

October 5, 1990

The Honorable William W. Paty
Chairperson, Board of Land and
Natural Resources
State of Hawaii
1151 Punchbowl Street, Room 130
Honolulu, Hawaii 96813

Dear Mr. Paty:

Re: Your Request for Advice re a Proposed Sale of Steam
From State Experimental Geothermal Well (HGP-A) to
Puna Geothermal Venture (PGV).

This is in response to your request for an opinion on the
above proposed sale. We understand the facts to be as follows:

1. The Natural Energy Laboratory of Hawaii Authority (NELH), a public instrumentality and division of the University of Hawaii, is currently the lessee of geothermal resources under Geothermal Resource Mining Lease (GRML) No. S-4602.
2. This lease site is known as the HGP-A well area.
3. The right to develop geothermal resources on the land adjacent to the HGP-A well area is held by PGV under GRML NO. R-2.
4. PGV has proposed to purchase steam from NELH's existing HGP-A well.
5. PGV will pay NELH certain amounts for this steam, and it is contemplated that in turn NELH will pay BLNR a 10% royalty on the revenues it receives from PGV.
6. Although not explicit, it is implicit in your letter that the area under GRML No. S-4602 is "ceded" land which is part of the public land trust, and a portion of the revenue

The Honorable William W. Paty
October 5, 1990
Page 2

therefrom is statutorily and constitutionally required to go to the Office of Hawaiian Affairs (OHA).

You have asked us three questions. They are:

1) Should OHA's 20% share be derived from the 10% royalty received by BLNR from NELH, or from the revenues NELH will receive from the sale of steam to PGV?

2) Is the proposed sale a unit or cooperative plan of development, requiring BLNR approval, or is it permissible under the existing GRML Nos. S-4602 and R-2, and thus allowable without BLNR approval?

3) Is PGV under its lease, required to file with BLNR a construction bond for 100% of the cost of all improvements prior to making those improvements?

We answer these questions as follows.

This session the legislature passed H.B. No. 2896, H.D. 3, S.D. 2, C.D. 1, which was enacted into law as Act 304. This law clarified OHA's rights to proceeds from "ceded" lands, and OHA is now entitled to 20% of the revenue derived by the State from "ceded" lands. Revenue is defined as:

"all proceeds, fees, charges, rents, or other income . . . derived from any sale . . . that is situated upon and results from the actual use of lands comprising the public land trust . . . but excluding any . . . regulatory or licensing fees . . . [or] interagency and intra-agency administrative fees or assessments."

At a minimum, OHA is entitled to 20% of the 10% royalty BLNR would receive from NELH. Whether OHA would be also entitled to 20% of the amount PGV will pay to NELH for the steam is a similar question to one already asked by your office in regards to a disposition of land from BLNR to the Housing Finance and Development Corporation in Lahaina. Pending a resolution of that earlier inquiry, we are unable to more definitely answer your question here.

As to questions 2) and 3), we concur with the staff analysis you have provided us. That is, prior to PGV

The Honorable William W. Paty
October 5, 1990
Page 3

constructing any improvements, commencing drilling operations, or doing any other work within the area under GRML No. R-2, it must post a construction bond with BLNR for at least 100% of the cost of the work. See section 14 of GRML No. R-2. Also, should PGV drill new wells from the GRML No. R-2 area to the GRML No. S-4602 area, i.e. slant drill new wells, see Item No. 6 of proposed HGP-A Steam Sale Agreement, section 13-183-33, HAR, would apply, and an application to do so would have to be filed with, and approved by BLNR. Compare GRML No. S-4602, page 4, NELH permitted to slant drill under adjoining land, with GRML No. R-2, no such right conferred upon PGV. Otherwise, NELH is entitled to sell steam, see page 2 of GRML No. S-4602.

Should you have any questions, please feel free to call me at 8-7132.

Very truly yours,

Randall Y. K. Young
Deputy Attorney General

RYKY:ksy
1303E

(AG)

MEMORANDUM

TO: Honorable Warren Price III, Attorney General

ATTN: Mr. Johnson Wong, Supervising Deputy Attorney General
Land/Transportation Division

FROM: William W. Paty, Chairperson
Department of Land and Natural Resources

SUBJECT: Proposed Sale of Steam from the State Experimental
Geothermal Well (HGP-A) to Puna Geothermal Venture (PGV)

Background

The Natural Energy Laboratory of Hawaii Authority has received a proposal from Puna Geothermal Venture to purchase geothermal resources (steam) from the existing HGP-A well, located at Pohoiki, Hawaii.

The Natural Energy Laboratory of Hawaii Authority (NELH) is the assignee for Geothermal Resource Mining Lease (GRML) S-4602, and Puna Geothermal Venture (PGV) is the sublessee for GRML R-2.

The proposed PGV steam sale agreement calls for the use and transport of steam from the HGP-A well (closed since December 1989) to the PGV power plant facility located on the leased land adjacent to the HGP-A site.

The proposed agreement calls for the purchase of steam by PGV, through annual payments to NELH of a Well Availability Fee (\$50,000), a Steam Fee based on pounds of steam delivered (minimum \$50,000/year), and a one time payment of \$250,000.

Enclosed for your review are copies of the following documents pertinent to the proposed steam sale agreement between the Natural Energy Laboratory of Hawaii Authority and Puna Geothermal Venture:

- 1) PGV's proposed HGP-A Steam Sales Agreement, dated 6/19/90.
- 2) Review of Proposed Steam Sales Agreement, prepared by NELH's financial consultant Steven Morris, dated August 1990.
- 3) DLNR staff analysis of the proposed steam sale agreement between NELH and PGV.
- 4) Geothermal Resource Mining Leases S-4602 and R-2.

The present status of the negotiations between NELH and PGV is that NELH has decided to submit a counter-proposal of the steam purchase agreement back to PGV for review and approval.

Discussion

It should be noted that the steam sale negotiations between NELH and PGV have been conducted without any direct input from our Department. Other than the discussions held at a meeting on 8/20/90, (summarized in the attached staff analysis), no request for approval of any kind has been received to date.

Based on that meeting and our analysis of the PGV proposal (attached), the following issues have been identified which require clarification and legal opinion:

- 1) Concerning the payment of monies to the Office of Hawaiian Affairs, should the OHA 20% share be derived from the 10% royalty received by the Board from the mining lessee for S-4602 (NELH), or from the total gross or net revenues received by NELH from the sale of steam to PGV ?
- 2) Should the proposed steam sale agreement be regarded as a unit or cooperative plan of development between PGV and NELH as defined in section 13-183-33, HAR ? If so, shouldn't an application be filed by NELH/PGV addressing such development plans for approval by the Board ?

Or, is the proposed sale and use of steam between the two lessees permissible under the existing conditions of mining leases S-4602 and R-2, and therefore allowable without prior approval of the lessor (Board) ?

- 3) Is our interpretation of Condition No. 14 of the mining lease R-2 correct, in that lessee is required to file with the Board, a construction bond for a sum of not less than 100% of the cost of any improvement, including pipeline construction?

Conclusion

We respectfully request your review and comment of the enclosed material, and your opinion on the issues outlined above. Our Department's position and concerns on the proposed steam sale agreement are set forth in the analysis provided.

We maintain that the above issues, as well as any proposed steam sales agreement involving leased lands, needs to be reviewed by your office and approved by the Board prior to consumation of any final agreement between said parties.

Your continued cooperation and assistance is greatly appreciated. Should you have any questions, please contact Manabu Tagomori, Deputy Director, at 548-7539.

JOHN WAIHEE
GOVERNOR OF HAWAII



WILLIAM W. PATY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
KEITH W. AHUE
MANABU TAGOMORI
RUSSELL N. FUKUMOTO

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

DIV. OF WATER & LAND DEVELOPMENT
HONOLULU, HAWAII 96809

TO
SEP 24 2 02 PM '90

SEP 20 1990

MEMORANDUM

TO: Honorable Warren Price III, Attorney General
ATTN: Mr. Johnson Wong, Supervising Deputy Attorney General
Land/Transportation Division
FROM: William W. Paty, Chairperson
Department of Land and Natural Resources
SUBJECT: Proposed Sale of Steam from State Experimental Geothermal Well (HGP-A) to Puna Geothermal Venture (PGV)

RECEIVED
DEPARTMENT OF
ATTORNEY GENERAL
STATE OF HAWAII
SEP 24 10 42 AM '90

Background

The Natural Energy Laboratory of Hawaii Authority (NELH) has received a proposal from Puna Geothermal Venture (PGV) to purchase geothermal resources (steam) from the existing HGP-A well, located at Pohoiki, Hawaii.

NELH is the assignee for Geothermal Resource Mining Lease (GRML) S-4602, and PGV is the sublessee for GRML R-2.

The proposed PGV steam sale agreement calls for the transport of steam from the HGP-A well (closed since December 1989) to the PGV power plant facility located on the leased land adjacent to the HGP-A site. The agreement calls for annual payments to NELH of a Well Availability Fee (\$50,000), a Steam Fee based on pounds of steam delivered (minimum \$50,000/year), and a one-time payment of \$250,000.

Enclosed for your review are copies of the following documents:

- 1) PGM's proposed HGP-A Steam Sales Agreement, dated 6/19/90.
- 2) Review of proposed Steam Sales Agreement, prepared by NELH's financial consultant, Steven Morris, dated August 1990.
- 3) DLNR staff analysis of the proposed Steam Sales Agreement.
- 4) Geothermal Resource Mining Leases S-4602 and R-2.

From negotiations to date, NELH has decided to submit a counter-proposal to PGM for review.

Discussion

To date the steam sale negotiations between NELH and PGM have been conducted without any direct input from our Department. Other than the discussions held at a meeting on 8/20/90 (summarized in the attached staff analysis), no request for approval of any kind has been received to date.

Based on the 8/20/90 meeting and our analysis of the PGM proposal, the following issues have been identified to require legal clarification:

- 1) Concerning the payment of monies to the Office of Hawaiian Affairs, should the OHA 20% share be derived from the 10% royalty received by the Board from the lessee for S-4602 (NELH), or from the revenues received by NELH from the sale of steam to PGM?
- 2) Should the proposed steam sale agreement be regarded as a unit or cooperative plan of development between PGM and NELH as defined in Section 13-183-33, HAR ? If so, shouldn't an application addressing such development plan be filed by NELH/PGM for approval by the Board?

Or, is the proposed sale and use of steam between the two lessees permissible under the existing conditions of mining leases S-4602 and R-2 and, therefore, allowable without prior approval of the Board?

- 3) Is our interpretation of Condition No. 14 of the mining lease R-2 correct, in that the lessee is required to file with the Board, a construction bond for a sum of not less than 100% of the cost of any improvement, including pipeline construction?

Honorable Warren Price, III
Page 3

Conclusion

We respectfully request your review of the enclosed material and your opinion on the issues outlined above. Our Department's position and concerns on the proposed steam sale agreement are set forth in the analysis provided.

We maintain that the above issues, as well as any proposed steam sales agreement involving leased lands, need to be reviewed by your office and approved by the Board prior to the consummation of any final agreement.

Your continued cooperation is appreciated. Should you have any questions, please contact Manabu Tagomori, Deputy Director, at 548-7539.

DN:mh

Encl.

State of Hawaii
Department of Land and Natural Resources
Division of Water Resource Management
State of Hawaii

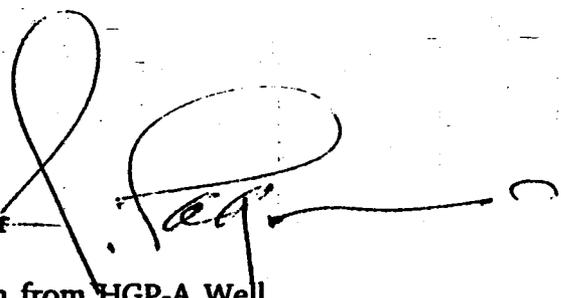
SEP 19 1990

MEMORANDUM

TO: William W. Paty, Chairperson

FROM: Manabu Tagomori, Deputy Director

SUBJECT: Analysis of Proposed Sale of Steam from HGP-A Well



Background

On August 20, 1990, during the International Symposium on Geothermal Energy held in Kona, a meeting was convened to discuss the Puna Geothermal Venture (PGV) proposal to purchase steam from the existing HGP-A well located at Pohoiki, Hawaii. In attendance at the meeting were the following:

Roger Ulveling	(DBED)	Manabu Tagomori	(DLNR)
Michelle Wong-Wilson	"	Janet Swift	"
Gerry Lesperance	"	Dean Nakano	"
Maurice Kaya	"	Don Thomas	(UH-HIG)
Clare Hachmuth	(NELH)	Roy Nakanishi	(NELH)
Steven Morris	(Consultant)		

The purpose of the meeting was to review PGV's proposed agreement and the independent financial analysis of the proposal undertaken by NELH's consultant, Steven Morris. (Copies of PGV proposal and the consultant's report attached.)

In brief, the PGV steam sale agreement proposes the purchase of steam from the HGP-A well, with compensation to be made to NELH through annual payments of a Well Availability Fee (\$50,000), a Steam Fee based on pounds of steam delivered (minimum \$50,000/year), and a one time payment of \$250,000.

Mr. Morris's analysis of the PGV proposal identified specific clauses within the proposed agreement that will require clarification, and suggested an alternate method of calculating payments to NELH for the use of steam.

As a result of the meeting, NELH/DBED decided to draft a counter-proposal for PGV's review and approval. The counter-proposal will include an alternate method of valuation of the steam resource based on a percentage (42%) of the revenues received from the sale of electricity.

An additional issue raised was the Office of Hawaiian Affairs (OHA) share of the revenues received by the State; specifically, whether the OHA 20% share should be derived from the 10% geothermal royalty received by the Board, or from the gross/net revenues received by NELH from the sale of steam to PGV. The group decided by the group that the matter should be submitted to the Attorney General's office for a legal opinion.

Discussion

Subject to a review of the counter-proposal being drafted by NELH/DBED, and solely on the basis of the PGV proposal and the discussions held at the 8/20/90 meeting, staff has prepared the following comments regarding the proposed sale of steam:

- 1) The PGV proposal (Item No. 13) allows for the assignment of the steam sale agreement and of the rights of either party (PGV/NELH) for financing security purposes without the consent of the other party.

This provision should be deleted from the agreement because both the PGV mining lease (R-2) and the HGP-A mining lease (S-4602) require that any transfer (assignment or sublease) of lessee's (NELH's) interest in the lease and lessee's rights thereunder (including any steam sale agreement) shall be subject to approval by the lessor (Board).

- 2) The purpose of the mining lease (S-4602), when originally granted, was to conduct scientific research and investigation. As such, the lease provides for a waiver of royalty payments to the State for the duration of the lease.

The proposed transport and sale of geothermal resources from lease S-4602 to lease R-2, however, constitute a change from scientific research to commercial production, and therefore requires a royalty payment of 10% of the gross proceeds from the sale or use of the geothermal resource.

It should be noted that NELH may request a continuance of the existing royalty waiver provision contained in the lease, or seek a waiver (of up to eight years) of royalty payments, as allowed by statute.

- 3) Based on our review, it appears that the proposed steam sale agreement between PGV and NELH can be considered a commingling of geothermal resources and, under the terms of the existing leases (R-2 and S-4602) and Section 13-183-32, HAR, is allowable, provided that the metering system used to measure the geothermal resource has been approved by the lessor. However, PGV's proposed option (Item No. 6) to "directionally" drill additional wells and utilize the resource underlying the HGP-A site could be interpreted as a unitization of State leased lands under unit or cooperative plan of development with PGV.

If such is the case, Section 13-183-33, HAR, requires that an application be filed with the Board, certifying whether the plan is necessary or advisable in the public interest.

The unit agreement must describe the separate tracts comprising the unit, disclose the apportionment of the production or royalties and costs to the several parties, and name the operator, and shall contain adequate provisions for the protection of the interests of all parties, including the State.

This agreement shall be signed by all parties before being submitted to the Board, and shall be effective only after approval by the Board.

- 4) Pursuant to Item No. 14 of Lease R-2, lessee (PGV) is required to file a construction bond for a sum of not less than one hundred percent (100%) of the cost of any improvements (including pipeline construction) in a form and with surety satisfactory to the lessor.

This provision for the submittal of a construction bond for the steam transmission pipeline will require PGV to provide the Department with an accurate estimate of the pipeline construction costs, as well as the construction bond.

- 5) Notwithstanding any final negotiated steam sale agreement, PGV will be required to submit, for approval, an amended Plan of Operations addressing the proposed transport and use of steam from HGP-A to its power plant facility located on the leased lands covered under R-2.

The amended Plan of Operations should also include any proposed plans for the drilling of additional wells from the PGV property to a bottom hole location beneath the HGP-A site.

It should be noted that any well drilled must be located more than 100 feet from the outer boundary of the parcel of land on which the well is located (Sect. 13-183-69), rather than the 50 feet set-back indicated in the PGV proposal (Item No. 6 (ii)).

SEP 19 1990

- 6) Item No. 7.1 of PGV's proposal states that any economic benefit derived from the commercial use of discharge, mineral residue, sludge, and waste shall belong to PGV. Lessee (PGV) should be advised that 5% of the gross proceeds received by the lessee from the sale of any such by-products is payable to the lessor (Board).

Item No. 7.1 also states that NELH will be responsible for the injection of any discharge (brine) utilized by the research facilities. No plans for such injection or request for approval of such disposal have been received by the lessor, as required under Lease S-4602.

- 7) PGV agreement Item No. 18 provides for a confidentiality agreement between PGV and NELH concerning information resulting from the steam sale operations (i.e. production, treatment, etc.). Both NELH and PGV should be advised that such information shall nonetheless be made available to the lessor and/or the Department as required by regulation.
- 8) Lastly, concerning the integrity of the HGP-A well, well tests or remedial work as necessary will be required to prevent or minimize any environmental impacts. The lessee/operator shall be required to conduct well tests, including a casing caliper log, temperature log, and spinner surveys to evaluate the integrity of the existing casing.

Conclusion

Based on the above preliminary analysis of the proposed steam sale agreement between PGV and NELH, staff recommends the following actions:

- Transmittal of this staff analysis, along with copies of the referenced documents (mining leases R-2 and S-4602, PGV's proposal, and NELH's consultant report) to the Attorney General's (AG) office for review and comment.
- Submittal of a request to the AG for a legal opinion concerning the sharing of revenues with OHA, and a determination of the Board's/Department's jurisdiction concerning regulation of the proposed steam sale activity involving the adjacent leased lands.
- Further evaluation of the NELH counter-proposal, when it is finally drafted and received by DLNR, and the prompt transmittal of such document to the AG for review.

In summary, notwithstanding any negotiated agreement between NELH and PGV, the Board and/or Chairperson's approval of such agreement, in whole or in part, will be necessary prior to the commencement of any operations concerning the transport and sale of steam from HGP-A to the PGV facility.

DN:mh

Encl.

June 6, 1989

MEMORANDUM

TO: William W. Paty, Chairperson
FROM: Manabu Tagomori, Deputy Director
SUBJECT: Dowald Staff Analysis of Proposed DBED Termination Options for the Existing HGP-A Well and Power Plant Facility

Pursuant to our review of the draft letter (attached) from Director Roger Ulveling (DBED) to Governor John Waihee concerning the future plans for HGP-A, DOWALD has prepared the following analysis and comments regarding the proposed termination options:

BACKGROUND

June 1976 The HGP-A Well was drilled to a depth of approximately 6,455 ft. Production (9 5/8") casing was cemented from the surface to approximately 2,200 ft. depth. Slotted (7") liner was set from approximately 2,100 ft. to 6,435 ft. depth.

June 1979 The Board of Land and Natural Resources granted approval of Geothermal Resource Mining Lease (GRML) S-4602 to the Research Corporation of the University of Hawaii (RCUH) for the development, operation, utilization and research of geothermal resources.

Oct. 1979 The HGP-A Well Workover and Recasing Program was completed. The original 7" slotted liner (set at 2,100' to 6435') was cut at 3,000 ft. depth and removed. The original 9 5/8" casing was re-cemented and re-tested. A 7" (solid) production casing was set and cemented within the 9 5/8" casing from the top of the existing 7" liner (approx. 2,900' depth) to the surface. The 7" casing (solid and slotted sections) was cleaned out to depth of 6,340 ft. depth.

July 1981 Start of initial production of electricity from geothermal resources at the HGP-A facility.

Aug. 1986 The Land Board approved the assignment of mining lease S-4602 from RCUH to the Natural Energy Laboratory of Hawaii (NELH).

DISCUSSION

- 1) The transfer of geothermal steam/brine from the leased area covered under State GRML S-4602 to an adjacent but different leased area (GRML R-2) may constitute a transfer/assignment of the mining lease which shall be subject to

the approval of the Board. (Ref. Sect. 13-183-25) The applicability of this provision to the transfer of the resource should be determined by the Division of Land Management.

- 2) In compliance with the provision of leases R-2 and S-4602, the construction of steam pipelines may require the approval of the Board (Lessor) for such easements or rights-of-way for joint or several use upon, through or in the leased area for steam lines.
- 3) Pursuant to the construction of the proposed pipelines and the provisions of lease R-2, the lessee is required to file a construction bond for a sum of not less than one hundred (100) percent of the cost of the pipeline, and as such, should provide the department with an estimate of the pipeline construction costs.
- 4) The terms of lease S-4602 provides for the waiver of royalty payments to the State for the duration of the lease. However, the purpose of the lease when originally granted was to engage in scientific research and investigation. As such, the transport of geothermal resources from lease S-4602 to lease R-2 may constitute a change from scientific research to commercial production and therefore require the payment of a royalty of ten (10) percent of the gross proceeds received by the Lessee (R-2) from the sale or use of such geothermal resources. (Approval/denial of the continuance of the royalty waiver provision should be further reviewed by the Division of Land Management.)
- 5) Under the authority of the DLNR's Administrative Rules, Chapter 13-183, the Department through the Chairperson/Board may require the following:
 - a) That areas cleared and graded for drilling and production facility sites (such as the HGP-A brine percolation ponds) be kept to a reasonable number and size. (Ref. Sect. 13-183-59)
 - b) That in the event of any disaster and pollution, or likelihood of either, having or capable of having a detrimental effect on public safety or the environment resulting from operations under a lease, the lessee shall suspend production operations except those which are corrective or mitigative. (Ref. Sect. 13-183-60)
 - c) The Chairperson is further authorized to shut down any operations which is determined unsafe or causing pollution of the natural environment upon failure by the lessee to take timely, corrective measures previously ordered by the Chairperson. (Ref. Sect. 13-183-54)
- 6) Concerning the integrity of the HGP-A well, the Chairperson shall require well tests or remedial work as necessary to prevent and minimize damage to life, health, property, natural resources, geothermal resources, ground water

resources, and the environment. Tests may include casing tests, cementing tests, directional tests, or equipment tests.

If the cementing of any casing appears to be defective, or if the casing in any well appears to be defective or corroded or parted, or if there appears any underground leakage which may permit underground waste, the operator shall take appropriate measures to eliminate the hazard. If the hazard of waste cannot be eliminated, the well shall be plugged and abandoned in accordance with a plugging program approved by the Chairperson. (Ref. Sect. 13-183-76)

- 7) All wells and appurtenances such as well head, valves, pipelines, etc. shall be operated and maintained in good working condition in order to ensure public safety and the protection of the environment.

Periodic corrosion surveillance of any well and appurtenances may be conducted by the Chairperson or authorized representative, and any leakage or hazard discovered shall be promptly corrected by the operator. If the operator fails to comply with the notice to remedy the defect in a timely fashion, the Chairperson may require or do the work necessary at the operator's expense to plug and properly abandon the well. (Ref. Sect. 13-183-80)

CONCLUSION

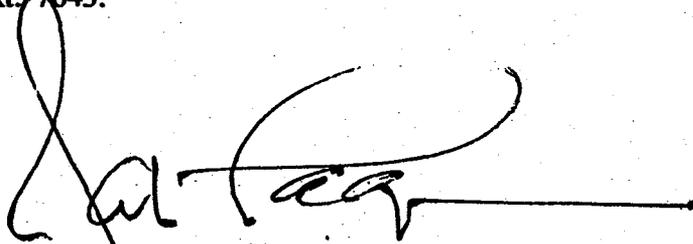
Based on staff's analysis of the proposed termination options, Dowald recommends the following transition plan for the HGP-A well and power plant facility:

- 1) Shut down of the HGP-A well and power plant as soon as practicable. The timetable for termination of all operations should take into consideration current operating commitments to HELCO, provided that all applicable regulations and lease requirements related to public safety and the protection of the environment continue to be met until such time as the suspension of all operations is feasible.
- 2) Upon the shut down of the HGP-A well, the lessee/operator shall be required to conduct well tests, including but not limited to, a casing caliper log, spinner surveys, and cement bond log to evaluate the integrity of the existing casing. In addition, the lessee/operator shall take appropriate action to remove the existing brine percolation ponds and provide for the reclamation/revegetation of all disturbed lands in a manner approved by the Chairperson.
- 3) The results of the tests identified in item (2) above, shall be submitted to the Department for review within 30 days after the completion of the tests. If it is determined that the well casing and cement bond is satisfactory (i.e. no corrosion or cracks are found), or if any defects are discovered and are properly corrected, then the HGP-A well may be approved for continued use.

(It may be advisable to contract an independent consultant such as a reservoir engineer whose specialty includes the analysis and evaluation of down-hole data to assist the Department in its review.)

- 4) Concerning the DBED proposal to provide geothermal resource to Puna Geothermal Venture (PGV), who would then supply brine back to the Noi'i O Puna Research Facility, it is recommended that the Department not permit the continued use of percolation ponds at the research facility, but instead require re-injection of these fluids by PGV or NELH (which would require NELH to drill their own injection well subject to State/County approvals).
- 5) Should negotiations between PGV and NELH result in an agreement to supply steam/brine from HGP-A to PGV (provided that the well is tested and approved), it is recommended that the lease (GRML S-4602) provision for waiver of royalties be terminated (on the assumption that the provision is not transferrable to GRML R-2) and that any State revenues received from the sale of the resource to PGV, be used for special capital improvement projects located in the Puna District, island of Hawaii. (One such project that could be considered is the construction of county water lines into areas that are dependent upon catchment water systems.)

Should you have any questions regarding the above analysis and proposed transition plan, please contact Dan Lum at Ext. 7643.



MANABU TAGOMORI

DN:dh

NELH

Natural Energy Laboratory of Hawaii
March 1, 1991

HOST PARK

Hawaii Ocean Science and Technology Park

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MEMORANDUM

TO: Manabu Tagomori/Dean Nakano
Department of Land & Natural Resources

FROM: Clare Hachmuth *CH*
Natural Energy Laboratory of Hawaii Authority

SUBJECT: Steam Sale Agreement

DIV. OF WATER &
LAND DEVELOPMENT

On January 29, 1991 a meeting (called by Ormat) was held to "complete" negotiations between NELHA and Ormat on the steam sale agreement. Those present were:

- Maurice Richard - PGV
- Frank Smith - general counsel for Ormat
- Bill Leedy - business development for Constellation Energy
- Hal Schofield - deputy attorney general for NELHA
- Don Thomas - geologist for NELHA
- Clare Hachmuth - executive director for NELHA

Constellation Energy is a non-regulated subsidiary of Baltimore Gas and Electric. Invests in alternate energy projects. All negotiations will now be with Frank Smith rather than Doug Miller.

Discussed the Judge's finding re: EIS requirement due to Federal funds for geothermal projects on teh Big Island. Appears that does not apply to HGP-A - we met NEPA requirements at the time we were getting Federal funds. Ormat wants our agreement to have a clause so that they can back out if work at HGP-A triggers NEPA.

Ormat feels obligated to buy steam from HGP-A only because of Condition 51 of their permit. Previously they had said they need the steam - now they say it would be easier to drill another well.

Ormat is most interested in drilling a well that will enter our reservoir. Don, Hal and I are in agreement that if a permit can be obtained and the steam sale conditions for the new well are the same as for the HGP-A, that this is not unreasonable. Don's only concern is that the HGP-A has provided a lot of information on the geothermal resource and he would like to see it continue to operate. Ormat agreed.

PGV will design gathering system to accomodate 2nd well.

[NOTE - in a conversation on 2-28-91, Don Thomas related that he had visited the PGV site and was shown a map that had future wells on it. One was slant drilled from the PGV site to HGP-A bottom. Hopes that DLNR is getting information on where the

bottom of PGV's wells are.]

Maurice Richard suggests that HGP-A request for amendment to permit be submitted to County separately from Ormat.

