

# Imperial County Planning & Development Services Planning / Building

November 26, 2025

Subject:

Request for Proposal for a concurrent but separate CEQA/NEPA Environmental Document and Project Management Assistance Contractor (PMAC) for the Truckhaven Geothermal Energy Project

Project Applicant: ORNI 5 LLC

- General Plan Amendment (GPA) #25-0003
- Zone Change (ZC) #25-0004
- Conditional Use Permit (CUP) #25-0016
- Initial Study (IS) #25-0034

#### Dear Consultant:

The Imperial County Planning & Development Services Department (ICPDS) is soliciting proposals for services for the Truckhaven Geothermal Energy Project, which involves a General Plan Amendment (GPA), Zone Change (ZC), and Conditional Use Permit (CUP). ICPDS and the Bureau of Land Management (BLM) are seeking support in the following two distinct areas:

- Preparation of Environmental Documents including a comprehensive Environmental Impact Report (EIR)
  under the California Environmental Quality Act (CEQA), and a concurrent but separate National Environmental
  Policy Act (NEPA) document;
- 2. **Project Management Assistance Contractor (PMAC)** to provide project coordination and support services for both ICPDS and the BLM;

Consultants may submit proposals for either or both above-mentioned roles.

The Planning & Development Services Department (ICPDS) will act as the "Lead Agency" for the preparation of the EIR under CEQA and the Bureau of Land Management will act as the "Lead Agency" under NEPA. The successful consultant(s) will work under the direction of ICPDS and/or BLM, depending on their assigned role.

#### The Truckhaven Geothermal Energy Project includes:

1. General Plan Amendment #25-0003 – Expansion for the Geothermal Overlay Zone designation and updating the West Shores/Salton City Urban Area Plan including an Urban Area Plan Amendment from Low Density Residential and General Commercial to Recreation/Open Space designation. Update open space/recreation standards to include geothermal facilities, parasitic solar energy generation, and utility substation in this Urban Area Plan.

- 2. Zone Change #25-0004 to include the Geothermal Overlay Zone for the expansion and include zone changes currently Low Density Residential with a minimum lot of 0.5 acres (R-1-L-.5) and Medium Commercial (C-2) to the Open Space/Recreation (S-1) zone.
- 3. Conditional Use Permit #25-0016 to include the following proposed developments:
  - a. Two (2) 15-24 MW geothermal power plants
  - b. Six (6) 20,000-gallon tanks for motive fluid storage
  - c. Four (4) geothermal injection or production wells
  - d. 15MW solar field(s) to provide parasitic load to geothermal power plants (up to three locations are proposed; however, only one location or parts of the three locations would be developed to achieve a total of 15 MW)
  - e. Approx. 1.78 miles (9,381.49 linear feet) of interconnection cable and poles
  - f. Electrical Substation for grid interconnection
  - g. Geothermal pipelines
  - h. Laydown lot
- 4. County CEQA Initial Study #25-0034 for Environmental Impact Report (EIR).
- 5. BLM NEPA Scope of Work (BLM is responsible for permitting ten (10) geothermal production or injection wells, access roads, and geothermal pipelines)
- 6. Per Figure 5 of the Truckhaven Geothermal Energy Project Application Package, the permitting of one (1) geothermal production/injection well, access roads, and geothermal pipeline is within the jurisdiction of State Lands Commission

Attached is a copy of the application package and the BLM Scope of Work Guidelines.

- I. The County hereby requests the following information; for each item (as appropriate), the hourly rate and estimated total hours for the specific task must be documented.
  - a. Project scope to be utilized in the preparation of a legally adequate CEQA/NEPA document;
  - b. Identified milestones representing specific tangible work products (tasks) to which payments by the County would be linked and become part of the legal contract. (Please note that all subsequent bills/invoices will be required to include both the identified milestones and percent completed);
  - c. All potential subcontractor(s) that will be utilized along with their estimated staff time and cost breakdown;
  - d. An estimated "not to exceed cost" to prepare the environmental documents and provide PMAC services;
  - e. Review the attached proposed General Plan Amendment, Zone Change, and Conditional Use Permit for findings of consistency with the Imperial County General Plan Renewable and Transmission Element, West Shores/Salton City Urban Area Plan, Title 9 Land Use Ordinance, and Findings of Fact regarding the proposed land use entitlement requests; and
  - f. A digital (thumb drive) version of all documents prepared by the prime CEQA/NEPA consultant and potential subcontractor(s).

The proposal must incorporate the cost estimate for the printing of five (5) hard copies of the Administrative Draft EIR, five (5) hard copies of the Draft EIR and five (5) hard copies of the Final EIR, along with a digital copy provided on a thumb drive of the aforementioned environmental documents, as determined. Also, the proposal must provide a cost estimate for each additional hard copy and thumb drive, if additional copies are needed.

The proposal must provide that prior to any cost overruns; the consultant shall discuss first and then seek written approval from the Imperial County Planning and Development Services Director before such costs are incurred. Failure to get prior written approval may result in such costs being disallowed.

- II. We request that you provide within your cost estimate for the proposed EIR, including the hourly rate and total estimated hours, a preparation of the following studies and/or analysis.
  - Agriculture and Forest Resources
  - Energy
  - Geology and Soils
  - Hydrology and Water Quality
  - Land Use and Planning
  - Mineral Resources
  - Noise
  - Population and Housing
  - Public Services
  - Recreation
  - Tribal Cultural Resources
  - Public Health & Safety
  - Utilities and Service Systems
  - Wildfire

The following sections need to be addressed in the EIR and Findings of Fact for the project:

- SB18/AB-52 Tribal Cultural Resources
- CEQA Findings for Project
- Mitigation, Monitoring & Reporting Program (MM&RP)

You will be expected to review submitted studies as a third-party review and determine whether or not they are adequate, need to be revised, updated or, in fact, be reproduced. It is expected that the applicant will be submitting the following documentation for review; we request that you provide within your estimate for the CEQA/NEPA document, the cost for the peer-review of this work and these studies prepared by the applicant and their consultants.

- Reclamation Plan
- Biological Resources Technical Report(s) and Habitat Assessment(s)
  - o Technical Report for General Habitat Assessment
  - Technical Report for Vegetation
  - o Technical Report for Palm Springs Pocket Mouse
  - o Technical Report for Bats
  - o Technical Report for Avian Species
  - Technical Report for Burrowing Owls
  - o Technical Report for Flat Tail Horned Lizard
- Aquatic Resource (Preliminary Jurisdictional Delineations) Surveys
- Cultural Resources Technical Report
- Paleontological Resources Technical Report
- Noise Technical Memorandum
- Traffic and Transportation Technical Memorandum
- Air Quality and Greenhouse Gas Emissions Technical Memorandum
- Water Resources Technical Report
- Water Quality Management Plan
- Visual and Aesthetic Resources Baseline/Sensitivity Technical Report
- Glint/Glare Model and Technical Report
- Dust Control Plan
- Geotechnical Memorandum

- Soil Crusts/Desert Pavement Report
- Preliminary Jurisdictional Determination
- Hazard Assessment
- Botanical and Sensitive Plant Species Surveys

# III. The following format should be used in preparing the proposal, additional information/items may be used to further bolster your proposal:

One page cover letter introducing your firm.

# 1. Project Understanding

#### 2. Project Team

- Identify all company and consultant team personnel who will work on the project and short description of their education and work experience.
- Resumes of the prime and technical consultants should be included and can be attached to the proposal as an appendix.
- Organization Charts-Elaborate organization charts are not necessary.

# 3. Scope of Work

- Describe the proposed tasks to accomplish the scope of work.
- Include deliverables, when applicable, for each task.
- Include all applicable site visits, scoping meetings, staff meetings and public hearings.
- Be specific regarding your approach to complete the CEQA/NEPA noticing requirements.

# 4. The tasks should be presented as follows:

#### a. Project Initiation

Include research, site visit, data collection, CEQA/NEPA notices, scoping meetings, etc.;

#### b. Administrative Draft EIR

Include mandatory CEQA sections, required and optional technical studies, peer review of applicant-prepared technical studies, number of revisions, meetings and coordination with County Staff;

# c. Public Review Draft

Include document preparation, CEQA/NEPA notice, Scoping meetings, and coordination with County Staff;

#### d. Final EIR/NEPA Document

Include document preparation, Response to Comments, CEQA/NEPA notice, meetings, coordination with County Staff and attendance at the Planning Commission and Board of Supervisors hearings;

# e. Mitigation, Monitoring and Reporting Program

Include the preparation per CEQA/NEPA identification of all mitigation measures, identification of all responsible parties, timing and enforcement;

#### f. CEQA Findings and Notice of Determination

Include the preparation per CEQA requirements;

#### a. Assumptions

Please provide a specific section for assumptions. Include your assumptions regarding travel time, mileage, public noticing, or anything else that needs clarification; and

h. Meetings

The number of meetings and hearings that are included in your proposal should be detailed under each task.

5. Proposed Schedule

Provide the number of weeks for each task in tabular form from project initiation to public hearings, Planning Commission, and Board of Supervisors.

#### 6. Cost Estimate/Milestones

- Provide a discussion of the proposed cost and any optional costs.
- Include a spread sheet that details your personnel, any subcontractors to be used, their estimated hours, and associated costs per task (can be attached as an appendix).
- A table of project milestones should be included in the Cost Estimate discussion.

#### 7. Consultant Selection Criteria

- a) Understanding of the project: the proposer should demonstrate understanding of key elements of the project and, accordingly, provide the names of personnel and their expertise.
- b) Approach to the project: The selection process will evaluate the extent to which the proposer has recognized and identified special circumstances on the project and whether the proposer has provided logical approach to tasks and issues of the project.
- c) Professional qualifications necessary for satisfactory performance: The project manager and key team members should be qualified to perform the work categories on the project; and the proposer's knowledge of standards and procedures will be examined.
- d) Specialized experience and technical competence in the type of work required: The proposer should provide information about comparable projects they have been involved with and/or successfully accomplished; past performance on contracts with government agencies and private industry will be considered together with past performance evaluations; and the capacity to accomplish the work in the required time will also be evaluated.
- IV. It is requested that you disclose any conflict or potential conflict that you may have if you are submitting a proposal. The conflict by the County envisions, at the very minimum, current/ongoing or previous contracts (within the past year) with the applicant(s); this also includes current technical studies that either are or have been prepared for the applicant(s) within the last year.
- V. Not providing the extent of information (including hourly rate and total estimated hours per task) may negatively impact the evaluation of your proposal.

If you are interested in submitting a proposal, please submit it to the Director at Imperial County Planning & Development Services Department, 801 Main Street, El Centro, CA, 92243, **no later than** <u>December 31, 2025, at</u> **5:00 p.m.** This must be postmarked on or before this date and time.

Please note that it is **not necessary to present us with voluminous references or individualized background data** on persons or personnel within your organization. We may require this at a later date. We look forward to receiving your RFP submittal.

Please submit a total of two (2) hard copies of your proposal, as well as a digital copy provided on a thumb drive.

Should you have any questions or comments, please contact the assigned Planner(s) for this project, David Black and/or Alan C. Molina, at (442) 265-1736, or via-email at <a href="mailto:davidblack@co.imperial.ca.us">davidblack@co.imperial.ca.us</a> or alanmolina@co.imperial.ca.us.

Sincerely,

Jim Minnick, Director

Planning & Development Services Department

Alan C. Molina,

Planner II

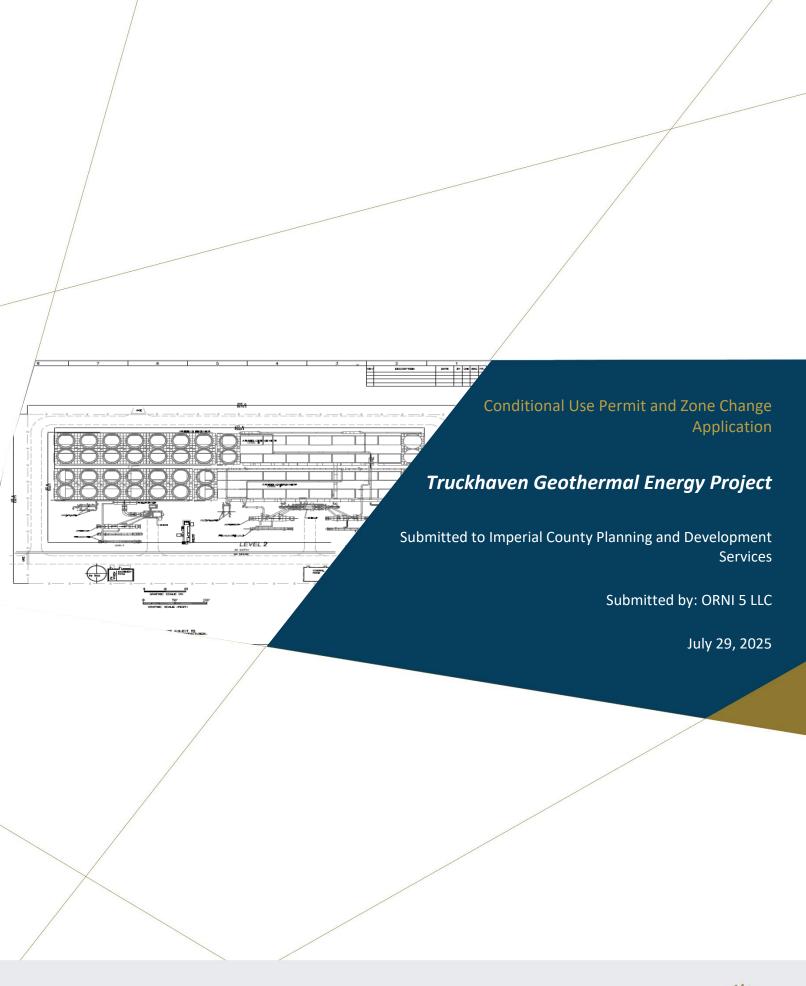
#### Attachments:

- 1. Truckhaven Geothermal Energy Project Application Package
- 2. BLM Scope of Work

CC

Jim Minnick, Director of Planning and Development Services
Michael Abraham, AICP, Asst. Director of Planning & Development Services\
Diana Robinson, Planning Division Manager
David Black, Planner IV
Alan C. Molina, Planner II
APN:017-010-004-000

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#### July 29, 2025

Mr. Jim Minnick County of Imperial Planning & Development Services Department 801 Main Street El Centro, CA 92243

Subject: Conditional Use Permit and Zone Change Application for the Truckhaven Geothermal Energy Project

Dear Mr. Minnick:

ORNI 5 LLC (a wholly owned subsidiary of ORMAT Nevada Inc.; hereinafter, the Applicant) proposes to develop a new 48-megawatt (MW; net generation) geothermal energy facility in northwest Imperial County (Truckhaven Project or Project). Proposed developments would occur near State Highway 86 on APNs 17010004; 17010016; 17010032; 17010056; 17010057; 17161006; 17161007; 17172001; 17184001; 17970007; 017970008; 17970011; 17970012; 17970013; 17970015. The following facilities are proposed for development:

- Two (2) 15-24 MW geothermal power plants;
- Fourteen (14) new geothermal injection and production wells [in addition to the (10) existing permitted exploration wells];
- One<sup>1</sup> (1) 15MW solar fields to provide parasitic load to the geothermal power plants;
- Six (6) 20,000-gallon tanks for motive fluid storage;
- Material laydown area;
- 8.4 miles (44,231 linear feet) of geothermal production/injection pipeline;
- 4.18 miles of new roads (22,092 linear feet)
- 1.85 miles of existing roads to-be improved (9,776 linear feet);
- 1.78 miles (9,381 linear feet) of interconnection cable and poles; and,
- An electrical substation for grid interconnection.

The 2,782-acre Project site includes private land (owned by the Applicant) in unincorporated Imperial County, lands managed by the California State Lands Commission (SLC), and the U.S. Bureau of Land Management (BLM). The Project site is generally vacant Sonoran Desert with numerous small desert washes, sparse vegetation/shrub steppe, and hardpan soils. Land uses in the Project vicinity include residential, commercial, waste disposal (Imperial County Dump), recreational (ATV and off-road vehicles trails), and transportation (Hwy 86; Salton Sea airport).

The enclosed application includes the following items:

- CUP Application Form and Fee
- Zone Change Application Form and Fee

<sup>&</sup>lt;sup>1</sup> Up to three locations are proposed; however, only one location or parts of the three locations would be developed to achieve a total of 15MW.

#### CUP and Zoning Change Application – Truckhaven Geothermal Energy Project

- Imperial County Planning & Development Services (ICPDS) General Indemnification Agreement
- Attachment A Project Description, Site Plan(s), Maps, and Figures Map Set, and General Plan (Zoning)
   Conformance
- Attachment B Site Photographs
- Attachment C Standard Facility Specifications and Company Overview
- Attachment D APN and Area of Interest (AOI) Calculations
- Attachment E Imperial County Reclamation Plan and Bond Estimate

We are presently preparing a draft CEQA document and supporting technical studies for the County's review. We are planning on submitting the draft CEQA document to the County by the end of 2025, with the following completed technical studies:

- Biological Resources Technical Report(s) and Habitat Assessment(s)
  - o Technical Report for General Habitat Assessment
  - Technical Report for Vegetation
  - Technical Report for Palm Springs Pocket Mouse
  - Technical Report for Bats
  - Technical Report for Avian Species
  - Technical Report for Burrowing Owls
  - Technical Report for Flat Tail Horned Lizard
- Cultural Resources Technical Report
- Paleontological Resources Technical Report
- Noise Technical Memorandum
- Traffic and Transportation Technical Memorandum
- Air Quality and Greenhouse Gas Emissions Technical Memorandum
- Water Resources Technical Report
- Water Quality Management Plan
- Visual and Aesthetic Resources Baseline/Sensitivity Technical Report
- Glint/Glare Model and Technical Report
- Dust Control Plan
- Geotechnical Memorandum
- Hazard Assessment

The remaining technical studies are being performed in the summer and fall of 2025. These studies will support the findings developed in the draft CEQA document and we will keep you apprised of any scheduling issues.

Thank you and please contact me if you have any questions regarding the Truckhaven Project or this Application.

Sincerely,

#### **Christopher Jim**

Manager, Environmental Permitting ORMAT Technologies, Inc.

