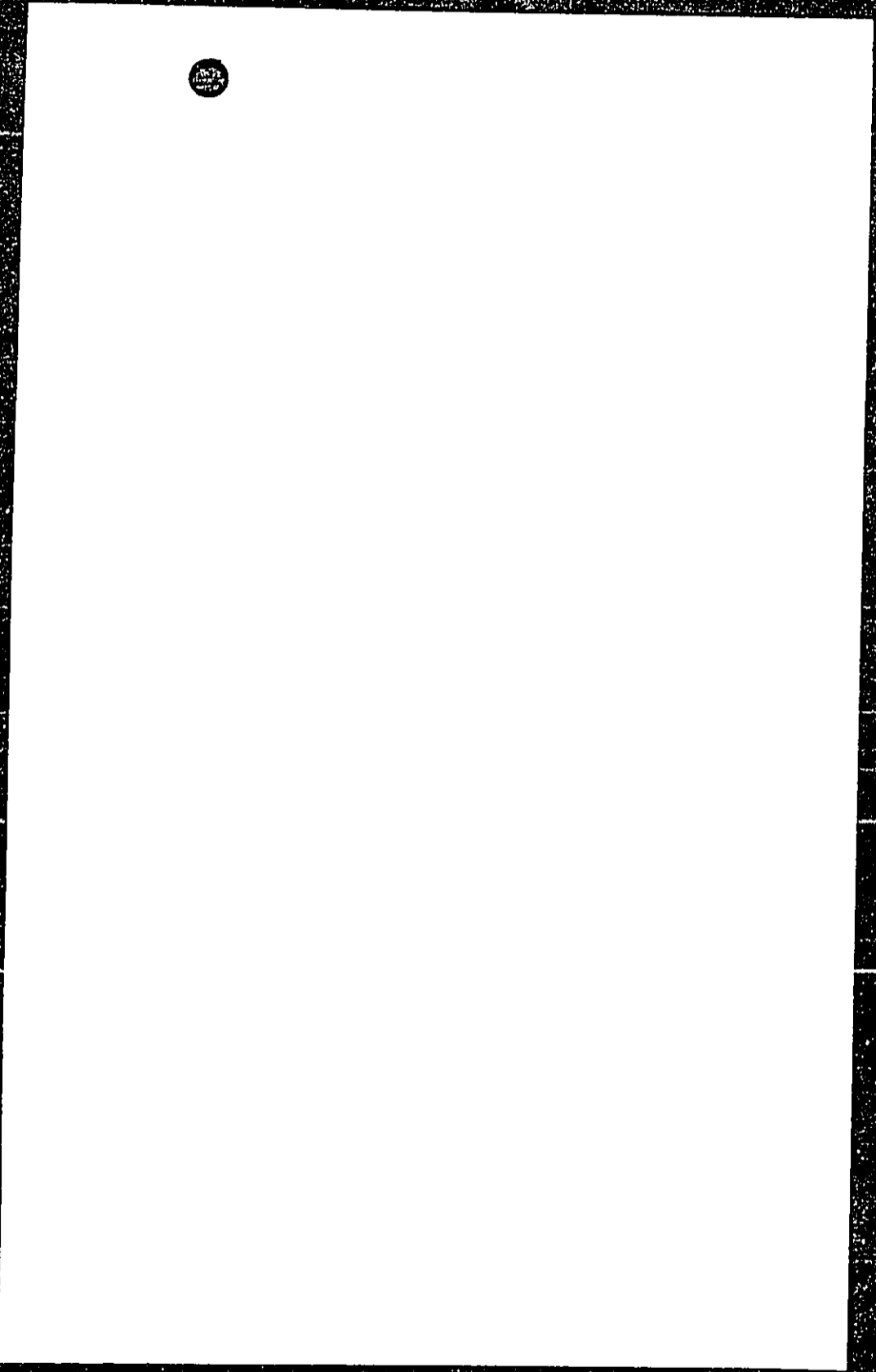


HELCO
~~1989~~-1994
1981

ADEQUACY OF SUPPLY
(Special Reports - Permanent)



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Warren H. W. Lee, P.E.
President

January 31, 1994

PUBLIC UTILITIES
COMMISSION

JAN 31 4 10 PM '94

FILED

The Honorable Chairman and Members of
the Hawaii Public Utilities Commission
465 South King Street
Kekuanaoa Building, 1st Floor
Honolulu, Hawaii 96813

Dear Commissioners:

Subject: Adequacy of Supply
Hawaii Electric Light Company, Inc.

In accordance with paragraph 5.3a of General Order No. 7, the following information is respectfully submitted.

HELCO's instantaneous system peak occurred on Monday, December 6 and was 155,000 KW. The total system capability of HELCO had a reserve margin of 33% over the 1993 instantaneous system peak.

HELCO's 1994 total generating capability of 205,600 KW includes firm purchased power of 25,000 KW from Puna Geothermal Venture, 18,000 KW from Hilo Coast Processing Company, and 8,000 KW from Hamakua Sugar Company. However, Hamakua is expected to cease operation by September 1994, before the annual system peak which typically occurs in November or December.

The attached table shows the expected reserve margins over the next three years, based on the Forecast Planning Committee's 1993-1998 Sales, Peaks and Minimum Low Demand Forecast dated March 1, 1993.

The following method is used to determine the timing of an additional generation unit:

The sum of the reserve ratings of all available units minus the reserve rating of the largest available unit minus the reserve ratings of any units on maintenance must be equal to or greater than the system peak load to be supplied.

The Honorable Chairman and Members of
the Hawaii Public Utilities Commission
January 31, 1994
Page 2

Puna Geothermal Venture ("PGV") passed the 100 hour acceptance test provided for in the purchase power agreement, and was considered to be a firm source of 25 MW as of June 27, 1993.

Succumbing to economic pressures, Hamakua Sugar Company ceased power production on May 7, 1993, but resumed on July 15, 1993 to complete the "final harvest". Under a court-approved harvest plan, Hamakua commenced a final sugar cane harvest in mid-July 1993, which is expected to continue over a period of 10 to 16 months. During the harvest plan period, Hamakua's firm capacity commitment has been reduced to 8 MW. This was done under an amendment to HELCO's existing power purchase agreement with Hamakua, which has been approved by the Commission and the Bankruptcy Court. For the purpose of determining HELCO's system capability at the end of 1994, it has been assumed that 8 MW from Hamakua will not be available.

Hilo Coast Processing Company ("HCPC") will discontinue harvesting sugar cane in late 1994 and has indicated that it may increase its power export capability and switch its primary fuel from biomass to coal after that, but supplemented by macadamia nut husks and other biomass material. This would require a new or modified power purchase agreement, which would be subject to Commission approval. By letter dated April 27, 1993, HCPC notified HELCO of HCPC's intention to renegotiate the existing agreement. For purposes of this Adequacy of Supply, it has been assumed that HCPC would continue to provide 18 MW of firm power to HELCO under the existing power purchase agreement.

The installation of the phased combined cycle unit (CT-4, CT-5, and ST-7) is still proceeding at the Keahole site. The proposed service date for CT-4 is now July 1, 1995, instead of November 1, 1994, due to the delay in obtaining the Conservation District Use Application approval at the existing Keahole Power Plant site. Although capacity after CT-4 is not required until April 1996, CT-5 is scheduled to be installed immediately after CT-4 in September 1995 based on economies of the earlier schedule. In addition, the earlier schedule will permit HELCO to proceed with the planned retirements of its older, less efficient units and to mitigate uncertainties with respect to deliveries from HELCO's power purchase producers, load growth forecasts, and construction schedules. Conversion of CT-4 and CT-5 to combined cycle operation with the addition of ST-7 is expected to occur in 1997.

With the delay in the CT-4 commercial operation schedule, the retirements of Waimea diesels 8-10, Kanoelehua diesel 11, Shipman 1, and Kanoelehua CT-1 have been deferred for one year to 1995, until CT-4 and CT-5 are installed. HELCO is concerned with the need to extend the retirements of these units. The age of these units and unavailability or difficulty in obtaining spare parts is likely to put the reliability of the HELCO system at risk



The Honorable Chairman and Members of
the Hawaii Public Utilities Commission
January 31, 1994
Page 3

in the coming years as load grows and if the CT-4 schedule is delayed further. In addition, there is a risk that these units may not be able to reach their stated reserve capacity, so that the system capability as shown in the attached table may not be met in the forecasted years.

