376	(1,062,054)

HAWAIIAN ELECTRIC CO., INC.
 AMORTIZATION OF FED ITC
 1971 REV ACT

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	81-84 RAR	1991	1992	1993	1994	90-91 RAR	Total
Balance 12/31/01	916,716	1,298,479	953,272	746,699	735,628	603,575	1,036,469	427,854	156,520	25,472	2,400	6,980	-	445	(1)	1,304	-	(7,144)	8,667,202
Amortization	(114,589)	(144,275)	(95,327)	(67,882)	(61,302)	(46,429)	(74,033)	(28,524)	(9,782)	(1,498)	(133)	(367)	-	(22)	0	(59)	-	376	(1,053,497)
Balance 12/31/02	802,126	1,154,204	857,945	678,817	674,326	557,146	962,435	399,331	146,738	23,973	2,267	6,613	-	423	(0)	1,245	-	(6,768)	7,613,705
Amortization	(114,589)	(144,275)	(95,327)	(67,882)	(61,302)	(46,429)	(74,033)	(28,524)	(9,782)	(1,498)	(133)	(367)	-	(22)	0	(59)	-	376	(1,011,968)
Balance 12/31/03	687,537	1,009,928	762,618	610,935	613,024	510,717	888,402	370,807	136,955	22,475	2,133	6,245	-	401	(0)	1,185	-	(6,392)	6,601,737
Amortization	(114,589)	(144,275)	(95,327)	(67,882)	(61,302)	(46,429)	(74,033)	(28,524)	(9,782)	(1,498)	(133)	(367)	-	(22)	0	(59)	-	376	(968,750)
Balance 12/31/04	572,947	865,653	667,290	543,053	551,722	464,288	814,368	342,283	127,173	20,977	2,000	5,878	-	378	(0)	1,126	-	(6,016)	5,632,987
Amortization	(114,589)	(144,275)	(95,327)	(67,882)	(61,302)	(46,429)	(74,033)	(28,524)	(9,782)	(1,498)	(133)	(367)	-	(22)	-	(59)	-	376	(905,431)
Balance 12/31/05	458,358	721,377	571,963	475,171	490,420	417,860	740,335	313,760	117,390	19,478	1,867	5,510	-	356	(0)	1,067	-	(5,640)	4,727,556
Amortization	(114,589)	(144,275)	(95,327)	(67,882)	(61,302)	(46,429)	(74,033)	(28,524)	(9,782)	(1,498)	(133)	(367)	-	(22)	-	(59)	-	376	(846,539)
Balance 12/31/06	343,768	577,102	476,636	407,289	429,119	371,431	666,301	285,236	107,608	17,980	1,734	5,143	-	334	(0)	1,007	-	(5,264)	3,881,017
Amortization	(114,589)	(144,275)	(95,327)	(67,882)	(61,302)	(46,429)	(74,033)	(28,524)	(9,782)	(1,498)	(133)	(367)	-	(22)	-	(59)	-	376	(764,222)
Balance 12/31/07	229,179	432,826	381,309	339,407	367,817	325,002	592,268	256,712	97,825	16,482	1,601	4,776	-	312	(0)	948	-	(4,888)	3,116,795
Amortization	(114,589)	(144,275)	(95,327)	(67,882)	(61,302)	(46,429)	(74,033)	(28,524)	(9,782)	(1,498)	(133)	(367)	-	(22)	-	(59)	-	376	(719,070)
Balance 12/31/08	114,590	288,551	285,982	271,525	306,515	278,573	518,234	228,189	88,043	14,983	1,468	4,408	-	289	(0)	889	-	(4,512)	2,397,726
Amortization	(114,590)	(144,275)	(95,327)	(67,882)	(61,302)	(46,429)	(74,033)	(28,524)	(9,782)	(1,498)	(133)	(367)	-	(22)	-	(59)	-	376	(643,849)
Balance 12/31/09	(0)	144,275	190,654	203,643	245,213	232,144	444,201	199,665	78,260	13,485	1,335	4,041	-	267	(0)	830	-	(4,136)	1,753,877

	(DR) / CR TOTAL	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Additions	540,833	540,833																					
Amortization	-																						
Balance 12/31/88	<u>540,833</u>	<u>540,833</u>																					
Additions	1,260,834		1,260,834																				
State tax effect on addns	(75,840)		(75,840)																				
Amortization	(18,028)	(18,028)																					
State tax effect on amort	1,084	1,084																					
State tax effect on addns	(32,531)	(32,531)																					
Balance 12/31/89	<u>1,676,353</u>	<u>491,358</u>	<u>1,184,994</u>																				
Additions	2,948,916			2,948,916																			
State tax effect on addns	(177,378)			(177,378)																			
Amortization	(60,056)	(18,028)	(42,028)																				
State tax effect on amort	3,612	1,084	2,528																				
89 PYE AJEs-additions	7,682																						
89 PYE-St tx eff on addns	(462)																						
Balance 12/31/90	<u>4,398,666</u>	<u>474,415</u>	<u>1,145,494</u>	<u>2,778,757</u>																			
Additions	1,232,436				1,232,436																		
State tax effect on addns	(74,132)				(74,132)																		
Amortization	(158,609)	(18,028)	(42,028)	(98,553)																			
State tax effect on amort	9,540	1,084	2,528	5,928																			
Balance 12/31/91	<u>5,407,903</u>	<u>457,471</u>	<u>1,105,994</u>	<u>2,686,132</u>	<u>1,158,305</u>																		
Additions	2,064,582					2,064,582																	
State tax effect on addns	(124,185)					(124,185)																	
Amortization	(199,690)	(18,028)	(42,028)	(98,553)	(41,081)																		
State tax effect on amort	12,011	1,084	2,528	5,928	2,471																		
Balance 12/31/92	<u>7,160,621</u>	<u>440,528</u>	<u>1,066,494</u>	<u>2,593,507</u>	<u>1,119,695</u>	<u>1,940,397</u>																	
Additions	2,380,698						2,380,698																
State tax effect on addns	(143,200)						(143,200)																
Amortization	(268,509)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)																	
State tax effect on amort	16,151	1,084	2,528	5,928	2,471	4,139																	
Balance 12/31/93	<u>9,145,761</u>	<u>423,584</u>	<u>1,026,994</u>	<u>2,500,882</u>	<u>1,081,085</u>	<u>1,875,717</u>	<u>2,237,498</u>																
Additions	2,587,370							2,587,370															
State tax effect on addns	(155,631)							(155,631)															
Amortization	(347,866)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)	(79,357)																
State tax effect on amort	20,924	1,084	2,528	5,928	2,471	4,139	4,773																
Balance 12/31/94	<u>11,250,558</u>	<u>406,640</u>	<u>987,494</u>	<u>2,408,257</u>	<u>1,042,475</u>	<u>1,811,038</u>	<u>2,162,914</u>	<u>2,431,739</u>															
Additions	2,676,706							2,676,706															
State tax effect on addns	(161,005)							(161,005)															
Amortization	(434,112)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)	(79,357)	(86,246)															
State tax effect on amort	26,112	1,084	2,528	5,928	2,471	4,139	4,773	5,188															
Balance 12/31/95	<u>13,358,259</u>	<u>389,697</u>	<u>947,994</u>	<u>2,315,632</u>	<u>1,003,865</u>	<u>1,746,358</u>	<u>2,088,331</u>	<u>2,350,680</u>	<u>2,515,701</u>														
Additions	2,119,371								2,119,371														
State tax effect on addns	(127,481)								(127,481)														
Amortization	(523,336)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)	(79,357)	(86,246)	(89,224)														
State tax effect on amort	31,479	1,084	2,528	5,928	2,471	4,139	4,773	5,188	5,367														
Balance 12/31/96	<u>14,858,292</u>	<u>372,753</u>	<u>908,494</u>	<u>2,223,007</u>	<u>965,255</u>	<u>1,681,679</u>	<u>2,013,747</u>	<u>2,269,622</u>	<u>2,431,844</u>	<u>1,991,890</u>													
Additions	1,538,664									1,538,664													
State tax effect on addns	(92,551)									(92,551)													
Amortization	(593,982)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)	(79,357)	(86,246)	(89,224)	(70,646)													
State tax effect on amort	35,728	1,084	2,528	5,928	2,471	4,139	4,773	5,188	5,367	4,249													
97 book adjustment	(3,460)																						(3,460)
Balance 12/31/97	<u>15,742,691</u>	<u>355,810</u>	<u>868,994</u>	<u>2,130,382</u>	<u>926,645</u>	<u>1,616,999</u>	<u>1,939,164</u>	<u>2,188,564</u>	<u>2,347,987</u>	<u>1,925,493</u>	<u>1,442,653</u>												
Additions	1,883,218																						1,883,218
State tax effect on addns	(113,276)																						(113,276)
Amortization	(645,271)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)	(79,357)	(86,246)	(89,224)	(70,646)	(51,289)												
State tax effect on amort	38,813	1,084	2,528	5,928	2,471	4,139	4,773	5,188	5,367	4,249	3,085												
97 PYE adj - solar tax credit	3,715																						3,715
97 book adjustment reversal	3,460																						3,460
Balance 12/31/98	<u>16,913,350</u>	<u>338,866</u>	<u>829,494</u>	<u>2,037,757</u>	<u>888,035</u>	<u>1,552,320</u>	<u>1,864,580</u>	<u>2,107,506</u>	<u>2,264,130</u>	<u>1,859,097</u>	<u>1,401,624</u>	<u>1,769,942</u>											
Additions	1,217,708																						1,217,708
State tax effect on addns	(73,246)																						(73,246)
Amortization	(708,045)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)	(79,357)	(86,246)	(89,224)	(70,646)	(51,289)	(62,774)											
State tax effect on amort	42,589	1,084	2,528	5,928	2,471	4,139	4,773	5,188	5,367	4,249	3,085	3,776											
98 PYE adj - solar tax credit	30,034																						30,034
Balance 12/31/99	<u>17,422,390</u>	<u>321,922</u>	<u>789,994</u>	<u>1,945,132</u>	<u>849,425</u>	<u>1,487,640</u>	<u>1,789,996</u>	<u>2,026,447</u>	<u>2,180,273</u>	<u>1,792,700</u>	<u>1,353,420</u>	<u>1,740,978</u>	<u>1,144,462</u>										
Additions	1,809,351																						1,809,351
State tax effect on addns	(108,833)																						(108,833)
Amortization	(748,635)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)	(79,357)	(86,246)	(89,224)	(70,646)	(51,289)	(62,774)	(40,590)										
State tax effect on amort	45,031	1,084	2,528	5,928	2,471																		

	(DR) / CR TOTAL	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Balance 12/31/00	18,419,304	304,979	750,494	1,852,507	810,815	1,422,961	1,715,413	1,945,389	2,096,415	1,726,304	1,305,216	1,681,979	1,106,314	1,700,518									
Additions	2,328,892																						2,328,892
State tax effect on addns	(140,084)																						(140,084)
Amortization	(808,947)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)	(79,357)	(86,246)	(89,224)	(70,646)	(51,289)	(62,774)	(40,590)	(60,312)									
State tax effect on amort	48,658	1,084	2,528	5,928	2,471	4,139	4,773	5,188	5,367	4,249	3,085	3,776	2,442	3,628									
Balance 12/31/01	19,847,824	288,035	710,994	1,759,882	772,205	1,358,281	1,640,829	1,864,331	2,012,558	1,659,907	1,257,012	1,622,981	1,068,165	1,643,834	2,188,809								
Additions	1,896,589																						1,896,589
State tax effect on addns	(114,081)																						(114,081)
Amortization	(882,136)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)	(79,357)	(86,246)	(89,224)	(70,646)	(51,289)	(62,774)	(40,590)	(55,871)	(77,630)								
State tax effect on amort	53,061	1,084	2,528	5,928	2,471	4,139	4,773	5,188	5,367	4,249	3,085	3,776	2,442	3,361	4,669								
Balance 12/31/02	20,801,257	271,091	671,494	1,667,257	733,595	1,293,602	1,566,245	1,783,273	1,928,701	1,593,510	1,208,808	1,563,983	1,030,017	1,591,323	2,115,848	1,782,508							
Additions	1,354,300																						1,354,300
State tax effect on addns	(81,462)																						(81,462)
Amortization	(945,356)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)	(79,357)	(86,246)	(89,224)	(70,646)	(51,289)	(62,774)	(40,590)	(55,871)	(77,630)	(63,220)							
State tax effect on amort	56,864	1,084	2,528	5,928	2,471	4,139	4,773	5,188	5,367	4,249	3,085	3,776	2,442	3,361	4,669	3,803							
97 PYE adj - addition	214																						
97 PYE adj - st tax on add	(13)																						
97 PYE adj - vint 1997 amort	(43)																						
97 PYE adj - st tax on amort	3																						
97 PYE adj - solar tax credit	(3,715)										(3,715)												
98 PYE adj - subtraction	(61,518)											(61,518)											
98 PYE adj - st tax on subtract	3,700											3,700											
98 PYE adj - vint 1998 amort	10,255											10,255											
98 PYE adj - st tax on amort	(617)											(617)											
98 PYE adj - solar tax credit	(30,034)											(30,034)											
00 PYE adj - subtraction	(133,483)													(133,483)									
00 PYE adj - st tax on subtract	8,029													8,029									
00 PYE adj - vint 2000 amort	4,467													4,467									
00 PYE adj - st tax on amort	(269)													(269)									
01 PYE adj - addition	43,497														43,497								
01 PYE adj - st tax on add	(2,616)														(2,616)								
01 PYE adj - vint 2001 amort	(2,900)														(2,900)								
01 PYE adj - st tax on amort	174														174								
02 PYE adj - addition	80,053															80,053							
02 PYE adj - st tax on add	(4,815)														(4,815)								
02 PYE adj - vint 2002 amort	(2,668)														(2,668)								
02 PYE adj - st tax on amort	161														161								
Balance 12/31/03	21,093,465	254,148	631,994	1,574,632	694,985	1,228,922	1,491,662	1,702,214	1,844,844	1,527,114	1,157,050	1,426,772	991,868	1,417,557	2,081,043	1,795,821	1,272,838						
Additions	3,195,500																						3,195,500
Amortization	(992,564)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)	(79,357)	(86,246)	(89,224)	(70,646)	(51,296)	(60,723)	(40,590)	(55,862)	(79,080)	(65,888)	(45,143)						
03 PYE adj - addition	116,187																	116,187					
03 PYE adj - vint 2003 amort	(3,889)																	(3,889)					
Reclass of 2003 & prior def st t	1,349,973																						
Balance 12/31/04	24,758,672	236,120	589,966	1,476,079	653,904	1,160,103	1,412,305	1,615,968	1,755,620	1,456,468	1,105,754	1,366,049	951,278	1,361,695	2,001,963	1,729,933	1,339,994	3,195,500					
Additions	2,418,800																						2,418,800
Amortization	(1,102,954)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)	(79,357)	(86,246)	(89,224)	(70,646)	(51,296)	(60,723)	(40,590)	(55,862)	(79,080)	(65,888)	(49,016)	(106,517)					
04 PYE adj - addition	420,542																	420,542					
04 PYE adj - vint 2004 amort	(14,018)																	(14,018)					
Balance 12/31/05	26,481,042	218,092	547,938	1,377,526	612,823	1,091,284	1,332,948	1,529,722	1,666,396	1,385,822	1,054,458	1,305,326	910,688	1,305,833	1,922,883	1,664,045	1,290,978	3,495,507	2,418,800				
Additions	3,097,400																						3,097,400
Amortization	(1,197,599)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)	(79,357)	(86,246)	(89,224)	(70,646)	(51,296)	(60,723)	(40,590)	(55,862)	(79,080)	(65,888)	(49,016)	(120,535)	(80,627)				
05 PYE adj - addition	100,833																	100,833					
05 PYE adj - vint 2005 amort	(3,361)																	(3,361)					
Balance 12/31/06	28,478,315	200,064	505,910	1,278,973	571,742	1,022,465	1,253,591	1,443,476	1,577,172	1,315,176	1,003,162	1,244,603	870,098	1,249,971	1,843,803	1,598,157	1,241,962	3,374,972	2,435,645	3,097,400			
Additions	2,467,175																						2,467,175
Amortization	(1,304,207)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)	(79,357)	(86,246)	(89,224)	(70,646)	(51,296)	(60,723)	(40,590)	(55,862)	(79,080)	(65,888)	(49,016)	(120,535)	(83,988)	(103,247)			
06 PYE adj - addition	(96,660)																			(96,660)			
06 PYE adj - vint 2006 amort	3,222																			3,222			
Balance 12/31/07	29,547,845	182,036	463,882	1,180,420	530,661	953,646	1,174,234	1,357,230	1,487,948	1,244,530	951,866	1,183,880	829,508	1,194,109	1,764,723	1,532,269	1,192,946	3,254,437	2,351,657	2,900,715	2,467,175		
Additions	2,366,100																						2,366,100
Amortization	(1,383,224)	(18,028)	(42,028)	(98,553)	(41,081)	(68,819)	(79,357)	(86,246)	(89,224)	(70,646)	(51,296)	(60,723)	(40,590)	(55,862)	(79,080)	(65,888)	(49,016)	(120,535)	(83,988)	(100,025)	(82,239)		
07 PYE adj - addition	-																						
07 PYE adj - vint 2006 amort	-																						
Balance 12/31/08	30,530,721	164,008	421,854	1,081,867	489,580	884,827	1,094,877	1,270,984	1,398,724	1,173,884	900,570	1,123,157	788,918	1,138,247	1,685,643	1,466							

	(DR) / CR TOTAL	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
08 PYE adj - addition	-																						
08 PYE adj- vint 2007 amort	-																						
Balance 12/31/09	35,129,327	145,980	379,826	983,314	448,499	816,008	1,015,520	1,184,738	1,309,500	1,103,238	849,274	1,062,434	748,328	1,082,385	1,606,563	1,400,493	1,094,914	3,013,367	2,183,681	2,700,665	2,302,697	2,287,230	6,060,700

HAWAIIAN ELECTRIC CO., INC.
DEFERRED INCOME TAXES
FEDERAL

LIAB (DR)CR	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Estimate	BASE CASE			INTERIM INCREASE			CIP CT-1 STEP		
	12-31-04	2005	12-31-05	2006	12-31-06	2007	12-31-07	2008	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
28310 State ITC	(8,203,455)	(519,942)	(8,723,397)	(656,997)	(9,380,394)	(354,624)	(9,735,017)	(323,314)	(10,058,331)	(1,512,698)	(11,571,029)	(10,058,331)	(367,999)	(10,426,331)	(11,203,030)	(367,999)	(11,571,029)
28311 Unearned Lease	(6,803)	1,232	(5,571)	1,190	(4,380)	1,149	(3,231)	1,043	(2,188)	1,034	(1,154)	(2,188)	1,034	(1,154)	(2,188)	1,034	(1,154)
28312 Accrued Vacation	1,093,432	(13,517)	1,079,915	135,561	1,215,476	(73,969)	1,141,507	66,070	1,207,577	-	1,207,577	1,207,577	-	1,207,577	1,207,577	-	1,207,577
28313 Uncollectible Acct	(200,802)	36,388	(164,414)	36,388	(217,612)	(382,026)	36,988	(345,038)	(345,038)	-	(345,038)	(345,038)	-	(345,038)	(345,038)	-	(345,038)
28314 Directors Def Comp	12,598	(43,298)	(30,700)	772	(29,928)	481	(29,447)	-	(29,447)	-	(29,447)	(29,447)	-	(29,447)	(29,447)	-	(29,447)
28317 Discounted Work Comp	(780,081)	62,740	(717,341)	(108,502)	(825,842)	(116,119)	(941,962)	-	(941,962)	-	(941,962)	(941,962)	-	(941,962)	(941,962)	-	(941,962)
28319 Cap to Construction	25,826,224	1,500,583	27,326,807	1,930,159	29,256,966	2,341,781	31,598,747	2,078,084	33,676,831	2,243,751	35,920,583	33,676,831	2,243,751	35,920,583	33,676,831	2,243,751	35,920,583
28321 Pension	24,831,018	2,306,273	27,137,291	(4,683,109)	22,454,182	(5,825,891)	16,628,291	(4,822,363)	11,805,928	(4,810,192)	6,995,736	11,805,928	(4,810,192)	6,995,736	11,805,928	(4,810,192)	6,995,736
28323 Excess Benefit Plan	(30,322)	(427,523)	(457,845)	(11,564)	(469,410)	3,310	(466,100)	-	(466,100)	-	(466,100)	(466,100)	-	(466,100)	(466,100)	-	(466,100)
28324 Nonop Deferred Gain	1,519	(1,519)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28326 Def Exec Comp	(56,515)	2,592	(53,923)	(3,502)	(57,425)	7,933	(49,492)	-	(49,492)	-	(49,492)	(49,492)	-	(49,492)	(49,492)	-	(49,492)
28327 Software	62,772	(291,805)	(229,032)	52,896	(176,136)	(412,631)	(588,767)	528,965	(59,803)	(24,668)	(84,471)	(59,803)	(24,668)	(84,471)	(59,803)	(24,668)	(84,471)
28328 G/L ACRS Retirements	5,933,233	595,669	6,528,902	256,506	6,785,408	268,443	7,053,851	1,654,505	8,708,356	636,311	9,344,667	8,708,356	636,311	9,344,667	8,708,356	636,311	9,344,667
28329 Series U Exp (Bonds)	888	-	888	(888)	(0)	-	(0)	-	(0)	-	(0)	(0)	-	(0)	(0)	-	(0)
28330 EICP	5,716	(16,094)	(10,377)	(7,889)	(18,266)	-	(18,266)	-	(18,266)	-	(18,266)	(18,266)	-	(18,266)	(18,266)	-	(18,266)
28331 CIAC	(12,811,566)	(1,240,261)	(14,051,827)	(545,158)	(14,596,985)	(16,228,122)	(30,825,107)	790,708	(30,034,400)	798,847	(29,235,552)	(30,034,400)	798,847	(29,235,552)	(30,034,400)	798,847	(29,235,552)
28332 Customer Advances	(298,293)	(29,542)	(327,835)	8,448	(319,387)	(47,514)	(366,901)	-	(366,901)	-	(366,901)	(366,901)	-	(366,901)	(366,901)	-	(366,901)
28333 Capitalized Interest	(16,074,594)	1,548,401	(14,526,192)	(695,651)	(15,221,843)	(524,981)	(15,746,825)	(1,202,031)	(16,948,856)	(2,506,287)	(19,455,143)	(16,948,856)	(2,506,287)	(19,455,143)	(16,948,856)	(2,506,287)	(19,455,143)
28335 Connection Fees	16,020	-	16,020	-	16,020	-	16,020	-	16,020	-	16,020	16,020	-	16,020	16,020	-	16,020
28336 Nondeductible Interest	(184,539)	293,191	108,652	(29,474)	79,178	(241,068)	(161,890)	-	(161,890)	-	(161,890)	(161,890)	-	(161,890)	(161,890)	-	(161,890)
28337 Supplemental Benefits -SERP	(234,234)	(294,490)	(528,724)	(80,710)	(609,434)	(65,940)	(675,374)	-	(675,374)	-	(675,374)	(675,374)	-	(675,374)	(675,374)	-	(675,374)
28338 Nondeductible Vacation	(1,084,196)	-	(1,084,196)	-	(1,084,196)	-	(1,084,196)	-	(1,084,196)	-	(1,084,196)	(1,084,196)	-	(1,084,196)	(1,084,196)	-	(1,084,196)
28339 System Devel Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28340 LTIP	(124,526)	(8,881)	(133,407)	(50,950)	(184,357)	(74,731)	(259,088)	-	(259,088)	-	(259,088)	(259,088)	-	(259,088)	(259,088)	-	(259,088)
28341 Waipahu Baseyard Int	(111,862)	-	(111,862)	-	(111,862)	-	(111,862)	-	(111,862)	-	(111,862)	(111,862)	-	(111,862)	(111,862)	-	(111,862)
28346 Ser V Redmp Premium	11,885	(11,885)	-	(0)	(0)	-	(0)	-	(0)	-	(0)	(0)	-	(0)	(0)	-	(0)
28347 Waiau Water Well Pmts	(429,133)	19,793	(409,340)	21,243	(388,097)	21,243	(366,855)	21,243	(345,612)	21,243	(324,369)	(345,612)	21,243	(324,369)	(345,612)	21,243	(324,369)
28348 Nonutil Bad Debt	8,047	-	8,047	-	8,047	-	8,047	-	8,047	-	8,047	8,047	-	8,047	8,047	-	8,047
28349 Cap Corp Logo	235	(235)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28401 Genl/Auto (& Accidents)	(552,302)	230,592	(321,710)	125,889	(195,821)	(212,927)	(408,749)	-	(408,749)	-	(408,749)	(408,749)	-	(408,749)	(408,749)	-	(408,749)
28403 CWIP Debt Transition	528,944	(20,891)	508,052	(20,889)	487,163	466,273	(20,889)	445,384	445,384	(20,889)	424,494	445,384	(20,889)	424,494	445,384	(20,889)	424,494
28404 CWIP Equity Trans	1,641,830	(76,251)	1,565,578	(73,137)	1,492,441	(63,191)	1,429,250	(63,796)	1,365,454	(63,796)	1,301,658	1,365,454	(63,796)	1,301,658	1,365,454	(63,796)	1,301,658
28405 Iolani Ct Plaza Sale	(95,622)	21,037	(74,585)	(80,470)	(155,055)	(10,802)	(165,856)	18,529	(147,327)	55,350	(91,977)	(147,327)	55,350	(91,977)	(147,327)	55,350	(91,977)
28406 Kaonohi Sale	37,752	-	37,752	-	37,752	-	37,752	-	37,752	-	37,752	37,752	-	37,752	37,752	-	37,752
28407 FAS 109 Flow Through	3,034,462	(275,858)	2,758,604	(275,858)	2,482,746	(275,858)	2,206,888	(275,858)	1,931,030	(275,858)	1,655,172	1,931,030	(275,858)	1,655,172	1,931,030	(275,858)	1,655,172
28408 Plant Transition	18,161,143	(864,819)	17,296,324	(864,818)	16,431,505	(864,818)	15,566,687	(864,818)	14,701,868	(864,818)	13,837,050	14,701,868	(864,818)	13,837,050	14,701,868	(864,818)	13,837,050
28409 CWIP Equity Net	14,752,302	892,193	15,644,496	870,570	16,515,065	965,930	17,480,996	2,246,115	19,727,111	3,340,987	23,068,098	19,727,111	3,340,987	23,068,098	19,727,111	3,340,987	23,068,098
28410 CWIP Equity Grossup	9,392,515	647,927	10,040,442	474,817	10,515,260	617,407	11,132,667	1,430,602	12,563,269	2,134,934	14,698,203	12,563,269	2,134,934	14,698,203	12,563,269	2,134,934	14,698,203
28411 CWIP Debt	7,503,690	304,150	7,807,840	369,242	8,177,083	459,646	8,636,729	824,182	9,460,911	1,195,577	10,656,488	9,460,911	1,195,577	10,656,488	9,460,911	1,195,577	10,656,488
28412 General/Auto Liability - Legal	(71,678)	38,717	(32,960)	(12,731)	(45,691)	2,664	(43,027)	-	(43,027)	-	(43,027)	(43,027)	-	(43,027)	(43,027)	-	(43,027)
28413 Post Retirement Ben	(1,493,807)	1,604,898	111,091	(715,278)	(604,187)	(762,392)	(1,366,579)	(1,834,957)	(3,201,536)	(1,740,064)	(4,941,600)	(3,201,536)	(1,740,064)	(4,941,600)	(3,201,536)	(1,740,064)	(4,941,600)
28414 Reg Liab Federal ITC	(3,032,577)	487,494	(2,545,083)	455,906	(2,089,177)	411,390	(1,677,787)	387,270	(1,290,517)	346,766	(943,751)	(1,290,517)	346,766	(943,751)	(1,290,517)	346,766	(943,751)
28418 IRP & DSM Costs	209,664	(80,605)	129,059	(140,771)	(11,712)	3,317	(8,395)	8,273	(122)	3,785	3,663	(122)	3,785	3,663	(122)	3,785	3,663
28419 Reg Liab Excess 283	(484,345)	18,947	(465,398)	18,947	(446,451)	18,947	(427,503)	18,947	(408,556)	18,947	(389,609)	(408,556)	18,947	(389,609)	(408,556)	18,947	(389,609)
28420 Reg Liab Deficit 283	(11,386)	12,350	964	(964)	-	-	-	-	-	-	-	-	-	-	-	-	-
28422 Miscellaneous	(28,512)	-	(28,512)	-	(28,512)	(0)	(28,512)	-	(28,512)	-	(28,512)	(28,512)	-	(28,512)	(28,512)	-	(28,512)
28427 Prepaid Expenses	580,572	(15,231)	565,341	78,270	643,611	(19,407)	624,203	14,591	638,794	14,591	653,385	638,794	14,591	653,385	638,794	14,591	653,385
28430 FMB X Premium	261,196	(21,919)	239,277	(21,919)	217,358	(21,919)	195,439	(21,919)	173,521	(21,919)	151,602	173,521	(21,919)	151,602	173,521	(21,919)	151,602
28434 EEO Claims	(65,140)	(42,334)	(107,473)	99,342	(8,131)	(4,297)	(12,429)	-	(12,429)	-	(12,429)	(12,429)	-	(12,429)	(12,429)	-	(12,429)
28435 Differential	936,369	79,756	1,016,125	(72,363)	943,762	(83,498)	860,265	(97,961)	762,303	(72,797)	689,506	762,303	(72,797)	689,506	762,303	(72,797)	689,506
28436 TIP	(170,479)	(27,828)	(198,307)	254,144	55,837	32,895	88,732	-	88,732	-	88,732	88,732	-	88,732	88,732	-	88,732
28437 HACO	(2,931)	2,931	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28438 BONY Rev	(4,775)	4,775	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28440 Kalaeloa	(324,165)	142,666	(181,499)	15,154	(166,346)	15,154	(151,192)	15,154	(136,038)	15,154	(120,884)	(136,038)	15,154	(120,884)	(136,038)	15,154	(120,884)
28441 Sun Power	577	-	577	-	577	-	577	-	577	-	577	577	-	577	577	-	577
28442 Overhaul	(198,935)	123,944															

HAWAIIAN ELECTRIC CO., INC.
DEFERRED INCOME TAXES
FEDERAL

LIAB (DR)CR	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Estimate	BASE CASE			INTERIM INCREASE			CIP CT-1 STEP		
	12-31-04	2005	12-31-05	2006	12-31-06	2007	12-31-07	2008	Estimate								
28560 Solar tax credit	-	-	-	-	-	(1,051)	(1,051)	-	(1,051)	-	(1,051)	(1,051)	-	(1,051)	(1,051)	-	(1,051)
28562 Revenue Adj - TY 2005	-	-	-	-	-	(5,164,468)	(5,164,468)	5,164,468	-	-	-	-	-	-	-	-	-
28564 HR Suites project costs	-	-	-	-	-	(12,487)	(12,487)	205,208	192,721	173,961	366,682	192,721	173,961	366,682	192,721	173,961	366,682
28566 §481(a) adjustment (CIAC)	-	-	-	-	-	10,105,141	10,105,141	(3,368,380)	6,736,760	(3,368,380)	3,368,380	6,736,760	(3,368,380)	3,368,380	6,736,760	(3,368,380)	3,368,380
28568 Solar Saver Program	-	-	-	-	-	(134,788)	(134,788)	-	(134,788)	-	(134,788)	(134,788)	-	(134,788)	(134,788)	-	(134,788)
28570 Pension Tracker	-	-	-	-	-	-	-	(1,003,617)	(1,003,617)	200,723	(802,894)	(1,003,617)	200,723	(802,894)	(1,003,617)	200,723	(802,894)
28572 OPEB Tracker	-	-	-	-	-	-	-	(255,645)	(255,645)	51,129	(204,516)	(255,645)	51,129	(204,516)	(255,645)	51,129	(204,516)
28574 Substation Land - Haiku	-	-	-	-	-	-	-	(104,771)	(104,771)	20,954	(83,817)	(104,771)	20,954	(83,817)	(104,771)	20,954	(83,817)
28576 Substation Land - Barber's Point su	-	-	-	-	-	-	-	(10,334)	(10,334)	2,296	(8,037)	(10,334)	2,296	(8,037)	(10,334)	2,296	(8,037)
AOCI - Qualified Pension	-	-	-	(43,242,753)	(43,242,753)	43,242,753	-	-	-	-	-	-	-	-	-	-	-
AOCI - NQ Pension	(148,315)	133,395	(14,920)	(108,665)	(123,586)	(17,015)	(140,601)	(12,756)	(153,357)	(12,756)	(166,113)	(153,357)	(12,756)	(166,113)	(153,357)	(12,756)	(166,113)
AOCI - OPEB	-	-	-	(7,776,113)	(7,776,113)	7,776,113	-	-	-	-	-	-	-	-	-	-	-
AOCI - OPEB Exec Life	-	-	-	511,926	511,926	65,955	577,881	112,908	690,789	112,908	803,697	690,789	112,908	803,697	690,789	112,908	803,697
FIN 48	-	-	-	-	-	(3,296,090)	(3,296,090)	-	(3,296,090)	-	(3,296,090)	(3,296,090)	-	(3,296,090)	(3,296,090)	-	(3,296,090)
TOTAL ACCOUNT 283	67,809,989	9,859,623	77,669,612	(54,987,213)	22,682,400	34,320,587	57,002,986	3,735,794	60,738,781	(2,064,483)	58,674,298	60,738,781	(919,784)	59,818,996	59,594,083	(919,784)	58,674,298
ACCOUNT 282 DEPR	59,565,462	1,769,318	61,334,780	(2,120,299)	59,214,481	(2,841,536)	56,372,945	3,203,088	59,576,033	(1,498,343)	58,077,690	59,576,033	(3,355,777)	56,220,256	59,576,033	(1,498,343)	58,077,690
TOTAL FEDERAL DEFERRED TAX LIABILITY (before rate case adjustments)	127,375,451	11,628,942	139,004,393	(57,107,512)	81,896,881	31,479,051	113,375,931	6,938,882	120,314,814	(3,562,826)	116,751,988	120,314,814	(4,275,561)	116,039,253	119,170,116	(2,418,127)	116,751,988
TOTAL ACCOUNT 283	67,809,989	9,859,623	77,669,612	(54,987,213)	22,682,400	34,320,587	57,002,986	3,735,794	60,738,781	(2,064,483)	58,674,298	60,738,781	(919,784)	59,818,996	59,594,083	(919,784)	58,674,298
<u>Less Rate Case Adjustments:</u>																	
28312 Accrued Vacation	1,093,432	(13,517)	1,079,915	135,561	1,215,476	(73,969)	1,141,507	66,070	1,207,577	-	1,207,577	1,207,577	-	1,207,577	1,207,577	-	1,207,577
28313 Uncollectible Account	(200,802)	36,388	(164,414)	(217,612)	(382,026)	36,988	(345,038)	-	(345,038)	-	(345,038)	(345,038)	-	(345,038)	(345,038)	-	(345,038)
28314 Directors Def Comp	12,598	(43,298)	(30,700)	772	(29,928)	481	(29,447)	-	(29,447)	-	(29,447)	(29,447)	-	(29,447)	(29,447)	-	(29,447)
28317 Discounted Work Comp	(780,081)	62,740	(717,341)	(108,502)	(825,842)	(116,119)	(941,962)	-	(941,962)	-	(941,962)	(941,962)	-	(941,962)	(941,962)	-	(941,962)
28321 Pension	24,831,018	2,306,273	27,137,291	(4,683,109)	22,454,182	(5,825,891)	16,628,291	(4,822,363)	11,805,928	(4,810,192)	6,995,736	11,805,928	(4,810,192)	6,995,736	11,805,928	(4,810,192)	6,995,736
28323 Excess Benefit Plan	(30,322)	(427,523)	(457,845)	(11,564)	(469,410)	3,310	(466,100)	-	(466,100)	-	(466,100)	(466,100)	-	(466,100)	(466,100)	-	(466,100)
28326 Def Exec Comp (Def LTIP)	(56,515)	2,592	(53,923)	(3,502)	(57,425)	7,933	(49,492)	-	(49,492)	-	(49,492)	(49,492)	-	(49,492)	(49,492)	-	(49,492)
28330 EICP	5,716	(16,094)	(10,377)	(7,889)	(18,266)	-	(18,266)	-	(18,266)	-	(18,266)	(18,266)	-	(18,266)	(18,266)	-	(18,266)
28336 Nondeductible Interest	(184,539)	293,191	108,652	(29,474)	79,178	(241,068)	(161,890)	-	(161,890)	-	(161,890)	(161,890)	-	(161,890)	(161,890)	-	(161,890)
28337 Supplemental Benefits -SERP	(234,234)	(294,490)	(528,724)	(80,710)	(609,434)	(65,940)	(675,374)	-	(675,374)	-	(675,374)	(675,374)	-	(675,374)	(675,374)	-	(675,374)
28338 Nondeductible Vacation	(1,084,196)	-	(1,084,196)	-	(1,084,196)	-	(1,084,196)	-	(1,084,196)	-	(1,084,196)	(1,084,196)	-	(1,084,196)	(1,084,196)	-	(1,084,196)
28340 LTIP	(124,526)	(8,881)	(133,407)	(50,950)	(184,357)	(74,731)	(259,088)	-	(259,088)	-	(259,088)	(259,088)	-	(259,088)	(259,088)	-	(259,088)
28341 Waipahu Baseyard Int	(111,862)	-	(111,862)	-	(111,862)	-	(111,862)	-	(111,862)	-	(111,862)	(111,862)	-	(111,862)	(111,862)	-	(111,862)
28347 Waiiau Water Well Pmts	(429,133)	19,793	(409,340)	21,243	(388,097)	21,243	(366,855)	21,243	(345,612)	21,243	(324,369)	(345,612)	21,243	(324,369)	(345,612)	21,243	(324,369)
28348 Nonutil Bad Debt	8,047	-	8,047	-	8,047	-	8,047	-	8,047	-	8,047	8,047	-	8,047	8,047	-	8,047
28401 Genl/Auto (& Accidents)	(552,302)	230,592	(321,710)	125,889	(195,821)	(212,927)	(408,749)	-	(408,749)	-	(408,749)	(408,749)	-	(408,749)	(408,749)	-	(408,749)
28412 Genl/Auto Legal	(71,678)	38,717	(32,960)	(12,731)	(45,691)	2,664	(43,027)	-	(43,027)	-	(43,027)	(43,027)	-	(43,027)	(43,027)	-	(43,027)
28434 EEO Claims	(65,140)	(42,334)	(107,473)	99,342	(8,131)	(4,297)	(12,429)	-	(12,429)	-	(12,429)	(12,429)	-	(12,429)	(12,429)	-	(12,429)
28436 TIP	(170,479)	(27,828)	(198,307)	254,144	55,837	32,895	88,732	-	88,732	-	88,732	88,732	-	88,732	88,732	-	88,732
28520 Deferred Comp - restricted stock	10,839	1,519	12,358	49,490	61,848	84,909	146,757	-	146,757	-	146,757	146,757	-	146,757	146,757	-	146,757
28538 Rate Case - TY 2005	-	222,272	222,272	(71,545)	150,727	(26,531)	124,196	-	124,196	-	124,196	124,196	-	124,196	124,196	-	124,196
28544 OPEB Exec Life	-	(2,650,482)	(2,650,482)	(248,272)	(2,898,754)	(274,772)	(3,173,527)	-	(3,173,527)	-	(3,173,527)	(3,173,527)	-	(3,173,527)	(3,173,527)	-	(3,173,527)
28550 E-Business hardware	-	9,645	9,645	20,919	30,564	1,678	32,242	643	32,884	-	32,884	32,884	-	32,884	32,884	-	32,884
AOCI - Qualified Pension	-	-	-	(43,242,753)	(43,242,753)	43,242,753	-	-	-	-	-	-	-	-	-	-	-
AOCI - NQ Pension	(148,315)	133,395	(14,920)	(108,665)	(123,586)	(17,015)	(140,601)	(12,756)	(153,357)	(12,756)	(166,113)	(153,357)	(12,756)	(166,113)	(153,357)	(12,756)	(166,113)
AOCI - OPEB	-	-	-	(7,776,113)	(7,776,113)	7,776,113	-	-	-	-	-	-	-	-	-	-	-
AOCI - OPEB Exec Life	-	-	-	511,926	511,926	65,955	577,881	112,908	690,789	112,908	803,697	690,789	112,908	803,697	690,789	112,908	803,697
FIN 48	-	-	-	-	-	(3,296,090)	(3,296,090)	-	(3,296,090)	-	(3,296,090)	(3,296,090)	-	(3,296,090)	(3,296,090)	-	(3,296,090)
FED DEF'D TAX LIABILITY - OTHER	46,092,462	10,026,952	56,119,414	446,890	56,566,305	(6,726,983)	49,839,322	8,370,051	58,209,372	2,624,315	60,833,687	58,209,372	3,769,013	61,978,385	58,209,372	3,769,013	60,833,687
FED DEF'D TAX LIAB - ACCEL DEPR	59,565,462	1,769,318	61,334,780	(2,120,299)	59,214,481	(2,841,536)	56,372,945	3,203,088	59,576,033	(1,498,343)	58,077,690	59,576,033	(3,355,777)	56,220,256	59,576,033	(1,498,343)	58,077,690
TOTAL FEDERAL DEFERRED TAX LIABILITY (after rate case adjustments)	105,657,924	11,796,271	117,454,194	(1,673,409)	115,780,786	(9,568,519)	106,212,267	11,573,138	117,785,405	1,125,972	118,911,377	117,785,405	413,236	118,198,641	117,785,405	2,270,670	118,911,377