PHONE: (775) 356-9029 (ext. 32244)

EMAIL: CJim@ORMAT.COM

CONDITIONAL USE PERMIT I.C. PLANNING & DEVELOPMENT SERVICES DEPT. 801 Main Street, El Centro, CA 92243 (442) 265-1736 - APPLICANT MUST COMPLETE ALL NUMBERED (black) SPACES - Please type or print -PROPERTY OWNER'S NAME **EMAIL ADDRESS** Orni 5 LLC cjim@ormat.com MAILING ADDRESS (Street / P O Box, City, State) 6884 Sierra Center Pkwy, Reno, NV ZIP CODE PHONE NUMBER 89511 775-233-8477 APPLICANT'S NAME **EMAIL ADDRESS** Orni 5 LLC cjim@ormat.com MAILING ADDRESS (Street / P O Box, City, State) 6884 Sierra Center Pkwy, Reno, NV ZIP CODE PHONE NUMBER 89511 775-233-8477 ENGINEER'S NAME CA. LICENSE NO. **EMAIL ADDRESS** alessner@ormat.com Avi Lessner MAILING ADDRESS (Street / P O Box, City, State) PHONE NUMBER ZIP CODE 6884 Sierra Center Pkwy, Reno, NV 89511 775-233-8477 ASSESSOR'S PARCEL NO. SIZE OF PROPERTY (in acres or square foot) ZONING (existing) 15 APNs 2,273 acres Mixed PROPERTY (site) ADDRESS N/A - near State Highway 86 GENERAL LOCATION (i.e. city, town, cross street) Site is vacant and southwest of State Highway 86, near County dump and Salton Sea airport. LEGAL DESCRIPTION T10S, R09E - Sections 36 T10S, R10E - Sections 28, 29, 31, 32, 33 T11S, R09E - Sections 1, 12 T11S, R10E - Sections 4, 5, 6, 7, 8 PLEASE PROVIDE CLEAR & CONCISE INFORMATION (ATTACH SEPARATE SHEET IF NEEDED) DESCRIBE PROPOSED USE OF PROPERTY (list and describe in detail) See attached - geothermal energy generation. 11. DESCRIBE CURRENT USE OF PROPERTY Open space. DESCRIBE PROPOSED SEWER SYSTEM N/A DESCRIBE PROPOSED WATER SYSTEM 13. See attached. 14. DESCRIBE PROPOSED FIRE PROTECTION SYSTEM See attached. IF YES, HOW MANY EMPLOYEES WILL BE AT THIS SITE? IS PROPOSED USE A BUSINESS? 2-3 employees ∑ Yes □ No I / WE THE LEGAL OWNER (S) OF THE ABOVE PROPERTY CERTIFY THAT THE INFORMATION SHOWN OR STATED HEREIN REQUIRED SUPPORT DOCUMENTS IS TRUE AND CORRECT SITE PLAN Christopher Jim 7/30/2025 FEE Print Name Date OTHER Signature Print Name Date

Signature		
APPLICATION RECEIVED BY:	DATE	REVIEW / APPROVAL BY OTHER DEPT'S required.
APPLICATION DEEMED COMPLETE BY:	DATE	P.W.
APPLICATION REJECTED BY:	DATE	A.P.C.D.
TENTATIVE HEARING BY:	DATE	□ O.E.S.
FINAL ACTION: APPROVED	☐ DENIED DATE	

CUP#

# CHANGE OF ZONE

I.C. PLANNING & DEVELOPMENT SERVICES DEPT. 801 Main Street, El Centro, CA 92243 (442) 265-1736

- APPLICANT MUST COMPLETE ALL NUMBERED (black & blue) SPACES - Please type or print -

PROPERTY OWNER'S NAME     Orni 5 LLC		EMAIL ADDRES	
MAILING ADDRESS (Street / P O Box, City, State)		ZIP CODE	PHONE NUMBER
6884 Sierra Center Pkwy, Reno, NV		89511	775-233-8477
3. ENGINEER'S NAME Avi Lessner	CA. LICENSE NO.	EMAIL ADDRES alessner@orm	
4. MAILING ADDRESS (Street / P O Box, City, State)		ZIP CODE	PHONE NUMBER
6884 Seirra Center Pkwy, Reno, NV		89511	775-233-8477
5. ASSESSOR'S PARCEL NO. 15 APNs	ZONING (existing) Six zoning classification	ons	ZONING (proposed) Industrial (M-1; M-2; or M-3)
6. PROPERTY (site) ADDRESS N/A - near State Highway 86			SIZE OF PROPERTY (in acres or square foot) Approx. 2,723 acres
7. GENERAL LOCATION (i.e. city, town, cross s Site is vacant and southwest of State Highway 86	treet) 5, near County dump a	nd Salton Sea airp	oort
8. LEGAL DESCRIPTION T10S, R09E - Sections	36 T10S. R10E -	Sections 28, 29, 31	. 32. 33
T11S, R09E - Sections 1, 12 T11S, R1	LOE - Sections 4, 5, 6, 7, 8		
8. DESCRIBE CURRENT USE ON / OF PROPE	RTY (list and describe	in detail)	
Generally vacant. Two geothermal test wells pres	ent. Some existing acces	s roads. OHV use ir	n the area.
\$ <del></del>			
<u>.                                    </u>			
9. PLEASE STATE REASON FOR PROPOSED	USE (be specific)		
See attached - geothermal energy generation.	25		
			*
10. DESCRIBE SURROUNDING PROPERTY US	ES		
Few residences in area. County dump to the	e south/southwest of t	the site. Salton S	ea Airport near site. Improved and unimproved
access roads present throughout area.			
I / WE THE LEGAL OWNER (S) OF THE ABOVE PLOT CERTIFY THAT THE INFORMATION SHOWN OF	ROPERTY	REQUIRE	SUPPORT DOCUMENTS
HEREIN IS TRUE AND CORRECT.	VOIATED	A. SITE P	PLAN
Christopher Jim 7/30/20	)25	B. PRELII	MINARY TITLE REPORT (6 months or newer)
Print Name Date		C. FEE	
Digitally signed by Christopher Jim Date: Wednesday, July 30, 2025 9:05:01 AM		D. OTHER	
Signature		D. OTTIE	`
APPLICATION RECEIVED BY:		DATE	REVIEW / APPROVAL BY
APPLICATION DEEMED COMPLETE BY:		DATE	OTHER DEPT'S required.  P. W. E. H. S.  ZC #
APPLICATION REJECTED BY:		DATE	□ E.H.S. □ A.P.C.D.
TENTATIVE HEARING BY:		DATE	□ O.E.S.
FINAL ACTION: APPROVED	DENIED	DATE	- :   <b> </b>

# **Attachment A** Project Description, Map Set, and General Plan (Zoning) Conformance

#### INTRODUCTION

ORNI 5 LLC (a wholly owned subsidiary of ORMAT Nevada Inc.; hereinafter, the Applicant) is seeking to develop the Truckhaven Geothermal Energy Project (Project) in northwest Imperial County, California. The 2,782-acre Project site includes private land (owned by the Applicant) in unincorporated Imperial County, as well as lands managed by the California State Lands Commission (SLC) and the U.S. Bureau of Land Management (BLM).

Ten (10) geothermal exploration wells were previously permitted on the Project site in 2019. Of the 10 permitted wells, two have been developed and are the only developed energy facilities currently on the Project site. This Application seeks the issuance of a CUP and zone change for the Truckhaven Project, whereas the following facilities are proposed for development:

- Two (2) 15-24 MW geothermal power plants;
- Fourteen (14) new geothermal injection and production wells [in addition to the (10) existing permitted exploration wells];
- One<sup>2</sup> (1) 15MW solar fields to provide parasitic load to the geothermal power plants;
- Six (6) 20,000-gallon tanks for motive fluid storage;
- Material laydown areas;
- 8.4 miles (44,231 linear feet) of geothermal production/injection pipeline;
- 4.18 miles of new roads (22,092 linear feet)
- 1.85 miles of roads needing improving (9,776 linear feet);
- 1.78 miles (9,381 linear feet) of interconnection cable and poles; and,
- An electrical substation for grid interconnection.

# **PROJECT LOCATION & ACCESS**

The 2,782-acre Project site includes the following Assessor's Parcel Numbers (APNs) 17010004; 17010016; 17010032; 17010056; 17010057; 17161006; 17161007; 17172001; 17184001; 17970007; 017970008; 17970011; 17970012; 017970013; and 017-970-015, in northwest Imperial County, California. The site is just south of Truckhaven and Salton City, and approximately 45 miles to the southeast of the City of Palm Springs.

State Highway 86 runs along the Project site's eastern boundary and provides exclusive access to the site. I-10 connects to State Hwy 86 approximately 25 miles to the north of the Project site near Indio, which provides sole regional access to the site. Other existing roads near/through the Project site include Pole Line Road and Thermal Road which provides public access to the Imperial County Dump. **Figure 1** provides a site location map.

# **PROJECT OBJECTIVES**

The objectives of the Truckhaven Project are to:

- Develop geothermal and solar energy facilities in a safe open space with an environmentally-friendly design and low-impact construction process.
- Develop geothermal production and injection wells in accordance with the Desert Renewable Energy Conservation Plan.
- Develop geothermal and solar energy facilities that do not conflict with the state and federal designated offroad recreational areas in the Project vicinity.

<sup>&</sup>lt;sup>2</sup> Up to three locations are proposed; however, only one location or parts of the three locations would be developed to achieve a total of 15MW.

- Develop clean, renewable geothermal energy pursuant to the Imperial County General Plan.
- Provide renewable baseload energy and capacity to assist the State of California with meeting the objectives of Senate Bill 100 (100% Clean Energy Act of 2018) and the State's Renewables Portfolio Standard program.

## **PROJECT BENEFITS**

As provided in the list below, the Truckhaven Project would provide significant state and local benefits, including, but not limited to:

- Increasing the employment base of Imperial County by creating both construction and operations positions, pursuant to Goal 2 of the Imperial County Strategic Plan (2020).
- Increasing the Imperial County tax base.
- Displacing fossil fuel consumption within the State.
- Meeting the State's climate change goals by reducing emissions of greenhouse gases associated with electrical generation.
- Promoting stable retail rates for electrical service.
- Meeting the State's need for a diversified and balanced energy generation portfolio.
- Meeting the State's resource adequacy requirements.
- Contributing to the safe and reliable operation of the electrical grid, including providing predictable electrical supply, voltage support, lower line losses, and congestion relief.

#### SITE DESCRIPTION & SURROUNDING USES

State Highway 86 runs along the Project site's eastern boundary and provides exclusive access to the site. The Project site is generally vacant Sonoran Desert with numerous small desert washes, sparse vegetation/shrub steppe, and hardpan soils (site photos are available in **Attachment B**). Land uses in the Project vicinity include residential, commercial, waste disposal (Imperial County Dump), recreational (ATV and off-road vehicles trails), and transportation (State Highway 86; Salton Sea airport). The only other existing roads near/through the Project site include Pole Line Road, Air Park Drive, and Thermal Road which provides public access to the Imperial County Dump and Salton Sea Airport. Two (2) geothermal pilot/test wells are present on the Project site and are the only developed energy facilities on the Project site.

As provided in **Figure 5**, the proposed energy facilities would occupy federal (BLM), state (SLC, and unincorporated Imperial County lands. The following list and **Table 1** below provide a breakdown the proposed facilities per permitting jurisdiction:

As provided in **Figure 5** and **Figure 6**, Imperial County is responsible for permitting:

- Two (2) geothermal power plants (OECs)
- Six (6) 20,000-gallon tanks for motive fluid storage
- Three<sup>3</sup> (3) 15MW parasitic solar arrays
- Three (3) geothermal injection or production wells (4 wells have been permitted; IS/MND 2016)
- 1.78 miles (9,381.49 linear feet) of interconnection cable and poles
- Substation
- Access roads

<sup>&</sup>lt;sup>3</sup> Up to three locations are proposed; however, only one location or parts of the three locations would be developed to achieve a total of 15MW.

- Geothermal pipelines
- Laydown lot

As provided in Figure 5, BLM is responsible for permitting:

- Ten (10) geothermal production or injection wells
- Access roads
- Geothermal pipelines

As provided in **Figure 7**, SLC is responsible for permitting:

- One (1) geothermal production or injection well
- Access roads
- Geothermal pipelines

Table 1 – Disturbance (Acres) by Proposed Facility and Permitting Jurisdiction

Facility	Imperial County (Private Land)	California State Lands Commission	California Dept. of Parks & Recreation <sup>1</sup>	U.S. Bureau of Land Management	Disturbance (Acres)
Power Plant A	17.18 acres	-	-	-	17.18 acres
Power Plant B	17.18 acres	-	-	-	17.18 acres
Geothermal Well Pads	26.25 acres (7 wells)	11.22 acres (3 wells)	-	49.35 (14 new wells)	86.82 acres
Solar Field A	100.4 acres	-	-	-	100.4 acres
Solar Field B	74.64 acres	-	-	-	74.64 acres
Solar Field C	91.23 acres				91.23 acres
Interconnection Line (50 ft buffer)	21.67 acres (1.78 linear miles)	-	-	-	21.67 acres
Pipelines (50 ft buffer)	30.9 acres (2.45 linear miles)	10.93 acres (0.87 linear miles)	6.22 acres (0.5 linear miles) disturbance only	56.10 acres (4.56 linear miles)	104.15 acres
Substation	5.7 acres	-	-	-	5.7 acres
Existing Access Roads to be Improved (25 ft buffer)	6.75 acres (0.52 linear miles)	3.99 acres (0.32 linear miles)	1.18 acres disturbance only	10.54 acres (1.01 linear miles)	22.46 acres
New Access Roads (25 ft buffer)	11.81 acres (1.86 linear miles)	0.24 acres (0.03 linear miles)	-	13.97 acres (2.29 linear miles)	26.02 acres
Laydown Lot	13.4 Acres	-	-	-	13.4 acres
Total	416.85 acres	26.38 acres	7.40 acres	129.96 acres	580.34 acres

<sup>&</sup>lt;sup>1</sup> No project facilities are proposed on California Department of Parks and Recreation lands; they have no permitting action on the project. Disturbance acres are due to 25-foot and 50-foot buffers added to linear features (i.e., pipelines and roads) for approximate disturbance area calculations.

#### **ZONING & LAND USE**

#### Desert Renewable Energy Conservation Plan

The California Desert Renewable Energy Conservation Plan (DRECP) is a cooperative approach to managing 10.8 million acres in seven California counties (Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San

Diego) on the landscape level. The DRECP is an agreement between the California Energy Commission, California Department of Fish and Wildlife, BLM, and U.S. Fish and Wildlife Service to manage public lands to that conservation of this desert region is balanced with the development of renewable energy.

As provided in **Figure 8**, the public lands portion of the Project site falls within a Development Focus Area (DRECP Land Use Amendment, September 2016), which is an area designated by the DRECP with the potential to have a lower environmental impact, as compared to a Conservation Management Area. The public part of the Project site is also classified as a Special Recreation Management Area by the DRECP.

#### State Lands Commission (SLC)

SLC classifies a portion of the site as Recreational, pursuant to Ocotillo Wells State Vehicular Recreational Area. The SLC is responsible for the protection and enhancement of lands and natural resources for use, development, and environmental preservation in the spirit of public access.

#### Imperial County General Plan and Geothermal Overlay Zone Amendment

Per Section 91701.03 - Conditional Use Permits of the Imperial County General Plan:

"Renewable energy projects must be located within the renewable energy overlay zone [RE] and may be permitted only through the issuance of a conditional use permit (CUP) within applicable zones as approved by the approving authority unless otherwise allowed by applicable law. Renewable energy projects may consist of the following technologies: <a href="mailto:geothermal">geothermal</a>, solar, wind, deep solar ponds, biofuel, bio-mass, algae production, concentrated solar-thermal power, and concentrated photovoltaics."

The County Geothermal Overlay zone is immediately south and adjacent to the Project site. In order for the project to conform with the County Geothermal overlay zone, an amendment is proposed to extend the overlay zone to include the Project Area. **Figure 9** shows the area of interest (AOI) of the proposed Geothermal Overlay Zone which would extend the overlay zone to 1,266.33 acres.

Also, as provided in **Figure 10**, facilities are proposed on County lands zoned as Low Density Residential with a minimum lot of 0.5 acres (R-1-L-.5); Open Space/Recreation (S-1); Low Density Residential (R-1); Medium Density Residential (R-2); Medium-High Density Residential (R-3); and Medium Commercial (C-2). An amendment to these zoning designations would be required to accommodate the Project as these Zoning designations do now allow for Geothermal Energy Production. Zones that allow Geothermal Energy production at this scale would be Light Industrial (M-1; use permitted with only with CUP), M-2 Medium Industrial (allowable by right), and M-3 Heavy Industrial (allowable by right). **Attachment D** contains a complete list of APNs impacted by the Project for the extension of the Geothermal Overlay zone and zoning designation which includes the APN number, APN Acres, AOI used, zoning designations, and Land Use designation. **Table 2** below summarizes the type of acres to be converted for each zoning designation.

Table 2 – Imperial County Geothermal Overlay / Zoning and Salton City Urban Plan Zoning Acres Converted

Zoning	Number of Parcels	Acres within AOI
C-2	38	16.12
M-1	3	15.32
R-1	188	63.48
R-1-L5	13	754.21

R-2	6	1.19
R-3	12	2.71
S-1	13	475.10
TOTAL	247	1328.13

#### West Shores/Salton City Urban Area Plan Amendment

The current Salton Shores Urban Plan shows some facilities that are proposed within the Salton City Urban Area Plan that are designated as Low Density Residential with a minimum lot of 0.5 acres (R-1-L-.5); Open Space/Recreation (S-1); Low Density Residential (R-1); Medium Density Residential (R-2); Medium-High Density Residential (R-3); and Medium Commercial (C-2) as shown in **Figure 10**. An amendment to these zoning designations would be required to accommodate the Project as these Zoning designations do not allow for Geothermal Energy Production or facilities. Zones that would allow for Geothermal Energy production at this scale would be Light Industrial or Medium Industrial. The amendment to this urban plan would entail the conversion of approximately 786.58 acres to Light or Medium Industrial Land. **Attachment D** contains a complete list of APNs impacted by the Project for the extension of the Geothermal Overlay zone and zoning designation which includes the APN number, APN Acres, AOI used, zoning designations, and Land Use designation. **Table 2** above summarizes the type of acres to be converted for each zoning designation.

#### Salton Sea Airport

As provided in **Figure 9**, the Project proposes facilities within the designated the Salton Sea Airport Zone. These zones include the Runway protection zone (Zone A), Approach/departure zone (Zone B1), Extended approach/departure zone (Zone B2), Common traffic patterns (Zone C). As the Project does not propose any tall structures in this immediate area, no amendments to this zone are propose.

#### PROJECT DESCRIPTION

The Applicants propose the following actions:

- Two (2) 15-25 MW geothermal power plants;
- Fourteen (14) new geothermal injection and production wells [in addition to the (10) existing permitted exploration wells];
- One<sup>4</sup> (1) 15MW solar fields to provide parasitic load to the geothermal power plants;
- Six (6) 20,000-gallon tanks for motive fluid storage;
- 8.4 miles (44,231 linear feet) of geothermal production/injection pipeline;
- 4.18 miles of new roads (22,092 linear feet)
- 1.85 miles of roads needing improving (9,776 linear feet);
- 1.78 miles (9,381 linear feet) of interconnection cable and poles; and,
- An electrical substation for grid interconnection.

#### **Proposed Facilities**

Geothermal Power Plants (ORMAT Energy Converters)

<sup>&</sup>lt;sup>4</sup> Up to three locations are proposed; however, only one location or parts of the three locations would be developed to achieve a total of 15MW.

The Project proposes to develop two 15-24 MW (net 48 MW gross) binary geothermal energy plants (ORMAT Energy Converter; OEC), operating on a subcritical Rankine cycle. Depending on the resource and project economics, one larger power plant (25+MW) may be constructed instead of two small plants. **Attachment C** provides technical facility specifications for the OEC, which consists of a generator, turbines, a vaporizer, Air Cooled condensers, preheaters and recuperators, and an evacuation skid/vapor recovery maintenance unit (VRMU) for purging and maintenance events.

Ancillary facilities and geothermal power plant components that would be constructed on the geothermal power plant site include offices, restrooms, the electrical room and control room, maintenance building, condensing fan equipment, lined reserve pits or baker tanks, electrical substation, and other smaller ancillary structures. All buildings housing the offices, electrical room, control room and auxiliary buildings would be a rigid, steel-frame, pre-engineered structure with steel panel walls and a steel roof. The exterior of the building would be painted consistent with BLM visual color guidelines to blend in with surrounding areas.

A chain link fence would be installed around the main facility areas in order to prevent unwarranted access to the facility by the public and the entering of wildlife into the facility/electrical generation area. The chain link fence would be equipped with controlled-entry gates to allow vehicle egress/ingress as necessary.

#### **Example Pictures of Proposed ORMAT Energy Converters (OECs)**





Site preparation activities for the power plants would begin with clearing, earthwork, drainage, and other improvements necessary for commencement of construction. Clearing would include removal of organic material, stumps, brush, and slash. A portion of the construction site would be devoted to equipment and materials laydown, storage, construction equipment parking, small fabrication areas, office trailers, and parking. Temporary utilities would be provided for the construction offices, the laydown area, and the plant site. During construction, temporary power would be supplied by a portable generator and, if available following completion of the interconnection line, by utility-furnished power.