Hal will determine whether or not an EIS is required for work done on HGP-A to allow the transfer of the steam to PGV.

Clare will determine actual O&M of facility.

PGV/Ormat will send new proposal.

As of March 1, 1991 they have not sent anything nor have they called to discuss the proposed agreements.

RECEIVED

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DIV. OF WATER &
LAND DEVELOPMENT

November 1, 1990

MEMORANDUM

TO: Distribution

FROM: Clare Hachmuth, NELHA

SUBJECT: HGP-A Steam sales and O&M Agreement

Enclosed is the latest and I hope final draft of the HGP-A steam sale agreement between NELHA and Puna Geothermal Ventures. These include the comments from our meeting on October 9. Please review and give me final comments by Thursday, November 8.

DISTRIBUTION:

Dean Anderson
Maurice Kaya
Dean Nakono
Sus Ono
Hal Schofield
Manabu Tagamori
Roger Ulveling
Mason Young
Randall Young

OPERATIONS AND MAINTENANCE AGREEMENT

THIS OPERATIONS AND MAINTENANCE AGREEMENT ("Agreement") is dated as of _____, 1990 by THE NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY, a body corporate and public instrumentality established pursuant to Act 224 of the Fifteenth Legislature of the State of Hawaii, in relation with the State Department of Planning, Economic Development and Tourism, whose business and address is P. O. Box 1749, Kailua-Kona, Hawaii 96745 ("Owner"), and _____, a _____, with offices at _____ ("Operator").

R E C I T A L S

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A. Owner is the successor in interest to The Research Corporation of the University of Hawaii under the certain State of Hawaii Department of Land and Natural Resources Geothermal Resources Mining Lease No. S-4602 entered into between the State of Hawaii ("Lessor") and The Research Corporation of the University of Hawaii on June 19, 1979 (the "Lease"). The Lease covers certain geothermal resource property located within the Lower East Rift Geothermal Subzone ("LERGS") of the Puna District, Island and State of Hawaii, situate on Tax Map Key No. 3rd/1-4-01:02 and commonly referred to as the Hawaii Geothermal Project-Abbott site described on Exhibit A attached hereto (the "HGP-A Site").

B. The Lease grants certain rights to sell geothermal resources and geothermal by-products from the HGP-A Site.

C. Puna Geothermal Venture, A Hawaii general partnership ("PGV"), an affiliate of Operator, intends to own or lease one or more geothermal power plants in LERGS ("Plants") which will utilize geothermal resources to produce electricity on properties owned or leased by PGV adjoining the HGP-A Site.

D. Owner and PGV are concurrently entering into that certain Steam Sales Agreement dated as of even date herewith (the "Steam Sales Agreement").

E. Owner desires to engage Operator to be responsible for the operation and maintenance of the Steam System (as hereinafter defined) from and after the date hereof and Operator is willing to accept such engagement upon the terms and conditions hereinafter set forth.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing and of the premises and mutual covenants herein contained, the parties hereto agree as follows:

1. Definitions. As used herein, the following terms shall have the following respective meanings (all terms defined in this Agreement shall have the same meanings when used in the plural and vice versa):

"Approved O&M Budget" shall mean the annual budget approved by Owner with respect to the Work pursuant to Section 11.2 hereof.

"Delivery Point" shall mean a point designated by Owner as the place for delivery of Steam to PGV pursuant to the Steam Sales Agreement.

"Effective Date" shall mean _____, 1990.

"Environmental Claim" shall mean, any and all suits, sanctions, liabilities, legal proceedings, claims, demands, losses, costs and expenses of whatsoever kind or character, including, without limitation, attorneys' fee, civil fines or penalties or other expenses incurred, assessed or sustained as a result of or in connection with Hazardous Materials.

"Hazardous Materials" shall mean substances defined as hazardous or toxic substances pursuant to applicable present or future county, state or federal laws or regulations, or which are classified as hazardous or toxic under applicable present or future local, state or federal laws or regulations.

"Materials" shall mean any and all material, equipment and supplies, including consumable supplies, tools and office supplies, for the performance of the Work under this Agreement.

"Reimbursable Costs" shall mean the costs described in Appendix 1 attached hereto to which Operator is entitled to reimbursement from Owner.

"Steam" shall mean geothermal steam and/or hot water.

"Steam System" shall mean the Well and the related steam gathering system necessary to deliver Steam to the Delivery Point.

"Well" shall mean the geothermal production well currently located on the HGP-A Site.

"Work" shall mean the operation and maintenance of the Steam System to be performed by Operator as described in Section 5 hereof.

2. Engagement. Upon the Effective Date, Owner hereby

engages Operator to conduct the operation and maintenance of the Steam System on the terms and conditions set forth below and Operator hereby accepts such engagement.

3. Term of Agreement. This Agreement shall become effective on the effective Date and shall remain in full force and effect for one year, and after the expiration of such initial term, shall automatically be renewed on the same terms and conditions for successive one year terms, unless Owner gives Operator written notice of Owner's intent not to renew the Agreement at least ninety (90) day's prior to the anniversary date of the Effective Date. Notwithstanding anything to the contrary in the foregoing sentence, this Agreement is subject to early termination by either party in accordance with Section 4 hereof.

4. Termination of Agreement.

4.1 By Operator.

(a) Non-Default. This Agreement may be terminated by Operator at any time upon one hundred and eighty (180) days' prior written notice to Owner. In the event that Operator so elects to terminate this Agreement, then both parties shall have no further obligations under this Agreement, except for their obligations under Sections 15 and 17, and except for any legal liability which Operator may have incurred prior to termination and which is subsequently discovered by Owner.

(b) Default. Operator shall have the right, in its discretion, to terminate this Agreement upon (i) the failure of Owner to make any payment required under Section 7 hereof when due and more than five (5) days elapses after notice of such failure is given to Owner; (ii) the failure of Owner to perform any other material covenant or obligation hereunder within thirty (30) days of receipt of notice of such default from Operator; provided that if such default cannot be cured (a) with the payment of money and (b) within such thirty (30) day period, then Owner shall have such longer period as shall be reasonable necessary to cure such default so long as such cure is commenced within thirty (30) days after receipt of notice of such default and is, thereafter, diligently pursued to completion; or (iii) the commencement of a bankruptcy or similar proceeding by or with respect to Owner.

4.2 By Owner.

(a) Non-Default. Owner shall have the right to terminate this Agreement (a) upon ninety (90) days' written notice to Operator in the event that Owner determines that the continued operation of the Well has become economically impracticable as determined by Owner in its sole discretion. In the event that Owner elects to terminate this Agreement then both parties shall have no further obligations under this Agreement, except for their obligations under Sections 15 and 17, and except for any legal liability which Operator may have incurred prior to

termination and which is subsequently discovered by Owner.

(b) Owner shall have the right, in its discretion, to terminate this Agreement in the event that a representation made by Operator in this Agreement or delivered pursuant to this Agreement shall prove to have been incorrect when made or deemed made or upon (i) the failure of Operator to perform any other material covenant or obligation hereunder within thirty (30) days of receipt of notice of such default from Owner; provided that if such default cannot be cured (a) with the payment of money and (b) within such thirty (30) day period, then Operator shall have such longer period as shall be reasonably necessary to cure such default so long as such cure is commenced within thirty (30) days after receipt of notice of such default and is, thereafter, diligently pursued to completion or (ii) the commencement of a bankruptcy or similar proceeding by or with respect to Owner.

5. Scope of Work.

During the term of this Agreement, Operator shall perform all operation and maintenance activities with respect to the Steam System necessary to produce and deliver Steam to PGV at the Delivery Point in accordance with the Steam Sales Agreement and as Owner may request from time to time (the "Work"). In its performance of the Work, Operator shall:

5.1 Provide supervision and personnel in connection with the cleaning, operation, major and routine repairs, rehabilitation and maintenance of the Steam System and perform regular and routine operation, inspection, maintenance, and repair of the Steam System as may be necessary, as determined by Operator and approved by Owner to enable Owner to satisfy its obligations under Section 8.2 of the Steam Sales Agreement.

5.2 Make primary use of its own employees where feasible; provided, however, that Operator may retain any affiliate of Operator, outside consultants and other independent contractors to provide any service hereunder that Owner has approved; provided that in no event shall any such approved affiliate, outside consultants or independent contractors be considered independent contractors, agents or employees of the Owner or the State of Hawaii.

5.3 Perform the Work in accordance with good engineering and operating practices and conduct all Work with due and reasonable diligence, in an orderly and prudent manner and in accordance with sound geothermal industry practices, excepting any such obligations which would otherwise be obligations of Operator but which Owner has expressly undertaken to perform.

5.4 Abide by all terms and conditions contained in the Steam Sales Agreement and the Lease which control, affect or pertain to any operations to be conducted under this Agreement excepting any such obligations which would otherwise be obliga-

tions of Operator but which Owner has expressly undertaken to perform.

5.5 Conduct all operations and maintenance under this Agreement in full compliance with all applicable laws, rules, orders and regulations of all federal, state, municipal and other governmental authorities having jurisdiction.

5.6 Procure Material as required for the Work pursuant to Section 5.2; provided that all such materials shall be procured only after Operator has obtained the approval and written consent of Owner.

5.7 In the event of any interruption in the operation of the Steam System, immediately exercise efforts to restore the Steam System to operation as soon as is reasonably possible.

5.8 Obtain all permits and licenses necessary for the operation and maintenance of the Steam System.

6. Expenditure Authority.

6.1 Expenditure Authority. Operator shall procure Materials and make expenditures for items as deemed necessary by Operator in completing the Work; provided that such expenditures shall be made only after Operator has obtained the approval and written consent of Owner; and further provided that such expenditures may not exceed the amounts set forth in the Approved O&M Budget therefore without the prior written consent or authorization of Owner.

6.2 Emergencies. In the event of an explosion, fire, flood, blowout, or other sudden emergency, whether of the same or different nature, Operator may take such steps and incur such expenses in an amount not to exceed \$[10,000.00] (whether or not the expenditures are in the Approved O&M Budget) as in Operator's reasonable opinion are required to deal with the emergency and to safeguard life or property, but Operator shall, as promptly as possible, report the emergency to Owner and to the Chairperson of the Department of Land and Natural Resources (hereinafter "DLNR"), which report shall be accompanied by a preliminary estimate of the costs and expenses to be incurred in connection with such repairs and other work.

7. Compensation.

7.1 Reimbursable Costs. Operator shall be reimbursed for Reimbursable Costs in accordance with Section 8 hereof.

7.2 Annual Fee. In addition to receiving reimbursement for Reimbursable Costs pursuant to Section 7.1 hereof, Operator shall earn a monthly fee of \$ _____, payable by Owner in accordance with Section 8 hereof.

8. Payments. Within twenty (20) days (or as soon thereaf-

ter as practicable) after the last day of each calendar month during the term of this Agreement, Operator shall submit a billing for the Reimbursable Costs, together with copies of any supporting data and invoices. Subject to Owner's right to conduct an audit pursuant to Section 12.3 hereof, Owner shall pay the full amount of the billing together with the monthly fee within thirty (30) days after receipt of the billing. No such Reimbursable Costs shall be invoiced by Operator unless they were incurred in connection with the Work, Operator's personnel policies and practices and the applicable Approved O&M Budget, except in the case of such costs and expense incurred in the event of an emergency pursuant to Section 6.2 hereof. If at any time in the performance of the work, Operator becomes aware that for any monthly period Reimbursable Costs, exceed or will exceed the amount provided therefore in the Approved O&M Budget, Operator shall promptly notify Owner of such budget overrun and shall not, without the written approval of Owner perform any additional Work, except in the case of an emergency pursuant to Section 6.2 hereof.

9. Facilities, Equipment and Improvements ^(i.e. subject to Board approval) ~~Subject to any~~ restrictions or limitations contained in ~~the Lease~~, Operator may install, construct and place upon the HGP-A Site such facilities including machinery, buildings, equipment of whatever nature and other property improvements, as may be necessary or usual to the activities contemplated hereunder. All such machinery, buildings, equipment, property and improvements acquired for or made upon the HGP-A Site by Operator and charged to the Owner as herein provided, whether or not permanently affixed to the HGP-A Site, shall become and remain the property of the Owner (subject to any contrary provision in the Lease or other agreement between Owner and the Lessor) from and after the time they are first acquired for or made upon the HGP-A Site. OK

10. Assistance and Right of Entry.

10.1 Assistance. During the term of this Agreement, each party hereto shall provide such reasonable assistance and cooperation as the other party hereto may reasonably request in connection with the performance of the duties and obligations of each party under this Agreement.

10.2 Right of Entry. Subject to the rights of Lessor under the Lease and the limitations set forth therein, Owner shall provide Operator with immediate entry upon the HGP-A Site for designated identified personnel employed by Operator or independent operators contracted by Operator to perform the Work.

11. Costs and Expenses; Budget.

11.1 Costs and Expenses. Except as otherwise expressly provided herein, Operator shall promptly pay and discharge all costs and expenses incurred in the operation and maintenance of the Steam System or the HGP-A Site pursuant to this Agreement or otherwise in connection with the performance and discharge of its

responsibilities hereunder, and the Owner shall have the right upon its reasonable request to inspect any accounting of such costs and expenses and to the full disclosure by Operator of the status of such costs and expenses.

11.2 Approved O&M Budget. Prior to the Effective Date hereof and thereafter, within sixty (60) days of each anniversary date of the Effective Date, Operator shall prepare and submit to Owner for its review and approval a proposed budget for the costs of the Work under this Agreement for the next twelve month period. Such budget shall include all anticipated items of the Reimbursable Costs (other than emergency expenses incurred pursuant to Section 6.2), itemized in reasonable detail with estimates of the amount of each item. On or before the Effective Date and thereafter within thirty (30) days of each anniversary date of the Effective Date, Owner shall consult with Operator as to any items of cost or expense shown in the proposed budget as to Owner objects or has any question. Operator shall delete and/or modify any items as to which Owner continues to object after such consultation to the extent necessary to obtain the approval of such proposed budget by Owner. Upon obtaining such approval by Owner, Operator shall be deemed authorized to perform the operations and projects so approved in such proposed budget. Operator shall not be entitled to reimbursement from Owner hereunder for any item of cost or expense not contained in the budget as approved by Owner, as provided hereinabove, except as provided in Section 6.2 hereof and except any item which shall otherwise be authorized or ratified by Owner.

12. Representations and Covenants of Operator. Operator represents and warrants and covenants and agrees as follows:

12.1 Compliance with Laws. Operator shall at all times comply with all of the requirements of all local, state and federal agencies and authorities and observe all local, state and federal laws, regulations, consents, permits, licenses or approvals, now in force or which may hereafter be in force, including, but not limited to, all water and air pollution control laws and other environmental laws.

12.2 No Rights Under Lease. Operator acknowledges that Owner is retaining Operator to perform the Work described herein and that Owner is not here conveying, transferring or assigning any of Owner's right, title and interest in the Lease to Operator.

12.3 Access to Property, Records and Information. Owner's authorized representatives and the Chairperson of DLNR shall have access to the HGP-A Site at any and all times to inspect or observe operations and shall have free access at all time during reasonable business hours to information relating to the Work and shall have the right to audit Operator's books, accounts and records relating thereto. Operator shall keep an accurate and itemized record of expenditure and costs attributable the Work. Operator shall, (upon request), furnish Owner, copies *as required* and DLNR *all that remain*

7.
— "shall furnish Owner upon request, and the DLNR as required"; —

of all well logs, tests, and other pertinent information, including without limitation, all such information concerning operations of the Steam System as shall be made known to or discovered by Operator.

13. Assignability of Interest. Except as expressly, provided herein, Operator shall not permit or suffer any person to perform the obligations of Operator hereunder or to occupy or use the HGP-A Site or any part thereof without the prior written consent of Owner, which consent may be given or refused in the sole discretion of Owner. Any purported assignment or other transfer by Operator without the consent of Owner as provided herein shall be void and shall at the option of Owner terminate this Agreement. Nothing in this Section shall prevent Operator from contracting with qualified entities to perform obligations hereunder, so long as Operator remains primarily responsible for such performance and the compensation required for performance of such obligations is reasonable.

*OK per
Nirvan*

14. Insurance.

(a) In connection with the performance of its obligations hereunder, Operator shall, as a Reimbursable Cost, maintain or cause to be maintained in effect throughout the term of this Agreement, with insurers of recognized responsibility, insurance policies insuring against loss or damage to the person or property of others from such risks and in such amounts as a contractor of recognized responsibility performing similar obligations under similar circumstances would, in the prudent management of its business, maintain or cause to be maintained with respect to similar risks; provided, however, that without limitation of the foregoing such insurance shall include:

(i) comprehensive general liability insurance covering all work to be performed under this Agreement with a combined single limit per occurrence of [(\$1,000,000)] for bodily injury and property damage; and

(ii) comprehensive automobile liability insurance including non-owned and hired vehicle coverage with a combined single limit per occurrence of [(\$1,000,000)] for bodily injury and property damage.

(iii) "All Risk" replacement cost coverage on declared real and personal property located at the HGP-A Site, (excluding Business Interruption coverage), with a coverage limit of not less than [\$1,000,000].

(b) Any insurance policies maintained in accordance with this Section 14 shall name Owner and Lessor as additional insured thereunder. In addition, any insurance policies maintained shall insure the interests of Owner (and the other named insured) regardless of any breach of or violation by Operator of any warranties, declarations or conditions contained in such policies. Each such insurance policy shall expressly provide

that all of the provisions thereof, except the limits of liability (which shall be applicable to all insureds as a group) and liability for premiums shall operate in the same manner as if there were a separate policy covering each insured. In addition to the foregoing, such policies shall contain a provision stating that the insurance underwriters waive all rights of subrogation in favor of Operator and the other named insureds.

(c) Within thirty (30) days of the Effective Date and thereafter at intervals of not more than twelve (12) months, Owner and the Chairperson of the DLNR may request, and Operator shall thereafter furnish to Owner and the Chairperson of the DLNR all certificates of the applicable insurers, in each case signed by a responsible officer thereof, evidencing that the insurance required hereunder is presently being maintained by Operator. Operator will cause the insureds with whom it maintains such insurance to advise Owner and the Chairperson of the DLNR in writing, at least thirty (30) days prior thereto, of the termination of any such insurance. Operator will advise the Owner and the Chairperson of the DLNR in writing: (i) promptly of any default in the payment of any premiums and of any other act or omission on the part of Operator that may invalidate or render unenforceable any such insurance; (ii) promptly of any notice or other communication received from an insurer by which such insurer indicates that it has suspended or terminated, or may seek or suspend or terminate, any such insurance; and (iii) at least thirty (30) days prior thereto, of the termination of any such insurance by reason of Operator's failure to renew such insurance.

15. Indemnification. Operator shall indemnify and save harmless Owner, its officers, agents, and employees and the State of Hawaii from and against any and all manner of actions and claims arising, either directly or indirectly, out of or resulting from the errors, omissions, or acts of Operator, its officers, employees, independent contractors, or its agents occurring during or in connection with the Operator's performance and activities under this Agreement. Operator shall defend Owner and the State of Hawaii against any such action or claim that does not involve an act or omission solely of Owner or the State, their officers, agents or employees.

16. Nonwaiver. The failure or delay of either party to insist upon strict performance of any of the provisions of this Agreement, to exercise any rights or remedies provided hereunder or by law, or to notify the other party in the event of a breach or default under this Agreement, shall not release or relieve either party from any of its obligations under this Agreement and shall not be deemed a waiver of any rights or remedies hereunder, nor shall any purported oral modifications of this Agreement operate as a waiver of any of the provisions hereof.

17. Confidentiality. The parties shall maintain in confidence the provision of this Agreement which are not subject to disclosure under Chapter 92F, Hawaii Revised Statutes. Further,

only that information which is necessary for the specific purpose of this Agreement shall be maintained in confidence by the parties and may not be released to third parties without the prior written consent of the party who provided the information to the other party. Operator further agrees to maintain in confidence any information received by it pursuant to this Agreement or obtained by it during the course of performing the work concerning the production, treatment, extent, productivity and properties of Steam present in or produced from the HGP-A Site. Notwithstanding the foregoing, this confidentiality provision shall not (i) apply to information already known by the receiving party through means other than the violation of the terms hereof, or information that becomes known to the general public through acts of other parties, or information received from third parties without restriction who did not acquire it directly or indirectly from the other party in breach of this Agreement and (ii) prohibit disclosure of such information of such party's attorney's, accountants and other consultants, or as required by law or legal process or the terms of the Lease, or in the case of the Owner, to any agency, authority or other governmental entity of, or established pursuant to the laws of, the State of Hawaii.

18. Entire Agreement; Amendment. This Agreement embodies the entire agreement of the parties hereto and supersedes any and all prior agreements between the parties regarding the subject matter hereof. No change, amendment or modification of any of the provisions hereof shall be valid unless set forth in a written instrument signed by each of the parties hereto.

19. Further Assurances. The parties shall take such other actions, and execute such other documents, that may be necessary to effectuate the provisions hereof.

20. Construction. This Agreement shall be construed as a whole. All Section headings are for convenience of reference only and shall not affect the construction of any provision hereof.

21. Applicable Law. This Agreement shall be interpreted, construed and enforced in all respects in accordance with the laws of the State of Hawaii applicable to contracts made in Hawaii by residents thereof and to be performed entirely within such State. The parties agree that any action or suit regarding any dispute arising between the parties about the terms of this Agreement or the transaction contemplated by this Agreement shall be brought into court of competent jurisdiction in the State of Hawaii, and in no other jurisdiction.

22. Counterparts. This Agreement may be executed in counterparts, each of which shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same Agreement.

23. Independent Contractor. For all purposes of this Agreement, Operator shall at all times act as and be deemed to be

an independent contractor, and shall not act or nor be deemed to be an employee or agent of the Owner. All persons hired or used by Operator shall be considered Operator's agents and employees and Operator shall be responsible for the accuracy, completeness, and adequacy of any and all work and services performed thereby. Further, Operator intentionally, voluntarily and knowingly assumes the sole and entire liability for any of its agents and employees, and to third persons for all loss, cost, damage, or injury caused, either directly or indirectly, by Operator's agents and employees in the course of their employment.

24. Limitations on Liability.

24.1 Operator. Notwithstanding any other provisions of this Agreement to the contrary, Owner agrees that no owner or partner of Operator, or AMOR VI Corporation, AMOR VIII Corporation, Ormat Energy Systems, Inc., or Ormat, Inc., or any parent or affiliate of any of the foregoing (each, a "Related Party") or any past, present or future incorporator, subscriber of stock of, or stockholder, officer or director of any Related Party shall be liable for any of the obligations of Operator under this Agreement, except in the event that (a) Operator's representation in Section 12 regarding its ownership of the project and solvency is materially inaccurate, (b) such Related Party received any assets from Operator for less than adequate consideration or as a result of fraud or misappropriation, or (c) such Related Party has a direct contractual or other obligation to Owner.

24.2 Owner. Notwithstanding any other provisions of this Agreement to the contrary, Operator agrees that this Agreement does not impose any pecuniary liability on the State of Hawaii or any political subdivision thereof [state exception, if any].

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

Owner:

THE NATURAL ENERGY LABORATORY OF
HAWAII AUTHORITY

By: _____
Its: Executive Director

Operator:

By: _____

Its: _____

STEAM SALES AGREEMENT

THIS STEAM SALES AGREEMENT is dated as of _____, 1990 by THE NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY, a body corporate and public instrumentality established pursuant to ACT 224 of the Fifteenth Legislature of the State of Hawaii, in relation with the State Department of Planning, Economic Development and Tourism, whose business address is P. O. Box 1749, Kailua-Kona, Hawaii 96745 ("Seller"), and PUNA GEOTHERMAL VENTURE, a Hawaii general partnership, with offices at 101 Aupuni Street, Suite 1014-B, Hilo, Hawaii 96720 ("Buyer").

R E C I T A L S

A. Seller is the successor-in-interest to The Research Corporation of the University of Hawaii under the certain State of Hawaii Department of Land and Natural Resources Geothermal Resources Mining Lease No. S-4602 entered into between the State of Hawaii ("Lessor") and The Research Corporation of the University of Hawaii on June 19, 1979 (the "Lease"). The Lease covers certain geothermal resource property located within the Lower East Rift Geothermal Subzone ("LERGS") of the Puna District, Island and State of Hawaii, situated on Tax Map Key No. 3rd/1-4-01:02 and commonly referred to as the Hawaii Geothermal Project-Abbott site described on Exhibit A attached hereto (the "HGP-A Site").

B. The Lease grants certain rights to sell geothermal resources and geothermal by-products from the HGP-A Site.

C. Buyer intends to own or lease one or more geothermal power plants in LERGS ("Plants") which will utilize geothermal resources to produce electricity on properties owned or leased by Buyer adjoining the HGP-A Site. *OK*

D. Buyer desires to secure a supply of geothermal steam for use in connection with the operation of the Plants.

E. Seller desires to sell, and Buyer desires to purchase, geothermal resources produced from the HGP-A Site pursuant to the terms of this Agreement.

NOW, THEREFORE, in consideration of the mutual agreements and covenants set forth hereinbelow, the parties hereto agree as follows:

Definitions. As used herein, the following terms shall have the following respective meanings (all terms defined in this Section 1 or in other provisions of this Agreement in the singular shall have the same meanings when use in the plural and vice versa):

"Available Steam" shall mean all Steam produced from the Well in accordance with Section 8 (to the extent Seller has an interest therein), but excluding Reserved Steam and Reserved Minerals. (*reference Section 6*)

"Commencement Date" shall mean the earlier of (i) the date on which Available Steam is delivered to Buyer pursuant to this Agreement or (ii) the date on which electric power is first sold to HELCO from the Plants.

"Delivery Point" shall mean a point designated by Seller as the place for delivery of Available Steam to Buyer at the common boundary of the HGP-A Site and Buyer's property. Unless otherwise designated by Seller, this point shall be on the North fence line, 475' + 25' from Pohoiki Road.

"Effective Date" shall mean _____, 1990.

"Environmental Claim" shall mean, any and all suits, sanctions, liabilities, legal proceedings, claims, demands, losses, costs and expenses of whatsoever kind or character, including, without limitation, attorneys' fees, civil fines or penalties or other expenses incurred, assessed or sustained as a result of or in connection with Hazardous Materials.

"Geothermal Asset Fund" shall mean the asset fund established by ~~The State of Hawaii~~ [pursuant to Chapter ~~Hawaii Revised Statutes~~] to help alleviate the effects of geothermal development.

"Hazardous Materials" shall mean substances defined as hazardous or toxic substances pursuant to applicable present or future local, state or federal laws or regulations, or which are classified as hazardous or toxic under applicable present or future local, state or federal laws or regulations.

"HELCO" shall mean Hawaii Electric Light Company, Inc., a corporation organized under the laws of State of Hawaii.

"Power Purchase Agreement" shall mean the power purchase agreement between Buyer and HELCO with respect to the purchase and sale of electricity from the Plants.

"Reserved Minerals" shall mean any oil, hydrocarbon gas, helium and other marketable precipitates that are contained in the Steam and are extracted by Lessor or Seller.

Need to delete this section and reference to Asset Fund.

on my revision

Need Steam definition

"Reserved Steam" shall mean Steam reserved by Seller pursuant to Section 6 hereof.

"Steam System" shall mean the Well and the related steam gathering system necessary to deliver Available Steam to the Delivery Point.

"Waste Water" shall mean liquid effluent, including, without limitation, condensates from the Steam and waste products or other substances of any nature from the Well.

"Well" shall mean the geothermal production well currently located on the HGP-A Site.

2. Purchase and Sale of Steam. Upon the terms and subject to the conditions set forth in the Agreement, the Seller agrees to sell and to deliver at the Delivery Point to Buyer, and Buyer agrees to purchase and to receive at the Delivery Point, Available Steam. Seller agrees that Buyer shall have the exclusive right to purchase Available Steam. However, Buyer shall have this exclusive right only if Buyer is purchasing all of the Available Steam. If Buyer is using less than all Available Steam then Seller shall have the right to dispose of the unused portion thereof as Seller sees fit, in its sole discretion. Further, title to all purchased steam and all risk of loss therefore shall transfer to Buyer immediately at the Delivery Point.

3. Term of Agreement. This Agreement shall become effective and its term shall begin on the Effective Date and shall remain in full force and effect until June 19, 2014 unless earlier termination pursuant to Section 10 hereof; provided that the term of this Agreement shall not extend beyond the term of the Lease. However, in the event Seller obtains an extension of the Lease pursuant to Paragraph 3B thereof, beyond the maximum term (June 19, 2014), then Seller and Buyer may negotiate for an equal extension of this Agreement.