HELCO has received several proposals for firm capacity from non-utility generation developers. However, none of the projects are alternatives to the Keahole unit for one or more of the following reasons: 1) the proposed project schedule is later than CT-4 and CT-5, 2) the proposed project is too small to impact CT-5 and ST-7, 3) the proposed project entails significant operating constraints and unacceptable risks for HELCO, and 4) the proposed price exceeds HELCO's avoided cost.

Sincerely,

Darren Miller

Attachment

cc: C. W. Tutto



ADEQUACY OF SUPPLY
Hawaii Electric Light Company, Inc.

January 31, 1994

<u>Year</u>	<u>Year-End System Capability (KW)⁽¹⁾</u>	<u>Without DSM</u>		<u>With DSM</u>	
		<u>System Peak (KW)⁽²⁾</u>	<u>Reserve Margin (%)</u>	<u>System Peak (KW)⁽³⁾</u>	<u>Reserve Margin (%)</u>
Recorded 1993	205,600 ⁽⁴⁾	155,000	33	155,000	33
Forecasted 1994	197,600 ⁽⁵⁾	165,000	20	164,000	20
1995	217,750 ⁽⁶⁾	171,000	27	170,000	28
1996	217,750	177,000	23	174,000	25

Notes:

- 1) Units at reserve ratings. Includes firm capacity of 18,000 KW from HCPC, 8,000 KW from Hamakua, and 25,000 KW from PGV. All unit retirements are planned for December 31 of the designated year unless otherwise specified.
- 2) The 1994 - 1996 system peaks without DSM are based on the Forecast Planning Committee's March 1, 1993 forecast.
- 3) The 1994 - 1996 system peaks with DSM are based on the Forecast Planning Committee's March 1, 1993 forecast and the DSM peak reduction which resulted from the integration analysis in Docket No. 7259.
- 4) PGV firm capacity of 25,000 KW added as of June 27, 1993.
- 5) Hamakua (8 MW) expected to cease operation before the end of 1994.
- 6) System additions include:
 - Combustion Turbine No. 4 (20 MW) to be installed at Keahole and commercial operation scheduled for 7/1/95.
 - Combustion Turbine No. 5 (20 MW) to be installed at Keahole and commercial operation scheduled for 9/1/95.

Unit retirements include:

- Waimea diesels 8-10 (2.7 MW), Kanoelehua diesel 11 (2 MW), Shipman 1 (3.4 MW), Kanoelehua Combustion Turbine No. 1 (9 MW), Waimea diesel 12 (2.75 MW). These retirements would have been made in 1994 (except diesel 12) if CT-4 had been available.



Warren H. W. Lee, P.E.
President

February 17, 1993

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PUBLIC UTILITIES
COMMISSION

FILED

The Honorable Chairman and Members
of the Hawaii Public Utilities Commission
465 South King Street
Kekuanaoa Building, 1st Floor
Honolulu, Hawaii 96813

Dear Commissioners:

Subject: Adequacy of Supply
Hawaii Electric Light Company, Inc.

In accordance with paragraph 5.3a of G.O. No. 7, the following information is respectfully submitted.

The 1992 instantaneous system peak occurred on Monday, November 9 and was 150,200 KW. The Island of Hawaii had a reserve margin of approximately 22% over the 1992 instantaneous system peak.

HELCO's 1992 total generating capability of 182,600 kw includes firm purchase power of 18,000 kw from Hilo Coast Processing Company, and 10,000 kw from Hamakua Sugar Company.

HELCO also has purchase power contracts with several wind and hydro cogenerators. These contracts are not for firm capacity, and the capacities are not reflected in HELCO's total generating capability.

The attached table shows the expected reserve margin over the next three years, based on the peak forecast of the Forecast Planning Committee dated April 1, 1992.

The following method is used to determine the timing of an additional generation unit.

The sum of the reserve ratings of all available units minus the reserve rating of the largest available unit minus the reserve ratings of any units on maintenance must be equal to or greater than the system peak load to be supplied.

The Honorable Chairman and Members
of the Hawaii Public Utilities Commission
February 17, 1993
Page 2

On July 31, 1992, C Brewer and Company publicly announced that Mauna Kea Agribusiness, which is the primary supplier of sugar cane processed by HCPC, will begin converting its acreage to macadamia nuts, eucalyptus trees and other diversified crops as of November 1, 1992, and will discontinue harvesting sugar cane in late 1994. The announcement also indicated that, after the last sugar harvest, HCPC's primary fuel would be coal, supplemented by macadamia nut husks and other biomass material. While it is our understanding that HCPC plans to continue supplying power after 1994 (and may even be in a position to supply more than 18 MW after its sugar processing operations are discontinued), for purposes of this Adequacy of Supply report, it is assumed that HCPC's commitment to provide 18 MW of capacity will remain in effect for the current term of the contract.

Hamakua Sugar filed a bankruptcy petition under Chapter 11 of the Bankruptcy Code on August 14, 1992. Hamakua ceased the planting of new sugar cane on or about November 23, 1992, but has continued to harvest and process portions of its mature sugar cane crop, and to sell power to HELCO. On or about December 19, 1992, Hamakua publicly announced that the plantation would be closed on March 31, 1993. There are a number of contingencies under which Hamakua, a trustee appointed by the federal bankruptcy court, or HELCO, would be able to continue to generate power using the Hamakua generating facilities after March 31, 1993. However, for purposes of this Adequacy of Supply report, it is assumed that the 10 MW of capacity provided by Hamakua under its power purchase agreement will not be available after March 31, 1993.

HELCO has an approved power purchase agreement with PGV, under which PGV committed to deliver 25 MW of firm capacity by December 31, 1990 (although sanctions would not apply unless PGV failed to deliver 12.5 MW by January 1, 1991, or 25 MW by March 1, 1991, subject to extension due to a delay in the issuance of its Geothermal Resource Permit). However, PGV has not yet provided firm capacity to HELCO for any period (due in large part to permitting delays, inadequacies in its drilling plans and procedures, and technical problems). As of the date of this filing, PGV's schedule to deliver firm capacity, as well as its ability to fulfill its 25 MW commitment, to HELCO remains uncertain.

HELCO will continue to look to PGV to fulfill its firm capacity commitment. At the same time, HELCO will continue to monitor PGV's progress, and to take parallel planning actions that are commensurate with PGV's actual progress. As a result, HELCO intends to accelerate the addition of its planned generating units after CT-4, including the addition of CT-5, a 20 MW combustion turbine, in December 1994, and the conversion of CT-4 and CT-5 to a 58 MW (gross) combined cycle unit in April 1995 by the addition of a 18 MW steam turbine and heat recovery steam generator (HRSG).



The Honorable Chairman and Members
of the Hawaii Public Utilities Commission
February 17, 1993
Page 3

In addition, HELCO does not plan to retire any of its existing generating units (barring a non-repairable, catastrophic failure) until its reserve margin is increased (e.g., until HELCO receives sufficient power from PGV and/or until CT-4 is available.).

In consideration of this uncertainty, HELCO is expediting the installation of subsequent phases of its proposed combined-cycle unit at Keahole and deferring retirement on certain other generating units to assure its ability to meet capacity needs in 1994 and 1995. If PGV does begin energy deliveries to HELCO and such deliveries are evaluated to be firm for capacity planning purposes, HELCO will consider deferring Combustion Turbine No. 5 and/or the steam turbine and HRSG portion of the combined-cycle facility at Keahole to a later date.