# **Cooling Tower Array**

A cooling tower array will perform air-cooling operations of the geothermal fluid. The cooling tower will include a series of heat-absorbing evaporators and condensers to capture and transfer heat stored in the geothermal fluid. **Attachment C** provides technical facility specifications for the cooling unit. These are the most prominent features of the geothermal power plant, both in height and mass. The cooling arrays range between 28 and 35 feet in height and up to 1,000 feet in length.

#### **Example of Proposed Cooling Tower Array**





#### Motive Fluid and Fuel Storage Tanks

Six double-walled 20,000-gallon above-ground storage tanks (ABSTs) would be installed for motive fluid (i.e., cyclopentane, isopentane, butane, etc.) storage, three at each power plant location. Additionally, two (2) 500-gallon diesel and one (1) 500-gallon unleaded fuel ABSTs would also be located at each power plant to supply backup power and fuel for equipment. Numerous safety and fire prevention measures will be installed on/near the ABST, including:

- Double-walled tank construction
- Concrete foundations with blast walls separating the motive fluid tank(s) from the OEC
- An automated water suppression system.
- Secondary concrete containment basins/areas.
- Two flame detectors, which will immediately detect any fire and immediately trigger the automatic fire suppression system.
- A gas detector, which will immediately detect any motive fluid leak and notify the control room (manned by 24/7).

The Project design includes a thorough list of fire prevention, design, and safety measures, which are described in greater detail below in the *Environmental Protection Measures* section below.

#### **Examples of Proposed Motive Fluid Storage Tank**





#### Geothermal Production and Injection Wells

Production wells flow geothermal fluid to the surface, while injection wells are used to inject geothermal fluid from the power plant back into the geothermal reservoir. Injection ensures the longevity and renewability of the geothermal resource. The Applicant was previously authorized for 10 production and injection wells in the exploration phase of the project (BLM 2019 and ICPDS 2019). The Applicant would utilize the 10 permitted wells

and is proposing up to 14 new production and injection wells as part of the development project. **Figure 2** and **Table 3** below provide location information on the proposed injection and production wells.

The production wells would be completed to depths between 1,000 and 4,000 feet, averaging approximately 3,500 feet. Casing depth will comply with California Department of Conservation – Geologic Energy Management Division (CalGEM) Regulations (Chapter 4, Article 3, §§ 1723, 2018) and vary depending on the total depth of the well. After the production well is completed, a well head will be installed and connected to a transmission pipeline that will convey geothermal fluid to the Truckhaven Project (as discussed below). An industrial grate will be placed over the well to prevent falls. An insulated electric conductor running from the OEC to the wellheads along the connecting pipelines will supply electricity to the wellhead pump motors. During normal well operations, total geothermal fluid production flowrates are assumed to be between 1,000 to 2,000 gallons per minute per well with temperatures ranging from 330 to 360 degrees Fahrenheit in the production wells. Injection will occur at the same approximate levels (i.e., 8,000 gpm) but at lower temperatures of approximately 170°F.

Well pad preparation would include clearing, earthwork, drainage, and other improvements necessary for efficient and safe operation as well as fire prevention. **Figure 4** provides a well pad layout/site plan. Each drill site would be graded to prevent stormwater runoff from the pad. Stormwater runoff from undisturbed areas around the drill pads would be directed into ditches surrounding the drill pad and back onto undisturbed ground, consistent with best management practices (BMPs) for stormwater.

Table 3 – Proposed Truckhaven Production and Injection Wells

Well Name (Kettleman	Approximate UTM Coordinates (NAD83)		Legal Description (Township, Range, Section, and Aliquot Part)	Land Status	Status	
No.)	Easting (m)	Northing (m)	Section, and Anquot Part)			
14-4	598401	3678908	SW ¼ NW ¼ of T11S, R10E, Section 4	State	Authorized; Not Drilled <sup>1</sup>	
16-31	595230	3680158	NW ¼ SW ¼ of T10S, R10E, Section 31	Private	Proposed	
16-6	595210	3678596	NW ¼ of SW ¼ of T11S, R10E, Section 6	BLM	Proposed	
17-4	598499	3678146	SW ¼ of SW ¼ of T11S, R10E, Section 4	State	Authorized; Not Drilled <sup>1</sup>	
18-32	596922	3679662	SW ¼ of SW ¼ of T10S, R10E, Section Private		Authorized; Not Drilled <sup>1</sup>	
18-6	595218	3678122	SW ¼ of SW ¼ of T11S, R10E, Section 6	BLM	Proposed	
21-8	597149	3677889	NW ¼ of NW ¼ of T11S, R10E, Section 8		Authorized; Not Drilled <sup>1</sup>	
24-8	597099	3677197	SW ¼ of NW ¼ of T11S, R10E, Section 8	BLM	Proposed	
32-5	597229	3679249	NE ¼ of NW ¼ of T11S, R10E, Section 5	Private	Authorized; Not Drilled <sup>1</sup>	
42-6	595901	3679233	NE ¼ of NW ¼ of T11S, R10E, Section 6	BLM	Proposed	
46-31	595892	3680168	NE ¼ of SW ¼ of T10S, R10E, Section 31	Private	Proposed	
47-32	597401	3679940	SE ¼ of SW ¼ of T10S, R10E, Section 32 Private		Authorized; Not Drilled <sup>1</sup>	
47-4	599153	3678205	SE ¼ of SW ¼ of T11S, R10E, Section 4	State	Proposed	

Well Name (Kettleman		mate UTM es (NAD83)	Legal Description (Township, Range,	Land Status	Status
No.)	Easting (m)	Northing (m)	Section, and Aliquot Part)		
47-5	597491	3678286	SE ¼ of SW ¼ of T11S, R10E, Section 5	Private	Authorized; Not Drilled <sup>1</sup>
48-6	595948	3678030	SW ¼ of SE ¼ of T11S, R10E, Section 6	BLM	Authorized; Not Drilled <sup>1</sup>
61-6	596318	3679481	NE ¼ of NE ¼ of T11S, R10E, Section 6	BLM	Proposed
61-8	597769	3677903	NW ¼ of NE ¼ of T11S, R10E, Section 8	BLM	Proposed
62-8	597938	3677632	NW ¼ of NE ¼ of T11S, R10E, Section 8	BLM	Proposed
5980723678 01578-5	596694	3678845	SE ¼ of SW ¼ of T11S, R10E, Section 5	Private	Proposed
84-6	595034	3677023	SE ¼ of NE ¼ of T11S, R10E, Section 6	BLM	Authorized; Drilled <sup>1</sup>
85-12	596723	3678241	NE ¼ of SE ¼ of T11S, R9E, Section 12	BLM	Proposed
87-6	598297	3676690	SE ¼ of SE ¼ of T11S, R10E, Section 6	BLM	Authorized; Drilled <sup>1</sup>
87-8	595042	3676463	NE ¼ of SE ¼ of T11S, R10E, Section 8	BLM	Proposed
88-12	598401	3678908	SE ¼ of SE ¼ of T11S, R9E, Section 12	BLM	Proposed

UTM = Universal Transverse Mercator

# Geothermal Fluid Pipelines

Pipelines would be used to transport geothermal fluid from the production wells to the power plants and to deliver the cooled geothermal fluid from the power plants to the injection wells. Construction of the pipeline network would include auguring 24-inch diameter holes to depths of three- to five-feet below ground surface (bgs) at approximately 30-foot intervals along the pipeline routes. Excavated soil would be cast onto the ground surface adjacent to each hole. The production and injection pipeline routes generally follow the shortest distance from each well pad to the next well pad or the geothermal power plant in order to minimize the amount of pipe required, reduce heat losses and the energy required to move the fluids, and minimize the amount of ground disturbance. Proposed production and injection pipeline routes are shown in **Figure 2** where approximately 8.4 miles (44,231 feet) of production and injection pipeline are proposed.

#### Photovoltaic Solar Field

As provided in **Figure 2** and **Table 4** below, three potential photovoltaic solar sites are considered for development. The Applicant may develop one site or parts of the three sites to achieve 15MWs total. The 15MW photovoltaic solar field(s) would be developed to provide parasitic load to the geothermal power plant(s). The energy generated from the solar fields would not directly enter the transmission grid, but rather provide parasitic power directly to the geothermal power plants to improve the efficiency of the geothermal energy generation process by narrowing the operational energy loss between gross and net generation (i.e., the energy required to operate the power plants, energy consumed by ancillary facilities/equipment, energy consumed by well pumps, etc.).

<sup>&</sup>lt;sup>1</sup> Approved geothermal wells completed in BLM 2019 and ICPDS 2019 for the exploration component of the Project.

Table 4 - Proposed Photovoltaic Solar Field(s)

Photovoltaic Solar Field	Photovoltaic Solar Field Approximate Acres		Land Status
Solar Field A	91.2	T11S, R10E, Section 5	Private
Solar Field B	74.7	T10S, R10E, Section 32	Private
Solar Field C	100.4	T10S, R10E, Section 31	Private

The photovoltaic arrays would be comprised of solar bifacial high-power photovoltaic panels measuring 3.5 feet by 6.5 feet. The panels would be mounted on single axis tracking panels with an east to west orientation. The arrays of panels would range from 2 to 8 feet above the ground, and the footings are typically 5-feet deep, but may vary based on soil conditions.

The panels would be constructed on grubbed and cleared area that is minimally graded. Installation of the photovoltaic arrays would include installation of mounting posts, module rail assemblies, photovoltaic modules, inverters, transformers and buried electrical conductors. Concrete would be required for the footings, foundations and pads for transformers. The proposed photovoltaic solar field would be contained within a 6-foot chain-link fence to prevent unwarranted access to the facility by the public and the entering of wildlife into the facility/electrical generation area.

A short generation cable would connect the solar fields to the geothermal power plants, as provided in **Figure 2**. The generation cable would either be put on trays that connect/latch to the geothermal pipelines or be put in underground piping.

# Substation and Interconnection Line

The Project includes the construction of an electrical substation to step-up the low voltage electrical energy (13.8 kV) generated at the power plants to the higher voltage required for transmission (120 kV). The substation would include a 13.8 kV circuit breaker to protect the electric generator, a minimum of 80 megavolt ampere 13.8 kV/120 kV transformer, 120 kV potential and current transformers for metering and system protection, and a circuit breaker to protect the substation. A main control building would contain instrumentation and telecommunications equipment.

The substation footprint would be up to 300 feet by 200 feet and would be surrounded by an eight-foot-tall chain link fence with vehicle and personnel access gates. The substation pad/base would be covered by gravel and the substation equipment would be placed onto concrete foundations. The high voltage equipment would be connected by overhead busbars that are two to four inches in diameter. A steel dead-end structure within the substation would provide a termination point for the 120 kV interconnection transmission line.

#### Access Roads

New and improved access roads would be constructed using a dozer and/or road grader for the Project. Existing access roads would require an additional 10 feet width of surface disturbance to improve the existing road, and new access roads would require a total of 25 feet width of surface disturbance in order to accommodate a 20-foot wide drivable roadbed. New and improved access roads are estimated to have a disturbance footprint of approximately 48.48 acres, as provided in **Table 1** above.

Road construction techniques will vary depending on the specific site and existing road conditions. New roads are typically dozed or bladed following topography where possible. During rough grading the amount of cut and fill will be kept to a minimum while providing for drivability and maintenance. If the base material has adequate aggregate and composition to maintain a stable road surface only grading will be performed. Should additional

aggregate/base be needed for stability, it will be laid in even lifts and compacted by grading and water equipment.

Constructed access roads crossing existing drainages may require installation of culverts depending on the final approved access route(s). Any necessary culvert work would include the appropriate agency consultation, including the U.S. Army Corp of Engineering, and the culvert installation would follow BLM design criteria and would be constructed pursuant to standards established in the Gold Book (Fourth Edition - Revised 2007). A Geothermal Sundry Notice (BLM Form 3260-3) would be submitted in the event of any changes in access road routes on public lands.

# **Development Process**

#### Construction Schedule

As provided in **Table 5** below, the Project is anticipated to take approximately 12 to 15 months to develop, with initiation of energy generation operations planned for Spring/Summer 2028. Construction is planned to commence in early 2027, after all permits are secured. As observed in **Table 5**, the Applicant proposes to perform some development activities concurrently, facility construction and geothermal well drilling phases in particular.

Table 5 - Project	Construction	Schedule
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Project Activity/Phase	Duration	No. of Working Days	Planned Start Date	End Date
Site Preparation	2 months	60	1/10/2027	3/10/2027
Project Construction	14 months	420	3/11/2027	5/4/2028
Well Drilling and Pipeline Interconnection	12 months	360	1/10/2027	1/5/2028
Substation Development and Interconnection	4 months	120	1/6/2028	5/6/2028
Testing	1 month	30	3/27/2028	4/25/2028
TOTAL	AL 12-15 Months (development to be performed concurrently)			oncurrently)

#### Construction Equipment and Noise

Heavy construction equipment, including drill rigs, drilling equipment, semi-truck trailers, flatbed trucks, forklifts, excavators/bulldozers, rollers, and cranes will be used to deliver and place the proposed facility equipment on the Project Site. Smaller powered hand tools, such as drills, compressors, and welding equipment will also be used. Employee vehicles will be used to transport workers to the Site and parked at the designated parking locations.

During construction, noise emissions will be periodic and temporary, depending on the use of heavy equipment. Smaller hand tools will be used consistently during the construction phase.

Construction activities will be limited to 7:00am through 7:00pm. Construction noise from Project development will not exceed the County threshold of 75 decibels at any time of (County of Imperial Codified Ordinances § 90702.00 – Sound Level Limits). There are no sensitive receptors (i.e., schools, churches, hospitals, parks, etc.) in close proximity (i.e., within 1 mile radius) to the Site. The closest residence is approximately 350 feet to the north of Solar Field B, with several residences approximately 1,600 feet away from various proposed facilities.

#### Personnel

Project construction would likely require a maximum of up to 50 workers, with an average of 15 to 25 workers after grading and excavation. Once operating, the facility would be staffed and approximately two to three employees onsite at any given time.

#### Aggregate Requirements and Source

Native materials (derived from grading to balance cut and fill) would be used for site and road building materials to the greatest extent possible. Approximately 100,000 cubic yards of surfacing material may be needed for geothermal power plants and pipeline construction. Aggregate material would be obtained from a local source such as the Aggregate Products Inc. Salton Sea quarry facility, located approximately two miles west of the town of Salton Sea Beach and ten miles north-northwest of the Project.

# Water Requirements and Source

Approximately 50,000 gallons per day would be consumed during the first three months of construction of the geothermal power plant and 5,000 gallons per day thereafter for ten months. Water required for well drilling could range up to 35,000 gallons per day. Water requirements for grading, construction, and dust control would be around 6,000 gallons per day. One or more portable water tank(s), holding a combined total of at least 10,000 gallons, would also be maintained on the well sites during drilling operations.

Water was procured from the Coachella Valley Water District for exploration activities and would be the primary source of water for future drilling and construction activities. In case issues arise, water could also be obtained from geothermal fluid, another established private source and trucked to each construction or drill site, or a shallow water well(s) drilled from one or more of the proposed drill sites, as approved by the appropriate agency. As necessary, temporary construction water pipeline would be utilized and laid on the side of the existing roads and no additional surface disturbance is anticipated.

Up to approximately 325 gallons of water would be consumed per day for the facility operations (0.37 acre-feet per year). This water, used for septic purposes, would also be obtained from the Coachella Valley Water District. If proximity to infrastructure allows, water would be piped to the facility operations. If there are issues with piping the water it will be stored onsite in an above ground potable water storage tank. Drinking water would be purchased from a commercial bottled water source

#### Interim Reclamation and Site Abandonment

#### **Interim Reclamation**

Once drilling is complete, approximately half of the well pad areas would be reclaimed, and the remaining half would be maintained for well operations and maintenance access. The approximate construction footprint for a well pad is 3.7 acres (400 ft x 400 ft; see well pad layout in **Figure 4**). Approximately 1.2 acres per well pad would be reclaimed after drilling is complete to leave in place a 2.5 acre well pad for operations. The overall disturbance footprint for well pads after interim reclamation would be reduced from 86.82 acres to 57.5 acres (for all 23 wells/well pads).

The other development that would undergo interim reclamation is the geothermal pipeline network. Up to 54 acres (47,576 ft x 50 ft width disturbance) would be disturbed for the construction of the pipelines. After the pipelines are complete and tested, the Applicant would perform interim reclamation to reduce the disturbance width from 50 feet to 20 feet, a reduction of 21.8 acres to the pipeline disturbance footprint.

The portions of the construction areas for the well pads and pipeline segments not needed for operational and safety purposes would be recontoured to a final or intermediate contour that would blend with the surrounding topography as much as possible. Areas able to be reclaimed would be ripped, tilled, or disked on contour, as necessary and reseeded with a BLM approved native seed mixture. The stockpiled topsoil would also be spread to aid in revegetation.

#### Site Abandonment and Restoration

At the end of the Project's useful life, which is targeted to be 50 years, all equipment and facilities will be properly abandoned and dismantled. Before facility shutdown, a Site Abandonment Plan (SAP) will be prepared and submitted to Imperial County, the State of California, and BLM for review and approval. The SAP would describe the proposed approach to facility abandonment, equipment removal, disposal, and site restoration, which are briefly described below.

The geothermal production and injection wells will be abandoned in conformance with the well abandonment requirements of CalGEM. Abandonment of a geothermal well involves plugging the well bore with clean drilling mud and cement sufficient to ensure that fluids will not migrate to other aquifers. The wellhead (and any other equipment) will be removed, the casing cut off at least six feet below ground surface, and the well site reclaimed.

Reclamation of the roads would include recontouring the road back to the original contour, seeding, controlling noxious weeds and may include other techniques to improve reclamation success, such as ripping, scarifying, replacing topsoil, pitting and mulching.

Pipeline reclamation would include the removal of all pipeline components and supports, followed by the breakup and burial of the foundations and burying them. Final reclamation would also include compacting the fill over the buried foundations, regrading cut and fill slopes to restore the original contour, replacing topsoil and revegetating the areas with a BLM approved seed mixture.

The end goal of the final reclamation would be to return the site as close as possible to the conditions prior to geothermal development. All other above ground facilities would be completely removed from the site (including the photovoltaic solar field), and the concrete foundations would be broken and buried in place. All areas of surface disturbance associated with the geothermal development project would be recontoured and reseeded with a BLM approved seed mixture. Stormwater diversion would remain in place until successful revegetation is attained.

#### Energy Operations

#### **Geothermal Power Plants**

The geothermal power plant would utilize a binary design with an air-cooled condenser system. The geothermal fluids produced from the production wells would be delivered to the geothermal power plant, where the heat in the geothermal fluid would be transferred to the "binary" (or secondary) fluid in multiple stage, non-contact heat exchangers. The system would use motive-fluid (i.e., isopentane), a flammable but nontoxic hydrocarbon, as the binary fluid which circulates in a closed loop. The heat from the geothermal fluid vaporizes the binary fluid, which turns the binary turbine and electrical generator to make electricity.

The vaporized binary fluid exits the turbine and is condensed back into a liquid in a non-contact air-cooled condenser. The condensed binary fluid is then pumped back to the heat exchangers for re-heating and vaporization, completing the closed loop/cycle.

The residual geothermal fluid from the heat exchangers is pumped to the geothermal injection wells and injected back into the geothermal reservoir. The geothermal fluid would flow through the binary geothermal power plant in a closed system, with no emissions of non-condensable gases to the atmosphere. However, some of the binary working fluid may be released to the atmosphere from rotating seals and flanges. Also, during normal operations, a small quantity of air enters the motive-fluid loop in the air-cooled condenser. This air, leaked into the motive-fluid loop, is discharged back to the atmosphere through a stack, along with a small quantity of motive-fluid.

During major maintenance activities the binary power plant units, the liquid motive-fluid would first be transferred to the motive-fluid storage tank. However, not all the motive-fluid can be removed in this manner, and the residual motive-fluid would be discharged to the atmosphere when the binary power plant unit is opened. Emissions Would be regulated through a permit issued by the Imperial County Air Pollution District to ensure emission do not exceed the applicable air quality standards..