4. Delivery of Steam. Buyer shall provide Seller with not less than thirty (30) days' written notice that Buyer is ready to accept initial delivery of Available Steam at the Delivery Point.

5. Consideration.

5.1 Annual Accessibility Fee. On an annual basis Buyer shall pay Seller an accessibility fee in the amount of \$50,000.00, which fee shall be in consideration of Seller giving Buyer access to the Available Steam. Said fee shall be paid as follows:
(annually or in monthly increments along with the steam payments, etc.)

5.2 Steam Payment. Commencing from the Commencement Date, Buyer shall pay Seller for the Available Steam (the "Steam Payment"), in accordance with the formula and standards

7.3 No Rights Under Lease. Buyer acknowledges that Seller is selling the Available Steam as permitted by the terms of the Lease and that Seller is not hereby conveying, transferring or assigning any of Seller's right, title and interest in the Lease to Buyer. Buyer further acknowledges that it is not an assignee of the Lease and that the sale of Available Steam hereunder is subject to the terms and provisions of the Lease. *OK*

7.4 Operation of Plants. Buyer shall utilize that Available Steam delivered to Buyer in accordance with prudent geothermal industry practices and, to the extent not inconsistent with such practices, Buyer shall utilize Available Steam prior to utilizing Steam from other sources available to Buyer. *OK*

7.5 Accounting.

(a) At its cost, Buyer shall install and maintain in accurate working order metering equipment in accordance with prudent industry standards for the measurement of (i) Available Steam received by Buyer at the Delivery Point and (ii) all Steam supplied to the Plants. Buyer shall test such equipment in accordance with prudent industry standards, and when requested by Seller. In addition, Seller and the Chairperson of the Department of Land and Natural Resources (hereinafter the "DLNR") shall have the right to unilaterally inspect and test such metering equipment for accuracy and to make certain that such equipment is in accordance with prudent industry standards. *OK*

(b) Buyer shall maintain records of all Steam supplies to the Plants, the Available Steam received by Buyer and of the payments under the Power Purchase Agreement for electrical power generated by the Plants, and of such other information as shall be relevant to the calculation of the Steam Payment, and shall provide to Seller in connection with the determination of the Steam Payment in accordance with Section 5, a statement of the calculation of the Steam Payment due for each month, quarter and year. Buyer agrees that Seller and the Chairperson of the DLNR shall have the right to examine and audit the books and records of Buyer to the extent necessary or desirable to verify any statement, payment, calculation or determination made pursuant to this Agreement. *OK*

new section
7.6 Buyer represents that it owns all of the assets of this project and that the value of the assets of the Buyer exceeds the liabilities of the Buyer. *OK*

8. Representations and Covenants of Seller.

8.1 No Warranty of Title and Adequacy of Resource. Seller does not warrant Lessor's title to the HGP-A Site and makes no representation or warranty with respect to its title to, or the quality, quantity or presence of, Steam at the HGP-A

Site.

8.2 Steam System. Seller shall maintain the Well and shall construct and maintain a Steam System from the Well to the Delivery Point, in each case in accordance with prudent geothermal industry standards, provide that Seller shall not be required to explore for, drill for, produce or deliver Steam beyond that which can be produced by the existing Well in accordance with such practices and subject to any limitations contained in the Lease. Seller may in its sole discretion make improvements to or rework the Well or drill additional geothermal wells.

9. Indemnification. Buyer shall indemnify and save harmless Seller, its officers, agents, and employees and the State of Hawaii from and against any and all manner of actions and claims arising, either directly or indirectly, out of or resulting from the errors, omissions, or acts of Buyer, its officers, its employees, or its agents occurring during or in connection with the Buyer's performance and activities under this Agreement. Buyer shall defend Seller and the State of Hawaii against any such action or claim that does not involve an act or omission solely of Seller or the State, their officers, agents or employees.

10. Termination.

(a) Default. In the event that one of the following events occurs with respect to a party to this Agreement (a "Defaulting Party"): *OK per minimum subject to lease and DLNE*

(1) Such Defaulting Party fails to pay a Steam Payment when due;

(2) Such Defaulting Party fails to make any other payments hereunder when due and more than five (5) days elapses after notice of such failure is given by the non-Defaulting Party;

(3) A representation made by such Defaulting Party in this Agreement or delivered pursuant to this Agreement shall prove to have been incorrect when made or deemed made;

(4) Such Defaulting Party shall fail to perform any covenant of such Defaulting Party under this Agreement within thirty (30) days of receipt of notice of such default from the non-Defaulting Party; provided that if such default cannot be cured (a) with the payment of money and (b) within such thirty (30) day period, then the Defaulting Party shall have such longer period not to exceed ninety (90) calendar days as shall be reasonable necessary to cure such default so long as such cure is commenced within thirty (30) days after receipt of notice of such default and is, thereafter, diligently pursued to completion; or

(5) A bankruptcy or similar proceeding shall

be commenced by or with respect to the Defaulting Party; then, the non-Defaulting Party may, in its discretion, terminate this Agreement and pursue all remedies available to it at law or in equity.

(6) Any party to whom rights have been assigned by Buyer for the purpose of securing financing for the Plants or for any other purposes forecloses or otherwise asserts its rights against Buyer with respect to any such assignment, or any other assignor of Buyer causes, creates or acts so as to create an event of default under this Agreement; (However, notwithstanding any other provision to the contrary, in the event of a default under this Section 10 (a)(6), the assignee or secured party may elect to accede to the Buyer's rights and obligations under this Steam Sales Agreement, and if any such assignee or secured party so elects, this Steam Sales Agreement shall continue pursuant to its terms, but Seller's remedies against the defaulting buyer shall remain intact as set forth hereinbelow.)

(b) Non-Default.

(1) By Buyer. Buyer shall have the right to terminate this Agreement upon ninety (90) days' prior written notice to Seller. In the event that Buyer so elects to terminate this Agreement, then both parties shall have no further obligations under this Agreement, except for their obligations under Sections 9 and 16, and except for any legal liability which Buyer may have incurred as subsequently discovered by Seller and for which Seller may have a legal remedy. *OK*

(2) By Seller. Seller shall have the right to terminate this Agreement (i) upon ten (10) days' written notice to Buyer in the event that the Commencement Date does not occur prior to the first anniversary of the Effective Date, and (ii) upon ninety (90) days' written notice to Buyer in the event that Seller determines that the continued operation of the Well has become economically impracticable as determined by Seller in its sole discretion. In the event that Seller elects to terminate this Agreement, then both parties shall have no further obligations under this Agreement, except for their obligations under Sections 9 and 16, and except for any legal liability which Buyer may have incurred and subsequently discovered by Seller and for which Seller may have a legal remedy. *OK*

11. Assignment. This Agreement and the rights of either party hereunder may be assigned, in whole or in part, as security for financing of the Plants (in the case of Buyer) or the Steam System (in the case of Seller) without the consent of the other party, provided that the assignor shall promptly give the other party hereto written notice of such assignment, together with a copy of the executed instrument of assignment and the written assumption by the assignee of all of the assignor's

*Does Buyer
approval required
to any
assignment
to the lease/
steam sale
agreement?*

*OK
per
revision*

obligations hereunder. In addition, Seller shall have the right to assign this Agreement to any agency, authority or other governmental entity of, or established pursuant to the laws of, the State of Hawaii. Except as aforesaid, this Agreement and the rights of either party hereunder may not be assigned without the prior written consent of the other party, which consent shall not be unreasonable withheld or delayed.

*OK
per
Minimum*

12. Benefit. This Agreement shall be fully binding upon the parties hereto and their respective successors, permitted assigns and legal representatives.

13. Notices. Any notice, request, approval, consent, order, instruction, direction or other communication under this Agreement given by either party to the other party shall be in writing and shall be delivered in person or mailed, properly addressed and stamped with the required postage, to the intended recipient at the address first above stated and to the attention of the person specified below the parties' respective signatures. Either party may from time to time change such address by giving the other party notice of such change. Notice of a change of address will be considered effective only upon physical receipt thereof.

14. Force Majeure. If either party shall be wholly or partially prevented from performing any act required to be performed by it herein (other than payment of a monetary obligation, it being the express understanding of the parties that no force majeure event shall relieve Buyer of its obligation to pay the Exclusivity Payment and the Minimum Annual Payment, whether or not Available Steam is delivered to Buyer), in any or all cases as a consequence of strikes; riots; fires; floods; lightning; rain; earthquake; volcanism; wind; tsunami; war; invasion; insurrection; civil commotion; accident; equipment failures; any lawsuit based upon environmental or land use grounds, unavailability of resources due to national defense priorities, any laws, rules, regulations or orders promulgated by federal, state or county governmental bodies or agencies; any rules, regulations or orders of any public body or official purporting to exercise authority or control respecting the activities and operations contemplated hereunder; the order of any court, judge or civil authority; any act of God or the public enemy; delays arising and/or any other delays caused by events or conditions which are beyond its exclusive control, then and in any such event such performance and the obligation of such party shall be extended, or suspended, as applicable, by the duration of such delay, but in no event for more than one (1) year in total; provide, however that any suspension of performance shall not extend the initial term of this Agreement or any extension period beyond the term of the Lease. the party claiming force majeure shall promptly notify the other party of the condition giving rise to the force majeure event and shall also indicate the estimated duration of such condition and the proposed action to mitigate such condition.

15. Nonwaiver. The failure or delay of either party to insist upon strict performance of any of the provisions of this Agreement, to exercise any rights or remedies provided hereunder or by law, or to notify the other party in the event of a breach or default under this Agreement, shall not release or relieve either party from any of its obligations under this Agreement and shall not be deemed a waiver of any rights or remedies hereunder, nor shall any purported oral modifications of this Agreement operate as a waiver of any of the provisions hereof.

16. Confidentiality. The parties shall maintain in confidence the provision of this Agreement and except as set forth in this Agreement, neither party shall disclose to any third party any information provided by one party to the other party that the providing party specifically indicates is confidential information, without the prior written consent of the other party. Specifically, the parties shall further maintain in confidence any information received by the other party pursuant to this Agreement concerning the production, treatment, extent, productivity and properties of Steam present in or produced from the geothermal resource underlying Buyer's adjoining properties. Notwithstanding the foregoing, this confidentiality provision shall not (i) apply to information already known by the receiving party through means other than the violation of the terms hereof, or information that becomes known to the general public through acts of other parties, or information received from third parties without restriction who did not acquire it directly or indirectly from the other party in breach of this Agreement and (ii) prohibit disclosure of such information to such party's attorney's, accountants and other consultants, or as required by law or legal process or the terms of the Lease, or in the case of Seller, to any agency, authority or other governmental entity of, or established pursuant to the laws of, the State of Hawaii.

17. Entire Agreement; Amendment. This Agreement embodies the entire agreement of the parties hereto and supercedes any and all prior agreements between the parties regarding the subject matter hereof. No change, amendment or modification of any of the provisions hereof shall be valid unless set forth in a written instrument signed by each of the parties hereto.

18. Further Assurances. The parties shall take such other actions, and execute such other documents, that may be necessary to effectuate the provisions hereof.

19. Construction. This Agreement shall be construed as a whole. All Section headings are for convenience of reference only and shall not affect the construction of any provision hereof.

20. No Partnership. This Agreement provides for the sale of Available Steam by Seller to Buyer, and is not intended to create a partnership, joint venture or agency relationship between the parties.

21. Applicable Law. This Agreement shall be interpreted, construed and enforced in all respects in accordance with the laws of the State of Hawaii applicable to contracts made in Hawaii by residents thereof and to be performed entirely within such State. The parties agree that any action or suit regarding any dispute arising between the parties about the terms of this Agreement or the transaction contemplated by this Agreement shall be brought into a court of competent jurisdiction in the State of Hawaii, and in no other jurisdiction.

22. Non-Utility Status. The parties agree that Seller is not, and is not intended by the execution, delivery or performance of this Agreement to be, a public utility, and that no Steam produced by Seller, or the Steam System and property owned or leased by Seller is dedicated, offered or sold to the public.

23. Counterparts. This Agreement may be executed in counterparts, each of which shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same Agreement.

24. Limitations of Liability.

24.1 Buyer. Notwithstanding any other provisions of this Agreement to the contrary, Seller agrees that no partner of Buyer, or AMOR VI Corporation, AMOR VIII Corporation, Ormat Energy Systems, Inc., or Ormat, Inc., or any parent or affiliate of any of the foregoing (each, a "Related Party") or any past, present or future incorporator of any Related Party shall be liable for any of the obligations of Buyer under this Agreement, except in the event that (a) Buyer's representation in Section 7 regarding its ownership of the project and solvency is materially inaccurate, (b) such Related Party receives any assets from Buyer for less than adequate consideration or as a result of fraud or misappropriation, or (c) such Related Party has a direct contractual or other obligation to Seller.

24.2 Seller. Notwithstanding any other provision of this Agreement to the contrary, Buyer agrees that this Agreement does not impose any pecuniary liability on the State of Hawaii or any political subdivision thereof [state exception, if any].

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date and year first written above.

NATURAL ENERGY LABORATORY OF HAWAII
AUTHORITY

By: _____
Its: Executive Director

PUNA GEOTHERMAL VENTURE

By: AMOR VIII CORPORATION
Its Managing Partner

By: _____
Its:

EXHIBIT B

STANDARDS AND FORMULA TO CALCULATE ANNUAL STEAM PAYMENT

Standards for Calculating the Steam Payment. The Steam Payment shall be calculated subject to the following:

1. The Steam Payment shall be calculated monthly within five (5) days after HELCO has made the required energy payments to Buyer under the Power Purchase Agreement.

2. Steam shall be valued at 45% of the aggregate amount of energy payments payable by HELCO to Buyer for such monthly period pursuant to the Power Purchase Agreements (the "HELCO Revenues") for the Plants.

3. Seller shall be entitled to a percentage of the HELCO Revenues based on Steam Value and the amount of Available Steam delivered to Buyer pursuant to the Agreement in relation to the aggregate amount of Steam supplied to the Plants.

4. All Steam shall be measured at the wellhead; provided that Available Steam shall be measured at the Delivery Point in accordance with this agreement.

Formula. The formula for calculating the Steam Payment is as follows:

$$\text{Steam Payment} = (45\%) \times (\text{HELCO revenues}) \times \left(\frac{\text{amount of Available Steam}}{\text{aggregate amount of Steam}} \right)$$

Sample Calculation. Assuming the following facts for a particular month:

- a. Available Steam = 60,000 pounds per hour;
- b. Aggregate amount of Steam = 600,000 pounds per hour;
- c. HELCO Revenues = \$1,000,000.

$$\text{Steam Payment} = (45\%) \times (\$1,000,000) \times \left(\frac{60,000}{600,000} \right) = \$45,000$$

APPENDIX 1

REIMBURSABLE COSTS

(steamsale)

Ms. Clare Hachmuth
Executive Director
Natural Energy Laboratory of Hawaii Authority
P.O. Box 1749
Kailua-Kona, Hawaii 96745

Dear Ms. Hachmuth:

The Department of Land and Natural Resources has reviewed the latest draft of the proposed HGP-A steam sale agreement between NELHA and Puna Geothermal Venture (PGV) and has identified several items requiring your attention. Our specific comments on the O/M Agreement and the Steam Sales Agreement are summarized below:

Operations and Maintenance Agreement

- 1) The last sentence on Page 7, section 12.3, entitled Access to Property, Records and Information, should be amended to read as follows: "Operator shall, upon request, furnish Owner, and the DLNR, as required, copies of all well logs, tests, and other pertinent information,.....". Other similar language/phrasing may be substituted in place of the suggested amendment, provided that ~~the intent and authority are~~ clearly set forth in the section. *this requirement is*
- 2) In addition to the consent of the Owner (NELHA) ~~set forth on~~ *specified in* page 8, (section 13), entitled Assignability of Interest, this section should be amended to include the ~~requirement~~ "that any assignment or other transfer by Operator shall also be subject to prior approval of the Lessor (DLNR)".
- 3) The first sentence of section 15, page 9, entitled Indemnification, should be revised to read as follows, "Operator shall indemnify and save harmless Owner and the State of Hawaii, their officers, agents, and employees from and against any and all manner of actions and claims arising,....".

Steam Sales Agreement

- 1) The definition of "Geothermal Asset Fund" on page 2, should be deleted entirely.
- 2) There is no definition of "Steam" found within the Steam Sale Agreement. It may be advisable to include the same "Steam" definition as described in the Operations and Maintenance Agreement (i.e. geothermal steam and/or hot water).
- 3) Section 5.3, page 4, entitled Application of Payments, should be deleted, as well as any other reference to the Geothermal Asset Fund.

- 4) It is not clear whether section 7.1, page 4, entitled Waste Water, is intended to include the disposal of effluent resulting from the use steam/hot water by the Seller (NELHA). If it is the intent to have the Buyer dispose of such waste water (i.e. through re-injection) then it may be prudent to include specific language to that effect within this section or other appropriate section within the steam sales agreement.
- 5) The last sentence in section 8.2, page 6, entitled Steam System, should be amended to read as follows, "Subject to the lease conditions and all applicable regulations, seller may in its sole discretion make improvements to or rework the Well or drill additional geothermal wells."
- 6) The first sentence of section 9, page 6, entitled Indemnification, should be revised as discussed above in Item # 3 under Operations and Maintenance Agreement.
- 7) Section 11, page 7, entitled Assignment, should be revised to include the Lessor's (BLNR) approval of any assignment, sublease, or transfer, including but not limited to the creation of security interests in the lease and/or steam sale agreement. The approval by the Lessor is required under mining lease S-4602 (section 17, page 10), and our department's regulations.

Thank you for the opportunity to comment on the final draft of the proposed O/M and Steam Sales Agreement between NELHA and PGV. Should you have any questions, please contact me at 548-7533.

Sincerely,

MANABU TAGOMORI
Deputy Director

NELH FAX COVER SHEET HOST PARK

Natural Energy Laboratory of Hawaii

Hawaii Ocean Science and Technology Park

MESSAGE # _____ DATE: 10-05-90

TO: MANABU TAGOMORI COMPANY: DLNR Deputy Director

FAX: _____ ADDRESS: _____

PH: _____ # PAGES: 3 + cover

FROM: Clare Hachmuth PROJECT: NELHA

TELECOPIER: SHARP FO-210 TELECOPIER FAX # (808) 326-3262

TIME SENT: 8:20 OPERATOR: cb

NOTES:

Roger Ulveling
 Hal Schofield
 Manabu Tagomori ✓
 Maurice Kaya

October 5, 1990

MEETING

Tuesday, October 9, 1990
 2:00 to 3:00 p.m.
 DBED Director's conference room

PURPOSE

To review the attached suggested revisions to the HGP-A Steam Sale Agreement and the HGP-A Operations and Maintenance Agreement. These proposed agreements were sent to you earlier. Please let me know if you need other copies.

Clare Hachmuth

HGP-A STEAM SALES AGREEMENT

Suggested revisions per Hal Schofield, Deputy Attorney General and Clare Hachmuth, NELHA

Para. 1 (Omit definition for "Geothermal Asset Fund".)

Para. 2 (Omit last sentence of paragraph.)

Para. 3 (In the 4th line, after the word "hereof", place a period to end the sentence. Then add the following.) "However, in the event seller obtains an extension of the Lease pursuant to Paragraph 3B thereof, beyond the maximum term (June 19, 2014), then Seller and Buyer may negotiate for an equal extension of this agreement."

Para. 5 (Delete 5.1 and replace with) "Annual Accessibility Fee. On an annual basis Buyer shall pay Seller an accessibility fee in the amount of \$50,000, which fee shall be in consideration of Seller giving Buyer access to the Available Steam. Said fee shall be paid as follows: (annually, monthly?)

Para. 6 (Delete the last sentence and replace with:) "Seller agrees that it will take no action which will reduce the natural amount and flow of Available Steam as such existed on the Commencement Date, until this Agreement is terminated.

Para. 7.5(a) (Add the following sentence to the end of this paragraph:) In addition, seller shall have the right to unilaterally inspect and test such metering equipment for accuracy and to make certain that such equipment is in accordance with prudent industry standards.

Para. 9 (Delete this paragraph and substitute with the following:) "Buyer shall indemnify and save harmless Seller, its officers, agents, and employees and the State of Hawaii from and against any and all manner of actions and claims arising, either directly or indirectly out of or resulting from the errors, omissions, or acts of Buyer, its officers, its employees, or its agents occurring during or in connection with the Buyer's performance and activities under this Agreement. Buyer shall defend Seller and the State of Hawaii against any such action or claim that does not involve an act or omission solely of Seller or the State, their officers, agents or employees.

Para. 10(a)(4) (End first sentence after "Party" on 4th line. Delete rest of paragraph.)

Add Para. 10 (a)(6) "Any party to whom rights have been assigned by Buyer for the purpose of securing financing for the Plants or for any other purposes forecloses or otherwise asserts its rights against Buyer with respect to any such assignment, or any other assignor of Buyer causes, creates or acts so as to create an

event of default under this Agreement;"

Para. 10(b)(1) (Place a comma at the end of the paragraph and add the following:) "and except for any legal liability which Buyer may have incurred as subsequently discovered by Seller and for which Seller may have a legal remedy."

Para. 10(b)(2) (Place a comma at the end of the paragraph and add the following:) "and except for any legal liability which Buyer may have incurred as subsequently discovered by Seller and for which Seller may have a legal remedy."

Para. 11 (Delete? need to discuss)

Para. 24.1 (Add the following to the end of the paragraph.) "However, such limitation shall apply only if the Buyer "stands alone" from all Related Parties in terms of assets and liabilities. If, however, any Related Party receives or benefits from assets of the Buyer or utilizes Buyer's liabilities in any accounting procedures for the financial benefit of such Related Party, then any such Related Party shall be liable for the obligations of the Buyer under this Agreement to the extent provided for under applicable law, including, but not limited to, the law of fraudulent conveyances and transfers. Buyer hereby represents that it does in fact "stand alone" from all Related Parties in terms of assets and liabilities."

HGP-A OPERATING AND MAINTENANCE AGREEMENT

Para. 4.1(a) (Place a comma after the end of this paragraph and add:) "and except for any legal liability which Operator may have incurred prior to termination and which is subsequently discovered by Owner."

Para. 4.2(a) (Place a comma after the end of this paragraph and add the following:) "and except for any legal liability which Operator may have incurred prior to termination and which is subsequently discovered by Owner."

Para. 5.2 (Place a semicolon at the end of the paragraph and add the following:) provided that in no event shall any such approved affiliate, outside consultants or independent contractors be considered independent contractors, agents, or employees of the Owner or the State of Hawaii.

Para. 5.6 (Redraft as follows:) "On behalf of owner, procure Material as required for the Work pursuant to Section 5.2; provided that all such materials shall be procured only after Operator has obtained the approval and written consent of Owner; and further provided that such expenditures may not exceed the amounts set forth in the approved O&M Budget thereof without the prior consent or authorization of Owner."

Para. 6.1 (Redraft as follows:) "Operator shall procure Materials and make expenditures for items as deemed necessary by Operator in completing the Work; provided that such expenditures shall be made only after Operator has obtained the approval and written consent of Owner; and further provided that such expenditures may not exceed the amounts set forth in the Approved O&M Budget thereof without the prior written consent or authorization of Owner."

Para. 11.1 (Place a comma at the end of the paragraph and add the following:) "and Owner shall have the right upon its reasonable request to inspect any accounting of such costs and expenses and to the full disclosure by Operator of the status of such costs and expenses."

Para. 15 (Delete this paragraph. Substitute the following:) "Operator shall indemnify and save harmless Owner, its officers, agents, and employees and the State of Hawaii from and against any and all manner of actions and claims arising, either directly or indirectly, out of or resulting from the errors, omissions, or acts of Operator, its officers, employees, independent contractors, or its agents occurring during or in connection with the operator's performance and activities under this Agreement. Operator shall defend Owner and the State of Hawaii against any such action or claim that does not involve an act or omission solely of Owner or the State, their officers, agents or employees."

Para. 23 (Add the following:) "All persons hired or used by Operator shall be considered Operator's agents and employees and Operator shall be responsible for the accuracy, completeness, and adequacy of any and all work and services performed thereby. Further, Operator intentionally, voluntarily and knowingly assumes the sole and entire liability for any of its agents and employees, and to third persons for all loss, cost, damage, or injury caused, either directly or indirectly, by Operator's agents and employees in the course of their employment."

Para. 24.1 (Add the following:) "However, such limitation shall apply only if the Operator "stands alone" from all Related Parties in terms of assets and liabilities. If, however, any Related Party receives or benefits from assets of the Operator or utilizes Operator's liabilities in any accounting procedures for the financial benefit of such Related Party, then any such Related Party shall be liable for the obligations of the Operator under this agreement to the extent provided for under applicable law, including, but not limited to, the law of fraudulent conveyances and transfers. Operator hereby represents that it does in fact "stand alone" from all Related Parties in terms of assets and liabilities."

NAKANO

NELH

HOST PARK

RECEIVED

Hawaii Ocean Science and Technology Park

Natural Energy Laboratory of Hawaii

September 18, 1990

90 SEP 21 P 4: 26

Manabu Tagomori, Deputy
Department of Land & Natural Resources
Kalanimoku Building
1151 Punchbowl St.
Honolulu, Hawaii 96813

DIV. OF WATER &
LAND DEVELOPMENT

SUBJECT: Steam sale agreement proposal

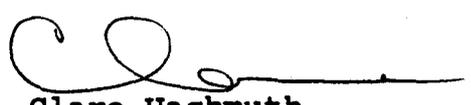
Dear Manabu:

Enclosed are copies of the proposed steam sale agreement and the proposed operation and maintenance agreement, as prepared by our consultant. I have also sent copies to Roger Ulveling and to the attorney general's office.

The dollar values are on the high side to allow room for negotiation. I suspect the final document will have values somewhere between those Ormatt proposed and these.

Please review these agreements and let me know if you have questions or suggestions.

Sincerely,



Clare Hachmuth
Executive Director

cc: Eleanor Mirikitani

STEAM SALES AGREEMENT

THIS STEAM SALES AGREEMENT is dated as of _____, 1990 by **THE NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY**, a body corporate and public instrumentality established pursuant to Act 224 of the Fifteenth Legislature of the State of Hawaii, in relation with the State Department of Planning, Economic Development and Tourism, whose business address is P.O. Box 1749, Kailua-Kona, Hawaii 96745 ("**Seller**"), and **PUNA GEOTHERMAL VENTURE**, a Hawaii general partnership, with offices at 101 Aupuni Street, Suite 1014-B, Hilo, Hawaii 96720 ("**Buyer**").

R E C I T A L S

A. Seller is the successor-in-interest to The Research Corporation of the University of Hawaii under that certain State of Hawaii Department of Land and Natural Resources Geothermal Resources Mining Lease No. S-4602 entered into between the State of Hawaii ("**Lessor**") and The Research Corporation of the University of Hawaii on June 19, 1979 (the "**Lease**"). The Lease covers certain geothermal resource property located within the Lower East Rift Geothermal Subzone ("**LERGS**") of the Puna District, Island and State of Hawaii, situate on Tax Map Key No. 3rd/1-4-01:02 and commonly referred to as the Hawaii Geothermal Project-Abbott site described on Exhibit A attached hereto (the "**HGP-A Site**").

B. The Lease grants certain rights to sell geothermal resources and geothermal by-products from the HGP-A Site.

C. Buyer intends to own or lease one or more geothermal power plants in LERGS ("**Plants**") which will utilize geothermal resources to produce electricity on properties owned or leased by Buyer adjoining the HGP-A Site.

D. Buyer desires to secure a supply of geothermal steam for use in connection with the operation of the Plants.

E. Seller desires to sell, and Buyer desires to purchase, geothermal resources produced from the HGP-A Site pursuant to the terms of this Agreement.

NOW, THEREFORE, in consideration of the mutual agreements and covenants set forth hereinbelow, the parties hereto agree as follows:

1. **Definitions.** As used herein, the following terms shall have the following respective meanings (all terms defined in this Section 1 or in other provisions of this Agreement in the singular shall have the same meanings when used in the plural and vice versa):

"Available Steam" shall mean all Steam produced from the Well in accordance with Section 8 (to the extent Seller has an interest therein), but excluding Reserved Steam and Reserved Minerals. *(see section 6)*

"Commencement Date" shall mean the earlier of (i) the date on which Available Steam is delivered to Buyer pursuant to this Agreement or (ii) the date on which electric power is first sold to HELCO from the Plants.