HAWAIIAN ELECTRIC CO., INC.
DEFERRED INCOME TAXES
STATE

LIAB (DR)/CR	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Estimate	BASE CASE			INTERIM INCREASE			CIP CT-1 STEP		
	12-31-04	2005	12-31-05	2006	12-31-06	2007	12-31-07	2008	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
28310 State ITC	(1,489,235)	(103,601)	(1,592,836)	(112,123)	(1,704,959)	(64,332)	(1,769,291)	(59,120)	(1,828,411)	(276,606)	(2,105,018)	(1,828,411)	(67,291)	(1,895,702)	(2,037,727)	(67,291)	(2,105,018)
28311 Unearned Lease	(1,166)	225	(941)	218	(723)	210	(513)	191	(322)	189	(133)	(322)	189	(133)	(322)	189	(133)
28312 Accrued Vacation	176,936	(2,472)	174,464	24,788	199,253	13,003	212,256	12,081	224,337	-	224,337	224,337	-	224,337	224,337	-	224,337
28313 Uncollectible Acct	(32,080)	6,655	(25,425)	(39,792)	(65,217)	6,764	(58,454)	-	(58,454)	-	(58,454)	(58,454)	-	(58,454)	(58,454)	-	(58,454)
28314 Directors Def Comp	(2,454)	(2,258)	(4,712)	141	(4,570)	88	(4,483)	-	(4,483)	-	(4,483)	(4,483)	-	(4,483)	(4,483)	-	(4,483)
28317 Discounted Work Comp	(142,643)	11,473	(131,170)	(19,840)	(151,010)	(21,233)	(172,243)	-	(172,243)	-	(172,243)	(172,243)	-	(172,243)	(172,243)	-	(172,243)
28319 Cap to Construction	4,730,600	274,392	5,004,993	350,390	5,355,383	431,091	5,786,474	380,137	6,166,611	410,424	6,577,035	6,166,611	410,424	6,577,035	6,166,611	410,424	6,577,035
28321 Pension	4,543,628	418,596	4,962,224	(856,335)	4,105,888	(1,065,300)	3,040,588	(881,799)	2,158,789	(879,573)	1,279,215	2,158,789	(879,573)	1,279,215	2,158,789	(879,573)	1,279,215
28323 Excess Benefit Plan	(3,128)	(76,065)	(79,193)	314	(78,878)	(1,824)	(80,702)	-	(80,702)	-	(80,702)	(80,702)	-	(80,702)	(80,702)	-	(80,702)
28324 Nonop Deferred Gain	278	(278)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28326 Def Exec Comp	(10,334)	473	(9,861)	(640)	(10,502)	1,451	(9,051)	-	(9,051)	-	(9,051)	(9,051)	-	(9,051)	(9,051)	-	(9,051)
28327 Software	12,052	(73,995)	(61,942)	28,165	(33,778)	(42,974)	(76,751)	96,724	19,973	(4,511)	15,462	19,973	(4,511)	15,462	19,973	(4,511)	15,462
28328 G/L ACRS Retirements	1,072,491	108,922	1,181,413	49,255	1,230,668	55,185	1,285,853	304,742	1,590,595	116,353	1,706,948	1,590,595	116,353	1,706,948	1,590,595	116,353	1,706,948
28329 Series U Exp (Bonds)	162	-	162	-	(162)	0	0	-	0	-	0	0	-	0	0	-	0
28330 EICP	1,045	(2,943)	(1,898)	(1,443)	(3,341)	16,171	12,830	-	12,830	-	12,830	12,830	-	12,830	12,830	-	12,830
28331 CIAC	(2,560,833)	(216,878)	(2,777,712)	(96,793)	(2,874,505)	(2,964,737)	(5,839,242)	147,060	(5,692,182)	148,363	(5,543,818)	(5,692,182)	148,363	(5,543,818)	(5,692,182)	148,363	(5,543,818)
28332 Customer Advances	(53,882)	(5,401)	(59,283)	1,544	(57,739)	(8,688)	(66,428)	-	(66,428)	-	(66,428)	(66,428)	-	(66,428)	(66,428)	-	(66,428)
28333 Capitalized Interest	(3,053,388)	281,120	(2,772,268)	(243,218)	(3,015,486)	35,303	(2,980,183)	(271,934)	(3,252,117)	(447,548)	(3,699,666)	(3,252,117)	(447,548)	(3,699,666)	(3,252,117)	(447,548)	(3,699,666)
28335 Connection Fees	8,444	-	8,444	-	8,444	-	8,444	-	8,444	-	8,444	8,444	-	8,444	8,444	-	8,444
28336 Nondeductible Interest	(33,744)	53,612	19,868	(5,389)	14,478	(44,081)	(29,602)	-	(29,602)	-	(29,602)	(29,602)	-	(29,602)	(29,602)	-	(29,602)
28337 Supplemental Benefits -SERP	(45,951)	(43,378)	(89,328)	(11,826)	(101,155)	(12,058)	(113,212)	-	(113,212)	-	(113,212)	(113,212)	-	(113,212)	(113,212)	-	(113,212)
28338 Nondeductible Vacation	(195,605)	-	(195,605)	-	(195,605)	-	(195,605)	-	(195,605)	-	(195,605)	(195,605)	-	(195,605)	(195,605)	-	(195,605)
28340 LTIP	(22,770)	(1,624)	(24,394)	(9,317)	(33,711)	(13,665)	(47,376)	-	(47,376)	-	(47,376)	(47,376)	-	(47,376)	(47,376)	-	(47,376)
28341 Waipahu Baseyard Int	(20,453)	-	(20,453)	-	(20,453)	-	(20,453)	-	(20,453)	-	(20,453)	(20,453)	-	(20,453)	(20,453)	-	(20,453)
28346 Ser V Redmp Premium	2,175	(2,175)	0	0	0	0	0	-	0	-	0	0	-	0	0	-	0
28347 Waiuu Water Well Pmts	(79,954)	3,884	(76,069)	4,285	(71,784)	4,686	(67,098)	3,884	(63,213)	3,884	(59,329)	(63,213)	3,884	(59,329)	(63,213)	3,884	(59,329)
28348 Nonutil Bad Debt	1,318	-	1,318	-	1,318	-	1,318	-	1,318	-	1,318	1,318	-	1,318	1,318	-	1,318
28349 Cap Corp Logo	700	(700)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28350 Loss Adj Exp	-	-	-	-	-	24,509	24,509	-	24,509	-	24,509	24,509	-	24,509	24,509	-	24,509
28401 Gen/Auto (& Accidents)	(100,992)	42,165	(58,826)	23,019	(35,807)	(38,935)	(74,742)	-	(74,742)	-	(74,742)	(74,742)	-	(74,742)	(74,742)	-	(74,742)
28403 CWIP Debt Transition	96,723	(3,820)	92,903	(3,820)	89,083	(3,820)	85,264	(3,820)	81,444	(3,820)	77,624	81,444	(3,820)	77,624	81,444	(3,820)	77,624
28404 CWIP Equity Trans	300,221	(13,943)	286,278	(13,374)	272,904	(11,555)	261,349	(11,665)	249,684	(11,665)	238,018	249,684	(11,665)	238,018	249,684	(11,665)	238,018
28405 Iolani Ct Plaza Sale	(7,751)	6,541	(1,210)	(13,572)	(11,572)	(9,221)	(12,782)	(9,221)	(10,316)	10,121	(194)	(10,316)	10,121	(194)	(10,316)	10,121	(194)
28406 Kaonohi Sale	6,943	-	6,943	-	6,943	-	6,943	-	6,943	-	6,943	6,943	-	6,943	6,943	-	6,943
28407 FAS 109 Flow Through	554,827	(50,443)	504,385	(50,442)	453,942	(50,442)	403,500	(50,442)	353,058	(50,442)	302,615	353,058	(50,442)	302,615	353,058	(50,442)	302,615
28408 Plant Transition	3,320,922	(158,138)	3,162,784	(158,137)	3,004,647	(158,137)	2,846,509	(158,137)	2,688,372	(158,137)	2,530,234	2,688,372	(158,137)	2,530,234	2,688,372	(158,137)	2,530,234
28409 CWIP Equity Net	2,697,555	163,144	2,860,699	159,189	3,019,888	176,626	3,196,514	410,716	3,607,230	610,920	4,218,150	3,607,230	610,920	4,218,150	3,607,230	610,920	4,218,150
28410 CWIP Equity Grossup	1,717,482	118,478	1,835,960	86,823	1,922,783	112,897	2,035,680	261,594	2,297,274	390,386	2,687,660	2,297,274	390,386	2,687,660	2,297,274	390,386	2,687,660
28411 CWIP Debt	1,375,640	55,616	1,431,256	67,518	1,498,774	84,049	1,582,823	150,707	1,733,530	218,619	1,952,149	1,733,530	218,619	1,952,149	1,733,530	218,619	1,952,149
28412 General/Auto Liability - Legal	(13,107)	7,080	(6,027)	(2,328)	(8,355)	2,916	(5,439)	-	(5,439)	-	(5,439)	(5,439)	-	(5,439)	(5,439)	-	(5,439)
28413 Post Retirement Ben	(275,569)	278,346	2,777	(133,222)	(130,445)	(139,408)	(269,853)	(335,533)	(605,386)	(318,181)	(923,567)	(605,386)	(318,181)	(923,567)	(605,386)	(318,181)	(923,567)
28414 Reg Liab Federal ITC	(555,364)	89,142	(466,223)	83,365	(382,858)	75,225	(307,632)	70,815	(236,818)	63,408	(173,409)	(236,818)	63,408	(173,409)	(236,818)	63,408	(173,409)
28418 IRP & DSM Costs	38,359	(14,792)	23,567	(25,578)	(2,010)	738	(1,272)	1,586	314	730	1,043	314	730	1,043	314	730	1,043
28419 Reg Liab Excess 283	(89,206)	3,465	(85,741)	3,465	(82,277)	3,465	(78,812)	3,465	(75,347)	3,465	(71,883)	(75,347)	3,465	(71,883)	(75,347)	3,465	(71,883)
28420 Reg Liab Deficit 283	(1,689)	2,258	569	(569)	-	-	-	-	-	-	-	-	-	-	-	-	-
28422 Miscellaneous	611	-	611	-	611	16,359	16,970	-	16,970	-	16,970	16,970	-	16,970	16,970	-	16,970
28427 Prepaid Expenses	106,161	(2,785)	103,376	14,312	117,688	(3,549)	114,139	2,668	116,807	2,668	119,475	116,807	2,668	119,475	116,807	2,668	119,475
28430 FMB X Premium	47,763	(4,008)	43,755	(4,008)	39,747	(4,008)	35,739	(4,008)	31,731	(4,008)	27,723	31,731	(4,008)	27,723	31,731	(4,008)	27,723
28432 Coal Gasif Costs	-	-	-	-	-	11,273	11,273	-	11,273	-	11,273	11,273	-	11,273	11,273	-	11,273
28434 EEO Claims	(11,911)	(7,741)	(19,652)	18,165	(1,487)	(786)	(2,273)	-	(2,273)	-	(2,273)	(2,273)	-	(2,273)	(2,273)	-	(2,273)
28435 Differential	171,221	(3,909)	167,311	4,149	171,460	(14,156)	157,305	(17,913)	139,392	(13,311)	126,080	139,392	(13,311)	126,080	139,392	(13,311)	126,080
28436 TIP	(35,474)	(5,089)	(40,564)	50,514	9,950	6,015	15,965	-	15,965	-	15,965	15,965	-	15,965	15,965	-	15,965
28437 HACOIA	(588)	588	-	-	-	1,533	1,533	-	1,533	-	1,533	1,533	-	1,533	1,533	-	1,533
28438 BONY Rev	74	(123)	(49)	(25)	(74)	148	74	-	74	-	74	74	-	74	74	-	74
28439 GAQS Tel	178	-	178	(178)	-	255	255	-	255	-	255	255	-	255	255	-	255
28440 Kalaeha	(17,889)	22,168	4,279	5,542	9,821	11,444	21,265	2,771	24,036	2,771	26,807	24,036	2,771	26,807	24,036	2,771	26,807
28441 Sun Power	(1,649)	-	(1,649)	-	(0)	-	(0)	-	(0)	-	(0)	(0)	-	(0)	(0)	-	(0)
28442 Overhaul	(36,377)	22,664	(13,713)	2,076	(11,637)	2,077	(9,560)	2,076	(7,484)	2,077	(5,407)	(7,484)	2,077	(5,407)	(7,484)	2,077	(5,407)
28443 EV Tax Credit	74	-	74	-													

HAWAIIAN ELECTRIC CO., INC.
DEFERRED INCOME TAXES
STATE

LIAB (DR)/CR	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Estimate	BASE CASE			INTERIM INCREASE			CIP CT-1 STEP		
	12-31-04	2005	12-31-05	2006	12-31-06	2007	12-31-07	2008	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
28554 Substation Land - Palolo	-	-	-	(2,519)	(2,519)	530	(1,988)	530	(1,458)	530	(928)	(1,458)	530	(928)	(1,458)	530	(928)
28556 Substation Land - Waianae	-	-	-	(6,244)	(6,244)	3,680	(2,565)	(3,334)	(5,898)	2,452	(3,446)	(5,898)	2,452	(3,446)	(5,898)	2,452	(3,446)
28558 Substation Land - Aiea	-	-	-	-	-	(6,708)	(6,708)	1,412	(5,296)	1,412	(3,884)	(5,296)	1,412	(3,884)	(5,296)	1,412	(3,884)
28560 Solar Tax Credit	-	-	-	-	-	(192)	(192)	-	(192)	-	(192)	(192)	-	(192)	(192)	-	(192)
28562 Revenue Adj - TY 2005	-	-	-	-	-	(944,355)	(944,355)	944,355	-	-	-	-	-	-	-	-	-
28564 HR Suites project costs	-	-	-	-	-	(2,283)	(2,283)	37,523	35,240	31,810	67,050	35,240	31,810	67,050	35,240	31,810	67,050
28566 \$481 (a) adjustment (CIAC)	-	-	-	-	-	-	-	1,847,788	1,231,858	(615,929)	615,929	1,231,858	(615,929)	615,929	1,231,858	(615,929)	615,929
28568 Solar Saver Program	-	-	-	-	-	(24,647)	(24,647)	-	(24,647)	-	(24,647)	(24,647)	-	(24,647)	(24,647)	-	(24,647)
28570 Pension Tracker	-	-	-	-	-	-	-	(183,518)	(183,518)	36,704	(146,814)	(183,518)	36,704	(146,814)	(183,518)	36,704	(146,814)
28572 OPEB Tracker	-	-	-	-	-	-	-	(46,746)	(46,746)	9,349	(37,397)	(46,746)	9,349	(37,397)	(46,746)	9,349	(37,397)
28574 Substation Land - Haiku	-	-	-	-	-	-	-	(19,158)	(19,158)	3,832	(15,326)	(19,158)	3,832	(15,326)	(19,158)	3,832	(15,326)
28576 Substation Land - Barber's Point sub	-	-	-	-	-	-	-	(1,890)	(1,890)	420	(1,470)	(1,890)	420	(1,470)	(1,890)	420	(1,470)
AOCI - Qualified Pension	-	-	-	(7,916,250)	(7,916,250)	7,916,250	-	-	-	-	-	-	-	-	-	-	-
AOCI - NQ Pension	(27,120)	24,392	(2,728)	(19,870)	(22,599)	(11,710)	(34,309)	(2,340)	(36,649)	(2,340)	(38,989)	(36,649)	(2,340)	(38,989)	(36,649)	(2,340)	(38,989)
AOCI - OPEB	-	-	-	(1,421,918)	(1,421,918)	1,421,918	-	-	-	-	-	-	-	-	-	-	-
AOCI - OPEB Exec Life	-	-	-	93,609	93,609	20,659	114,268	20,640	134,908	20,640	155,548	134,908	20,640	155,548	134,908	20,640	155,548
FIN 48	-	-	-	-	-	(602,717)	(602,717)	-	(602,717)	-	(602,717)	(602,717)	-	(602,717)	(602,717)	-	(602,717)
TOTAL ACCOUNT 283	12,114,680	1,784,954	13,899,635	(9,934,275)	3,965,359	6,552,789	10,518,148	625,268	11,143,416	(373,982)	10,769,434	11,143,416	(164,667)	10,978,749	10,934,101	(164,667)	10,769,434
ACCOUNT 282 DEPR	7,029,409	161,260	7,190,669	(409,112)	6,781,557	(228,438)	6,553,119	(498,930)	6,054,189	45,457	6,099,646	6,054,189	(294,186)	5,760,003	6,054,189	45,457	6,099,646
TOTAL STATE DEFERRED TAX LIABILITY (before rate case adjustments)	19,144,089	1,946,214	21,090,303	(10,343,387)	10,746,916	6,324,351	17,071,267	126,338	17,197,605	(328,525)	16,869,080	17,197,605	(458,853)	16,738,752	16,988,290	(119,209)	16,869,080
TOTAL ACCOUNT 283	12,114,680	1,784,954	13,899,635	(9,934,275)	3,965,359	6,552,789	10,518,148	625,268	11,143,416	(373,982)	10,769,434	11,143,416	(164,667)	10,978,749	10,934,101	(164,667)	10,769,434
Less Rate Case Adjustments:																	
28312 Accrued Vacation	176,936	(2,472)	174,464	24,788	199,253	13,003	212,256	12,081	224,337	-	224,337	224,337	-	224,337	224,337	-	224,337
28313 Uncollectible Account	(32,080)	6,655	(25,425)	(39,792)	(65,217)	6,764	(58,454)	-	(58,454)	-	(58,454)	(58,454)	-	(58,454)	(58,454)	-	(58,454)
28314 Directors Def Comp	(2,454)	(2,258)	(4,712)	141	(4,570)	88	(4,483)	-	(4,483)	-	(4,483)	(4,483)	-	(4,483)	(4,483)	-	(4,483)
28317 Discounted Work Comp	(142,643)	11,473	(131,170)	(19,840)	(151,010)	(21,233)	(172,243)	-	(172,243)	-	(172,243)	(172,243)	-	(172,243)	(172,243)	-	(172,243)
28321 Pension	4,543,628	418,596	4,962,224	(856,335)	4,105,888	(1,065,300)	3,040,588	(881,799)	2,158,789	(879,573)	1,279,215	2,158,789	(879,573)	1,279,215	2,158,789	(879,573)	1,279,215
28323 Excess Benefit Plan	(3,128)	(76,065)	(79,193)	314	(78,878)	(1,824)	(80,702)	-	(80,702)	-	(80,702)	(80,702)	-	(80,702)	(80,702)	-	(80,702)
28324 Nonop Deferred Gain	278	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28326 Def Exec Comp (Def LTIP)	(10,334)	473	(9,861)	(640)	(10,502)	1,451	(9,051)	-	(9,051)	-	(9,051)	(9,051)	-	(9,051)	(9,051)	-	(9,051)
28330 EICP	1,045	(2,943)	(1,898)	(1,443)	(3,341)	16,171	12,830	-	12,830	-	12,830	12,830	-	12,830	12,830	-	12,830
28336 Nondeductible Interest	(33,744)	53,612	19,868	(5,389)	14,478	(44,081)	(29,602)	-	(29,602)	-	(29,602)	(29,602)	-	(29,602)	(29,602)	-	(29,602)
28337 Supplemental Benefits -SERP	(45,951)	(43,378)	(89,328)	(11,826)	(101,155)	(12,058)	(113,212)	-	(113,212)	-	(113,212)	(113,212)	-	(113,212)	(113,212)	-	(113,212)
28338 Nondeductible Vacation	(195,605)	-	(195,605)	-	(195,605)	-	(195,605)	-	(195,605)	-	(195,605)	(195,605)	-	(195,605)	(195,605)	-	(195,605)
28340 LTIP	(22,770)	(1,624)	(24,394)	(9,317)	(33,711)	(13,665)	(47,376)	-	(47,376)	-	(47,376)	(47,376)	-	(47,376)	(47,376)	-	(47,376)
28341 Waipahu Baseyard Int	(20,453)	-	(20,453)	-	(20,453)	-	(20,453)	-	(20,453)	-	(20,453)	(20,453)	-	(20,453)	(20,453)	-	(20,453)
28347 Waiiau Water Well Pmts	(79,954)	3,884	(76,069)	4,285	(71,784)	4,686	(67,098)	3,884	(63,213)	3,884	(59,329)	(63,213)	3,884	(59,329)	(63,213)	3,884	(59,329)
28348 Nonutil Bad Debt	1,318	-	1,318	-	1,318	-	1,318	-	1,318	-	1,318	1,318	-	1,318	1,318	-	1,318
28349 Cap Corp Logo	700	(700)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28350 Outage Loss Adj Exp	-	-	-	-	-	24,509	24,509	-	24,509	-	24,509	24,509	-	24,509	24,509	-	24,509
28401 Gen/Auto (& Accidents)	(100,992)	42,165	(58,826)	23,019	(35,807)	(38,935)	(74,742)	-	(74,742)	-	(74,742)	(74,742)	-	(74,742)	(74,742)	-	(74,742)
28412 Gen/Auto Legal	(13,107)	7,080	(6,027)	(2,328)	(8,355)	2,916	(5,439)	-	(5,439)	-	(5,439)	(5,439)	-	(5,439)	(5,439)	-	(5,439)
28434 EEO Claims	(11,911)	(7,741)	(19,652)	18,165	(1,487)	(786)	(2,273)	-	(2,273)	-	(2,273)	(2,273)	-	(2,273)	(2,273)	-	(2,273)
28436 TIP	(35,474)	(5,089)	(40,564)	50,514	9,950	6,015	15,965	-	15,965	-	15,965	15,965	-	15,965	15,965	-	15,965
28520 Deferred Comp - restricted stock	1,982	278	2,260	9,050	11,309	15,526	26,836	-	26,836	-	26,836	26,836	-	26,836	26,836	-	26,836
28538 Rate Case - TY 2005	-	40,644	40,644	(13,083)	27,562	(4,851)	22,710	-	22,710	-	22,710	22,710	-	22,710	22,710	-	22,710
28544 OPEB Exec Life	-	(484,657)	(484,657)	(45,398)	(530,055)	(50,244)	(580,299)	-	(580,299)	-	(580,299)	(580,299)	-	(580,299)	(580,299)	-	(580,299)
28550 E-Business hardware	-	2,276	2,276	5,072	7,348	608	7,956	251	8,207	-	8,207	8,207	-	8,207	8,207	-	8,207
AOCI - Qualified Pension	-	-	-	(7,916,250)	(7,916,250)	7,916,250	-	-	-	-	-	-	-	-	-	-	-
AOCI - NQ Pension	(27,120)	24,392	(2,728)	(19,870)	(22,599)	(11,710)	(34,309)	(2,340)	(36,649)	(2,340)	(38,989)	(36,649)	(2,340)	(38,989)	(36,649)	(2,340)	(38,989)
AOCI - OPEB	-	-	-	(1,421,918)	(1,421,918)	1,421,918	-	-	-	-	-	-	-	-	-	-	-
AOCI - OPEB Exec Life	-	-	-	93,609	93,609	20,659	114,268	20,640	134,908	20,640	155,548	134,908	20,640	155,548	134,908	20,640	155,548
FIN 48	-	-	-	-	-	(602,717)	(602,717)	-	(602,717)	-	(602,717)	(602,717)	-	(602,717)	(602,717)	-	(602,717)
STATE DEF'D TAX LIABILITY - OTHER	8,166,514	1,800,632	9,967,145	200,196	10,167,341	(1,030,371)	9,136,970	1,472,550	10,609,521	483,407	11,092,928	10,609,521	692,722	11,302,243	10,400,206	692,722	11,092,928
STATE DEF'D TAX LIAB - ACCEL DEPR	7,029,409	161,260	7,190,669	(409,112)	6,781,557	(228,438)	6,553,119	(498,930)	6,054,189	45,457	6,099,646	6,054,189	(294,186)	5,760,003	6,054,189	45,457	6,099,646
TOTAL STATE DEFERRED TAX LIABILITY (after rate case adjustments)	15,195,922	1,961,892	17,157,814	(208,915)	16,948,898	(1,258,809)	15,690,089	973,620	16,663,710	528,864	17,192,574	16,663,710	398,536	17,062,246	16,454,395	738,180	17,192,574

**HAWAIIAN ELECTRIC CO., INC.
ACCUMULATED DEFERRED FEDERAL ITC
FOR TEST YEAR 2009**

	<u>2009</u>	<u>References</u>
Annual Amortization of 1971 Revenue Act ITC	643,849	HECO-1603
Multiplied by Gross-up Factor (1/(1-tax rate) 1/(1-.389097744)	1.636923	
Total Amortization of Unamortized ITC and Regulatory Liability	<u>1,053,931</u>	
Less: Amortization of Unamortized ITC	<u>643,849</u>	
Amortization of Regulatory Liability	<u>410,082</u>	HECO-1606

Hawaiian Electric Company, Inc.

2008 PLANT ADDITIONS - PROJECTS

<u>Grand parent</u>	<u>Project #</u>	<u>Project Title</u>	<u>Expenditures</u>			
			<u>Project to Date Recorded 12/31/07</u>	<u>2008</u>	<u>2009</u>	<u>Total</u>
	P0000056	H8 Blr Elec Warm Sys	855,771	34,572	0	890,343
	P0000465	K1&2 Service Air Compressors	271,437	155,983	0	427,420
	P0000490	H8&9 Emergency Generator	204,101	31,015	0	235,116
	P0000634	W7&8 Boiler Wash Sump Pump	341,250	47,617	0	388,867
	P0000636	W0 Waiiau Chlorine Dioxide	258,206	369,230	80,000	707,436
	P0000637	K0 Kahe Chlorine Dioxide	413,281	351,355	0	764,636
	P0000786	K1 Kahe 1 BW Sump Upgrade	195,755	5,408	0	201,163
	P0000787	K5&6 Lube water pump	37,691	65,851	0	103,542
	P0000788	K2 Kahe 2 BW Sump Upgrade	159,920	3,345	0	163,265
	P0000789	K3 Kahe 3 BW Sump Upgrade	358,004	60,274	0	418,278
	P0000790	K4 Kahe 4 BW Sump Upgrade	183,009	3,935	0	186,944
	P0000791	K5 Kahe 5 BW Sump Upgrade	167,007	5,084	0	172,091
	P0000792	K6 Kahe 6 BW Sump Upgrade	165,392	4,308	0	169,700
	P0000797	W3-W4 Svc Air Compr	122,854	310,556	0	433,410
	P0000798	W6 Instr Air Compr	14,605	196,950	893	212,448
	P0000990	Waiiau-Makalapa FO Replacemen	429,397	103,523	0	532,920
	P0000997	TWO-Way radio upgrade	82,626	0	0	82,626
	P0001108	Upper Kipapa Sound Lev Reduc	0	330,671	0	330,671
	P0001109	Wahiawa 46Kv Ln-Schofield	31,000	199,000	0	230,000
	P0001112	Waiiau Chem Lab	214,037	71,856	55	285,948
	P0001120	HECO PV Ward Project	16,128	126,702	0	142,830
	P0001155	150 Feet Aerial Platform Trk	928,253	0	0	928,253
	P0001285	W6 Waiiau FWH 64 Replace	333,371	112,023	0	445,394
	P0001300	W8 Waiiau FWH 85 Replace	13,308	890,772	0	904,080
	P0001304	Archer Sub Chiller change	657,272	691,627	0	1,348,899
	P0001341	Ellipse Migration to Unix	118,951	305,586	0	424,537
	P0001342	Walmart Manana OH Relocation	31,353	129,108	0	160,461
	P0001357	Kapolei Pkwy Ext. OH to UG	25,388	130,935	0	156,323
	P0001358	Queens Medical Center Upgrd	9,222	126,583	3,872	139,677
	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
	P0001381	K5 Kahe FWH 53 Replace	0	745,269	59,458	804,727
	P0001382	W3 Waiiau FWH 34 Replace	47,313	209,157	0	256,470
	P0001383	W5 Waiiau 52 FWH Replace	272,963	420,316	0	693,279
	P0001391	K1 Opacity Monitor	154,551	155,897	0	310,448
	P0001401	Spare 10% Tsf 2007 #1	517,509	51,869	0	569,378
	P0001404	Kal Hwy at Makapuu - 12kV UG	14,804	247,449	313,157	575,410
	P0001405	Enterprise Reporting System	137,890	0	0	137,890
	P0001417	Remedy Upgrade	0	0	0	0
	P0001421	School St #1 Swgr Repl	258,839	326,335	0	585,174
	P0001422	New Ward MW Battery Rm	69,688	567,785	0	637,473
	P0001429	Lagoon #1 Tsf Replacement	604,144	132	0	604,276
	P0001443	CEIP46 Recond (near RR)	0	572,396	0	572,396
	P0001474	K5 Voltage Regulator Upgrade	1,901	505,864	16,172	523,937
	P0001475	H8/H9 Elevator Replacement	254,382	110,210	0	364,592

Totals may not add due to rounding

Hawaiian Electric Company, Inc.

2008 PLANT ADDITIONS - PROJECTS

<u>Grand parent</u>	<u>Project #</u>	<u>Project Title</u>	<u>Expenditures</u>			
			<u>Project to Date Recorded 12/31/07</u>	<u>2008</u>	<u>2009</u>	<u>Total</u>
	P0001477	Manana Swgr Installation	9,767	163,962	0	173,729
	P0001478	Waiau 138KV Bkr 107&108 Repl	185,002	266,547	0	451,549
	P0001479	HPP 46KV Bkr 4552 Replace	74,925	124,499	0	199,424
	P0001484	Makakilo Tsf #2 Replace	23,063	759,676	0	782,739
	P0001490	Ahuimanu Pl OH & UG Cbl Upgr	960	169,861	3,872	174,693
	P0001499	Kahe 138kV Bkr 247 Replace	2,748	320,491	0	323,239
	P0001501	HPP 46kV Bkr 4553 Replace	3,320	222,940	0	226,260
	P0001514	Airport Iwilei Shield Wire	0	1,306,851	0	1,306,851
	P0001516	Ilaniwai St 46 kV Cable Replc	30,242	103,328	0	133,570
	P0001519	Mak-Airport 138kV SW Repl	0	381,610	1,936	383,546
	P0001525	Tesoro Electrical Upgrade	64,442	455,046	0	519,488
	P0001531	W0 Startup Transformer	2,205	544,295	0	546,500
	P0001535	W5 CWP #51 Column Repl	1,212	111,158	0	112,370
	P0001537	2008 Spare 10MVA(10%) Tsf #1	0	637,629	0	637,629
	P0001539	Waiau 2 Office	0	189,571	0	189,571
	P0001550	Spare 80mva Tsf #1	0	538,499	0	538,499
	P0001551	P28X Waiau-Mak #1 138kV 2412	0	159,171	0	159,171
	P0001552	Kahe-Permanente 46kVNanakuli	0	785,541	0	785,541
	P0001557	Makakilo C&D Ph1 46kV UG	0	557,435	570,400	1,127,835
	P0001566	Mamala Tsf Paralleling	0	59,606	0	59,606
	P0001578	W06 BFP 61 Motor Replacement	0	139,014	0	139,014
Y00030	P0000795	Parking-C&M, SysOp, & Employee	147,569	102,132	0	249,701
Y00044	P0000946	KoOlina SS Tsf#1 Install	1,660,159	319,295	0	1,979,454
Y00044	P0000947	KoOlina 46kV lines	2,707,131	307,458	0	3,014,589
Y00044	P0000948	KoOlina 12kV lines	20,841	3,948	0	24,789
Y00047	P0001037	Puuloa Rd Widening - UG	278,971	290,728	0	569,699
Y00064	P0001170	CIP0 AQ Monitoring Stns	51,563	737,796	0	789,359
Y00066	P0001183	K5 Gen Protective Relay	27,940	63,953	6,760	98,653
Y00067	P0001197	K5 Hydrogen Gas Dryer	0	120,459	5,730	126,189
Y00068	P0001201	W5 Hydrogen Gas Dryer	96,403	57,980	0	154,383
Y00068	P0001204	W8 Hydrogen Gas Dryer	0	125,227	0	125,227
Y00071	P0001215	W5 Turbine Drains	86,219	172,482	0	258,701
Y00071	P0001218	W8 Turbine Drains	272,941	152,203	0	425,144
Y00075	P0001263	K5 Air Htr Rotor Stop Alarm	9,309	35,582	1,339	46,230
Y00075	P0001266	W8 Air Htr Rotor Stop Alarm	13,001	33,699	1,409	48,109
Y00077	P0001294	Ward 1/2 Safety Access Impvm	13,497	294,762	0	308,259
Y00079	P0000486	H8 Honolulu FWH 85 Replace	11,634	804,138	0	815,772
Y00079	P0000487	H8 Honolulu FWH 82 Replace	22,636	571,462	0	594,098
Y00079	P0000807	H8 TSI Upgrade	28,707	341,580	0	370,287
Y00079	P0000814	H8 Volt Reg/Exciter Replace	413,724	797,347	0	1,211,071
Y00079	P0000831	H8 Operator Console Upgrade	178,294	245,411	0	423,705
Y00079	P0000858	H8 Annunciator Replacement	289,698	497,129	0	786,827
Y00079	P0000895	H8 Main Xfmr Replacement	45,430	1,430,745	0	1,476,175
Y00079	P0000980	H8 Battery Bank Replacement	21,932	151,027	0	172,959
Y00081	P0001131	H9 Honolulu FWH 94 Replace	38,158	821,500	0	859,658

Totals may not add due to rounding

Hawaiian Electric Company, Inc.