#### Production and Injection Wells

During normal well field operations, total geothermal fluid production rates are expected to be approximately 1,000 to 2,000 gallons per minute at 330 to 360 degrees Fahrenheit. The wells would be operated by pumps to move the geothermal fluid through the well and pipeline network to/from the geothermal power plant. The wells would be periodically inspected and maintained to ensure safe and efficient operations.

# Photovoltaic Solar Fields

Once fully constructed, the solar fields would be monitored periodically by the power plant staff and when needed there will be periodic panel washing and periodic vegetation clearing. As the photovoltaic arrays produce electricity passively, maintenance requirements are anticipated to be minimal.

# Applicant-Proposed Environmental Protection Measures

All Applicant and contractor personnel will be informed of the following measures and policies regarding environmental protection, safety plans, and emergency response protocols. Collectively, these measures minimize unintended impacts and events as result of facility construction and operation.

#### Air Quality

- Compaction of the energy plant site and any potential new well pads during construction, and gravel placed on the access roads would alleviate a large portion of the fugitive dust emissions.
- State of the art equipment and design would be used to ensure minimal emissions of motive-fluid. The energy plant would not have any air emissions during normal operation.
- The Project will adhere to the Imperial County Air Pollution Control District's (ICAPCD) Regulation VIII, Fugitive Dust Rules, which are designed to mitigate PM10 emissions during construction.
- The Applicant shall submit a Construction Dust Control Plan and notify the ICAPCD 10 days prior to the start of any construction activities.
- Any equipment breakdown resulting in air emissions shall be reported to ICAPCD and promptly corrected (within 24 hours when possible).
- To minimize unnecessary emissions, Project equipment and worker vehicles shall be turned off when not in use and not left idling.

- Water shall be applied to the development site and during preparation and construction to control fugitive dust.
- Earth moving work shall be completed in phases (as necessary) to minimize the amount of disturbed area at one time.
- Construction vehicles and heavy equipment that use non-surfaced facility roads and areas will be restricted to 5 mph to control fugitive dust.
- During windy conditions, barriers shall be constructed and/or additional watering will occur to minimize fugitive dust.
- Vehicle access shall be restricted to the disturbance area via signage and/or fencing.
- Equipment shall be operated according to best practices and maintained according to design specifications.
- The OEC shall be tested and inspected for leaks annually using specialized leak detection equipment to confirm proper function and high motive fluid recovery rates.
- The Project shall implement the following measures as part of its construction Best Management Practices (BMPs): providing Valley Fever awareness training for workers; providing respirators to workers when requested, including the provision of necessary training; use of closed-cab earth-moving vehicles equipped with HEPA-filtered air systems; employee testing for Valley Fever as needed; and conducting earth-moving activities downwind of workers when possible.

#### **Cultural Resources**

- The Applicant will prepare a DRECP compliant cultural resources monitoring, discovery, and mitigation plan for the construction and maintenance phases of the project.
- The Applicant would retain qualified archaeological monitors for all ground-disturbing activities associated with the Project. If a significant cultural resource site is found during ground-disturbing activities associated with construction of the Project features, the resource shall be left in place, work within the area would cease, and notification would be made to an Applicant representative and the appropriate agency representative, by telephone, with written confirmation to follow, immediately upon such discovery as defined in the Monitoring and Post-Review Discovery Plan.
- All workers involved with ground-disturbing activities associated with the Project would undergo worker resources awareness training prior to being allowed to work in the Project area.

#### Paleontological Resources

- The Applicant will prepare a Paleontological Resources Mitigation and Monitoring Plan for the exploration phase of the Project and would continue to implement for the development phase of the Project.
- The Applicant would retain a qualified paleontological monitor for all ground-disturbing activities within
  the Project area. Monitoring would entail the visual inspection of excavated or graded areas and trench
  sidewalls. In the event that a paleontological resource is discovered, the monitor would have the
  authority to temporarily divert the construction equipment around the find until it is assessed for
  scientific significance and collected.
- All Project construction and operation personnel and other on-site construction workers shall receive awareness training on paleontological resources prior to the start or continuation of any elements of the

Project. The training would provide a description of the fossil resources that may be encountered in the Project area, outline steps to follow in the event that a fossil discovery is made and provide contact information for the appropriate Project contacts. The training would be made available as a video and/or an informational brochure for future use by field personnel who are not present at the start of the Project construction. The workers should be informed that any unlawful collection of paleontological resources may be subject to a misdemeanor, a fine, or both.

#### Fire Prevention

- All construction and operating equipment would be equipped with applicable exhaust spark arresters.
- Fire extinguishers would be available on all active sites.
- Water that is used for construction and dust control would be available for firefighting.
- Personnel would be allowed to smoke only in designated areas.
- A Fire Contingency Plan would be prepared that includes provisions such as:
  - Small fires may occur around the well pad during drilling and/or testing operations. These fires would be controlled by rig personnel utilizing on-site firefighting equipment.
  - A roster of emergency phone numbers would be available on-site so that the appropriate firefighting agency can be contacted in case of a fire.
  - Calling 911 should be the first contact if fire cannot be contained.
  - The BLM El Centro Field Office (760-337-4400) would be notified of any wildland fire, even if the available personnel can handle the situation or the fire poses no threat to the surrounding area.
     Additionally, the San Bernardino Federal Interagency Command Center would be notified (909-383-5652).
  - o All vehicles shall carry at a minimum a shovel and a conventional fire extinguisher.
  - Vehicle catalytic converters (on vehicles that would enter and leave the drill site on a regular basis) shall be inspected often and cleaned of all flammable debris.
  - All cutting/welding torch use, electric-arc welding, and grinding operations shall be conducted in an area free, or mostly free, from vegetation. A welding tent would be used, as appropriate. At least one person in addition to the cutter/welder/grinder shall be at the work site to promptly detect fires created by sparks. Ormat would comply with all OSHA requirements for metal work, as applicable to the Project.
  - Personnel would be responsible for being aware of and complying with the requirements of any
    fire restrictions or closures issued by the BLM El Centro District Office, as publicized in the local
    media or posted at various sites throughout the field office district.
- Safety Data Sheets for all known chemicals of concern will be maintained and available to workers and first responders.
- The motive fluid tank will be equipped with an automated water suppression system.
- The motive fluid tank will include a concrete foundation and additional concrete containment areas.
- The motive fluid tank will be equipped with two flame detectors, which will immediately detect any fire and immediately trigger the automatic fire suppression system and the horn and strobe system.

- The motive fluid tanks will be equipped with a gas detector, which will immediately detect any motive fluid leak and notify the control room (manned by 24/7).
- A survey and analysis of the proposed fire suppression and detection equipment will be performed by a
  certified fire protection engineer to evaluate the proposed fire response system's performance. An
  evaluation of the proposed fire suppression and detection equipment in conjunction with existing
  equipment will also occur. A full report of findings will be provided to Imperial County Fire Department for
  review.
- An approved automatic fire detection system shall be installed as per the California Fire Code as adopted by the Imperial County Code. All fire detection systems shall be installed and maintained to the current fire code and regulations adopted by Imperial County.
- Fire Department access roads and gates will be in accordance with the current fire code adopted by Imperial County and the facility will maintain a Knox Box or a similar, Department-approved device for Site access.

# Geotechnical and Geologic Hazards

A detailed geotechnical analysis (including standard soil and geotechnical engineering investigations)
would be performed prior to the construction of any structures so any hazards from subsidence or
liquefaction (i.e., the changing of a saturated soil from a relatively stable solid state to a liquid during
earthquakes or nearby blasting) are avoided.

#### Noise

- To abate noise pollution, mufflers would be used on all drilling rig engines. Each well pad may have one rock muffler. Rock mufflers are approximately 30 feet tall with a diameter of about 10 feet and are used to attenuate steam venting noise during well testing.
- All construction equipment shall use noise-reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

#### Public Health and Safety

- Portable chemical sanitary facilities would be available and used by all personnel during periods of well drilling and/or flow testing, and construction. These facilities would be maintained by a local contractor.
- Solid waste materials (trash) would be deposited at an authorized landfill by a disposal contractor.
- The Project would conform to federal and state hazardous materials handling requirements.
- Construction and operation activities would be conducted in a manner to avoid creating any hazards to public health and safety.
- A power plant operations and maintenance manual would be developed in parallel with site construction. This manual would be available onsite once the plant commences operations.
- The Site is fenced to prevent unauthorized people from accessing and tampering with the geothermal facilities, and to prevent wildlife from entering the facility.
- Signage, such as "No Trespassing" and "Danger High Voltage" warnings, will continue to be posted at the Site to provide notice to unauthorized people to keep out.
- ORMAT will designate an employee to serve as the on-call Emergency Coordinator who fully comprehends the ERP and would be prepared to enact the ERP in the event of an emergency.

- Injury Contingency, Spill or Discharge Contingency, and Hydrogen Sulfide Contingency Plans will be prepared to include provisions such as:
  - Orilling operators are required by law to safety train workers and to have first aid equipment on-site. Ormat supervises the drilling operations to ensure that all safety procedures and best safety practices are in place and adhered to throughout the drilling program. Ormat's contract with the drilling company specifies that safety regulations are implemented and adhered to by the drilling contractor, and that the operation is in compliance with all existing laws pertaining to safety and environmental protection. Safety meetings are held prior to any major operation, such as running casing, cementing, or unloading the well. Drilling contractors would typically have a daily safety meeting with crews and review any issues that could come up during the 12 hours that each crew is at work.
  - o In the event injuries occur in connection with an Ormat operation, specific and immediate attention would be given to proper transportation to a medical facility.
  - A Spill or Discharge Contingency Plan will be prepared that includes provisions for managing potential sources of accidental spills or discharges, such as geothermal fluids, drilling muds/fluids, lubricants, fuels, motive fluids, and petroleum products.

# Surface and Ground Water Quality

- The BLM best management practices for stormwater would be followed, as applicable, on public lands as described below.
  - Cut and fill activities would be minimized through the selection of the geothermal power plant site and pipeline routes.
  - Off-site stormwater would be intercepted in ditches and channeled to energy dissipaters as necessary to minimize erosion around the geothermal power plant.
  - To minimize erosion from stormwater runoff, access roads would be maintained consistent with the best management practices to development roads.
- An erosion control plan would be prepared before grading to adequately control erosion during construction.
- Erosion control/soils protection measures after construction would include revegetation and periodic maintenance. Disturbed areas that would not be used after construction would be revegetated with the proper seed mixture and planting procedures prescribed by the BLM. Topsoil may be stockpiled on previously disturbed areas and applied to enhance areas to be reclaimed by revegetation.
- Any spills or unintended releases of chemicals used during Project construction and/or operation will be cleaned up with the appropriate materials (i.e., absorbent pads, foams/gels) and the affected area remediated to prevent contact with groundwater resources.
- No vehicle fueling or maintenance will take place on exposed soil.
- The Project would comply with the Clean Water Act as implemented by the State Water Resources Control Board's National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002, a general permit for construction activities, and the associated Order No. 92-08-DWQ, Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction Activity.

- The Applicant would develop a Stormwater Pollution Prevention Plan (SWPPP) prior to beginning construction, inspect all stormwater control structures, and implement other pollution prevention measures, such as applicable BMPs and conservation measures during construction.
- The SWPPP would include the specific measures and techniques for implementation to protect the project sites and adjacent areas from erosion and deposition during site grading, construction, and post-construction stabilization of sediment on the site.
- The contractor would provide a copy of the SWPPP for the various crews performing work on the construction site, and a copy would be kept on-site during the project to satisfy the requirements of the NPDES permit.
- Construction within, or alteration of, 100-year floodplains would be avoided where possible, and Ormat would obtain all required permits, as applicable for the Project.
- Exclusive of short- and long-term flow testing, wherein fluids would be discharged to the reserve pit, geothermal fluids would not be discharged to the ground surface under normal operating conditions.
   Also, each drill pad is graded towards the reserve pit to prevent movement of stormwater runoff from the pad. Further, geothermal wells are cased to prevent co-mingling of the geothermal fluids with underground aquifers.
- Each drill pad would be prepared to create a level pad for the drill rig and a graded surface for the support equipment. Stormwater runoff from undisturbed areas around the constructed drill pads would be directed into ditches surrounding the drill pad and back onto undisturbed ground, consistent with best management practices for stormwater. The site would be graded to prevent the movement of stormwater from the pad off the constructed site to areas of natural drainage in conformance with "The Gold Book" standards (BLM and Forest Service 2007).
- Traffic and Transportation
- Project personnel will coordinate that movement of any required oversized load on Imperial County roads
  with the Imperial County Department of Public Works (ICDPW) and/or on State highways with the
  California Department of Transportation (CalTrans) and the El Centro California Highway Patrol office.
  Transportation of oversized equipment will be minimized to the greatest extent feasible. Oversized
  equipment and/or large vehicles which impose greater than legal roads on riding surfaces, including
  bridges, shall require a transportation permit.
- The Project shall consider traffic safety in transporting equipment and materials to the permitted facilities to include temporary signs warning motorists on adjacent roadways and flagmen shall be used when equipment is being brought to and from the plant and wellfield sites.
- The Project shall coordinate with DPW for any requested dedication of rights-of-way needed for the consideration of existing and any future road needs.
- The Project shall file for an encroachment permit for any work or proposed work in the affected County or CalTrans road rights-of-way and for any and all new, altered or unauthorized existing driveway(s) to access the lot or lots and for any proposed road crossings.
- Any necessary temporary route closures for construction would be coordinated with BLM and Ocotillo Wells State Vehicular Recreation Area (OWSVRA) before beginning construction.

- Signs and/or flagging that advise recreational users of construction activities would be posted in coordination with BLM and OWSVRA. Whenever active work is being performed, the area should be posted with "construction ahead" signs on any adjacent access roads or trails that might be affected.
- Ormat would prepare a traffic control plan indicating how and where construction traffic would be routed and traffic control measures would be in place to ensure traffic accidents do not occur.
- Signs directing vehicles to alternative parking access and parking would be posted in the event construction temporarily obstructs parking areas near trailheads.

#### Vegetation

- Work area boundaries would be delineated with staking, flagging, or other comparable markings to
  minimize surface disturbance associated with vehicle straying. Signs and/or fencing would be placed
  around active construction areas to restrict access to project-related vehicles.
- The Applicant and all agents would not collect plants or wildlife from the Project area.
- The Applicant would preserve existing vegetation to the extent practicable during construction activities. Precautions would be taken to avoid damage to vegetation by people or equipment, as feasible.
- To prevent the spread of invasive, nonnative species, all vehicles, heavy earth-moving construction equipment, mobile trailers and RV campers brought to and used on the Project site would go through high pressure washing of the entire vehicle/unit at a commercial wash station prior to arriving and/or being used on the Project site.
- If needed, certified noxious weed free hay and straw bales would be purchased and used at all times on the Project site.
- Seed mixes for the rehabilitation and/or re-vegetation of all disturbed areas related to this Project would be certified as weed-free, per BLM standards.

# Waste Management

- All trash and food items would be promptly contained within closed, wildlife-proof containers. These would be regularly removed from the Project site to reduce the attractiveness of the area to ravens and other wildlife.
- Workers will be required to properly dispose of all refuse and trash to prevent any litter on the Project site.
- During construction, portable chemical sanitary facilities will be used by all construction personnel. These facilities will be serviced by a local contractor.
- All construction wastes, liquid and solid, will be disposed of in compliance with all appropriate local, state, and federal disposal regulations.
- Solid wastes will be disposed of in an approved solid waste disposal site in accordance with Imperial County Environmental Health Department requirements. Waste will be routinely collected and disposed of at an authorized landfill by a licensed disposal contractor.

# Wildlife

- To prevent undue degradation and removal of habitat, cover and food, existing roads would be used whenever possible and cross-country travel would be restricted to designated construction areas.
- The geothermal power plant site would be fenced to prevent wildlife from entering.

- Speed limits of 15 miles per hour would be observed on all unpaved roads in the Project area in order to minimize dust and avoid collision and incidental death of local wildlife.
- Once a well is drilled and well head completed, an industrial grate would be placed over the hole to
  prevent humans and wildlife from falling into the cellar. The grating will be sized to keep out reptiles, or
  the cellar will be designed to provide an escape route.
- To prevent a potential violation of the Migratory Bird Treaty Act, Ormat would contract a qualified wildlife biologist to conduct a preconstruction survey for nesting migratory birds (including burrowing owls) during the breeding season (February 1 through August 31) and prior to any ground clearing or other surface disturbance. The survey would include the proposed footprint of disturbance and an appropriate-sized buffer area. If disturbance is not completed within the 14 days from the preconstruction survey, an additional survey may be required after consultation with the appropriate agency. If active nests and/or burrows are found, and in consultation with the appropriate agency, an appropriately sized buffer would be established to exclude any disturbance around the nest and/or burrow until the nesting attempt has been completed. If active nests are not found, surface disturbance activities would occur within the survey validity timeframe.
- A worker education program would be prepared and presented to all employees working on the proposed Project in special species habitat. The education program would include identification of target species and their habitats, any project mitigation measures and stipulations, reporting requirements, and penalties for failure of compliance.
- Work area boundaries would be delineated with staking, flagging, or other comparable markings to
  minimize surface disturbance associated with vehicle straying. Signs and/or fencing would be placed
  around active construction areas to restrict access to project-related vehicles.
- The Applicant and all agents would not collect plants or wildlife from the Project area.
- All trash and food items would be promptly contained within closed, wildlife-proof containers. These
  would be regularly removed from the Project site to reduce the attractiveness of the area to ravens and
  other wildlife.

#### **REFERENCES**

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- Imperial County Planning and Development Services Department (ICPDS). 2019. Mitigated Negative Declaration. Initial Study and Environmental Analysis for the Truckhaven Geothermal Exploration Well Project. November 2019.
- ORNI 5, LLC (ORNI). 2019. Project Description for the Truckhaven Geothermal Exploration Well Project. October 2019.
- ORNI 5, LLC (ORNI). 2022. Plan of Development for the Truckhaven Geothermal Development Project.