Sincerely,

Nauman H. Lee

Attachment

cc: C. W. Tutto



ADEQUACY OF SUPPLY
Hawaii Electric Light Company, Inc.
February 17, 1993

Year	Unit Additions KW	System Capability KW	Instantaneous System Peak KW(1)	Reserve Margin (2) %
Recorded 1992	+20,800 (3)	182,600 (4)	150,200	22
Forecasted 1993	-10,000 (5)	172,600	158,000	9
1994	+20,000 (6)	192,600		
	+20,000 (7)	212,600		
	-4,700 (8)	207,900		
	-9,000 (9)	198,900		
	-3,400 (10)	195,500	171,000	24
1995	+18,000 (11)	213,500		
	-2,750 (12)	210,750	176,000	21

Notes:

- (1) The forecasted 1993-1995 System Peaks are Evening Peaks, based on the Forecast Planning Committee's April 1, 1992 Forecast.
- (2) Reserve Margins are at the time of the System Peak.
- (3) Combustion Turbine No. 3 at Puna declared commercial on 8/03/92. The 20.8 MW rating is based on the unit performance test.
- (4) Units at reserve ratings. Includes firm power purchases from HCPC (18,000 KW) and Hamakua sugar (10,000).
- (5) Hamakua Sugar assumed to be not available by 3/31/93.
- (6) Combustion Turbine No. 4 to be installed at Keahole and commercial operation scheduled for 11/1/94. The 20 MW is a nominal rating and may vary from unit to unit and with different sites.
- (7) Combustion Turbine No. 5 to be installed at Keahole and commercial operation scheduled for 12/1/94. See Note 6 on nominal rating.
- (8) Waimea Diesels No. 8,9,10 and Kanoelehua Diesel No. 11 to be retired 12/31/94.
- (9) Combustion Turbine No. 1 at Kanoelehua to be retired 12/31/94.

ADEQUACY OF SUPPLY
February 17, 1993

- (10) Shipman Steam Unit No. 1 to be retired 12/31/94.
- (11) Combustion Turbines No. 4 and No. 5 converted to a Dual Train Combined Cycle Unit by 4/1/95.
- (12) Waimea Diesels No. 12 to be retired 12/31/95.

JOHN WAIHEE
GOVERNOR



STATE OF HAWAII
PUBLIC UTILITIES COMMISSION
DEPARTMENT OF BUDGET AND FINANCE
465 S KING STREET #103
HONOLULU, HAWAII 96813

YUKIO NAITO
CHAIRMAN

DAN T. KOCHI
COMMISSIONER

PATSY K. YOUNG
COMMISSIONER

February 16, 1993

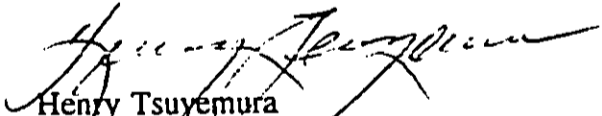
Mr. Warren H. W. Lee
President
Hawaii Electric Light Company, Ltd.
P. O. Box 1027
Hilo, Hawaii 96720

Re: 1993 Adequacy of Supply Report
Additional Time to File HELCO's 1993 Report

Dear Mr. Lee:

The commission grants your request to extend the time to file HELCO's 1993 adequacy of supply report from February 8, 1993 to February 17, 1993.

Very truly yours,


Henry Tsuyemura
Administrative Director

HT:ST:CG:eh

cc: Consumer Advocate

for you ST of 199
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Warren H. W. Lee, P.E.
President

February 8, 1993

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PUBLIC UTILITIES
COMMISSION

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

Dear Commissioners:

Subject: 1993 Adequacy of Supply Report
Additional Time to File HELCO's 1993 Report

In accordance with paragraph 5.3a of G.O. No. 7, HELCO's Adequacy of Supply Report is due within 30 days after the end of the year. HELCO is unable to complete its Report by the previously requested extension of February 8, 1993 and requests additional time, no later than February 17, 1993.

Sincerely,

cc: C. W. Tutto

Hawaii Electric Light Company, Inc. • PO Box 1027 • Hilo, HI 96721-1027



Warren H. W. Lee, P.E.
President

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PUBLIC UTILITIES
COMMISSION
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January 29, 1993

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

Dear Commissioners:

Subject: 1993 Adequacy of Supply Report
Additional Time to File HELCO's 1993 Report

In accordance with paragraph 5.3a of G.O. No. 7, HELCO's Adequacy of Supply Report is due within 30 days after the end of the year. We would appreciate additional time in which to prepare HELCO's annual statement indicating its adequacy of capacity; until February 8, 1993.

Sincerely,

Warren Lee

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Hawaii Electric Light Company, Inc. • PO Box 1027 • Hilo, HI 96721-1027



Warren H. W. Lee, P.E.
President

January 29, 1993

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PUBLIC UTILITIES
COMMISSION

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

Dear Commissioners:

Subject: 1993 Adequacy of Supply Report
Additional Time to File HELCO's 1993 Report

In accordance with paragraph 5.3a of G.O. No. 7, HELCO's Adequacy of Supply Report is due within 30 days after the end of the year. We would appreciate additional time in which to prepare HELCO's annual statement indicating its adequacy of capacity; until February 8, 1993.

Sincerely,

Warren Lee

cc: C. W. Tutto



Warren H. W. Lee, P.E.
President

February 21, 1992

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PUBLIC UTILITIES
COMMISSION

The Honorable Chairman and Members of
the Hawaii Public Utilities Commission
465 South King Street
Kekuanaoa Building, 1st Floor
Honolulu, Hawaii 96813

Dear Commissioners:

Subject: Adequacy of Supply
Hawaii Electric Light Company, Inc.

In accordance with paragraph 5.3a of G.O. No. 7, the following information is respectfully submitted.

The 1991 instantaneous system peak occurred on Monday, December 16 and was 145,400 KW. The total generation capability of the system had a reserve margin of approximately 11% over the 1991 instantaneous system peak.

HELCO's 1990 total generating capability of 161,800 kw includes firm purchased power of 18,000 kw from Hilo Coast Processing Company, and 10,000 kw from Hamakua Sugar Company.

HELCO also has purchase power contracts with several wind and small hydro cogenerators. These contracts are not for firm capacity, and the capacities are not reflected in HELCO's total generating capability.

The attached table shows the expected reserve margin over the next three years, based on the peak forecast of the Forecast Planning Committee of March 1, 1991.

The following method is used to determine the timing of an additional generation unit.

The Honorable Chairman and Members
of the Hawaii Public Utilities Commission
February 21, 1992
Page Two

The total capability of our system, as measured by the reserve rating of all available units, with a unit on maintenance, less the reserve rating of the largest available unit, must at all times be equal to or greater than the system peak.

Sincerely,

Danah W. Lee

Attachment

cc: C. W. Tutto



ADEQUACY OF SUPPLY

Hawaii Electric Light Company, Inc.

February 21, 1992

Year	Unit Additions KW	System Capability KW(1)	Instantaneous System Peak KW(2)	Reserve Margin %
Recorded 1991		161,800	145,400	11
Forecasted 1992	+25,000 (3) -9,000 (4) +20,000 (5)	186,800 177,800 197,800	152,000	30
1993	-2,700 (6)	195,100	163,000	20
1994	+20,000 (7)	215,100	171,000	26

Notes:

- (1) Units at reserve ratings. Includes firm power purchases from HCPC (18,000 KW) and Hamakua Sugar (10,000 KW).
- (2) The forecasted 1992-1994 System Peaks are Evening Peaks, based on the Forecast Planning Committee's March 1, 1991 Forecast.
- (3) Puna Geothermal Venture 25 MW of purchase power assumed to be on-line in 1992. More specific in-service date is unavailable. Approximately 12 to 16 weeks is required after drilling permit is reinstated by the County of Hawaii.
- (4) Combustion Turbine No. 1 at Kanoelehua will be placed on stand-by status after geothermal comes on-line, and will not be accounted for as firm capacity. It was derated in 1991 from 10,600 KW to 9,000 KW.
- (5) Combustion Turbine No. 3 (CT3) to be installed at Puna. Commercial operation expected August 1992.
- (6) Waimea Diesels No. 8, 9 and 10 will be placed on stand-by status in December of 1993 and will not be accounted for as firm capacity.
- (7) Combustion Turbine No. 4 (CT4) to be installed at a West Hawaii site. Commercial operation scheduled for April 1, 1994.

Hawaii Electric Light Company, Inc. • PO Box 1027 • Hilo, HI 96721-1027



Warren H. W. Lee, P.E.
President

January 31, 1992

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PUBLIC UTILITIES
COMMISSION

The Honorable Chairman and Members of
the Hawaii Public Utilities Commission
Kekuanaoa Building
465 South King Street, 1st Floor
Honolulu, Hawaii 96813

Dear Commissioners:

Subject: 1992 Adequacy of Supply Report
Additional Time to File HELCO's 1992 Report

We would appreciate two additional weeks in which to prepare HELCO's annual statement indicating its adequacy of capacity. We will be able to file this report by February 14. Thank You.