2008 PLANT ADDITIONS - PROJECTS

<u>Grand</u> <u>parent</u>	<u>Project #</u>	<u>Project Title</u>	<u>Expenditures</u>			
			<u>Project</u> <u>to Date</u> <u>Recorded</u> <u>12/31/07</u>	<u>2008</u>	<u>2009</u>	<u>Total</u>
Y00083	P0000622	K1 Kahe 13 FWH Replace	412,035	202,940	0	614,975
Y00083	P0000644	K1 Kahe FWH 14 Replace	700,273	108,474	0	808,747
Y00090	P0000812	K5 Annunciator Replacement	0	868,108	3,994	872,102
Y00090	P0000890	K5 Ignitor Atomization	0	466,898	2,756	469,654
Y00095	P0000802	W5 Operator Console Upgrade	245,806	83,030	0	328,836
Y00097	P0000484	W7 Waiiau FWH 75 Replace	28,654	872,863	0	901,517
Y00097	P0000856	W7 Main Transformer	1,801,383	340,221	0	2,141,604
Y00099	P0000819	W8 Exciter/Regulator Repl	28,084	1,038,709	0	1,066,793
Y00100	P0000564	W9 DCS Processor Upgrade	253,062	89,461	0	342,523
Y00103	P0001314	St Lib V6422 Trayer Sw Repl	2,961	16,985	0	19,946
Y00103	P0001315	Capitol Ctr V6608 Trayer Sw Rpl	12,044	11,716	0	23,760
Y00103	P0001316	Inn Prk V4322 Trayer Sw Repl	5,542	11,448	0	16,990
Y00103	P0001318	Honvest V6193 Trayer Sw Repl	6,550	11,664	0	18,214
Y00104	P0001327	W5 UPS Panel Upgrade	31,723	40,738	0	72,461
Y00105	P0001346	N. Kahana Bridge Temp OH	0	183,534	0	183,534
Y00106	P0001349	Baseyards Priority 2 - 2008	0	89,393	0	89,393
Y00116	P0001486	School-Bkr4568 Rly Up	64,148	15,342	0	79,490
Y00116	P0001487	Halawa 2 & 3 Tap	67,143	140,908	1,936	209,987
Y00116	P0001488	Kamoho Sub Sw Upgrd	24,324	376	0	24,700
Y00117	P0001491	HECO CLS - CAPITAL	455,645	8,320	0	463,965
Y49000	P0001052	CIP1 CEIP Substation Mod	34,168	586,404	3,966	624,538
Y49000	P0001135	CIP1 Unit Addition-Microwave	12,703	746,992	0	759,695
Y49000	P0001137	CIP1 Unit Addition-Kalaeloa	0	178,574	0	178,574
Y49000	P0001340	CIP1 Unit Addition-Easements	7,200	6,177,983	0	6,185,183
Y49000	P0001585	CIP1 - Land - Gen Station	0	1,261,761	0	1,261,761
			<u>21,835,974</u>	<u>38,918,161</u>	<u>1,077,705</u>	<u>61,831,840</u>

2008 Stragglng Costs:Pre-2008 (HECO-WP-1701, page 7) 1,753,186
2009 Plant Additions -1,077,705

Total projects \$62,507,321
To HECO-1701, page 1

Hawaiian Electric Company, Inc.

2009 PLANT ADDITIONS - PROJECTS

		<u>Expenditures</u>						
<u>Grand</u> <u>parent</u>	<u>Project #</u>	<u>Project Title</u>	<u>Project</u>					<u>Total</u>
			<u>to Date</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	
			<u>Recorded</u>					
			<u>12/31/07</u>					
	P0000086	W0 Waiau WW Oil Detectors	63,561	0	47,680	0	0	111,241
	P0000335	Intl Savings & Loan Vault	91,980	15,479	310,000	0	0	417,459
	P0000571	CIS Replacement	556,133	0	30,948	0	0	587,081
	P0000620	K0 Kahe Fire Water Tank 2	53,400	143,164	795,074	0	0	991,638
	P0000635	K1 Elec Brkr Rm Ventilation	0	10,398	162,412	1,348	0	174,158
	P0000680	W0 Waiau Waste Oil Recover	49,620	44,087	293,549	0	0	387,256
	P0000956	W0 WWTF Chem Feed Upgrades	349,645	158,313	1,043,621	0	0	1,551,579
	P0000975	Tripler-Koolau Baseyard Comm	0	0	481,556	0	0	481,556
	P0001040	Ft DeRussy Vault Load Relief	11,066	13,475	639,078	0	0	663,619
	P0001081	Auahi Street 12kV OH to UG	16,461	1,395	170,194	0	0	188,050
	P0001121	Maunalani Hts Reliab Impvmts	185,242	79,304	303,868	1,023,824	0	1,592,238
	P0001132	K6 Kahe FWH 64 Replace	0	163,574	707,105	0	0	870,679
	P0001141	W3 Waiau 3 Blowoff Tank	81,578	36,233	73,834	0	0	191,645
	P0001142	W4 Waiau 4 Blowoff Tank	57,382	47,982	73,887	0	0	179,251
	P0001167	Waiau-Ewa Nui Fiber Optic Replace	384,540	1,089,999	456,119	0	0	1,930,658
	P0001282	Waiau-Steel Mill 46kv Line	0	0	155,000	289,000	289,000	733,000
	P0001334	W10 Inlet Air Filtration	63,986	27,391	1,566,103	0	0	1,657,480
	P0001361	Kapolei Business Park 138kV	45,959	9,202	273,657	285,618	0	614,436
	P0001392	W0 WWTF Filter Press	67,905	281,955	1,537,674	0	0	1,887,534
	P0001393	W0 WWTF Misc Upgrades	0	0	609,888	0	0	609,888
	P0001400	Ewa Nui-CIP Fiber Repl	38,290	261,873	316,812	0	0	616,975
	P0001441	K2 FWH Turb. Wtr. Ind. Pvt.	0	99,735	539,379	0	0	639,114
	P0001442	K5/K6 Diesel Tank Expansion	0	0	180,000	0	0	180,000
	P0001444	K6 Seal Air Dmpr Drv Replace	0	88,697	56,028	0	0	144,725
	P0001473	K6 Voltage Regulator Upgrade	0	335,332	228,443	0	0	563,775
	P0001500	Kahe 138kV Bkr 133 Replace	10,652	205,244	115,258	0	0	331,154
	P0001502	North South Rd Ph1B UG Conv	33,186	40,280	255,383	212,550	0	541,399
	P0001503	Kahe 138 kV Bkr 172 Replace	3,134	85,506	233,848	0	0	322,488
	P0001513	Waiau 46kV Bkr 4499 Replace	0	47,368	155,109	0	0	202,477
	P0001533	W8 SW/Fire Pump Replacement	1,674	384	161,316	0	0	163,374
	P0001534	BPT FO Tk131 FloorRenovation	706,601	3,496,000	91,000	0	0	4,293,601
	P0001536	W3&4 Phase Shift Transformer	0	13,519	218,817	0	0	232,336
	P0001541	Pali Ckt Tree Wire Install	0	0	533,000	0	0	533,000
	P0001547	Ward ITS Generator Repl	0	0	361,294	0	0	361,294
	P0001549	School-Iwilei 138kV SW Repl	0	0	108,985	0	0	108,985
	P0001553	Halawa-Iwilei Shield Wire	0	41,663	858,529	0	0	900,192
	P0001560	Waiakamilo Tsf #2 Replace	0	0	721,361	0	0	721,361
	P0001561	Kamokila #4 12 kV Line Ext	0	305,278	65,865	0	0	371,143
	P0001562	Archer Bkr Rupture Disk Inst	0	3,202	845,921	0	0	849,123
	P0001565	EMESA Implementation	0	0	11,574	0	0	11,574
	P0001572	Bougainville Subd SV4613	0	55,413	100,287	0	0	155,700
	P0001573	K1 BFP 12 Motor Replacement	0	0	236,629	0	0	236,629
	P0001574	K2 Repl H2 Purity Meter	0	19,019	57,151	0	0	76,170
	P0001575	K1 Repl H2 Purity Meter	0	9,056	67,062	0	0	76,118
	P0001577	K3 Biofuel Co-Firing	0	0	2,156,863	0	0	2,156,863
	P9262000	Malae-Koolau MW Replace	0	153,195	571,519	0	0	724,714
Y00017	P0000192	Waikiki Rehabilitation Project 3	168,176	902,112	608,625	0	0	1,678,913
Y00064	P0001169	CIP0 Kahe RO Water Project	580,238	1,300,881	(707,663)	0	0	1,173,456
Y00069	P0001206	K2 Turbine Drains	1,953	0	284,608	0	0	286,561
Y00073	P0001251	K3 Condensate Pump	0	0	334,081	0	0	334,081

Totals may not add due to rounding

Hawaiian Electric Company, Inc.

2009 PLANT ADDITIONS - PROJECTS

<u>Grand</u> <u>parent</u>	<u>Project #</u>	<u>Project Title</u>	<u>Expenditures</u>					<u>Total</u>
			<u>Project</u> <u>to Date</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	
			<u>Recorded</u> <u>12/31/07</u>					
Y00073	P0001252	K4 Condensate Pump	0	0	334,081	0	0	334,081
Y00077	P0001287	Ward bldg 1/2 Atrium Roof	23,959	1,057	523,770	0	0	548,786
Y00083	P0000854	K1 Excitation System	11,752	264,710	976,390	698	0	1,253,550
Y00084	P0000301	K1 Kahe FWH 12 Replace	0	10,412	594,304	0	0	604,716
Y00084	P0000494	K1 Kahe FWH 11 Replace	0	11,066	593,353	0	0	604,419
Y00084	P0000861	K1 Annunciator Replacement	0	8,196	837,043	4,091	0	849,330
Y00084	P0000871	K1 Sootblower Controls	0	43,920	421,995	0	0	465,915
Y00085	P0000799	K2 Operator Console Upgrade	0	237,717	253,366	0	0	491,083
Y00085	P0000853	K2 Excitation System	25,722	299,993	984,648	0	0	1,310,363
Y00085	P0000873	K2 Sootblower Controls	258,831	103,230	410,824	0	0	772,885
Y00091	P0000809	K6 Annunciator Replacement	544,043	75,527	154,925	0	0	774,495
Y00104	P0001324	K1 UPS Panel Upgrade	0	1,332	73,624	0	0	74,956
Y00104	P0001329	K6 UPS Panel Upgrade	0	30,789	48,283	0	0	79,072
Y00104	P0001332	K2 UPS Panel Upgrade	0	22,861	49,366	0	0	72,227
Y00105	P0001347	N. Kahana Bridge Perm OH	0	0	165,555	0	0	165,555
Y00106	P0001350	Baseyards Priority 2 - 2009	0	0	160,706	0	0	160,706
Y00107	P0001354	MEVA Priority 1 - 2009	0	0	108,812	0	0	108,812
Y00112	P0001415	Archer Breaker 6050 Repl	78,397	26,205	468,872	0	0	573,474
Y00115	P0001482	Mikilua Sub T&D Work	0	20,126	309,279	0	0	329,405
Y00115	P0001483	Mikilua Sub Tsf #3 Work	17,569	78,626	1,674,174	5,304	0	1,775,673
Y00119	P0001504	Kaloi Sub Land Transf	0	0	2,174,000	0	0	2,174,000
Y00119	P0001510	Ewa Nui T&D	23,326	(23,326)	0	0	0	0
Y00120	P0001010	HR Suite Phase 1	0	190,508	181,072	0	0	371,580
Y00121	P0001520	Barbers Pt TF Tsf #2 Install	72,721	393,003	1,291,274	0	0	1,756,998
Y00121	P0001522	Barbers Pt TF 12kV Ckt	622	5,031	324,545	0	0	330,198
Y00123	P0001563	Kamokila Tsf #3 Install	0	1,332,831	365,241	0	0	1,698,072
Y00123	P0001564	Kamokila SS Tsf #3 Circuiting	0	171,842	534,806	0	0	706,648
Y00124	P0001568	Ocean Pointe Tsf 2 Circuits	0	9,626	139,359	0	0	148,985
Y00124	P0001569	Ocean Pointe SS Tsf 2	0	15,135	1,298,247	0	0	1,313,382
Y49000	P0001050	CIP1 AES-CEIP#2 Trans. Line	224,217	4,471,070	496,862	0	0	5,192,149
Y49000	P0001051	CIP1 AES Substation Add	359,890	2,433,173	317,034	0	0	3,110,097
Y49000	P0001134	CIP1 Unit Addition-Fiber	10,987	261,325	230,739	0	0	503,051
Y49000	P0001136	CIP1 Unit Addition-Kahe Bkrs	85,613	1,235,051	434,979	0	0	1,755,643
Y49000	P4900000	CIP1 Unit 1 Addition	19,559,672	85,729,997	37,064,016	50,000	0	142,403,685
			<u>24,919,683</u>	<u>107,046,741</u>	<u>73,493,875</u>	<u>1,872,433</u>	<u>289,000</u>	<u>207,621,732</u>

2009 Stragglng Costs:Pre-2008 (HECO-WP-1701, page 7)	1,974
2009 Stragglng Costs:2008 Plt Adds (HECO-WP-1701, page 3)	1,077,705
2010 Plant Additions	-1,872,433
2011 Plant Additions	-289,000

Total Projects

\$206,539,978

To HECO-1701, page 1

Hawaiian Electric Company, Inc.

2008 and 2009 PLANT ADDITIONS

Stragglng Costs for Projects with Plant Addition Dates Pre-2008

<u>Grand</u>			<u>Expenditures</u>	<u>Expenditures</u>
<u>parent</u>	<u>Project #</u>	<u>Project Title</u>	<u>2008</u>	<u>2009</u>
	P0000062	Ce-Terminating Trust Esmnts	56,573	0
	P0000474	WSC Privatization	2,420	0
	P0000485	W3 Waiiau FWH 35 Replace	4,731	0
	P0000507	Kam Hy Resurf Waiahole-Cr Ln	23,000	0
	P0000542	Ward Disaster Generator	74,852	0
	P0000598	Kahekili Hy Ltg OH/UG Conv	25,273	0
	P0000640	H0 Honolulu Demin Upgrade	49,635	0
	P0000664	W3 UPS Installation	1,081	0
	P0000690	W5 Annunciator Upgrade	10,055	0
	P0000764	H-1 Widening Waimalu Reloc	183,000	0
	P0000803	W3 Operator Console Upgrade	1,081	0
	P0000813	K3&4 Control Room AC	362,615	0
	P0000828	Outage Management System	84	0
	P0000983	W5 Waiiau 5/6 Elevator Upgrd	513	0
	P0001133	W8 Waiiau FWH 83 Replace	57,943	0
	P0001144	Helemano - Substation DG	135,645	0
	P0001145	Ewa Nui - Substation DG	37,894	0
	P0001146	Iwilei Tank Farm DG	18,147	0
	P0001152	W0 Waiiau Shft Supervisor Off	20,654	0
	P0001158	Waiiau-Koolau #1 Line Repl	7,160	0
	P0001161	W0 Waiiau Solar FS Upgrade	6,761	0
	P0001166	Shared UNIX Infrastructure	16,979	0
	P0001284	W8 Waiiau FWH 84 Replace	4,559	0
	P0001301	Kalaeloa Pole Yard DG	12,760	0
	P0001336	Camp Catlin Tsf Upgrade	182	0
	P0001339	Halawa Quarry Tsf Repl	316	0
	P0001385	Fort St Mall-Campbell Ducts	1,968	0
	P0001398	Mamala Phase 3	58	0
	P0001412	Kahe 138KV Bkr 169 Replace	2,729	0
	P0001526	H9 BFP 93 Motor Replacement	2,413	0
	P0001530	W4 #41 Scrn Wash Pmp Replmnt	477	0
	P8470000	Koolau/Tripler MWR Repl	121,493	0
Y00023	P0001117	Ward A/C Sys Op & Bsment	1,236	0
Y00030	P0000713	Dispatch Center Building	22,915	0
Y00030	P0000715	Dispatch Boards	16,963	0
Y00030	P0000716	Telecomm Extensions	12,676	0
Y00030	P0000717	EMS Replacement	40,614	0
Y00030	P0000793	Field Service/Meter Reading	2,497	0
Y00030	P0000794	Call Center-1st floor	10,486	0
Y00039	P0000833	Mamala Substation	13,371	0
Y00039	P0000834	46kV Fdrs to Mamala Sub	785	0
Y00040	P0000839	Comm. Links FI-Maklpa	258,244	0

Totals may not add due to rounding.

Hawaiian Electric Company, Inc.

2008 and 2009 PLANT ADDITIONS

Stragglng Costs for Projects with Plant Addition Dates Pre-2008

<u>Grand parent</u>	<u>Project #</u>	<u>Project Title</u>	<u>Expenditures</u>	<u>Expenditures</u>
			<u>2008</u>	<u>2009</u>
Y00051	P0000804	W6 Operator Console Upgrade	1,081	0
Y00053	P0000299	W9 Compressor Wash	3,954	0
Y00053	P0000939	W9 Waiiau CT Separation	25,718	0
Y00063	P0001157	Honouliuli Reservoir 12kV Line	(758)	0
Y00066	P0001181	K3 Gen Protective Relay	12,044	0
Y00068	P0001203	W7 Hydrogen Gas Dryer	2,807	0
Y00072	P0001244	K3 Process Parameter Monitor	15,106	0
Y00075	P0001261	K3 Air Htr Rotor Stop Alarm	76	0
Y00081	P0000091	H9 Attemperator Block Valve	2,329	0
Y00081	P0000815	H9 Volt Reg/Exciter Replace	4,590	0
Y00083	P0000800	K1 Operator Console Upgrade	1,081	0
Y00083	P0000957	K1 MS Replacement	951	0
Y00086	P0000632	K3 Exciter/Regulator Upgrade	(41,709)	1,973
Y00086	P0000808	K3 Annunciator Replacement	30,218	0
Y00086	P0000827	K3 DCS Balance of Plant I/O	14,245	0
Y00086	P9539000	K3 Boiler Control Upgrade	37,100	1
Y00088	P9454000	K4 Boiler Control Upgrade	455	0
Y00093	P0000801	W4 Operator Console Upgrade	1,081	0
Y00093	P0000829	W4 Main Xfmr Replacement	1,081	0
Y00093	P8820000	W4 Exciter Upgrade	3,365	0
Y00097	P0000857	W7 Aux Transformer	1,350	0
Y00108	P0001356	Mamala Phase 2 - Mamala	(4,627)	0
Y00111	P0001394	AMI - Ocean Point	18,810	0
			<u>\$1,753,186</u>	<u>\$1,974</u>
			To HECO-WP-1701	
			page 3	page 5

Hawaiian Electric Company, Inc.

PLANT ADDITIONS - PROGRAMS

<u>Project #</u>	<u>Project Title</u>	<u>2008</u>	<u>2009</u>
P0000120	Corr (Inc Emg) OH Trsf Rpl	366,362	437,013
P0000121	Corr (Inc Emg) UG Trsf Rpl	462,358	493,218
P0000122	Cor (Inc Emg) Mis Cable Rpl	5,625,850	6,364,694
P0000123	Corr (Inc Emg) OH Dist Rpl	2,498,333	2,828,927
P0000124	Cor (Inc Emg) OH Subtrn Rpl	510,218	515,260
P0000500	Misc Office Furniture	227,775	198,269
P0000501	Misc Office Equipment	23,664	21,222
P0000502	Waiau Minor Gen Addns	34,971	74,552
P0000503	Ward Ave Minor Addns	150,381	162,628
P0000504	King St Minor Addns	67,847	84,532
P0000505	Other Minor Gen Plt Addns	81,521	170,459
P0000510	PROG Circ Wtr Temp Monitors	3,504	0
P0000652	Enterprise Computing	14,152	13,816
P0000653	Collaborative Communications	30,925	36,250
P0000692	CSD Technical Support Prgrm	268,340	92,685
P0000733	Trns Sub RTU Migration Pgm	195,311	430,305
P0001014	Security CCTV System	108,937	181,877
P0001309	Net Energy Metering	40,495	59,004
P0001529	Power Supply - Capital Tools	487,810	606,810
P1081000	ED Capitalized Tools & Equip	445,489	294,014
P1243000	PCs, Servers & Network	1,178,841	1,376,099
P1244000	Copiers/Faxes/Printers	46,400	44,212
P1250000	Vehicle Purchases	2,687,556	3,026,687
P1251000	Misc Tel Eqpt NT	11,600	11,053
P1370000	Distr R/W Purch (Blanket)	72,000	65,000
P1373000	46kv R/W Purch (blanket)	31,000	36,000
P1429000	PROG Misc Power Plant Addns	1,841,306	2,485,823
P1470000	Minor Trans Sub Addns	453,286	910,038
P1480000	Minor Dist Sub Addns	882,713	612,343
P1500000	Misc CM Fac-Op & Ctrl (TD)	491,434	238,950
P1505000	Other Misc Comm Fac SOD	210,940	215,688
P1510000	Misc OH Svc & Extn (CID)	1,222,078	1,165,524
P1580000	Minor OH Dist Addn (CID)	1,301,983	1,079,618
P1670000	P&I&Test Meters & Mtr Eq	894,884	894,458
P1680000	Tsf & Equip Pur (CID)	4,604,885	5,700,530
P1690000	Minor T&D Customer Programs	509,220	362,917
P1700000	Misc UG Svc & Extn (CID)	11,287,706	10,626,491
P1789000	Preventive OH Transf Repl	226,766	306,562
P1793000	Preventive UG Transf Repl	325,211	258,553
P1810000	Prev Misc Cable Failure Rpl	530,916	4,347,896
P1820000	Minor UG Addns (CID)	1,136,899	546,885
P1870000	PROG Power Station Misc	246,824	3,109,425
P1990000	Minor T&D System Programs	1,143,904	882,511
P3400000	Prev OH Dist Repl	1,892,844	3,152,026
P3401000	Prev OH Subtrans Repl	2,081,788	1,882,946

Totals may not add due to rounding

Hawaiian Electric Company, Inc.

PLANT ADDITIONS - PROGRAMS

<u>Project #</u>	<u>Project Title</u>	<u>2008</u>	<u>2009</u>
P3402000	Prev OH Trans Repl	715,294	833,600
P4150000	Monitoring Services	39,762	46,889
P9028000	Mobile Radio F1/F2 Replace	0	854,332
		<u>\$47,712,283</u>	<u>\$58,138,591</u>

To HECO-1701, page 1

Hawaiian Electric Company, Inc.
Contributions in Aid of Construction

	<u>2008</u>	<u>2009</u>	<u>Reference</u>
Cash CIAC:			
Customer Installations	\$ 3,445,832	\$ 3,541,523	HECO-WP-1706, page 2
Energy Delivery	<u>2,800,000</u>	<u>3,212,000</u>	HECO-WP-1706, page 3
	<u>\$ 6,245,832</u>	<u>\$ 6,753,523</u>	
In-Kind CIAC	<u>\$ 3,864,343</u>	<u>\$ 4,203,794</u>	HECO-WP-1706, page 4

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

PROJ #	DESCRIPTION	2008	2009
P1510	Minor OH	\$ 5,539	\$ 44,885
P1580	Misc OH Addn	\$ 79,551	\$ 83,276
P1700	Minor UG	\$ 3,202,403	\$ 3,334,193
P1820	Misc UG Addn	\$ 158,339	\$ 79,169
	Total	\$ 3,445,832	\$ 3,541,523

Totals may not add due to rounding.

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

CASH		(\$ Thousands)	2008	2009
Project#	Description		Estimate	Estimate
P0000507	Kam Hwy Resurf, Waiahole to Crchng Lion		862	0
P0000598	Kahekili Hwy Lighting Impvts		33	0
P0000575	Nimitz Hwy Rehab		71	0
P0000672	Kakaako Makai-Kewalo 25kV		0	456
P0000764	H1 Widening Waimalu Reloc		-41	0
P0001037	Puuloa Rd Widening, UG		387	0
P0001075	Kam Hwy Kokololio Bridge		231	0
P0001347	No. Kahana Bridge Replacement		0	212
P0001357	Kapolei Pkwy Ext OH to UG		77	0
P0001385	Fort St Mall - Campbell Ducts		43	0
P0001404	Kal Hwy at Makapuu 12kV UG		0	18
P0001502	North South Road Ph. UG Conv		0	232
P0001504	Kaloi Sub Land Transf		0	2,174
P0001525	Tesoro Electrical Upgrade		341	0
P0001557	Makakilo C&D Ph. 1 46kV UG		640	0
P0001566	Mamala Tsf Paralleling		66	0
P1690000	Minor T&D Customer Programs		90	120
	TOTALS		2,800	3,212

Totals may not add due to rounding.

Hawaiian Electric Company, Inc.
In-Kind CIAC

<u>Project #</u>	<u>Project</u>	<u>2008</u>	<u>2009</u>
P0000507	Kam Hwy resurfacing	23,000	0
P0000598	Kahekili Hy Ltg OH/UG Conv	25,273	0
P0000764	H-1 Widening Waimalu Reloc	183,000	0
P0001037	Puuloa Rd Widening - UG	104,386	0
P0001081	Auahi Street 12kV OH to UG	0	34,425
P0001342	Walmart Manana OH Relocation	12,059	0
P0001357	Kapolei Pkwy Ext. OH to UG	55,062	0
P0001404	Kal Hwy at Makapuu - 12kV UG	0	313,157
P0001525	Tesoro Electrical Upgrade	40,000	0
P0001557	Makakilo C&D Ph1 46kV UG	0	570,400
P1690000	Minor T&D Customer Programs	13,059	17,412
P1700000	Misc UG Svc & Extn (CID)	3,408,504	3,268,400
		<u>3,864,343</u>	<u>4,203,794</u>

Hawaiian Electric Company, Inc.
Customer Advances

	<u>Receipts</u>	<u>Refunds</u>	<u>Transfers</u>
2008:			
Forecast (from page 2)	\$ 110,000	\$ 125,000	\$ 20,000
Less: GET	\$ 4,950	\$ 5,625	\$ 900
Net	<u>\$ 105,050</u>	<u>\$ 119,375</u>	<u>\$ 19,100</u>
2009:			
Forecast (from page 2)	\$ 115,000	\$ 130,000	\$ 70,000
Less: GET	\$ 5,175	\$ 5,850	\$ 3,150
Net	<u>\$ 109,825</u>	<u>\$ 124,150</u>	<u>\$ 66,850</u>

Hawaiian Electric Company, Inc.
Customer Advances

	<u>Receipts</u>	<u>Refunds</u>	<u>Transfers</u>
2008:			
2003 Recorded	\$ 52,986	\$ 27,544	
2004 Recorded	\$ 128,459	\$ 4,130	
2005 Recorded	\$ 38,095	\$ -	
2006 Recorded	\$ 66,595	\$ 575,100	
2007 Recorded	\$ 256,198	\$ -	
Net	<u>\$ 542,333</u>	<u>\$ 606,774</u>	
2003-2007 Five-Year Average Escalation Factor	\$ 108,467 (b)	\$ 121,355 (a)	
	<u>102.50%</u>		
	\$ 111,178		
2008 Receipts - Rounded *	110,000	110,000	
2003-2007 Refunds/Receipts Ratio (a)/(b)		<u>111.9%</u>	
		\$ 123,070	
2008 Refunds - Rounded		125,000	
1998 Customer Advances balance (adjusted for 2008 estimated refunds)			\$ 19,836
Transfer to CIAC Factor			<u>90%</u>
			\$ 17,852
2008 Transfers - Rounded			20,000
2009:			
2008 Refund Estimate	\$ 111,178		
Escalation Factor	<u>102.50%</u>		
2009 Receipts Estimate	\$ 113,958		
2009 Receipts - Rounded	115,000	115,000	
2003-2007 Refunds/Receipts Ratio (a)/(b)		<u>111.9%</u>	
		\$ 128,665	
2009 Refunds - Rounded		130,000	
1999 Customer Advances balance (adjusted for 2008-09 estimated refunds)			\$ 85,065
Transfer to CIAC Factor			<u>80%</u>
			\$ 68,052
2009 Transfers - Rounded			70,000

2009 Real GDP Consensus Forecast Starts Out At 2.7%

JANUARY 2008 Forecast For 2009 SOURCE:	Percent Change 2009 From 2008 (Year-Over-Year)									Average For 2009			Total Units-2009 -		-2009-
	1 Real GDP (Chained) (2000 \$)	2 GDP Price Index	3 Nominal GDP (Cur. \$)	4 Consumer Price Index	5 Indust. Prod. (Total)	6 Dis. Pers. Income (2000 \$)	7 Personal Cons. Exp (2000 \$)	8 Non-Res. Fix. Inv. (2000 \$)	9 Corp. Profits (Cur. \$)	10 Treas. Bills 3-mo.	11 Treas. Notes 10-Year	12 Unempl. Rate (Civ.)	13 Housing Starts (Mil.)	14 Auto & Light Truck Sales (Mil.)	15 Net Exports (2000 \$)
Moody's Economy.com	3.4 H	2.1	5.5	1.8	1.8	4.0 H	2.2	3.9	7.7	4.7	5.4	5.0	1.38	15.9	-491.4
ClearView Economics*	3.3	2.0	5.3	2.8	3.4	3.1	2.8	5.3	5.4	4.1	4.6	4.4 L	1.19	16.2	-533.0
DuPont***	3.3	2.0	5.3	2.0	3.2	2.8	2.7	5.5	6.0	4.8	5.5	4.9	1.35	16.6	-518.0
Bank of America*	3.2	2.3	5.5	2.1	3.3	2.8	2.8	4.4	6.0	3.9	5.0	5.0	1.28	16.6	-448.0
Eaton Corporation	3.2	2.0	5.2	1.8	4.8 H	3.9	2.5	6.2 H	5.1	3.5	4.5	4.9	1.28	16.5	-487.4
J P MorganChase	3.1	2.4	5.6	2.3	3.4	3.3	2.7	3.7	7.4	na	na	4.6	1.48	16.3	-504.4
Moody's Investors Service	3.1	2.3	5.4	2.7	3.5	2.8	2.6	5.0	5.2	4.5	4.8	4.6	1.14	16.4	-470.2
RBS Greenwich Capital	3.0	2.5	5.6	2.8	3.5	3.4	2.9	5.2	8.0	4.6	4.9	4.5	1.50	16.2	-530.0
Swiss Re	3.0	0.7 L	3.7	1.3 L	2.9	3.0	2.5	4.6	5.2	3.9	4.7	5.1	1.13	15.9	-483.0
Argus Research Corp.	2.9	3.5 H	6.5 H	3.4 H	2.5	3.0	2.5	5.7	7.5	3.1	4.3	5.1	1.20	16.5	-538.5
Wells Capital Management	2.9	2.7	5.6	2.7	3.4	3.3	2.3	3.8	6.9	4.0	4.7	4.6	1.46	16.3	-588.0 L
Barclays Capital	2.9	2.4	5.4	2.5	3.1	3.5	2.5	4.2	2.7	4.3	5.6 H	4.5	1.15	16.1	-457.0
J.W. Coons Advisors	2.9	2.3	5.3	2.3	2.3	2.7	2.7	3.2	6.9	3.3	4.7	5.0	1.25	16.2	-491.0
Macroeconomic Advisers, LLC**	2.9	2.2	5.1	2.0	3.1	3.6	2.5	4.2	2.6	4.3	5.0	4.9	1.22	16.0	-506.4
Mesirow Financial	2.9	2.2	5.1	2.0	3.1	3.6	2.5	3.9	2.7	4.3	5.0	5.0	1.21	16.3	-502.8
National Assn. of Realtors	2.9	2.2	5.1	2.3	3.4	3.4	2.6	4.6	3.0	4.1	4.8	4.9	1.18	16.7	-492.0
General Motors Corporation	2.9	2.1	5.0	2.3	3.1	3.6	2.5	3.9	2.8	4.2	5.1	5.1	1.21	na	-497.2
UCLA Business Forecasting Proj.*	2.9	1.7	4.6	1.6	2.6	3.3	2.7	3.4	3.5	3.6	4.7	5.0	1.21	16.2	-431.9
Chrysler	2.9	1.7	4.6	2.1	3.6	3.2	2.5	3.7	5.6	4.2	5.1	5.0	1.13	na	-431.0
Wachovia	2.8	2.3	5.1	2.9	3.3	3.2	2.1	4.4	5.9	4.6	4.9	4.8	1.22	16.4	-465.1
Nomura Securities	2.8	2.2	5.1	2.5	1.8	3.1	3.0	4.7	1.7	3.4	4.6	4.9	1.11	16.5	-489.1
Wayne Hummer Investments LLC*	2.8	2.2	5.0	2.3	3.2	3.1	2.7	5.0	5.2	3.8	5.0	4.8	1.25	16.1	-434.0
Fannie Mae	2.8	2.1	4.9	2.0	2.5	3.3	2.3	4.5	4.1	3.4	4.4	5.1	1.22	na	-500.7
National City Corporation	2.8	1.9	4.7	1.8	2.7	3.5	2.9	3.2	-0.2	4.2	4.9	4.7	1.49	16.3	-477.5
Stanford Washington Research Group*	2.7	2.3	5.0	2.2	3.1	3.2	2.2	4.4	4.1	4.0	4.4	5.0	1.15	15.9	-490.0
Naroff Economic Advisors	2.7	2.3	5.0	2.5	2.9	3.2	3.1 H	2.9	1.9	3.4	5.0	5.0	1.42	16.4	-460.0
National Assn. of Home Builders	2.7	2.2	4.9	2.1	2.0	3.1	2.2	4.0	4.5	3.9	4.6	5.0	1.19	16.0	-505.0
Conference Board*	2.7	2.0	4.8	3.0	3.4	3.8	2.8	2.7	-1.0	4.9 H	4.9	4.5	1.26	16.3	-446.3
Morgan Stanley	2.7	1.9	4.6	2.4	4.1	3.4	2.3	1.7	8.2 H	4.3	4.9	5.4	0.96	15.4	-405.8
Global Insight	2.7	1.7	4.4	1.6	2.6	3.1	2.5	2.5	2.4	3.8	4.7	5.1	1.31	16.0	-434.5
Economist Intelligence Unit	2.6	2.7	5.3	2.2	2.4	2.5	2.1	4.8	na	3.5	4.6	5.3	1.20	16.0	-466.0
BMO Capital Markets	2.6	1.9	4.6	2.2	3.2	3.0	2.4	3.2	4.8	3.7	4.8	5.1	1.15	15.7	-494.0
Georgia State University*	2.6	1.9	4.5	1.5	2.0	3.6	2.5	5.2	5.0	3.8	4.8	5.1	1.31	15.6	-485.5
Comerica Bank*	2.6	1.9	4.5	2.0	2.9	2.6	2.4	4.5	7.0	3.8	4.5	5.1	1.18	16.2	-465.0
Turning Points (Micrometrics)	2.6	1.8	4.4	3.3	2.7	2.7	2.3	3.7	-1.8	3.6	4.8	5.0	1.19	16.8 H	-483.0
Standard & Poors Corp.*	2.6	1.6	4.3	1.6	2.6	2.9	2.4	2.4	0.9	3.5	5.1	5.1	1.29	16.0	-425.2
Action Economics	2.5	2.9	4.9	3.4 H	2.0	2.3 L	2.3	3.6	1.8	3.8	4.5	4.8	1.24	16.0	-472.0
UBS Warburg	2.5	1.8	4.3	1.8	2.3	2.7	2.4	2.1	na	3.5	4.5	5.2	1.18	na	-498.0
FedEx Corporation	2.3	2.6	4.9	2.8	2.7	2.9	2.3	3.4	2.3	4.0	5.0	5.6	1.67 H	16.6	-552.5
Inforum - Univ. of Maryland	2.3	2.1	4.5	2.5	2.1	2.8	2.4	3.2	4.5	4.3	5.2	5.3	1.16	16.1	-499.0
Econoclast	2.2	1.7	3.9	2.0	3.0	2.6	2.2	3.2	4.8	3.7	4.7	5.1	1.20	16.0	-475.0
Goldman Sachs & Co.	2.2	1.7	3.9	1.9	2.3	3.5	2.0	0.2	-0.8	2.9	4.0	5.7	0.75 L	15.8	-341.8 H
Lehman Brothers	2.0	2.0	4.0	1.8	1.5	2.3 L	1.3 L	2.3	3.6	3.2	4.3	5.4	1.13	16.0	-457.0
Kellner Economic Advisers	2.0	1.8	3.8	2.4	2.0	2.4	2.0	3.0	5.0	3.8	4.5	5.0	1.00	15.0 L	-400.0
SOM Economics, Inc.	0.9 L	2.7	3.5 L	2.7	-1.5 L	2.4	1.6	-4.5 L	-4.0 L	2.7 L	3.7 L	5.7 H	1.34	15.6	-490.0
2009 Consensus: January Avg.	2.7	2.1	4.8	2.3	2.8	3.1	2.4	3.7	4.0	3.9	4.8	5.0	1.23	16.1	-478.1
Top 10 Avg.	3.2	2.6	5.6	2.9	3.7	3.7	2.8	5.3	7.2	4.5	5.2	5.4	1.44	16.6	-419.9
Bottom 10 Avg.	2.2	1.6	4.0	1.7	1.6	2.6	2.0	1.5	0.1	3.2	4.3	4.6	1.07	15.7	-527.9
December Avg.	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Number Of Forecasts Changed From A Month Ago:															
Down	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Same	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Up	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
January Median	2.8	2.1	4.9	2.2	2.9	3.1	2.5	3.9	4.5	3.9	4.8	5.0	1.21	16.2	-485.5
January Diffusion Index	na %	na %	na %	na %	na %	na %	na %	na %	na %	na %	na %	na %	na %	na %	na %

*Former winner of annual Lawrence R. Klein Award for Blue Chip Forecast Accuracy. **Denotes two-time winner. ***Denotes three-time winner.

BASIC DATA SOURCES: ¹Gross Domestic Product (GDP), chained 2000\$, National Income and Product Accounts (NIPA), Bureau of Economic Analysis (BEA); ²GDP Chained Price Index, NIPA, BEA; ³GDP, current dollars, NIPA, BEA; ⁴Consumer Price Index-All Urban Consumers, Bureau of Labor Statistics (BLS); ⁵Total Industrial Production, Federal Reserve Board (FRB); ⁶Disposable Personal Income, 2000\$, NIPA, BEA; ⁷Personal Consumption Expenditures, 2000\$, NIPA, BEA; ⁸Non-residential Fixed Investment, 2000\$, NIPA, BEA; ⁹Corporate Profits Before Taxes, current dollars, with inventory valuation and capital consumption adjustments, NIPA, BEA; ¹⁰Treasury Bill Rate, 3-month, secondary market, bank discount basis, FRB; ¹¹Treasury note yield, 10-year, constant maturity basis, FRB; ¹²Unemployment Rate, civilian work force, BLS; ¹³Housing Starts, Bureau of Census; ¹⁴Total U.S. Auto and Light Truck Sales (includes imports), BEA; ¹⁵Net Exports of Goods and Services, 2000\$, NIPA, BEA.