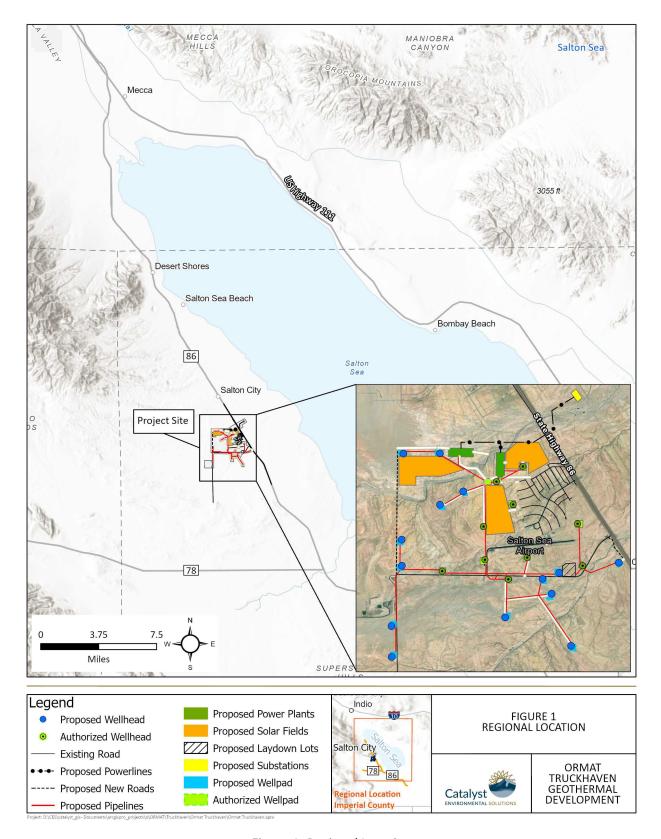


Figure 1. Regional Location

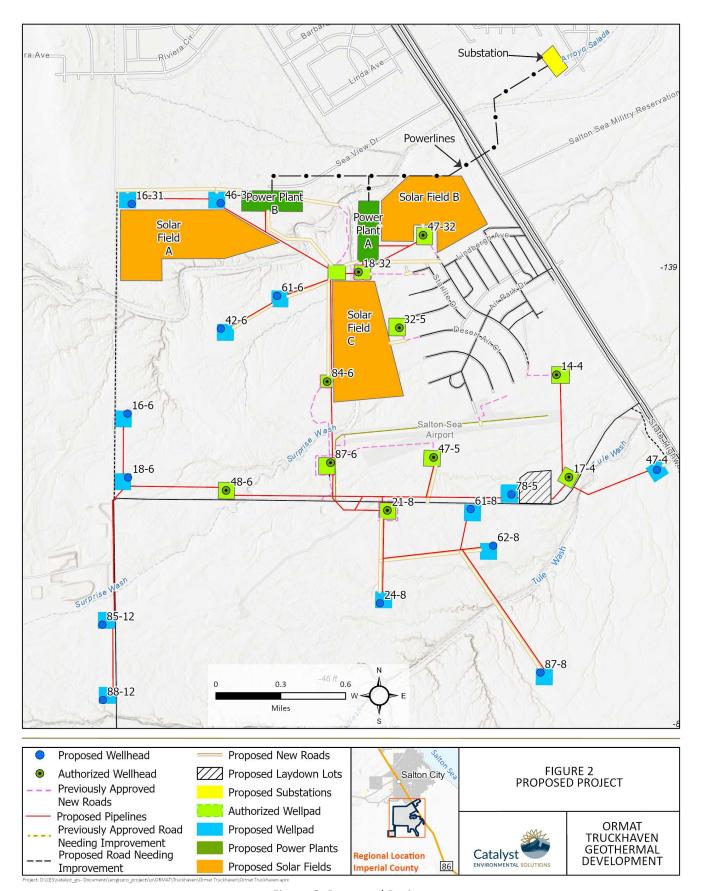


Figure 2. Proposed Project

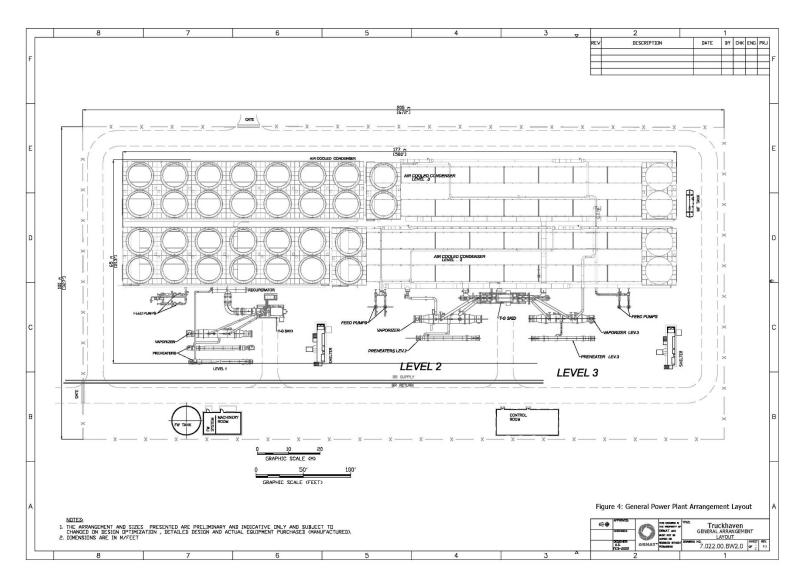


Figure 3: General Power Plan Arrangement Layout

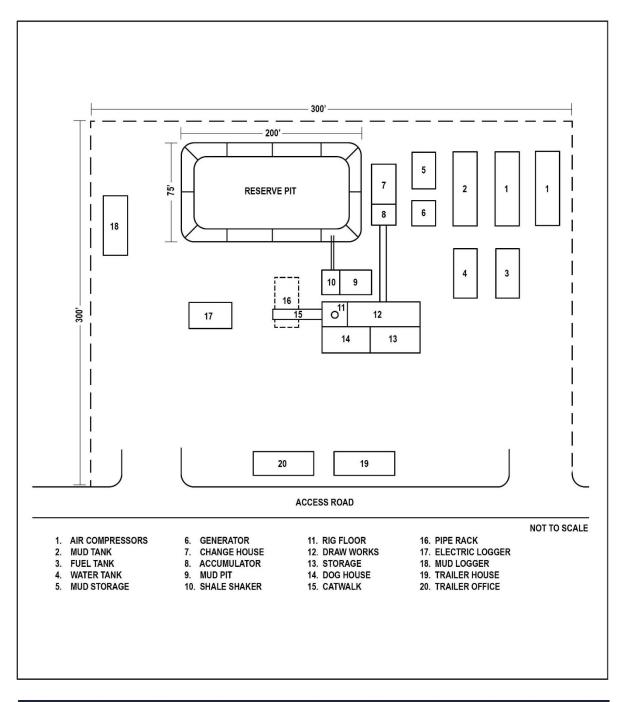




Figure 4: Typical Well Pad Layout Design

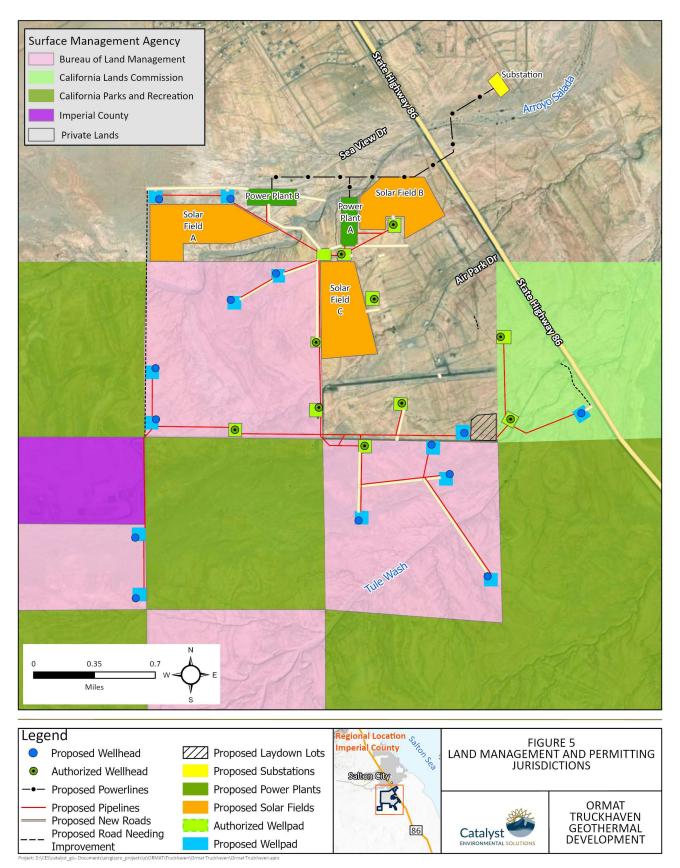
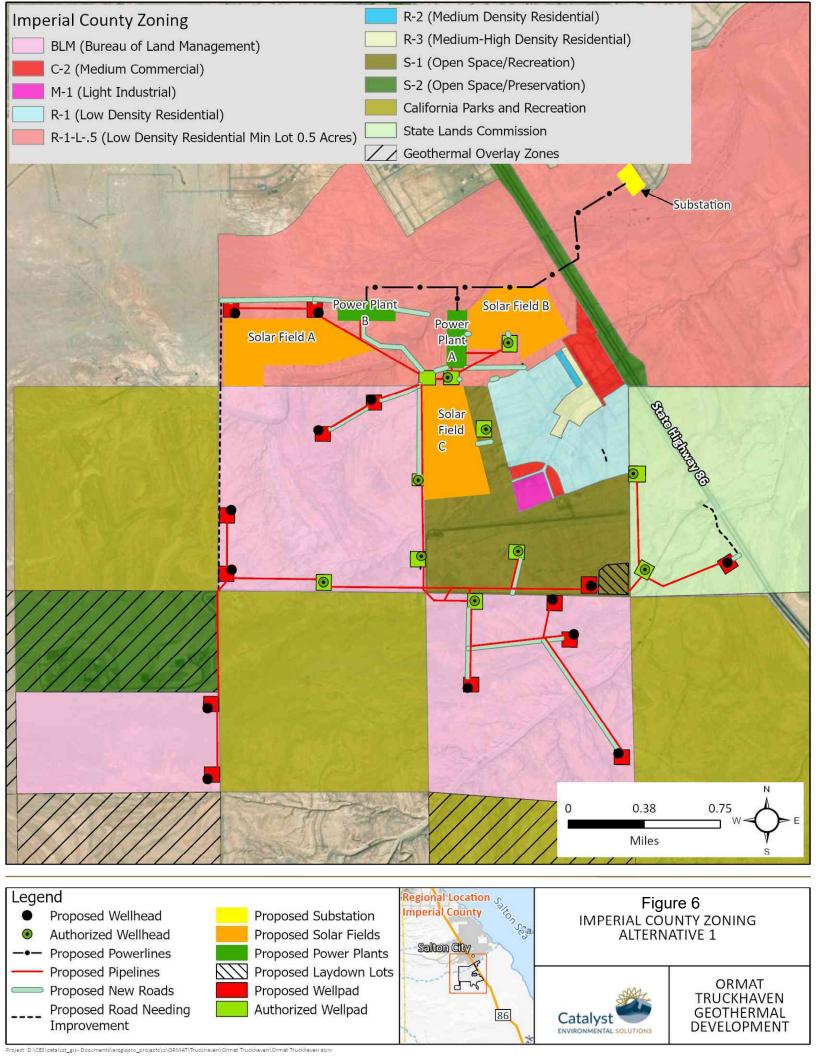
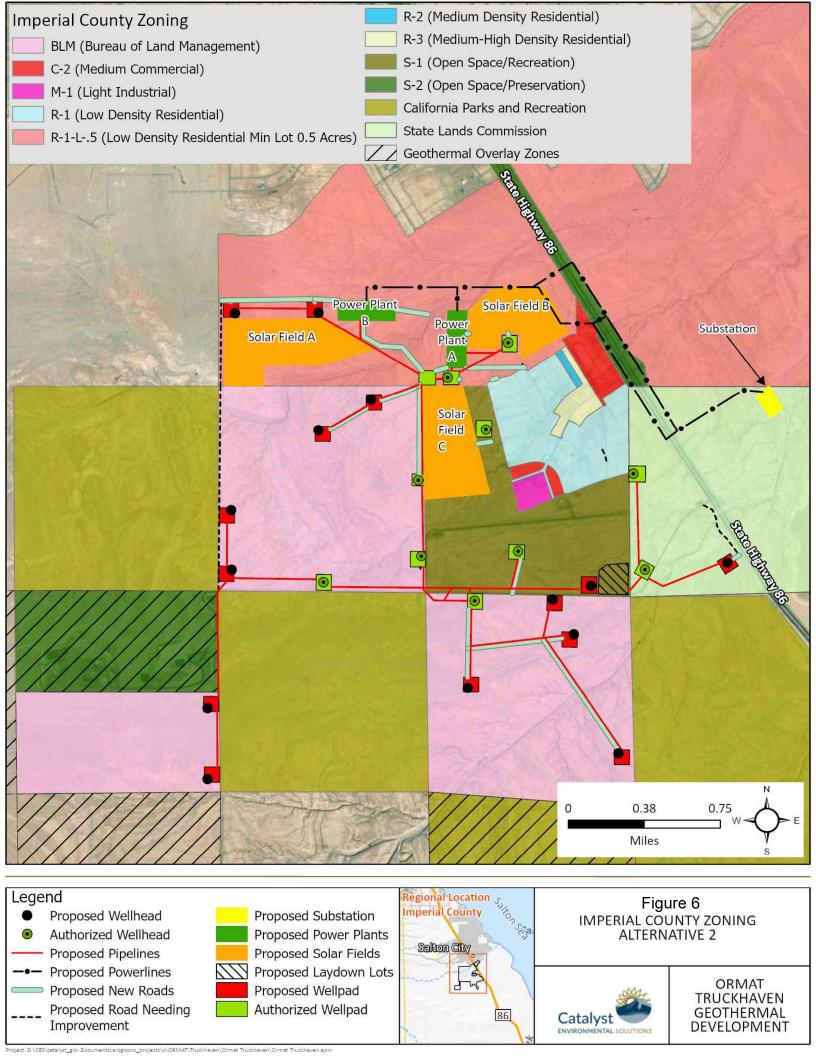
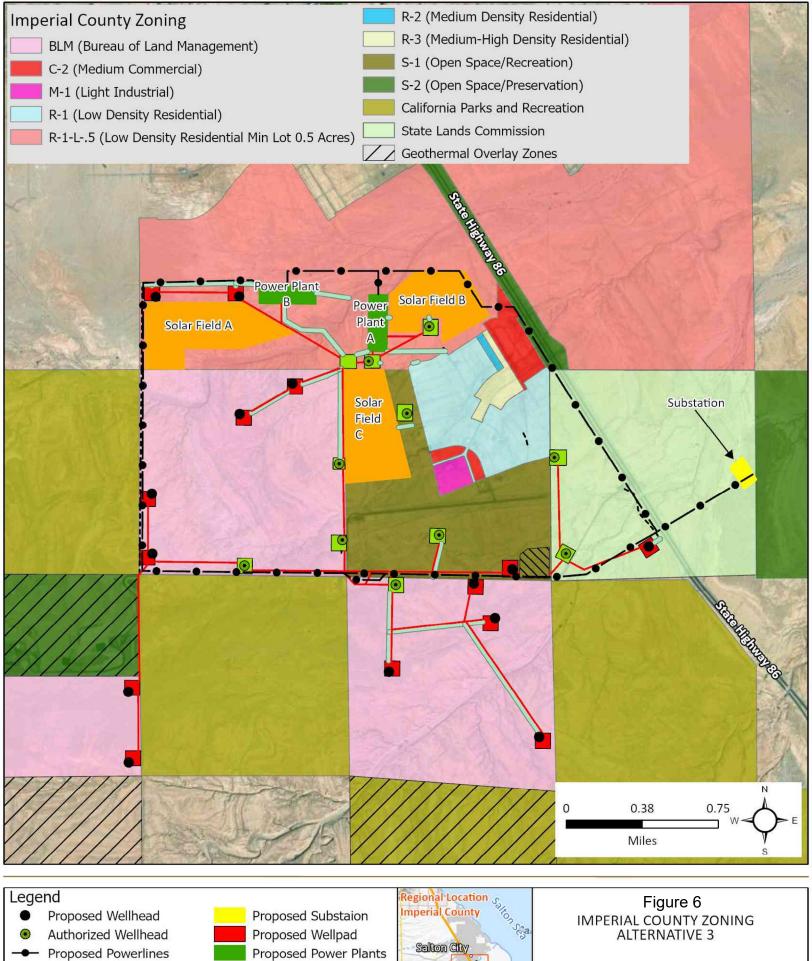