Sincerely,

cc: C. W. Tutto

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An HEI Company

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Norman A. Oss
President

January 31, 1991

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The Honorable Chairman and Members of
the Hawaii Public Utilities Commission
465 South King Street
Kekuanaoa Building, 1st Floor
Honolulu, Hawaii 96813

Dear Commissioners:

Subject: Adequacy of Supply
Hawaii Electric Light Company, Inc.

In accordance with paragraph 5.3a of G.O. No. 7, the following information is respectfully submitted.

The 1990 instantaneous system peak occurred on Tuesday, November 13 and was 140,300 KW. The total generation capability of the system had a reserve margin of approximately 16% over the 1990 instantaneous system peak.

HELCO's 1990 total generating capability of 163,400 kw includes firm purchased power of 18,000 kw from Hilo Coast Processing Company, and 10,000 kw from Hamakua Sugar Company.

HELCO also has purchase power contracts with several wind and small hydro co-generators. These contracts are not for firm capacity, and the capacities are not reflected in HELCO's total generating capability.

The attached table shows the expected reserve margin over the next three years, based on the Forecast Planning Committee peak forecast dated May 16, 1990.

The following method is used to determine the timing of an additional generation unit.

JAN 31 4 27 PM '91
PUBLIC UTILITIES
COMMISSION

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The Honorable Chairman and Members
of the Hawaii Public Utilities Commission
January 31, 1991
Page Two

The total capability of our system must at all times be equal to or greater than the load to be supplied by the summation of the following:

1990 & 1991

For Day and Evening Peak:

1. Normal rating of all available units.
2. With no unit on maintenance, the reserve rating of all available units less the reserve rating of the largest available unit.

For Day Peak Only:

With a unit on maintenance, the reserve rating of all available units less the reserve rating of the largest available unit.

For Evening Peak Only:

With a unit on maintenance, the reserve ratings of all available units.

1992 and Thereafter

For Day and Evening Peak:

With a unit on maintenance, the reserve rating of all available units less the reserve rating of the largest available unit.

Very truly yours,

Norman A. Orr

Attachment

cc: C. W. Tutto



ADEQUACY OF SUPPLY

Hawaii Electric Light Company, Inc.

January 31, 1991

<u>Year</u>	<u>Unit Additions KW</u>	<u>Year-End System Capability KW (1)</u>	<u>Instantaneous System Peak KW (2)</u>	<u>Reserve Margin %</u>
Recorded 1990		163,400	140,300	16
Forecasted 1991	+25,000 (3) -10,600 (4)*	188,400 177,800	146,000	22
1992	+20,800 (5)	198,600	154,000	29
1993	-2,700 (6)*	195,900	163,000	20

Notes:

- (1) Units at reserve ratings. Includes firm power purchases from HCPC (18,000 kW) and Hamakua Sugar (10,000 kW).
- (2) The forecasted 1991-1993 System Peaks are Evening Peaks, based on the Forecast Planning Committee's May 16, 1990 Forecast.
- (3) Scheduled 25 MW of purchased power from Puna Geothermal Venture in four phases throughout 1991. Last phase tentatively scheduled to be completed in October of 1991.
- (4) Combustion Turbine No.1 at Kanoelehua will be placed on stand-by status after geothermal comes on-line, and will not be accounted for as firm capacity.
- (5) Combustion Turbine No.3 (CT3) to be installed at Puna. Commercial operation anticipated in April of 1992.
- (6) Waimea Diesels No. 8, 9 and 10 will be placed on stand-by status in December of 1993 and will not be accounted for as firm capacity.

* Status change subject to availability of additional generation or purchased power

file



January 31, 1990

PUBLIC UTILITIES
COMMISSION
JAN 31 4 10 PM '90

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*cc: YN HL
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The Honorable Chairman & Members
of the Hawaii Public Utilities Commission
465 South King Street
Kekuanaoa Building, 1st Floor
Honolulu, HI 96813

Dear Commissioners:

SUBJECT: Adequacy of Supply
Hawaii Electric Light Company, Inc.

In accordance with paragraph 5.3a of G.O. No. 7, the following information is respectfully submitted.

The 1989 instantaneous system peak occurred on Tuesday, December 5, and was 130,400 kw. The total generating capability of the system had a reserve margin of approximately 25% over the 1989 instantaneous system peak.

HELCO's 1989 total generating capability of 163,400 kw includes firm purchased power of 18,000 kw from Hilo Coast Processing Company, and 10,000 kw from Hamakua Sugar Company.

Early in December of 1989, the Research Corporation of the University of Hawaii, in conjunction with the State, closed operation at the HGP-A plant in the Puna area, thereby terminating the 2,400 kw of geothermal power it supplied HELCO.

HELCO also has purchase power contracts with several wind and small hydro co-generators. These contracts are not for firm capacity, and the capacities are not reflected in HELCO's total generating capability.

The attached table shows the expected system reserve margin over the next three years, based on the peak forecast of the Forecast Planning Committee dated March 16, 1989.

The following method is used to determine the timing for an additional unit.

The total capability of our system must at all times be equal to or greater than the load to be supplied by the summation of the following:

Adequacy of Supply
Page Two
January 31, 1990

1990

For Day and Evening Peak:

1. Normal rating of all available units.
2. With no unit on maintenance, the reserve rating of all available units less the reserve rating of the largest available unit.

For Day Peak Only:

With a unit on maintenance, the reserve rating of all available units less the reserve rating of the largest available unit.

For Evening Peak Only:

With a unit on maintenance, the reserve ratings of all available units.

1992 and Thereafter

For Day and Evening Peak:

With a unit on maintenance, the reserve rating of all available units less the reserve rating of the largest available unit.

Sincerely,

Norman A. Oss

Attachment
cc: C. W. Tutto, Esq.



ADEQUACY OF SUPPLY

Hawaii Electric Light Company, Inc.

January 31, 1990

<u>YEAR</u>	<u>Scheduled Unit Additions KW</u>	<u>System Capability (1) KW</u>	<u>Instantaneous System Peak (7) KW</u>	<u>Reserve Margin %</u>
Recorded 1989	+15,900 (2) - 2,400 (3)	163,400	130,400	25
Forecasted 1990	+7,500 (4)	170,900	139,000	23
1991	+17,500 (4)	188,400	146,000	29
1992	+20,800 (5) (6)	209,200	152,000	38 (5)

Notes:

- (1) Units at reserved ratings. Includes firm power purchases; 18,000 kw from HCPC, and 10,000 kw from Hamakua Sugar Co.
- (2) Combustion turbine (CT-2), commercial operation November 3, 1989.
- (3) Geothermal Plant (HGP-A) operation terminated December 6, 1989.
- (4) HELCO signed a purchase power contract with Puna Geothermal Venture on June 28, 1989, for 25,000 of geothermal power. The current planned service dates are mid-1990 for 7,500 kw and early 1991 for the remaining 17,500 kw.
- (5) CT-1 may be retired after the Puna CT-3 is installed.
- (6) HELCO plans to install a 20,800 kw combustion turbine (CT-3) at the Puna Plant site in 1992.
- (7) The forecasted 1990-1992 System Peaks are Evening Peaks.

cc: NL



March 31, 1989

Norman A. Oss
President

Mar 31 3 02 PM '89
PUBLIC UTILITIES
COMMISSION

FILED

The Honorable Chairman and Members of
the Hawaii Public Utilities Commission
Kekuanaoa Building
465 South King Street, 1st floor
Honolulu, Hawaii 96813

Dear Commissioners:

Subject: HELCO's March 16, 1989 Sales & Peak Forecast

Attached for your information is a copy of HELCO's re-
cently completed sales and peak forecast for 1989-1993 dated
March 16, 1989 and finalized on March 29. Please feel free
to contact me for more information on this forecast.

Sincerely,

Norman A. Oss

Attachment

cc: C. W. Tutto, Esq.

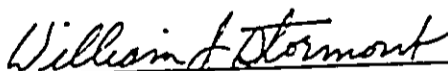
HAWAII ELECTRIC LIGHT COMPANY, INC.
 TABLE 2
 FORECAST OF SALES, PEAK & SLF
 1989-1993
 March 16, 1989

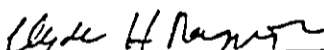
At its meeting of March 16, 1989, the HELCO Forecast Planning Committee adopted the following forecasts of Sales, Peak Demand and Sales Load Factor for 1989-1993.