2009 Real GDP Consensus Forecast Drops To 2.0%

MAY 2008 Forecast For 2009 SOURCE:	Percent Change 2009 From 2008 (Year-Over-Year)									Average For 2009			Total Units-2009 -		-2009- 15 Net Exports (2000 \$)	
	1 Real GDP (Chained) (2000 \$)	2 GDP Price Index	3 Nominal GDP (Cur. \$)	4 Consumer Price Index	5 Indust. Prod. (Total)	6 Dis. Pers. Income (2000 \$)	7 Personal Cons. Exp (2000 \$)	8 Non-Res. Fix. Inv. (2000 \$)	9 Corp. Profits (Cur. \$)	10 Treas. Bills 3-mo.	11 Treas. Notes 10-Year	12 Unempl. Rate (Civ.)	13 Housing Starts (Mil.)	14 Auto & Light Truck Sales (Mil.)		
Eaton Corporation	3.3 H	2.5	5.9 H	2.5	4.9 H	4.2 H	2.8 H	6.5 H	8.1	2.4	4.0	5.1	1.15	16.6	H	-496.9
ClearView Economics*	3.1	2.5	5.6	2.7	3.3	2.8	2.7	5.3	4.3	2.5	4.3	4.8 L	1.05	16.1		-501.0
Moody's Economy.com	3.0	1.6	4.7	2.1	1.8	2.6	2.0	3.5	5.3	1.8	5.4 H	6.0	1.13	15.8		-464.9
Macroeconomic Advisers, LLC**	2.8	2.4	5.3	2.5	3.3	1.9	1.9	4.3	5.9	2.6	4.4	5.3	1.11	15.5		-396.2
Barclays Capital	2.7	2.4	5.2	2.7	2.8	1.3	2.4	2.1	2.7	2.6	4.6	5.0	1.13	15.9		-418.0
General Motors Corporation	2.7	2.3	5.2	2.0	3.5	1.5	1.9	4.3	5.8	2.4	4.3	5.7	1.07	na		-376.4
Chrysler	2.7	2.3	5.1	3.6	2.9	2.8	2.1	3.0	5.6	3.6	4.4	5.0	0.96	na		-405.0
Nomura Securities	2.5	2.6	5.2	2.3	1.8	1.2	1.9	3.2	7.9	2.1	4.4	5.6	1.05	15.3		-397.6
Econoclast	2.5	2.2	4.7	2.4	2.0	2.0	1.9	1.5	4.9	2.2	4.2	5.4	1.20	15.6		-425.0
U.S. Chamber of Commerce	2.5	2.0	4.5	3.0	2.3	2.7	2.1	4.9	3.5	2.2	4.2	5.3	1.01	na		-518.1 L
Argus Research Corp.	2.4	3.1 H	5.5	3.8 H	2.1	2.5	2.1	3.2	6.5	1.9	4.1	5.2	1.05	15.5		-469.8
National City Corporation	2.4	2.3	4.7	2.1	2.5	2.4	2.5	1.3	1.1	3.1	4.8	5.1	1.43 H	16.3		-441.3
Wayne Hummer Investments LLC*	2.4	2.2	4.6	2.5	2.4	2.2	2.0	4.5	4.0	2.4	4.4	5.3	1.17	15.6		-425.0
Moody's Analytics	2.4	2.1	4.6	2.6	2.8	2.0	1.9	2.0	5.0	2.3	4.1	5.2	1.02	15.3		-399.0
Action Economics	2.3	2.8	5.1	2.8	2.4	4.0	1.7	-0.6	7.7	3.0	4.3	5.3	1.12	15.4		-383.0
Wells Capital Management	2.3	2.5	4.8	2.6	2.7	2.9	2.7	2.4	6.5	2.4	4.7	5.3	1.06	16.3		-490.0
Inforum - Univ. of Maryland	2.3	2.5	4.8	2.9	1.9	2.4	1.8	2.5	4.3	2.6	4.8	5.4	0.95	15.4		-430.0
Stanford Washington Research Group*	2.3	2.4	4.8	2.5	2.6	2.4	1.5	1.5	0.3	2.4	4.2	5.6	0.95	15.1		-358.0
Naroff Economic Advisers	2.3	2.3	4.7	2.5	2.8	2.9	2.3	2.4	4.8	3.9 H	4.9	5.0	1.22	16.2		-440.0
Mesirow Financial	2.3	2.3	4.7	2.4	2.4	1.4	1.7	3.4	5.0	2.3	4.4	5.8	1.04	15.4		-408.6
National Assn. of Realtors	2.3	1.8	4.1	2.2	2.2	3.0	1.9	3.6	6.0	2.7	4.3	5.5	0.97	15.5		-429.0
RBS Greenwich Capital	2.1	2.5	4.6	2.8	2.8	2.0	2.0	3.7	7.0	2.7	4.7	5.4	1.43	15.7		-513.0
Turning Points (Micrometrics)	2.1	2.4	4.5	3.7	1.0	2.4	2.1	4.1	6.1	2.3	4.2	5.5	0.92	16.1		-444.6
FedEx Corporation	2.0	2.6	4.6	3.3	2.0	2.5	1.9	2.2	0.3	3.6	5.0	5.6	1.25	16.0		-460.0
National Assn. of Home Builders	2.0	2.2	4.3	2.3	2.0	2.2	1.8	1.5	4.5	1.7	4.1	5.6	0.93	15.6		-440.0
J P MorganChase	2.0	2.2	4.3	2.0	2.0	2.4	1.9	-1.6	3.2	na	na	5.7	0.63 L	16.1		-438.1
Swiss Re	2.0	2.1	4.2	2.2	1.5	2.0	1.7	-1.8	4.5	2.8	4.1	6.1	1.11	15.3		-429.0
UBS Warburg	2.0	1.8	3.9	1.6	1.4	2.0	2.1	-0.6	na	1.7	4.2	6.0	0.98	na		-454.0
UCLA Business Forecasting Proj.*	2.0	1.7	3.7	2.3	1.7	1.6	2.0	-0.1	20.0 H	2.2	3.9	5.6	1.21	15.7		-447.4
Ford Motor Company*	2.0	1.5 L	3.4	2.0	3.6	1.8	1.3	-0.3	na	2.3	3.6	6.6 H	0.90	na		-348.0 H
Fannie Mae	1.9	2.9	4.8	3.3	3.2	1.2	1.6	3.3	9.0	2.4	4.2	5.5	0.92	na		-435.3
Wachovia	1.9	2.6	4.6	2.6	2.0	1.3	1.9	-4.0	5.9	2.6	4.4	5.9	1.10	15.7		-400.4
Bank of America*	1.9	2.2	4.1	2.3	1.8	1.9	1.9	-1.6	6.0	1.9	3.9	5.8	0.97	16.1		-420.0
Conference Board*	1.8	2.2	4.1	3.5	3.1	1.6	1.9	0.2	1.6	1.9	3.8	5.4	1.12	15.4		-417.0
BMO Capital Markets	1.8	2.1	4.0	2.2	2.5	1.7	1.6	0.0	2.7	1.9	3.9	5.8	0.87	15.5		-449.0
Comerica Bank*	1.8	1.8	3.6	2.0	-0.1	2.2	1.7	1.0	19.6	2.6	4.7	5.5	1.02	16.2		-477.5
Kellner Economic Advisers	1.7	2.4	4.1	2.8	1.9	2.1	1.5	1.1	1.0	2.3	4.1	5.3	0.85	14.8		-430.0
DuPont***	1.7	2.1	3.8	2.5	2.4	1.6	1.9	0.3	4.5	2.3	4.6	5.4	1.08	15.3		-460.0
Global Insight	1.7	2.0	3.8	1.6	1.9	1.2	1.4	-0.9	2.7	2.0	3.7	5.8	1.13	15.2		-353.5
Morgan Stanley	1.4	2.0	3.4	2.8	1.9	1.3	1.5	0.8	5.8	2.5	4.7	5.7	0.80	15.1		-472.5
J.W. Coons Advisors	1.3	2.8	3.9	2.6	-1.3 L	1.6	2.0	-2.8	2.9	2.4	4.4	5.9	1.10	15.0		-467.0
SOM Economics, Inc.	1.2	2.6	3.9	2.5	-0.8	2.3	1.6	-4.5 L	-1.0 L	1.7	3.8	6.3	1.14	14.9		-461.0
Bear, Stearns & Co., Inc.	1.1	3.0	4.1	3.1	0.6	0.6	0.7	-0.8	1.0	1.9	4.8	5.9	1.00	15.5		-427.1
Goldman Sachs & Co.	1.0	2.2	3.2	2.3	1.9	1.3	0.6	-3.2	-0.6	2.2	3.9	6.2	0.77	15.0		-353.1
Georgia State University*	1.0	1.9	2.9	1.4 L	0.6	0.8	0.8	-0.6	16.6	2.0	4.2	6.2	1.19	14.3 L		-373.9
Economist Intelligence Unit	0.9	2.3	3.2	2.1	2.4	2.1	0.6	0.5	na	2.0	3.9	5.8	1.10	14.8		-442.0
Lehman Brothers	0.5 L	1.9	2.4 L	1.5	-0.5	-0.3 L	0.1 L	-2.4	3.3	1.3	4.0	6.2	1.06	15.2		-432.4
Merrill Lynch Economics	0.5 L	1.7	2.5	1.5	0.5	0.9	0.2	-3.5	na	1.1 L	2.9 L	6.3	0.79	14.5		-354.1
2009 Consensus: MAY Avg.	2.0	2.3	4.3	2.5	2.0	2.0	1.8	1.1	5.3	2.3	4.3	5.6	1.05	15.5		-430.7
Top 10 Avg.	2.8	2.7	5.3	3.3	3.3	2.9	2.4	4.5	10.7	3.0	4.9	6.2	1.24	16.2		-371.0
Bottom 10 Avg.	1.1	1.8	3.2	1.8	0.3	1.0	0.9	-2.6	0.9	1.7	3.7	5.1	0.84	14.9		-487.1
April Avg.	2.2	2.2	4.5	2.4	2.3	2.1	1.9	1.4	5.2	2.4	4.2	5.6	1.10	15.7		-430.7
Number Of Forecasts Changed From A Month Ago:																
Down	30	9	23	7	23	23	23	26	10	17	8	8	24	23		16
Same	15	24	18	18	17	16	18	11	22	17	24	22	16	16		9
Up	3	15	7	23	8	9	7	11	12	13	15	18	8	3		23
May Median	2.0	2.3	4.5	2.5	2.1	2.0	1.9	1.4	4.9	2.3	4.2	5.6	1.06	15.5		-431.2
May Diffusion Index	22 %	56 %	33 %	67 %	34 %	35 %	33 %	34 %	52 %	46 %	57 %	60 %	33 %	26 %		57 %

*Former winner of annual Lawrence R. Klein Award for Blue Chip Forecast Accuracy. **Denotes two-time winner. ***Denotes three-time winner.

BASIC DATA SOURCES: ¹Gross Domestic Product (GDP), chained 2000\$, National Income and Product Accounts (NIPA), Bureau of Economic Analysis (BEA); ²GDP Chained Price Index, NIPA, BEA; ³GDP, current dollars, NIPA, BEA; ⁴Consumer Price Index-All Urban Consumers, Bureau of Labor Statistics (BLS); ⁵Total Industrial Production, Federal Reserve Board (FRB); ⁶Disposable Personal Income, 2000\$, NIPA, BEA; ⁷Personal Consumption Expenditures, 2000\$, NIPA, BEA; ⁸Non-residential Fixed Investment, 2000\$, NIPA, BEA; ⁹Corporate Profits Before Taxes, current dollars, with inventory valuation and capital consumption adjustments, NIPA, BEA; ¹⁰Treasury Bill Rate, 3-month, secondary market, bank discount basis, FRB; ¹¹Treasury note yield, 10-year, constant maturity basis, FRB; ¹²Unemployment Rate, civilian work force, BLS; ¹³Housing Starts, Bureau of Census; ¹⁴Total U.S. Auto and Light Truck Sales (includes imports), BEA; ¹⁵Net Exports of Goods and Services, 2000\$, NIPA, BEA.

Hawaiian Electric Company, Inc.
Net Cost of Plant in Service
CIP1 Generating Unit at Full Cost for Step Increase
(\$ in thousands)

	<u>Original Cost</u>	<u>Accum Deprec</u>	<u>Removal Reg Liability</u>	<u>Acc. Retire. Obligation</u>	<u>Net Plant In Service</u>	<u>HECO Reference</u>
Recorded Balances - 12/31/07	2,529,629	(995,190)	(179,249)	(79)	1,355,111	
ESTIMATED CHANGES in 2008:						
Net Plant Additions	110,220				110,220	1701
Cost of Removal			6,549		6,549	1409
Salvage			(260)		(260)	1409
Depreciation Accrual		(91,663)			(91,663)	1408
Deprec Accrual Reclass related to Cost of Removal ¹		24,398	(24,398)		0	WP-1404
Accretion of ARO			5	(5)	0	
ARO Retirements			(1)	1	0	
Retirements ²	(17,201)	17,201			0	1409
Estimated Balances - 12/31/08	2,622,648	(1,045,254)	(197,354)	(83)	1,379,957	
Annualized Plant Add - 1/1/09	152,919					1703
Estimated Balances - 1/1/09	2,775,567	(1,045,254)	(197,354)	(83)	1,532,876	
ESTIMATED CHANGES in 2009:						
Net Plant Additions	111,760				111,760	1701
Cost of Removal			6,782		6,782	1409
Salvage			(276)		(276)	1409
Depreciation Accrual		(93,089)			(93,089)	1408
Deprec Accrual Reclass related to Cost of Removal ¹		25,192	(25,192)		0	WP-1404
Accretion of ARO			5	(5)	0	
ARO Retirements			(1)	1	0	
Retirements ²	(16,027)	16,027			0	1409
Estimated Balances - 12/31/09	2,871,300	(1,097,124)	(216,036)	(87)	1,558,053	
AVERAGE 2009 BALANCE					<u>1,545,465</u>	

NOTE: Totals may not add exactly due to rounding.

¹ Represents the amount of removal costs that has been included in the depreciation expense that will be reclassified as a liability for financial statement purposes.

² Original cost of estimated retirements for the respective year.

Hawaiian Electric Company, Inc.
Net Cost of Plant in Service
Interim Increase (w/o CIP1 Generating Unit)
(\$ in thousands)

	<u>Original Cost</u>	<u>Accum Deprec</u>	<u>Removal Reg Liability</u>	<u>Acc. Retire. Obligation</u>	<u>Net Plant In Service</u>	<u>HECO Reference</u>
Recorded Balances - 12/31/07	2,529,629	(995,190)	(179,249)	(79)	1,355,111	
ESTIMATED CHANGES in 2008:						
Net Plant Additions	110,220				110,220	1701
Cost of Removal			6,549		6,549	1409
Salvage			(260)		(260)	1409
Depreciation Accrual		(91,663)			(91,663)	1408
Deprec Accrual Reclass related to Cost of Removal ¹		24,398	(24,398)		0	WP-1404
Accretion of ARO			5	(5)	0	
ARO Retirements			(1)	1	0	
Retirements ²	(17,201)	17,201			0	1409
Estimated Balances - 12/31/08	2,622,648	(1,045,254)	(197,354)	(83)	1,379,957	
ESTIMATED CHANGES in 2009:						
Net Plant Additions	111,760				111,760	1701
Cost of Removal			6,782		6,782	1409
Salvage			(276)		(276)	1409
Depreciation Accrual		(93,089)			(93,089)	1408
Deprec Accrual Reclass related to Cost of Removal ¹		25,192	(25,192)		0	WP-1404
Accretion of ARO			5	(5)	0	
ARO Retirements			(1)	1	0	
Retirements ²	(16,027)	16,027			0	1409
Estimated Balances - 12/31/09	2,718,382	(1,097,124)	(216,036)	(87)	1,405,135	
AVERAGE 2009 BALANCE					<u><u>1,392,546</u></u>	

NOTE: Totals may not add exactly due to rounding.

¹ Represents the amount of removal costs that has been included in the depreciation expense that will be reclassified as a liability for financial statement purposes.

² Original cost of estimated retirements for the respective year.

Hawaiian Electric Company, Inc.
Net Cost of Plant in Service
Base Case
(\$ in thousands)

	<u>Original Cost</u>	<u>Accum Deprec</u>	<u>Removal Reg Liability</u>	<u>Acc. Retire. Obligation</u>	<u>Net Plant In Service</u>	<u>HECO Reference</u>
Recorded Balances - 12/31/07	2,529,629	(995,190)	(179,249)	(79)	1,355,111	
ESTIMATED CHANGES in 2008:						
Net Plant Additions	110,220				110,220	1701
Cost of Removal			6,549		6,549	1409
Salvage			(260)		(260)	1409
Depreciation Accrual		(91,663)			(91,663)	1408
Deprec Accrual Reclass related to Cost of Removal ¹		24,398	(24,398)		0	WP-1404
Accretion of ARO			5	(5)	0	
ARO Retirements			(1)	1	0	
Retirements ²	(17,201)	17,201			0	1409
Estimated Balances - 12/31/08	2,622,648	(1,045,254)	(197,354)	(83)	1,379,957	
ESTIMATED CHANGES in 2009:						
Net Plant Additions	264,679				264,679	1701
Cost of Removal			6,782		6,782	1409
Salvage			(276)		(276)	1409
Depreciation Accrual		(93,089)			(93,089)	1408
Deprec Accrual Reclass related to Cost of Removal ¹		25,192	(25,192)		0	WP-1404
Accretion of ARO			5	(5)	0	
ARO Retirements			(1)	1	0	
Retirements ²	(16,027)	16,027			0	1409
Estimated Balances - 12/31/09	2,871,300	(1,097,124)	(216,036)	(87)	1,558,053	
AVERAGE 2009 BALANCE					<u>1,469,005</u>	

NOTE: Totals may not add exactly due to rounding.

¹ Represents the amount of removal costs that has been included in the depreciation expense that will be reclassified as a liability for financial statement purposes.

² Original cost of estimated retirements for the respective year.

Hawaiian Electric Company, Inc.
**Estimate of Materials & Supplies Inventory Adjustment
for Goods Received but not yet Paid for by the Company**
(\$ in thousands)

	Production Inventory	Transmission & Distribution Inventory	Total Materials & Supplies Inventory
2009 ADDITIONS to Materials & Supplies Inventory Account (WP-1803 p. 2)	\$ 7,584	\$ 11,248	\$ 18,832 (a)
Average Daily Additions to Inventory	\$ 20.78	\$ 30.82	\$ 51.59 (b)=(a)/365
Materials & Supplies Inventory Payment Lag Days (WP-1803 p. 3)	19.5	19.5	19.5 (c)
Estimate of Materials & Supplies Inventory Not Yet Paid For	<u>\$ 405</u>	<u>\$ 601</u>	<u>\$ 1,007</u> (b)*(c)

NOTE: Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.
Inventory Additions for 2009
(\$ in thousands)

<u>Production Inventory</u>		<u>HECO Reference</u>
Ending Balance 12/31/08	\$ 8,562	703
Plus: Additions	7,584	
Less: Issues	<u>(7,089)</u>	703
Ending Balance 12/31/09	<u>\$ 9,057</u>	703
<u>Transmission & Distribution Inventory</u>		
Ending Balance 12/31/08	\$ 7,843	803
Plus: Additions	11,248	
Less: Issues	<u>(10,511)</u>	803
Ending Balance 12/31/09	<u>\$ 8,580</u>	803

NOTE: Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.
Materials & Supplies Inventory Payment Lag
Random Sample of 20 Transactions

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-1803 & WP-1803 p.1-3 (Mat&Supp).
Source: Original documents; Info per Ellipse. As presented in HECO-WP-1703, Docket No. 2006-0386

VENDOR	CHECK NUMBER	DATE RECEIVED MATERIAL	PAYMENT DATE	(X1)	DATE CHECK CLEARED	(X2)	(WI)	INVOICE AMOUNT (\$)	(X1+X2) * WI
				PAYMENT LAG (DAYS)		CHECK CLEARING LAG (DAYS)	DOLLAR		DAYS
1 J H Baxter & Co.	58897	1/31/03	2/4/03	3.5	2/7/03	3.0		832	5,408
2 Industrial Hardware Hawaii, Inc.	578894	2/12/03	3/13/03	28.5	3/14/03	1.0		64	1,884
3 Gaspro Inc.	578525	2/13/03	3/6/03	20.5	3/7/03	1.0		1,041	22,372
4 Construction Materials	579197	2/19/03	3/20/03	28.5	3/27/03	7.0		383	13,587
5 Gaspro Inc.	579053	2/27/03	3/18/03	18.5	3/19/03	1.0		107	2,083
6 Ferguson Enterprises, Inc.	578887	3/4/03	3/13/03	8.5	3/20/03	7.0		10	152
7 Safety Systems Hawaii Inc.	582174	3/25/03	5/28/03	63.5	5/30/03	2.0		614	40,218
8 Newmark International Inc.	59227	3/25/03	3/27/03	1.5	4/1/03	5.0		19,136	124,384
9 Wesco Distribution, Inc.	59535	4/21/03	5/20/03	28.5	5/21/03	1.0		2,120	62,526
10 Graphic Controls Corp	583920	6/26/03	7/3/03	6.5	7/10/03	7.0		166	2,239
11 Graphic Controls Corp	586679	8/29/03	9/4/03	5.5	9/9/03	5.0		300	3,153
12 Wesco Distribution, Inc.	60409	9/9/03	10/7/03	27.5	10/9/03	2.0		10,660	314,470
13 GE Supply Hawaii, Inc.	60427	9/12/03	10/9/03	26.5	10/10/03	1.0		2,747	75,534
14 A.L. Kilgo Company, Inc.	588258	9/16/03	10/9/03	22.5	10/15/03	6.0		209	5,967
15 Gaspro Inc.	60672	10/16/03	11/18/03	32.5	11/19/03	1.0		2,955	98,999
16 Graybar Electric Co., Inc.	590340	10/29/03	11/28/03	29.5	12/2/03	4.0		2,912	97,552
17 A.L. Kilgo Company, Inc.	593557	12/4/03	2/12/04	69.5	2/18/04	6.0		48	3,603
18 Gerald P. Teixeira	591264	12/12/03	12/18/03	5.5	12/22/03	4.0		707	6,713
19 Gerald P. Teixeira	591264	12/12/03	12/18/03	5.5	12/22/03	4.0		294	2,794
20 Hach Company	591864	12/17/03	1/2/04	15.5	1/8/04	6.0		171	3,679
								<u>45,474</u>	<u>887,317</u>

Materials & Supplies Inventory Payment Lag

19.5 days

Hawaiian Electric Company, Inc.
Working Cash Study
Fuel Payment Lag

File:
Source:

S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.1-7 (F)
Per Supporting Worksheets.

	Test Year Expense (\$ 000's)	% of Total	Payment Lag Days	Check Clearing Lag Days	Total Payment Lag Days	Weighted Average
	Note A		HECO-WP-1806, p. 2-7	Note B		
Chevron	\$499,759	62%	19	0	19	12 days
Tesoro	\$307,669	38%	13	0	13	5 days
Imperium (Note D)	\$1,629	0%	31	0	31	days
	<u>\$ 809,058</u>	<u>100%</u>				

Fuel Payment Lag	17 days
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NOTE: Totals may not add exactly due to rounding.

Note A: Fuel oil expense for test year per HECO-401, page 2, line 5.

Note B: Chevron paid by automated clearinghouse (ACH) debit transfer. No check clearing lag.
Tesoro paid by wire transfer. No check clearing lag.
Assumed Imperium to be paid via wire. No check clearing lag.

Note D: Imperium Services, LLC will begin supplying biodiesel in 2009. See further discussion in Mr. Ron Cox's testimony at HECO T-5. Payment lag based on payment terms in fuel contract pending approval with Commission. Payment terms=net 30 days after invoice date. Forecast deliveries on business days. Invoices dated as of delivery date.

Hawaiian Electric Company, Inc.
Working Cash Study
Fuel Payment Lag

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workp
Source: Docket No. 2006-0386, HECO-WP-1706, pages 2-7.

Actual 2005 payments

CHEVRON	SERVICE PERIOD (Delivery dates)		AVE	PAYMENT DATE	END DATE	PAYMENT LAG (DAYS)
	BEGIN	END	SERVICE PERIOD (DAYS)		TO PAY DATE (DAYS)	
	12/22/04	12/22/04	0.5	1/20/2005	28.5	29.0
	1/10/05	1/10/05	0.5	1/31/05	20.5	21.0
	1/10/05	1/10/05	0.5	1/31/05	20.5	21.0
	1/10/05	1/10/05	0.5	1/31/05	20.5	21.0
	1/10/05	1/10/05	0.5	1/31/05	20.5	21.0
	1/20/05	1/20/05	0.5	2/10/05	20.5	21.0
	1/20/05	1/20/05	0.5	2/10/05	20.5	21.0
	1/17/05	1/17/05	0.5	2/10/05	23.5	24.0
	1/26/05	1/26/05	0.5	2/22/05	26.5	27.0
	1/26/05	1/26/05	0.5	2/22/05	26.5	27.0
	1/26/05	1/26/05	0.5	2/22/05	26.5	27.0
	2/9/05	2/9/05	0.5	2/22/05	12.5	13.0
	2/9/05	2/9/05	0.5	2/22/05	12.5	13.0
	2/9/05	2/9/05	0.5	2/22/05	12.5	13.0
	2/9/05	2/9/05	0.5	2/22/05	12.5	13.0
	2/9/05	2/9/05	0.5	2/22/05	12.5	13.0
	2/8/05	2/8/05	0.5	2/22/05	13.5	14.0
	2/8/05	2/8/05	0.5	2/22/05	13.5	14.0
	2/8/05	2/8/05	0.5	2/22/05	13.5	14.0
	2/9/05	2/9/05	0.5	2/28/05	18.5	19.0
	2/14/05	2/14/05	0.5	3/10/05	23.5	24.0
	2/14/05	2/14/05	0.5	3/10/05	23.5	24.0
	2/14/05	2/14/05	0.5	3/10/05	23.5	24.0
	2/26/05	2/26/05	0.5	3/21/05	22.5	23.0
	2/26/05	2/26/05	0.5	3/21/05	22.5	23.0
	2/26/05	2/26/05	0.5	3/21/05	22.5	23.0
	3/8/05	3/8/05	0.5	3/21/05	12.5	13.0
	3/17/05	3/17/05	0.5	3/31/05	13.5	14.0
	3/15/05	3/15/05	0.5	4/11/05	26.5	27.0
	3/27/05	3/27/05	0.5	4/20/05	23.5	24.0
	3/27/05	3/27/05	0.5	4/20/05	23.5	24.0

SERVICE PERIOD (Delivery dates)

CHEVRON	BEGIN	END	AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)
	3/25/05	3/25/05	0.5	4/20/05	25.5	26.0
	4/3/05	4/3/05	0.5	4/20/05	16.5	17.0
	4/7/05	4/7/05	0.5	4/29/05	21.5	22.0
	4/10/05	4/10/05	0.5	4/29/05	18.5	19.0
	4/22/05	4/22/05	0.5	5/10/05	17.5	18.0
	5/2/05	5/2/05	0.5	5/20/05	17.5	18.0
	5/11/05	5/11/05	0.5	5/31/05	19.5	20.0
	5/11/05	5/11/05	0.5	5/31/05	19.5	20.0
	5/14/05	5/14/05	0.5	5/31/05	16.5	17.0
	5/10/05	5/10/05	0.5	6/9/05	29.5	30.0
	5/18/05	5/18/05	0.5	6/9/05	21.5	22.0
	5/24/05	5/24/05	0.5	6/9/05	15.5	16.0
	6/1/05	6/1/05	0.5	6/20/05	18.5	19.0
	6/1/05	6/1/05	0.5	6/20/05	18.5	19.0
	6/2/05	6/2/05	0.5	6/20/05	17.5	18.0
	6/3/05	6/3/05	0.5	6/30/05	26.5	27.0
	6/9/05	6/9/05	0.5	6/30/05	20.5	21.0
	6/15/05	6/15/05	0.5	6/30/05	14.5	15.0
	6/15/05	6/15/05	0.5	6/30/05	14.5	15.0
	6/15/05	6/15/05	0.5	6/30/05	14.5	15.0
	6/20/05	6/20/05	0.5	7/11/05	20.5	21.0
	6/27/05	6/27/05	0.5	7/11/05	13.5	14.0
	6/19/05	6/19/05	0.5	7/11/05	21.5	22.0
	6/27/05	6/27/05	0.5	7/20/05	22.5	23.0
	7/7/05	7/7/05	0.5	7/20/05	12.5	13.0
	7/7/05	7/7/05	0.5	7/20/05	12.5	13.0
	7/5/05	7/5/05	0.5	7/20/05	14.5	15.0
	7/19/05	7/19/05	0.5	8/1/05	12.5	13.0
	7/17/05	7/17/05	0.5	8/10/05	23.5	24.0
	7/21/05	7/21/05	0.5	8/10/05	19.5	20.0
	7/25/05	7/25/05	0.5	8/10/05	15.5	16.0
	7/23/05	7/23/05	0.5	8/18/05	25.5	26.0
	7/23/05	7/23/05	0.5	8/18/05	25.5	26.0
	7/27/05	7/27/05	0.5	8/18/05	21.5	22.0
	7/29/05	7/29/05	0.5	8/18/05	19.5	20.0
	7/29/05	7/29/05	0.5	8/18/05	19.5	20.0
	7/30/05	7/30/05	0.5	8/18/05	18.5	19.0

SERVICE PERIOD (Delivery dates)

CHEVRON	BEGIN	END	AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)
	8/1/05	8/1/05	0.5	8/18/05	16.5	17.0
	8/2/05	8/2/05	0.5	8/18/05	15.5	16.0
	8/3/05	8/3/05	0.5	8/18/05	14.5	15.0
	8/3/05	8/3/05	0.5	8/18/05	14.5	15.0
	8/4/05	8/4/05	0.5	8/18/05	13.5	14.0
	8/5/05	8/5/05	0.5	8/18/05	12.5	13.0
	8/6/05	8/6/05	0.5	8/18/05	11.5	12.0
	8/7/05	8/7/05	0.5	8/18/05	10.5	11.0
	8/5/05	8/5/05	0.5	8/18/05	12.5	13.0
	8/5/05	8/5/05	0.5	8/18/05	12.5	13.0
	8/9/05	8/9/05	0.5	8/31/05	21.5	22.0
	8/10/05	8/10/05	0.5	8/31/05	20.5	21.0
	8/11/05	8/11/05	0.5	8/31/05	19.5	20.0
	8/12/05	8/12/05	0.5	8/31/05	18.5	19.0
	8/18/05	8/18/05	0.5	8/31/05	12.5	13.0
	8/18/05	8/18/05	0.5	8/31/05	12.5	13.0
	8/11/05	8/11/05	0.5	8/31/05	19.5	20.0
	8/10/05	8/10/05	0.5	8/31/05	20.5	21.0
	8/17/05	8/17/05	0.5	8/31/05	13.5	14.0
	8/26/05	8/26/05	0.5	9/9/05	13.5	14.0
	8/22/05	8/22/05	0.5	9/9/05	17.5	18.0
	8/16/05	8/16/05	0.5	9/9/05	23.5	24.0
	8/17/05	8/17/05	0.5	9/9/05	22.5	23.0
	8/18/05	8/18/05	0.5	9/9/05	21.5	22.0
	8/20/05	8/20/05	0.5	9/9/05	19.5	20.0
	8/23/05	8/23/05	0.5	9/9/05	16.5	17.0
	8/24/05	8/24/05	0.5	9/9/05	15.5	16.0
	8/25/05	8/25/05	0.5	9/9/05	14.5	15.0
	8/26/05	8/26/05	0.5	9/9/05	13.5	14.0
	8/29/05	8/29/05	0.5	9/9/05	10.5	11.0
	8/29/05	8/29/05	0.5	9/9/05	10.5	11.0
	9/1/05	9/1/05	0.5	9/20/05	18.5	19.0
	9/7/05	9/7/05	0.5	9/20/05	12.5	13.0
	9/10/05	9/10/05	0.5	9/30/05	19.5	20.0
	9/15/05	9/15/05	0.5	9/30/05	14.5	15.0
	9/15/05	9/15/05	0.5	9/30/05	14.5	15.0
	9/12/05	9/12/05	0.5	9/30/05	17.5	18.0
	9/22/05	9/22/05	0.5	10/11/05	18.5	19.0
	9/27/05	9/27/05	0.5	10/20/05	22.5	23.0
	9/27/05	9/27/05	0.5	10/20/05	22.5	23.0
	9/29/05	9/29/05	0.5	10/20/05	20.5	21.0
	9/28/05	9/28/05	0.5	11/10/05	42.5	43.0

SERVICE PERIOD (Delivery dates)

CHEVRON	BEGIN	END	AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)
	10/3/05	10/3/05	0.5	10/20/05	16.5	17.0
	10/15/05	10/15/05	0.5	10/31/05	15.5	16.0
	10/20/05	10/20/05	0.5	11/10/05	20.5	21.0
	10/24/05	10/24/05	0.5	11/10/05	16.5	17.0
	10/19/05	10/19/05	0.5	11/10/05	21.5	22.0
	10/27/05	10/27/05	0.5	11/21/05	24.5	25.0
	10/27/05	10/27/05	0.5	11/21/05	24.5	25.0
	10/29/05	10/29/05	0.5	11/21/05	22.5	23.0
	11/4/05	11/4/05	0.5	11/21/05	16.5	17.0
	11/9/05	11/9/05	0.5	11/21/05	11.5	12.0
	11/7/05	11/7/05	0.5	11/21/05	13.5	14.0
	11/8/05	11/8/05	0.5	11/21/05	12.5	13.0
	11/11/05	11/11/05	0.5	11/30/05	18.5	19.0
	11/14/05	11/14/05	0.5	11/30/05	15.5	16.0
	11/16/05	11/16/05	0.5	11/30/05	13.5	14.0
	11/17/05	11/17/05	0.5	11/30/05	12.5	13.0
	11/15/05	11/15/05	0.5	11/30/05	14.5	15.0
	11/21/05	11/21/05	0.5	12/9/05	17.5	18.0
	11/30/05	11/30/05	0.5	12/20/05	19.5	20.0
	11/27/05	11/27/05	0.5	12/20/05	22.5	23.0
	11/11/05	11/11/05	0.5	12/20/05	38.5	39.0
	12/5/05	12/5/05	0.5	12/20/05	14.5	15.0
	12/7/05	12/7/05	0.5	12/20/05	12.5	13.0
	12/10/05	12/10/05	0.5	12/30/05	19.5	20.0
	12/14/05	12/14/05	0.5	12/30/05	15.5	16.0

CHEVRON Payment Lag

18.9

Actual 2005 payments

TESORO	SERVICE PERIOD (Delivery Dates)		AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)
	BEGIN	END				
	12/23/04	12/23/04	0.5	1/6/05	13.5	14.0
	12/24/04	12/24/04	0.5	1/12/05	18.5	19.0
	12/24/04	12/24/04	0.5	1/12/05	18.5	19.0
	12/30/04	12/30/04	0.5	1/13/05	13.5	14.0
	1/15/05	1/15/05	0.5	1/27/05	11.5	12.0
	1/22/05	1/22/05	0.5	2/7/05	15.5	16.0
	1/22/05	1/22/05	0.5	2/7/05	15.5	16.0
	2/10/05	2/10/05	0.5	2/22/05	11.5	12.0
	2/20/05	2/20/05	0.5	3/9/05	16.5	17.0
	2/20/05	2/20/05	0.5	3/9/05	16.5	17.0
	3/2/05	3/2/05	0.5	3/15/05	12.5	13.0
	3/17/05	3/17/05	0.5	3/31/05	13.5	14.0
	3/29/05	3/29/05	0.5	4/8/05	9.5	10.0
	3/29/05	3/29/05	0.5	4/8/05	9.5	10.0
	4/1/05	4/1/05	0.5	4/15/05	13.5	14.0
	4/12/05	4/12/05	0.5	4/22/05	9.5	10.0
	4/19/05	4/19/05	0.5	5/5/05	15.5	16.0
	4/19/05	4/19/05	0.5	5/5/05	15.5	16.0
	5/5/05	5/5/05	0.5	5/18/05	12.5	13.0
	5/26/05	5/26/05	0.5	6/7/05	11.5	12.0
	6/1/05	6/1/05	0.5	6/13/05	11.5	12.0
	6/1/05	6/1/05	0.5	6/13/05	11.5	12.0
	6/15/05	6/15/05	0.5	6/27/05	11.5	12.0
	6/25/05	6/25/05	0.5	7/7/05	11.5	12.0
	6/30/05	6/30/05	0.5	7/13/05	12.5	13.0
	7/5/05	7/5/05	0.5	7/15/05	9.5	10.0
	7/5/05	7/5/05	0.5	7/15/05	9.5	10.0
	7/12/05	7/12/05	0.5	7/22/05	9.5	10.0
	7/20/05	7/20/05	0.5	8/1/05	11.5	12.0
	7/27/05	7/27/05	0.5	8/9/05	12.5	13.0
	8/1/05	8/1/05	0.5	8/12/05	10.5	11.0
	8/2/05	8/2/05	0.5	8/15/05	12.5	13.0
	8/2/05	8/2/05	0.5	8/15/05	12.5	13.0
	8/14/05	8/14/05	0.5	8/26/05	11.5	12.0
	8/19/05	8/19/05	0.5	8/31/05	11.5	12.0
	8/28/05	8/28/05	0.5	9/9/05	11.5	12.0
	9/3/05	9/3/05	0.5	9/15/05	11.5	12.0

Actual 2005 payments

SERVICE PERIOD (Delivery Dates)

TESORO	BEGIN	END	AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)
	9/4/05	9/4/05	0.5	9/15/05	10.5	11.0
	9/4/05	9/4/05	0.5	9/15/05	10.5	11.0
	9/12/05	9/12/05	0.5	9/22/05	9.5	10.0
	9/14/05	9/14/05	0.5	9/27/05	12.5	13.0
	9/25/05	9/25/05	0.5	10/6/05	10.5	11.0
	9/25/05	9/25/05	0.5	10/7/05	11.5	12.0
	10/8/05	10/8/05	0.5	10/21/05	12.5	13.0
	10/11/05	10/11/05	0.5	10/24/05	12.5	13.0
	10/19/05	10/19/05	0.5	10/31/05	11.5	12.0
	10/25/05	10/25/05	0.5	11/7/05	12.5	13.0
	10/25/05	10/25/05	0.5	11/7/05	12.5	13.0
	11/6/05	11/6/05	0.5	11/18/05	11.5	12.0
	11/8/05	11/8/05	0.5	11/21/05	12.5	13.0
	11/14/05	11/14/05	0.5	11/25/05	10.5	11.0
	11/20/05	11/20/05	0.5	12/2/05	11.5	12.0
	11/21/05	11/21/05	0.5	12/8/05	16.5	17.0
	12/2/05	12/2/05	0.5	12/14/05	11.5	12.0
	12/7/05	12/07/05	0.5	12/20/05	12.5	13.0
	12/12/05	12/12/05	0.5	12/22/05	9.5	10.0
TESORO Payment Lag						12.8

Hawaiian Electric Company, Inc.
Working Cash Study

Calculation of the Composite O&M Labor Lag Days

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.8-31 (Labor O&M).xls\SUM-O&MLab
Source: Per Supporting Worksheets

O&M Labor Item	Payment		Payment Lag Days	Check Clearing Lag Days	Total Payment Lag Days	Weighted Average
	Amount for 2007 (\$)	% of Total				
	Note A		Note B	Note C		
Net pay by Checks	4,325,816	3.94%	9.7	7.3	17.0	1 days
Net pay by Direct Deposit	57,645,633	52.44%	9.7	0.0	9.7	5 days
Federal income tax withholdings	14,059,858	12.79%	10.7	0.0	10.7	1 days
State income tax withholdings	6,354,712	5.78%	16.5	0.0	16.5	1 days
Employee FICA withholdings	8,397,833	7.64%	10.7	0.0	10.7	1 days
HEIRS & HEIRS Loans	12,417,534	11.30%	14.6	0.0	14.6	2 days
Credit Union Shares & Loans	6,721,304	6.11%	9.7	0.0	9.7	1 days
Total	109,922,690	100.00%				

O&M Labor Payment Lag 11 days

NOTE: Totals may not add exactly due to rounding.