"Delivery Point" shall mean a point designated by Seller as the place for delivery of Available Steam to Buyer at the common boundary of the HGP-A Site and Buyer's property.

"Effective Date" shall mean _____, 1990.

"Environmental Claim" shall mean, any and all suits, sanctions, liabilities, legal proceedings, claims, demands, losses, costs and expenses of whatsoever kind or character, including, without limitation, attorneys' fees, civil fines or penalties or other expenses incurred, assessed or sustained as a result of or in connection with Hazardous Materials.

"Geothermal Asset Fund" *not established by HRS.* shall mean the asset fund established by The State of Hawaii [pursuant to Chapter _____, Hawaii Revised Statutes] to help alleviate the effects of geothermal development.

"Hazardous Materials" shall mean substances defined as hazardous or toxic substances pursuant to applicable present or future local, state or federal laws or regulations, or which are classified as hazardous or toxic under applicable present or future local, state or federal laws or regulations.

"HELCO" shall mean Hawaii Electric Light Company, Inc., a corporation organized under the laws of State of Hawaii.

"Power Purchase Agreement" shall mean the power purchase agreement between Buyer and HELCO with respect to the purchase and sale of electricity from the Plants.

"Reserved Minerals" shall mean any oil, hydrocarbon gas, helium and other marketable precipitates that are contained in the Steam and are extracted by Lessor or Seller.

"Reserved Steam" shall mean Steam reserved by Seller pursuant to Section 6 hereof.

"Steam" shall mean geothermal steam and/or hot water.

"Steam System" shall mean the Well and the related steam gathering system necessary to deliver Available Steam to the Delivery Point.

"Waste Water" shall mean liquid effluent, including, without limitation, condensates from the Steam and waste products or other substances of any nature from the Well.

"Well" shall mean the geothermal production well currently located on the HGP-A Site.

2. **Purchase and Sale of Steam.** Upon the terms and subject to the conditions set forth in this Agreement, Seller agrees to sell and to deliver at the Delivery Point to Buyer, and Buyer agrees to purchase and to receive at the Delivery Point, Available Steam. Seller agrees that Buyer shall have the exclusive right to purchase Available Steam.

*Preferential
to HGP-A
HGP-A*

3. **Term of Agreement.** This Agreement shall become effective and its term shall begin on the Effective Date and shall remain in full force and effect until June 19, 2014 unless earlier terminated pursuant to Section 10 hereof; provided that the term of this Agreement shall not extend beyond the term of the Lease.

4. **Delivery of Steam.** Buyer shall provide Seller with not less than thirty (30) days' written notice that Buyer is ready to accept initial delivery of Available Steam at the Delivery Point.

5. **Consideration.**

5.1 **Exclusivity Payment.** On the Effective Date, Buyer shall pay to Seller a payment of TWO HUNDRED FIFTY THOUSAND DOLLARS (\$250,000) for the exclusive right to receive Available Steam pursuant to the terms of this Agreement.

✓

5.2 Steam Payment. Commencing from the Commencement Date, Buyer shall pay Seller for the Available Steam (the "Steam Payment"), in accordance with the formula and standards set forth in Exhibit B attached hereto and hereby made a part hereof; provided, however, that Buyer agrees to pay Seller a minimum Steam Payment per annum of THREE HUNDRED THOUSAND DOLLARS (\$300,000) (the "Minimum Annual Payment") whether or not Buyer receives Available Steam under this Agreement. The Steam Payment shall be calculated for each calendar month and shall be paid by Buyer to Seller, or Seller's account, fifteen (15) days after Buyer's receipt from HELCO of energy payments made under the Power Purchase Agreement for such calendar month. At the end of each quarter (commencing with the first quarter ending on the third calendar month after the Effective Date), Buyer and Seller shall determine the total amount of the Steam Payment paid or payable to Seller for the year through the end of such quarter. In the event that the total amount of Steam Payment paid or payable by Buyer to Seller through the end of such quarter does not exceed \$75,000 times the number of quarters having occurred in the relevant year, Buyer shall pay the difference between such product and the amount of the Steam Payment previously paid during that period on the date that the Steam Payment is, or would be, payable for the last month in such quarter. If the Steam Payment paid by Buyer during any year equals or exceeds the Minimum Annual Payment, then Buyer shall have no further payment obligation for the Minimum Annual Payment for such year.

5.3 Application of Payments. ~~Buyer acknowledges that no payments made to Seller hereunder shall constitute any payments required to be made by Buyer to the Geothermal Asset Fund.~~

6. Seller's Reservation of Steam and Minerals. Seller reserves the right to use up to 10% of the Steam in connection with the HGP-A Site. In addition, Seller reserves the right to extract and own all Reserved Minerals. Except as reserved by Seller in this Section 6, all Available Steam shall be available for delivery to Buyer and Seller agrees not to develop and sell Available Steam or the energy associated therewith to any person other than Buyer.

7. Representations and Covenants of Buyer.

7.1 Waste Water. Buyer shall, at its own expense, handle and dispose of the Waste Water from Available Steam delivered to it, and all other waste produced by the Plants. ~~If any commercial use is made of such Waste Water, the economic benefits of such commercial use shall belong to Buyer.~~

(Does royalty payments for by-products apply to use of waste water?)

7.2 Compliance with Laws. Buyer shall at all times comply with all of the requirements of all local, state and federal agencies and authorities and observe all local, state and federal laws, regulations, consents, permits, licenses or approvals, now in force or which may hereafter be in force, including, but not limited to, all water and air pollution control laws and other environmental laws.

7.3 No Rights Under Lease. Buyer acknowledges that Seller is selling the Available Steam as permitted by the terms of the Lease and that Seller is not hereby conveying, transferring or assigning any of Seller's right, title and interest in the Lease to Buyer. ~~Buyer further acknowledges that it is not an assignee of the Lease and that the sale of Available Steam hereunder is subject to the terms and provisions of the Lease.~~

7.4 Operation of Plants. Buyer shall utilize the Available Steam delivered to Buyer in accordance with prudent geothermal industry practices and, to the extent not inconsistent with such practices, ~~Buyer shall utilize Available Steam prior to utilizing Steam from other sources available to Buyer.~~

7.5 Accounting.

(a) At its cost, Buyer shall install and maintain in accurate working order metering equipment in accordance with prudent industry standards for the measurement of (i) Available Steam received by Buyer at the Delivery Point and (ii) all Steam supplied to the Plants. ~~Buyer shall test such equipment in accordance with prudent industry standards, and when requested by Seller.~~ (add the chargeurson of DLNR.) ✓

(b) Buyer shall maintain records of all Steam supplied to the Plants, the Available Steam received by Buyer and of the payments under the Power Purchase Agreement for electrical power generated by the Plants, and of such other information as shall be relevant to the calculation of the Steam Payment, ~~and shall provide to Seller in connection with the determination of the Steam Payment in accordance with Section 5, a statement of the calculation of the Steam Payment due for each month, quarter and year.~~ Buyer agrees that Seller shall have the right to examine and audit the books and records of Buyer to the extent necessary or desirable to verify any statement, payment, calculation or determination made pursuant to this Agreement. ✓

(similar rights apply to chargeurson - DLNR.) ✓

8. Representations and Covenants of Seller.

8.1 No Warranty of Title and Adequacy of Resource. Seller does not warrant Lessor's title to the HGP-A Site and makes no representation or warranty with respect to its title to, or the quality, quantity or presence of, Steam at the HGP-A Site.

8.2 Steam System. Seller shall maintain the Well ~~and shall construct and maintain a Steam System from the Well to the Delivery Point,~~ in each case in accordance with prudent geothermal industry standards, provided that Seller shall not be required to explore for, drill for, produce or deliver Steam beyond that which can be produced by the existing Well in accordance with such practices and subject to any limitations contained in the Lease. ~~Seller may in its sole discretion make improvements to or rework the Well or drill additional geothermal wells.~~

9. Indemnification. Each party shall indemnify and hold harmless the other party, its partners, related political subdivision, and affiliates and their directors, officers, employees and agents (each, an "Indemnified Person"), from and against any liability, loss, damage, claim, Environmental Claims, cost or charge of any kind or nature (including attorney's fees and costs of litigation) incurred by an Indemnified Person as a result of any breach of this Agreement or any tortious conduct by such party, its partners, directors, officers, employees, agents or any other person whose acts would be imputed to such party, except to the extent that such liability, loss, damage or claim resulted from the gross negligence or willful misconduct of the Indemnified Person. ~~Notwithstanding the above, the amount of any party's liability pursuant to this indemnity shall not exceed~~ \$_____. *(This liability limit should be received by the AGs from the lessor's (state's) perspective)*

clause should include the State of Hawaii

10. Termination.

(a) Default. In the event that one of the following events occurs with respect to a party to this Agreement (a "Defaulting Party"):

(1) ~~Such Defaulting Party fails to pay a Steam Payment when due;~~

(2) ~~Such Defaulting Party fails to make any other payment hereunder when due and more than five (5) days elapse after notice of such failure is given by the non-Defaulting Party;~~

(3) A representation made by such Defaulting Party in this Agreement or delivered pursuant to this Agreement shall prove to have been incorrect when made or deemed made;

(4) Such Defaulting Party shall fail to perform any covenant of such Defaulting Party under this Agreement within thirty (30) days of receipt of notice of such default from the non-Defaulting Party; ~~provided that if such default cannot be cured (a) with the payment of money and (b) within such thirty (30) day period, then the Defaulting Party shall have such longer period as shall be reasonably necessary to cure such default so long as such cure is commenced within thirty (30) days after receipt of notice of such default and is, thereafter, diligently pursued to completion, or~~

(5) A bankruptcy or similar proceeding shall be commenced by or with respect to the Defaulting Party;

then, the non-Defaulting Party may, in its discretion, terminate this Agreement and pursue all remedies available to it at law or in equity.

(b) Non-Default

(1) By Buyer. Buyer shall have the right to terminate this Agreement upon ninety (90) days' prior ~~written notice to Seller.~~ In the event that Buyer so elects to terminate this Agreement, then both parties shall have no further obligations under this Agreement, except for their obligations under Sections 9 and 16.

(2) By Seller. Seller shall have the right to terminate this Agreement (i) upon ten (10) days' written notice to Buyer in the event that the Commencement Date does not occur prior to the first anniversary of the Effective Date, and (ii) upon ninety (90) days' written notice to Buyer in the event that Seller determines that the continued operation of the Well has become economically impracticable as determined by Seller in its sole discretion. In the event that Seller elects to terminate this Agreement, ~~then both parties shall have no further obligations under this Agreement, except for their obligations under Sections 9 and 16.~~

11. Assignment. ~~This Agreement and the rights of either party hereunder may be assigned, in whole or in part, as security for financing of the Plants, (in the case of Buyer) or the Steam System, (in the case of Seller) without the consent of~~

(isn't Board approval required for any assignment?)

~~the other party, provided that the assignor shall promptly give the other party hereto written notice of such assignment, together with a copy of the executed instrument of assignment and the written assumption by the assignee of all of the assignor's obligations hereunder.~~ In addition, Seller shall have the right to assign this Agreement to any agency, authority or other governmental entity of, or established pursuant to the laws of, the State of Hawaii. Except as aforesaid, this Agreement and the rights of either party hereunder may not be assigned without the prior written consent of the other party, which consent shall not be unreasonably withheld or delayed.

12. Benefit. This Agreement shall be fully binding upon the parties hereto and their respective successors, permitted assigns and legal representatives.

13. Notices. Any notice, request, approval, consent, order, instruction, direction or other communication under this Agreement given by either party to the other party shall be in writing and shall be delivered in person or mailed, properly addressed and stamped with the required postage, to the intended recipient at the address first above stated and to the attention of the person specified below the parties' respective signatures. Either party may from time to time change such address by giving the other party notice of such change. Notice of a change of address will be considered effective only upon physical receipt thereof.

14. Force Majeure. If either party shall be wholly or partially prevented from performing any act required to be performed by it herein (other than payment of a monetary obligation, it being the express understanding of the parties that no force majeure event shall relieve Buyer of its obligation to pay the Exclusivity Payment and the Minimum Annual Payment, whether or not Available Steam is delivered to Buyer), in any or all cases as a consequence of strikes; riots; fires; floods; lightning; rain; earthquake; volcanism; wind; tsunami; war; invasion; insurrection; civil commotion; accident; equipment failures; any lawsuit based upon environmental or land use grounds, unavailability of resources due to national defense priorities, any laws, rules, regulations or orders promulgated by federal, state or county governmental bodies or agencies; any rules, regulations or orders of any public body or official purporting to exercise authority or control respecting the activities and operations contemplated hereunder; the order of any court, judge or civil authority; any act of God or the public enemy; delays arising and/or any other delays caused by events or conditions which are beyond its exclusive control, then and in any such event such performance and the obligation of such party shall be extended, or suspended, as applicable, by the duration

of such delay, but in no event for more than one (1) year in total; provided, however that any suspension of performance shall not extend the initial term of this Agreement or any extension period beyond the term of the Lease. The party claiming force majeure shall promptly notify the other party of the condition giving rise to the force majeure event and shall also indicate the estimated duration of such condition and the proposed action to mitigate such condition.

15. Nonwaiver. The failure or delay of either party to insist upon strict performance of any of the provisions of this Agreement, to exercise any rights or remedies provided hereunder or by law, or to notify the other party in the event of a breach or default under this Agreement, shall not release or relieve either party from any of its obligations under this Agreement and shall not be deemed a waiver of any rights or remedies hereunder, nor shall any purported oral modifications of this Agreement operate as a waiver of any of the provisions hereof.

16. Confidentiality. The parties shall maintain in confidence the provisions of this Agreement and except as set forth in this Agreement, neither party shall disclose to any third party any information provided by one party to the other party that the providing party specifically indicates is confidential information, without the prior written consent of the other party. ~~Specifically, the parties shall further maintain in confidence any information received by the other party pursuant to this Agreement concerning the production, treatment, extent, productivity and properties of Steam present in or produced from the geothermal resource underlying Buyer's adjoining properties.~~ Notwithstanding the foregoing, this confidentiality provision shall not (i) apply to information already known by the receiving party through means other than the violation of the terms hereof, or information that becomes known to the general public through acts of other parties, or information received from third parties without restriction who did not acquire it directly or indirectly from the other party in breach of this Agreement and (ii) prohibit disclosure of such information to such party's attorney's, accountants and other consultants, or as required by law or legal process or the terms of the Lease, or in the case of Seller, to any agency, authority or other governmental entity of, or established pursuant to the laws of, the State of Hawaii.

17. Entire Agreement; Amendment. This Agreement embodies the entire agreement of the parties hereto and supersedes any and all prior agreements between the parties regarding the subject matter hereof. No change, amendment or modification of any of the provisions hereof shall be valid

unless set forth in a written instrument signed by each of the parties hereto.

18. Further Assurances. The parties shall take such other actions, and execute such other documents, that may be necessary to effectuate the provisions hereof.

19. Construction. This Agreement shall be construed as a whole. All Section headings are for convenience of reference only and shall not affect the construction of any provision hereof.

20. No Partnership. ~~This Agreement provides for the sale of Available Steam by Seller to Buyer, and is not intended to create a partnership, joint venture or agency relationship between the parties.~~

21. Applicable Law. This Agreement shall be interpreted, construed and enforced in all respects in accordance with the laws of the State of Hawaii applicable to contracts made in Hawaii by residents thereof and to be performed entirely within such State. The parties agree that any action or suit regarding any dispute arising between the parties about the terms of this Agreement or the transaction contemplated by this Agreement shall be brought into a court of competent jurisdiction in the State of Hawaii, and in no other jurisdiction.

22. Non-Utility Status. The parties agree that Seller is not, and is not intended by the execution, delivery or performance of this Agreement to be, a public utility, and that no Steam produced by Seller, or the Steam System and property owned or leased by Seller is dedicated, offered or sold to the public.

23. Counterparts. This Agreement may be executed in counterparts, each of which shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same Agreement.

24. Limitations on Liability.

24.1 Buyer. Notwithstanding any other provisions of this Agreement to the contrary, ~~Seller agrees that no partner of Buyer, or MOP VII Corporation, MOP VIII Corporation, Ormat Energy Systems, Inc., or Ormat, Inc., or any parent or affiliate of any of the foregoing (each, a "Related Party") or any past, present or future incorporator, subscriber of stock of, or stockholder, officer or director of any Related Party shall be liable for any of the obligations of Buyer under this Agreement.~~

24.2 ~~Seller~~. Notwithstanding any other provision of this Agreement to the contrary, ~~Buyer agrees that this Agreement does not impose any pecuniary liability on the State of Hawaii or any political subdivision thereof [state exception, if any].~~

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date and year first written above.

NATIONAL ENERGY LABORATORY OF
HAWAII AUTHORITY

By: _____
Its: Executive Director

PUNA GEOTHERMAL VENTURE

By: AMOR VIII CORPORATION
Its Managing Partner

By: _____
Its: _____

EXHIBIT B

STANDARDS AND FORMULA TO CALCULATE ANNUAL STEAM PAYMENT

Standards for Calculating the Steam Payment. The Steam Payment shall be calculated subject to the following:

1. The Steam Payment shall be calculated monthly within five (5) days after HELCO has made the required energy payments to Buyer under the Power Purchase Agreement.

2. Steam shall be valued at 45% of the aggregate amount of energy payments payable by HELCO to Buyer for such monthly period pursuant to the Power Purchase Agreements (the "HELCO Revenues") for the Plants.

3. Seller shall be entitled to a percentage of the HELCO Revenues based on Steam Value and the amount of Available Steam delivered to Buyer pursuant to the Agreement in relation to the aggregate amount of Steam supplied to the Plants.

4. All Steam shall be measured at the wellhead; provided that Available Steam shall be measured at the Delivery Point in accordance with this agreement.

Formula. The formula for calculating the Steam Payment is as follows:

$$\text{Steam Payment} = (45\%) \times (\text{HELCO revenues}) \times \left(\frac{\text{amount of Available Steam}}{\text{aggregate amount of Steam}} \right)$$

Sample Calculation. Assuming the following facts for a particular month:

- a. Available Steam = 60,000 pounds per hour;
- b. Aggregate amount of Steam = 600,000 pounds per hour;
- c. HELCO Revenues = \$1,000,000.

$$\text{Steam Payment} = (45\%) \times (\$1,000,000) \times \left(\frac{60,000}{600,000} \right) = \$45,000.$$

OPERATIONS AND MAINTENANCE AGREEMENT

THIS OPERATIONS AND MAINTENANCE AGREEMENT ("**Agreement**") is dated as of _____, 1990 by ~~THE NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY~~, a body corporate and public instrumentality established pursuant to Act 224 of the Fifteenth Legislature of the State of Hawaii, in relation with the State Department of Planning, Economic Development and Tourism, whose business address is P.O. Box 1749, Kailua-Kona, Hawaii 96745 ("**Owner**"), and _____, a _____, with offices at ("**Operator**").

R E C I T A L S

A. **Owner is the successor in interest to The Research Corporation of the University of Hawaii under that certain State of Hawaii Department of Land and Natural Resources Geothermal Resources Mining Lease No. S-4602 entered into between the State of Hawaii ("**Lessor**") and The Research Corporation of the University of Hawaii on June 19, 1979 (the "**Lease**"). The Lease covers certain geothermal resource property located within the Lower East Rift Geothermal Subzone ("**LERGS**") of the Puna District, Island and State of Hawaii, situate on Tax Map Key No. 3rd/1-4-01:02 and commonly referred to as the Hawaii Geothermal Project-Abbott site described on Exhibit A attached hereto (the "**HGP-A Site**").**

B. **The Lease grants certain rights to sell geothermal resources and geothermal by-products from the HGP-A Site.**

C. **Puna Geothermal Venture, a Hawaii general partnership ("**PGV**"), an affiliate of Operator, intends to own or lease one or more geothermal power plants in LERGS ("**Plants**") which will utilize geothermal resources to produce electricity on properties owned or leased by PGV adjoining the HGP-A Site.**

D. **Owner and PGV are concurrently entering into that certain Steam Sales Agreement dated as of even date herewith (the "**Steam Sales Agreement**").**

E. **Owner desires to engage Operator to be responsible for the operation and maintenance of the Steam System (as hereinafter defined) from and after the date hereof and Operator is willing to**

accept such engagement upon the terms and conditions hereinafter set forth.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing and of the premises and mutual covenants herein contained, the parties hereto agree as follows:

1. Definitions.— As used herein, the following terms shall have the following respective meanings (all terms defined in this Agreement shall have the same meanings when used in the plural and vice versa):

"Approved O&M Budget" shall mean the annual budget approved by Owner with respect to the Work pursuant to Section 11.2 hereof.

"Delivery Point" shall mean a point designated by Owner as the place for delivery of Steam to PGV pursuant to the Steam Sales Agreement.

"Effective Date" shall mean _____, 1990.

"Environmental Claim" shall mean, any and all suits, sanctions, liabilities, legal proceedings, claims, demands, losses, costs and expenses of whatsoever kind or character, including, without limitation, attorneys' fees, civil fines or penalties or other expenses incurred, assessed or sustained as a result of or in connection with Hazardous Materials.

"Hazardous Materials" shall mean substances defined as hazardous or toxic substances pursuant to applicable present or future local, state or federal laws or regulations, or which are classified as hazardous or toxic under applicable present or future local, state or federal laws or regulations.

"Materials" shall mean any and all material, equipment and supplies, including consumable supplies, tools and office supplies, for the performance of the Work under this Agreement.

"Reimbursable Costs" shall mean the costs described in Appendix 1 attached hereto to which Operator is entitled to reimbursement from Owner.

"Steam" shall mean geothermal steam and/or hot water.

~~"Steam System" shall mean the well and the related steam-gathering system necessary to deliver steam to the Delivery Point.~~

"Well" shall mean the geothermal production well currently located on the HGP-A Site.

"Work" shall mean the operation and maintenance of the Steam System to be performed by Operator as described in Section 5 hereof.

2. Engagement. Upon the Effective Date, Owner hereby engages Operator to conduct the operation and maintenance of the Steam System on the terms and conditions set forth below and Operator hereby accepts such engagement.

3. Term of Agreement. This Agreement shall become effective on the Effective Date and ~~shall remain in full force and effect for one year, and after the expiration of such initial term, shall automatically be renewed on the same terms and conditions for successive one-year terms, unless Owner gives Operator written notice of Owner's intent not to renew the Agreement at least ninety (90) day's prior to the anniversary date of the Effective Date. Notwithstanding anything to the contrary in the foregoing sentence, this Agreement is subject to early termination by either party in accordance with Section 4 hereof.~~

4. Termination of Agreement.

4.1 By Operator.

(a) Non-Default. This Agreement may be terminated by Operator at any time upon one hundred and eighty (180) days' prior written notice to Owner. In the event that Operator so elects to terminate this Agreement, then ~~both parties shall have no further obligations under this Agreement, except for their obligations under Sections 15 and 17.~~

(b) Default. Operator shall have the right, in its discretion, to terminate this Agreement upon (i) the failure of Owner to make any payment required under Section 7 hereof when due and more than five (5) days elapses after notice of such failure is given to Owner; (ii) the failure of Owner to perform any other material covenant or obligation hereunder within thirty (30) days of receipt of notice of such default from Operator; provided that if such default cannot be cured (a) with the payment of money and (b) within such thirty (30) day period, then Owner shall have such longer period as shall be reasonably necessary to cure such default so long as such cure is commenced within thirty

(30) days after receipt of notice of such default and is, thereafter, diligently pursued to completion; or (iii) the commencement of a bankruptcy or similar proceeding by or with respect to Owner.

4.2 By Owner.

(a) Non-Default. Owner shall have the right to terminate this Agreement (a) upon ninety (90) days' written notice to Operator in the event that Owner determines that the continued operation of the Well has become economically impracticable as determined by Owner in its sole discretion. In the event that Owner elects to terminate this Agreement then both parties shall have no further obligations under this Agreement, except for their obligations under Sections 15 and 17.

(b) Owner shall have the right, in its discretion, to terminate this Agreement in the event that a representation made by Operator in this Agreement or delivered pursuant to this Agreement shall prove to have been incorrect when made or deemed made or upon (i) the failure of Operator to perform any other material covenant or obligation hereunder within thirty (30) days of receipt of notice of such default from Owner; provided that if such default cannot be cured (a) with the payment of money and (b) within such thirty (30) day period, then Operator shall have such longer period as shall be reasonably necessary to cure such default so long as such cure is commenced within thirty (30) days after receipt of notice of such default and is, thereafter, diligently pursued to completion or (ii) the commencement of a bankruptcy or similar proceeding by or with respect to Owner.

5. Scope of Work.

During the term of this Agreement, Operator shall perform all operation and maintenance activities with respect to the Steam System necessary to produce and deliver Steam to PGV at the Delivery Point in accordance with the Steam Sales Agreement and as Owner may request from time to time (the "Work"). In its performance of the Work, Operator shall:

5.1 Provide supervision and personnel in connection with the cleaning, operation, major and routine repairs, rehabilitation and maintenance of the Steam System and perform regular and routine operation, inspection, maintenance, and repair of the Steam System as may be necessary, as determined by Operator and approved by Owner to enable Owner to satisfy its obligations under Section 8.2 of the Steam Sales Agreement.

5.2 Make primary use of its own employees where feasible; provided, however, that Operator may retain any

affiliate of Operator, outside consultants and other independent contractors to provide any service hereunder that Owner has approved.

5.3 Perform the Work in accordance with good engineering and operating practices and conduct all Work with due and reasonable diligence, in an orderly and prudent manner and in accordance with sound geothermal industry practices, excepting any such obligations which would otherwise be obligations of Operator but which Owner has expressly undertaken to perform.

5.4 Abide by all the terms and conditions contained in the Steam Sales Agreement and the Lease which control, affect or pertain to any operations to be conducted under this Agreement excepting any such obligations which would otherwise be obligations of Operator but which Owner has expressly undertaken to perform.

5.5 Conduct all operations and maintenance under this Agreement in full compliance with all applicable laws, rules, orders and regulations of all federal, state, municipal and other governmental authorities having jurisdiction.

5.6 On behalf of Owner, procure Material as required for the Work pursuant to Section 5.2.

5.7 In the event of any interruption in the operation of the Steam System, immediately exercise efforts to restore the Steam System to operation as soon as is reasonably possible.

5.8 ~~Obtain all permits and licenses necessary for the operation and maintenance of the Steam System.~~ (may require that NEZLH designate "whom")

6. Expenditure Authority.

6.1 Expenditure Authority. Operator shall have the authority to procure Materials and make expenditures on Owner's behalf for items as deemed necessary by Operator in completing the Work; ~~provided, however, that such expenditures may not exceed the amounts set forth in the Approved O&M Budget therefor without the prior written consent or authorization of Owner.~~

6.2 Emergencies. In the event of an explosion, fire, flood, blowout, or other sudden emergency, whether of the same or different nature, Operator may take such steps and incur such expenses in an amount not to exceed \$[10,000.00] (whether or not the expenditures are in the Approved O&M Budget) as in Operator's reasonable opinion are required to deal with the emergency and to safeguard life or property, ~~but Operator shall, as promptly as possible, report the emergency to Owner, which report shall be~~

(as well as The Board/DLNR)

accompanied by a preliminary estimate of the costs and expenses to be incurred in connection with such repairs and other work.

7. Compensation.

7.1 Reimbursable Costs. Operator shall be reimbursed for Reimbursable Costs in accordance with Section 8 hereof.

7.2 Annual Fee. In addition to receiving reimbursement for Reimbursable Costs pursuant to Section 7.1 hereof, Operator shall earn a monthly fee of \$ _____, payable by Owner in accordance with Section 8 hereof.

8. Payments. Within twenty (20) days (or as soon thereafter as practicable) after the last day of each calendar month during the term of this Agreement, Operator shall submit a billing for the Reimbursable Costs, together with copies of any supporting data and invoices. Subject to Owner's right to conduct an audit pursuant to Section 12.3 hereof, Owner shall pay the full amount of the billing together with the monthly fee within thirty (30) days after receipt of the billing. No such Reimbursable Costs shall be invoiced by Operator unless they were incurred in connection with the Work, Operator's personnel policies and practices and the applicable Approved O&M Budget, except in the case of such costs and expenses incurred in the event of an emergency pursuant to Section 6.2 hereof. If at any time in the performance of the Work, Operator becomes aware that for any monthly period Reimbursable Costs, exceed or will exceed the amount provided therefor in the Approved O&M Budget, Operator shall promptly notify Owner of such budget overrun and shall not, without the written approval of Owner perform any additional Work, except in the case of an emergency pursuant to Section 6.2 hereof.