Figure 5. Land Management and Permitting Jurisdictions









Authorized Wellpad

Proposed Solar Fields

Proposed Laydown Lots

**Proposed Pipelines** 

Improvement

Proposed New Roads

Proposed Road Needing

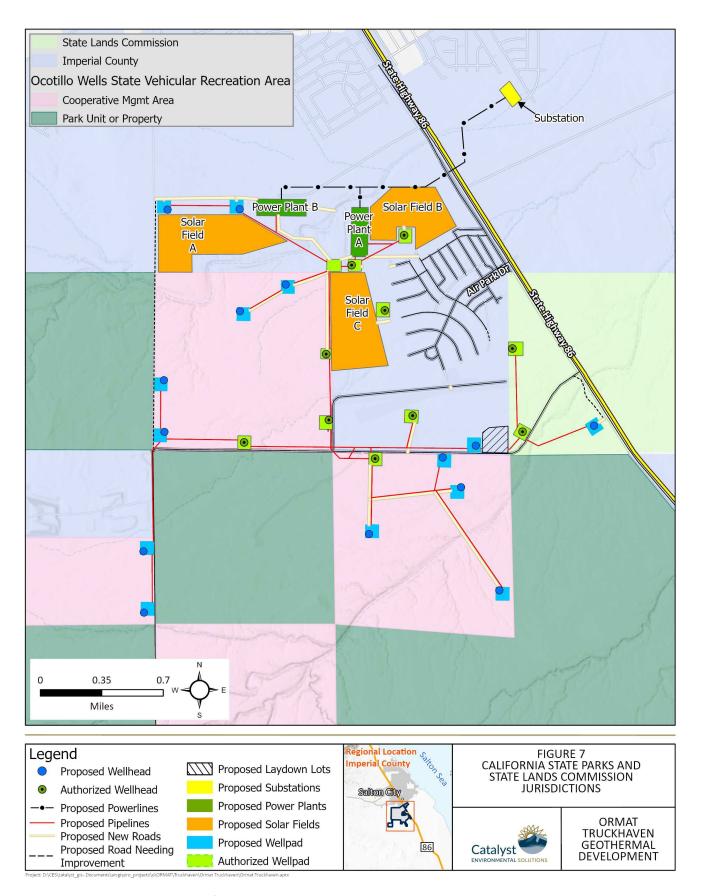


Figure 7. California State Parks and State Lands Commission Jurisdictions

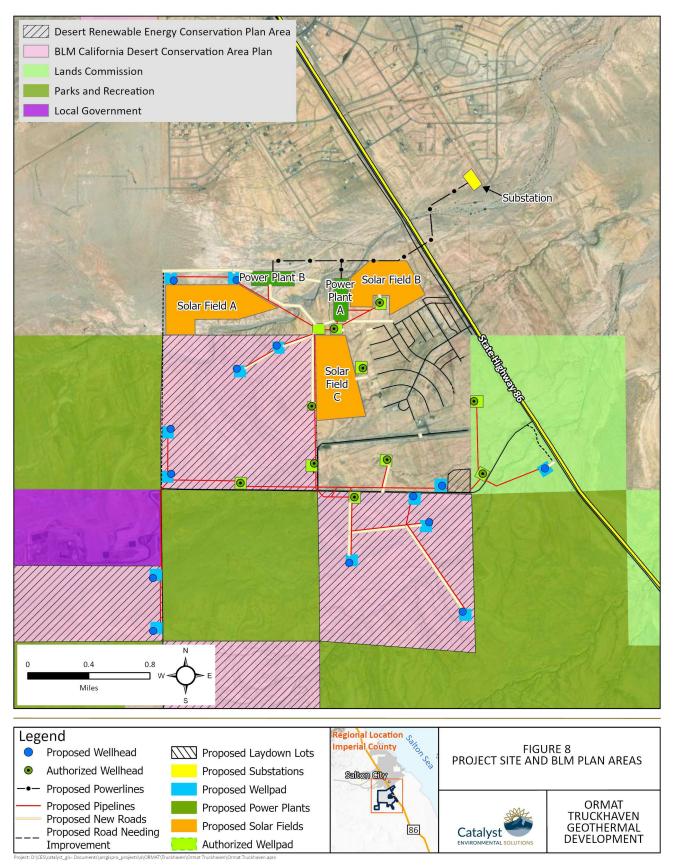
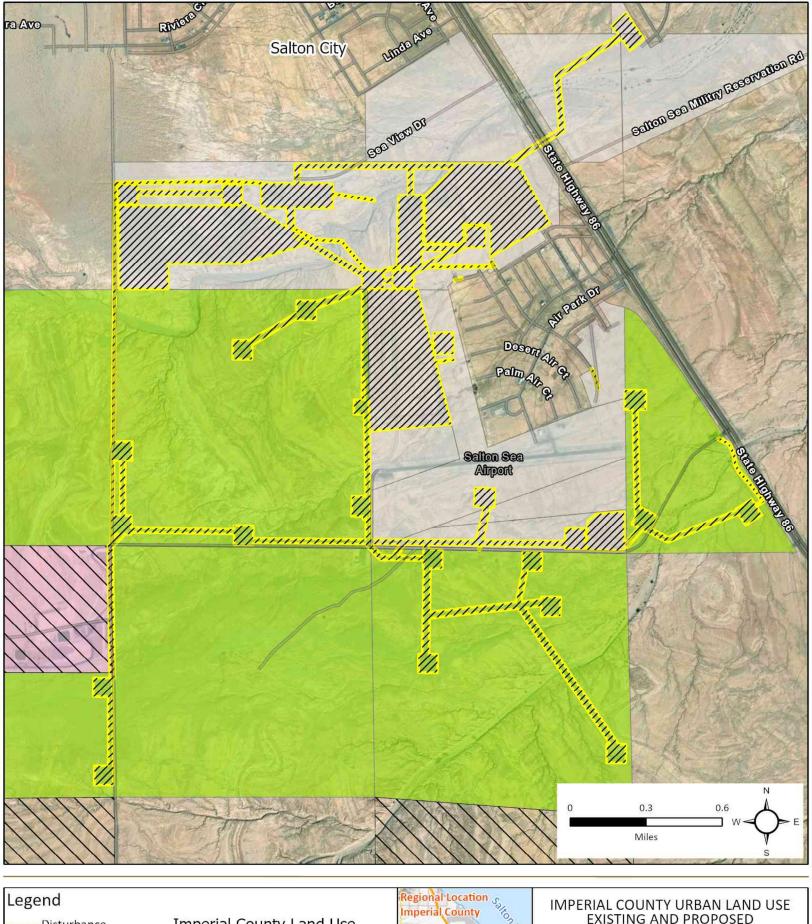
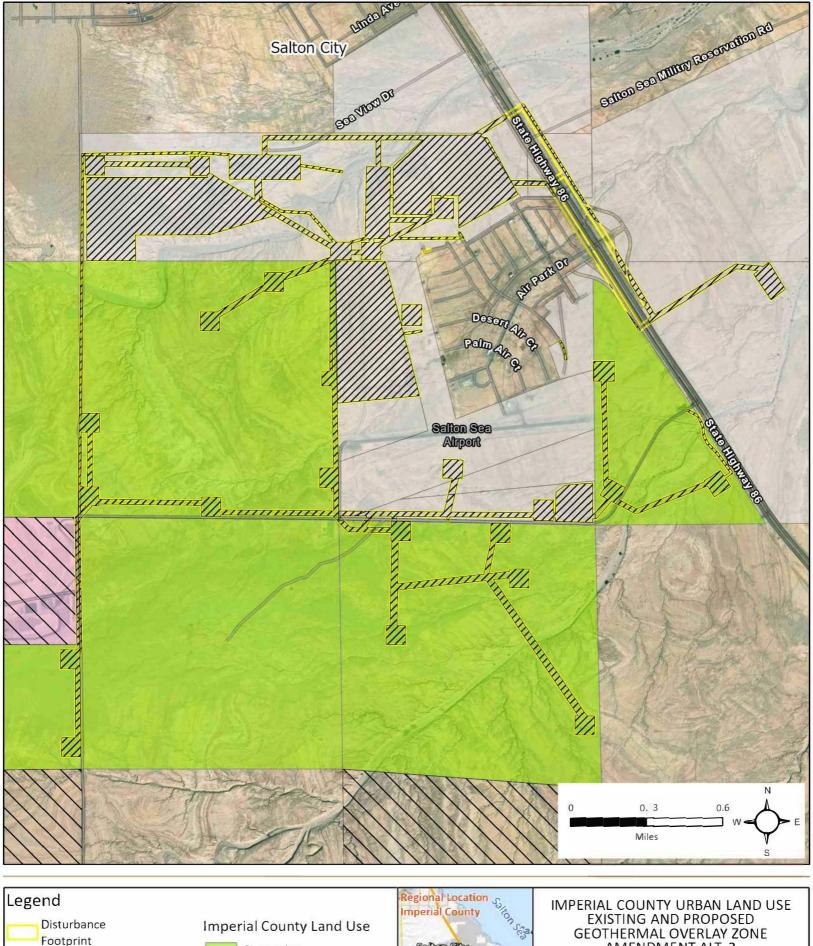


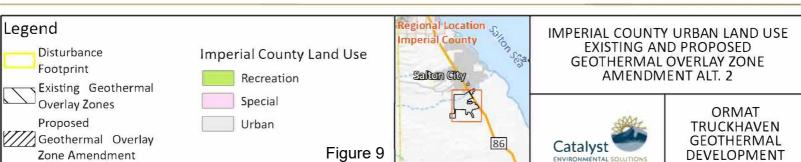
Figure 8. Project Site and BLM Plan Areas



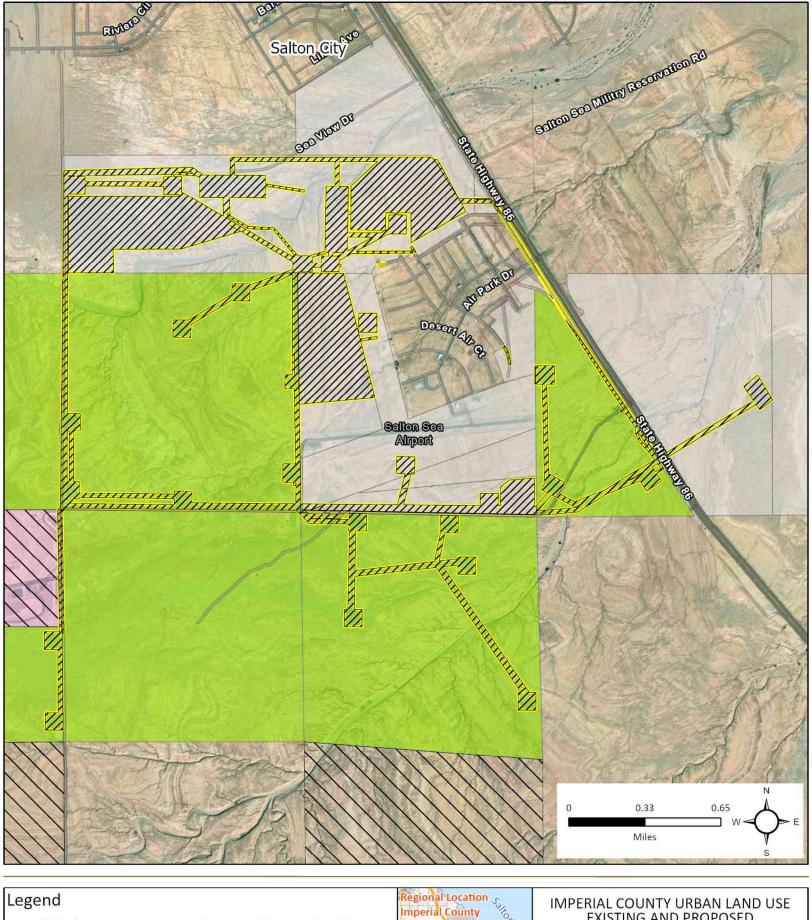


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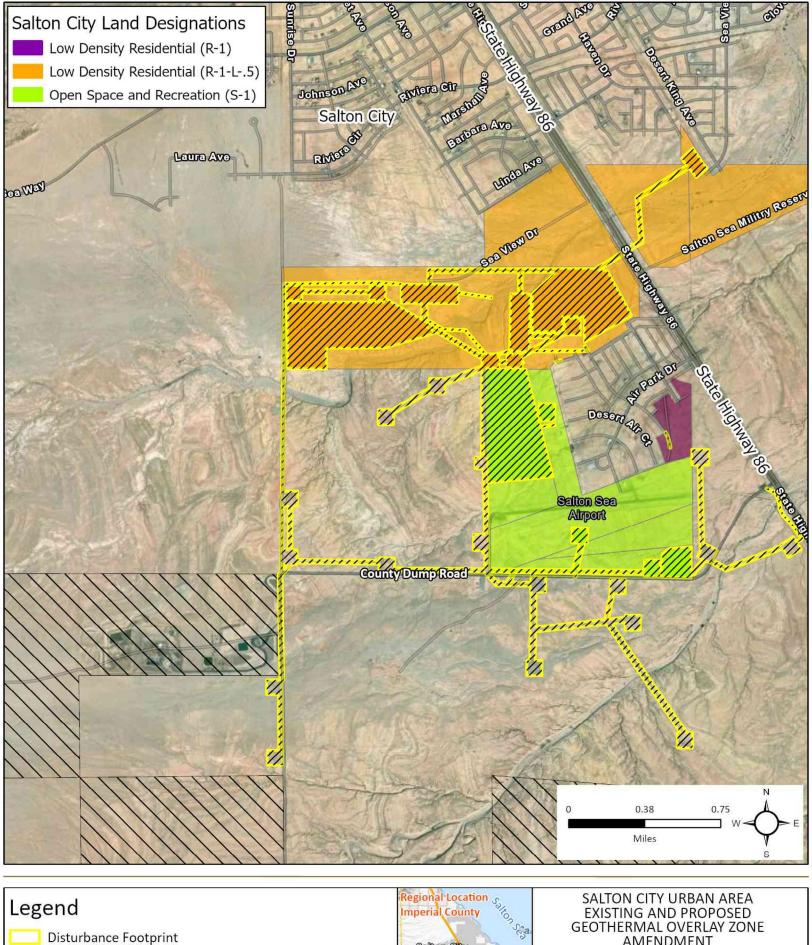


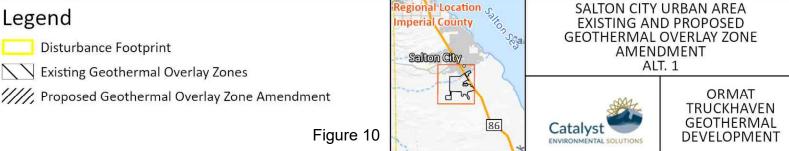
DEVELOPMENT

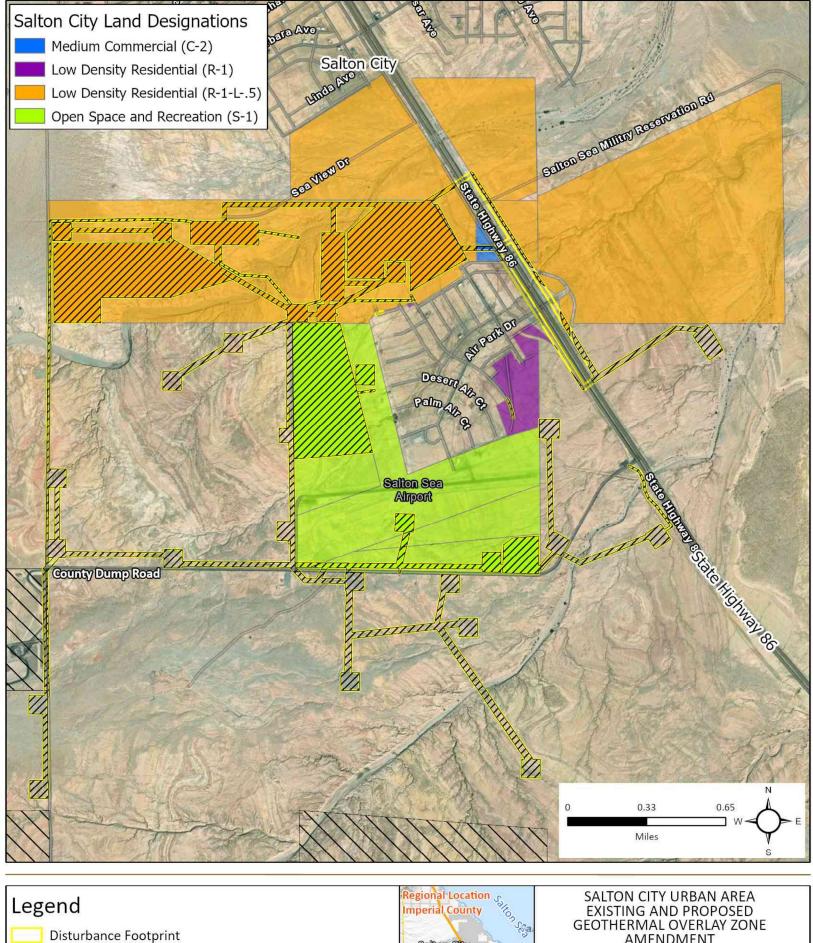


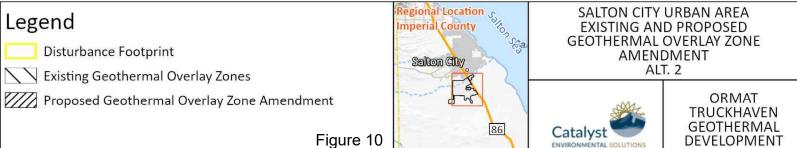


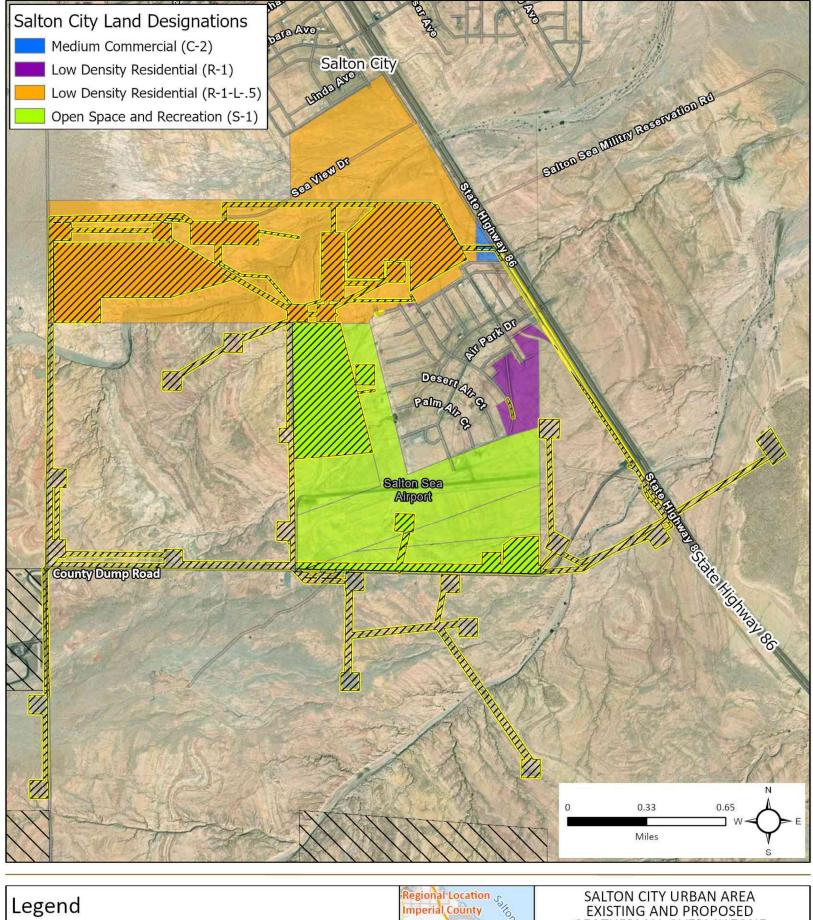
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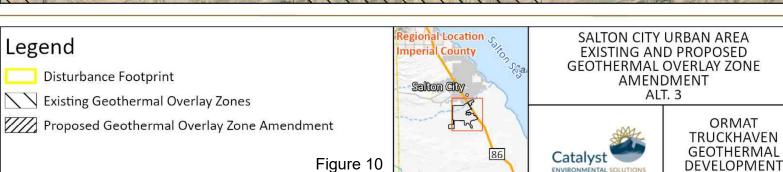




Photo A



Photo B



# Photo C



# Photo D



Photo E:



Photo F



Photo G



Photo H



# Photo I



# Photo J



# Attachment C **Standard Facility** Specifications and **Company Overview**



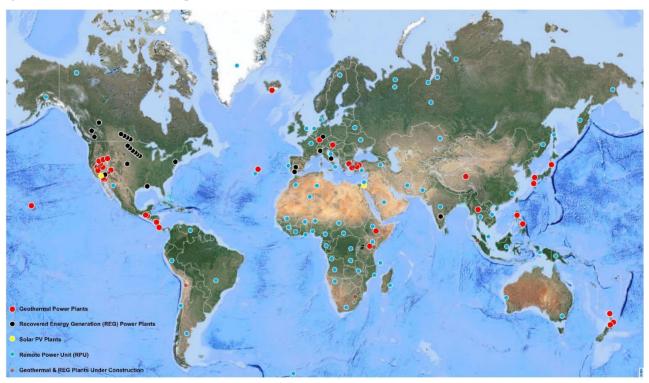
#### A. INTRODUCTION

#### A.1. About Ormat

Ormat is a global leader in development, supply and operation of state-of-the-art environmentally sound alternative energy power plants, matched to resources available locally.

Ormat has pioneered the use of organic fluids as the power system's motive fluid. These systems are generally referred to as Organic Rankine Cycle (ORC) systems. For over 55 years, Ormat's power plants have been supplying clean, reliable, cost effective and sustainable electricity to power grids on five continents, from Iceland to New Zealand, from Canada to The Andes, and from Hawaii to Japan. Ormat's power plants have been built in areas that otherwise would be forced to depend on expensive, environmentally unfriendly fossil fuels.

Ormat Technologies, Inc. is a public company traded on the New York Stock Exchange, under the symbol "ORA" and is headquartered in Reno, Nevada.



Selection of geothermal, REG, RPU and solar power plants installed and under construction by Ormat worldwide



## A.2. The Power of Experience

Ormat offers unique renewable power solutions based on the ORMAT® Energy Converter (OEC), a power generation unit which converts low, medium and high temperature heat into electrical energy. With 77 US patents (and 9 patents pending), the OEC is a state-of-the-art implementation of the Organic Rankine Cycle (ORC) technology that we have refined and perfected through more than 30 years of use under the most challenging conditions. Ormat's flexible, modular solutions are all based on the OEC, specifically designed for customized power plant options. Ormat has built over 3,270 megawatts of power plants (3,010MW installed and 260MW under construction) and over 3,000 remote power units across 77 countries and 6 continents. We have actual practical experience with ORCs ranging in size from 250kW to 125MW. Ormat's experience in designing, commissioning and operating large plants with multiple OEC units is among the benefits we bring to our customers. The ability to provide full operational control to an entire power plant makes the difference between providing a solution and merely providing products.

Over 3,270 MW (3,010MW installed and 260MW under construction), 180 Plants, 300 ORC Units, and 50 million hours of Ormat Energy Converter experience



Capacity (MW)



## A.3. The ORMAT® Energy Converter (OEC)

The OEC is a power unit specifically designed to best utilize the available heat sources at a wide range of temperatures. The major components of the OEC are heat exchangers, turbine-generator set, water/air-cooled condenser(s) and feed pump(s).

The OEC is a field proven, mature commercial product operating worldwide. The OEC is an Organic Rankine Cycle power generation system utilizing geothermal fluid, solar or waste heat to produce electrical energy, designed for outdoor installation and remote control unattended operation. Ormat has successfully installed geothermal and industrial power plants, based on the OEC technology with an accumulated experience of millions of operating hours.

## The OEC's Competitive Edge:

## Environmentally benign motive fluid

The OEC utilizes an environmentally benign Hydrocarbon motive fluid with a negligible GWP and ODP.

## Flexibility to best fit the requirements

Ormat OEC units are designed to fit the specific site conditions of the given application (heat source and environmental characteristics), thus providing the best fit solution to the customer's needs, and optimizing the efficiency and cost effectiveness of the electrical generation.

## **Modular Approach**

The OEC units vary in sizes to suit the many different power heat sources available. The OECs can generate electric power between 250kW to over 50MW per unit. The OECs can be linked together to fit the needs of larger size plants.

A key component in our multi OEC plants is the Plant Control System which comprises the unit control and the Central Station Control. The purpose of the Central Station Control (CSC) and HMI (Human Machine Interface) systems are to enable the plant operator to monitor and control the entire system, including the OECs, and the balance of plant from a central control room.