Sources & References:

Note A: 2007 expense amounts per Cost Accounting.

Note B: Payment Lags	HECO-WP- 1806, Page No.
Net pay by Checks	9
Net pay by Direct Deposit	10
Federal income tax withholdings	11
State income tax withholdings	12
Employee FICA withholdings	13
HEIRS & HEIRS Loans	14
Credit Union Shares & Loans	15

Note C: Check Clearing Lag	HECO-WP- 1806, Page No.
Net pay by Checks	16-31
Net pay by Direct Deposit	0 days
Federal income tax withholdings	0 days (payment wired to bank)
State income tax withholdings	0 days (payment wired to bank)
Employee FICA withholdings	0 days (payment wired to bank)
HEIRS & HEIRS Loans	0 days (direct deposit to account)

Hawaiian Electric Company, Inc.
Working Cash Study

O&M Labor - Net Payroll Payment Lag (Checks)

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.8-31 (Labor O&M)
Source: 2007 Pay schedule

2007 CHECKS ISSUED

PAY PERIOD		(X)	(Y)	(X) * (Y)			
BEGIN	END	AVE PAY PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)	NET CHECK AMOUNT	DOLLAR DAYS
12/25/06	1/7/07	7.0	1/10/07	2.5	9.5	100	950
1/8/07	1/21/07	7.0	1/24/07	2.5	9.5	100	950
1/22/07	2/4/07	7.0	2/7/07	2.5	9.5	100	950
2/5/07	2/18/07	7.0	2/22/07	3.5	10.5	100	1,050
2/19/07	3/4/07	7.0	3/7/07	2.5	9.5	100	950
3/5/07	3/18/07	7.0	3/21/07	2.5	9.5	100	950
3/19/07	4/1/07	7.0	4/4/07	2.5	9.5	100	950
4/2/07	4/15/07	7.0	4/18/07	2.5	9.5	100	950
4/16/07	4/29/07	7.0	5/2/07	2.5	9.5	100	950
4/30/07	5/13/07	7.0	5/16/07	2.5	9.5	100	950
5/14/07	5/27/07	7.0	5/31/07	3.5	10.5	100	1,050
5/28/07	6/10/07	7.0	6/14/07	3.5	10.5	100	1,050
6/11/07	6/24/07	7.0	6/27/07	2.5	9.5	100	950
6/25/07	7/8/07	7.0	7/11/07	2.5	9.5	100	950
7/9/07	7/22/07	7.0	7/25/07	2.5	9.5	100	950
7/23/07	8/5/07	7.0	8/8/07	2.5	9.5	100	950
8/6/07	8/19/07	7.0	8/22/07	2.5	9.5	100	950
8/20/07	9/2/07	7.0	9/6/07	3.5	10.5	100	1,050
9/3/07	9/16/07	7.0	9/19/07	2.5	9.5	100	950
9/17/07	9/30/07	7.0	10/3/07	2.5	9.5	100	950
10/1/07	10/14/07	7.0	10/17/07	2.5	9.5	100	950
10/15/07	10/28/07	7.0	10/31/07	2.5	9.5	100	950
10/29/07	11/11/07	7.0	11/15/07	3.5	10.5	100	1,050
11/12/07	11/25/07	7.0	11/28/07	2.5	9.5	100	950
11/26/07	12/9/07	7.0	12/12/07	2.5	9.5	100	950
12/10/07	12/23/07	7.0	12/27/07	3.5	10.5	100	1,050
						<u>2,600</u>	<u>25,300</u>

Net Payroll Payment Lag Days for Checks

9.7

Hawaiian Electric Company, Inc.
Working Cash Study

O&M Labor - Net Payroll Payment Lag (Direct Deposit)

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.8-31 (Labor O&M).;

Source: 2007 pay schedule. Checks direct deposited on pay date.

2007 DIRECT DEPOSIT

PAY PERIOD		(X)	(Y)	(X) * (Y)			
BEGIN	END	AVE PAY PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)	NET CHECK AMOUNT	DOLLAR DAYS
12/25/06	1/7/07	7.0	1/10/07	2.5	9.5	100	950
1/8/07	1/21/07	7.0	1/24/07	2.5	9.5	100	950
1/22/07	2/4/07	7.0	2/7/07	2.5	9.5	100	950
2/5/07	2/18/07	7.0	2/22/07	3.5	10.5	100	1,050
2/19/07	3/4/07	7.0	3/7/07	2.5	9.5	100	950
3/5/07	3/18/07	7.0	3/21/07	2.5	9.5	100	950
3/19/07	4/1/07	7.0	4/4/07	2.5	9.5	100	950
4/2/07	4/15/07	7.0	4/18/07	2.5	9.5	100	950
4/16/07	4/29/07	7.0	5/2/07	2.5	9.5	100	950
4/30/07	5/13/07	7.0	5/16/07	2.5	9.5	100	950
5/14/07	5/27/07	7.0	5/31/07	3.5	10.5	100	1,050
5/28/07	6/10/07	7.0	6/14/07	3.5	10.5	100	1,050
6/11/07	6/24/07	7.0	6/27/07	2.5	9.5	100	950
6/25/07	7/8/07	7.0	7/11/07	2.5	9.5	100	950
7/9/07	7/22/07	7.0	7/25/07	2.5	9.5	100	950
7/23/07	8/5/07	7.0	8/8/07	2.5	9.5	100	950
8/6/07	8/19/07	7.0	8/22/07	2.5	9.5	100	950
8/20/07	9/2/07	7.0	9/6/07	3.5	10.5	100	1,050
9/3/07	9/16/07	7.0	9/19/07	2.5	9.5	100	950
9/17/07	9/30/07	7.0	10/3/07	2.5	9.5	100	950
10/1/07	10/14/07	7.0	10/17/07	2.5	9.5	100	950
10/15/07	10/28/07	7.0	10/31/07	2.5	9.5	100	950
10/29/07	11/11/07	7.0	11/15/07	3.5	10.5	100	1,050
11/12/07	11/25/07	7.0	11/28/07	2.5	9.5	100	950
11/26/07	12/9/07	7.0	12/12/07	2.5	9.5	100	950
12/10/07	12/23/07	7.0	12/27/07	3.5	10.5	100	1,050
						<u>2,600</u>	<u>25,300</u>

Net Payroll Payment Lag Days for Direct Deposits

9.7

Hawaiian Electric Company, Inc.
Working Cash Study

O&M Labor - Federal Withholding Taxes (FWT)

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.8-31 (Labor O&M)

Source: 2007 pay schedule. FWT paid the day after pay date.

FWT for 2007

SERVICE PERIOD		(X)	(Y)	(X) * (Y)			
BEGIN	END	AVE PAY PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)	AMOUNT	DOLLAR DAYS
12/25/06	1/7/07	7.0	1/11/07	3.5	10.5	100	1,050
1/8/07	1/21/07	7.0	1/25/07	3.5	10.5	100	1,050
1/22/07	2/4/07	7.0	2/8/07	3.5	10.5	100	1,050
2/5/07	2/18/07	7.0	2/23/07	4.5	11.5	100	1,150
2/19/07	3/4/07	7.0	3/8/07	3.5	10.5	100	1,050
3/5/07	3/18/07	7.0	3/22/07	3.5	10.5	100	1,050
3/19/07	4/1/07	7.0	4/5/07	3.5	10.5	100	1,050
4/2/07	4/15/07	7.0	4/19/07	3.5	10.5	100	1,050
4/16/07	4/29/07	7.0	5/3/07	3.5	10.5	100	1,050
4/30/07	5/13/07	7.0	5/17/07	3.5	10.5	100	1,050
5/14/07	5/27/07	7.0	6/1/07	4.5	11.5	100	1,150
5/28/07	6/10/07	7.0	6/15/07	4.5	11.5	100	1,150
6/11/07	6/24/07	7.0	6/28/07	3.5	10.5	100	1,050
6/25/07	7/8/07	7.0	7/12/07	3.5	10.5	100	1,050
7/9/07	7/22/07	7.0	7/26/07	3.5	10.5	100	1,050
7/23/07	8/5/07	7.0	8/9/07	3.5	10.5	100	1,050
8/6/07	8/19/07	7.0	8/23/07	3.5	10.5	100	1,050
8/20/07	9/2/07	7.0	9/7/07	4.5	11.5	100	1,150
9/3/07	9/16/07	7.0	9/20/07	3.5	10.5	100	1,050
9/17/07	9/30/07	7.0	10/4/07	3.5	10.5	100	1,050
10/1/07	10/14/07	7.0	10/18/07	3.5	10.5	100	1,050
10/15/07	10/28/07	7.0	11/1/07	3.5	10.5	100	1,050
10/29/07	11/11/07	7.0	11/16/07	4.5	11.5	100	1,150
11/12/07	11/25/07	7.0	11/29/07	3.5	10.5	100	1,050
11/26/07	12/9/07	7.0	12/13/07	3.5	10.5	100	1,050
12/10/07	12/23/07	7.0	12/28/07	4.5	11.5	100	1,150
						<u>2,600</u>	<u>27,900</u>

Federal Withholdings Payment Lag Days

10.7

Hawaiian Electric Company, Inc.
Working Cash Study

O&M Labor - State Withholding Taxes (SWT)

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.8-31 (Labor O&M)

Source: 2007 pay schedule. SWT paid the following Wednesday after pay date.

SWT for 2007

SERVICE PERIOD		(X)	(Y)	(X) * (Y)					
BEGIN	END	AVE PAY PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)	AMOUNT	DOLLAR DAYS		
12/25/06	1/7/07	7.0	1/17/07	9.5	16.5	100	1,650		
1/8/07	1/21/07	7.0	1/31/07	9.5	16.5	100	1,650		
1/22/07	2/4/07	7.0	2/14/07	9.5	16.5	100	1,650		
2/5/07	2/18/07	7.0	2/28/07	9.5	16.5	100	1,650		
2/19/07	3/4/07	7.0	3/14/07	9.5	16.5	100	1,650		
3/5/07	3/18/07	7.0	3/28/07	9.5	16.5	100	1,650		
3/19/07	4/1/07	7.0	4/11/07	9.5	16.5	100	1,650		
4/2/07	4/15/07	7.0	4/25/07	9.5	16.5	100	1,650		
4/16/07	4/29/07	7.0	5/9/07	9.5	16.5	100	1,650		
4/30/07	5/13/07	7.0	5/23/07	9.5	16.5	100	1,650		
5/14/07	5/27/07	7.0	6/6/07	9.5	16.5	100	1,650		
5/28/07	6/10/07	7.0	6/20/07	9.5	16.5	100	1,650		
6/11/07	6/24/07	7.0	7/5/07	10.5	17.5	100	1,750		
6/25/07	7/8/07	7.0	7/18/07	9.5	16.5	100	1,650		
7/9/07	7/22/07	7.0	8/1/07	9.5	16.5	100	1,650		
7/23/07	8/5/07	7.0	8/15/07	9.5	16.5	100	1,650		
8/6/07	8/19/07	7.0	8/29/07	9.5	16.5	100	1,650		
8/20/07	9/2/07	7.0	9/12/07	9.5	16.5	100	1,650		
9/3/07	9/16/07	7.0	9/26/07	9.5	16.5	100	1,650		
9/17/07	9/30/07	7.0	10/10/07	9.5	16.5	100	1,650		
10/1/07	10/14/07	7.0	10/24/07	9.5	16.5	100	1,650		
10/15/07	10/28/07	7.0	11/7/07	9.5	16.5	100	1,650		
10/29/07	11/11/07	7.0	11/21/07	9.5	16.5	100	1,650		
11/12/07	11/25/07	7.0	12/5/07	9.5	16.5	100	1,650		
11/26/07	12/9/07	7.0	12/19/07	9.5	16.5	100	1,650		
12/10/07	12/23/07	7.0	1/2/08	9.5	16.5	100	1,650		
						2,600	43,000		

State Withholdings Payment Lag Days

16.5

Hawaiian Electric Company, Inc.
Working Cash Study
O&M Labor - Employee FICA

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.8-31 (Labor O&M)
Source: 2007 pay schedule. FICA paid the day after pay date.

FICA for 2007

SERVICE PERIOD		(X)	(Y)	(X) * (Y)			
BEGIN	END	AVE PAY PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)	AMOUNT	DOLLAR DAYS
12/25/06	1/7/07	7.0	1/11/07	3.5	10.5	100	1,050
1/8/07	1/21/07	7.0	1/25/07	3.5	10.5	100	1,050
1/22/07	2/4/07	7.0	2/8/07	3.5	10.5	100	1,050
2/5/07	2/18/07	7.0	2/23/07	4.5	11.5	100	1,150
2/19/07	3/4/07	7.0	3/8/07	3.5	10.5	100	1,050
3/5/07	3/18/07	7.0	3/22/07	3.5	10.5	100	1,050
3/19/07	4/1/07	7.0	4/5/07	3.5	10.5	100	1,050
4/2/07	4/15/07	7.0	4/19/07	3.5	10.5	100	1,050
4/16/07	4/29/07	7.0	5/3/07	3.5	10.5	100	1,050
4/30/07	5/13/07	7.0	5/17/07	3.5	10.5	100	1,050
5/14/07	5/27/07	7.0	6/1/07	4.5	11.5	100	1,150
5/28/07	6/10/07	7.0	6/15/07	4.5	11.5	100	1,150
6/11/07	6/24/07	7.0	6/28/07	3.5	10.5	100	1,050
6/25/07	7/8/07	7.0	7/12/07	3.5	10.5	100	1,050
7/9/07	7/22/07	7.0	7/26/07	3.5	10.5	100	1,050
7/23/07	8/5/07	7.0	8/9/07	3.5	10.5	100	1,050
8/6/07	8/19/07	7.0	8/23/07	3.5	10.5	100	1,050
8/20/07	9/2/07	7.0	9/7/07	4.5	11.5	100	1,150
9/3/07	9/16/07	7.0	9/20/07	3.5	10.5	100	1,050
9/17/07	9/30/07	7.0	10/4/07	3.5	10.5	100	1,050
10/1/07	10/14/07	7.0	10/18/07	3.5	10.5	100	1,050
10/15/07	10/28/07	7.0	11/1/07	3.5	10.5	100	1,050
10/29/07	11/11/07	7.0	11/16/07	4.5	11.5	100	1,150
11/12/07	11/25/07	7.0	11/29/07	3.5	10.5	100	1,050
11/26/07	12/9/07	7.0	12/13/07	3.5	10.5	100	1,050
12/10/07	12/23/07	7.0	12/28/07	4.5	11.5	100	1,150
						<u>2,600</u>	<u>27,900</u>

Employee FICA Payment Lag Days

10.7

Hawaiian Electric Company, Inc.
Working Cash Study
O&M Labor - HEIRS and HEIRS Loans

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.8-31 (Labor O&M).
Source: 2007 pay schedule. HEIRS paid the following Monday after pay date.

HEIRS & HEIRS Loan Deductions for 2007

SERVICE PERIOD			(X)	(Y)	(X) * (Y)		
BEGIN	END	AVE PAY PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)	AMOUNT	DOLLAR DAYS
12/25/06	1/7/07	7.0	1/15/07	7.5	14.5	100	1,450
1/8/07	1/21/07	7.0	1/29/07	7.5	14.5	100	1,450
1/22/07	2/4/07	7.0	2/12/07	7.5	14.5	100	1,450
2/5/07	2/18/07	7.0	2/26/07	7.5	14.5	100	1,450
2/19/07	3/4/07	7.0	3/12/07	7.5	14.5	100	1,450
3/5/07	3/18/07	7.0	3/26/07	7.5	14.5	100	1,450
3/19/07	4/1/07	7.0	4/9/07	7.5	14.5	100	1,450
4/2/07	4/15/07	7.0	4/23/07	7.5	14.5	100	1,450
4/16/07	4/29/07	7.0	5/7/07	7.5	14.5	100	1,450
4/30/07	5/13/07	7.0	5/21/07	7.5	14.5	100	1,450
5/14/07	5/27/07	7.0	6/4/07	7.5	14.5	100	1,450
5/28/07	6/10/07	7.0	6/18/07	7.5	14.5	100	1,450
6/11/07	6/24/07	7.0	7/2/07	7.5	14.5	100	1,450
6/25/07	7/8/07	7.0	7/16/07	7.5	14.5	100	1,450
7/9/07	7/22/07	7.0	7/30/07	7.5	14.5	100	1,450
7/23/07	8/5/07	7.0	8/13/07	7.5	14.5	100	1,450
8/6/07	8/19/07	7.0	8/27/07	7.5	14.5	100	1,450
8/20/07	9/2/07	7.0	9/10/07	7.5	14.5	100	1,450
9/3/07	9/16/07	7.0	9/24/07	7.5	14.5	100	1,450
9/17/07	9/30/07	7.0	10/9/07	8.5	15.5	100	1,550
10/1/07	10/14/07	7.0	10/22/07	7.5	14.5	100	1,450
10/15/07	10/28/07	7.0	11/5/07	7.5	14.5	100	1,450
10/29/07	11/11/07	7.0	11/19/07	7.5	14.5	100	1,450
11/12/07	11/25/07	7.0	12/3/07	7.5	14.5	100	1,450
11/26/07	12/9/07	7.0	12/17/07	7.5	14.5	100	1,450
12/10/07	12/23/07	7.0	1/2/08	9.5	16.5	100	1,650
						<u>2,600</u>	<u>38,000</u>

HEIRS & HEIRS Loans Payment Lag Days

14.6

Hawaiian Electric Company, Inc.
Working Cash Study

O&M Labor - Credit Union Shares & Loans

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.8-31 (Labor O&M)
Source: 2007 pay schedule. Credit union paid on pay date.

Credit Union Shares & Loans Deductions for 2007

SERVICE PERIOD			(X)	(Y)	(X) * (Y)		
BEGIN	END	AVE PAY PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)	AMOUNT	DOLLAR DAYS
12/25/06	1/7/07	7.0	1/10/07	2.5	9.5	100	950
1/8/07	1/21/07	7.0	1/24/07	2.5	9.5	100	950
1/22/07	2/4/07	7.0	2/7/07	2.5	9.5	100	950
2/5/07	2/18/07	7.0	2/22/07	3.5	10.5	100	1,050
2/19/07	3/4/07	7.0	3/7/07	2.5	9.5	100	950
3/5/07	3/18/07	7.0	3/21/07	2.5	9.5	100	950
3/19/07	4/1/07	7.0	4/4/07	2.5	9.5	100	950
4/2/07	4/15/07	7.0	4/18/07	2.5	9.5	100	950
4/16/07	4/29/07	7.0	5/2/07	2.5	9.5	100	950
4/30/07	5/13/07	7.0	5/16/07	2.5	9.5	100	950
5/14/07	5/27/07	7.0	5/31/07	3.5	10.5	100	1,050
5/28/07	6/10/07	7.0	6/14/07	3.5	10.5	100	1,050
6/11/07	6/24/07	7.0	6/27/07	2.5	9.5	100	950
6/25/07	7/8/07	7.0	7/11/07	2.5	9.5	100	950
7/9/07	7/22/07	7.0	7/25/07	2.5	9.5	100	950
7/23/07	8/5/07	7.0	8/8/07	2.5	9.5	100	950
8/6/07	8/19/07	7.0	8/22/07	2.5	9.5	100	950
8/20/07	9/2/07	7.0	9/6/07	3.5	10.5	100	1,050
9/3/07	9/16/07	7.0	9/19/07	2.5	9.5	100	950
9/17/07	9/30/07	7.0	10/3/07	2.5	9.5	100	950
10/1/07	10/14/07	7.0	10/17/07	2.5	9.5	100	950
10/15/07	10/28/07	7.0	10/31/07	2.5	9.5	100	950
10/29/07	11/11/07	7.0	11/15/07	3.5	10.5	100	1,050
11/12/07	11/25/07	7.0	11/28/07	2.5	9.5	100	950
11/26/07	12/9/07	7.0	12/12/07	2.5	9.5	100	950
12/10/07	12/23/07	7.0	12/27/07	3.5	10.5	100	1,050
						<u>2,600</u>	<u>25,300</u>

Credit Union Shares & Loans Payment Lag Days

9.7

Hawaiian Electric Company, Inc.
Working Cash Study

Check Clearing Lag for Net Payroll paid by Checks

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.8-31 (Labo
Source: Docket No. 2006-0386, HECO-WP-1706, pages 16-31,

2005 Payroll Checks Issued

		(X)	(Y)	(X) * (Y)
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED	DOLLAR DAYS
01/12/2005	01/12/2005	0.0	18,263	0
01/12/2005	01/13/2005	1.0	60,152	60,152
01/12/2005	01/14/2005	2.0	27,917	55,834
01/12/2005	01/18/2005	6.0	20,763	124,576
01/12/2005	01/19/2005	7.0	20,544	143,806
01/12/2005	01/20/2005	8.0	1,775	14,203
01/12/2005	01/21/2005	9.0	5,135	46,219
01/12/2005	01/24/2005	12.0	3,778	45,342
01/12/2005	01/25/2005	13.0	1,507	19,593
01/12/2005	01/26/2005	14.0	17	243
01/12/2005	01/27/2005	15.0	11,267	169,002
01/12/2005	01/31/2005	19.0	1,746	33,170
01/12/2005	02/01/2005	20.0	2,959	59,170
01/12/2005	02/03/2005	22.0	1,425	31,340
01/12/2005	02/04/2005	23.0	4,474	102,906
01/12/2005	02/07/2005	26.0	142	3,686
01/12/2005	02/10/2005	29.0	138	3,988
01/12/2005	02/16/2005	35.0	131	4,582
01/12/2005	02/18/2005	37.0	184	6,812
01/12/2005	02/23/2005	42.0	184	7,733
01/12/2005	02/24/2005	43.0	1,236	53,127
01/12/2005	02/25/2005	44.0	4,753	209,130
01/12/2005	03/10/2005	57.0	2,034	115,929
01/12/2005	03/14/2005	61.0	142	8,648
01/12/2005	04/04/2005	82.0	893	73,223
01/26/2005	01/26/2005	0.0	12,518	0
01/26/2005	01/27/2005	1.0	51,261	51,261
01/26/2005	01/28/2005	2.0	35,453	70,907
01/26/2005	01/31/2005	5.0	26,810	134,049
01/26/2005	02/01/2005	6.0	11,480	68,879
01/26/2005	02/02/2005	7.0	7,853	54,968
01/26/2005	02/03/2005	8.0	2,073	16,587
01/26/2005	02/04/2005	9.0	3,094	27,842
01/26/2005	02/07/2005	12.0	1,221	14,646
01/26/2005	02/08/2005	13.0	131	1,702
01/26/2005	02/10/2005	15.0	1,260	18,896
01/26/2005	02/15/2005	20.0	163	3,260
01/26/2005	02/18/2005	23.0	944	21,720

		(X)	(Y)	(X) * (Y)
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED	DOLLAR DAYS
01/26/2005	02/23/2005	28.0	686	19,194
01/26/2005	03/02/2005	35.0	152	5,335
01/26/2005	03/10/2005	43.0	1,922	82,665
01/26/2005	03/11/2005	44.0	2,799	123,173
01/26/2005	03/14/2005	47.0	1,368	64,299
01/26/2005	03/15/2005	48.0	3,532	169,545
01/26/2005	03/23/2005	56.0	131	7,332
02/09/2005	02/09/2005	0.0	16,942	0
02/09/2005	02/10/2005	1.0	62,306	62,306
02/09/2005	02/11/2005	2.0	28,480	56,960
02/09/2005	02/14/2005	5.0	22,619	113,095
02/09/2005	02/15/2005	6.0	15,005	90,032
02/09/2005	02/16/2005	7.0	1,772	12,405
02/09/2005	02/17/2005	8.0	3,026	24,209
02/09/2005	02/18/2005	9.0	1,470	13,233
02/09/2005	02/22/2005	13.0	2,399	31,187
02/09/2005	02/23/2005	14.0	1,828	25,598
02/09/2005	02/24/2005	15.0	1,662	24,924
02/09/2005	02/28/2005	19.0	2,392	45,447
02/09/2005	03/01/2005	20.0	2,176	43,528
02/09/2005	03/02/2005	21.0	1,765	37,060
02/09/2005	03/08/2005	27.0	1,157	31,249
02/09/2005	03/10/2005	29.0	2,034	58,982
02/09/2005	03/18/2005	37.0	2,304	85,231
02/09/2005	03/23/2005	42.0	1,417	59,508
02/09/2005	03/25/2005	44.0	2,534	111,477
02/09/2005	04/01/2005	51.0	1,546	78,864
02/09/2005	04/04/2005	54.0	894	48,298
02/09/2005	05/31/2005	111.0	4,408	489,317
02/24/2005	02/24/2005	0.0	16,870	0
02/24/2005	02/25/2005	1.0	49,314	49,314
02/24/2005	02/28/2005	4.0	48,000	192,001
02/24/2005	03/01/2005	5.0	18,666	93,328
02/24/2005	03/02/2005	6.0	12,897	77,383
02/24/2005	03/03/2005	7.0	2,871	20,094
02/24/2005	03/04/2005	8.0	3,893	31,142
02/24/2005	03/07/2005	11.0	279	3,070
02/24/2005	03/08/2005	12.0	2,834	34,004
02/24/2005	03/09/2005	13.0	152	1,982
02/24/2005	03/10/2005	14.0	4,000	56,004
02/24/2005	03/11/2005	15.0	425	6,377
02/24/2005	03/14/2005	18.0	1,825	32,847
02/24/2005	03/15/2005	19.0	1,221	23,197
02/24/2005	03/18/2005	22.0	2,339	51,449
02/24/2005	03/23/2005	27.0	2,992	80,782

	(X)	(Y)	(X) * (Y)	
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED	
			DOLLAR DAYS	
02/24/2005	03/24/2005	28.0	269	7,521
02/24/2005	04/01/2005	36.0	1,368	49,250
02/24/2005	04/08/2005	43.0	3,849	165,489
02/24/2005	04/18/2005	53.0	857	45,410
02/24/2005	05/31/2005	96.0	3,914	375,732
03/09/2005	03/09/2005	0.0	8,553	0
03/09/2005	03/10/2005	1.0	54,902	54,902
03/09/2005	03/11/2005	2.0	36,103	72,207
03/09/2005	03/14/2005	5.0	19,279	96,395
03/09/2005	03/15/2005	6.0	20,772	124,632
03/09/2005	03/16/2005	7.0	4,247	29,726
03/09/2005	03/17/2005	8.0	6,889	55,116
03/09/2005	03/18/2005	9.0	4,681	42,128
03/09/2005	03/21/2005	12.0	1,728	20,737
03/09/2005	03/22/2005	13.0	2,392	31,099
03/09/2005	03/23/2005	14.0	3,513	49,186
03/09/2005	03/24/2005	15.0	142	2,127
03/09/2005	04/05/2005	27.0	167	4,515
03/09/2005	04/11/2005	33.0	2,566	84,672
03/09/2005	04/13/2005	35.0	49	1,726
03/09/2005	04/15/2005	37.0	131	4,844
03/09/2005	04/18/2005	40.0	250	9,984
03/09/2005	04/22/2005	44.0	4,446	195,623
03/09/2005	04/28/2005	50.0	844	42,181
03/09/2005	05/20/2005	72.0	142	10,207
03/09/2005	05/31/2005	83.0	4,939	409,917
03/23/2005	03/23/2005	0.0	14,278	0
03/23/2005	03/24/2005	1.0	61,937	61,937
03/23/2005	03/25/2005	2.0	24,539	49,078
03/23/2005	03/28/2005	5.0	10,725	53,623
03/23/2005	03/29/2005	6.0	12,044	72,263
03/23/2005	03/30/2005	7.0	6,016	42,112
03/23/2005	03/31/2005	8.0	7,753	62,025
03/23/2005	04/01/2005	9.0	3,666	32,996
03/23/2005	04/04/2005	12.0	4,098	49,181
03/23/2005	04/05/2005	13.0	3,011	39,149
03/23/2005	04/06/2005	14.0	4,455	62,365
03/23/2005	04/07/2005	15.0	1,884	28,253
03/23/2005	04/08/2005	16.0	2,649	42,380
03/23/2005	04/11/2005	19.0	5,706	108,423
03/23/2005	04/12/2005	20.0	1,392	27,832
03/23/2005	04/13/2005	21.0	372	7,821
03/23/2005	04/14/2005	22.0	343	7,552
03/23/2005	04/15/2005	23.0	641	14,734
03/23/2005	04/18/2005	26.0	322	8,366

		(X)	(Y)	(X) * (Y)
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED	DOLLAR DAYS
03/23/2005	04/19/2005	27.0	1,733	46,790
03/23/2005	04/25/2005	33.0	142	4,678
03/23/2005	04/27/2005	35.0	180	6,296
03/23/2005	04/28/2005	36.0	809	29,134
03/23/2005	05/02/2005	40.0	180	7,196
03/23/2005	05/04/2005	42.0	319	13,391
03/23/2005	05/06/2005	44.0	1,975	86,914
03/23/2005	05/13/2005	51.0	1,405	71,657
03/23/2005	07/01/2005	100.0	4,803	480,286
04/06/2005	04/06/2005	0.0	12,262	0
04/06/2005	04/07/2005	1.0	62,706	62,706
04/06/2005	04/08/2005	2.0	39,199	78,398
04/06/2005	04/11/2005	5.0	30,276	151,382
04/06/2005	04/12/2005	6.0	9,542	57,249
04/06/2005	04/13/2005	7.0	3,405	23,832
04/06/2005	04/14/2005	8.0	2,841	22,729
04/06/2005	04/15/2005	9.0	887	7,981
04/06/2005	04/18/2005	12.0	1,155	13,861
04/06/2005	04/19/2005	13.0	5,264	68,427
04/06/2005	04/20/2005	14.0	873	12,226
04/06/2005	04/21/2005	15.0	322	4,826
04/06/2005	04/22/2005	16.0	1,343	21,485
04/06/2005	04/25/2005	19.0	3,419	64,954
04/06/2005	04/27/2005	21.0	306	6,432
04/06/2005	04/29/2005	23.0	2,621	60,289
04/06/2005	05/02/2005	26.0	372	9,684
04/06/2005	05/13/2005	37.0	840	31,098
04/06/2005	05/17/2005	41.0	116	4,745
04/06/2005	05/27/2005	51.0	2,662	135,738
04/06/2005	05/31/2005	55.0	1,496	82,273
04/06/2005	06/06/2005	61.0	1,462	89,172
04/06/2005	06/21/2005	76.0	155	11,745
04/06/2005	07/01/2005	86.0	5,036	433,134
04/20/2005	04/20/2005	0.0	11,062	0
04/20/2005	04/21/2005	1.0	55,114	55,114
04/20/2005	04/22/2005	2.0	32,906	65,813
04/20/2005	04/25/2005	5.0	11,929	59,643
04/20/2005	04/26/2005	6.0	28,724	172,347
04/20/2005	04/27/2005	7.0	3,235	22,648
04/20/2005	04/28/2005	8.0	2,722	21,778
04/20/2005	04/29/2005	9.0	4,243	38,183
04/20/2005	05/02/2005	12.0	1,206	14,469
04/20/2005	05/03/2005	13.0	6,096	79,250
04/20/2005	05/04/2005	14.0	499	6,984
04/20/2005	05/05/2005	15.0	167	2,508

	(X)	(Y)	(X) * (Y)	
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED	
			DOLLAR DAYS	
04/20/2005	05/06/2005	16.0	360	5,756
04/20/2005	05/09/2005	19.0	2,544	48,342
04/20/2005	05/10/2005	20.0	180	3,598
04/20/2005	05/11/2005	21.0	167	3,511
04/20/2005	05/12/2005	22.0	372	8,194
04/20/2005	05/18/2005	28.0	367	10,272
04/20/2005	05/26/2005	36.0	863	31,052
04/20/2005	05/27/2005	37.0	1,725	63,825
04/20/2005	05/31/2005	41.0	1,166	47,790
04/20/2005	06/01/2005	42.0	165	6,930
04/20/2005	06/06/2005	47.0	1,486	69,858
04/20/2005	06/07/2005	48.0	180	8,635
04/20/2005	06/17/2005	58.0	2,453	142,262
04/20/2005	06/21/2005	62.0	1,274	78,957
04/20/2005	07/01/2005	72.0	4,811	346,372
05/04/2005	05/04/2005	0.0	17,616	0
05/04/2005	05/05/2005	1.0	52,150	52,150
05/04/2005	05/06/2005	2.0	30,326	60,652
05/04/2005	05/09/2005	5.0	15,252	76,261
05/04/2005	05/10/2005	6.0	15,370	92,223
05/04/2005	05/11/2005	7.0	4,347	30,432
05/04/2005	05/12/2005	8.0	5,630	45,044
05/04/2005	05/13/2005	9.0	3,057	27,512
05/04/2005	05/16/2005	12.0	2,255	27,054
05/04/2005	05/17/2005	13.0	4,872	63,338
05/04/2005	05/18/2005	14.0	2,184	30,574
05/04/2005	05/19/2005	15.0	2,012	30,184
05/04/2005	05/23/2005	19.0	654	12,417
05/04/2005	05/24/2005	20.0	1,671	33,417
05/04/2005	05/26/2005	22.0	372	8,194
05/04/2005	05/27/2005	23.0	1,425	32,775
05/04/2005	05/31/2005	27.0	1,220	32,929
05/04/2005	06/01/2005	28.0	360	10,074
05/04/2005	06/02/2005	29.0	321	9,319
05/04/2005	06/03/2005	30.0	180	5,397
05/04/2005	06/06/2005	33.0	155	5,100
05/04/2005	06/09/2005	36.0	193	6,932
05/04/2005	06/14/2005	41.0	89	3,629
05/04/2005	06/15/2005	42.0	155	6,491
05/04/2005	06/17/2005	44.0	2,808	123,557
05/04/2005	06/21/2005	48.0	1,161	55,738
05/04/2005	06/24/2005	51.0	1,253	63,916
05/04/2005	07/01/2005	58.0	5,036	292,114
05/04/2005	07/08/2005	65.0	1,343	87,315
05/04/2005	07/11/2005	68.0	180	12,233

	(X)	(Y)	(X) * (Y)	
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED	DOLLAR DAYS
05/04/2005	07/14/2005	71.0	180	12,772
05/18/2005	05/18/2005	0.0	17,920	0
05/18/2005	05/19/2005	1.0	50,759	50,759
05/18/2005	05/20/2005	2.0	26,609	53,218
05/18/2005	05/23/2005	5.0	27,078	135,389
05/18/2005	05/24/2005	6.0	16,560	99,359
05/18/2005	05/25/2005	7.0	8,285	57,997
05/18/2005	05/26/2005	8.0	882	7,056
05/18/2005	05/27/2005	9.0	5,235	47,115
05/18/2005	05/31/2005	13.0	2,055	26,718
05/18/2005	06/01/2005	14.0	4,521	63,292
05/18/2005	06/02/2005	15.0	707	10,602
05/18/2005	06/03/2005	16.0	180	2,878
05/18/2005	06/06/2005	19.0	3,057	58,086
05/18/2005	06/07/2005	20.0	319	6,377
05/18/2005	06/14/2005	27.0	155	4,173
05/18/2005	06/21/2005	34.0	1,621	55,113
05/18/2005	06/24/2005	37.0	1,825	67,528
05/18/2005	06/29/2005	42.0	484	20,341
05/18/2005	07/01/2005	44.0	5,038	221,684
05/18/2005	07/08/2005	51.0	2,206	112,485
05/18/2005	07/15/2005	58.0	1,618	93,828
06/02/2005	06/02/2005	0.0	24,065	0
06/02/2005	06/03/2005	1.0	71,582	71,582
06/02/2005	06/06/2005	4.0	53,412	213,650
06/02/2005	06/07/2005	5.0	17,716	88,581
06/02/2005	06/08/2005	6.0	10,080	60,483
06/02/2005	06/09/2005	7.0	3,998	27,987
06/02/2005	06/10/2005	8.0	527	4,216
06/02/2005	06/13/2005	11.0	941	10,349
06/02/2005	06/14/2005	12.0	4,566	54,797
06/02/2005	06/15/2005	13.0	1,112	14,455
06/02/2005	06/16/2005	14.0	1,020	14,286
06/02/2005	06/20/2005	18.0	167	3,010
06/02/2005	06/21/2005	19.0	2,194	41,682
06/02/2005	06/22/2005	20.0	1,683	33,660
06/02/2005	06/23/2005	21.0	331	6,959
06/02/2005	06/24/2005	22.0	217	4,763
06/02/2005	06/27/2005	25.0	474	11,838
06/02/2005	06/28/2005	26.0	1,930	50,175
06/02/2005	07/01/2005	29.0	5,319	154,264
06/02/2005	07/05/2005	33.0	1,252	41,307
06/02/2005	07/06/2005	34.0	484	16,467
06/02/2005	07/08/2005	36.0	2,672	96,174
06/02/2005	07/11/2005	39.0	343	13,388