Rate	Gwh 1988(R)	Gwh 1989(F)	Gwh Incr	% Incr	Gwh 1990(F)	Gwh Incr	% Incr
R	243.7	257.2	13.5	5.5	269.9	12.7	4.9
G	169.8	180.6	10.8	6.4	191.9	11.3	6.3
H	43.6	44.0	0.4	0.9	44.8	0.8	1.8
P	152.0	184.4	32.4	21.3	192.5	8.1	4.3
F	3.4	3.3	(0.1)	(2.9)	3.2	(0.1)	(3.0)
X	0.4	0.0	(0.4)	(100.0)	0.0	0.0	0.0
Total	612.9	669.5	56.6	9.2	702.3	32.8	4.9

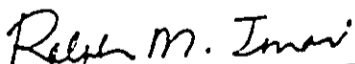
Year	Gwh Sales	Gwh Incr	% Incr	Peak (Mw)	Mw Incr	% Incr	Sales Load Factor (%)	Incr
1989	669.5	56.6	9.2	132.0	5.7	4.5	57.9	2.5
1990	702.3	32.8	4.9	139.0	7.0	5.3	57.7	(0.2)
1991	749.6	47.3	6.7	146.0	7.0	5.0	58.6	0.9
1992	783.4	34.7	4.6	152.0	6.0	4.1	58.9	0.3
1993	819.0	34.7	4.4	158.0	6.0	3.9	59.2	0.3


FORECAST PLANNING COMMITTEE:

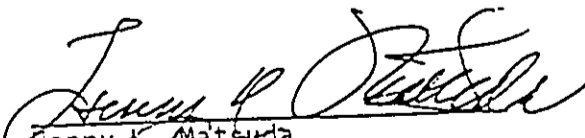

 William J. Stormont


 Clyde H. Nagata


 Thomas S. Goya


 Ralph Imai


 Frank G. Kennedy


 Henry K. Matsuda

HAWAII ELECTRIC LIGHT COMPANY, INC.
TABLE 10
1988-1993 SALES SUMMARY

	<u>1988 Recorded</u>	<u>1989 Forecast</u>	<u>1990 Forecast</u>	<u>1991 Forecast</u>	<u>1992 Forecast</u>	<u>1993 Forecast</u>
Sales (Gwh)						
R	243.7	257.2	269.9	282.7	295.5	308.3
G	169.8	180.6	191.9	203.1	214.3	225.5
H	43.6	44.0	44.8	45.6	46.4	47.2
P	152.0	184.4	192.5	215.0	225.0	235.0
F	3.4	3.3	3.2	3.2	3.1	3.0
X	<u>0.4</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
Total	612.9	669.5	702.3	749.6	783.4	819.0
Sales Increase						
R	13.3	13.5	12.7	12.8	12.8	12.8
G	10.6	10.8	11.3	11.2	11.2	11.2
H	0.3	0.4	0.8	0.8	0.8	0.8
P	14.6	32.4	8.1	22.5	10.0	10.0
F	(0.2)	(0.1)	(0.1)	0.0	(0.1)	(0.1)
X	<u>(0.2)</u>	<u>(0.4)</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
Total	38.8	56.6	32.8	47.3	34.7	34.7
% Increase	6.8	9.2	4.9	6.7	4.6	4.4
Peak Increase	126.3 +10.3	132.0 +5.7	139.0 +7.0	146.0 +7.0	152.0 +6.0	158.0 +6.0
SLF % Increase	55.4 3.5	57.9 2.5	57.7 -0.2	58.6 0.9	58.9 0.3	59.2 0.3

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January 30, 1989



Norman A. Oss
President

The Honorable Chairman and Members
of the Hawaii Public Utilities Commission
465 South King Street
Kekuanaoa Building, 1st Floor
Honolulu, HI 96813

Dear Commissioners:

Subject: Adequacy of Supply
Hawaii Electric Light Company, Inc.

JAN 30 3 40 PM '89
PUBLIC UTILITIES
COMMISSION

FILED

In accordance with paragraph 5.3a of G.O. No. 7, the following information is respectfully submitted.

The 1988 instantaneous system peak occurred on Monday, November 28, and was 126,300 KW. The total generating capability of the System had a reserve margin of approximately 19% over the 1988 instantaneous system peak.

HELCO's 1988 total generating capability of 149,900 KW includes firm purchased power of 18,000 KW from Hilo Coast Processing Company, 2,400 KW from the HGP-A geothermal unit, and 10,000 KW from Hamakua Sugar Company.

HECO's firm power supply contract with Puna Biomass Power Co. for 8,000 KW was terminated and the PUNA generating unit, rated at 15,500 KW, was acquired by HELCO effective August 1988.

HELCO also has purchase power contracts with several wind and small hydro cogenerators. These contracts are not for firm capacity, and the capacities are not reflected in HELCO's total generating capability.

The attached table shows the expected system reserve margin over the next three years, based on the peak forecast of the Forecast Planning Committee dated April 6, 1988.

The following method is used to determine the timing for an additional generating unit:

Hawaii Public Utilities Commission
January 30, 1989
Page 2

The total capability of our system must at all times be equal to or greater than the load to be supplied by the summation of the following:

FOR DAY AND EVENING PEAKS:

1. Normal rating of all available units.
2. With no unit on maintenance, the reserve rating of all available units less the reserve rating of the largest available unit.

FOR DAY PEAK ONLY:

With a unit on maintenance, the reserve rating of all available units less the reserve rating of the largest available unit.

FOR EVENING PEAK ONLY:

With a unit on maintenance, the reserve ratings of all available units.

Sincerely,

Norman A. Cruz

Attachment

cc: C. W. Tutto, Esq.



ADEQUACY OF SUPPLY

Hawaii Electric Light Company, Inc.

January 30, 1989

<u>YEAR</u>	<u>Scheduled Unit Additions KW</u>	<u>System Capability (1) KW</u>	<u>Instantaneous System Peak (7) KW</u>	<u>Reserve Margin %</u>
Recorded 1988	+ 2,750 (2) - 8,000 (3) +15,500 (3)	149,900	126,300	19
Forecasted 1989	+15,900 (4)	165,800	129,000	29
1990	0 (5)	165,800	134,000	24
1991	+15,000 (6)	180,800	139,000	30

Notes:

- (1) Units at reserve ratings. Includes firm power purchases; 18,000 KW from HCPC, 2,400 KW from HGP-A, and 10,000 KW from Hamakua Sugar.
- (2) Keahole Diesel No. 23, commercial operation March 23, 1988
- (3) 8 MW Firm Power contract with PUNA Biomass Power Co. terminated. PUNA Power Plant, rated 15,500 KW acquired by HELCO in August 1988.
- (4) Combustion turbine Unit No. 2 at Keahole. Commercial operation anticipated during fourth quarter in 1989.
- (5) Negotiations underway to purchase 25 mw firm power in 1990 from a geothermal source.
- (6) A combustion turbine is required if the 25 MW of purchased geothermal capacity expected in 1990 is delayed.
- (7) The forecasted 1989-1991 System Peaks are Evening Peaks.

Note: HELCO plans to adopt a more stringent unit addition criteria to increase generation reliability as soon as feasible.



June 27, 1988

Jun 27 11 19 AM '88
PUBLIC UTILITIES
COMMISSION

FILED

Mr. Charles Lee
Engineer
Hawaii Public Utilities Commission
465 South King Street
Kekuanaoa Building, 1st floor
Honolulu, Hawaii

Dear Mr. Lee:

Subject: HELCO Sales and Peak Forecast

Pursuant to your request, attached is a copy of HELCO's most recent sales and peak forecast. It is the April 6, 1988 forecast.

Very truly yours,

Ann Yamamoto
Director, Regulatory Affairs Division
Rate & Regulatory Affairs Department

Attachment

cc: C. W. Tutto, Esq.
N. A. Oss
G. T. Iwahiro

NL



January 29, 1988

The Honorable Chairman and Members of
the Hawaii Public Utilities Commission
465 South King Street
Kekuanaoa Building, 1st Floor
Honolulu, HI 96813

JAN 29 4 16 PM '88
PUBLIC UTILITIES
COMMISSION

FILED

Gentlemen:

Subject: Adequacy of Supply
Hawaii Electric Light Company, Inc.

In accordance with paragraph 5.3a of G.O. No. 7, the following information is respectfully submitted.