9. Facilities, Equipment and Improvements. Subject to any restrictions or limitations contained in the Lease, Operator may install, construct and place upon the HGP-A Site such facilities including machinery, buildings, equipment of whatever nature and other property and improvements, as may be necessary or usual to the activities contemplated hereunder. All such machinery, buildings, equipment, property and improvements acquired for or made upon the HGP-A Site by Operator and charged to the Owner as herein provided, whether or not permanently affixed to the HGP-A Site, ~~shall become and remain the property of the Owner (subject to any contrary provision in the Lease or other agreement between Owner and the Lessee)~~ from and after the time they are first acquired for or made upon the HGP-A Site. *subject to bond approval.*

10. Assistance and Right of Entry.

10.1 Assistance. During the term of this Agreement, each party hereto shall provide such reasonable assistance and cooperation as the other party hereto may reasonably request in connection with the performance of the duties and obligations of each party under this Agreement.

10.2 Right of Entry. Subject to the rights of Lessor under the Lease and the limitations set forth therein, Owner shall provide Operator with immediate entry upon the HGP-A Site for designated identified personnel employed by Operator or independent operators contracted by Operator to perform the Work.

11. Costs and Expenses; Budget.

11.1 Costs and Expenses. Except as otherwise expressly provided herein, Operator shall promptly pay and discharge all costs and expenses incurred in the operation and maintenance of the Steam System or the HGP-A Site pursuant to this Agreement or otherwise in connection with the performance and discharge of its responsibilities hereunder.

11.2 Approved O&M Budget. Prior to the Effective Date hereof and thereafter, within sixty (60) days of each anniversary date of the Effective Date, Operator shall prepare and submit to Owner for its review and approval a proposed budget for the costs of the Work under this Agreement for the next twelve month period. Such budget shall include all anticipated items of the Reimbursable Costs (other than emergency expenses incurred pursuant to Section 6.2), itemized in reasonable detail with estimates of the amount of each item. On or before the Effective Date and thereafter within thirty (30) days of each anniversary date of the Effective Date, Owner shall consult with Operator as to any items of cost or expense shown in the proposed budget as to which Owner objects or has any question. Operator shall delete and/or modify any items as to which Owner continues to object after such consultation to the extent necessary to obtain the approval of such proposed budget by Owner. Upon obtaining such approval by Owner, Operator shall be deemed authorized to perform the operations and projects so approved in such proposed budget. Operator shall not be entitled to reimbursement from Owner hereunder for any item of cost or expense not contained in the budget as approved by Owner, as provided hereinabove, except as provided in Section 6.2 hereof and except any item which shall otherwise be authorized or ratified by Owner.

12. Representations and Covenants of Operator. Operator represents and warrants and covenants and agrees as follows:

12.1 Compliance with Laws. Operator shall at all times comply with all of the requirements of all local, state and

federal agencies and authorities and observe all local, state and federal laws, regulations, consents, permits, licenses or approvals, now in force or which may hereafter be in force, including, but not limited to, all water and air pollution control laws and other environmental laws.

~~12.2 No Rights Under Lease. Operator acknowledges that Owner is retaining Operator to perform the Work described herein and that Owner is not hereby conveying, transferring or assigning any of Owner's right, title and interest in the lease to Operator.~~

12.3. Access to Property, Records and Information. Owner's authorized representatives shall have access to the HGP-A Site at any and all times to inspect or observe operations and shall have free access at all times during reasonable business hours to information relating to the Work and shall have the right to audit Operator's books, accounts and records relating thereto. Operator shall keep an accurate and itemized record of expenditures and costs attributable the Work. Operator shall, upon request, furnish Owner copies of all well logs, tests, and other pertinent information, including without limitation, all such information concerning operations of the Steam System as shall be made known to or discovered by Operator.

(Must also furnish to the Board upon request)

13. Assignability of Interest. Except as expressly, provided herein, Operator shall not permit or suffer any person to perform the obligations of Operator hereunder or to occupy or use the HGP-A Site or any part thereof without the prior written consent of Owner, which consent may be given or refused in the sole discretion of Owner. ~~Any purported assignment or other transfer by Operator without the consent of Owner as provided herein shall be void and shall at the option of Owner terminate this Agreement.~~ Nothing in this Section shall prevent Operator from contracting with qualified entities to perform obligations hereunder, so long as Operator remains primarily responsible for such performance and the compensation required for performance of such obligations is reasonable.

14. Insurance.

(a) In connection with the performance of its obligations hereunder, Operator shall, as a Reimbursable Cost, maintain or cause to be maintained in effect throughout the term of this Agreement, with insurers of recognized responsibility, insurance policies insuring against loss or damage to the person or property of others from such risks and in such amounts as a contractor of recognized responsibility performing similar obligations under similar circumstances would, in the prudent management of its business, maintain or cause to be maintained

with respect to similar risks; provided, however, that without limitation of the foregoing such insurance shall include:

(i) comprehensive general liability insurance covering all work to be performed under this Agreement with a combined single limit per occurrence of [(\$1,000,000)] for bodily injury and property damage; and

(ii) comprehensive automobile liability insurance including non-owned and hired vehicle coverage with a combined single limit per occurrence of [(\$1,000,000)] for bodily injury and property damage.

(iii) "All Risk" replacement cost coverage on declared real and personal property located at the HGP-A Site, (excluding Business Interruption coverage), with a coverage limit of not less than [(\$1,000,000)].

OK
(b) Any insurance policies maintained in accordance with this Section 14 shall name Owner and Lessor as additional insureds thereunder. In addition, any insurance policies maintained shall insure the interests of Owner (and the other named insureds) regardless of any breach of or violation by Operator of any warranties, declarations or conditions contained in such policies. Each such insurance policy shall expressly provide that all of the provisions thereof, except the limits of liability (which shall be applicable to all insureds as a group) and liability for premiums shall operate in the same manner as if there were a separate policy covering each insured. In addition to the foregoing, such policies shall contain a provision stating that the insurance underwriters waive all rights of subrogation in favor of Operator and the other named insureds.

(c) Within thirty (30) days of the Effective Date and thereafter at intervals of not more than twelve (12) months, ~~Owner may request, and Operator shall thereafter furnish to Owner all certificates of the applicable insurers, in each case signed by a responsible officer thereof, evidencing that the insurance required hereunder is presently being maintained by Operator.~~ Operator will cause the insurers with whom it maintains such insurance to advise Owner in writing, at least thirty (30) days prior thereto, of the termination of any such insurance. Operator will advise the Owner in writing: (i) promptly of any default in the payment of any premiums and of any other act or omission on the part of Operator that may invalidate or render unenforceable any such insurance; (ii) promptly of any notice or other communication received from any insurer by which such insurer indicates that it has suspended or terminated, or may seek or suspend or terminate, any such insurance; and (iii) at least

Copy should be sent to the Board for and filed.

thirty (30) days prior thereto, of the termination of any such insurance by reason of Operator's failure to renew such insurance.

15. Indemnification. Each party hereto (the "Indemnifying Party") agrees to assume liability for, and shall indemnify, protect, save and keep harmless the other party hereto and, as applicable, such other party's successors, assigns, agents, officers, directors, employees and representatives (collectively, the "Indemnified Parties"), from and against, any and all liabilities, obligations, losses, damages, penalties, claims, Environmental Claims, actions, suits, costs, expenses and disbursements (including legal fees and expenses) of whatever kind and nature imposed upon, asserted against or reasonably incurred by any of the Indemnified Parties (whether or not also indemnified against by any other person), (i) arising as a result of or in connection with any failure on the part of the Indemnifying Party to perform its obligations under this Agreement or (ii) arising out of or in any way connected with the acts or omissions of the Indemnifying Party or any one acting on such Indemnifying Party's behalf (other than an Indemnified Party), except as the same may result from the negligence or wilful misconduct of any Indemnified Party. *as well as the State*

16. Nonwaiver. The failure or delay of either party to insist upon strict performance of any of the provisions of this Agreement, to exercise any rights or remedies provided hereunder or by law, or to notify the other party in the event of a breach or default under this Agreement, shall not release or relieve either party from any of its obligations under this Agreement and shall not be deemed a waiver of any rights or remedies hereunder, nor shall any purported oral modifications of this Agreement operate as a waiver of any of the provisions hereof.

17. Confidentiality. The parties shall maintain in confidence the provisions of this Agreement and except as set forth in this Agreement, neither party shall disclose to any third party any information provided by one party to the other party that the providing party specifically indicates is confidential information, without the prior written consent of the other party. Operator further agrees to maintain in confidence any information received by it pursuant to this Agreement or obtained by it during the course of performing the Work concerning the production, treatment, extent, productivity and properties of Steam present in or produced from the HGP-A Site. Notwithstanding the foregoing, this confidentiality provision shall not (i) apply to information already known by the receiving party through means other than the violation of the terms hereof, or information that becomes known to the general public through acts of other parties, or information received from third parties without restriction who did not acquire it directly or indirectly from the other party in

breach of this Agreement and (ii) prohibit disclosure of such information to such party's attorney's, accountants and other consultants, ~~as required by law or legal process on the terms of the lease, or in the case of Owner, to any agency, authority or other governmental entity of, or established pursuant to the laws of, the State of Hawaii.~~

18. Entire Agreement; Amendment. This Agreement embodies the entire agreement of the parties hereto and supersedes any and all prior agreements between the parties regarding the subject matter hereof. No change, amendment or modification of any of the provisions hereof shall be valid unless set forth in a written instrument signed by each of the parties hereto.

19. Further Assurances. The parties shall take such other actions, and execute such other documents, that may be necessary to effectuate the provisions hereof.

20. Construction. This Agreement shall be construed as a whole. All Section headings are for convenience of reference only and shall not affect the construction of any provision hereof.

21. Applicable Law. This Agreement shall be interpreted, construed and enforced in all respects in accordance with the laws of the State of Hawaii applicable to contracts made in Hawaii by residents thereof and to be performed entirely within such State. The parties agree that any action or suit regarding any dispute arising between the parties about the terms of this Agreement or the transaction contemplated by this Agreement shall be brought into a court of competent jurisdiction in the State of Hawaii, and in no other jurisdiction.

22. Counterparts. This Agreement may be executed in counterparts, each of which shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same Agreement.

23. Independent Contractor. For all purposes of this Agreement, Operator shall at all times act as and be deemed to be an independent contractor, and shall not act as nor be deemed to be an employee or agent of the Owner.

24. Limitations on Liability.

24.1 Operator. Notwithstanding any other provisions of this Agreement to the contrary, Owner agrees that no owner or partner of Operator, or AMOR VI Corporation, AMOR VIII Corporation, Ormat Energy Systems, Inc., or Ormat, Inc., or any parent or affiliate of any of the foregoing (each, a "Related Party") or any past, present or future incorporator, subscriber of

stock of, or stockholder, officer or director of any Related Party shall be liable for any of the obligations of Operator under this Agreement.

24.2 Owner. Notwithstanding any other provision of this Agreement to the contrary, Operator agrees that this Agreement ~~does not impose any pecuniary liability on the State of Hawaii or any political subdivision thereof.~~ [state exception, if any].

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

Owner:

THE NATURAL ENERGY LABORATORY OF
HAWAII AUTHORITY

By: _____
Its: Executive Director

Operator:

By: _____
Its: _____

APPENDIX 1

REIMBURSABLE COSTS

(HGPA)

MEMORANDUM

TO: William W. Paty, Chairperson

FROM: Manabu Tagomori, Deputy Director

SUBJECT: Analysis of the Proposed Sale of Steam from HGP-A to Puna Geothermal Venture (PGV)

Background

On August 20, 1990, during the International Symposium on Geothermal Energy held in Kona, a meeting was convened to discuss the Puna Geothermal Venture (PGV) proposal to purchase steam from the existing HGP-A well located at Pohoiki, Hawaii. In attendance at the meeting were the following:

Roger Ulveling	(DBED)	Manabu Tagomori	(DLNR)
Michelle Wong-Wilson	"	Janet Swift	"
Gerry Lesperance	"	Dean Nakano	"
Maurice Kaya	"	Don Thomas	(UH-HIG)
Clare Hachmuth	(NELH)	Roy Nakanishi	(NELH)
Steven Morris	(Consultant)		

The purpose of the meeting was to review the proposed PGV agreement and the independent financial analysis of the proposal prepared by NELH's consultant Steven Morris. (Copies of both the PGV proposal and the consultant's report are attached.)

In summary, the PGV steam sale agreement proposes the purchase of steam from HGP-A, with compensation to be made to NELH through annual payments of a Well Availability Fee (\$50,000), a Steam Fee based on pounds of steam delivered (minimum \$50,000/year), and a one time payment of \$250,000.

Mr. Morris's financial analysis of the PGV proposal identified specific clauses within the proposed agreement that require further clarification, as well as suggesting an alternate method of calculating the revenue payable to NELH by PGV for the use of steam.

As a result of the meeting, NELH/DBED decided to draft and submit a counter-proposal to PGV for their review and approval. The counter-proposal will include an alternate method of valuation of the steam resource which will be based on a percentage (42%) of the revenues received by PGV from the sale of electricity.

Additionally, the issue was raised concerning the payment of monies to the Office of Hawaiian Affairs (OHA) from revenues received by the State. Specifically, whether the OHA 20% share should be derived from the 10% geothermal royalty received by the Board, or from the total gross/net revenues received by NELH from the sale of steam to PGV. It was decided by the group that the matter should be submitted to the Attorney General's office for a legal opinion on the issue.

Discussion

Subject to review of the counter-proposal being drafted by NELH/DBED, and solely on the basis of the PGV proposal and the discussions held at the 8/20/90 meeting, staff has prepared the following comments regarding the proposed sale of steam:

- 1) The PGV proposal (Item No. 13) allows for the assignment of the steam sale agreement and the rights of either party (PGV/NELH) for financing security purposes without the consent of the other party.

This provision should be deleted from the agreement since both the PGV mining lease (R-2) and the HGP-A mining lease (S-4602) requires that any transfer (assignment or sublease) of lessee's (NELH) interest in the lease and lessee's rights thereunder (including any steam sale agreement), shall be subject to approval by the lessor (Board).

- 2) The purpose of the mining lease (S-4602) when originally granted, was to conduct scientific research and investigation. As such, the terms of the lease provide for the waiver of royalty payments to the State for the duration of the lease.

The proposed transport and sale of geothermal resources from lease S-4602 to lease R-2, however, constitutes a change from scientific research to commercial production and therefore requires a royalty payment of 10% of the gross proceeds from the sale or use of the geothermal resource.

It should be noted that NELH may request a continuance of the existing royalty waiver provision contained within the lease, or seek a waiver (of up to eight years) of royalty payments as provided by statute.

- 3) Based on our review, it appears that the proposed steam sale agreement between PGV and NELH might be considered a commingling of geothermal resources, and under the terms of the existing leases (R-2 and S-4602) and section 13-183-32, is allowable provided that the metering system used to measure the geothermal resources has been approved by the lessor.

- 3) (cont.) However, PGV's proposed option (Item No. 6) to "directionally" drill additional wells and utilize the resource underlying the HGP-A site could possibly be interpreted as an unitization of State leased lands under an unit or cooperative plan of development with PGV.

If such is the case, Section 13-183-33 HAR, requires that an application be filed with the Board which shall certify whether the plan is necessary or advisable in the public interest.

The unit agreement must describe the separate tracts comprising the unit, disclose the apportionment of the production or royalties and costs to the several parties and the name of the operator, and shall contain adequate provisions for the protection of the interests of all parties, including the State.

This agreement shall be signed by all parties before being submitted to the Board, and shall be effective only after approval by the Board.

- N/A ✓
4) Pursuant to Item No. 14 of lease R-2, lessee (PGV) is required to file a construction bond for a sum of not less than one hundred percent (100%) of the cost of any improvements (including pipeline construction) in a form and with surety satisfactory to the lessor.

This provision for submittal of a construction bond for the steam transmission pipeline therefore requires that PGV provide the Department with an accurate estimate of the pipeline construction costs, as well as the construction bond.

- 5) Notwithstanding any final negotiated steam sale agreement, PGV will be required to submit for approval, an amended Plan of Operations addressing the proposed transport and use of steam from HGP-A to their power plant facility located on the leased lands covered under R-2.

The amended Plan of Operations should also include any proposed plans concerning the drilling of additional wells from the PGV property to a bottom hole location beneath the HGP-A site.

It should be noted that any well drilled must be located more than 100 feet from the outer boundary of the parcel of land on which the well is located (sect. 13-183-69), rather than the 50 feet set-back indicated in the PGV proposal (Item No. 6, (ii)).

- 6) Item No. 7.1 of PGV's proposal states that any economic benefit derived from the commercial use of discharge, mineral residue, sludge and waste shall belong to PGV. Lessee (PGV) should be advised that 5% of the gross proceeds received by the lessee from the sale of any such by-products shall be payable to the lessor (Board).

Item No. 7.1 also states that NELH will be responsible for the injection of any discharge (brine) utilized by the research facilities. No plans for such injection or request for approval of such disposal has been received by the lessor as required under the lease S-4602.

- 7) PGV agreement Item No. 18 provides for a confidentiality agreement between PGV and NELH concerning information resulting from the steam sale operations (i.e. production, treatment, etc.). Both NELH and PGV should be advised that such information shall be made available to the lessor and/or submitted to the Department as required by regulation.

- 8) Lastly, concerning the integrity of the HGP-A well, well tests or remedial work as necessary will be required to prevent and minimize any environmental impacts. The lessee/operator shall be required to conduct well tests, including but not limited to, a casing caliper log, temperature log, and spinner surveys to evaluate the integrity of the existing casing.

Conclusion

Based on the above preliminary analysis of the proposed steam sale agreement between PGV and NELH, staff recommends the following actions:

- o Transmittal of this staff analysis, along with the copies of the referenced documents (mining leases R-2 and S-4602, PGV's proposal, and NELH's consultant report) to the Attorney General's (AG) office for review and comment.
- o Submittal of a request for legal opinion to the AG in resolution of the matter concerning the sharing of revenues with OHA, and a determination of the Board's/Department's jurisdiction concerning regulation of the proposed steam sale activity involving the adjacent leased lands.
- o Further evaluation of the NELH counter-proposal when it is finally drafted and received by DLNR, and the prompt transmittal of such document to the AG for review.

In summary, notwithstanding any final negotiated agreement between NELH and PGV, the Board and/or Chairperson's approval of such agreement, in whole or in part, will be necessary prior to commencement of any operations concerning the transport and sale of steam from HGP-A to the PGV facility.

Handwritten note:
See p. 9
part. 16

The Natural Energy Laboratory of Hawaii



90 JUN 27 P 4: 20

June 26, 1990

MEMORANDUM
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

TO: Sus Ono
Bill Paty

FROM: Clare Hachmuth *CH*

RE: HGP-A Steam Sale Proposal

Here is the proposed steam sale agreement from ORMAT for your review and comment. I have also sent a copy to Don Thomas at HIG.

I would like to meet to discuss the terms within the next week. Please give me a call to set a time.

*MT - DM
Commitment
P*

DIV. OF WATER &
LAND DEVELOPMENT

90 AUG 30 P 3: 25

RECEIVED

ORMAT®



June 25, 1990

VIA FEDERAL EXPRESS

Ms. Clare Hachmuth
Natural Energy Laboratory of Hawaii
Keahole Point
Kailua - Kona, Hawaii 96745

Subject: HGP-A Steam Sales Agreement

Dear Clare:

Attached please find a clean copy of the subject agreement previously submitted.

Please call me if you have any questions and to set a schedule for further discussion.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Doug Miller". The signature is fluid and cursive, with the first name "Doug" and last name "Miller" clearly distinguishable.

Douglas M. Miller
Manager, Project Development

DMM:nrk

Enclosure

37597

PUNA GEOTHERMAL VENTURE

610 East Glendale Ave., Sparks, Nevada 89431-5811 • Telephone (702) 356-9111 • Facsimile (702) 356-9125 • Telex 170030

STEAM SALES AGREEMENT

THIS STEAM SALES AGREEMENT is made this _____ day of _____, 1990 by the NATURAL ENERGY LABORATORY OF HAWAII, a division of the University of Hawaii, with offices at 220 S. King Street, Suite 1280, Honolulu, Hawaii 96813 ("Seller"), and PUNA GEOTHERMAL VENTURE, a Hawaii general partnership, with offices at 101 Aupuni Street, Suite 1014-B, Hilo, Hawaii 96720 ("Buyer").

R E C I T A L S:

A. Seller, acting for and on behalf of the State of Hawaii, is the owner of certain geothermal resource property located within the Lower East Rift Geothermal Subzone ("LERGS") of the Puna District, Island and State of Hawaii, situate on Tax Map Key No.: 3rd/1-4-01:82 and commonly referred to as the Hawaii Geothermal Project-Abbott site ("HGP-A Site").

B. Buyer intends to own or lease one or more geothermal power plants ("Plants") which will utilize geothermal steam and/or hot water ("Steam") to produce electricity on properties owned or leased by Buyer adjoining Seller's parcel.

C. Seller desires to sell, and Buyer desires to purchase, Steam produced from the geothermal resource property owned or leased by Seller pursuant to the terms of this Agreement.

D. Buyer further desires, and Seller is willing to grant to Buyer, an option to drill and develop additional production and injection wells on Buyer's properties capable of utilizing the geothermal resource capabilities underlying the HGP-A Site.

NOW, THEREFORE, in consideration of the mutual agreements and covenants set forth hereinbelow, the parties hereto agree as follows:

1. Purchaser of Steam from Seller's Existing Well. Seller shall (subject to the availability of commercial quantities of Steam from the HGP-A Site) sell exclusively to Buyer, and Buyer shall purchase from Seller, available Steam, on as an-needed basis, from the existing geothermal production well ("Well") located upon the HGP-A Site for use in meeting the hydrothermal energy requirements of the Plant(s) which Buyer may hereafter operate within the LERGS. The price and

the terms for the sale of Steam shall be as set forth in this Agreement.

2. Delivery of Steam. Upon the completion of Buyer's Plant(s) and Buyer's written notice to Seller that Buyer is ready to accept available Steam from the Well, Seller shall deliver Steam to Buyer at their common boundary line, at a point of delivery mutually acceptable to the parties ("Point of Delivery"). If Buyer, in its sole discretion, determines that it is necessary to upgrade the Well and/or its wellhead, valves, meters, piping system or ancillary equipment in order to move the Steam in a safe and prudent manner to the Point of Delivery, then Buyer shall make such improvements at Buyer's expense, or Buyer may have the option of making such improvements as Seller's contractor.

3. Consideration for Exclusive Purchase Agreement; Well Availability Fee. In full consideration for (i) the grant by Seller of the exclusive right to purchase Steam, as provided herein and (ii) Seller's agreement to maintain and make available the Well to Buyer, Buyer shall pay to Seller the following amounts:

(a) Exclusive Purchase Rights and Grant of Option. Upon the execution of this Agreement, Buyer shall pay to Seller the one-time sum of TWO HUNDRED FIFTY THOUSAND AND NO/100 DOLLARS (\$250,000.00) for (i) the exclusive right to purchase Steam from the Well, subject to Seller's reservation of steam use set forth in Paragraph 5, and (ii) the option to drill additional geothermal wells as set forth in Paragraph 6.

(b) Well Availability Fee. Buyer shall also pay to Seller an annual payment of FIFTY THOUSAND AND NO/100 DOLLARS (\$50,000.00) for Seller to maintain and make available, during the term hereof, the Well and its wellhead, valves, meters, piping and ancillary equipment, for the purchase and delivery of Steam to Buyer. The first annual payment shall be due one (1) year from the date of execution hereof and each subsequent annual payment shall be due on each anniversary date thereafter for as long as Buyer continues to purchase Steam delivered by Seller from the Well. If Seller should, for any reason whatsoever, cease to maintain or otherwise make available its Well as aforesaid, then Buyer shall be under no obligation to pay this annual fee from the year following the year that Steam from the Well becomes unavailable.

4. Steam Fee.

(a) In addition to the payments set forth in Paragraph 3, Buyer shall pay to Seller the minimum amount of FIFTY THOUSAND AND NO/100 DOLLARS (\$50,000.00) per year during the term hereof for Steam purchased under this Agreement, in accordance with the formula set forth in Appendix A attached hereto and hereby made a part hereof. Such payments shall be made by Buyer to Seller, or Seller's account, no later than forty-five (45) days after the end of each calendar quarter during the term hereof, with the first (1st) such quarterly payment being made within forty-five (45) days after the end of the calendar quarter in which first occurs (i) the initial delivery of Steam to Buyer at the Point of Delivery, or (ii) Buyer's purchase of Steam produced from the additional geothermal wells drilled and operated by Buyer pursuant to Paragraph 6. At the end of each calendar year during term hereof, Buyer and Seller shall determine the total amount of Steam purchased from Seller by Buyer during such calendar year and the total amount paid by Buyer therefor. If the amount is less than \$50,000.00, Buyer shall pay to Seller the amount of the deficiency within forty-five (45) days after the date of such determination. If the amount paid by Buyer for the Steam during such calendar year equals or exceeds \$50,000.00, then Buyer shall have no further payment obligation for the Steam Fee for such year.

(b) Buyer shall keep records of all Steam delivered to and purchased by Buyer (whether at the Point of Delivery or from the aforesaid additional wells) and shall make available such records to Seller, upon Seller's request, that are reasonably required to enable Seller to verify the amount of Steam delivered and sold to Buyer.

5. Seller's Reservation of Steam Use. The parties shall cooperate in providing Steam, brine, heat or a combination thereof from the Well to the research facilities operated or maintained by Seller on the HGP-A Site if (i) technically and economically feasible, and (ii) not prohibited by permits issued to either Buyer or Seller. The parties shall coordinate all required physical arrangements on the HGP-A Site for the surface and gathering facilities to accomplish the foregoing; provided, however, that each party shall be separately responsible for the operation and maintenance of its own such facilities

6. Option for Additional Wells.

(a) Seller hereby grants to Buyer the option to drill and develop additional geothermal production or injection wells capable of utilizing the geothermal resource capabilities underlying the HGP-A Site as Buyer deems necessary or appropriate for the continued operation of the Plant(s). Buyer shall drill any such additional wells utilizing the HGP-A Site's geothermal resource capabilities as aforesaid:

(i) By means of directional drilling;

(ii) From a surface drilling site located not closer than 50 feet from the boundaries of the HGP-A Site, unless otherwise approved in writing by the Seller; and

(iii) With a bottom hole location beneath the HGP-A Site.

(b) Buyer shall pay, as part of the Steam Fee pursuant to Paragraph 4, the purchase price for all Steam delivered to Buyer from any such additional wells. The parties intend that the Steam Fee shall include Steam purchased from both the Well and from any such additional wells that Buyer drills and develops pursuant to this option.

7. Covenants of Buyer.

7.1 Waste. Buyer shall, at its own expense, handle and dispose of the discharge, mineral residue, sludge and waste ("Discharge") produced by the Plant(s) as a result of the use of the Steam. If any commercial use is made of such Discharge, the economic benefits of such commercial use shall belong to Buyer. Buyer shall be responsible for the injection of such Discharge produced by the Plant(s); provided, however, that Seller shall remain responsible for the injection of such Discharge resulting from Seller's reserved uses set forth in Paragraph 5.

7.2 HGP-A Site. In taking and using Steam from the Well and/or any such additional wells, and in performing any other obligations or exercising any rights hereunder, Buyer shall at all times comply with the requirements of any applicable regulations, plans of operation, permits or orders relating to the HGP-A Site, the Well and the geothermal resource underlying the HGP-A Site. Buyer shall use Steam made available to it from the HGP-A Site in a manner consistent with

prudent industry practices and within the existing operational parameters of the Plants(s) utilizing such Steam.

7.3 Operation and Maintenance. During the term hereof, Buyer, as Seller's contractor, shall clean, repair, operate and maintain in a manner consistent with prudent industry practices, the Well and its wellhead, valves, meters, piping and any ancillary equipment located on the HGP-A Site and which utilize the geothermal resource underlying the HGP-A Site. However, each party shall be responsible for the operation and maintenance of its own separate facilities (other than the Well and its wellhead, piping and any ancillary equipment, which shall be operated and maintained by Buyer as aforesaid) on the HGP-A Site, and each party assumes full liability and agrees to hold the other party harmless from the indemnifying party's own acts and omissions in the operation and maintenance of its separate facilities.