		(X)	(Y)	(X) * (Y)
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED	DOLLAR DAYS
06/02/2005	07/13/2005	41.0	193	7,895
06/02/2005	07/19/2005	47.0	193	9,050
06/02/2005	07/22/2005	50.0	2,205	110,270
06/02/2005	07/28/2005	56.0	180	10,074
06/02/2005	08/01/2005	60.0	1,544	92,645
06/02/2005	08/08/2005	67.0	1,490	99,838
06/15/2005	06/15/2005	0.0	15,744	0
06/15/2005	06/16/2005	1.0	50,566	50,566
06/15/2005	06/17/2005	2.0	39,732	79,463
06/15/2005	06/20/2005	5.0	23,197	115,985
06/15/2005	06/21/2005	6.0	25,991	155,947
06/15/2005	06/22/2005	7.0	3,653	25,568
06/15/2005	06/23/2005	8.0	2,115	16,920
06/15/2005	06/24/2005	9.0	4,476	40,284
06/15/2005	06/27/2005	12.0	2,505	30,060
06/15/2005	06/28/2005	13.0	3,363	43,723
06/15/2005	06/29/2005	14.0	2,389	33,449
06/15/2005	06/30/2005	15.0	894	13,404
06/15/2005	07/01/2005	16.0	5,165	82,647
06/15/2005	07/05/2005	20.0	3,296	65,924
06/15/2005	07/06/2005	21.0	1,024	21,504
06/15/2005	07/07/2005	22.0	2,838	62,438
06/15/2005	07/08/2005	23.0	1,655	38,062
06/15/2005	07/12/2005	27.0	180	4,857
06/15/2005	07/13/2005	28.0	180	5,037
06/15/2005	07/18/2005	33.0	2,060	67,995
06/15/2005	07/19/2005	34.0	180	6,116
06/15/2005	07/29/2005	44.0	2,239	98,508
06/15/2005	08/01/2005	47.0	1,565	73,547
06/15/2005	08/05/2005	51.0	1,420	72,402
06/15/2005	08/08/2005	54.0	853	46,054
06/29/2005	06/29/2005	0.0	20,730	0
06/29/2005	06/30/2005	1.0	55,843	55,843
06/29/2005	07/01/2005	2.0	45,261	90,522
06/29/2005	07/05/2005	6.0	19,089	114,536
06/29/2005	07/06/2005	7.0	12,125	84,878
06/29/2005	07/07/2005	8.0	12,944	103,552
06/29/2005	07/08/2005	9.0	3,011	27,102
06/29/2005	07/11/2005	12.0	745	8,939
06/29/2005	07/12/2005	13.0	1,995	25,937
06/29/2005	07/13/2005	14.0	1,841	25,781
06/29/2005	07/14/2005	15.0	1,737	26,061
06/29/2005	07/15/2005	16.0	1,609	25,738
06/29/2005	07/18/2005	19.0	3,459	65,717
06/29/2005	07/19/2005	20.0	2,358	47,155

		(X)	(Y)	(X) * (Y)
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED	DOLLAR DAYS
06/29/2005	07/20/2005	21.0	270	5,676
06/29/2005	07/21/2005	22.0	714	15,702
06/29/2005	07/27/2005	28.0	167	4,682
06/29/2005	08/01/2005	33.0	1,466	48,370
06/29/2005	08/03/2005	35.0	167	5,852
06/29/2005	08/04/2005	36.0	360	12,952
06/29/2005	08/05/2005	37.0	1,425	52,720
06/29/2005	08/09/2005	41.0	167	6,856
06/29/2005	08/12/2005	44.0	1,905	83,805
06/29/2005	08/24/2005	56.0	737	41,279
06/29/2005	09/09/2005	72.0	4,862	350,032
07/13/2005	07/13/2005	0.0	17,696	0
07/13/2005	07/14/2005	1.0	50,101	50,101
07/13/2005	07/15/2005	2.0	47,757	95,514
07/13/2005	07/18/2005	5.0	25,174	125,868
07/13/2005	07/19/2005	6.0	14,414	86,481
07/13/2005	07/20/2005	7.0	4,158	29,105
07/13/2005	07/21/2005	8.0	7,468	59,744
07/13/2005	07/22/2005	9.0	1,546	13,914
07/13/2005	07/25/2005	12.0	2,672	32,064
07/13/2005	07/26/2005	13.0	2,168	28,189
07/13/2005	07/27/2005	14.0	3,045	42,623
07/13/2005	07/28/2005	15.0	599	8,982
07/13/2005	08/01/2005	19.0	3,338	63,420
07/13/2005	08/02/2005	20.0	520	10,397
07/13/2005	08/05/2005	23.0	167	3,846
07/13/2005	08/08/2005	26.0	1,539	40,009
07/13/2005	08/09/2005	27.0	527	14,228
07/13/2005	08/11/2005	29.0	155	4,482
07/13/2005	08/12/2005	30.0	167	5,016
07/13/2005	08/18/2005	36.0	226	8,149
07/13/2005	08/19/2005	37.0	331	12,261
07/13/2005	08/22/2005	40.0	2,173	86,923
07/13/2005	08/23/2005	41.0	167	6,856
07/13/2005	08/24/2005	42.0	853	35,821
07/13/2005	08/26/2005	44.0	1,897	83,484
07/13/2005	09/06/2005	55.0	1,771	97,409
07/13/2005	09/07/2005	56.0	167	9,364
07/13/2005	09/09/2005	58.0	4,957	287,504
07/13/2005	10/11/2005	90.0	59	5,324
07/27/2005	07/27/2005	0.0	12,739	0
07/27/2005	07/28/2005	1.0	59,206	59,206
07/27/2005	07/29/2005	2.0	14,991	29,981
07/27/2005	08/01/2005	5.0	39,767	198,836
07/27/2005	08/02/2005	6.0	12,444	74,662

		(X)	(Y)	(X) * (Y)
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED	DOLLAR DAYS
07/27/2005	08/03/2005	7.0	8,030	56,207
07/27/2005	08/04/2005	8.0	2,532	20,253
07/27/2005	08/05/2005	9.0	3,598	32,386
07/27/2005	08/08/2005	12.0	4,780	57,364
07/27/2005	08/09/2005	13.0	446	5,799
07/27/2005	08/10/2005	14.0	749	10,489
07/27/2005	08/11/2005	15.0	2,394	35,907
07/27/2005	08/12/2005	16.0	1,030	16,476
07/27/2005	08/15/2005	19.0	2,816	53,503
07/27/2005	08/17/2005	21.0	575	12,081
07/27/2005	08/19/2005	23.0	496	11,409
07/27/2005	08/22/2005	26.0	1,966	51,107
07/27/2005	08/31/2005	35.0	1,018	35,622
07/27/2005	09/01/2005	36.0	331	11,930
07/27/2005	09/06/2005	41.0	1,788	73,303
07/27/2005	09/07/2005	42.0	1,605	67,401
07/27/2005	09/09/2005	44.0	6,722	295,775
07/27/2005	09/16/2005	51.0	1,098	56,005
07/27/2005	09/19/2005	54.0	757	40,855
08/10/2005	08/10/2005	0.0	13,434	0
08/10/2005	08/11/2005	1.0	54,568	54,568
08/10/2005	08/12/2005	2.0	32,260	64,520
08/10/2005	08/15/2005	5.0	34,531	172,654
08/10/2005	08/16/2005	6.0	17,213	103,280
08/10/2005	08/17/2005	7.0	5,532	38,723
08/10/2005	08/18/2005	8.0	3,885	31,082
08/10/2005	08/19/2005	9.0	588	5,292
08/10/2005	08/22/2005	12.0	3,716	44,591
08/10/2005	08/23/2005	13.0	730	9,492
08/10/2005	08/24/2005	14.0	782	10,941
08/10/2005	08/26/2005	16.0	892	14,265
08/10/2005	08/29/2005	19.0	3,582	68,052
08/10/2005	08/30/2005	20.0	1,600	31,991
08/10/2005	08/31/2005	21.0	319	6,696
08/10/2005	09/01/2005	22.0	628	13,818
08/10/2005	09/06/2005	27.0	1,616	43,638
08/10/2005	09/08/2005	29.0	532	15,429
08/10/2005	09/16/2005	37.0	1,391	51,464
08/10/2005	09/19/2005	40.0	167	6,688
08/10/2005	09/20/2005	41.0	142	5,813
08/10/2005	09/23/2005	44.0	3,998	175,908
08/10/2005	09/26/2005	47.0	1,949	91,590
08/10/2005	09/27/2005	48.0	436	20,919
08/10/2005	10/12/2005	63.0	5,252	330,851
08/10/2005	10/14/2005	65.0	167	10,869

		(X)	(Y)	(X) * (Y)
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED	DOLLAR DAYS
08/10/2005	10/25/2005	76.0	423	32,134
08/24/2005	08/24/2005	0.0	11,892	0
08/24/2005	08/25/2005	1.0	73,938	73,938
08/24/2005	08/26/2005	2.0	24,351	48,701
08/24/2005	08/29/2005	5.0	31,605	158,026
08/24/2005	08/30/2005	6.0	11,479	68,872
08/24/2005	08/31/2005	7.0	6,861	48,029
08/24/2005	09/01/2005	8.0	2,324	18,594
08/24/2005	09/02/2005	9.0	2,745	24,703
08/24/2005	09/06/2005	13.0	3,588	46,645
08/24/2005	09/07/2005	14.0	1,248	17,476
08/24/2005	09/08/2005	15.0	473	7,101
08/24/2005	09/09/2005	16.0	833	13,330
08/24/2005	09/12/2005	19.0	334	6,354
08/24/2005	09/13/2005	20.0	496	9,921
08/24/2005	09/14/2005	21.0	2,336	49,050
08/24/2005	09/15/2005	22.0	1,953	42,966
08/24/2005	09/16/2005	23.0	1,628	37,447
08/24/2005	09/22/2005	29.0	167	4,849
08/24/2005	09/23/2005	30.0	1,425	42,746
08/24/2005	09/26/2005	33.0	1,837	60,623
08/24/2005	09/28/2005	35.0	836	29,273
08/24/2005	09/29/2005	36.0	167	6,020
08/24/2005	10/03/2005	40.0	2,799	111,973
08/24/2005	10/06/2005	43.0	167	7,190
08/24/2005	10/07/2005	44.0	2,282	100,402
08/24/2005	10/12/2005	49.0	4,816	235,999
08/24/2005	10/21/2005	58.0	167	9,698
08/24/2005	11/09/2005	77.0	180	13,852
08/24/2005	12/14/2005	112.0	236	26,481
09/08/2005	09/08/2005	0.0	21,903	0
09/08/2005	09/09/2005	1.0	46,850	46,850
09/08/2005	09/12/2005	4.0	46,090	184,362
09/08/2005	09/13/2005	5.0	15,289	76,446
09/08/2005	09/14/2005	6.0	6,565	39,388
09/08/2005	09/15/2005	7.0	5,501	38,504
09/08/2005	09/16/2005	8.0	3,151	25,205
09/08/2005	09/19/2005	11.0	3,973	43,708
09/08/2005	09/20/2005	12.0	4,157	49,879
09/08/2005	09/21/2005	13.0	510	6,625
09/08/2005	09/22/2005	14.0	1,787	25,022
09/08/2005	09/23/2005	15.0	155	2,318
09/08/2005	09/26/2005	18.0	1,475	26,551
09/08/2005	09/27/2005	19.0	1,095	20,813
09/08/2005	09/28/2005	20.0	1,317	26,344

		(X)	(Y)	(X) * (Y)
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED	DOLLAR DAYS
09/08/2005	09/29/2005	21.0	461	9,678
09/08/2005	09/30/2005	22.0	167	3,679
09/08/2005	10/03/2005	25.0	3,035	75,876
09/08/2005	10/04/2005	26.0	193	5,007
09/08/2005	10/05/2005	27.0	1,195	32,265
09/08/2005	10/07/2005	29.0	1,412	40,960
09/08/2005	10/12/2005	34.0	5,583	189,822
09/08/2005	10/14/2005	36.0	155	5,563
09/08/2005	10/17/2005	39.0	520	20,261
09/08/2005	10/21/2005	43.0	1,504	64,665
09/08/2005	10/28/2005	50.0	648	32,392
09/08/2005	11/14/2005	67.0	693	46,422
09/08/2005	11/17/2005	70.0	1,506	105,399
09/08/2005	12/21/2005	104.0	167	17,390
09/21/2005	09/21/2005	0.0	9,193	0
09/21/2005	09/22/2005	1.0	59,222	59,222
09/21/2005	09/23/2005	2.0	23,710	47,420
09/21/2005	09/26/2005	5.0	21,043	105,216
09/21/2005	09/27/2005	6.0	19,324	115,945
09/21/2005	09/28/2005	7.0	4,463	31,241
09/21/2005	09/29/2005	8.0	4,332	34,659
09/21/2005	09/30/2005	9.0	3,307	29,764
09/21/2005	10/03/2005	12.0	5,303	63,634
09/21/2005	10/04/2005	13.0	694	9,024
09/21/2005	10/05/2005	14.0	656	9,179
09/21/2005	10/06/2005	15.0	1,446	21,684
09/21/2005	10/07/2005	16.0	367	5,870
09/21/2005	10/11/2005	20.0	520	10,390
09/21/2005	10/12/2005	21.0	306	6,432
09/21/2005	10/13/2005	22.0	523	11,510
09/21/2005	10/14/2005	23.0	3,503	80,558
09/21/2005	10/17/2005	26.0	167	4,347
09/21/2005	10/18/2005	27.0	1,121	30,274
09/21/2005	10/20/2005	29.0	226	6,564
09/21/2005	10/24/2005	33.0	1,554	51,298
09/21/2005	10/26/2005	35.0	226	7,923
09/21/2005	10/28/2005	37.0	1,127	41,710
09/21/2005	11/01/2005	41.0	167	6,856
09/21/2005	11/04/2005	44.0	1,375	60,479
09/21/2005	11/14/2005	54.0	743	40,098
09/21/2005	11/17/2005	57.0	1,639	93,419
09/21/2005	12/06/2005	76.0	4,807	365,362
10/05/2005	10/05/2005	0.0	17,123	0
10/05/2005	10/06/2005	1.0	53,272	53,272
10/05/2005	10/07/2005	2.0	37,588	75,177

		(X)	(Y)	(X) * (Y)
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED	DOLLAR DAYS
10/05/2005	10/11/2005	6.0	14,511	87,067
10/05/2005	10/12/2005	7.0	13,821	96,746
10/05/2005	10/13/2005	8.0	2,949	23,594
10/05/2005	10/14/2005	9.0	5,698	51,285
10/05/2005	10/17/2005	12.0	2,770	33,243
10/05/2005	10/18/2005	13.0	1,854	24,098
10/05/2005	10/19/2005	14.0	5,407	75,698
10/05/2005	10/20/2005	15.0	616	9,233
10/05/2005	10/21/2005	16.0	2,171	34,735
10/05/2005	10/24/2005	19.0	1,766	33,550
10/05/2005	10/25/2005	20.0	469	9,377
10/05/2005	10/26/2005	21.0	385	8,088
10/05/2005	10/27/2005	22.0	168	3,702
10/05/2005	10/28/2005	23.0	1,222	28,098
10/05/2005	10/31/2005	26.0	319	8,290
10/05/2005	11/01/2005	27.0	2,676	72,248
10/05/2005	11/03/2005	29.0	205	5,952
10/05/2005	11/08/2005	34.0	155	5,254
10/05/2005	11/09/2005	35.0	334	11,705
10/05/2005	11/14/2005	40.0	736	29,453
10/05/2005	11/16/2005	42.0	1,612	67,693
10/05/2005	11/17/2005	43.0	2,570	110,526
10/05/2005	11/18/2005	44.0	4,509	198,378
10/05/2005	12/06/2005	62.0	5,473	339,322
10/05/2005	03/01/2006	147.0	167	24,580
10/19/2005	10/19/2005	0.0	19,278	0
10/19/2005	10/20/2005	1.0	60,412	60,412
10/19/2005	10/21/2005	2.0	21,576	43,153
10/19/2005	10/24/2005	5.0	28,309	141,543
10/19/2005	10/25/2005	6.0	3,712	22,269
10/19/2005	10/26/2005	7.0	5,278	36,943
10/19/2005	10/27/2005	8.0	1,680	13,440
10/19/2005	10/28/2005	9.0	10,764	96,875
10/19/2005	10/31/2005	12.0	4,129	49,550
10/19/2005	11/01/2005	13.0	6,759	87,872
10/19/2005	11/02/2005	14.0	3,169	44,364
10/19/2005	11/03/2005	15.0	1,006	15,085
10/19/2005	11/04/2005	16.0	167	2,675
10/19/2005	11/07/2005	19.0	1,057	20,079
10/19/2005	11/08/2005	20.0	334	6,688
10/19/2005	11/09/2005	21.0	2,668	56,026
10/19/2005	11/15/2005	27.0	103	2,773
10/19/2005	11/17/2005	29.0	782	22,675
10/19/2005	11/21/2005	33.0	167	5,518
10/19/2005	11/23/2005	35.0	89	3,098

		(X)	(Y)	(X) * (Y)
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED	DOLLAR DAYS
10/19/2005	11/25/2005	37.0	1,652	61,130
10/19/2005	11/29/2005	41.0	824	33,802
10/19/2005	11/30/2005	42.0	367	15,408
10/19/2005	12/02/2005	44.0	1,676	73,724
10/19/2005	12/05/2005	47.0	1,277	60,001
10/19/2005	12/06/2005	48.0	5,186	248,932
11/02/2005	11/02/2005	0.0	25,749	0
11/02/2005	11/03/2005	1.0	59,949	59,949
11/02/2005	11/04/2005	2.0	38,012	76,025
11/02/2005	11/07/2005	5.0	21,005	105,024
11/02/2005	11/08/2005	6.0	15,904	95,426
11/02/2005	11/09/2005	7.0	14,557	101,899
11/02/2005	11/10/2005	8.0	2,235	17,879
11/02/2005	11/14/2005	12.0	6,106	73,269
11/02/2005	11/15/2005	13.0	4,892	63,592
11/02/2005	11/16/2005	14.0	1,908	26,714
11/02/2005	11/17/2005	15.0	2,823	42,346
11/02/2005	11/18/2005	16.0	2,597	41,560
11/02/2005	11/21/2005	19.0	707	13,431
11/02/2005	11/22/2005	20.0	334	6,688
11/02/2005	11/23/2005	21.0	193	4,044
11/02/2005	11/25/2005	23.0	1,704	39,202
11/02/2005	11/28/2005	26.0	155	4,018
11/02/2005	12/02/2005	30.0	2,941	88,226
11/02/2005	12/06/2005	34.0	309	10,505
11/02/2005	12/09/2005	37.0	1,104	40,864
11/02/2005	12/12/2005	40.0	3,217	128,682
11/02/2005	12/16/2005	44.0	2,046	90,024
11/02/2005	12/21/2005	49.0	167	8,193
11/02/2005	12/23/2005	51.0	252	12,838
11/02/2005	01/27/2006	86.0	5,754	494,827
11/16/2005	11/16/2005	0.0	21,432	0
11/16/2005	11/17/2005	1.0	49,982	49,982
11/16/2005	11/18/2005	2.0	40,689	81,378
11/16/2005	11/21/2005	5.0	10,706	53,532
11/16/2005	11/22/2005	6.0	16,118	96,709
11/16/2005	11/23/2005	7.0	5,378	37,646
11/16/2005	11/25/2005	9.0	4,072	36,649
11/16/2005	11/28/2005	12.0	6,118	73,421
11/16/2005	11/29/2005	13.0	1,145	14,885
11/16/2005	11/30/2005	14.0	6,265	87,707
11/16/2005	12/01/2005	15.0	7,099	106,478
11/16/2005	12/02/2005	16.0	4,906	78,504
11/16/2005	12/05/2005	19.0	1,887	35,847
11/16/2005	12/06/2005	20.0	821	16,412

		(X)	(Y)	(X) * (Y)
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED	DOLLAR DAYS
11/16/2005	12/07/2005	21.0	167	3,511
11/16/2005	12/08/2005	22.0	2,896	63,717
11/16/2005	12/09/2005	23.0	1,862	42,825
11/16/2005	12/12/2005	26.0	1,790	46,545
11/16/2005	12/13/2005	27.0	142	3,828
11/16/2005	12/19/2005	33.0	167	5,518
11/16/2005	12/21/2005	35.0	167	5,852
11/16/2005	12/22/2005	36.0	473	17,042
11/16/2005	12/27/2005	41.0	155	6,336
11/16/2005	12/30/2005	44.0	1,133	49,842
11/16/2005	01/09/2006	54.0	1,781	96,155
11/16/2005	01/27/2006	72.0	5,409	389,426
11/16/2005	02/27/2006	103.0	167	17,223
11/30/2005	11/30/2005	0.0	22,985	0
11/30/2005	12/01/2005	1.0	61,230	61,230
11/30/2005	12/02/2005	2.0	40,687	81,374
11/30/2005	12/05/2005	5.0	21,227	106,136
11/30/2005	12/06/2005	6.0	13,282	79,693
11/30/2005	12/07/2005	7.0	1,286	9,004
11/30/2005	12/08/2005	8.0	5,939	47,515
11/30/2005	12/09/2005	9.0	3,174	28,566
11/30/2005	12/12/2005	12.0	4,642	55,698
11/30/2005	12/13/2005	13.0	783	10,175
11/30/2005	12/14/2005	14.0	1,599	22,388
11/30/2005	12/15/2005	15.0	839	12,580
11/30/2005	12/16/2005	16.0	446	7,138
11/30/2005	12/19/2005	19.0	372	7,077
11/30/2005	12/20/2005	20.0	243	4,861
11/30/2005	12/21/2005	21.0	975	20,481
11/30/2005	12/22/2005	22.0	155	3,400
11/30/2005	12/23/2005	23.0	281	6,468
11/30/2005	12/27/2005	27.0	3,259	87,994
11/30/2005	12/29/2005	29.0	116	3,356
11/30/2005	12/30/2005	30.0	1,145	34,340
11/30/2005	01/04/2006	35.0	167	5,852
11/30/2005	01/09/2006	40.0	1,656	66,252
11/30/2005	01/13/2006	44.0	1,621	71,317
11/30/2005	01/18/2006	49.0	319	15,623
11/30/2005	01/23/2006	54.0	1,092	58,957
11/30/2005	01/27/2006	58.0	5,580	323,650
12/14/2005	12/14/2005	0.0	15,854	0
12/14/2005	12/15/2005	1.0	67,221	67,221
12/14/2005	12/16/2005	2.0	41,977	83,954
12/14/2005	12/19/2005	5.0	19,492	97,458
12/14/2005	12/20/2005	6.0	14,600	87,602

		(X)	(Y)	(X) * (Y)
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED	DOLLAR DAYS
12/14/2005	12/21/2005	7.0	3,154	22,077
12/14/2005	12/22/2005	8.0	1,758	14,065
12/14/2005	12/23/2005	9.0	1,659	14,933
12/14/2005	12/27/2005	13.0	6,840	88,922
12/14/2005	12/28/2005	14.0	2,924	40,939
12/14/2005	12/29/2005	15.0	1,548	23,216
12/14/2005	12/30/2005	16.0	1,269	20,308
12/14/2005	01/03/2006	20.0	547	10,935
12/14/2005	01/04/2006	21.0	167	3,511
12/14/2005	01/05/2006	22.0	601	13,214
12/14/2005	01/06/2006	23.0	2,698	62,053
12/14/2005	01/09/2006	26.0	1,604	41,694
12/14/2005	01/10/2006	27.0	180	4,857
12/14/2005	01/11/2006	28.0	167	4,682
12/14/2005	01/13/2006	30.0	180	5,397
12/14/2005	01/17/2006	34.0	320	10,874
12/14/2005	01/20/2006	37.0	1,833	67,832
12/14/2005	01/23/2006	40.0	906	36,242
12/14/2005	01/24/2006	41.0	322	13,192
12/14/2005	01/25/2006	42.0	195	8,190
12/14/2005	01/27/2006	44.0	5,188	228,290
12/14/2005	01/31/2006	48.0	319	15,304
12/14/2005	02/01/2006	49.0	167	8,193
12/14/2005	02/15/2006	63.0	89	5,576
12/29/2005	12/29/2005	0.0	13,021	0
12/29/2005	12/30/2005	1.0	62,869	62,869
12/29/2005	01/03/2006	5.0	42,958	214,788
12/29/2005	01/04/2006	6.0	13,186	79,114
12/29/2005	01/05/2006	7.0	11,357	79,496
12/29/2005	01/06/2006	8.0	11,061	88,492
12/29/2005	01/09/2006	11.0	6,817	74,987
12/29/2005	01/10/2006	12.0	2,430	29,160
12/29/2005	01/11/2006	13.0	2,506	32,574
12/29/2005	01/12/2006	14.0	1,045	14,627
12/29/2005	01/13/2006	15.0	155	2,318
12/29/2005	01/17/2006	19.0	459	8,712
12/29/2005	01/18/2006	20.0	296	5,919
12/29/2005	01/23/2006	25.0	5,805	145,128
12/29/2005	01/24/2006	26.0	155	4,018
12/29/2005	01/26/2006	28.0	155	4,327
12/29/2005	02/01/2006	34.0	155	5,254
12/29/2005	02/03/2006	36.0	1,906	68,617
12/29/2005	02/07/2006	40.0	155	6,182
12/29/2005	02/15/2006	48.0	167	8,026
12/29/2005	02/21/2006	54.0	5,523	298,229

	(X)	(Y)	(X) * (Y)
PAYMENT DATE	DATE CHECK CLEARS BANK	PAYMENT DATE TO CLEAR DATE (DAYS)	PAYROLL CHECKS AMOUNT CLEARED
			DOLLAR DAYS
12/29/2005	02/22/2006	55.0	319
12/29/2005	02/27/2006	60.0	1,344
12/29/2005	03/10/2006	71.0	155

4,841,854	35,123,538
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Payroll Check Clearing Lag

7.25

Hawaiian Electric Company, Inc.
Working Cash Study
O&M Non-Labor Payment Lag

File:

S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-1
Per Supporting Worksheets

Source:

	Test Year Expense (\$000's)	% of Total	Total Payment Lag Days	Weighted Average
	Note A		HECO-WP-1806, p. 33-37	
Pension ¹	\$10,821	8%	0	days
OPEB ²	\$3,815	3%	66	2 days
Pension Regulatory Liability amort.	(\$610)	0%	0	days
OPEB Regulatory Liability amort.	(\$155)	0%	0	days
Emission Fees ³	\$958	1%	252	2 days
EPRI Dues ⁴	\$1,657	1%	(3)	days
Other Non-Labor O&M ⁵	\$121,605	88%	30	27 days
	<u>\$138,091</u>	<u>100%</u>		

O&M Non-Labor Payment Lag	30 days
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NOTE: Totals may not add exactly due to rounding.

Note A

¹ Pension expense estimate based on 2009 Pension Accrual of \$14,623k (per HECO-1303) x 74% (based on 2007 % of Employee Benefits charged to O&M expense).

² OPEB expense estimate based on 2009 OPEB expense of \$5,155k (per HECO-1301) x 74% (based on 2007 % of Employee Benefits charged to O&M expense).

³ Emission Fees per HECO T-7.

⁴ EPRI Dues per HECO-1406

⁵ Other Non-Labor O&M = Total O&M Non-Labor expense of \$138,091k, less other items noted above.

Hawaiian Electric Company
Working Cash Study
OPEB Payment Lag

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.32-37 (Nc
Source: 2008 Payments and forecast payments. Information per Treasury wire transfer files.

OPEB

	SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	PAYMENT DATE ¹	END DATE TO PAY DATE (DAYS)	PAYMENT LAG DAYS	INVOICE (\$) ²	WEIGHTED AVERAGE
	BEGIN	END						
January	1/1/08	1/31/08	15.5	3/31/08	59.5	75.0	33,333	2,500,000
	1/1/08	1/31/08	15.5	6/30/08	150.5	166.0	491,382	81,569,329
February	2/1/08	2/28/08	14.0	3/31/08	31.5	45.5	33,333	1,516,667
	2/1/08	2/28/08	14.0	6/30/08	122.5	136.5	491,382	67,073,575
March	3/1/08	3/31/08	15.5	3/31/08	(0.5)	15.0	33,333	500,000
	3/1/08	3/31/08	15.5	6/30/08	90.5	106.0	491,382	52,086,439
April	4/1/08	4/30/08	15.0	6/30/08	60.5	75.5	33,333	2,516,666
	4/1/08	4/30/08	15.0	6/30/08	60.5	75.5	491,382	37,099,303
May	5/1/08	5/31/08	15.5	6/30/08	29.5	45.0	33,333	1,500,000
	5/1/08	5/31/08	15.5	6/30/08	29.5	45.0	491,382	22,112,168
June	6/1/08	6/30/08	15.0	6/30/08	(0.5)	14.5	33,333	483,333
	6/1/08	6/30/08	15.0	6/30/08	(0.5)	14.5	491,382	7,125,032
July	7/1/08	7/31/08	15.5	9/30/08	60.5	76.0	33,333	2,533,333
	7/1/08	7/31/08	15.5	9/30/08	60.5	76.0	491,382	37,344,994
August	8/1/08	8/31/08	15.5	9/30/08	29.5	45.0	33,333	1,500,000
	8/1/08	8/31/08	15.5	9/30/08	29.5	45.0	491,382	22,112,168
September	9/1/08	9/30/08	15.0	9/30/08	(0.5)	14.5	33,333	483,333
	9/1/08	9/30/08	15.0	9/30/08	(0.5)	14.5	491,382	7,125,032
October	10/1/08	10/31/08	15.5	12/30/08	59.5	75.0	33,333	2,500,000
	10/1/08	10/31/08	15.5	12/30/08	59.5	75.0	491,382	36,853,613
November	11/1/08	11/30/08	15.0	12/30/08	29.5	44.5	33,333	1,483,333
	11/1/08	11/30/08	15.0	12/30/08	29.5	44.5	491,382	21,866,477
December	12/1/08	12/31/08	15.5	12/30/08	(1.5)	14.0	33,333	466,667
	12/1/08	12/31/08	15.5	12/30/08	(1.5)	14.0	491,393	6,879,495
							<u>6,296,589</u>	<u>417,230,954</u>

OPEB Payment Lag

66.3

¹ HECO is currently making quarterly OPEB payments. Dates listed are the dates in 2008 the OPEB payment was wired or is scheduled to be wired.

² As noted in footnote 1 above, OPEB payments are made quarterly. However, OPEB expense is recognized monthly. In order to capture the appropriate payment lag days the amounts shown in this column represent the portion of the quarterly payment recognized in the that service period. Therefore, the sum of the amounts with the same payment date represent the total quarterly payment made.

Hawaiian Electric Company, Inc.
Working Cash Study

Emission Fees Payment Lag

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.32-37 (Non-Labor O&M).xls\Summary

Source: 2007 Emission fee payments per Ellipse

Hawaii State Dept of Health

SERVICE PERIOD				(X1)	(X2)	(X1) + (X2)				
CHECK NUMBER	INVOICE NUMBER	BEGIN	END	AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)	DATE CHECK CLEARED	CHECK CLEARING LAG (DAYS)	TOTAL PAYMENT LAG DAYS
74139	2042008	1/1/07	12/31/07	182.5	2/14/08	44.5	227.0	3/10/08	25.0	252.0
74103	2052008	1/1/07	12/31/07	182.5	2/12/08	42.5	225.0	3/10/08	27.0	252.0
74104	2052008A	1/1/07	12/31/07	182.5	2/12/08	42.5	225.0	3/10/08	27.0	252.0
665001	2042008B	1/1/07	12/31/07	182.5	2/12/08	42.5	225.0	3/10/08	27.0	252.0
74105	2042008	1/1/07	12/31/07	182.5	2/12/08	42.5	225.0	3/10/08	27.0	252.0
74106	2042008A	1/1/07	12/31/07	182.5	2/12/08	42.5	225.0	3/10/08	27.0	252.0
Emission Fees Payment Lag							225.3		26.7	252.0

Working Cash Study

EPRI Dues

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.32-37 (Non-Labor O&M).xls]Summary

Source: 2007 EPRI payments per Ellipse

EPRI Dues are paid QUARTERLY.

CHECK NUMBER	INVOICE NUMBER	SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	(X1)	DATE CHECK CLEARED	(X2)	(X1) + (X2)
		BEGIN	END				PAYMENT LAG (DAYS)		CHECK CLEARING LAG (DAYS)	TOTAL PAYMENT LAG DAYS
70707	EP00309240	1/1/07	3/31/07	45.0	2/22/07	(37.5)	7.5	2/27/07	5.0	12.5
71332	EP00313791	4/1/07	6/30/07	45.5	5/1/07	(60.5)	(15.0)	5/8/07	7.0	(8.0)
72211	EP00319029	7/1/07	9/30/07	46.0	8/2/07	(59.5)	(13.5)	8/8/07	6.0	(7.5)
73058	EP00323805	10/1/07	12/31/07	46.0	10/30/07	(62.5)	(16.5)	11/5/07	6.0	(10.5)
EPRI Dues Payment Lag							(9.4)		6.0	(3.4)

Hawaiian Electric Company, Inc.
Working Cash Study
Other Non-Labor O&M Payment Lag

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.32-37 ()
Source: HECO-WP-1706, Docket No. 2006-0386, pages 35-36.