The 1987 instantaneous system peak occurred on Monday, December 7, and was 116,000 KW. The total generating capability of the system had a reserve margin of approximately 20% over the 1987 instantaneous system peak.

HELCO's 1987 total generating capability of 139,650 KW included firm purchased power of 8,000 KW from Puna Biomass Company (formerly called Puna Sugar Company), 18,000 KW from Hilo Coast Processing Company, 2,400 KW from the HGP-A geothermal unit, and 10,000 KW from Hamakua Sugar Company.

HELCO also has purchase power contracts with several wind and small hydro cogenerators. These contracts are not for firm capacity, and the capacities are not reflected in HELCO's total generating capability.

The attached table shows the expected system reserve margin over the next three years, based on the peak forecast of the Forecast Planning Committee dated February 23, 1987.

The following method is used to determine the timing for an additional generating unit:

Hawaii Public Utilities Commission
January 29, 1988
Page 2

The total capability of our system must at all times be equal to or greater than the load to be supplied by the summation of the following:

FOR DAY AND EVENING PEAKS:

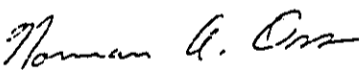
1. Normal rating of all available units.
2. With no unit on maintenance, the reserve rating of all available units less the reserve rating of the largest available unit.

FOR DAY PEAK ONLY:

With a unit on maintenance, the reserve rating of all available units less the reserve rating of the largest available unit.

FOR EVENING PEAK ONLY:

With a unit on maintenance, the reserve ratings of all available units.


Norman A. Oss
President

cc: W. W. Milks, Esq.



ADEQUACY OF SUPPLY

Hawaii Electric Light Company, Inc.

January 29, 1988

<u>Year</u>	<u>Scheduled Unit Additions KW</u>	<u>System Capability (1) KW</u>	<u>Instantaneous System Peak (6) KW</u>	<u>Reserve Margin %</u>
Recorded 1987	+12,000 (2)	139,650	116,000	20
Forecasted 1988	+ 2,750 (3)	142,400	118,000	21
1989	+13,700 (4)	156,100	122,000	28
1990	+13,750 (5)	169,850	126,000	35

Notes:

- (1) Units at reserve ratings. Includes firm power purchases; 8,000 KW from Puna Biomass, 18,000 KW from HCPC, 2,400 KW from HGP-A, and 10,000 KW from Hamakua Sugar.
- (2) Additional 10,000 KW of firm power from Hamakua Sugar Company effective August 1987, plus 2,000 KW of firm power from Puna Biomass Power Company effective March 1987.
- (3) High speed Diesel No. 23 at Keahole. Commercial operation anticipated during first quarter in 1988.
- (4) Combustion turbine Unit No. 2 at Keahole. Commercial operation anticipated during first quarter in 1989.
- (5) This unit required due to HELCO's plan to institute a stricter addition criteria for the evening peak. Under the planned criteria, the current day peak criteria would be applicable to the evening peak. This HELCO unit may be displaced by purchased power from a geothermal unit, if available. If geothermal power is unavailable, HELCO will seek a new plant site in west Hawaii.
- (6) The forecasted 1988-1990 System Peaks are Evening Peaks.

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January 30, 1987

The Honorable Chairman and Members of
 the Hawaii Public Utilities Commission
 465 South King Street
 Kekuanaoa Building, 1st Floor
 Honolulu, HI 96813

JAN 30 4 01 PM '87
 PUBLIC UTILITIES
 COMMISSION

FILED

Gentlemen:

Subject: Adequacy of Supply
Hawaii Electric Light Company, Inc.

In accordance with paragraph 5.3a of G.O. No. 7, the following information is respectfully submitted.

The 1986 instantaneous system peak occurred on Tuesday, December 30, and was 108,600 KW. The total generating capability of the system had a reserve margin of approximately 18% over the 1986 instantaneous system peak.

HELCO's 1986 total generating capacity of 127,650 KW included firm purchased power of 6,000 KW from Puna Biomass Power Company (formerly called Puna Sugar Company), 18,000 KW from Hilo Coast Processing Company, and 2,400 KW from the HGP-A geothermal unit.

HELCO also has purchase power contracts with Hamakua Sugar Company and several wind and small hydro cogenerators. These contracts are not for firm capacity, and the capacities are not reflected in HELCO's total generating capability.

The following table shows the expected system reserve margin for the next three years, based on peak predictions of the Forecast Planning Committee dated June 4, 1986.

Year	Scheduled Unit Additions* KW	System Capability** KW	Instantaneous Peak KW	Reserve Margin %
Recorded 1986	0	127,650	108,600	18
Forecasted 1987	+ 12,750	140,400	108,000	30
1988	0	140,400	112,000	25
1989	+ 12,500	152,900	115,000	33

The following method is used to determine the timing for an additional generating unit. The total capability of our system must at all times be equal to or greater than the load to be supplied by the summation of the following:

FOR MORNING AND EVENING PEAKS:

1. Normal rating of all available units.
2. With no unit on maintenance, the reserve rating of all available units less the reserve rating of the largest available unit.

FOR MORNING PEAK ONLY:

With a unit on maintenance, the reserve rating of all available units less the reserve rating of the largest available unit.

FOR EVENING PEAK ONLY:

With a unit on maintenance, the reserve ratings of all available units.

Sincerely,

Norman A. Orr

cc: W. W. Milks, Esq.

* HELCO is in the final stages of negotiating a contract modification for 10,000 KW of firm capacity from Hamakua Sugar (effective 1987), plans the addition of a 2,750 KW high speed diesel at Keahole (in 1987), and anticipates 12,500 KW of firm capacity from Puna Geothermal Venture in 1989.

** HELCO units at reserve ratings.

Note: 300 KW rating increase to Shipman Unit No. 1 (reported in January 30, 1986, Adequacy of Supply Report) not yet completed.

HEI



January 30, 1986

Norman A. Oss
President

The Honorable Chairman and Members of
the Hawaii Public Utilities Commission
465 So. King Street
Kekuanaoa Building, 1st Floor
Honolulu, HI 96813

JAN 30 2 25 PM '86
PUBLIC UTILITIES
COMMISSION

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Gentlemen:

Subject: Adequacy of Supply
Hawaii Electric Light Company, Inc.

In accordance with paragraph 5.3a of G. O. No. 7, the following information is respectfully submitted.

The 1985 instantaneous system peak occurred on Monday, November 18, and was 102,400 KW. The total generating capability of the system had a reserve margin of approximately 21% over the 1985 instantaneous system peak.

HELCO's 1985 total generating capability of 123,650 KW included firm purchased power of 6,000 KW from Puna Biomass Power Company (formerly called Puna Sugar Company), 14,000 KW from Hilo Coast Processing Company, and 2,400 KW from the HGP-A geothermal unit.

HELCO also has purchase power contracts with Hamakua Sugar Company and several wind and small hydro cogenerators. These contracts are not for firm capacity, and the capacities are not reflected in HELCO's total generating capability. As demonstrated by the amended HCPC contract that the Commission approved in Decision and Order No. 8585, HELCO is pursuing sources of firm capacity.

The Honorable Chairman and Members of
the Hawaii Public Utilities Commission
January 30, 1986
Page 2

The following table shows the expected system reserve margin for the next three years, based on peak predictions of the Forecast Planning Committee dated August 1, 1985.

<u>Year</u>	<u>Scheduled Unit Additions KW</u>	<u>System Capability KW</u>	<u>Instantaneous Peak KW</u>	<u>Reserve Margin %</u>
recorded 1985	0	123,650	102,400	21
predicted 1986	+ 4,300*	127,950	102,300	25
1987	0	127,950	104,300	23
1988	+ 8,250**	136,200	110,300	23

The following method is used to determine the timing for an additional generating unit. The total capability of our system must at all times be greater than the summation of the following:

- a. the capacity needed to serve the estimated system peak load, less
- b. the capacity of the unit scheduled for maintenance.

Sincerely,

Norman A. Oss

cc: William W. Milks, Esq.
N. A. Oss, President
J. F. Richardson, Jr.
B. M. Utsumi
A. Nakamura

* Hilo Coast Processing Co. increased firm capability from 14,000 to 18,000 KW in accordance with the terms of the amended purchase power contract dated December 31, 1985, and approved by the Commission in Docket No. 5460, Decision and Order No. 8585. Also, HELCO's Shipman Unit No. 1 increases capability from 3,400 to 3,700 KW following boiler repairs.