## Condensing near atmospheric pressure

The thermodynamic properties of the motive fluid provide much higher condensing pressures than comparable steam systems. By operating at condensing pressures near atmospheric, the turbine requires shorter blades and the ingress of air into the system is significantly minimized. The latter feature mitigates the need for vacuum maintenance.

#### Not susceptible to freezing

The freezing point of the motive fluid is below -100°C. This feature eliminates the requirement to implement controls and procedures to prevent freeze-up within the condenser, the heat exchangers and the piping.



#### Moisture-free turbine expansion

Unlike its steam turbine counterpart, the OEC turbine remains dry under all expected working conditions (a thermodynamic consequence of the hydrocarbons' 'drying fluid' saturation curve). This eliminates the possibility of erosion damage to the turbine's buckets and nozzles. Thus, the OEC can accommodate part load operation and large transients more effectively than steam systems.

### High turbine efficiency at low speed and low output

Due to the motive fluid's low sonic velocity, the OEC yields high turbine efficiency at 1500 or 1800 RPM (50 or 60 Hz) without a gearbox, increasing plant output while reducing costs.

#### **Synchronous generators**

Synchronous Generators above 1MW are the state-of-the-art solution preferred by utilities as they allow for the ability to support and stabilize the grid voltage and frequency, regulate the output voltage and VAr's, and can operate with a wide voltage regulation range. Further, synchronous generators do not require complex and costly capacitor banks.

### Remote, unattended operation

OECs have compiled an exemplary reliability record wherever Ormat has applied them. These OECs do not require 24/7 manning nor a licensed steam plant operator. These two features result in the ability to operate OEC plants in a remote, unattended mode.

#### Water-free cooling

Air cooled OECs operate on a closed loop, do not consume any water and are therefore free of the environmental consequences that accompany water based systems. Chemical additives are not required for the cooling tower operation and therefore there is no waste disposal. The plant has a much lower profile than a conventional condensing steam turbine with water cooled condenser and wet cooling towers, and has the advantage of never producing a visible plume resulting in a low visual profile that blends into the surroundings with minimal impact to the landscape.

Note: Water-cooled units are also designed and supplied by Ormat.

## **High Performance with Minimal Environmental Impact**

Ormat's modular power plants are designed to be environmentally friendly. Air-cooled condenser technology enables us to re-inject almost 100% of all extracted geothermal fluids, thereby avoiding the use of geothermal steam condensate or external water resources for cooling and preventing the need for chemical additives. The 100% re-injection also sustains reservoir life and productivity. Due to the low profile of the air-cooled condensers and the lack of any plumes from water cooling towers, both environmental and visual impacts are minimized.

## Field proven high availability and reliable performance

Ormat OEC's have field proven performance with very high rates of availability - Ormat binary cycle plants have demonstrated the highest average plant availability in today's market. This is a critical factor, as it drives the pay back, proves the maturity of the system and its components, defines the quality of the generated electricity, quantifies the O&M cost, and lowers the investment risk. Ormat's committed performance is contractually guaranteed and confirmed by predefined performance tests.



#### Low maintenance

Ormat OECs are proven to require minimal maintenance resulting in high availability, low maintenance and low operational costs.

#### A.4. Engineering Expertise

Ormat prides itself on being actively involved in the development of alternative energy thermal power systems and designing ORC systems since 1965, over 5 decades. Ormat's Engineering department is divided into the following disciplines: Thermodynamics, Rotating Equipment, Process Eng., Mechanical Eng. & Piping, Heat Exchange & Pressure Vessels. Ormat's Project department is divided into: Project managers, Project engineers, Sites managers, Startup & commissioning engineers. Our engineering and design staff have extensive experience allowing for best design of each application. The in-depth knowledge gained from our operations in a variety of different applications gives our company its competitive edge.

## A.5. Technology Leadership

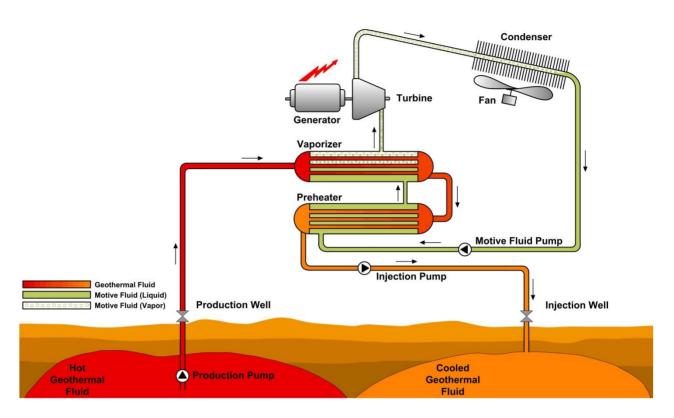
Ormat OEC design is flexible, and our products are customized for the maximum utilization of the heat source in the specific site condition and cooling method (air or water). The OEC major components are designed and manufactured in-house. The heat-exchangers, turbine and condensers are all customized and built in accordance to the specific characteristics of the heat source. Therefore we can utilize the heat source directly or indirectly using intermediate thermal fluid: steam, hot water, hydro carbons, flue gasses, acid liquids, kilns dirty flue gasses and more.

In recent years, there has been a need to improve the efficiency of power production from heat sources in general and from industrial heat sources in particular. One of the methods to accomplish this which has been developed recently is to utilize Waste Heat available in industrial complexes and facilities. By doing so, energy is recovered from the waste heat and power is generated. Ormat has developed over the last few years a power plant unit for this purpose. At present, several such generating unit systems comprising a Recovered Energy Generation (REG) system are operating in the US, Canada and in other countries around the world.



The following diagram shows a typical air-cooled OEC for a geothermal application (the air-cooled condenser in this diagram could be replaced by a water-cooled condenser).

## **Air-Cooled Binary Geothermal Power Plant**



### **Abbreviation:**

CSC	Central Station Control
HMI	Human Machine Interface
OEC	ORMAT® Energy Converter
ORC	Organic Rankine Cycle
TAS	Technical Advisory Services
GWP	Global Warming Potential
ODP	Ozone Depletion Potential



#### B. TECHNICAL PROPOSAL

#### **B.1. PROCESS DESCRIPTION**

#### **B.1.1.** General Description

The Air-cooled ORMAT® Energy Converter (OEC) unit proposed to Novus Earth Energy Operations Inc. for the Novus Earth Energy - Hinton geothermal plant will generate electrical power utilizing the geothermal fluid from a deep-well closed loop (with 80% water and 20% environmentally friendly glyco)l at Hinton, Alberta, Canada, while synchronized to the grid.

#### **B.1.2.** Process Description

## B.1.2.1. Thermodynamic Cycle - ORMAT® Energy Converter (OEC)

The OEC proposed is comprised of all equipment and controls required to convert geothermal heat into useful electric power.

The major components of the OEC consist of heat exchangers, turbine, generator, lubrication and sealing systems, air-cooled condenser and motive fluid cycle pump. The module also includes automatic and manual control valves, instrumentation (gauges, switches and transmitters), internal piping, and power and control boards.

Operation process of the OEC is based on the Organic Rankine Cycle, in which an organic fluid absorbs heat from a heat source, causing the motive fluid to evaporate, the motive fluid then expands in the turbine thus dropping in pressure and temperature and producing rotational shaft power by transforming kinetic energy gained by the vapor's expansion process.

The low-pressure vapor flows to the condensers via a recuperator, condenses and is pumped back into the preheater/vaporizer via the recuperator in its liquid state by a feed pump. The fluid is heated in the preheater to a temperature close to the boiling temperature and in the vaporizer the organic fluid reaches the boiling point and vaporizes

#### B.1.2.2. Cooling

The cooling media for the motive fluid condenser is air.

#### B.1.2.3. Heat and Mass Balance

The preliminary heat and mass balance of the process is provided in the Appendix, section C.1.3 (Drawings).



# B.1.3. Description of the ORMAT® Energy Converter (OEC)

The OEC is fully automatic operating power generation equipment, which generates electrical power from various heat sources.

The OEC incorporates a mechanical subsystem and an electrical subsystem:

### B.1.3.1. Mechanical Subsystem

The mechanical subsystem consists of the thermal-mechanical energy transfer equipment and includes heat exchangers, condenser, turbine, oil system and feed pump as well as motive fluid piping, automatic control and safety relief valves, level, pressure and temperature controls and pneumatic piping.

#### B.1.3.2. Electrical Subsystem

The electrical subsystem consists of the mechanical-electrical energy transfer equipment and includes a generator, power and control boards.

## B.1.3.3. Control Subsystem

The control subsystem is based on a programmable logic controller (PLC) which can accept all discrete (logic) and analog signals coming from the system components, process (compute) them according to a dedicated program (software), and send back logic or analog output signals (commands). The unit includes a personal computer with dedicated application used by the operator to operate the OEC and monitor its functions locally and remotely.