VENDOR	SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	DATE CHECK CLEARED	TOTAL LAG (DAYS)	INVOICE AMOUNT (\$)	(X) * (W) DOLLAR DAYS
	BEGIN	END					
1 Kaman Industrial Tech Corp	8/4/03	8/4/03	0.5	8/20/03	16.0	150	2,407
2 Graybar Electric Co.	9/19/03	9/19/03	0.5	10/14/03	25.0	127	3,170
3 Issue Stock Code #000578305	6/3/03	6/3/03	0.5	6/3/03	0.0	20	0
4 Kele & Associates	3/20/03	3/20/03	0.5	4/17/03	28.0	399	11,182
5 Boise Office*In	7/25/03	7/25/03	0.5	8/14/03	20.0	336	6,725
6 Diversified Energy Svcs Inc.	3/31/03	4/27/03	14.0	5/9/03	25.5	2,139	54,556
7 Issue Stock Code #000223966	12/30/03	12/30/03	0.5	12/30/03	0.0	625	0
8 EPRI Solutions Inc.	1/30/03	1/30/03	0.5	3/3/03	32.0	55,000	1,760,000
9 Issue Stock Code #000380840	4/21/03	4/21/03	0.5	4/21/03	0.0	2	0
10 David John M.D., Inc.	9/16/03	9/16/03	0.5	10/27/03	41.0	95	3,909
11 Atlas Sales Co., Inc.-Kapolei	4/23/03	5/20/03	14.0	6/30/03	54.5	2,047	111,554
12 Process Controls, Inc.	9/2/03	9/2/03	0.5	10/7/03	35.0	1	51
13 Issue Stock Code #000268045	1/22/03	1/22/03	0.5	1/22/03	0.0	140	0
14 Schuler Homes Inc.	12/16/03	12/16/03	0.5	1/23/04	38.0	80	3,040
15 Hawaii Dental Service	10/1/03	10/31/03	15.5	10/10/03	(6.0)	35,782	(214,694)
16 Modern Key Shop Inc.	4/1/03	4/1/03	0.5	5/8/03	37.0	366	13,534
17 Castle & Cooke Homes	7/23/03	7/23/03	0.5	8/22/03	30.0	270	8,100
18 Issue Stock Code #000373225	6/2/03	6/2/03	0.5	6/2/03	0.0	62	0
19 Diamond Head Sprinklers	2/3/03	2/3/03	0.5	2/14/03	11.0	48	526
20 Issue Stock Code #000586784	8/23/03	8/23/03	0.5	8/23/03	0.0	9	0
21 Board of Water Supply	12/10/02	1/10/03	16.0	2/10/03	46.5	12,268	570,454
22 Valve Service & Supply Inc.	10/10/03	10/10/03	0.5	11/17/03	38.0	805	30,588
23 Giordano's Paintining, Inc.	2/15/03	4/16/03	30.5	5/16/03	60.0	16,200	972,000
24 Issue Stock Code #000115402	1/30/03	1/30/03	0.5	1/30/03	0.0	636	0
25 Issue Stock Code #000224543	4/11/03	4/11/03	0.5	4/11/03	0.0	195	0
26 AT&T WS	9/29/03	9/29/03	0.5	10/14/03	15.0	100	1,502
27 Issue Stock Code #000227066	3/7/03	3/7/03	0.5	3/7/03	0.0	1	0
28 Kuakini Radiology Group	8/22/03	8/22/03	0.5	10/10/03	49.0	295	14,436
29 T. Michael May (Emp Reimb)	3/12/03	3/13/03	1.0	4/24/03	42.5	17	723
30 Issue Stock Code #000124602	3/21/03	3/21/03	0.5	3/21/03	0.0	96	0
31 Altres Staffing Inc.	9/8/03	9/12/03	2.5	9/26/03	16.0	302	4,831
32 Castle & Cooke Homes	12/9/03	12/9/03	0.5	1/16/04	38.0	270	10,260
33 Issue Stock Code #000574135	6/2/03	6/2/03	0.5	6/2/03	0.0	55	0
34 Schuler Homes Inc.	10/16/03	10/16/03	0.5	11/25/03	40.0	750	30,000
35 The Babcock & Wilcox Co.	1/30/03	1/30/03	0.5	3/17/03	46.0	63	2,884
36 Issue Stock Code #000366906	11/10/03	11/10/03	0.5	11/10/03	0.0	11	0
37 Goodsill Anderson Quinn Stifel	3/5/03	3/31/03	13.5	7/2/03	106.0	2,500	264,989
Piper Rudnick LLP	3/19/03	3/31/03	6.5	7/9/03	106.0	2,075	219,929
Piper Rudnick LLP	4/1/03	4/30/03	15.0	7/9/03	84.5	5,154	435,479
Cades Schutte LLP	4/17/03	4/17/03	0.5	6/16/03	60.0	64	3,828
38 W.W. Grainger, Inc.	6/25/03	6/25/03	0.5	7/28/03	33.0	24	804
39 Issue Stock Code #000370007	5/19/03	5/19/03	0.5	5/19/03	0.0	201	0
40 Sun Industries, Inc.	8/1/03	8/31/03	15.5	9/26/03	41.0	36	1,456
41 Craig Wireless Honolulu	3/1/03	3/31/03	15.5	3/14/03	(2.0)	60	(121)
42 Pioneer Electric Inc.	2/7/03	2/7/03	0.5	2/14/03	7.0	102	711
43 Samuel M. Nakata	2/6/03	2/6/03	0.5	2/24/03	18.0	40	720
44 Crane Nuclear, Inc.	10/6/03	10/6/03	0.5	11/4/03	29.0	33	965

VENDOR	SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	DATE CHECK CLEARED	TOTAL LAG (DAYS)	INVOICE AMOUNT (\$)	DOLLAR DAYS
	BEGIN	END					
45 Issue Stock Code #000251884	4/29/03	4/29/03	0.5	4/29/03	0.0	24	0
46 Schuman Auto - Cambell	3/31/03	3/31/03	0.5	4/14/03	14.0	23	316
47 Sun Industries, Inc.	1/1/03	1/31/03	15.5	4/4/03	78.0	18	1,385
48 Sun Industries, Inc.	3/13/03	3/13/03	0.5	5/16/03	64.0	490	31,333
49 Maguire Bearing Co.	1/24/03	1/24/03	0.5	2/14/03	21.0	50	1,058
50 Atlas Sales Co., Inc.-Kapolei	9/11/03	10/8/03	14.0	10/10/03	15.5	69	1,066
51 Rolloffs Hawaii, Inc.	9/1/03	9/30/03	15.0	10/27/03	41.5	1,480	61,407
52 Board of Water Supply	5/7/03	7/10/03	32.5	7/29/03	51.0	4	189
53 Board of Water Supply	1/29/03	4/3/03	32.5	5/14/03	73.0	57	4,149
54 Edison Electric Institute	6/1/03	6/4/03	2.0	3/13/03	(81.5)	1,050	(85,575)
55 Mail-Well Envelope	9/23/03	9/23/03	0.5	11/6/03	44.0	91	3,993
56 Roy's Fishing Supply	1/29/03	1/29/03	0.5	2/14/03	16.0	31	493
57 Robert M. McCulloch	6/24/03	6/24/03	0.5	7/8/03	14.0	50	700
58 Issue Stock Code #000341685	11/15/03	11/15/03	0.5	11/15/03	0.0	385	0
59 Issue Stock Code #000595447	2/11/03	2/11/03	0.5	2/11/03	0.0	115	0
60 Issue Stock Code #000228908	7/23/03	7/23/03	0.5	7/23/03	0.0	3	0
61 BEI Hawaii	10/29/03	10/29/03	0.5	11/24/03	26.0	6,774	176,132
62 Diamond Power International	10/6/03	10/6/03	0.5	11/21/03	46.0	12,090	556,140
63 Issue Stock Code #000227066	1/18/03	1/18/03	0.5	1/18/03	0.0	2	0
64 Issue Stock Code #000596965	3/20/03	3/20/03	0.5	3/20/03	0.0	19	0
65 Precision Machinery	7/15/03	7/15/03	0.5	8/14/03	30.0	188	5,655
66 The Cookie Corner	11/17/03	11/17/03	0.5	12/12/03	25.0	14	359
67 HI Trading Ltd	10/17/03	10/17/03	0.5	11/14/03	28.0	174	4,861
68 Issue Stock Code #000373761	2/18/03	2/18/03	0.5	2/18/03	0.0	13	0
69 Allied Security Fence	1/28/03	1/28/03	0.5	2/14/03	17.0	227	3,862
70 Issue Stock Code #000373183	7/24/03	7/24/03	0.5	7/24/03	0.0	93	0
71 Chevron	4/1/03	4/1/03	0.5	4/14/03	13.0	29	374
72 Staffing Solutions of Hawaii.Com	1/13/03	1/17/03	2.5	2/14/03	30.0	881	26,425
73 Issue Stock Code #000266163	9/22/03	9/22/03	0.5	9/22/03	0.0	42	0
74 AT & T Honolulu	4/25/03	4/25/03	0.5	5/14/03	19.0	26	495
75 Sinaloa Hawaiian Tortillas	7/1/03	7/1/03	0.5	8/15/03	45.0	742	33,373
76 Hiro Makino, M.D.	10/22/03	10/22/03	0.5	12/3/03	42.0	61	2,559
77 Issue Stock Code #000595009	7/28/03	7/28/03	0.5	7/28/03	0.0	71	0
78 Issue Stock Code #000573006	7/21/03	7/21/03	0.5	7/21/03	0.0	31	0
79 Issue Stock Code #000221366	4/10/03	4/10/03	0.5	4/10/03	0.0	117	0
80 Ikaika Masonry & Utilities	4/8/03	4/8/03	0.5	5/15/03	37.0	309	11,429
81 Valenti Brothers Graphics, Ltd.	9/12/03	9/12/03	0.5	9/16/03	4.0	2,500	10,000
82 Longs Drug Stores	7/11/03	7/11/03	0.5	8/14/03	34.0	43	1,469
83 Robert Moran	1/20/03	1/20/03	0.5	1/28/03	8.0	40	320
84 Gaspro Honolulu	5/27/03	5/27/03	0.5	6/13/03	17.0	70	1,195
85 Beylik Drilling Inc.	1/20/03	1/20/03	0.5	2/19/03	30.0	92	2,750
86 Boise Office*In	11/28/03	11/28/03	0.5	12/12/03	14.0	336	4,708
87 Issue Stock Code #000224022	12/18/03	12/18/03	0.5	12/18/03	0.0	2,174	0
88 H M Florals and Crafts	9/8/03	9/8/03	0.5	9/12/03	4.0	36	145
89 Issue Stock Code #000226985	2/24/03	2/24/03	0.5	2/24/03	0.0	4	0
90 Issue Stock Code #000572081	9/9/03	9/9/03	0.5	9/9/03	0.0	6	0
91 Issue Stock Code #000155747	10/23/03	10/23/03	0.5	10/23/03	0.0	38	0
92 Issue Stock Code #000155747	5/30/03	5/30/03	0.5	5/30/03	0.0	32	0
93 Issue Stock Code #000247700	1/8/03	1/8/03	0.5	1/8/03	0.0	14	0
						<u>171,278</u>	<u>5,193,261</u>

Other Non-Labor O&M Payment Lag

30.3

Hawaiian Electric Company, Inc.
Working Cash Study
Purchased Power Payment Lag

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.
Source: Per Supporting Worksheets.

	Test Year		Payment	Check	Total	
	Expense (\$000's)	% of Total	Lag Days	Clearing Lag	Payment	Weighted Average
	Note A		HECO-WP- 1806, p. 39-43	HECO-WP-1806, p. 43 & Note B	Lag Days	
H-Power (Energy & Capacity)	\$57,193	12%	44	0	44	5 days
Kalaeloa (Fuel and O&M)	\$244,005	51%	36	0	36	18 days
Kalaeloa (Capacity)	\$32,719	7%	5	0	5	days
AES (Fuel, O&M, & Capacity)	\$141,172	30%	44	0	44	13 days
AES (Bonus)	\$1,042	0%	214	0	214	days
Hoku - Archer Substation (Energy)	\$58	0%	44	5	49	days
Chevron	\$129	0%	34	32	66	days
Tesoro	\$737	0%	43	15	58	days
	<u>\$477,055</u>	<u>100%</u>				

Purchased Power Payment Lag	37 days
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NOTE: Totals may not add exactly due to rounding.

Note A: Payments for the test year per the Power Purchase Division. See HECO T-6 exhibits and workpapers.

Note B: Payments to Kalaeloa, AES and H-Power (eff. 1/2008) are made by wire transfer. Check clearing lag for Hoku Solar is an estimate as no payments have yet been made at the time this study was completed.

Working Cash Study

Purchase Power Payments to H-Power, Kalaeloa & AES

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-
Source: HECO-WP-1907, Docket No. 04-0113, HECO 2005 test year. Payment dates per contract terms.

VENDOR	SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)
	BEGIN	END				
H-Power (Energy & Capacity Payment)	1/1/05	1/31/05	15.5	2/28/05	27.5	43.0
	2/1/05	2/28/05	14.0	3/29/05	28.5	42.5
	3/1/05	3/31/05	15.5	4/28/05	27.5	43.0
	4/1/05	4/30/05	15.0	5/27/05	26.5	41.5
	5/1/05	5/31/05	15.5	6/29/05	28.5	44.0
	6/1/05	6/30/05	15.0	7/29/05	28.5	43.5
	7/1/05	7/31/05	15.5	8/29/05	28.5	44.0
	8/1/05	8/31/05	15.5	9/29/05	28.5	44.0
	9/1/05	9/30/05	15.0	10/31/05	30.5	45.5
	10/1/05	10/31/05	15.5	11/30/05	29.5	45.0
	11/1/05	11/30/05	15.0	12/29/05	28.5	43.5
	12/1/05	12/31/05	15.5	1/31/06	30.5	46.0
H-Power Payment Lag						43.8

SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)
BEGIN	END				
Kalaeloa (Fuel and O&M Payment)					
1/1/05	1/31/05	15.5	2/22/05	21.5	37.0
2/1/05	2/28/05	14.0	3/21/05	20.5	34.5
3/1/05	3/31/05	15.5	4/21/05	20.5	36.0
4/1/05	4/30/05	15.0	5/20/05	19.5	34.5
5/1/05	5/31/05	15.5	6/21/05	20.5	36.0
6/1/05	6/30/05	15.0	7/22/05	21.5	36.5
7/1/05	7/31/05	15.5	8/18/05	17.5	33.0
8/1/05	8/31/05	15.5	9/22/05	21.5	37.0
9/1/05	9/30/05	15.0	10/21/05	20.5	35.5
10/1/05	10/31/05	15.5	11/21/05	20.5	36.0
11/1/05	11/30/05	15.0	12/21/05	20.5	35.5
12/1/05	12/31/05	15.5	1/23/06	22.5	38.0
Kalaeloa Payment Lag for Fuel and O&M					35.8

SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)
BEGIN	END				
Kalaeloa (Capacity Payment)					
1/1/05	1/31/05	15.5	1/21/05	(10.5)	5.0
2/1/05	2/28/05	14.0	2/22/05	(6.5)	7.5
3/1/05	3/31/05	15.5	3/21/05	(10.5)	5.0
4/1/05	4/30/05	15.0	4/21/05	(9.5)	5.5
5/1/05	5/31/05	15.5	5/20/05	(11.5)	4.0
6/1/05	6/30/05	15.0	6/21/05	(9.5)	5.5
7/1/05	7/31/05	15.5	7/22/05	(9.5)	6.0
8/1/05	8/31/05	15.5	8/18/05	(13.5)	2.0
9/1/05	9/30/05	15.0	9/22/05	(8.5)	6.5
10/1/05	10/31/05	15.5	10/21/05	(10.5)	5.0
11/1/05	11/30/05	15.0	11/21/05	(9.5)	5.5
12/1/05	12/31/05	15.5	12/21/05	(10.5)	5.0
Kalaeloa Capacity Payment Lag					5.2

SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)
BEGIN	END				
AES (Fuel, Fixed and Variable O&M, & Capacity Payment)					
1/1/05	1/31/05	15.5	2/28/05	27.5	43.0
2/1/05	2/28/05	14.0	3/29/05	28.5	42.5
3/1/05	3/31/05	15.5	4/28/05	27.5	43.0
4/1/05	4/30/05	15.0	5/27/05	26.5	41.5
5/1/05	5/31/05	15.5	6/29/05	28.5	44.0
6/1/05	6/30/05	15.0	7/29/05	28.5	43.5
7/1/05	7/31/05	15.5	8/29/05	28.5	44.0
8/1/05	8/31/05	15.5	9/29/05	28.5	44.0
9/1/05	9/30/05	15.0	10/31/05	30.5	45.5
10/1/05	10/31/05	15.5	11/30/05	29.5	45.0
11/1/05	11/30/05	15.0	12/29/05	28.5	43.5
12/1/05	12/31/05	15.5	1/31/06	30.5	46.0
AES Payment Lag (excluding Bonus Payment)					43.8

SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)
BEGIN	END				
AES (Bonus Payment)					
10/1/04	9/30/05	182.5	11/1/05	31.5	214.0
AES Bonus Payment Lag					214.0

Source: Hoku Solar payment dates per contract terms (payment due 20 working days after month-end)

SERVICE PERIOD		AVE		END DATE		
BEGIN	END	SERVICE PERIOD (DAYS)	PAYMENT DATE	TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)	
Hoku Solar	1/1/09	1/31/09	15.5	2/27/09	26.5	42.0
	2/1/09	2/28/09	14.0	3/27/09	26.5	40.5
	3/1/09	3/31/09	15.5	4/29/09	28.5	44.0
	4/1/09	4/30/09	15.0	5/29/09	28.5	43.5
	5/1/09	5/31/09	15.5	6/29/09	28.5	44.0
	6/1/09	6/30/09	15.0	7/29/09	28.5	43.5
	7/1/09	7/31/09	15.5	8/31/09	30.5	46.0
	8/1/09	8/31/09	15.5	9/29/09	28.5	44.0
	9/1/09	9/30/09	15.0	10/29/09	28.5	43.5
	10/1/09	10/31/09	15.5	11/30/09	29.5	45.0
	11/1/09	11/30/09	15.0	12/29/09	28.5	43.5
	12/1/09	12/31/09	15.5	1/29/10	28.5	44.0
Hoku Solar Payment Lag					43.6	

Hawaiian Electric Company, Inc.
Working Cash Study
Purchase Power Payments to Small Vendors - 2007

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.38-43 (Purch Pwr).xls\Sm Ven
Source: Actual 2007 payments.

VENDOR	CHECK NUMBER	SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY		PAYMENT LAG (DAYS)	DATE CHECK CLEARED	CHECK CLEARING LAG (DAYS)
		BEGIN	END			DATE	(DAYS)			
Chevron #001984	642957	1/1/07	1/31/07	15.5	2/13/07	12.5	28.0	3/7/07	22.0	
	644544	2/1/07	2/28/07	14.0	3/20/07	19.5	33.5	5/9/07	50.0	
	646210	3/1/07	3/31/07	15.5	4/24/07	23.5	39.0	5/9/07	15.0	
	647218	4/1/07	4/30/07	15.0	5/15/07	14.5	29.5	5/23/07	8.0	
	649126	5/1/07	5/31/07	15.5	6/26/07	25.5	41.0	9/6/07	72.0	
	650482	6/1/07	6/30/07	15.0	7/24/07	23.5	38.5	9/6/07	44.0	
	652019	7/1/07	7/31/07	15.5	8/23/07	22.5	38.0	9/10/07	18.0	
	653492	8/1/07	8/31/07	15.5	9/20/07	19.5	35.0	10/18/07	28.0	
	654936	9/1/07	9/30/07	15.0	10/16/07	15.5	30.5	11/1/07	16.0	
	657748	10/1/07	10/31/07	15.5	11/20/07	19.5	35.0	1/14/08	55.0	
	659774	11/1/07	11/30/07	15.0	12/13/07	12.5	27.5	1/14/08	32.0	
	662062	12/1/07	12/31/07	15.5	1/15/08	14.5	30.0	2/11/08	27.0	
	Chevron Payment Lag								33.8	
	Chevron Check Clearing Lag									32.3

VENDOR	CHECK NUMBER	SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY		PAYMENT LAG (DAYS)	DATE CHECK CLEARED	CHECK CLEARING LAG (DAYS)
		BEGIN	END			DATE	(DAYS)			
Tesoro #001677	70757	1/1/07	1/31/07	15.5	3/1/07	28.5	44.0	3/16/07	15.0	
	70993	2/1/07	2/28/07	14.0	3/29/07	28.5	42.5	4/12/07	14.0	
	71290	3/1/07	3/31/07	15.5	4/26/07	25.5	41.0	5/8/07	12.0	
	71588	4/1/07	4/30/07	15.0	5/30/07	29.5	44.5	6/11/07	12.0	
	71860	5/1/07	5/31/07	15.5	6/28/07	27.5	43.0	7/13/07	15.0	
	650633	6/1/07	6/30/07	15.0	7/26/07	25.5	40.5	8/8/07	13.0	
	72465	7/1/07	7/31/07	15.5	8/30/07	29.5	45.0	9/12/07	13.0	
	72754	8/1/07	8/31/07	15.5	9/27/07	26.5	42.0	10/30/07	33.0	
	73057	9/1/07	9/30/07	15.0	10/30/07	29.5	44.5	11/14/07	15.0	
	73328	10/1/07	10/31/07	15.5	11/29/07	28.5	44.0	12/12/07	13.0	
	73613	11/1/07	11/30/07	15.0	12/27/07	26.5	41.5	1/9/08	13.0	
	73933	12/1/07	12/31/07	15.5	1/29/08	28.5	44.0	2/7/08	9.0	
	Tesoro Payment Lag								43.0	
	Tesoro Check Clearing Lag									14.8

Hawaiian Electric Company, Inc.
Working Cash Study
Revenue Tax Payment Lag

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpaper
Source: Per Supporting Worksheets

	Effective Rate	% of Total	Total Payment Lag Days	Weighted Average
			HECO-WP-1806, p. 45-46	
Public Service Company Tax	5.885%	66%	(0)	days
Franchise Royalty Tax	2.500%	28%	214	60 days
Public Utility Commission Fees	0.500%	6%	110	6 days
	<u>8.885%</u>	<u>100%</u>		

Revenue Tax Payment Lag	66 days
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NOTE: Totals may not add exactly due to rounding.

References:

Tax Rates: Current Revenue Tax rates

Hawaiian Electric Company
Working Cash Study
Revenue Tax Payment Lag

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806 p.44-46 (Rev Tax).xls Pay Lag
Source: 2005 Payments. Information per Ellipse.

PUBLIC SERICE COMPANY (PSC) TAX

CITY & COUNTY OF HONOLULU	SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG DAYS	DATE CHECK CLEARED	CHECK CLEARING LAG (DAYS)	TOTAL LAG DAYS	INVOICE (\$) (Note 1)	DOLLAR DAYS
	BEGIN	END									
	(A)	(B)									
PSC Tax - January	1/1/07	12/31/07	182.5	1/3/07	(362.5)	(180.0)	1/12/07	9.0	(171.0)	320	(54,720)
PSC Tax - February	1/1/07	12/31/07	182.5	1/30/07	(335.5)	(153.0)	2/14/07	15.0	(138.0)	320	(44,160)
PSC Tax - March	1/1/07	12/31/07	182.5	3/6/07	(300.5)	(118.0)	3/14/07	8.0	(110.0)	320	(35,200)
PSC Tax - April	1/1/07	12/31/07	182.5	4/3/07	(272.5)	(90.0)	4/12/07	9.0	(81.0)	320	(25,920)
PSC Tax - May	1/1/07	12/31/07	182.5	5/3/07	(242.5)	(60.0)	5/14/07	11.0	(49.0)	320	(15,680)
PSC Tax - June	1/1/07	12/31/07	182.5	6/5/07	(209.5)	(27.0)	6/14/07	9.0	(18.0)	320	(5,760)
PSC Tax - July	1/1/07	12/31/07	182.5	7/3/07	(181.5)	1.0	7/24/07	21.0	22.0	320	7,040
PSC Tax - August	1/1/07	12/31/07	182.5	8/2/07	(151.5)	31.0	8/15/07	13.0	44.0	320	14,080
PSC Tax - September	1/1/07	12/31/07	182.5	9/5/07	(117.5)	65.0	9/12/07	7.0	72.0	320	23,040
PSC Tax - October	1/1/07	12/31/07	182.5	10/4/07	(88.5)	94.0	10/12/07	8.0	102.0	320	32,640
PSC Tax - November	1/1/07	12/31/07	182.5	11/6/07	(55.5)	127.0	11/15/07	9.0	136.0	320	43,520
PSC Tax - December	1/1/07	12/31/07	182.5	12/4/07	(27.5)	155.0	12/12/07	8.0	163.0	320	52,160
										<u>3,840</u>	<u>(8,960)</u>

PSC Tax Payment Lag for C&C of Honolulu (INFO ONLY)

(2.3)

Hawaii State Tax Collector	SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG DAYS	DATE CHECK CLEARED	CHECK CLEARING LAG (DAYS)	TOTAL LAG DAYS	INVOICE (\$) (Note 1)	DOLLAR DAYS
	BEGIN	END									
	(A)	(B)									
PSC Tax - January	1/1/07	12/31/07	182.5	1/3/07	(362.5)	(180.0)	1/18/07	15.0	(165.0)	680	(112,200)
PSC Tax - February	1/1/07	12/31/07	182.5	1/30/07	(335.5)	(153.0)	2/20/07	21.0	(132.0)	680	(89,760)
PSC Tax - March	1/1/07	12/31/07	182.5	3/6/07	(300.5)	(118.0)	3/16/07	10.0	(108.0)	680	(73,440)
PSC Tax - April	1/1/07	12/31/07	182.5	4/3/07	(272.5)	(90.0)	4/27/07	24.0	(66.0)	680	(44,880)
PSC Tax - May	1/1/07	12/31/07	182.5	5/3/07	(242.5)	(60.0)	5/15/07	12.0	(48.0)	680	(32,640)
PSC Tax - June	1/1/07	12/31/07	182.5	6/5/07	(209.5)	(27.0)	6/19/07	14.0	(13.0)	680	(8,840)
PSC Tax - July	1/1/07	12/31/07	182.5	7/3/07	(181.5)	1.0	7/13/07	10.0	11.0	680	7,480
PSC Tax - August	1/1/07	12/31/07	182.5	8/2/07	(151.5)	31.0	8/16/07	14.0	45.0	680	30,600
PSC Tax - September	1/1/07	12/31/07	182.5	9/5/07	(117.5)	65.0	9/14/07	9.0	74.0	680	50,320
PSC Tax - October	1/1/07	12/31/07	182.5	10/4/07	(88.5)	94.0	10/15/07	11.0	105.0	680	71,400
PSC Tax - November	1/1/07	12/31/07	182.5	11/6/07	(55.5)	127.0	11/19/07	13.0	140.0	680	95,200
PSC Tax - December	1/1/07	12/31/07	182.5	12/4/07	(27.5)	155.0	12/12/07	8.0	163.0	680	110,840
										<u>8,160</u>	<u>4,080</u>

PSC Tax Payment Lag for Hawaii State Tax (INFO ONLY)

0.5

12,000 (4,880)

PSC Tax Payment Lag (incl County & State)

(C) / (B) (0.4)

Note 1:

PSC Tax Payments

		Ratio
County of Honolulu	1.885%	32%
Hawaii State Tax Collector	4.000%	68%
PSC Rate	5.885%	

The PSC Tax rate is 5.885% of which 1.885% is payable to the County of Honolulu and 4% is paid to the Hawaii State Tax Collector in accordance with HRS Section 239-5. The amounts paid to each party are based on a theoretical monthly payment of \$1,000 split according to the ratio determined above. This captures the weighting of payments to the County and the State.

Hawaiian Electric Company, Inc.
Working Cash Study
Revenue Tax Payment Lag

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 DoIT-18 Exhibits & Workpapers\HECO-WP-1806 p.44-46 (Rev Tax).xls\Pay Lag
Source: 2007 Payments. Information per Ellipse.

FRANCHISE ROYALTY TAX

Payment due January 31 of year following. Payments made by check.

VENDOR	SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)	DATE CHECK CLEARED	CHECK CLEARING LAG (DAYS)	TOTAL LAG (DAYS)
	BEGIN	END							
Franchise Royalty Tax	1/1/06	12/31/06	182.5	1/30/07	29.5	212.0	2/1/07	2.00	214.00

PUBLIC UTILITY COMMISSION (PUC) FEES

Installments due on or before July 31 and December 31. Payments made by check.

VENDOR	SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)	DATE CHECK CLEARED	CHECK CLEARING LAG (DAYS)	TOTAL LAG (DAYS)	(A)	(B)	(A) X (B)
	BEGIN	END								INVOICE (\$)	DOLLAR DAYS	
PUC Fee	1/1/07	6/30/07	90.5	7/24/07	23.5	114.0	8/3/07	10.00	124.00	2,595,665	321,862,460	
PUC Fee	7/1/07	12/31/07	92.0	12/20/07	-11.5	80.5	1/4/08	15.00	95.50	2,595,665	247,886,008	
										<u>5,191,330</u>	<u>569,748,468</u>	

Public Utility Commission Fees Payment Lag

Hawaiian Electric Company, Inc.
Working Cash Study

Income Tax Payment Lag

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\HECO-WP-1806
Source: Per Supporting Worksheets.

2009 Test Year

	Effective Rate	% of Total	Payment Lag Days	Check Clearing Lag Days	Total Payment Lag Days	Weighted Average
				HECO-WP-1806, p. 48-49		
Federal	32.895%	85%	37	Note A	37	31 days
State	6.015%	15%	50		50	8 days
	<u>38.910%</u>	<u>100%</u>				

Income Tax Payment Lag	39 days
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NOTE: Totals may not add exactly due to rounding.

References:

Tax Rates: Current State and Federal Tax Rates.

Note A: Payments wired to HEI's General Fund Account. Clears same day. Zero check clearing lag.

Hawaiian Electric Company, Inc.
Working Cash Study
Federal Corporate Income Tax Payment Lag

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\[HECO-WP-1806 p.47-49 (Inc Tax).xls]Summary
Source: HEI Corporate Taxes Dept; Federal Income Tax Law

2009 Test Year

SERVICE PERIOD								
INSTALLMENT	BEGIN	END	AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	TOTAL PAYMENT LAG (DAYS)	% OF TOTAL ANNUAL TAXES TO BE PAID	WEIGHTED AVERAGE
1st	1/1/09	12/31/09	182.5	4/15/09	-260.5	-78.0	25%	(19.5)
2nd	1/1/09	12/31/09	182.5	6/15/09	-199.5	-17.0	25%	(4.3)
3rd	1/1/09	12/31/09	182.5	9/15/09	-107.5	75.0	25%	18.8
4th	1/1/09	12/31/09	182.5	12/15/09	-16.5	166.0	25%	41.5
							<u>100%</u>	

Federal Income Tax Payment Lag	36.5
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Hawaiian Electric Company, Inc.
Working Cash Study
State Corporate Income Tax Payment Lag

File: S:_Company\RegulatoryAffairs\HECO 2009 TY Rate Case\09 Direct Testimonies\09HECO T-18 Doi\T-18 Exhibits & Workpapers\[HECO-WP-1806 p.47-49 (Inc Tax).xls]Summary
Source: HEI Corporate Taxes Dept; State Income Tax Law

2009 Test Year

INSTALLMENT	SERVICE PERIOD		AVE SERVICE PERIOD (DAYS)	PAYMENT DATE	END DATE TO PAY DATE (DAYS)	PAYMENT LAG (DAYS)	% OF TOTAL ANNUAL TAXES TO BE PAID	WEIGHTED AVERAGE
	BEGIN	END						
1st	1/1/09	12/31/09	182.5	4/20/09	-255.5	-73.0	25%	(18.3)
2nd	1/1/09	12/31/09	182.5	6/22/09	-192.5	-10.0	25%	(2.5)
3rd	1/1/09	12/31/09	182.5	9/21/09	-101.5	81.0	25%	20.3
4th	1/1/09	12/31/09	182.5	1/20/10	19.5	202.0	25%	50.5
							100%	50.0

State Income Tax Payment Lag	50.0
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**Witness HECO T-19
has no workpapers.**

Hawaiian Electric Company, Inc.

Composite Embedded Cost of Capital
Test Year 2009 Beginning, Ending, and Average Balances
(\$ Thousands)

	Reference	12/31/08 Balance	12/31/09 Balance	2009 Average Balance
Short-Term Debt	HECO-2002	\$ 38,960	\$ 4,942	\$ 21,951
Long-Term Debt				
Net Proceeds	HECO-2003	551,580	611,580	581,580
Unamortized Costs, Revenue Bonds	WP-2003 p. 1	(19,572)	(18,589)	(19,081)
Unamortized Costs, First Mtg Bonds	WP-2003 p. 7	(528)	(461)	(494)
Unamortized Costs, SCF	WP-2003 p. 8	(84)	(47)	(66)
Net Long-Term Debt		531,396	592,483	561,940
Hybrid Securities				
Net Proceeds	WP-2004	30,000	30,000	30,000
Unamortized Costs		(2,280)	(2,170)	(2,225)
Net Hybrid Securities		27,720	27,830	27,775
Preferred Stock				
Net Proceeds	WP-2005	22,293	102,293	62,293
Unamortized Costs		(1,625)	(3,969)	(2,797)
Net Preferred Stock		20,668	98,324	59,496
Common Equity	HECO-2006	786,234	808,381	797,307
Total Capitalization		\$ 1,404,979	\$ 1,531,959	\$ 1,468,469

Estimated 2009 Test Year Composite Cost of Capital

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

Short-Term Borrowings
2007 Recorded

<u>Account Description</u>	<u>General Ledger Account</u>	<u>12/31/07 Balance</u>
Notes Payable - MECO	233020	\$ 2,000,000
Commercial Paper	231010	28,791,136
Total Notes Payable		<u>\$ 30,791,136</u>
Total Notes Receivable - HELCO	145020	<u>\$ (36,600,000)</u>
Total Short-Term Borrowings as of December 31, 2007, net		<u><u>\$ (5,808,864)</u></u>

Hawaiian Electric Company, Inc.
Revenue Bonds
Summary of Unamortized Balances

		(A)	(B)	(C)
<u>Unamortized Costs</u>	<u>WP Reference</u>	<u>12/31/07 Unamortized Balance</u>	<u>12/31/08 Unamortized Balance</u>	<u>12/31/09 Unamortized Balance</u>
Issuance and Redemption	WP-2003 p.3	\$ 15,432,486	\$ 14,218,265	\$ 13,589,478
Investment Income Differential	WP-2003 p.4	3,566,582	3,268,780	3,047,478
Issuance Discount	WP-2003 p.5	<u>2,217,894</u>	<u>2,085,028</u>	<u>1,952,162</u>
Total		<u>\$ 21,216,961</u>	<u>\$ 19,572,073</u>	<u>\$ 18,589,118</u>
Test Year 2009 Average = [Total(B)+Total(C)]/2				<u>\$ 19,080,595</u>

Totals may not add due to rounding

Hawaiian Electric Company, Inc.
Revenue Bonds
Summary of 2009 Annual Amortizations & Insurance

	(A) = WP-2003, p.3	(B) = Note (1)	(C) = WP-2003, p.4	(D) = WP-2003, p.5	(E) = (A)+(B)+(C)+(D)
Series (Refunded Issue)	Issuance and Redemption	Annual Insurance	Investment Income Differential	Discount	Total
1993	\$ 44,604		\$ 10,665	\$ 33,651	\$ 88,919
1997A	13,822	45,000	17,037	-	75,859
Refunding 1998A	54,247		-	-	54,247
(1982)	45,762		35,977	-	81,739
(1987)	116,739		1,200	-	117,939
Refunding 1999B	39,627		-	17,953	57,580
(1988)	17,243		-	-	17,243
(1988 Conv)	43,030		-	-	43,030
1999C	37,330		26,168	-	63,498
Refunding 1999D	20,830		-	-	20,830
(1990A)	29,573		(1,162)	-	28,411
Refunding 2000	59,427		-	5,847	65,274
(1990B)	36,597		(399)	-	36,198
(1990C)	51,386		27,660	-	79,046
2002A	58,939		50,664	10,548	120,151
Refunding 2003B	78,137		-	-	78,137
(1992)	70,239		46,261	-	116,500
Refunding 2005A	82,056		-	-	82,056
(1995A)	48,914		1,281	25,784	75,978
2007A	(A) 123,481		3,384	-	126,865
Refunding 2007B	86,872		-	-	86,872
(1996A)	39,893		2,018	37,422	79,333
(1996B)	20,038		549	1,661	22,247
New Series 2009	10,000		-	-	10,000
Total	<u>\$ 1,228,787</u>	<u>\$ 45,000</u>	<u>\$ 221,303</u>	<u>\$ 132,866</u>	<u>\$ 1,627,956</u>

Note (A) Series 2007A was not fully drawn as of 12/31/07, but is expected to be fully drawn by 12/31/08

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.
Revenue Bonds
Schedule of Issuing Expenses (Includes Amortization Differential)

	(A)	(B)	(C)	(D)=(B)-(C)	(E)	(F) = (D)-(E)
Series (Refunded Issue)	2007 Annual Amortization	12/31/07 Unamortized Balance	2008 Annual Amortization	12/31/08 Unamortized Balance	2009 Annual Amortization	12/31/09 Unamortized Balance
1993	\$ 44,604	\$ 706,228	\$ 44,604	\$ 661,624	\$ 44,604	\$ 617,020
1997A	44,058	306,735	13,822	292,913	13,822	279,092
Refunding 1998A	54,247	230,551	54,247	176,304	54,247	122,057
(1982)	45,762	194,489	45,762	148,727	45,762	102,965
(1987)	116,739	496,139	116,739	379,400	116,739	262,661
Refunding 1999B	39,627	432,595	39,627	392,968	39,627	353,341
(1988)	17,243	657,983	17,243	597,710	17,243	537,437
(1988 Conv)	43,030	(incl. above)	43,030	(incl. above)	43,030	(incl. above)
1999C	37,330	815,049	37,330	777,719	37,330	740,389
Refunding 1999D	20,830	249,964	20,830	229,134	20,830	208,304
(1990A)	29,573	354,876	29,573	325,303	29,573	295,730
Refunding 2000	59,427	742,840	59,427	683,413	59,427	623,986
(1990B)	36,597	457,465	36,597	420,868	36,597	384,271
(1990C)	51,386	663,733	51,386	612,347	51,386	560,961
2002A	58,939	1,453,827	58,939	1,394,888	58,939	1,335,948
Refunding 2003B	78,137	1,165,543	78,137	1,087,406	78,137	1,009,269
(1992)	70,239	1,047,745	70,239	977,506	70,239	907,267
Refunding 2005A	82,056	839,294	82,056	757,238	82,056	675,181
(1995A)	48,914	831,530	48,914	782,616	48,914	733,703
2007A	70,746	1,649,245	118,915	1,530,330	123,481	1,406,848
Refunding 2007B	86,872	1,026,230	86,872	939,358	86,872	852,486
(1996A)	39,893	731,376	39,893	691,483	39,893	651,590
(1996B)	20,038	379,049	20,038	359,011	20,038	338,973
New Series 2009 *	-	-	-	-	10,000	590,000
Total	<u>\$ 1,196,287</u>	<u>\$ 15,432,486</u>	<u>\$ 1,214,221</u>	<u>\$ 14,218,265</u>	<u>\$ 1,228,787</u>	<u>\$ 13,589,478</u>

* Estimated issuance cost of \$600,000 (1% of face) amortized over 360 months (30 year bond). 2009 amortization of 6 months (\$600,000/360 months * 6/12 months = \$10,000)

Hawaiian Electric Company, Inc.
Revenue Bonds
Schedule of Investment Income Differential

Series (Refunded Issue)	(A) 2007 Annual Amortization	(B) 12/31/07 Unamortized Balance	(C) 2008 Annual Amortization	(D) = (B)-(C) 12/31/08 Unamortized Balance	(E) 2009 Annual Amortization	(F) = (D)-(E) 12/31/09 Unamortized Balance
1993	\$ 10,665	\$ 168,854	\$ 10,665	\$ 158,189	\$ 10,665	\$ 147,525
1997A	17,037	336,479	17,037	319,442	17,037	302,405
Refunding 1998A (1982)	- 35,977	- 152,903	- 35,977	- 116,926	- 35,977	- 80,949
(1987)	1,200	5,100	1,200	3,900	1,200	2,700
Refunding 1999B (1988)	- -	- -	- -	- -	- -	- -
(1988 Conv)	-	-	-	-	-	-
1999C	26,168	571,344	26,168	545,176	26,168	519,007
Refunding 1999D (1990A)	- (1,162)	- (13,944)	- (1,162)	- (12,782)	- (1,162)	- (11,620)
Refunding 2000 (1990B)	- (399)	- (4,992)	- (399)	- (4,593)	- (399)	- (4,193)
(1990C)	27,660	357,280	27,660	329,620	27,660	301,959
2002A	50,664	1,249,706	50,664	1,199,042	50,664	1,148,378
Refunding 2003B (1992)	- 46,261	- 690,055	- 46,261	- 643,794	- 46,261	- 597,533
Refunding 2005A (1995A)	- 1,281	- 21,774	- 1,281	- 20,494	- 1,281	- 19,213
2007A		(15,357)	79,883	(95,240)	3,384	(98,624)
Refunding 2007B (1996A)	- 2,018	- 37,000	- 2,018	- 34,982	- 2,018	- 32,964
(1996B)	549	10,379	549	9,830	549	9,281
New Series 2009	-	-	-	-	-	-
Total	\$ 217,918	\$ 3,566,582	\$ 297,802	\$ 3,268,780	\$ 221,303	\$ 3,047,478

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.
Revenue Bonds
Schedule of Issuance Discount

	(A)	(B)	(C)	(D) = (B)-(C)	(E)	(F) = (D)-(E)
Series (Refunded Issue)	2007 Annual Amortization	12/31/07 Unamortized Balance	2008 Annual Amortization	12/31/08 Unamortized Balance	2009 Annual Amortization	12/31/09 Unamortized Balance
1993	\$ 33,651	\$ 532,801	\$ 33,651	\$ 499,150	\$ 33,651	\$ 465,500
1997A	-	-	-	-	-	-
Refunding 1998A (1982)	-	-	-	-	-	-
(1987)	-	-	-	-	-	-
Refunding 1999B (1988)	17,953	195,992	17,953	178,039	17,953	160,085
(1988 Conv)	-	-	-	-	-	-
1999C	-	-	-	-	-	-
Refunding 1999D (1990A)	-	-	-	-	-	-
Refunding 2000 (1990B)	5,847	73,093	5,847	67,246	5,847	61,398
(1990C)	-	-	-	-	-	-
2002A	10,548	260,194	10,548	249,646	10,548	239,098
Refunding 2003B (1992)	-	-	-	-	-	-
Refunding 2005A (1995A)	-	-	-	-	-	-
2007A	25,784	438,325	25,784	412,541	25,784	386,758
Refunding 2007B (1996A)	-	-	-	-	-	-
(1996B)	37,422	686,071	37,422	648,649	37,422	611,227
New Series 2009	1,661	31,417	1,661	29,756	1,661	28,096
	-	-	-	-	-	-
Total	<u>\$ 132,866</u>	<u>\$ 2,217,894</u>	<u>\$ 132,866</u>	<u>\$ 2,085,028</u>	<u>\$ 132,866</u>	<u>\$ 1,952,162</u>
Outstanding	\$ 67,999	\$ 1,062,080	\$ 67,999	\$ 994,081	\$ 67,999	\$ 926,081
Redeemed	<u>64,867</u>	<u>1,155,814</u>	<u>64,867</u>	<u>1,090,947</u>	<u>64,867</u>	<u>1,026,080</u>
Total	<u>\$ 132,866</u>	<u>\$ 2,217,894</u>	<u>\$ 132,866</u>	<u>\$ 2,085,028</u>	<u>\$ 132,866</u>	<u>\$ 1,952,162</u>

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.
Revenue Bonds
General Ledger Accounting Codes

Series (Refunded Issue)	Issuance and Redemption Unamortized Costs	Issuance and Redemption Amortization Costs	Inv Inc Differential Unamortized Costs	Inv Inc Differential Amortization Costs	Discount Unamortized Costs	Discount Amortization Costs
1993	18130000/04	42812000	25338000/04	40303009	18150000/04	42812000
1997A	18134000/04	42816000	25342000/04	40303013	n/a	n/a
Refunding 1998A	18135000/04	42817000	n/a	n/a	n/a	n/a
(1982)	18671P00/04	42802000	18675000/04	40303001	n/a	n/a
(1987)	18671R00/04	42804000	18675020/24	40303001	n/a	n/a
Refunding 1999B	18138000/04	42820000	n/a	n/a	18156000/04	42820000
(1988)	18671Y00/04; 18675030/34	42805000	n/a	n/a	n/a	n/a
(1988 Conv)	n/a	42806000	n/a	n/a	n/a	n/a
1999C	18136000/04	42821000	25344000/04	40303014	n/a	n/a
Refunding 1999D	18139000/04	42822000	n/a	n/a	n/a	n/a
(1990A)	18671Z00/04	42807000	18675040/44	40303005	n/a	n/a
Refunding 2000	18140000/04	42823000	n/a	n/a	18157000/04	42823000
(1990B)	18671200/04; 18675060/64	42808000	18675050/54	40303006	n/a	n/a
(1990C)	18671300/04; 18675080/84	42809000	18675070/74	40303007	n/a	n/a
2002A	18141000/04	42824000	25345000/04	40303015	18158000/04	42824000
Refunding 2003B	18142000/04	42826000	n/a	n/a	n/a	n/a
(1992)	18671400/04; 18675100/04	42810000	18675090/94	40303008	n/a	n/a
Refunding 2005A	18144300/04	42827000	n/a	n/a	n/a	n/a
(1995A)	18671410/14	42813000	18675110/14	40303010	18671420/24	42813000
2007A	18144500/04	42829000	25346000/04	40303016	n/a	n/a
Refunding 2007B	18144600/04	42830000	n/a	n/a	n/a	n/a
(1996A)	18671430/34	42814000	25340000/04	40303011	18152000/04	42814000
(1996B)	18671450/54	42815000	18675130/34	40303012	18153000/04	42815000

Hawaiian Electric Company, Inc.