** HELCO's current plan calls for the addition of three 2.75 MW high-speed diesels in 1988.

GOV 4-1-5-5-1
H-G/Y - M

HAWAII ELECTRIC LIGHT COMPANY, INC.
P. O. BOX 1027 HILO, HAWAII-96720

January 22, 1985

Public Utilities Commission
1164 Bishop Street, Suite 911
Honolulu, Hawaii 96813

JAN 24 9 44 AM '85
PUBLIC UTILITIES
COMMISSION

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Gentlemen:

SUBJECT: Adequacy of Supply

In accordance with Paragraph 5.3a of G. O. No. 7, the following information is respectfully submitted.

HELCO's total generating capability on the system was 123,650 kw at the time of the 1984 system peak. The former generating capability of 117,600 kw was increased by a net total of 6,050 kw because of the following:

1. Keahole Diesel Unit Nos. 20, 21, and 22 began commercial operation on November 2, 1984. Each unit's capability is 2,750 kw for a total of 8,250 kw.
2. Testing indicates capability of HGP-A (geothermal) to be 2,400 kw rather than 2,600 kw.
3. Hilo Coast Processing Company, in accordance with their 1983 notification, reduced their export capacity on January 1, 1984 from 16,000 kw to 14,000 kw.

The system margin was 27% over the 1984 instantaneous peak load of 97,400 kw which occurred on December 17, 1984.

The total generating capability of 123,650 kw included firm purchased power of 6,000 kw from Puna Biomass Power Company (formerly called Puna Sugar Company), 14,000 kw from Hilo Coast Processing Company, and 2,400 kw from the RCUH geothermal unit. AMFAC has reversed an earlier decision to close Puna Sugar Company and now plans to deliver 6,000 kw of firm capacity as Puna Biomass Power Company until 1991.

In addition, HELCO has contracts with Hamakua Sugar Company and several wind and small hydro co-generators. These contracts are not for firm capacity at this time, and the capacities are not reflected in HELCO's total generating capability.


HELCO's adequacy of supply report for 1983 did not include capabilities for Shipman Unit No. 2 (4,400 kw) and Puueo Diesel Unit Nos. 5, 6, and 7 (1,000 kw each) due to the condition of the units and their anticipated retirements. Subsequently, Puueo Unit Nos. 5, 6, and 7 were retired on April 5, 1984, and Shipman Unit No. 2 was retired on July 3, 1984.

Public Utilities Commission
Page Two
January 22, 1985

Tabulated below are the capabilities and predicted margins on the HELCO system.

<u>Date Year</u>	<u>Estimated Change in Capability (Kw)</u>	<u>Estimated System Capability (Kw)</u>	<u>Predicted Instantaneous Peak (Kw)</u>	<u>Predicted Margin (%)</u>
1985	-0-	123,650	98,500	26
1986	+10,000	133,650 (1)	100,000	34
1987	-0-	133,650	101,000	32

(1) Hamakua Sugar Company moves to Phase III of the contract, providing 10,000 kw of firm capacity.



Frank G. Kennedy, Manager
Production Department

FGK:mn
cc: N. Oss, President
J. Richardson (HECO)

1985
JAN 22

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HAWAII ELECTRIC LIGHT COMPANY, INC.

P. O. BOX 1027 HILO, HAWAII-96720

JAN 30 8 39 AM '84



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H-G/Y - M

PUBLIC UTILITIES
COMMISSION

January 26, 1984

Public Utilities Commission
1164 Bishop Street, Suite 911
Honolulu, Hawaii 96813

Gentlemen:

SUBJECT: Adequacy of Supply

In accordance with Paragraph 5.3a of G. O. No. 7, the following information is respectfully submitted.

HELCO's total generating capability on the system was 117,600 kw at the time of the 1983 system peak. The former generating capability of 118,900 kw was reduced by a net total of 1,300 kw because of the following:

1. Testing indicates capability of Shipman Unit No. 1 to be 3,400 kw rather than 4,000 kw.
2. Testing indicates capability of Shipman Unit No. 4 to be 7,700 kw rather than 8,000 kw.
3. Testing indicates capability of W. H. Hill Unit No. 5 to be 14,100 kw rather than 14,800 kw.
4. Testing indicates capability of Waimea Diesel Unit No. 8 to be 800 kw rather than 1,000 kw.
5. Testing indicates capability of Waimea Diesel Unit No. 9 to be 900 kw rather than 1,000 kw.
6. HGP-A (Geothermal) 2,600 kw as reported in the HELCO 11/16/83 capability was declared firm power on November 1, 1983, following inspection.

The system margin was approximately 23% over the 1983 instantaneous peak load of 95,800 kw on November 21, 1983.

The total generating capability of 117,600 kw included firm purchased power of 6,000 kw from Puna Sugar Company, 16,000 kw from Hilo Coast Processing Company, and 2,600 kw from the RCUH geothermal unit. In addition, HELCO has signed contracts with Davies-Hamakua Sugar Company and several small wind and hydro generators. At this date, since these contracts are not for firm capacity, they are not reflected in HELCO's total generating capability.

HAWAII ELECTRIC LIGHT COMPANY, INC.

Public Utilities Commission
 Page Two
 January 26, 1984

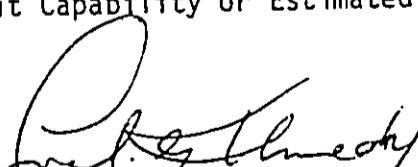
Due to the extensive repair work needed on Shipman Unit No. 2, HELCO is presently reviewing the feasibility of retiring this unit in 1984. Application to retire diesels D5, D6, and D7 has been filed with the PUC. The 117,600 kw capability in 1983 reflects these projected retirements.

Hilo Coast Processing Company, as notified in 1983, has reduced their export capacity January 1, 1984, from 16,000 kw to 14,000 kw; and Amfac has revised their Puna Sugar Company closure date to September 30, 1984. As a result of these reductions in our system capability, HELCO has purchased three 2,750 kw diesels for the Keahole site and is presently conducting air quality monitoring tests to obtain the necessary permits for this installation.

Tabulated below are the capabilities and predicted margins on the HELCO system.

Year	Month	Estimated Unit Capability KW	Estimated System Capability KW	Predicted Instantaneous Peak KW	Predicted Margin %
1984	January	- 2,000 (1)	115,600	93.3	24
	June	+ 8,250 (2)	123,850	93.3	33
	October	- 6,000 (3)	117,850	93.3	26
1985	November	+ 10,000 (4)	127,850	95.0	35
1986		-0- (5)	127,850	95.9	33

- (1) Reduction of HCPC from 16,000 kw to 14,000 kw.
- (2) Addition of three diesel units at Keahole.
- (3) Although Puna Sugar Company will close September 30, 1984, negotiations are presently being held for HELCO to lease the generating unit and operate at 14,000 kw or Amfac continue to operate unit burning wood chips as boiler fuel.
- (4) Davies-Hamakua Sugar Company moves to Phase III of contract, providing firm energy and capacity.
- (5) No change in Estimated Unit Capability or Estimated System Capability for 1986.


 Frank G. Kennedy, Acting Manager
 Production Department

FGK: cr
 cc: N. Oss, President
 J. Richardson (HECO)

[Handwritten notes and stamps, including "11/23/84" and "11/26/84"]

HAWAII ELECTRIC LIGHT COMPANY, INC.
P. O. BOX 1027 HILO, HAWAII-96720



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CC: LT
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CD
MSE

January 28, 1983

Public Utilities Commission
1164 Bishop Street
Suite 911
Honolulu, Hawaii 96813

FEB 1 2 02 PM '83
PUBLIC UTILITIES
COMMISSION

F11

Gentlemen:

Subject: Adequacy of Supply

In accordance with Paragraph 5.3a of G.O. No. 7, the following information is respectfully submitted.

HELCO's total generating capability on the system was 118,900 kw at the time of the 1982 system peak. The former generating capability of 124,300 kw was reduced by 5,400 kw because Shipman Unit No. 2 and Puueo Diesel No. 6 were unavailable due to extensive repair work. The system margin was approximately 30% over the 1982 instantaneous peak load of 91,600 kw on November 22, 1982.