7.4 Obligations To Be Without Recourse to Buyer. Notwithstanding any other provisions of this Agreement to the contrary, Seller shall look solely to the Plant(s) for (i) the payment of all amounts coming due to Seller under this Agreement, (ii) the performance by Buyer of all of its covenants, agreements and obligations hereunder, and (iii) any damages resulting from Buyer's breach of its representations, warranties and covenants hereunder or under any other agreement, undertaking, certificate or other document executed and delivered by Buyer contemplated hereby (whether or not expressed or general obligations of Buyer); and, therefore, no judgment or recourse (except a judgment against the Plant(s)) shall be sought or enforced for the payment of performance of Buyer's obligations under this Agreement or any such other agreement, undertaking, certificate or document contemplated hereby: (a) against Buyer in its individual or personal capacity, other than in connection with the enforcement of remedies against the Plant(s), (b) against any assets or property of Buyer other than its rights in the Plant(s), (c) against AMOR VI Corporation, AMOR VIII Corporation, Ormat Energy Systems, Inc., Ormat, Inc. and/or any partner of Buyer or any parent or other affiliate of any of the foregoing, or (d) any past, present or future incorporator or subscriber to the capital stock of, or stockholder, officer or director of, Ormat Inc., Ormat Energy Systems, Inc., any partner of Buyer or any parent or other affiliate of any of the foregoing, or any of their respective assets or property.

8. Covenants of Seller.

8.1 Adequacy of Resource. Seller makes no representation, warranty or covenant with respect to the

quality, quantity or presence of Steam underlying the HGP-A Site, and shall not be required to explore for, drill for, produce or deliver Steam or permit injection beyond that which can be produced by, or injected from, the Well in accordance with prudent resource management practices.

8.2 Permits. Seller shall cooperate with Buyer as may be reasonably required to obtain all authorizations, licenses, permits and approvals that are necessary for the performance by the parties of their respective obligations under this Agreement, and shall, if any of the same are required by Buyer but cannot be transferred, assigned or conveyed to Buyer, cooperate with Buyer to exercise Seller's rights thereunder for the benefit of Buyer and at Buyer's expense.

9. No Rights Retained. All Steam produced from the HGP-A Site shall be dedicated exclusively for the use by the Plant(s), except for the steam use reserved by Seller pursuant to Paragraph 5. Seller shall not develop and sell Steam or the energy associated therewith to any person other than Buyer and shall not permit injection of Discharge within the geothermal resource underlying the HGP-A Site by any other persons without the prior written consent of Buyer, which Buyer may withhold for any reason whatsoever in its sole discretion.

10. Term.

(a) The term of this Agreement shall begin on the date hereof and shall continue until terminated by Buyer upon sixty (60) days' prior written notice to Seller.

(b) Notwithstanding Paragraph 10(a), (i) either party may terminate this Agreement if the other party shall be in material default hereunder and fail to cure such default within sixty (60) days after receipt of notice of such default from the non-defaulting party; provided, however, that if such default cannot be reasonably cured within such sixty (60) day period, the defaulting party shall have such additional time as is reasonably necessary to cure such default as long as such cure is commenced within sixty (60) days after receipt of notice of default and is thereafter pursued diligently to completion; and (ii) should the owner(s) of the Plant(s) succeed to the interests of Buyer hereunder, such owner(s) shall have the right to terminate this Agreement upon sixty (60) days' prior written notice if Buyer is removed for any reason whatsoever as the operator of the Plant(s).

11. Access. Seller hereby grants to Buyer a right of ingress and egress upon, across, over and under the HGP-A Site for purposes of Buyer's performing, as Seller's contractor, maintenance and operations functions of the Well and its ancillary equipment, pursuant to Paragraph 7.3.

12. Environmental Indemnification. Seller agrees to indemnify and hold Buyer free and harmless from any claims, damages, liabilities, losses, penalties and expenses, including reasonable attorney's fees and costs, that Buyer may incur from any activities, whether past, present or future, of Seller as or with respect to the HGP-A Site that fall under any County, State or Federal environmental laws or regulations, including those dealing with hazardous and dangerous substances and wastes.

13. Assignment. This Agreement and the rights of either party hereunder may be assigned, in whole or in part, for financing security purposes without the consent of the other party, provided that the assignor shall promptly give the other party hereto written notice of such assignment, together with a copy of the executed instrument of assignment and the written assumption by the assignee of all of the assignor's obligations hereunder. Except as aforesaid, this Agreement and the rights of either party hereunder may not be assigned without the prior written consent of the other party, which consent shall not be unreasonably withheld or delayed.

14. Benefit. This Agreement shall be fully binding upon the parties hereto and their respective successors, permitted assigns and legal representatives.

15. Notices. Any notice, request, approval, consent, order, instruction, direction or other communication under this Agreement given by either party to the other party shall be in writing and shall be delivered in person or mailed, properly addressed and stamped with the required postage, to the intended recipient at the address first above stated and to the attention of the person specified below the parties' respective signatures. Either party may from time to time change such address by giving the other party notice of such change. Notice is to be considered effective only upon physical receipt thereof.

16. Force Majeure. If either party shall be wholly or partially prevented from performing any act required to be performed by it herein, in any or all cases as a consequence of strikes; riots; fires; floods; lightning; rain; earthquake; volcanism; wind; tsunami; war; invasion; insurrection; civil commotion; accident; equipment failures; any lawsuit based upon

environmental or land use grounds, unavailability of resources due to national defense priorities, any laws, rules, regulations or orders promulgated by federal, state or county governmental bodies or agencies; any rules, regulations or orders of any public body or official purporting to exercise authority or control respecting the activities and operations contemplated hereunder; the order of any court, judge or civil authority; any act of God or the public enemy; delays arising and/or any other delays caused by events or conditions which are beyond its exclusive control, then and in any such event such performance and the obligation of such party shall be extended, or suspended, as applicable, by the duration of such delay, but in no event for more than three (3) years in total. The party claiming force majeure shall promptly notify the other party of the condition giving rise to the force majeure event and shall also indicate the estimated duration of such condition and the proposed action to mitigate such condition.

17. Nonwaiver. The failure or delay of either party to insist upon strict performance of any of the provisions of this Agreement, to exercise any rights or remedies provided hereunder or by law, or to notify the other party in the event of a breach or default under this Agreement, shall not release or relieve either party from any of its obligations under this Agreement and shall not be deemed a waiver of any rights or remedies hereunder, nor shall any purported oral modifications of this Agreement operate as a waiver of any of the provisions hereof.

18. Confidentiality. The parties shall maintain in confidence the provisions hereof, and except as set forth in this Agreement or in any disclosure required by law, neither party shall disclose to any third party any information provided to one party to the other party that the providing party specifically indicates is confidential information, without the prior written consent of the other party. Specifically, the parties shall further maintain in confidence any information received by the other party pursuant to this Agreement concerning the production, treatment, extent, productivity and properties of Steam present in or produced from the geothermal resource underlying Buyer's adjoining properties, except that this restriction shall not apply to information already known by the receiving party through means other than the violation of the terms hereof, or information that becomes known to the general public through acts of other parties, or information received from third parties without restriction who did not acquire it directly or indirectly from the other party in breach of this Agreement.

19. Entire Agreement; Amendment. This Agreement embodies the entire agreement of the parties hereto and supersedes any and all prior agreements between the parties regarding the subject matter hereof. No change, amendment or modification of any of the provisions hereof shall be valid unless set forth in a written instrument signed by each of the parties hereto.

20. Further Assurances. The parties shall take such other actions, and execute such other documents, that may be necessary or desirable to effectuate the provisions hereof.

21. Construction. This Agreement shall be construed as a whole. All Paragraph headings are for convenience of reference only and shall not affect the construction of any provision hereof.

22. Applicable Law. This Agreement shall be interpreted, construed and enforced in all respects in accordance with the laws of the State of Hawaii applicable to contracts entered in Hawaii by residents thereof and to be performed entirely within such State.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date and year first written above.

NATIONAL ENERGY LABORATORY OF
HAWAII

By: _____
Its

Seller

PUNA GEOTHERMAL VENTURE

By: Amor VIII Corporation
Managing Partner

By: _____
Its:

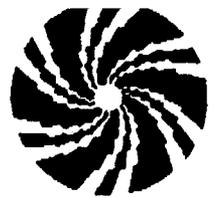
Buyer

FORMULA TO CALCULATE ANNUAL STEAM FEE
(Pursuant to Paragraph 4)

No. of lbs. of Steam x \$0.11415/1,000 lbs. = Steam Fee*
delivered in year

*Subject, however, to a minimum annual Steam Fee of \$50,000.00

NHRAND
ORMAT®



June 19, 1990
Reference No. 90218.011

Ms. Clare Hachmuth
General Manager
Natural Energy Laboratory of Hawaii
P.O. Box 1749
Kailua-Kona, Hawaii 96745

Subject: HGP-A Steam Sales Agreement

Dear Clare:

As we discussed, attached please find the proposed Steam Sales Agreement between Puna Geothermal Venture (PGV) and the State of Hawaii. The proposed agreement reflects the following principles previously discussed:

1. An initial payment to provide for the exclusive rights to use steam from the HGP-A resource;
2. An additional "Availability or Maintenance" fee if the existing HGP-A well is utilized;
3. A steam fee to be paid for the steam itself subject to an annual minimum fee;
4. Maximum flexibility to allow for future State research uses; and
5. Each party will remain responsible for its own operations and maintenance.

If you have any questions, please call me at 961-2184.

Sincerely,

for
Doug Miller
Manager, Project Development
Ormat Energy Systems, Inc. for
Puna Geothermal Venture

Attachments (5)

PUNA GEOTHERMAL VENTURE

- | | | | | |
|---|---|--------------------------|---|--------------------------|
| <input type="checkbox"/> 101 Aupuni Street Suite 1014-B, Hilo, Hawaii 96720 | • | Telephone (808) 961-2184 | • | Facsimile (808) 961-3531 |
| <input type="checkbox"/> 610 East Glendale Ave., Sparks, Nevada 89431-5811 | • | Telephone (702) 356-9111 | • | Facsimile (702) 356-9125 |

STEAM SALES AGREEMENT

THIS STEAM SALES AGREEMENT is made this _____ day of _____, 1990 by the NATURAL ENERGY LABORATORY OF HAWAII, a division of the University of Hawaii, with offices at 220 S. King Street, Suite 1280, Honolulu, Hawaii 96813 ("Seller"), and PUNA GEOTHERMAL VENTURE, a Hawaii general partnership, with offices at 101 Aupuni Street, Suite 1014-B, Hilo, Hawaii 96720 ("Buyer").

R E C I T A L S:

A. Seller, acting for and on behalf of the State of Hawaii, is the owner of certain geothermal resource property located within the Lower East Rift Geothermal Subzone ("LERGS") of the Puna District, Island and State of Hawaii, situate on Tax Map Key No.: 3rd/1-4-01:82 and commonly referred to as the Hawaii Geothermal Project-Abbott site ("HGP-A Site").

B. Buyer intends to own or lease one or more geothermal power plants ("Plants") which will utilize geothermal steam and/or hot water ("Steam") to produce electricity on properties owned or leased by Buyer adjoining Seller's parcel.

C. Seller desires to sell, and Buyer desires to purchase, Steam produced from the geothermal resource property owned or leased by Seller pursuant to the terms of this Agreement.

D. Buyer further desires, and Seller is willing to grant to Buyer, an option to drill and develop additional production and injection wells on Buyer's properties capable of utilizing the geothermal resource capabilities underlying the HGP-A Site. (*directional drilling?*)

~~NOW, THEREFORE,~~ in consideration of the mutual agreements and covenants set forth hereinbelow, the parties hereto agree as follows:

1. Purchaser of Steam from Seller's Existing Well. Seller shall (subject to the availability of commercial quantities of Steam from the HGP-A Site) sell exclusively to Buyer, and Buyer shall purchase from Seller, available Steam, on as an-needed basis, from the existing geothermal production well ("Well") located upon the HGP-A Site for use in meeting the hydrothermal energy requirements of the Plant(s) which Buyer may hereafter operate within the LERGS. The price and

the terms for the sale of Steam shall be as set forth in this Agreement.

2. Delivery of Steam. Upon the completion of Buyer's Plant(s) and Buyer's written notice to Seller that Buyer is ready to accept available Steam from the Well, Seller shall deliver Steam to Buyer at their common boundary line, at a point of delivery mutually acceptable to the parties ("Point of Delivery"). If Buyer, in its sole discretion, determines that it is necessary to upgrade the Well and/or its wellhead, valves, meters, piping system or ancillary equipment in order to move the Steam in a safe and prudent manner to the Point of Delivery, then Buyer shall make such improvements at Buyer's expense, or Buyer may have the option of making such improvements as Seller's contractor.

3. Consideration for Exclusive Purchase Agreement: Well Availability Fee. In full consideration for (i) the grant by Seller of the exclusive right to purchase Steam, as provided herein and (ii) Seller's agreement to maintain and make available the Well to Buyer, Buyer shall pay to Seller the following amounts:

(a) Exclusive Purchase Rights and Grant of Option. Upon the execution of this Agreement, Buyer shall pay to Seller the one-time sum of TWO HUNDRED FIFTY THOUSAND AND NO/100 DOLLARS (\$250,000.00) for (i) the exclusive right to purchase Steam from the Well, subject to Seller's reservation of steam use set forth in Paragraph 5, and (ii) the option to drill additional geothermal wells as set forth in Paragraph 6.

(b) Well Availability Fee. Buyer shall also pay to Seller an annual payment of FIFTY THOUSAND AND NO/100 DOLLARS (\$50,000.00) for Seller to maintain and make available, during the term hereof, the Well and its wellhead, valves, meters, piping and ancillary equipment, for the purchase and delivery of Steam to Buyer. The first annual payment shall be due one (1) year from the date of execution hereof and each subsequent annual payment shall be due on each anniversary date thereafter for as long as Buyer continues to purchase Steam delivered by Seller from the Well. If Seller should, for any reason whatsoever, cease to maintain or otherwise make available its Well as aforesaid, then Buyer shall be under no obligation to pay this annual fee from the year following the year that Steam from the Well becomes unavailable.

4. Steam Fee.

(a) In addition to the payments set forth in Paragraph 3, Buyer shall pay to Seller the minimum amount of FIFTY THOUSAND AND NO/100 DOLLARS (\$50,000.00) per year during the term hereof for Steam purchased under this Agreement, in accordance with the formula set forth in Appendix A attached hereto and hereby made a part hereof. Such payments shall be made by Buyer to Seller, or Seller's account, no later than forty-five (45) days after the end of each calendar quarter during the term hereof, with the first (1st) such quarterly payment being made within forty-five (45) days after the end of the calendar quarter in which first occurs (i) the initial delivery of Steam to Buyer at the Point of Delivery, or (ii) Buyer's purchase of Steam produced from the additional geothermal wells drilled and operated by Buyer pursuant to Paragraph 6. At the end of each calendar year during term hereof, Buyer and Seller shall determine the total amount of Steam purchased from Seller by Buyer during such calendar year and the total amount paid by Buyer therefor. If the amount is less than \$50,000.00, Buyer shall pay to Seller the amount of the deficiency within forty-five (45) days after the date of such determination. If the amount paid by Buyer for the Steam during such calendar year equals or exceeds \$50,000.00, then Buyer shall have no further payment obligation for the Steam Fee for such year.

(b) Buyer shall keep records of all Steam delivered to and purchased by Buyer (whether at the Point of Delivery or from the aforesaid additional wells) and shall make available such records to Seller, upon Seller's request, that are reasonably required to enable Seller to verify the amount of Steam delivered and sold to Buyer.

5. Seller's Reservation of Steam Use. The parties shall cooperate in providing Steam, brine, heat or a combination thereof from the Well to the research facilities operated or maintained by Seller on the HGP-A Site if (i) technically and economically feasible, and (ii) not prohibited by permits issued to either Buyer or Seller. The parties shall coordinate all required physical arrangements on the HGP-A Site for the surface and gathering facilities to accomplish the foregoing; provided, however, that each party shall be separately responsible for the operation and maintenance of its own such facilities

Need POP under
GEML R-2

6. Option for Additional Wells.

(a) Seller hereby grants to Buyer the option to drill and develop additional geothermal production or injection wells capable of utilizing the geothermal resource capabilities underlying the HGP-A Site as Buyer deems necessary or appropriate for the continued operation of the Plant(s). Buyer shall drill any such additional wells utilizing the HGP-A Site's geothermal resource capabilities as aforesaid:

(i) By means of directional drilling;

(12-183-69)

(ii) From a surface drilling site located not closer than 50 feet from the boundaries of the HGP-A Site, unless otherwise approved in writing by the Seller; and

(iii) With a bottom hole location beneath the HGP-A Site.

(b) Buyer shall pay, as part of the Steam Fee pursuant to Paragraph 4, the purchase price for all Steam delivered to Buyer from any such additional wells. The parties intend that the Steam Fee shall include Steam purchased from both the Well and from any such additional wells that Buyer drills and develops pursuant to this option.

5% royalty for
by-product (?)

7. Covenants of Buyer.

7.1 Waste. Buyer shall, at its own expense, handle and dispose of the discharge, mineral residue, sludge and waste ("Discharge") produced by the Plant(s) as a result of the use of the Steam. If any commercial use is made of such Discharge, the economic benefits of such commercial use shall belong to Buyer. Buyer shall be responsible for the injection of such Discharge produced by the Plant(s); provided, however, that Seller shall remain responsible for the injection of such Discharge resulting from Seller's reserved uses set forth in Paragraph 5.

where & how?

7.2 HGP-A Site. In taking and using Steam from the Well and/or any such additional wells, and in performing any other obligations or exercising any rights hereunder, Buyer shall at all times comply with the requirements of any applicable regulations, plans of operation, permits or orders relating to the HGP-A Site, the Well and the geothermal resource underlying the HGP-A Site. Buyer shall use Steam made available to it from the HGP-A Site in a manner consistent with

prudent industry practices and within the existing operational parameters of the Plant(s) utilizing such Steam.

7.3 Operation and Maintenance. During the term hereof, Buyer, as Seller's contractor, shall clean, repair, operate and maintain in a manner consistent with prudent industry practices, the Well and its wellhead, valves, meters, piping and any ancillary equipment located on the HGP-A Site and which utilize the geothermal resource underlying the HGP-A Site. However, each party shall be responsible for the operation and maintenance of its own separate facilities (other than the Well and its wellhead, piping and any ancillary equipment, which shall be operated and maintained by Buyer as aforesaid) on the HGP-A Site, and each party assumes full liability and agrees to hold the other party harmless from the indemnifying party's own acts and omissions in the operation and maintenance of its separate facilities.

7.4 Obligations To Be Without Recourse to Buyer. Notwithstanding any other provisions of this Agreement to the contrary, Seller shall look solely to the Plant(s) for (i) the payment of all amounts coming due to Seller under this Agreement, (ii) the performance by Buyer of all of its covenants, agreements and obligations hereunder, and (iii) any damages resulting from Buyer's breach of its representations, warranties and covenants hereunder or under any other agreement, undertaking, certificate or other document executed and delivered by Buyer contemplated hereby (whether or not expressed or general obligations of Buyer); and, therefore, no judgment or recourse (except a judgment against the Plant(s)) shall be sought or enforced for the payment of performance of Buyer's obligations under this Agreement or any such other agreement, undertaking, certificate or document contemplated hereby: (a) against Buyer in its individual or personal capacity, other than in connection with the enforcement of remedies against the Plant(s), (b) against any assets or property of Buyer other than its rights in the Plant(s), (c) against AMOR VI Corporation, AMOR VIII Corporation, Ormat Energy Systems, Inc., Ormat, Inc. and/or any partner of Buyer or any parent or other affiliate of any of the foregoing, or (d) any past, present or future incorporator or subscriber to the capital stock of, or stockholder, officer or director of, Ormat Inc., Ormat Energy Systems, Inc., any partner of Buyer or any parent or other affiliate of any of the foregoing, or any of their respective assets or property.

8. Covenants of Seller.

8.1 Adequacy of Resource. Seller makes no representation, warranty or covenant with respect to the

quality, quantity or presence of Steam underlying the HGP-A Site, and shall not be required to explore for, drill for, produce or deliver Steam or permit injection beyond that which can be produced by, or injected from, the Well in accordance with prudent resource management practices.

8.2 Permits. Seller shall cooperate with Buyer as may be reasonably required to obtain all authorizations, licenses, permits and approvals that are necessary for the performance by the parties of their respective obligations under this Agreement, and shall, if any of the same are required by Buyer but cannot be transferred, assigned or conveyed to Buyer, cooperate with Buyer to exercise Seller's rights thereunder for the benefit of Buyer and at Buyer's expense.

9. No Rights Retained. All Steam produced from the HGP-A Site shall be dedicated exclusively for the use by the Plant(s), except for the steam use reserved by Seller pursuant to Paragraph 5. Seller shall not develop and sell Steam or the energy associated therewith to any person other than Buyer and shall not permit injection of Discharge within the geothermal resource underlying the HGP-A Site by any other persons without the prior written consent of Buyer, which Buyer may withhold for any reason whatsoever in its sole discretion.

10. Term.

(a) The term of this Agreement shall begin on the date hereof and shall continue until terminated by Buyer upon sixty (60) days' prior written notice to Seller.

(b) Notwithstanding Paragraph 10(a), (i) either party may terminate this Agreement if the other party shall be in material default hereunder and fail to cure such default within sixty (60) days after receipt of notice of such default from the non-defaulting party; provided, however, that if such default cannot be reasonably cured within such sixty (60) day period, the defaulting party shall have such additional time as is reasonably necessary to cure such default as long as such cure is commenced within sixty (60) days after receipt of notice of default and is thereafter pursued diligently to completion; and (ii) should the owner(s) of the Plant(s) succeed to the interests of Buyer hereunder, such owner(s) shall have the right to terminate this Agreement upon sixty (60) days' prior written notice if Buyer is removed for any reason whatsoever as the operator of the Plant(s).

11. Access. Seller hereby grants to Buyer a right of ingress and egress upon, across, over and under the HGP-A Site for purposes of Buyer's performing, as Seller's contractor, maintenance and operations functions of the Well and its ancillary equipment, pursuant to Paragraph 7.3.

12. Environmental Indemnification. Seller agrees to indemnify and hold Buyer free and harmless from any claims, damages, liabilities, losses, penalties and expenses, including reasonable attorney's fees and costs, that Buyer may incur from any activities, whether past, present or future, of Seller as or with respect to the HGP-A Site that fall under any County, State or Federal environmental laws or regulations, including those dealing with hazardous and dangerous substances and wastes.

13. Assignment. This Agreement and the rights of either party hereunder may be assigned, in whole or in part, for financing security purposes without the consent of the other party, provided that the assignor shall promptly give the other party hereto written notice of such assignment, together with a copy of the executed instrument of assignment and the written assumption by the assignee of all of the assignor's obligations hereunder. Except as aforesaid, this Agreement and the rights of either party hereunder may not be assigned without the prior written consent of the other party, which consent shall not be unreasonably withheld or delayed.

14. Benefit. This Agreement shall be fully binding upon the parties hereto and their respective successors, permitted assigns and legal representatives.

15. Notices. Any notice, request, approval, consent, order, instruction, direction or other communication under this Agreement given by either party to the other party shall be in writing and shall be delivered in person or mailed, properly addressed and stamped with the required postage, to the intended recipient at the address first above stated and to the attention of the person specified below the parties' respective signatures. Either party may from time to time change such address by giving the other party notice of such change. Notice is to be considered effective only upon physical receipt thereof.

16. Force Majeure. If either party shall be wholly or partially prevented from performing any act required to be performed by it herein, in any or all cases as a consequence of strikes; riots; fires; floods; lightning; rain; earthquake; volcanism; wind; tsunami; war; invasion; insurrection; civil commotion; accident; equipment failures; any lawsuit based upon

19. Entire Agreement; Amendment. This Agreement embodies the entire agreement of the parties hereto and supersedes any and all prior agreements between the parties regarding the subject matter hereof. No change, amendment or modification of any of the provisions hereof shall be valid unless set forth in a written instrument signed by each of the parties hereto.

20. Further Assurances. The parties shall take such other actions, and execute such other documents, that may be necessary or desirable to effectuate the provisions hereof.

21. Construction. This Agreement shall be construed as a whole. All Paragraph headings are for convenience of reference only and shall not affect the construction of any provision hereof.

22. Applicable Law. This Agreement shall be interpreted, construed and enforced in all respects in accordance with the laws of the State of Hawaii applicable to contracts entered in Hawaii by residents thereof and to be performed entirely within such State.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date and year first written above.

NATIONAL ENERGY LABORATORY OF
HAWAII

By: _____
Its

Seller

PUNA GEOTHERMAL VENTURE

By: Amor VIII Corporation
Managing Partner

By: _____
Its:

Buyer

FORMULA TO CALCULATE ANNUAL STEAM FEE
(Pursuant to Paragraph 4)

No. of lbs. of Steam x \$0.11415/1,000 lbs. = Steam Fee*
delivered in year

*Subject, however, to a minimum annual Steam Fee of \$50,000.00

NELH

Natural Energy Laboratory of Hawaii

HOST PARK

RECEIVED

Hawaii Ocean Science and Technology Park

September 18, 1990

90 SEP 21 P 4: 26

Manabu Tagomori, Deputy
Department of Land & Natural Resources
Kalanimoku Building
1151 Punchbowl St.
Honolulu, Hawaii 96813

DIV. OF WATER &
LAND DEVELOPMENT

SUBJECT: Steam sale agreement proposal

Dear Manabu:

Enclosed are copies of the proposed steam sale agreement and the proposed operation and maintenance agreement, as prepared by our consultant. I have also sent copies to Roger Ulveling and to the attorney general's office.

The dollar values are on the high side to allow room for negotiation. I suspect the final document will have values somewhere between those Ormatt proposed and these.

Please review these agreements and let me know if you have questions or suggestions.

Sincerely,



Clare Hachmuth
Executive Director

cc: Eleanor Mirikitani

STEAM SALES AGREEMENT

THIS STEAM SALES AGREEMENT is dated as of _____, 1990 by THE NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY, a body corporate and public instrumentality established pursuant to Act 224 of the Fifteenth Legislature of the State of Hawaii, in relation with the State Department of Planning, Economic Development and Tourism, whose business address is P.O. Box 1749, Kailua-Kona, Hawaii 96745 ("Seller"), and PUNA GEOTHERMAL VENTURE, a Hawaii general partnership, with offices at 101 Aupuni Street, Suite 1014-B, Hilo, Hawaii 96720 ("Buyer").

R E C I T A L S

A. Seller is the successor-in-interest to The Research Corporation of the University of Hawaii under that certain State of Hawaii Department of Land and Natural Resources Geothermal Resources Mining Lease No. S-4602 entered into between the State of Hawaii ("Lessor") and The Research Corporation of the University of Hawaii on June 19, 1979 (the "Lease"). The Lease covers certain geothermal resource property located within the Lower East Rift Geothermal Subzone ("LERGS") of the Puna District, Island and State of Hawaii, situate on Tax Map Key No. 3rd/1-4-01:02 and commonly referred to as the Hawaii Geothermal Project-Abbott site described on Exhibit A attached hereto (the "HGP-A Site").

B. The Lease grants certain rights to sell geothermal resources and geothermal by-products from the HGP-A Site.

C. Buyer intends to own or lease one or more geothermal power plants in LERGS ("Plants") which will utilize geothermal resources to produce electricity on properties owned or leased by Buyer adjoining the HGP-A Site.

D. Buyer desires to secure a supply of geothermal steam for use in connection with the operation of the Plants.

E. Seller desires to sell, and Buyer desires to purchase, geothermal resources produced from the HGP-A Site pursuant to the terms of this Agreement.

NOW, THEREFORE, in consideration of the mutual agreements and covenants set forth hereinbelow, the parties hereto agree as follows:

1. Definitions. As used herein, the following terms shall have the following respective meanings (all terms defined in this Section 1 or in other provisions of this Agreement in the singular shall have the same meanings when used in the plural and vice versa):

"Available Steam" shall mean all Steam produced from the Well in accordance with Section 8 (to the extent Seller has an interest therein), but excluding Reserved Steam and Reserved Minerals.

"Commencement Date" shall mean the earlier of (i) the date on which Available Steam is delivered to Buyer pursuant to this Agreement or (ii) the date on which electric power is first sold to HELCO from the Plants.

"Delivery Point" shall mean a point designated by Seller as the place for delivery of Available Steam to Buyer at the common boundary of the HGP-A Site and Buyer's property.