Redeemed First Mortgage Bonds
Schedule of Unamortized Costs *

	(A) 2007 Annual Amortization	(B) 12/31/07 Unamortized Balance	(C) 2008 Annual Amortization	(D)= (B)-(C) 12/31/08 Unamortized Balance	(E) 2009 Annual Amortization	(F) = (D)-(E) 12/31/09 Unamortized Balance
First Mortgage Bond						
Series X	66,633	594,138	66,633	527,505	66,633	460,872
Total	<u>\$ 66,633</u>	<u>\$ 594,138</u>	<u>\$ 66,633</u>	<u>\$ 527,505</u>	<u>\$ 66,633</u>	<u>\$ 460,872</u>
Test Year 2009 Average = [Total(D)+Total(F)]/2						<u>\$ 494,188</u>

* Unamortized costs include issuance costs, redemption costs and/or issuance discounts.
These costs are recorded in the following accounts:

Series	Unamortized Costs	Amortization Costs
Series X	18671000/04	42801000

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

Syndicated Credit Facility (SCF) Issuance Costs
Test Year 2009 Estimate

	(A) 2007 Annual Amortization	(B) 12/31/07 Unamortized Balance	(C) 2008 Annual Amortization	(D)= (B)-(C) 12/31/08 Unamortized Balance	(E) 2009 Annual Amortization	(F) = (D)-(E) 12/31/09 Unamortized Balance
SCF Issuance Costs	<u>37,473</u>	<u>121,785</u>	<u>37,473</u>	<u>84,313</u>	<u>37,473</u>	<u>46,840</u>
Test Year 2009 Average = [Total(D)+Total(F)]/2						<u>\$ 65,577</u>

	Unamortized Costs	Amortization Costs
These costs are recorded in the following accounts:	18102000/04	42801100

Hawaiian Electric Company, Inc.

Hybrid Securities
Schedule of Issuance Costs

Hybrid (Redeemed Series)	(A) 2007 Annual Amortization	(B) 12/31/07 Unamortized Balance	(C) 2008 Annual Amortization	(D)= (B)-(C) 12/31/08 Unamortized Balance	(E) 2009 Annual Amortization	(F) = (D)-(E) 12/31/09 Unamortized Balance
Series 2004	\$ 31,099	\$ 815,047	\$ 31,099	\$ 783,948	\$ 31,099	\$ 752,849
(Series 1997)	40,416	777,997	40,416	737,581	40,416	697,165
(Series 1998)	37,899	795,887	37,899	757,988	37,899	720,089
Total	<u>\$ 109,414</u>	<u>\$ 2,388,931</u>	<u>\$ 109,414</u>	<u>\$ 2,279,517</u>	<u>\$ 109,414</u>	<u>\$ 2,170,103</u>
Test Year 2009 Average = [Total(D)+Total(F)]/2						<u>\$ 2,224,810</u>

These costs are recorded in the following accounts:	Unamortized Costs	Amortization Costs
Series 2004	18144200/04	428QUID3
Series 1997	18671500/04	428QUID1
Series 1998	18671600/04	428QUID2

Hawaiian Electric Company, Inc.

Preferred Stock
Schedule of Issuance and Redemption Costs

		(A)	(B)	(C)	(D)=(B)-(C)	(E)	(F)=(D)-(E)
Preferred Stock	Unamortized Balance G/L Account	2007 Annual Amortization	12/31/07 Unamortized Balance	2008 Annual Amortization	12/31/08 Unamortized Balance	2009 Annual Amortization	12/31/09 Unamortized Balance
<u>Perpetual</u> *:							
Series C	21423000	\$ -	\$ 70,404	\$ -	\$ 70,404	\$ -	\$ 70,404
Series D	21424000	-	55,071	-	55,071	-	55,071
Series E	21425000	-	183,556	-	183,556	-	183,556
Series H	21428000	-	59,679	-	59,679	-	59,679
Series I	21429000	-	64,701	-	64,701	-	64,701
Series J	21430000	-	49,654	-	49,654	-	49,654
Series K	21431000	-	39,755	-	39,755	-	39,755
New Issue**	New Issue	-	-	-	-	-	2,400,000
Subtotal		-	522,820	-	522,820	-	2,922,820
<u>Redeemed:</u>							
Series M ***	18674M00	7,110	149,318	7,110	142,208	7,110	135,098
Series Q ***	18674Q00	28,154	591,245	28,154	563,091	28,154	534,937
Series R ***	18674R00	19,821	416,241	19,821	396,420	19,821	376,599
Subtotal		55,085	1,156,804	55,085	1,101,719	55,085	1,046,634
		<u>\$ 55,085</u>	<u>\$ 1,679,624</u>	<u>\$ 55,085</u>	<u>\$ 1,624,539</u>	<u>\$ 55,085</u>	<u>\$ 3,969,454</u>
Test Year 2009 Average = [Total(D)+Total(F)]/2							<u>\$ 2,796,996</u>

* Represents preferred stock not subject to mandatory redemption. As such, issuance costs are not amortized.

** New issuance in 2009. Estimated issuance cost of 3% of \$80 million face = \$2,400,000

*** Amortization expense recorded to G/L Account Code #42501000.

Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

Common Equity
2007 Recorded

Account Description	G/L Account	12/31/07 Balance	
Common Stock Issued	20100000	\$ 85,387,140	
Premium on Capital Stock	20700000	303,135,446	
Misc Paid in Capital	211	1,156,742	
Capital Stock Expense - Common	21401000	(3,526,923)	
Preferred Stock Expense	2143	(394,693)	
Net Income for Common	n/a	-	closed to Retained Earnings
Retained Earnings	216	724,704,455	
Dividends, net	43800000	-	closed to Retained Earnings
Common Stock Equity of HECO		\$ 1,110,462,167	
Investment in Subsidiary - MECO	12301000	\$ (208,520,626)	
Investment in Subsidiary - HELCO	12302000	(201,820,961)	
Investment in Subsidiary - UBC	12303000	(388,273)	
Investment in Subsidiary - RHI	12306000	(181,616)	
Investment in Subsidiaries *		\$ (410,911,475)	
Common Equity as of December 31, 2007		\$ 699,550,691	

* Does not include \$1,546,400 of equity investment in the HECO Capital Trust III (Capital Trust) subsidiary. The investment in the Capital Trust is offset against HECO's Hybrid securities which were purchased by the Capital Trust. Refer to WP-2004, p.1 for the adjustment to the Hybrid securities.

Hawaiian Electric Company, Inc.

Common Equity Restoration
2007 Recorded

	<u>G/L Account</u>	<u>12/31/07 Balance</u>
Unamortized Issuance Costs - Preferred Stock *	2143	<u>522,820</u>
Total Common Equity Restoration		<u>\$ 522,820</u>

* For financial statement purposes, the unamortized issuance costs of the outstanding preferred stock is shown as a reduction to common equity. For ratemaking purposes, however, these cost are shown as a deduction to preferred stock rather than common equity since these costs relate to preferred stock. Refer to WP-2005, p.1 and HECO-2005.

HECO's general ledger balance for account 2143 adjusts the preferred issuance costs for HELCO and MECO

HECO Oahu only	522,820
HELCO (reflected in investment in subsidiary)	(57,159)
MECO (reflected in investment in subsidiary)	<u>(70,968)</u>
	<u><u>394,693</u></u>

Hawaiian Electric Company, Inc.
Test Year 2009

Income Statement

NO Rate Increase (Current Rates) & WITH Debt Equivalent

Based on 11.25% Earned Return on Common Equity

	<u>\$ in thousands</u>	<u>HECO Reference</u>
Operating Income	70,081	2301
AFUDC	9,465	Note 1
Annual Debt Requirement:		
Short-term Debt	713	2002
Long-term Debt	32,303	2003
Hybrid	2,059	2004
Total Annual Debt Requirement	<u>35,075</u>	
Net Income	<u>44,471</u>	
Annual requirement on Preferred Stock	4,535	2005
Net Income for Common	<u><u>39,936</u></u>	

Note 1: AFUDC per HECO-2007 of \$15,837, less AFUDC for CIP1.

Total AFUDC	15,837	2007
Less: AFUDC - CIP1	6,372	
AFUDC - Other	<u><u>9,465</u></u>	

Hawaiian Electric Company, Inc.
Test Year 2009

Funds from Operations / Average Total Debt

NO Rate Increase (Current Rates) & WITH Debt Equivalent
Based on 11.25% Earned Return on Common Equity

	<u>\$ in thousands</u>	<u>HECO Reference</u>	
Operating Income	70,081	2301	
Depreciation	83,183	2301	
Depreciation adjustment for Operating Leases	1,840	Per calculation from Budgets Division	
Deferred Income Taxes	3,009	WP-2301, p. 12	
Amortization of State ITC	(1,462)	2301	
State Capital Goods Excise Credit	2,581	WP-2301, p. 12	
Interest Expense:			
Short-term interest	(713)	2002	
Long-term interest	(30,571)	2003	
Hybrid interest	(2,051)	2004	
Total Interest Expense	<u>(33,335)</u>		
 Total	 <u><u>125,897</u></u> A		
Average Debt:			
Short-term Debt	21,951	2002	
Long-term Debt ¹	580,620	2003 & WP-2003, p.5	
Hybrid ²	31,546	2004	
OBS Debt (50%) - Purch Pwr Commitments ³	431,033	WP-2016, p. 14	
OBS Debt - Operating Leases ³	17,289	Per calculation from Budgets Division	
Average Total Debt	<u><u>1,082,439</u></u> B		
 FFO to Ave Total Debt Ratio (A)/(B)	 <table border="1" style="margin: auto;"><tr><td style="text-align: center;">12%</td></tr></table>	12%	
12%			

¹ Net of unamortized discount on outstanding revenue bonds.

² Excludes unamortized costs.

³ Off-balance sheet (OBS) debt is not reflected in the book numbers. Represents the imputed debt of the Company's purchased power commitments and operating leases.

Hawaiian Electric Company, Inc.
Test Year 2009

Funds from Operations Interest Coverage
NO Rate Increase (Current Rates) & WITH Debt Equivalent
Based on 11.25% Earned Return on Common Equity

	<u>\$ in thousands</u>	<u>HECO Reference</u>
Operating Income	70,081	2301
Depreciation	83,183	2301
Deferred Income Taxes	3,009	WP-2301, p. 12
Amortization of State ITC	(1,462)	2301
State Capital Goods Excise Credit	2,581	WP-2301, p. 12
Interest on OBS Debt - Purchased Power Commitments ¹	25,448	WP-2016, p. 14
Interest on OBS Debt - Operating Leases ¹	1,037	Per calculation from Budgets Division
Total	183,877	A
Total Debt Requirement (ST, LT & Hybrids)	35,075	WP-2016, p. 1
Interest on OBS Debt - Purchased Power Commitments ¹	25,448	WP-2016, p. 14
Interest on OBS Debt - Operating Leases ¹	1,037	Per calculation from Budgets Division
	61,560	B
Fund from Operations Interest Coverage (A)/(B)	3.0	x

¹ Interest on off-balance sheet (OBS) debt is not reflected in the book numbers.

Interest on the OBS debt related to purchased power commitments and operating leases represents the interest expense that the Company would have incurred if the debt equivalent related to purchased power commitments and operating leases were reflected as a debt obligation on the Company's balance sheet.

Hawaiian Electric Company, Inc.
Test Year 2009

Total Debt / Total Capital

NO Rate Increase (Current Rates) & WITH Debt Equivalent
Based on 11.25% Earned Return on Common Equity

	<u>\$ in thousands</u>	<u>HECO Reference</u>
<u>Capitalization Balances at Year-End:</u>		
Total Debt:		
Short-term Debt	4,942	2002
Long-term Debt ¹	610,654	2003 & WP-2003, p.5
Hybrid Securities ²	31,546	2004
Total Debt	647,142	
OBS Debt (50%) - Purch Pwr Commitments ³	424,136	WP-2016, p. 14
OBS Debt - Operating Leases ³	16,331	Per calculation from Budgets Division
Pension Obligation	0	No estimate available
Equity Adjustment for Hybrids	(15,773)	50% of YE balance
Debt Adjustment for Preferred Stock	51,147	50% of YE balance
Revised Total Debt	1,122,983	A
Preferred Stock ²	102,293	2005
Common Stock	808,381	2006
Debt Adjustment for Preferred Stock	(51,147)	50% of YE balance
Equity Adjustment for Hybrids	15,773	50% of YE balance
Total Capital	1,998,283	B
Total Debt / Total Capital Ratio (A)/(B)	56%	

¹ Net of unamortized discount on outstanding revenue bonds.

² Excludes unamortized costs.

³ Off-balance sheet (OBS) debt is not reflected in the book numbers. Represents the imputed debt of the Company's purchased power commitments and operating leases.

Hawaiian Electric Company, Inc.
Test Year 2009

Total Debt / Total Capital

NO Rate Increase & WITHOUT Purchased Power Debt Equivalent
Based on 11.25% Earned Return on Common Equity

	<u>\$ in thousands</u>	<u>HECO Reference</u>
<u>Capitalization Balances at Year-End:</u>		
Total Debt:		
Short-term Debt	4,942	2002
Long-term Debt ¹	610,654	2003 & WP-2003, p.5
Hybrid Securities ²	31,546	2004
Total Debt	647,142	
OBS Debt (50%) - Purch Pwr Commitments ³	0	
OBS Debt - Operating Leases ³	16,331	Per calculation from Budgets Division
Pension Obligation	0	No estimate available
Equity Adjustment for Hybrids	(15,773)	50% of YE balance
Debt Adjustment for Preferred Stock	51,147	50% of YE balance
Revised Total Debt	698,847	A
Preferred Stock ²	102,293	2005
Common Stock	808,381	2006
Debt Adjustment for Preferred Stock	(51,147)	50% of YE balance
Equity Adjustment for Hybrids	15,773	50% of YE balance
Total Capital	1,574,147	B
Total Debt / Total Capital Ratio (A)/(B)	44%	

¹ Net of unamortized discount on outstanding revenue bonds.

² Excludes unamortized costs.

³ Off-balance sheet (OBS) debt is not reflected in the book numbers. Represents the imputed debt of the Company's purchased power commitments and operating leases.

Hawaiian Electric Company, Inc.
Test Year 2007

Income Statement

WITH Rate Increase (CIP1 Generating Unit Step) & WITH Debt Equivalent (50% Risk Factor)

Based on 11.25% Earned Return on Common Equity

	<u>\$ in thousands</u>	<u>HECO Reference</u>
Operating Income	124,042	2301
AFUDC	9,465	Note 1
Annual Debt Requirement:		
Short-term Debt	713	2002
Long-term Debt	32,303	2003
Hybrid	2,059	2004
Total Annual Debt Requirement	<u>35,075</u>	
Net Income	<u>98,432</u>	
Annual requirement on Preferred Stock	4,535	2005
Net Income for Common	<u><u>93,897</u></u>	

Note 1: AFUDC per HECO-2007 of \$15,837, less AFUDC for CIP1.

Total AFUDC	15,837	2007
Less: AFUDC - CIP1	<u>6,372</u>	
AFUDC - Other	<u><u>9,465</u></u>	

Hawaiian Electric Company, Inc.
Test Year 2009

Funds from Operations / Average Total Debt

WITH Rate Increase (CIP1 Generating Unit Step) & WITH Debt Equivalent (50% Risk Factor)

Based on 11.25% Earned Return on Common Equity

	<u>\$ in thousands</u>	<u>HECO Reference</u>	
Operating Income	124,042	2301	
Depreciation	83,183	2301	
Depreciation adjustment for Operating Leases	1,840	Per calculation from Budgets Division	
Deferred Income Taxes	3,009	WP-2301, p. 12	
Amortization of State ITC	(1,462)	2301	
State Capital Goods Excise Credit	2,581	WP-2301, p. 12	
Interest Expense:			
Short-term interest	(713)	2002	
Long-term interest	(30,571)	2003	
Hybrid interest	(2,051)	2004	
Total Interest Expense	<u>(33,335)</u>		
 Total	 <u><u>179,858</u></u> A		
Average Debt:			
Short-term Debt	21,951	2002	
Long-term Debt ¹	580,620	2003 & WP-2003, p.5	
Hybrid ²	31,546	2004	
OBS Debt (50%) - Purch Pwr Commitments ³	431,033	WP-2016, p. 14	
OBS Debt - Operating Leases ³	17,289	Per calculation from Budgets Division	
Average Total Debt	<u><u>1,082,439</u></u> B		
 FFO to Ave Total Debt Ratio (A)/(B)	 <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="text-align: center; padding: 2px 10px;">17%</td></tr></table>	17%	
17%			

¹ Net of unamortized discount on outstanding revenue bonds.

² Excludes unamortized costs.

³ Off-balance sheet (OBS) debt is not reflected in the book numbers. Represents the imputed debt of the Company's purchased power commitments and operating leases.

Hawaiian Electric Company, Inc.
Test Year 2009

Funds from Operations Interest Coverage

WITH Rate Increase (CIP1 Generating Unit Step) & WITH Debt Equivalent (50% Risk Factor)

Based on 11.25% Earned Return on Common Equity

	<u>\$ in thousands</u>	<u>HECO Reference</u>
Operating Income	124,042	2301
Depreciation	83,183	2301
Deferred Income Taxes	3,009	WP-2301, p. 12
Amortization of State ITC	(1,462)	2301
State Capital Goods Excise Credit	2,581	WP-2301, p. 12
Interest on OBS Debt - Purchased Power Commitments ¹	25,448	WP-2016, p. 14
Interest on OBS Debt - Operating Leases ¹	1,037	Per calculation from Budgets Division
Total	237,838	A
Total Debt Requirement (ST, LT & Hybrids)	35,075	WP-2016, p. 1
Interest on OBS Debt - Purchased Power Commitments ¹	25,448	WP-2016, p. 14
Interest on OBS Debt - Operating Leases ¹	1,037	Per calculation from Budgets Division
	61,560	B
Fund from Operations Interest Coverage (A)/(B)	3.9	x

¹ Interest on off-balance sheet (OBS) debt is not reflected in the book numbers.

Interest on the OBS debt related to purchased power commitments and operating leases represents the interest expense that the Company would have incurred if the debt equivalent related to purchased power commitments and operating leases were reflected as a debt obligation on the Company's balance sheet.

Hawaiian Electric Company, Inc.
Test Year 2009

Total Debt / Total Capital

WITH Rate Increase (CIP1 Generating Unit Step) & WITH Debt Equivalent (50% Risk Factor)
Based on 11.25% Earned Return on Common Equity

	<u>\$ in thousands</u>	<u>HECO Reference</u>
<u>Capitalization Balances at Year-End:</u>		
Total Debt:		
Short-term Debt	4,942	2002
Long-term Debt ¹	610,654	2003 & WP-2003, p.5
Hybrid Securities ²	31,546	2004
Total Debt	647,142	
OBS Debt (50%) - Purch Pwr Commitments ³	424,136	WP-2016, p. 14
OBS Debt - Operating Leases ³	16,331	Per calculation from Budgets Division
Pension Obligation	0	No estimate available
Equity Adjustment for Hybrids	(15,773)	50% of YE balance
Debt Adjustment for Preferred Stock	51,147	50% of YE balance
Revised Total Debt	1,122,983	A
Preferred Stock ²	102,293	2005
Common Stock	808,381	2006
Debt Adjustment for Preferred Stock	(51,147)	50% of YE balance
Equity Adjustment for Hybrids	15,773	50% of YE balance
Total Capital	1,998,283	B
Total Debt / Total Capital Ratio (A)/(B)	56%	

¹ Net of unamortized discount on outstanding revenue bonds.

² Excludes unamortized costs.

³ Off-balance sheet (OBS) debt is not reflected in the book numbers. Represents the imputed debt of the Company's purchased power commitments and operating leases.

Hawaiian Electric Company, Inc.
Test Year 2009

Total Debt / Total Capital

WITH Rate Increase (CIP1 Generating Unit Step) & WITHOUT Purchased Power Debt Equivalent

Based on 11.25% Earned Return on Common Equity

	<u>\$ in thousands</u>	<u>HECO Reference</u>
<u>Capitalization Balances at Year-End:</u>		
Total Debt:		
Short-term Debt	4,942	2002
Long-term Debt ¹	610,654	2003 & WP-2003, p.5
Hybrid Securities ²	31,546	2004
Total Debt	647,142	
OBS Debt (50%) - Purch Pwr Commitments ³	0	
OBS Debt - Operating Leases ³	16,331	Per calculation from Budgets Division
Pension Obligation	0	No estimate available
Equity Adjustment for Hybrids	(15,773)	50% of YE balance
Debt Adjustment for Preferred Stock	51,147	50% of YE balance
Revised Total Debt	698,847	A
Preferred Stock ²	102,293	2005
Common Stock	808,381	2006
Debt Adjustment for Preferred Stock	(51,147)	50% of YE balance
Equity Adjustment for Hybrids	15,773	50% of YE balance
Total Capital	1,574,147	B
Total Debt / Total Capital Ratio (A)/(B)	44%	

¹ Net of unamortized discount on outstanding revenue bonds.

² Excludes unamortized costs.

³ Off-balance sheet (OBS) debt is not reflected in the book numbers. Represents the imputed debt of the Company's purchased power commitments and operating leases.

Hawaiian Electric Company, Inc.
Test Year 2009

Funds from Operations / Average Total Debt

WITH Rate Increase (CIP1 Generating Unit Step) & WITH Debt Equivalent (25% Risk Factor)

Based on 11.25% Earned Return on Common Equity

	<u>\$ in thousands</u>	<u>HECO Reference</u>	
Operating Income	124,042	2301	
Depreciation	83,183	2301	
Depreciation adjustment for Operating Leases	1,840	Per calculation from Budgets Division	
Deferred Income Taxes	3,009	WP-2301, p. 12	
Amortization of State ITC	(1,462)	2301	
State Capital Goods Excise Credit	2,581	WP-2301, p. 12	
Interest Expense:			
Short-term interest	(713)	2002	
Long-term interest	(30,571)	2003	
Hybrid interest	(2,051)	2004	
Total Interest Expense	<u>(33,335)</u>		
 Total	 <u><u>179,858</u></u> A		
Average Debt:			
Short-term Debt	21,951	2002	
Long-term Debt ¹	580,620	2003 & WP-2003, p.5	
Hybrid ²	31,546	2004	
OBS Debt (25%) - Purch Pwr Commitments ³	215,517	WP-2016, p. 14	
OBS Debt - Operating Leases ³	17,289	Per calculation from Budgets Division	
Average Total Debt	<u><u>866,923</u></u> B		
 FFO to Ave Total Debt Ratio (A)/(B)	 <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="text-align: center; padding: 2px 10px;">21%</td></tr></table>	21%	
21%			

¹ Net of unamortized discount on outstanding revenue bonds.

² Excludes unamortized costs.

³ Off-balance sheet (OBS) debt is not reflected in the book numbers. Represents the imputed debt of the Company's purchased power commitments and operating leases.

Hawaiian Electric Company, Inc.
Test Year 2009

Funds from Operations Interest Coverage

WITH Rate Increase (CIP1 Generating Unit Step) & WITH Debt Equivalent (25% Risk Factor)

Based on 11.25% Earned Return on Common Equity

	<u>\$ in thousands</u>	<u>HECO Reference</u>
Operating Income	124,042	2301
Depreciation	83,183	2301
Deferred Income Taxes	3,009	WP-2301, p. 12
Amortization of State ITC	(1,462)	2301
State Capital Goods Excise Credit	2,581	WP-2301, p. 12
Interest on OBS Debt - Purchased Power Commitments ¹	12,724	WP-2016, p. 14
Interest on OBS Debt - Operating Leases ¹	1,037	Per calculation from Budgets Division
Total	<u><u>225,114</u></u> A	
Total Debt Requirement (ST, LT & Hybrids)	35,075	WP-2013, p. 1
Interest on OBS Debt - Purchased Power Commitments ¹	12,724	WP-2016, p. 14
Interest on OBS Debt - Operating Leases ¹	1,037	Per calculation from Budgets Division
	<u><u>48,836</u></u> B	
Fund from Operations Interest Coverage (A)/(B)	4.6 x	

¹ Interest on off-balance sheet (OBS) debt is not reflected in the book numbers.

Interest on the OBS debt related to purchased power commitments and operating leases represents the interest expense that the Company would have incurred if the debt equivalent related to purchased power commitments and operating leases were reflected as a debt obligation on the Company's balance sheet.

Hawaiian Electric Company, Inc.
Test Year 2009

Total Debt / Total Capital

WITH Rate Increase (CIP1 Generating Unit Step) & WITH Debt Equivalent (25% Risk Factor)
Based on 11.25% Earned Return on Common Equity

	<u>\$ in thousands</u>	<u>HECO Reference</u>
<u>Capitalization Balances at Year-End:</u>		
Total Debt:		
Short-term Debt	4,942	2002
Long-term Debt ¹	610,654	2003 & WP-2003, p.5
Hybrid Securities ²	31,546	2004
Total Debt	647,142	
OBS Debt (25%) - Purch Pwr Commitments ³	212,068	WP-2016, p. 14
OBS Debt - Operating Leases ³	16,331	Per calculation from Budgets Division
Pension Obligation	0	No estimate available
Equity Adjustment for Hybrids	(15,773)	50% of YE balance
Debt Adjustment for Preferred Stock	51,147	50% of YE balance
Revised Total Debt	910,915	A
Preferred Stock ²	102,293	2005
Common Stock	808,381	2006
Debt Adjustment for Preferred Stock	(51,147)	50% of YE balance
Equity Adjustment for Hybrids	15,773	50% of YE balance
Total Capital	1,786,215	B
Total Debt / Total Capital Ratio (A)/(B)	51%	

¹ Net of unamortized discount on outstanding revenue bonds.

² Excludes unamortized costs.

³ Off-balance sheet (OBS) debt is not reflected in the book numbers. Represents the imputed debt of the Company's purchased power commitments and operating leases.

Hawaiian Electric Company, Inc.
2009 Purchase Power Credit Impact Using the Standard & Poors Method
Debt Equivalent (\$000)

S&P Risk Factor of	50%			
Interest Equivalent at	6%			
Includes evergreen treatment				
	A	B	C	D
	Debt Equivalent			
	<u>Beginning of</u> <u>Year 2009</u>	<u>End of</u> <u>Year 2009</u>	<u>Average</u>	<u>Interest</u> <u>Equivalent</u> <u>(B x 6%)</u>
AES	275,293	263,197	269,245	15,792
Kalaeloa	134,020	132,559	133,289	7,954
H Power	28,617	28,381	28,499	1,703
Total	437,930	424,136	431,033	25,448

S&P Risk Factor of	25%			
Interest Equivalent at	6%			
Includes evergreen treatment				
AES	137,647	131,598	134,622	7,896
Kalaeloa	67,010	66,279	66,645	3,977
H Power	14,308	14,190	14,249	851
Total	218,965	212,068	215,517	12,724

AES

Credit Impact Using the Standard & Poors Method
(\$000's)

S&P Risk Factor of	50%
Interest Equivalent at	6%
Annual Capacity Payment for non-major maint years ¹	59,100
Monthly Capacity Payment for non-major maint years ²	4,925
Annual Capacity Payment for non-major maint in leap years ¹	59,262
Monthly Capacity Payment for non-major maint in leap years ²	4,938
Annual Capacity Payment for major maint years ¹	56,318
Monthly Capacity Payment for major maint years ²	4,693
End Month of Capacity Payments	Aug-22

		A	B	C = A x B
		Present Value		
		Remaining Pmts	Risk Factor	Debt Equivalent
Balance at	1/1/2009	550,587	50%	275,293
	1/1/2010	526,393	50%	263,197

¹ Based on 4.4095 cents per available kwh and a firm capacity commitment of 180,000kW.
Assumes 85% availability on non-major maintenance years, and 81% availability in years
of major maintenance.

² Monthly payments made in arrears; calculated at the beginning of the next month.

Kalaeloa

Credit Impact Using the Standard & Poors Method
(\$000's)

S&P Risk Factor of	50%
Interest Equivalent at	6%
Annual Capacity Payment ¹	32,719
Monthly Capacity Payment ²	2,727
Contract terminates	May-16

For years beyond contract expiration:

Total MW	208
Proxy Peaker Value	\$136 per kw/yr
Annual Capacity Payment	28,288
Monthly Capacity Payment ²	2,357

		A	B	C = A x B
		Present Value		Debt
		Remaining Pmts	Risk Factor	Equivalent
Balance at	1/1/2009	268,040	50%	134,020
	1/1/2010	265,118	50%	132,559

¹ Based on \$164.35 per kW for the first 180,000kW of capacity, and \$112 per kW for all kW of capacity above 180,000 kW (up to a maximum of 28 MW).

² Monthly payments made at the beginning of the month.

H Power

Credit Impact Using the Standard & Poors Method
(\$000's)

S&P Risk Factor of	50%	
Interest Equivalent at	6%	
Annual Capacity Payment ¹		6,944
Monthly Capacity Payment ²		579
Contract terminates		Jul-15
<u>For years beyond contract expiration:</u>		
Total MW	46	
Proxy Peaker Value	\$136 per kw/yr	
Annual Capacity Payment		6,256
Monthly Capacity Payment ²		521

		A	B	C = A x B
		Present Value		Debt
		Remaining Pmts	Risk Factor	Equivalent
Balance at	1/1/2009	57,234	50%	28,617
	1/1/2010	56,762	50%	28,381

¹ Based on 4.89 cents per kwh for 46 MW capacity during on-peak hours at 90% availability.

² Monthly payments made in arrears.

Theoretical Cost of Imputed Debt

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	
	Amount	%	Rate	Weighted Average Cost of Capital	Revenue Requirement Factor	Revenue Requirement applied to Capital Amount	Imputed Debt	S&P Balances Adjusted for Imputed Debt	S&P Ratios	Theoretical Rebalancing Embedded in Actual Debt	Theoretical Structure Would Have Been without Imputed Debt	%	Rate	Weighted Average Cost of Capital	Revenue Requirement applied to Capital Amount	Theoretical Revenue Requirement of Imputed Debt (on Rate Base)	Theoretical Revenue Requirement of Imputed Debt (on Total Capital)		
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	
				(B)*(C)	(D) grossed up for taxes	(A)*(C) grossed up for taxes			(I) - Imputed Debt	(A)+(J)		(L)*(M) grossed up for taxes	(N) grossed up for taxes	(O) grossed up for taxes	(K)*(M) grossed up for taxes	Difference based on Rate Base * Rev Req Factor	Difference based on Rev Req applied to Total Capital		
1995 Rate Case (Final D&O)																			
Short-term debt	47,328	5.46%	6.00%	0.33%	0.36%	3,117	178,219	47,328	4.53%	(8,066)	39,262	4.53%	6.00%	0.27%	0.30%	2,585			
Long-term debt	336,210	38.76%	7.13%	2.76%	3.03%	26,309		514,429	49.19%	90,544	426,754	49.19%	7.13%	3.51%	3.85%	33,395			
Preferred stock	60,525	6.98%	7.28%	0.51%	0.91%	7,916		60,525	5.79%	(10,315)	50,210	5.79%	7.28%	0.42%	0.76%	6,567			
Common equity	423,414	48.81%	11.40%	5.56%	10.00%	86,718		423,414	40.49%	(72,163)	351,251	40.49%	11.40%	4.62%	8.29%	71,938			
	<u>867,477</u>	<u>100.00%</u>		<u>9.16%</u>	<u>14.30%</u>	<u>124,060</u>		<u>1,045,696</u>	<u>100.00%</u>	<u>0</u>	<u>867,477</u>	<u>100.00%</u>		<u>8.82%</u>	<u>13.20%</u>	<u>114,465</u>		<u>9,574</u>	
Rate Base	809,665					115,792								106,856		8,936			
2009 Rate Case (HECO Direct)																			
Short-term debt	21,951	1.49%	3.25%	0.05%	0.05%	763	431,033	21,951	1.16%	(4,981)	16,970	1.16%	3.25%	0.04%	0.04%	605			
Long-term debt	561,940	38.27%	5.75%	2.20%	2.41%	35,462		992,973	52.28%	205,709	767,649	52.28%	5.75%	3.01%	3.30%	48,444			
Hybrid securities	27,775	1.89%	7.41%	0.14%	0.15%	2,259		27,775	1.46%	(6,303)	21,472	1.46%	7.41%	0.11%	0.12%	1,746			
Preferred stock	59,496	4.05%	7.62%	0.31%	0.55%	8,145		59,496	3.13%	(13,501)	45,995	3.13%	7.62%	0.24%	0.43%	6,297			
Common equity	797,307	54.30%	11.25%	6.11%	10.97%	161,145		797,307	41.97%	(180,924)	616,383	41.97%	11.25%	4.72%	8.48%	124,578			
	<u>1,468,469</u>	<u>100.00%</u>		<u>8.81%</u>	<u>14.15%</u>	<u>207,794</u>		<u>1,899,502</u>	<u>100.00%</u>	<u>0</u>	<u>1,468,469</u>	<u>100.00%</u>		<u>8.11%</u>	<u>12.37%</u>	<u>181,670</u>		<u>26,124</u>	
Rate Base	1,407,979					199,234								174,187		25,048			
Tax Assumptions:																			
Federal	35.00%																		
State	6.40%																		
PSC Tax	5.885%																		
PUC Fee	0.500%																		
Franchise Tax	2.500%																		
Revenue Tax Rate	<u>8.885%</u>																		

Change from 1995 to 2009

16,111

25,048

**Witness HECO T-21
has no workpapers.**