The total generating capability of 118,900 kw included firm purchased power of 6,000 kw from Puna Sugar Company and 16,000 kw from Hilo Coast Processing Company. In addition, HELCO has signed contracts with RCUH to purchase energy from the 3,000 kw geothermal unit and a purchase power contract with Davies-Hamakua for energy. At this date since these contracts are not for firm capacity, they are not reflected in HELCO's total generating capability.

As a result of the extensive repair work needed on Shipman Unit No. 2 and the age, condition, and location of HELCO's Puueo Diesels #5, #6, and #7, the economic study is presently being conducted to determine the feasibility of retiring these units in 1983. Should these units be retired, HELCO's capability will be reduced by 7,400 kws.

Hilo Coast Processing Company has notified us that beginning in 1984 they will reduce their export capacity from 16,000 kw to 14,000 kw. Amfac Inc. has also notified HELCO that Puna Sugar Company will cease operations in January 1985, thus reducing HELCO's system capability by 6,000 kw. As a result of these future reductions in our system capability, HELCO is presently studying the feasibility of adding several 2,750 kw diesels at the Keahole site in late 1984. HELCO has also asked Davies-Hamakua if they plan to exercise their option to move into Phase III of our purchase power contract which would add 10,000 kw of firm capacity by 1985. At this time they are tentatively planning to move into Phase III, however, a definite answer will not be forthcoming before the middle of 1984.

HAWAII ELECTRIC LIGHT COMPANY, INC.

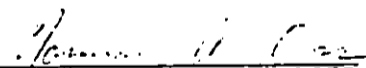
Public Utilities Commission
 Honolulu, Hawaii
 Page 2

January 28, 1983

Tabulated below are the capabilities and margins reflected by the above changes in generation on the HELCO system, should they materialize.

<u>Year</u>	<u>Date</u> <u>Month</u>	<u>Estimated</u> <u>Unit Capability</u> <u>KW</u>	<u>Estimated</u> <u>System</u> <u>Capability</u> <u>KW</u>	<u>Predicted</u> <u>Instantaneous</u> <u>Peak</u> <u>KW</u>	<u>Predicted</u> <u>Margin</u> <u>%</u>
1983	November	- 7,400 (1)	116,900	92,600	26
1984	January	- 2,000 (2)	114,900	93,900	22
	November	+ 5,500 (3)	120,400	93,900	28
1985	January	- 6,000 (4)	114,400	95,000	20
	November	+ 10,000 (5)	124,400	95,000	31

- (1) Possible retirement of Shipman No. 2 and Puueo Diesels No. 5, 6; and 7.
- (2) Reduction of HCPC from 16,000 kw to 14,000 kw.
- (3) Addition of at least (two) 2,750 kw diesels.
- (4) Termination of Puna contract.
- (5) Davies-Hamakua moves to Phase III of contract providing firm energy and capacity.


 NORMAN A. OSS, MANAGER
 PRODUCTION DEPARTMENT

NAO:hs

xc: J. Richardson, HECO
 F. Johnson, HELCO
 N. Lee

HAWAII ELECTRIC LIGHT COMPANY, INC.
P. O. BOX 1027 HILO, HAWAII-96720



January 21, 1982

Public Utilities Commission
1164 Bishop Street
Suite 911
Honolulu, Hawaii 96813

Subject: Adequacy of Supply

Gentlemen:

In accordance with Paragraph 5.3a of G.O. No. 7, the following information is respectfully submitted.

Hawaii Electric Light Company's total generating capability on the system was 124,300 kw at the time of the system peak, providing a system margin of approximately 39% over the 1981 instantaneous peak load of 89,400 kw. on December 7, 1981.

The total generating capability is 124,300 kw. which includes firm purchased power of 6,000 kw. from Puna Sugar Company and 16,000 kw. from Hilo Coast Processing Company.

Helco has signed a contract with Research Corporation of the University of Hawaii to buy it's export electrical energy and to operate and maintain at cost the 3.0 mw geothermal unit at the HGP-A well in the Puna area. This unit should begin commercial operation during January of 1982.

Helco has signed a power contract with Davies-Hamakua for energy which will go into effect March of 1982.

In late 1980 Helco signed a power purchase agreement with Windfarms, Ltd. to buy electrical energy from a proposed windmill site in Kohala area. This energy should be available in late 1983.

Hilo Coast Processing Company has notified us that in 1984 they will drop their capacity by 2 mws. Therefore they will be providing us with 14 mw instead of 16 mw.

Tabulated below are the capabilities and predicted margins on the Helco system.

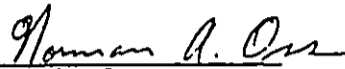
<u>Year</u>	<u>System Capability KW</u>	<u>Predicted Instantaneous Peak KW</u>	<u>Predicted Margin %</u>
1982	124,300	90,900	37%
1983	124,300	92,800	34%
1984	122,300	94,500	29%

PUBLIC UTILITIES
COMMISSION

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Adequacy of Supply
January 21, 1982
Page 2


Norman A. Oss
Manager of Production

NAO:hs

cc: J. Richardson - Heco
F. Johnson - Helco
N. Lee - PUD

HAWAII ELECTRIC LIGHT COMPANY, INC.
P. O. BOX 1027 HILO, HAWAII-96720

January 14, 1981



AT
/K
/R
/M
/N

Public Utilities Commission
1164 Bishop Street
Suite 911
Honolulu, Hawaii 96813

Subject: Adequacy of Supply

Gentlemen:

In accordance with Paragraph 5.3a of G.O. No. 7, the following information is respectfully submitted.

Hawaii Electric Light Company's total generating capability on the system was 124,300 kw at the time of the system peak, providing a system margin of approximately 44% over the 1980 instantaneous peak load of 86,300 kw. on December 3, 1980.

The total generating capability is 124,300 kw which includes firm purchased power of 6,000 kw from Puna Sugar Company and 16,000 kw from Hilo Coast Processing Company.

Helco has signed a contract with Research Corporation of the University of Hawaii to buy it's export electrical energy and to operate and maintain at cost the 3.0 mw geothermal unit at the HGP-A well in the Puna area. This unit should be on line in April of 1981.

Helco is in the process of negotiating a power contract with Davies Hamakua Sugar Company which should go into effect sometime in 1981.

In late 1980 Helco signed a power purchase agreement with Windfarms, Ltd. to buy electrical energy from a proposed windmill site in Kohala area. This energy should be available in 1982.

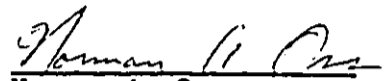
Tabulated below are the capabilities and predicted margins on the Helco system.

<u>Year</u>	<u>System Capability KW</u>	<u>Predicted Instantaneous Peak KW</u>	<u>Predicted Margin %</u>
1981	124,300	88,000	41%
1982	124,300	90,500	37%
1983	124,300	91,600	36%

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Adequacy of Supply
January 14, 1981
Page 2


Norman A. Oss
Norman A. Oss
Manager of Production

NO:hs

cc: J. Richardson - Heco
F. Johnson - Helco
N. Lee - POD

HAWAII ELECTRIC LIGHT COMPANY, INC.
P. O. BOX 1027 HILO, HAWAII-96720

January 4, 1980



PUBLIC UTILITIES
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Public Utilities Commission
1164 Bishop Street
Suite 911
Honolulu, Hawaii 96813

Subject: Adequacy of Supply

Gentlemen:

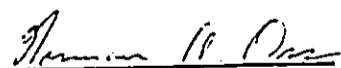
In accordance with Paragraph 5.3a of G.O. No. 7, the following information is respectfully submitted.

Hawaii Electric Light Company's total generating capability on the system was 124,300 kw. at the time of the system peak, providing a system margin of approximately 45% over the 1979 instantaneous peak load of 85,800 kw. on December 19, 1979.

The total generating capability is 124,300 kw. which includes firm purchased power of 6,000 kw. from Puna Sugar Company and 16,000 kw. from Hilo Coast Processing Company.

Tabulated below are the capabilities and predicted margins on the Helco system.

<u>Year</u>	<u>System Capability KW</u>	<u>Predicted Instantaneous Peak KW</u>	<u>Predicted Margin %</u>
1980	124,300	90,200	38%
1981	124,300	93,400	33%
1982	124,300	96,600	29%


Norman A. Oss
Manager of Production

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cc: J. Richardson - Heco
D. Williamson - Helco
N. Lee - PUD