"Effective Date" shall mean _____, 1990.

"Environmental Claim" shall mean, any and all suits, sanctions, liabilities, legal proceedings, claims, demands, losses, costs and expenses of whatsoever kind or character, including, without limitation, attorneys' fees, civil fines or penalties or other expenses incurred, assessed or sustained as a result of or in connection with Hazardous Materials.

"Geothermal Asset Fund" shall mean the asset fund established by The State of Hawaii [pursuant to Chapter ____, Hawaii Revised Statutes] to help alleviate the effects of geothermal development.

"Hazardous Materials" shall mean substances defined as hazardous or toxic substances pursuant to applicable present or future local, state or federal laws or regulations, or which are classified as hazardous or toxic under applicable present or future local, state or federal laws or regulations.

"HELCO" shall mean Hawaii Electric Light Company, Inc., a corporation organized under the laws of State of Hawaii.

"Power Purchase Agreement" shall mean the power purchase agreement between Buyer and HELCO with respect to the purchase and sale of electricity from the Plants.

"Reserved Minerals" shall mean any oil, hydrocarbon gas, helium and other marketable precipitates that are contained in the Steam and are extracted by Lessor or Seller.

"Reserved Steam" shall mean Steam reserved by Seller pursuant to Section 6 hereof.

"Steam" shall mean geothermal steam and/or hot water.

"Steam System" shall mean the Well and the related steam gathering system necessary to deliver Available Steam to the Delivery Point.

"Waste Water" shall mean liquid effluent, including, without limitation, condensates from the Steam and waste products or other substances of any nature from the Well.

"Well" shall mean the geothermal production well currently located on the HGP-A Site.

2. **Purchase and Sale of Steam.** Upon the terms and subject to the conditions set forth in this Agreement, Seller agrees to sell and to deliver at the Delivery Point to Buyer, and Buyer agrees to purchase and to receive at the Delivery Point, Available Steam. Seller agrees that Buyer shall have the exclusive right to purchase Available Steam.

3. **Term of Agreement.** This Agreement shall become effective and its term shall begin on the Effective Date and shall remain in full force and effect until June 19, 2014 unless earlier terminated pursuant to Section 10 hereof; provided that the term of this Agreement shall not extend beyond the term of the Lease.

4. **Delivery of Steam.** Buyer shall provide Seller with not less than thirty (30) days' written notice that Buyer is ready to accept initial delivery of Available Steam at the Delivery Point.

5. **Consideration.**

5.1 **Exclusivity Payment.** On the Effective Date, Buyer shall pay to Seller a payment of TWO HUNDRED FIFTY THOUSAND DOLLARS (\$250,000) for the exclusive right to receive Available Steam pursuant to the terms of this Agreement.

5.2 Steam Payment. Commencing from the Commencement Date, Buyer shall pay Seller for the Available Steam (the "Steam Payment"), in accordance with the formula and standards set forth in Exhibit B attached hereto and hereby made a part hereof; provided, however, that Buyer agrees to pay Seller a minimum Steam Payment per annum of THREE HUNDRED THOUSAND DOLLARS (\$300,000) (the "Minimum Annual Payment") whether or not Buyer receives Available Steam under this Agreement. The Steam Payment shall be calculated for each calendar month and shall be paid by Buyer to Seller, or Seller's account, fifteen (15) days after Buyer's receipt from HELCO of energy payments made under the Power Purchase Agreement for such calendar month. At the end of each quarter (commencing with the first quarter ending on the third calendar month after the Effective Date), Buyer and Seller shall determine the total amount of the Steam Payment paid or payable to Seller for the year through the end of such quarter. In the event that the total amount of Steam Payment paid or payable by Buyer to Seller through the end of such quarter does not exceed \$75,000 times the number of quarters having occurred in the relevant year, Buyer shall pay the difference between such product and the amount of the Steam Payment previously paid during that period on the date that the Steam Payment is, or would be, payable for the last month in such quarter. If the Steam Payment paid by Buyer during any year equals or exceeds the Minimum Annual Payment, then Buyer shall have no further payment obligation for the Minimum Annual Payment for such year.

5.3 Application of Payments. Buyer acknowledges that no payments made to Seller hereunder shall constitute any payments required to be made by Buyer to the Geothermal Asset Fund.

6. Seller's Reservation of Steam and Minerals. Seller reserves the right to use up to 10% of the Steam in connection with the HGP-A Site. In addition, Seller reserves the right to extract and own all Reserved Minerals. Except as reserved by Seller in this Section 6, all Available Steam shall be available for delivery to Buyer and Seller agrees not to develop and sell Available Steam or the energy associated therewith to any person other than Buyer.

7. Representations and Covenants of Buyer.

7.1 Waste Water. Buyer shall, at its own expense, handle and dispose of the Waste Water from Available Steam delivered to it, and all other waste produced by the Plants. If any commercial use is made of such Waste Water, the economic benefits of such commercial use shall belong to Buyer.

7.2 Compliance with Laws. Buyer shall at all times comply with all of the requirements of all local, state and federal agencies and authorities and observe all local, state and federal laws, regulations, consents, permits, licenses or approvals, now in force or which may hereafter be in force, including, but not limited to, all water and air pollution control laws and other environmental laws.

7.3 No Rights Under Lease. Buyer acknowledges that Seller is selling the Available Steam as permitted by the terms of the Lease and that Seller is not hereby conveying, transferring or assigning any of Seller's right, title and interest in the Lease to Buyer. Buyer further acknowledges that it is not an assignee of the Lease and that the sale of Available Steam hereunder is subject to the terms and provisions of the Lease.

7.4 Operation of Plants. Buyer shall utilize the Available Steam delivered to Buyer in accordance with prudent geothermal industry practices and, to the extent not inconsistent with such practices, Buyer shall utilize Available Steam prior to utilizing Steam from other sources available to Buyer.

7.5 Accounting.

(a) At its cost, Buyer shall install and maintain in accurate working order metering equipment in accordance with prudent industry standards for the measurement of (i) Available Steam received by Buyer at the Delivery Point and (ii) all Steam supplied to the Plants. Buyer shall test such equipment in accordance with prudent industry standards, and when requested by Seller.

(b) Buyer shall maintain records of all Steam supplied to the Plants, the Available Steam received by Buyer and of the payments under the Power Purchase Agreement for electrical power generated by the Plants, and of such other information as shall be relevant to the calculation of the Steam Payment, and shall provide to Seller in connection with the determination of the Steam Payment in accordance with Section 5, a statement of the calculation of the Steam Payment due for each month, quarter and year. Buyer agrees that Seller shall have the right to examine and audit the books and records of Buyer to the extent necessary or desirable to verify any statement, payment, calculation or determination made pursuant to this Agreement.

8. Representations and Covenants of Seller.

8.1 No Warranty of Title and Adequacy of Resource. Seller does not warrant Lessor's title to the HGP-A Site and makes no representation or warranty with respect to its title to, or the quality, quantity or presence of, Steam at the HGP-A Site.

8.2 Steam System. Seller shall maintain the Well and shall construct and maintain a Steam System from the Well to the Delivery Point, in each case in accordance with prudent geothermal industry standards, provided that Seller shall not be required to explore for, drill for, produce or deliver Steam beyond that which can be produced by the existing Well in accordance with such practices and subject to any limitations contained in the Lease. Seller may in its sole discretion make improvements to or rework the Well or drill additional geothermal wells.

9. Indemnification. Each party shall indemnify and hold harmless the other party, its partners, related political subdivision, and affiliates and their directors, officers, employees and agents (each, an "Indemnified Person"), from and against any liability, loss, damage, claim, Environmental Claims, cost or charge of any kind or nature (including attorney's fees and costs of litigation) incurred by an Indemnified Person as a result of any breach of this Agreement or any tortious conduct by such party, its partners, directors, officers, employees, agents or any other person whose acts would be imputed to such party, except to the extent that such liability, loss, damage or claim resulted from the gross negligence or willful misconduct of the Indemnified Person. Notwithstanding the above, the amount of any party's liability pursuant to this indemnity shall not exceed \$_____.

10. Termination.

(a) Default. In the event that one of the following events occurs with respect to a party to this Agreement (a "Defaulting Party"):

(1) Such Defaulting Party fails to pay a Steam Payment when due;

(2) Such Defaulting Party fails to make any other payment hereunder when due and more than five (5) days elapses after notice of such failure is given by the non-Defaulting Party;

(3) A representation made by such Defaulting Party in this Agreement or delivered pursuant to this Agreement shall prove to have been incorrect when made or deemed made;

(4) Such Defaulting Party shall fail to perform any covenant of such Defaulting Party under this Agreement within thirty (30) days of receipt of notice of such default from the non-Defaulting Party; provided that if such default cannot be cured (a) with the payment of money and (b) within such thirty (30) day period, then the Defaulting Party shall have such longer period as shall be reasonably necessary to cure such default so long as such cure is commenced within thirty (30) days after receipt of notice of such default and is, thereafter, diligently pursued to completion; or

(5) A bankruptcy or similar proceeding shall be commenced by or with respect to the Defaulting Party;

then, the non-Defaulting Party may, in its discretion, terminate this Agreement and pursue all remedies available to it at law or in equity.

(b) Non-Default

(1) By Buyer. Buyer shall have the right to terminate this Agreement upon ninety (90) days' prior written notice to Seller. In the event that Buyer so elects to terminate this Agreement, then both parties shall have no further obligations under this Agreement, except for their obligations under Sections 9 and 16.

(2) By Seller. Seller shall have the right to terminate this Agreement (i) upon ten (10) days' written notice to Buyer in the event that the Commencement Date does not occur prior to the first anniversary of the Effective Date, and (ii) upon ninety (90) days' written notice to Buyer in the event that Seller determines that the continued operation of the Well has become economically impracticable as determined by Seller in its sole discretion. In the event that Seller elects to terminate this Agreement, then both parties shall have no further obligations under this Agreement, except for their obligations under Sections 9 and 16.

11. Assignment. This Agreement and the rights of either party hereunder may be assigned, in whole or in part, as security for financing of the Plants (in the case of Buyer) or the Steam System (in the case of Seller) without the consent of

the other party, provided that the assignor shall promptly give the other party hereto written notice of such assignment, together with a copy of the executed instrument of assignment and the written assumption by the assignee of all of the assignor's obligations hereunder. In addition, Seller shall have the right to assign this Agreement to any agency, authority or other governmental entity of, or established pursuant to the laws of, the State of Hawaii. Except as aforesaid, this Agreement and the rights of either party hereunder may not be assigned without the prior written consent of the other party, which consent shall not be unreasonably withheld or delayed.

12. Benefit. This Agreement shall be fully binding upon the parties hereto and their respective successors, permitted assigns and legal representatives.

13. Notices. Any notice, request, approval, consent, order, instruction, direction or other communication under this Agreement given by either party to the other party shall be in writing and shall be delivered in person or mailed, properly addressed and stamped with the required postage, to the intended recipient at the address first above stated and to the attention of the person specified below the parties' respective signatures. Either party may from time to time change such address by giving the other party notice of such change. Notice of a change of address will be considered effective only upon physical receipt thereof.

14. Force Majeure. If either party shall be wholly or partially prevented from performing any act required to be performed by it herein (other than payment of a monetary obligation, it being the express understanding of the parties that no force majeure event shall relieve Buyer of its obligation to pay the Exclusivity Payment and the Minimum Annual Payment, whether or not Available Steam is delivered to Buyer), in any or all cases as a consequence of strikes; riots; fires; floods; lightning; rain; earthquake; volcanism; wind; tsunami; war; invasion; insurrection; civil commotion; accident; equipment failures; any lawsuit based upon environmental or land use grounds, unavailability of resources due to national defense priorities, any laws, rules, regulations or orders promulgated by federal, state or county governmental bodies or agencies; any rules, regulations or orders of any public body or official purporting to exercise authority or control respecting the activities and operations contemplated hereunder; the order of any court, judge or civil authority; any act of God or the public enemy; delays arising and/or any other delays caused by events or conditions which are beyond its exclusive control, then and in any such event such performance and the obligation of such party shall be extended, or suspended, as applicable, by the duration

of such delay, but in no event for more than one (1) year in total; provided, however that any suspension of performance shall not extend the initial term of this Agreement or any extension period beyond the term of the Lease. The party claiming force majeure shall promptly notify the other party of the condition giving rise to the force majeure event and shall also indicate the estimated duration of such condition and the proposed action to mitigate such condition.

15. Nonwaiver. The failure or delay of either party to insist upon strict performance of any of the provisions of this Agreement, to exercise any rights or remedies provided hereunder or by law, or to notify the other party in the event of a breach or default under this Agreement, shall not release or relieve either party from any of its obligations under this Agreement and shall not be deemed a waiver of any rights or remedies hereunder, nor shall any purported oral modifications of this Agreement operate as a waiver of any of the provisions hereof.

16. Confidentiality. The parties shall maintain in confidence the provisions of this Agreement and except as set forth in this Agreement, neither party shall disclose to any third party any information provided by one party to the other party that the providing party specifically indicates is confidential information, without the prior written consent of the other party. Specifically, the parties shall further maintain in confidence any information received by the other party pursuant to this Agreement concerning the production, treatment, extent, productivity and properties of Steam present in or produced from the geothermal resource underlying Buyer's adjoining properties. Notwithstanding the foregoing, this confidentiality provision shall not (i) apply to information already known by the receiving party through means other than the violation of the terms hereof, or information that becomes known to the general public through acts of other parties, or information received from third parties without restriction who did not acquire it directly or indirectly from the other party in breach of this Agreement and (ii) prohibit disclosure of such information to such party's attorney's, accountants and other consultants, or as required by law or legal process or the terms of the Lease, or in the case of Seller, to any agency, authority or other governmental entity of, or established pursuant to the laws of, the State of Hawaii.

17. Entire Agreement; Amendment. This Agreement embodies the entire agreement of the parties hereto and supersedes any and all prior agreements between the parties regarding the subject matter hereof. No change, amendment or modification of any of the provisions hereof shall be valid

unless set forth in a written instrument signed by each of the parties hereto.

18. Further Assurances. The parties shall take such other actions, and execute such other documents, that may be necessary to effectuate the provisions hereof.

19. Construction. This Agreement shall be construed as a whole. All Section headings are for convenience of reference only and shall not affect the construction of any provision hereof.

20. No Partnership. This Agreement provides for the sale of Available Steam by Seller to Buyer, and is not intended to create a partnership, joint venture or agency relationship between the parties.

21. Applicable Law. This Agreement shall be interpreted, construed and enforced in all respects in accordance with the laws of the State of Hawaii applicable to contracts made in Hawaii by residents thereof and to be performed entirely within such State. The parties agree that any action or suit regarding any dispute arising between the parties about the terms of this Agreement or the transaction contemplated by this Agreement shall be brought into a court of competent jurisdiction in the State of Hawaii, and in no other jurisdiction.

22. Non-Utility Status. The parties agree that Seller is not, and is not intended by the execution, delivery or performance of this Agreement to be, a public utility, and that no Steam produced by Seller, or the Steam System and property owned or leased by Seller is dedicated, offered or sold to the public.

23. Counterparts. This Agreement may be executed in counterparts, each of which shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same Agreement.

24. Limitations on Liability.

24.1 Buyer. Notwithstanding any other provisions of this Agreement to the contrary, Seller agrees that no partner of Buyer, or AMOR VI Corporation, AMOR VIII Corporation, Ormat Energy Systems, Inc., or Ormat, Inc., or any parent or affiliate of any of the foregoing (each, a "Related Party") or any past, present or future incorporator, subscriber of stock of, or stockholder, officer or director of any Related Party shall be liable for any of the obligations of Buyer under this Agreement.

24.2 Seller. Notwithstanding any other provision of this Agreement to the contrary, Buyer agrees that this Agreement does not impose any pecuniary liability on the State of Hawaii or any political subdivision thereof [state exception, if any].

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date and year first written above.

NATIONAL ENERGY LABORATORY OF
HAWAII AUTHORITY

By: _____
Its: Executive Director

PUNA GEOTHERMAL VENTURE

By: AMOR VIII CORPORATION
Its Managing Partner

By: _____
Its:

EXHIBIT B

STANDARDS AND FORMULA TO CALCULATE ANNUAL STEAM PAYMENT

Standards for Calculating the Steam Payment. The Steam Payment shall be calculated subject to the following:

1. The Steam Payment shall be calculated monthly within five (5) days after HELCO has made the required energy payments to Buyer under the Power Purchase Agreement.

2. Steam shall be valued at 45% of the aggregate amount of energy payments payable by HELCO to Buyer for such monthly period pursuant to the Power Purchase Agreements (the "HELCO Revenues") for the Plants.

3. Seller shall be entitled to a percentage of the HELCO Revenues based on Steam Value and the amount of Available Steam delivered to Buyer pursuant to the Agreement in relation to the aggregate amount of Steam supplied to the Plants.

4. All Steam shall be measured at the wellhead; provided that Available Steam shall be measured at the Delivery Point in accordance with this agreement.

Formula. The formula for calculating the Steam Payment is as follows:

Steam Payment = (45%) x (HELCO revenues) x (amount of Available Steam/aggregate amount of Steam)

Sample Calculation. Assuming the following facts for a particular month:

- a. Available Steam = 60,000 pounds per hour;
- b. Aggregate amount of Steam = 600,000 pounds per hour;
- c. HELCO Revenues = \$1,000,000.

Steam Payment = (45%) x (\$1,000,000) x (60,000/600,000) = \$45,000.

OPERATIONS AND MAINTENANCE AGREEMENT

THIS OPERATIONS AND MAINTENANCE AGREEMENT ("Agreement") is dated as of _____, 1990 by THE NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY, a body corporate and public instrumentality established pursuant to Act 224 of the Fifteenth Legislature of the State of Hawaii, in relation with the State Department of Planning, Economic Development and Tourism, whose business address is P.O. Box 1749, Kailua-Kona, Hawaii 96745 ("Owner"), and _____, a _____, with offices at _____ ("Operator").

R E C I T A L S

A. Owner is the successor in interest to The Research Corporation of the University of Hawaii under that certain State of Hawaii Department of Land and Natural Resources Geothermal Resources Mining Lease No. S-4602 entered into between the State of Hawaii ("Lessor") and The Research Corporation of the University of Hawaii on June 19, 1979 (the "Lease"). The Lease covers certain geothermal resource property located within the Lower East Rift Geothermal Subzone ("LERGS") of the Puna District, Island and State of Hawaii, situate on Tax Map Key No. 3rd/1-4-01:02 and commonly referred to as the Hawaii Geothermal Project-Abbott site described on Exhibit A attached hereto (the "HGP-A Site").

B. The Lease grants certain rights to sell geothermal resources and geothermal by-products from the HGP-A Site.

C. Puna Geothermal Venture, a Hawaii general partnership ("PGV"), an affiliate of Operator, intends to own or lease one or more geothermal power plants in LERGS ("Plants") which will utilize geothermal resources to produce electricity on properties owned or leased by PGV adjoining the HGP-A Site.

D. Owner and PGV are concurrently entering into that certain Steam Sales Agreement dated as of even date herewith (the "Steam Sales Agreement").

E. Owner desires to engage Operator to be responsible for the operation and maintenance of the Steam System (as hereinafter defined) from and after the date hereof and Operator is willing to

accept such engagement upon the terms and conditions hereinafter set forth.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing and of the premises and mutual covenants herein contained, the parties hereto agree as follows:

1. Definitions. As used herein, the following terms shall have the following respective meanings (all terms defined in this Agreement shall have the same meanings when used in the plural and vice versa):

"Approved O&M Budget" shall mean the annual budget approved by Owner with respect to the Work pursuant to Section 11.2 hereof.

"Delivery Point" shall mean a point designated by Owner as the place for delivery of Steam to PGV pursuant to the Steam Sales Agreement.

"Effective Date" shall mean _____, 1990.

"Environmental Claim" shall mean, any and all suits, sanctions, liabilities, legal proceedings, claims, demands, losses, costs and expenses of whatsoever kind or character, including, without limitation, attorneys' fees, civil fines or penalties or other expenses incurred, assessed or sustained as a result of or in connection with Hazardous Materials.

"Hazardous Materials" shall mean substances defined as hazardous or toxic substances pursuant to applicable present or future local, state or federal laws or regulations, or which are classified as hazardous or toxic under applicable present or future local, state or federal laws or regulations.

"Materials" shall mean any and all material, equipment and supplies, including consumable supplies, tools and office supplies, for the performance of the Work under this Agreement.

"Reimbursable Costs" shall mean the costs described in Appendix 1 attached hereto to which Operator is entitled to reimbursement from Owner.

"Steam" shall mean geothermal steam and/or hot water.

"Steam System" shall mean the Well and the related steam gathering system necessary to deliver Steam to the Delivery Point.

"Well" shall mean the geothermal production well currently located on the HGP-A Site.

"Work" shall mean the operation and maintenance of the Steam System to be performed by Operator as described in Section 5 hereof.

2. **Engagement.** Upon the Effective Date, Owner hereby engages Operator to conduct the operation and maintenance of the Steam System on the terms and conditions set forth below and Operator hereby accepts such engagement.

3. **Term of Agreement.** This Agreement shall become effective on the Effective Date and shall remain in full force and effect for one year, and after the expiration of such initial term, shall automatically be renewed on the same terms and conditions for successive one year terms, unless Owner gives Operator written notice of Owner's intent not to renew the Agreement at least ninety (90) day's prior to the anniversary date of the Effective Date. Notwithstanding anything to the contrary in the foregoing sentence, this Agreement is subject to early termination by either party in accordance with Section 4 hereof.

4. **Termination of Agreement.**

4.1 **By Operator.**

(a) **Non-Default.** This Agreement may be terminated by Operator at any time upon one hundred and eighty (180) days' prior written notice to Owner. In the event that Operator so elects to terminate this Agreement, then both parties shall have no further obligations under this Agreement, except for their obligations under Sections 15 and 17.

(b) **Default.** Operator shall have the right, in its discretion, to terminate this Agreement upon (i) the failure of Owner to make any payment required under Section 7 hereof when due and more than five (5) days elapses after notice of such failure is given to Owner; (ii) the failure of Owner to perform any other material covenant or obligation hereunder within thirty (30) days of receipt of notice of such default from Operator; provided that if such default cannot be cured (a) with the payment of money and (b) within such thirty (30) day period, then Owner shall have such longer period as shall be reasonably necessary to cure such default so long as such cure is commenced within thirty

(30) days after receipt of notice of such default and is, thereafter, diligently pursued to completion; or (iii) the commencement of a bankruptcy or similar proceeding by or with respect to Owner.

4.2 By Owner.

(a) Non-Default. Owner shall have the right to terminate this Agreement (a) upon ninety (90) days' written notice to Operator in the event that Owner determines that the continued operation of the Well has become economically impracticable as determined by Owner in its sole discretion. In the event that Owner elects to terminate this Agreement then both parties shall have no further obligations under this Agreement, except for their obligations under Sections 15 and 17.

(b) Owner shall have the right, in its discretion, to terminate this Agreement in the event that a representation made by Operator in this Agreement or delivered pursuant to this Agreement shall prove to have been incorrect when made or deemed made or upon (i) the failure of Operator to perform any other material covenant or obligation hereunder within thirty (30) days of receipt of notice of such default from Owner; provided that if such default cannot be cured (a) with the payment of money and (b) within such thirty (30) day period, then Operator shall have such longer period as shall be reasonably necessary to cure such default so long as such cure is commenced within thirty (30) days after receipt of notice of such default and is, thereafter, diligently pursued to completion or (ii) the commencement of a bankruptcy or similar proceeding by or with respect to Owner.

5. Scope of Work.

During the term of this Agreement, Operator shall perform all operation and maintenance activities with respect to the Steam System necessary to produce and deliver Steam to PGV at the Delivery Point in accordance with the Steam Sales Agreement and as Owner may request from time to time (the "Work"). In its performance of the Work, Operator shall:

5.1 Provide supervision and personnel in connection with the cleaning, operation, major and routine repairs, rehabilitation and maintenance of the Steam System and perform regular and routine operation, inspection, maintenance, and repair of the Steam System as may be necessary, as determined by Operator and approved by Owner to enable Owner to satisfy its obligations under Section 8.2 of the Steam Sales Agreement.

5.2 Make primary use of its own employees where feasible; provided, however, that Operator may retain any

affiliate of Operator, outside consultants and other independent contractors to provide any service hereunder that Owner has approved.

5.3 Perform the Work in accordance with good engineering and operating practices and conduct all Work with due and reasonable diligence, in an orderly and prudent manner and in accordance with sound geothermal industry practices, excepting any such obligations which would otherwise be obligations of Operator but which Owner has expressly undertaken to perform.

5.4 Abide by all the terms and conditions contained in the Steam Sales Agreement and the Lease which control, affect or pertain to any operations to be conducted under this Agreement excepting any such obligations which would otherwise be obligations of Operator but which Owner has expressly undertaken to perform.

5.5 Conduct all operations and maintenance under this Agreement in full compliance with all applicable laws, rules, orders and regulations of all federal, state, municipal and other governmental authorities having jurisdiction.

5.6 On behalf of Owner, procure Material as required for the Work pursuant to Section 5.2.

5.7 In the event of any interruption in the operation of the Steam System, immediately exercise efforts to restore the Steam System to operation as soon as is reasonably possible.

5.8 Obtain all permits and licenses necessary for the operation and maintenance of the Steam System.

6. Expenditure Authority.

6.1 Expenditure Authority. Operator shall have the authority to procure Materials and make expenditures on Owner's behalf for items as deemed necessary by Operator in completing the Work; provided, however, that such expenditures may not exceed the amounts set forth in the Approved O&M Budget therefor without the prior written consent or authorization of Owner.

6.2 Emergencies. In the event of an explosion, fire, flood, blowout, or other sudden emergency, whether of the same or different nature, Operator may take such steps and incur such expenses in an amount not to exceed \$[10,000.00] (whether or not the expenditures are in the Approved O&M Budget) as in Operator's reasonable opinion are required to deal with the emergency and to safeguard life or property, but Operator shall, as promptly as possible, report the emergency to Owner, which report shall be

accompanied by a preliminary estimate of the costs and expenses to be incurred in connection with such repairs and other work.

7. Compensation.

7.1 Reimbursable Costs. Operator shall be reimbursed for Reimbursable Costs in accordance with Section 8 hereof.

7.2 Annual Fee. In addition to receiving reimbursement for Reimbursable Costs pursuant to Section 7.1 hereof, Operator shall earn a monthly fee of \$ _____, payable by Owner in accordance with Section 8 hereof.

8. Payments. Within twenty (20) days (or as soon thereafter as practicable) after the last day of each calendar month during the term of this Agreement, Operator shall submit a billing for the Reimbursable Costs, together with copies of any supporting data and invoices. Subject to Owner's right to conduct an audit pursuant to Section 12.3 hereof, Owner shall pay the full amount of the billing together with the monthly fee within thirty (30) days after receipt of the billing. No such Reimbursable Costs shall be invoiced by Operator unless they were incurred in connection with the Work, Operator's personnel policies and practices and the applicable Approved O&M Budget, except in the case of such costs and expenses incurred in the event of an emergency pursuant to Section 6.2 hereof. If at any time in the performance of the Work, Operator becomes aware that for any monthly period Reimbursable Costs, exceed or will exceed the amount provided therefor in the Approved O&M Budget, Operator shall promptly notify Owner of such budget overrun and shall not, without the written approval of Owner perform any additional Work, except in the case of an emergency pursuant to Section 6.2 hereof.

9. Facilities, Equipment and Improvements. Subject to any restrictions or limitations contained in the Lease, Operator may install, construct and place upon the HGP-A Site such facilities including machinery, buildings, equipment of whatever nature and other property and improvements, as may be necessary or usual to the activities contemplated hereunder. All such machinery, buildings, equipment, property and improvements acquired for or made upon the HGP-A Site by Operator and charged to the Owner as herein provided, whether or not permanently affixed to the HGP-A Site, shall become and remain the property of the Owner (subject to any contrary provision in the Lease or other agreement between Owner and the Lessor) from and after the time they are first acquired for or made upon the HGP-A Site.

10. Assistance and Right of Entry.

10.1 Assistance. During the term of this Agreement, each party hereto shall provide such reasonable assistance and cooperation as the other party hereto may reasonably request in connection with the performance of the duties and obligations of each party under this Agreement.

10.2 Right of Entry. Subject to the rights of Lessor under the Lease and the limitations set forth therein, Owner shall provide Operator with immediate entry upon the HGP-A Site for designated identified personnel employed by Operator or independent operators contracted by Operator to perform the Work.

11. Costs and Expenses; Budget.

11.1 Costs and Expenses. Except as otherwise expressly provided herein, Operator shall promptly pay and discharge all costs and expenses incurred in the operation and maintenance of the Steam System or the HGP-A Site pursuant to this Agreement or otherwise in connection with the performance and discharge of its responsibilities hereunder.

11.2 Approved O&M Budget. Prior to the Effective Date hereof and thereafter, within sixty (60) days of each anniversary date of the Effective Date, Operator shall prepare and submit to Owner for its review and approval a proposed budget for the costs of the Work under this Agreement for the next twelve month period. Such budget shall include all anticipated items of the Reimbursable Costs (other than emergency expenses incurred pursuant to Section 6.2), itemized in reasonable detail with estimates of the amount of each item. On or before the Effective Date and thereafter within thirty (30) days of each anniversary date of the Effective Date, Owner shall consult with Operator as to any items of cost or expense shown in the proposed budget as to which Owner objects or has any question. Operator shall delete and/or modify any items as to which Owner continues to object after such consultation to the extent necessary to obtain the approval of such proposed budget by Owner. Upon obtaining such approval by Owner, Operator shall be deemed authorized to perform the operations and projects so approved in such proposed budget. Operator shall not be entitled to reimbursement from Owner hereunder for any item of cost or expense not contained in the budget as approved by Owner, as provided hereinabove, except as provided in Section 6.2 hereof and except any item which shall otherwise be authorized or ratified by Owner.

12. Representations and Covenants of Operator. Operator represents and warrants and covenants and agrees as follows:

12.1 Compliance with Laws. Operator shall at all times comply with all of the requirements of all local, state and

federal agencies and authorities and observe all local, state and federal laws, regulations, consents, permits, licenses or approvals, now in force or which may hereafter be in force, including, but not limited to, all water and air pollution control laws and other environmental laws.

12.2 No Rights Under Lease. Operator acknowledges that Owner is retaining Operator to perform the Work described herein and that Owner is not hereby conveying, transferring or assigning any of Owner's right, title and interest in the Lease to Operator.--

12.3. Access to Property, Records and Information. Owner's authorized representatives shall have access to the HGP-A Site at any and all times to inspect or observe operations and shall have free access at all times during reasonable business hours to information relating to the Work and shall have the right to audit Operator's books, accounts and records relating thereto. Operator shall keep an accurate and itemized record of expenditures and costs attributable the Work. Operator shall, upon request, furnish Owner copies of all well logs, tests, and other pertinent information, including without limitation, all such information concerning operations of the Steam System as shall be made known to or discovered by Operator.

13. Assignability of Interest. Except as expressly, provided herein, Operator shall not permit or suffer any person to perform the obligations of Operator hereunder or to occupy or use the HGP-A Site or any part thereof without the prior written consent of Owner, which consent may be given or refused in the sole discretion of Owner. Any purported assignment or other transfer by Operator without the consent of Owner as provided herein shall be void and shall at the option of Owner terminate this Agreement. Nothing in this Section shall prevent Operator from contracting with qualified entities to perform obligations hereunder, so long as Operator remains primarily responsible for such performance and the compensation required for performance of such obligations is reasonable.

14. Insurance.

(a) In connection with the performance of its obligations hereunder, Operator shall, as a Reimbursable Cost, maintain or cause to be maintained in effect throughout the term of this Agreement, with insurers of recognized responsibility, insurance policies insuring against loss or damage to the person or property of others from such risks and in such amounts as a contractor of recognized responsibility performing similar obligations under similar circumstances would, in the prudent management of its business, maintain or cause to be maintained

with respect to similar risks; provided, however, that without limitation of the foregoing such insurance shall include:

(i) comprehensive general liability insurance covering all work to be performed under this Agreement with a combined single limit per occurrence of [(\$1,000,000)] for bodily injury and property damage; and

(ii) comprehensive automobile liability insurance including non-owned and hired vehicle coverage with a combined single limit per occurrence of [(\$1,000,000)] for bodily injury and property damage.

(iii) "All Risk" replacement cost coverage on declared real and personal property located at the HGP-A Site, (excluding Business Interruption coverage), with a coverage limit of not less than [\$1,000,000].

(b) Any insurance policies maintained in accordance with this Section 14 shall name Owner and Lessor as additional insureds thereunder. In addition, any insurance policies maintained shall insure the interests of Owner (and the other named insureds) regardless of any breach of or violation by Operator of any warranties, declarations or conditions contained in such policies. Each such insurance policy shall expressly provide that all of the provisions thereof, except the limits of liability (which shall be applicable to all insureds as a group) and liability for premiums shall operate in the same manner as if there were a separate policy covering each insured. In addition to the foregoing, such policies shall contain a provision stating that the insurance underwriters waive all rights of subrogation in favor of Operator and the other named insureds.

(c) Within thirty (30) days of the Effective Date and thereafter at intervals of not more than twelve (12) months, Owner may request, and Operator shall thereafter furnish to Owner all certificates of the applicable insurers, in each case signed by a responsible officer thereof, evidencing that the insurance required hereunder is presently being maintained by Operator. Operator will cause the insurers with whom it maintains such insurance to advise Owner in writing, at least thirty (30) days prior thereto, of the termination of any such insurance. Operator will advise the Owner in writing: (i) promptly of any default in the payment of any premiums and of any other act or omission on the part of Operator that may invalidate or render unenforceable any such insurance; (ii) promptly of any notice or other communication received from any insurer by which such insurer indicates that it has suspended or terminated, or may seek or suspend or terminate, any such insurance; and (iii) at least

thirty (30) days prior thereto, of the termination of any such insurance by reason of Operator's failure to renew such insurance.

15. Indemnification. Each party hereto (the "Indemnifying Party") agrees to assume liability for, and shall indemnify, protect, save and keep harmless the other party hereto and, as applicable, such other party's successors, assigns, agents, officers, directors, employees and representatives (collectively, the "Indemnified Parties"), from and against, any and all liabilities, obligations, losses, damages, penalties, claims, Environmental Claims, actions, suits, costs, expenses and disbursements (including legal fees and expenses) of whatever kind and nature imposed upon, asserted against or reasonably incurred by any of the Indemnified Parties (whether or not also indemnified against by any other person), (i) arising as a result of or in connection with any failure on the part of the Indemnifying Party to perform its obligations under this Agreement or (ii) arising out of or in any way connected with the acts or omissions of the Indemnifying Party or any one acting on such Indemnifying Party's behalf (other than an Indemnified Party), except as the same may result from the negligence or wilful misconduct of any Indemnified Party.

16. Nonwaiver. The failure or delay of either party to insist upon strict performance of any of the provisions of this Agreement, to exercise any rights or remedies provided hereunder or by law, or to notify the other party in the event of a breach or default under this Agreement, shall not release or relieve either party from any of its obligations under this Agreement and shall not be deemed a waiver of any rights or remedies hereunder, nor shall any purported oral modifications of this Agreement operate as a waiver of any of the provisions hereof.

17. Confidentiality. The parties shall maintain in confidence the provisions of this Agreement and except as set forth in this Agreement, neither party shall disclose to any third party any information provided by one party to the other party that the providing party specifically indicates is confidential information, without the prior written consent of the other party. Operator further agrees to maintain in confidence any information received by it pursuant to this Agreement or obtained by it during the course of performing the Work concerning the production, treatment, extent, productivity and properties of Steam present in or produced from the HGP-A Site. Notwithstanding the foregoing, this confidentiality provision shall not (i) apply to information already known by the receiving party through means other than the violation of the terms hereof, or information that becomes known to the general public through acts of other parties, or information received from third parties without restriction who did not acquire it directly or indirectly from the other party in

breach of this Agreement and (ii) prohibit disclosure of such information to such party's attorney's, accountants and other consultants, or as required by law or legal process or the terms of the Lease, or in the case of Owner, to any agency, authority or other governmental entity of, or established pursuant to the laws of, the State of Hawaii.

18. Entire Agreement; Amendment. This Agreement embodies the entire agreement of the parties hereto and supersedes any and all prior agreements between the parties regarding the subject matter hereof. No change, amendment or modification of any of the provisions hereof shall be valid unless set forth in a written instrument signed by each of the parties hereto.

19. Further Assurances. The parties shall take such other actions, and execute such other documents, that may be necessary to effectuate the provisions hereof.

20. Construction. This Agreement shall be construed as a whole. All Section headings are for convenience of reference only and shall not affect the construction of any provision hereof.

21. Applicable Law. This Agreement shall be interpreted, construed and enforced in all respects in accordance with the laws of the State of Hawaii applicable to contracts made in Hawaii by residents thereof and to be performed entirely within such State. The parties agree that any action or suit regarding any dispute arising between the parties about the terms of this Agreement or the transaction contemplated by this Agreement shall be brought into a court of competent jurisdiction in the State of Hawaii, and in no other jurisdiction.

22. Counterparts. This Agreement may be executed in counterparts, each of which shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same Agreement.

23. Independent Contractor. For all purposes of this Agreement, Operator shall at all times act as and be deemed to be an independent contractor, and shall not act as nor be deemed to be an employee or agent of the Owner.

24. Limitations on Liability.

24.1 Operator. Notwithstanding any other provisions of this Agreement to the contrary, Owner agrees that no owner or partner of Operator, or AMOR VI Corporation, AMOR VIII Corporation, Ormat Energy Systems, Inc., or Ormat, Inc., or any parent or affiliate of any of the foregoing (each, a "Related Party") or any past, present or future incorporator, subscriber of

stock of, or stockholder, officer or director of any Related Party shall be liable for any of the obligations of Operator under this Agreement.

24.2 Owner. Notwithstanding any other provision of this Agreement to the contrary, Operator agrees that this Agreement does not impose any pecuniary liability on the State of Hawaii or any political subdivision thereof [state exception, if any].

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

Owner:

THE NATURAL ENERGY LABORATORY OF
HAWAII AUTHORITY

By: _____
Its: Executive Director

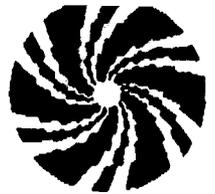
Operator:

By: _____
Its: _____

APPENDIX 1

REIMBURSABLE COSTS

ORMAT®



June 19, 1990
Reference No. 90218.011

Ms. Clare Hachmuth
General Manager
Natural Energy Laboratory of Hawaii
P.O. Box 1749
Kailua-Kona, Hawaii 96745

Subject: HGP-A Steam Sales Agreement

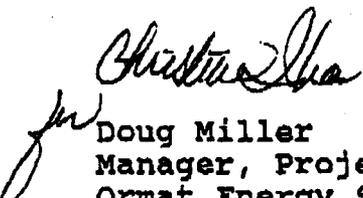
Dear Clare:

As we discussed, attached please find the proposed Steam Sales Agreement between Puna Geothermal Venture (PGV) and the State of Hawaii. The proposed agreement reflects the following principles previously discussed:

1. An initial payment to provide for the exclusive rights to use steam from the HGP-A resource;
2. An additional "Availability or Maintenance" fee if the existing HGP-A well is utilized;
3. A steam fee to be paid for the steam itself subject to an annual minimum fee;
4. Maximum flexibility to allow for future State research uses; and
5. Each party will remain responsible for its own operations and maintenance.

If you have any questions, please call me at 961-2184.

Sincerely,


Doug Miller
Manager, Project Development
Ormat Energy Systems, Inc. for
Puna Geothermal Venture

Attachments (5)

PUNA GEOTHERMAL VENTURE

101 Aupuni Street Suite 1014-B, Hilo, Hawaii 96720 • Telephone (808) 961-2184 • Facsimile (808) 961-3531
 610 East Glendale Ave., Sparks, Nevada 89431-5811 • Telephone (702) 356-9111 • Facsimile (702) 356-9125

STEAM SALES AGREEMENT

THIS STEAM SALES AGREEMENT is made this _____ day of _____, 1990 by the NATURAL ENERGY LABORATORY OF HAWAII, a division of the University of Hawaii, with offices at 220 S. King Street, Suite 1280, Honolulu, Hawaii 96813 ("Seller"), and PUNA GEOTHERMAL VENTURE, a Hawaii general partnership, with offices at 101 Aupuni Street, Suite 1014-B, Hilo, Hawaii 96720 ("Buyer").

R E C I T A L S:

A. Seller, acting for and on behalf of the State of Hawaii, is the owner of certain geothermal resource property located within the Lower East Rift Geothermal Subzone ("LERGS") of the Puna District, Island and State of Hawaii, situate on Tax Map Key No.: 3rd/1-4-01:82 and commonly referred to as the Hawaii Geothermal Project-Abbott site ("HGP-A Site").

B. Buyer intends to own or lease one or more geothermal power plants ("Plants") which will utilize geothermal steam and/or hot water ("Steam") to produce electricity on properties owned or leased by Buyer adjoining Seller's parcel.

C. Seller desires to sell, and Buyer desires to purchase, Steam produced from the geothermal resource property owned or leased by Seller pursuant to the terms of this Agreement.

D. Buyer further desires, and Seller is willing to grant to Buyer, an option to drill and develop additional production and injection wells on Buyer's properties capable of utilizing the geothermal resource capabilities underlying the HGP-A Site.

NOW, THEREFORE, in consideration of the mutual agreements and covenants set forth hereinbelow, the parties hereto agree as follows:

1. Purchaser of Steam from Seller's Existing Well. Seller shall (subject to the availability of commercial quantities of Steam from the HGP-A Site) sell exclusively to Buyer, and Buyer shall purchase from Seller, available Steam, on as an-needed basis, from the existing geothermal production well ("Well") located upon the HGP-A Site for use in meeting the hydrothermal energy requirements of the Plant(s) which Buyer may hereafter operate within the LERGS. The price and

the terms for the sale of Steam shall be as set forth in this Agreement.

2. Delivery of Steam. Upon the completion of Buyer's Plant(s) and Buyer's written notice to Seller that Buyer is ready to accept available Steam from the Well, Seller shall deliver Steam to Buyer at their common boundary line, at a point of delivery mutually acceptable to the parties ("Point of Delivery"). If Buyer, in its sole discretion, determines that it is necessary to upgrade the Well and/or its wellhead, valves, meters, piping system or ancillary equipment in order to move the Steam in a safe and prudent manner to the Point of Delivery, then Buyer shall make such improvements at Buyer's expense, or Buyer may have the option of making such improvements as Seller's contractor.

3. Consideration for Exclusive Purchase Agreement: Well Availability Fee. In full consideration for (i) the grant by Seller of the exclusive right to purchase Steam, as provided herein and (ii) Seller's agreement to maintain and make available the Well to Buyer, Buyer shall pay to Seller the following amounts:

(a) Exclusive Purchase Rights and Grant of Option. Upon the execution of this Agreement, Buyer shall pay to Seller the one-time sum of TWO HUNDRED FIFTY THOUSAND AND NO/100 DOLLARS (\$250,000.00) for (i) the exclusive right to purchase Steam from the Well, subject to Seller's reservation of steam use set forth in Paragraph 5, and (ii) the option to drill additional geothermal wells as set forth in Paragraph 6.

(b) Well Availability Fee. Buyer shall also pay to Seller an annual payment of FIFTY THOUSAND AND NO/100 DOLLARS (\$50,000.00) for Seller to maintain and make available, during the term hereof, the Well and its wellhead, valves, meters, piping and ancillary equipment, for the purchase and delivery of Steam to Buyer. The first annual payment shall be due one (1) year from the date of execution hereof and each subsequent annual payment shall be due on each anniversary date thereafter for as long as Buyer continues to purchase Steam delivered by Seller from the Well. If Seller should, for any reason whatsoever, cease to maintain or otherwise make available its Well as aforesaid, then Buyer shall be under no obligation to pay this annual fee from the year following the year that Steam from the Well becomes unavailable.

4. Steam Fee.

(a) In addition to the payments set forth in Paragraph 3, Buyer shall pay to Seller the minimum amount of FIFTY THOUSAND AND NO/100 DOLLARS (\$50,000.00) per year during the term hereof for Steam purchased under this Agreement, in accordance with the formula set forth in Appendix A attached hereto and hereby made a part hereof. Such payments shall be made by Buyer to Seller, or Seller's account, no later than forty-five (45) days after the end of each calendar quarter during the term hereof, with the first (1st) such quarterly payment being made within forty-five (45) days after the end of the calendar quarter in which first occurs (i) the initial delivery of Steam to Buyer at the Point of Delivery, or (ii) Buyer's purchase of Steam produced from the additional geothermal wells drilled and operated by Buyer pursuant to Paragraph 6. At the end of each calendar year during term hereof, Buyer and Seller shall determine the total amount of Steam purchased from Seller by Buyer during such calendar year and the total amount paid by Buyer therefor. If the amount is less than \$50,000.00, Buyer shall pay to Seller the amount of the deficiency within forty-five (45) days after the date of such determination. If the amount paid by Buyer for the Steam during such calendar year equals or exceeds \$50,000.00, then Buyer shall have no further payment obligation for the Steam Fee for such year.

(b) Buyer shall keep records of all Steam delivered to and purchased by Buyer (whether at the Point of Delivery or from the aforesaid additional wells) and shall make available such records to Seller, upon Seller's request, that are reasonably required to enable Seller to verify the amount of Steam delivered and sold to Buyer.

5. Seller's Reservation of Steam Use. The parties shall cooperate in providing Steam, brine, heat or a combination thereof from the Well to the research facilities operated or maintained by Seller on the HGP-A Site if (i) technically and economically feasible, and (ii) not prohibited by permits issued to either Buyer or Seller. The parties shall coordinate all required physical arrangements on the HGP-A Site for the surface and gathering facilities to accomplish the foregoing; provided, however, that each party shall be separately responsible for the operation and maintenance of its own such facilities

6. Option for Additional Wells.

(a) Seller hereby grants to Buyer the option to drill and develop additional geothermal production or injection wells capable of utilizing the geothermal resource capabilities underlying the HGP-A Site as Buyer deems necessary or appropriate for the continued operation of the Plant(s). Buyer shall drill any such additional wells utilizing the HGP-A Site's geothermal resource capabilities as aforesaid:

(i) By means of directional drilling;

(ii) From a surface drilling site located not closer than 50 feet from the boundaries of the HGP-A Site, unless otherwise approved in writing by the Seller; and

(iii) With a bottom hole location beneath the HGP-A Site.

(b) Buyer shall pay, as part of the Steam Fee pursuant to Paragraph 4, the purchase price for all Steam delivered to Buyer from any such additional wells. The parties intend that the Steam Fee shall include Steam purchased from both the Well and from any such additional wells that Buyer drills and develops pursuant to this option.

7. Covenants of Buyer.

7.1 Waste. Buyer shall, at its own expense, handle and dispose of the discharge, mineral residue, sludge and waste ("Discharge") produced by the Plant(s) as a result of the use of the Steam. If any commercial use is made of such Discharge, the economic benefits of such commercial use shall belong to Buyer. Buyer shall be responsible for the injection of such Discharge produced by the Plant(s); provided, however, that Seller shall remain responsible for the injection of such Discharge resulting from Seller's reserved uses set forth in Paragraph 5.

7.2 HGP-A Site. In taking and using Steam from the Well and/or any such additional wells, and in performing any other obligations or exercising any rights hereunder, Buyer shall at all times comply with the requirements of any applicable regulations, plans of operation, permits or orders relating to the HGP-A Site, the Well and the geothermal resource underlying the HGP-A Site. Buyer shall use Steam made available to it from the HGP-A Site in a manner consistent with

prudent industry practices and within the existing operational parameters of the Plant(s) utilizing such Steam.

7.3 Operation and Maintenance. During the term hereof, Buyer, as Seller's contractor, shall clean, repair, operate and maintain in a manner consistent with prudent industry practices, the Well and its wellhead, valves, meters, piping and any ancillary equipment located on the HGP-A Site and which utilize the geothermal resource underlying the HGP-A Site. However, each party shall be responsible for the operation and maintenance of its own separate facilities (other than the Well and its wellhead, piping and any ancillary equipment, which shall be operated and maintained by Buyer as aforesaid) on the HGP-A Site, and each party assumes full liability and agrees to hold the other party harmless from the indemnifying party's own acts and omissions in the operation and maintenance of its separate facilities.

7.4 Obligations To Be Without Recourse to Buyer. Notwithstanding any other provisions of this Agreement to the contrary, Seller shall look solely to the Plant(s) for (i) the payment of all amounts coming due to Seller under this Agreement, (ii) the performance by Buyer of all of its covenants, agreements and obligations hereunder, and (iii) any damages resulting from Buyer's breach of its representations, warranties and covenants hereunder or under any other agreement, undertaking, certificate or other document executed and delivered by Buyer contemplated hereby (whether or not expressed or general obligations of Buyer); and, therefore, no judgment or recourse (except a judgment against the Plant(s)) shall be sought or enforced for the payment of performance of Buyer's obligations under this Agreement or any such other agreement, undertaking, certificate or document contemplated hereby: (a) against Buyer in its individual or personal capacity, other than in connection with the enforcement of remedies against the Plant(s), (b) against any assets or property of Buyer other than its rights in the Plant(s), (c) against AMOR VI Corporation, AMOR VIII Corporation, Ormat Energy Systems, Inc., Ormat, Inc. and/or any partner of Buyer or any parent or other affiliate of any of the foregoing, or (d) any past, present or future incorporator or subscriber to the capital stock of, or stockholder, officer or director of, Ormat Inc., Ormat Energy Systems, Inc., any partner of Buyer or any parent or other affiliate of any of the foregoing, or any of their respective assets or property.

8. Covenants of Seller.

8.1 Adequacy of Resource. Seller makes no representation, warranty or covenant with respect to the

quality, quantity or presence of Steam underlying the HGP-A Site, and shall not be required to explore for, drill for, produce or deliver Steam or permit injection beyond that which can be produced by, or injected from, the Well in accordance with prudent resource management practices.

8.2 Permits. Seller shall cooperate with Buyer as may be reasonably required to obtain all authorizations, licenses, permits and approvals that are necessary for the performance by the parties of their respective obligations under this Agreement, and shall, if any of the same are required by Buyer but cannot be transferred, assigned or conveyed to Buyer, cooperate with Buyer to exercise Seller's rights thereunder for the benefit of Buyer and at Buyer's expense.

9. No Rights Retained. All Steam produced from the HGP-A Site shall be dedicated exclusively for the use by the Plant(s), except for the steam use reserved by Seller pursuant to Paragraph 5. Seller shall not develop and sell Steam or the energy associated therewith to any person other than Buyer and shall not permit injection of Discharge within the geothermal resource underlying the HGP-A Site by any other persons without the prior written consent of Buyer, which Buyer may withhold for any reason whatsoever in its sole discretion.

10. Term.

(a) The term of this Agreement shall begin on the date hereof and shall continue until terminated by Buyer upon sixty (60) days' prior written notice to Seller.

(b) Notwithstanding Paragraph 10(a), (i) either party may terminate this Agreement if the other party shall be in material default hereunder and fail to cure such default within sixty (60) days after receipt of notice of such default from the non-defaulting party; provided, however, that if such default cannot be reasonably cured within such sixty (60) day period, the defaulting party shall have such additional time as is reasonably necessary to cure such default as long as such cure is commenced within sixty (60) days after receipt of notice of default and is thereafter pursued diligently to completion; and (ii) should the owner(s) of the Plant(s) succeed to the interests of Buyer hereunder, such owner(s) shall have the right to terminate this Agreement upon sixty (60) days' prior written notice if Buyer is removed for any reason whatsoever as the operator of the Plant(s).

11. Access. Seller hereby grants to Buyer a right of ingress and egress upon, across, over and under the HGP-A Site for purposes of Buyer's performing, as Seller's contractor, maintenance and operations functions of the Well and its ancillary equipment, pursuant to Paragraph 7.3.

12. Environmental Indemnification. Seller agrees to indemnify and hold Buyer free and harmless from any claims, damages, liabilities, losses, penalties and expenses, including reasonable attorney's fees and costs, that Buyer may incur from any activities, whether past, present or future, of Seller as or with respect to the HGP-A Site that fall under any County, State or Federal environmental laws or regulations, including those dealing with hazardous and dangerous substances and wastes.

13. Assignment. This Agreement and the rights of either party hereunder may be assigned, in whole or in part, for financing security purposes without the consent of the other party, provided that the assignor shall promptly give the other party hereto written notice of such assignment, together with a copy of the executed instrument of assignment and the written assumption by the assignee of all of the assignor's obligations hereunder. Except as aforesaid, this Agreement and the rights of either party hereunder may not be assigned without the prior written consent of the other party, which consent shall not be unreasonably withheld or delayed.

14. Benefit. This Agreement shall be fully binding upon the parties hereto and their respective successors, permitted assigns and legal representatives.

15. Notices. Any notice, request, approval, consent, order, instruction, direction or other communication under this Agreement given by either party to the other party shall be in writing and shall be delivered in person or mailed, properly addressed and stamped with the required postage, to the intended recipient at the address first above stated and to the attention of the person specified below the parties' respective signatures. Either party may from time to time change such address by giving the other party notice of such change. Notice is to be considered effective only upon physical receipt thereof.

16. Force Majeure. If either party shall be wholly or partially prevented from performing any act required to be performed by it herein, in any or all cases as a consequence of strikes; riots; fires; floods; lightning; rain; earthquake; volcanism; wind; tsunami; war; invasion; insurrection; civil commotion; accident; equipment failures; any lawsuit based upon

environmental or land use grounds, unavailability of resources due to national defense priorities, any laws, rules, regulations or orders promulgated by federal, state or county governmental bodies or agencies; any rules, regulations or orders of any public body or official purporting to exercise authority or control respecting the activities and operations contemplated hereunder; the order of any court, judge or civil authority; any act of God or the public enemy; delays arising and/or any other delays caused by events or conditions which are beyond its exclusive control, then and in any such event such performance and the obligation of such party shall be extended, or suspended, as applicable, by the duration of such delay, but in no event for more than three (3) years in total. The party claiming force majeure shall promptly notify the other party of the condition giving rise to the force majeure event and shall also indicate the estimated duration of such condition and the proposed action to mitigate such condition.

17. Nonwaiver. The failure or delay of either party to insist upon strict performance of any of the provisions of this Agreement, to exercise any rights or remedies provided hereunder or by law, or to notify the other party in the event of a breach or default under this Agreement, shall not release or relieve either party from any of its obligations under this Agreement and shall not be deemed a waiver of any rights or remedies hereunder, nor shall any purported oral modifications of this Agreement operate as a waiver of any of the provisions hereof.

18. Confidentiality. The parties shall maintain in confidence the provisions hereof, and except as set forth in this Agreement or in any disclosure required by law, neither party shall disclose to any third party any information provided to one party to the other party that the providing party specifically indicates is confidential information, without the prior written consent of the other party. Specifically, the parties shall further maintain in confidence any information received by the other party pursuant to this Agreement concerning the production, treatment, extent, productivity and properties of Steam present in or produced from the geothermal resource underlying Buyer's adjoining properties, except that this restriction shall not apply to information already known by the receiving party through means other than the violation of the terms hereof, or information that becomes known to the general public through acts of other parties, or information received from third parties without restriction who did not acquire it directly or indirectly from the other party in breach of this Agreement.

19. Entire Agreement; Amendment. This Agreement embodies the entire agreement of the parties hereto and supersedes any and all prior agreements between the parties regarding the subject matter hereof. No change, amendment or modification of any of the provisions hereof shall be valid unless set forth in a written instrument signed by each of the parties hereto.

20. Further Assurances. The parties shall take such other actions, and execute such other documents, that may be necessary or desirable to effectuate the provisions hereof.

21. Construction. This Agreement shall be construed as a whole. All Paragraph headings are for convenience of reference only and shall not affect the construction of any provision hereof.

22. Applicable Law. This Agreement shall be interpreted, construed and enforced in all respects in accordance with the laws of the State of Hawaii applicable to contracts entered in Hawaii by residents thereof and to be performed entirely within such State.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date and year first written above.

NATIONAL ENERGY LABORATORY OF
HAWAII

By: _____
Its

Seller

PUNA GEOTHERMAL VENTURE

By: Amor VIII Corporation
Managing Partner

By: _____
Its:

Buyer

FORMULA TO CALCULATE ANNUAL STEAM FEE
(Pursuant to Paragraph 4)

No. of lbs. of Steam x \$0.11415/1,000 lbs. = Steam Fee*
delivered in year

*Subject, however, to a minimum annual Steam Fee of \$50,000.00