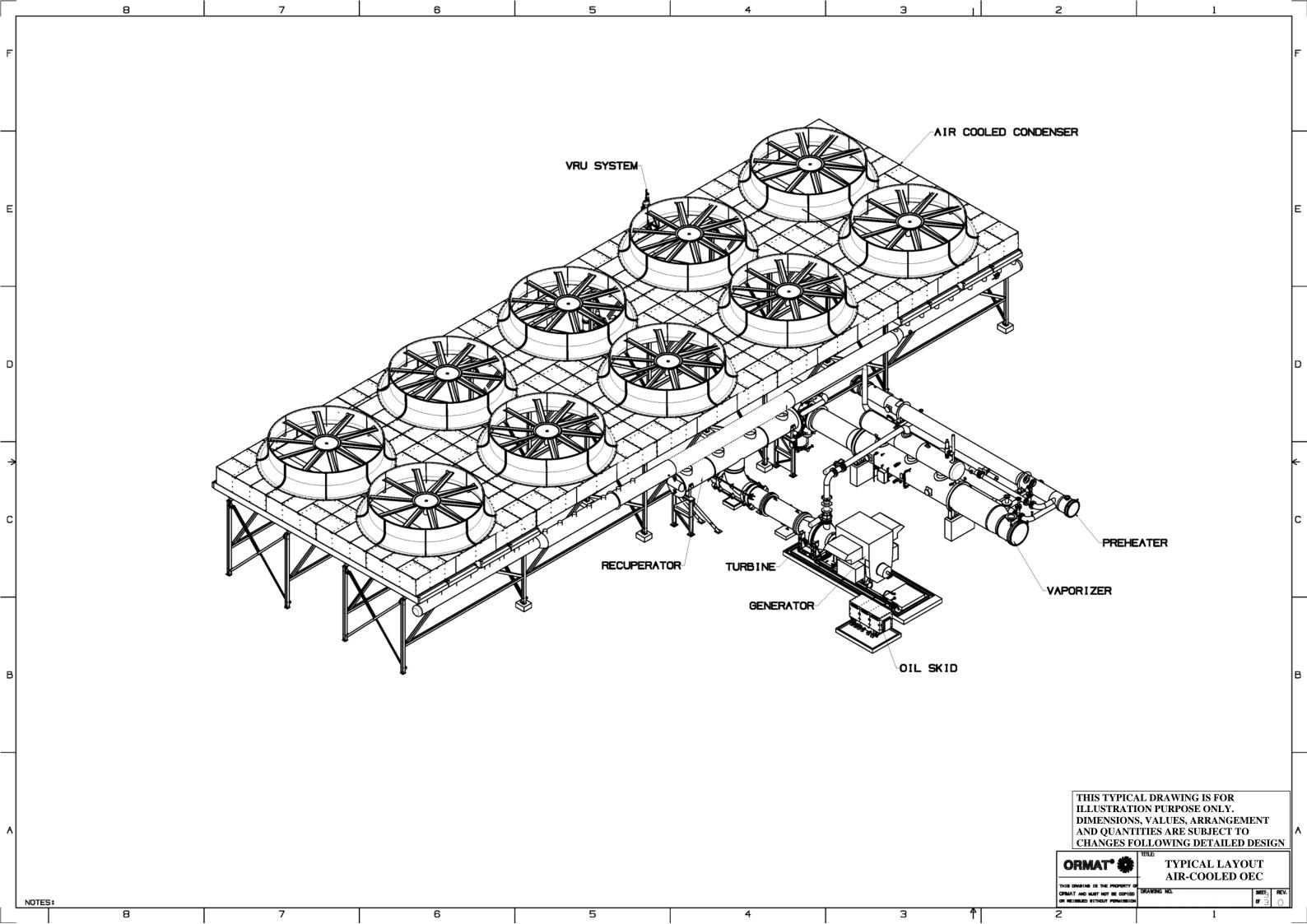


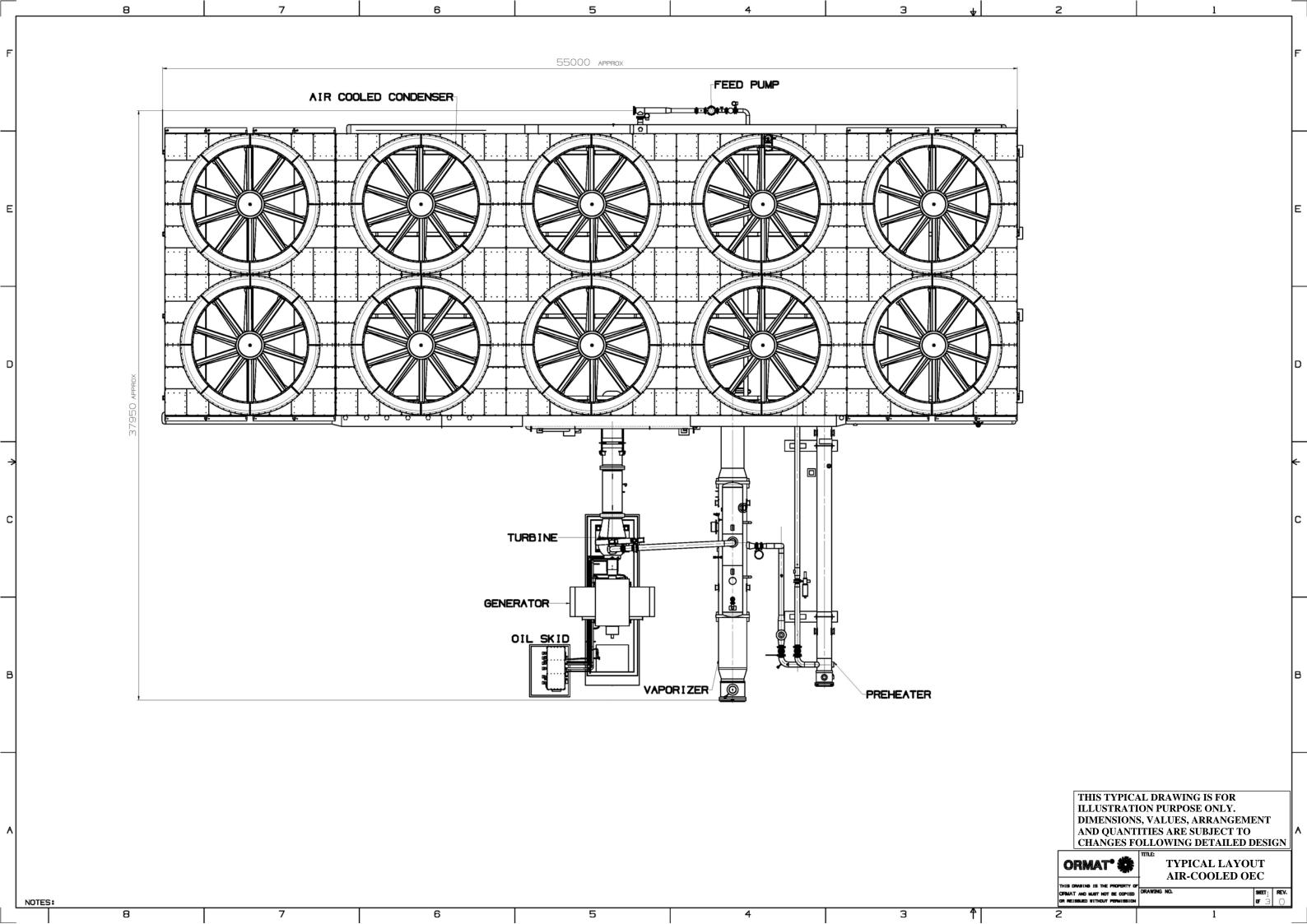
# C. APPENDICES

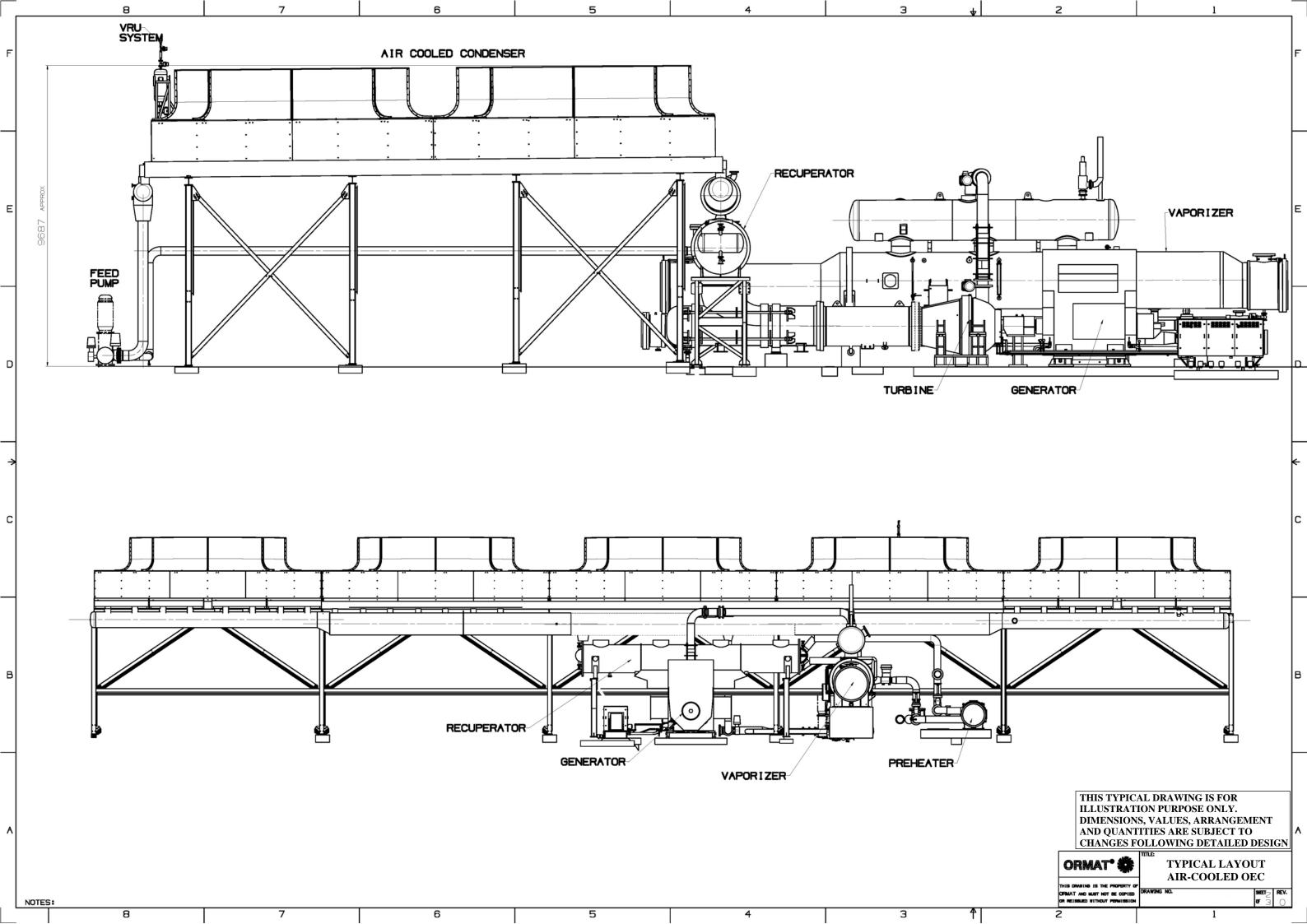
# C.1. DRAWINGS

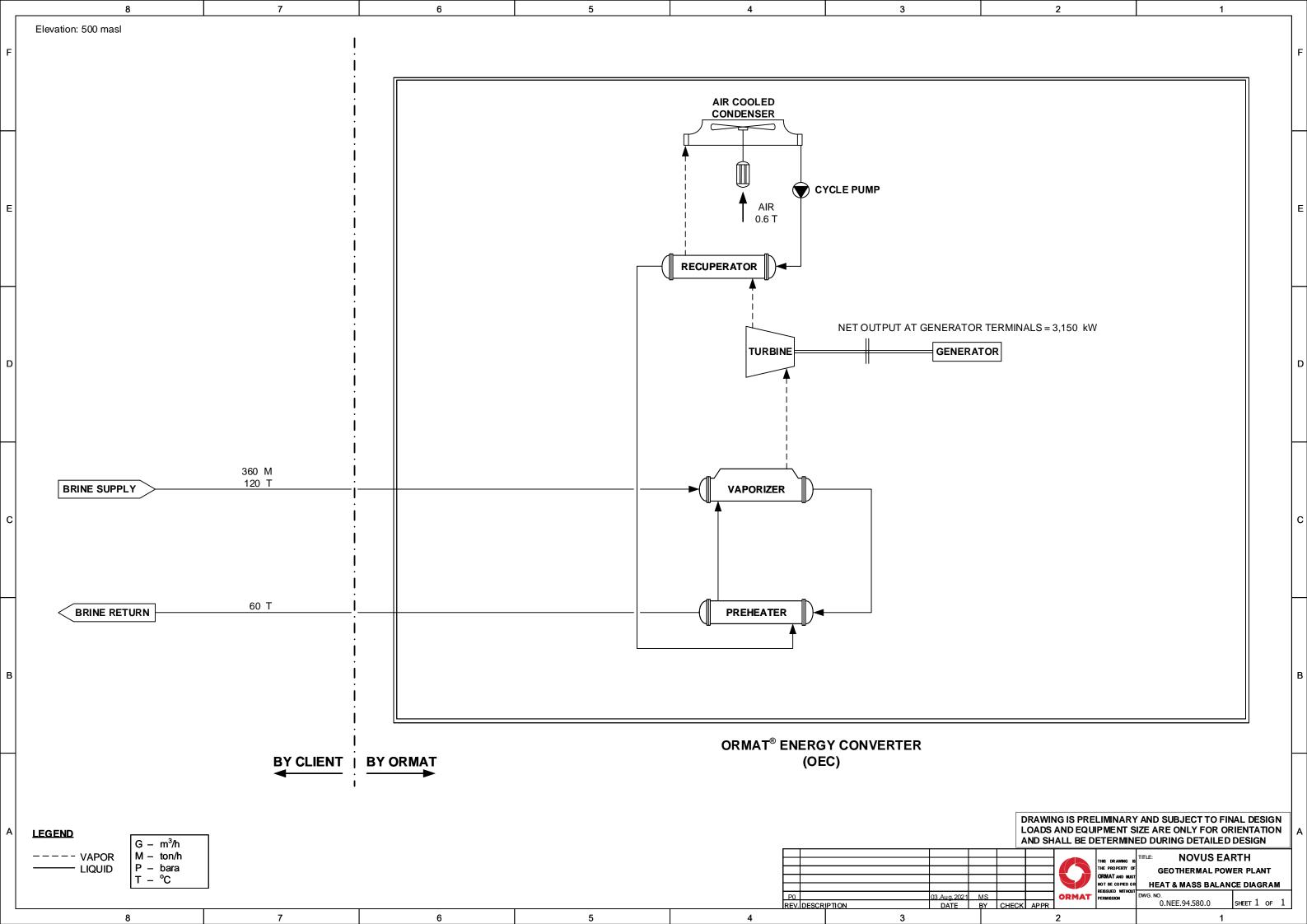
C.1.1. Typical OEC Layout

C.1.2. Preliminary Heat & Mass Balance Diagram











## C.2. OPERATION, MAINTENANCE, AND SUPPORT

Ormat's extensive in-house knowledge gained over three decades of power plant operations and development gives us our competitive edge and enables efficient maintenance and timely response to operational issues. Our proven track record and our first-hand knowledge of the equipment that we use allow us to operate and maintain our power plants efficiently and to respond to operational issues in a timely and cost-efficient manner. Being a vertically-integrated company experienced in all aspects of ORC projects, we are able to quickly and cost effectively identify and repair mechanical issues and to have timely access to technical assistance and replacement parts.

## C.2.1. <u>Post-Sales Support During Warranty:</u>

During the warranty period Ormat guarantees that the work shall conform to the specifications and criteria set forth in this Supply Contract; that it shall be performed in a professional and skillful manner; that it shall be of good quality and free from defects in workmanship, material, design and title. During the warranty period the Customer has to inform Ormat promptly upon detection of any failure, which, at the time of discovery, appears to give rise to a warranty claim. All direct costs of any warranty correction and remedying shall be borne by Ormat, according to the terms and conditions of the supply agreement.

## C.2.2. <u>Post-Sales Support After Warranty Period:</u>

Post warranty and throughout the lifetime of the system (which is expected to be more than 25 years) Ormat continues to support its customers through the Ormat Customer Support Department. Customer Support is available year round, and provides the following services:

#### 1. Technical Inquiries

- 1.1. Support Operation and Maintenance
- 1.2. Perform Troubleshooting
- 1.3. Analyze plant and Generating Unit Performance
- 1.4. Assist in equipment upgrade and modification

#### 2. Training

- 2.1. Classroom training
- 2.2. On the job practical training
- 2.3. Turbine repair training
- 2.4. Initiate periodical site visits

## 3. Administration

- 3.1. Propose and sell spare parts and tools
- 3.2. Coordinate support of Ormat personnel from other departments



#### C.3. MANUFACTURING

Ormat manufactures major power plant components at our state-of-the-art facilities. For our customers, this translates to precisely tailored solutions that meet the specific requirements and challenges of every site and power resource.

Our extensive knowledge and experience is integrated into the manufacturing processes to create the highest-quality, most reliable equipment available.

**State-of-the-Art Facilities:** All equipment manufactured by Ormat is preassembled and tested in our facilities to ensure rapid and dependable installation on site. Our intimate knowledge of the equipment allows us to offer the most professional training, services and product support available, as well as respond to operational issues in a timely and cost effective manner.

Our main manufacturing complex covers over 23,000 m<sup>2</sup> and includes CNC, data processing, ASME certified heat exchanger shops, fabrication, clean rooms and assembly areas. Specialized testing facilities are used for certifying the full range of equipment from turbines and generators to engines and heat exchangers.

All laboratories are equipped with the latest equipment and are operated by highly trained personnel. In addition, at our manufacturing site, we host a specialized vocational training school for local apprentices.

Ormat designs, engineers, procures, manufactures, assembles, tests and integrates the OEC under the same roof with continuous QA and QC along the process. The outcome is a reliable, state of the art product that is supplied to the customer on time with a minimum dependency on sub-contractors.

In 2009, in order to meet its increasing workload, Ormat doubled its manufacturing capacity with the addition of a 7,000 m<sup>2</sup> "Green" facility, in line with Ormat's commitment to environmental concerns (use of natural light and recycled water, PV electrical generation on roof, ventilation in place of air-conditioning).



**Certifications:** Ormat is a certified with ISO 9001, ISO 14001 ASME, TUV, and National Board certifications. More on our quality assurance process can be found in the following section.



# C.4. QUALITY ASSURANCE

Ormat's Quality, Environmental, Health and Safety (QEHS) policy includes the following elements:

- a. Active communication between Ormat and its customers and suppliers in order to achieve understanding of customer's requirements, expectations, customer satisfaction and to provide effective product support.
- b. Compliance with applicable environmental, health and safety regulations where Ormat operates.
- c. Continuous efforts to achieve:
  - i. High standards of safety in the manufacturing, construction and operational phases of our products in order to minimize risks to personnel and the public.
  - ii. Improved product performance and reliability.
  - iii. Reduced costs and time to market.
  - iv. Prevention of pollution.
  - v. Savings in energy and materials.
- d. Implementation and certification of an integrated management system in accordance with ISO 9001 and 14001 international standards.
- e. Top management is committed to dedicate resources and attention in order to comply with the requirements and continually improve the effectiveness of the integrated management system.

Our mission is to maintain the highest level of customer satisfaction through continuous improvement of quality, delivery, and service in compliance to ISO 9001, ISO 14001, PED and ASME codes/standards.





# C.5. SELECTED REFERENCES

The following section includes a list of selected sites manufactured by Ormat, divided into the following groups:

- Power Plants Owned by Ormat
  - o Geothermal
  - o Recovered Energy Generation (REG)
  - o Solar PV
- Power Plants Supplied by Ormat to Third Parties
  - o Geothermal
  - o Recovered Energy Generation (REG)
  - o Solar PV
  - o Solar Thermal



# Power Plants Owned by Ormat

# Q1 2020

Project	Location	Utility	Capacity (MW)*	Operational Since**	Application
CD4	California, USA	SCPPA- 16MW Silicon Valley Clean Energy- 7MW Monterey Bay- 7MW	30	under construction	Geothermal
Wister solar	California, USA	SDG&E	20AC	under construction	Solar PV
Steamboat Hills Enhancement	Nevada, USA	Southern California Public Power Authority (SCPPA)	19	under construction	Geothermal
Heber Complex Repowering	California, USA	Southern California Public Power Authority (SCPPA)	11	under construction	Geothermal
Tungsten Solar	Nevada, USA	Southern California Public Power Authority (SCPPA)	7 (AC)	2019	Solar PV
Olkaria III Complex	Kenya	Kenya Power and Light Co. (KPLC)	150	2000, 2008, 2013, 2014, 2016, 2018	Geothermal
McGinness Hills Complex	Nevada, USA	NV Energy (phase 1&2) and Southern California Public Power Authority (SCPPA) (phase 3)	143	2012, 2015, 2018	Geothermal
Brady	Nevada, USA	NV Energy	26	1992, 2004, 2007, 2018	Geothermal
Sarulla – NIL 2	Indonesia	PT Perusahaan Listrik Negara (PLN)	110 <sup>(1)</sup> (14 owned by Ormat)	2018	Geothermal
Sarulla – NIL 1	Indonesia	PT Perusahaan Listrik Negara (PLN)	110 <sup>(1)</sup> (14 owned by Ormat)	2017	Geothermal
Sarulla - SIL	Indonesia	PT Perusahaan Listrik Negara (PLN)	110 <sup>(1)</sup> (14 owned by Ormat)	2017	Geothermal
Tungsten Mountain	Nevada, USA	Southern California Public Power Authority (SCPPA)	27	2017	Geothermal

<sup>&</sup>lt;sup>1</sup> Ormat owns 12.75% interest in the Sarulla consortium.



Project	Location	Utility	Capacity (MW)*	Operational Since**	Application
Platanares <sup>(2)</sup>	Honduras	Empresa Nacional de Energía Eléctrica (ENEE)	38	2017	Geothermal
Bouillante <sup>(3)</sup>	Guadeloupe Island	Électricité de France S.A. (EDF)	15	1995, 2004	Geothermal
Don A. Campbell  — Complex <sup>(4)</sup>	Nevada, USA	Southern California Public Power Authority (SCPPA)	36	2013, 2015	Geothermal
Ormat Rooftops	Ormat Manufacturing Facility	Ormat	1.3	2014	Solar PV
Tuscarora	Nevada, USA	NV Energy	18	2012	Geothermal
Puna Complex <sup>(5)</sup>	Hawaii, USA	Hawaiian Electric Light Co.	38	1992, 2004, 2012	Geothermal
Neal Hot Springs	Oregon, USA	Idaho Power	22	2012(6)	Geothermal
San Emidio	Nevada, USA	NV Energy	11	2012 <sup>(7)</sup>	Geothermal
Jersey Valley	Nevada, USA	NV Energy	10	2011	Geothermal
North Brawley	California, USA	Southern California Edison	13	2010	Geothermal
OREG III – GRE - CS13 <sup>(8)</sup>	Minnesota, USA	Great River Energy	5.5	2010	REG on 1 Gas Turbine Model RB-211
OREG IV – Peetz	Colorado, USA	Highline Electric Association	3.5	2009	REG on 2 Gas Turbines Model Solar Mars 100
OREG II – CS3, CS5, CS8, CS12 <sup>(9)</sup>	North Dakota, Minnesota & Montana, USA	Basin Electric Power Cooperative	22	2008-2009	REG on 1 Gas Turbine Model RB-211

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<sup>&</sup>lt;sup>2</sup> Ormat holds the assets under a Build, Operate and Transfer (BOT) structure for approximately 15 years.

<sup>&</sup>lt;sup>3</sup> Acquired by Ormat in July 2016. Ormat owns a 60% stake in the project company Geothermie Bouillante SA.

<sup>&</sup>lt;sup>4</sup> Ormat owns a 63.3% stake in Don A. Campbell complex.

<sup>&</sup>lt;sup>5</sup> Ormat owns a 63.3% stake in the Puna Complex.

<sup>&</sup>lt;sup>6</sup> The Neal Hot Springs power plant was acquired by Ormat in April 24, 2018 and 40% interest is held by Enbridge.

<sup>&</sup>lt;sup>7</sup> The San Emidio power plant was acquired by Ormat in April 24, 2018

<sup>8</sup> Ormat owns a 63.3% stake in the OREG III facilities

<sup>&</sup>lt;sup>9</sup> Ormat owns a 63.3% stake in the OREG II facilities.



Project	Location	Utility	Capacity (MW)*	Operational Since**	Application
Heber Complex	California, USA	Southern California Edison & Southern California Public Power Authority (SCPPA)	81	1985, 1993, 2005, 2006, 2008	Geothermal
Steamboat Complex	Nevada, USA	NV Energy & Southern California Public Power Authority (SCPPA)	65	1988, 1992, 2005, 2007-2008	Geothermal
Amatitlan	Guatemala	Instituto Nacional de Electricidad (INDE)	20	2007	Geothermal
Raft River	Idaho, USA	Idaho Power	11	2008(10)	Geothermal
Ormesa Complex	California, USA	Southern California Edison	39	1987-1989, 2005-2007	Geothermal
OREG I – CS7, CS9, CS10, CS11 <sup>(11)</sup>	North Dakota and South Dakota, USA	Basin Electric Power Cooperative	22	2006	REG on 1 Gas Turbine Model RB-211
Zunil	Guatemala	Instituto Nacional de Electricidad (INDE)	20	1999	Geothermal
Mammoth Complex	California, USA	Southern California Edison Pacific Gas and Electric Company	29	1984, 1990	Geothermal

<sup>\*</sup> In power plant owned by Ormat the capacity figure given is net to the grid generating capacity, which is defined in Ormat's 10K reports. In solar power plants the MWdc is indicated.

1,

<sup>\*\*</sup> In power plants that were built in phases, the year of each new phase is indicated.

<sup>&</sup>lt;sup>10</sup> The Raft River power plant was acquired by Ormat in April 24, 2018. Ormat provided EPC services and installed its proprietary technology in Raft River to its former owner U.S. Geothermal in 2007

<sup>&</sup>lt;sup>11</sup> Ormat owns a 63.3% stake in the OREG I facilities



# Power Plants Supplied by Ormat to Third Parties

Q1 2020

Project	Location	Customer	Capacity (MW)*	Operational Since	Application	Project Type
Emirler JES 1	Turkey	Pekdemir	7	under construction	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Cerro Pabellon 3	Chile	Geotérmica del Norte (GDN)	32	under construction	Geothermal	EPC Repeat Order
Nezih Beren	Turkey	Maren	20	under construction	Geothermal	Supply of Equipment, Supervision of Installation and Start Up Repeat Order
Ching-Shui	Taiwan	Chingshuei Geothermal Power Corporation	5	under construction	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Pamukoren 7	Turkey	Celikler	32	under construction	Geothermal	Supply of Equipment, Supervision of Installation and Start Up Repeat Order
Laguna Colorada	Bolivia	Empresa Nacional de Electricidad (ENDE)	5	under construction	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Ngawha 4	New Zealand	Top Energy	34	under construction	Geothermal	EPC Repeat Order
EFE 8 U2	Turkey	Gurmat	30	under construction	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Tuzla West	Turkey	Yerka Yilsan	12	under construction	Geothermal	Supply of Equipment, Supervision of Installation and Start Up



Project	Location	Customer	Capacity (MW)*	Operational Since	Application	<b>Project Type</b>
EFE 8 U1	Turkey	Gurmat	30	under construction	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Soda Lake 3	USA	Cyrq Energy	24	2019	Geothermal	EPC Repeat Order
Salihli JES 3	Turkey	Sanko	30	2019	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Salihli JES 2	Turkey	Sanko	25	2019	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Ala 2	Turkey	Maspo	34	2019	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Akkecili Mis 3	Turkey	Soyak	24	2019	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Akkecili Mis 2	Turkey	Soyak	24	2019	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
TAOM	New Zealand	Eastland Group	28	2018	Geothermal	EPC
JES3 TR	Turkey	Turkerler	27	2018	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order



Project	Location	Customer	Capacity (MW)*	Operational Since	Application	Project Type
Pamukoren 6	Turkey	Celikler	32	2018	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Incirliova JES 1	Turkey	3S Kale	27	2018	Geothermal	Supply of Equipment, Supervision of Installation and Start Up.
EFE 7	Turkey	Gurmat	27	2018	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Akkecili Mis 1	Turkey	Soyak	15	2018	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Sultanhisar 2	Turkey	Celikler	23	2018	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Baklaci	Turkey	Akca	20	2018	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Kizildere 3 unit 2	Turkey	Zorlu	16	2018	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Melih	Turkey	Maren	32	2017	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order



Project	Location	Customer	Capacity (MW)*	Operational Since	Application	Project Type
Caferbay Salihli JES 1	Turkey	Sanko	16	2017	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Kizildere 3 unit 1	Turkey	Zorlu	22	2017	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
EFE 6	Turkey	Gurmat	27	2017	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Ala 1	Turkey	Maspo	11	2017	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Cerro Pabellon	Chile	Geotérmica del Norte (GDN)	53	2017	Geothermal	EPC
TR2	Turkey	Turkerler	24	2016	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
DORA 4	Turkey	MEGE	21	2016	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Veyo	Utah, USA	Utah Associated Municipal Power Systems (UAMPS)	9	2016	3 Gas Turbines Model Solar Mars 100	EPC
Gumuskoy 1, 2	Turkey	Turcao - BM	9	2015	Geothermal	Repowering non- working older units of another provider. Design and supply Equipment



Project	Location	Customer	Capacity (MW)*	Operational Since	Application	Project Type
Tsuchiyu	Japan	Genki-Up Tsuchiyu Co.	1	2015	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
KEN	Turkey	Kipas - Ken	22	2015	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
EFE 4	Turkey	Gurmat	26	2015	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
ACP (Waterval Smelter)	South Africa	Eternity Power for Anglo Platinum	5	2015	Industrial Waste Heat	Supply of Equipment, Supervision of Installation and Start Up
EFE 3	Turkey	Gurmat	26	2015	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Ibusuki	Japan	Medipolis Energy	2	2014	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Kerem	Turkey	Maren	22	2014	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
EFE 2	Turkey	Gurmat	26	2014	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order



Project	Location	Customer	Capacity (MW)*	Operational Since	Application	Project Type
TR1	Turkey	Turkerler	24	2014	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Dora 3, Unit 2	Turkey	MEGE	20	2014	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Heber Solar	California, USA	Renewable Energy Trust (RET)	14	2014	Solar PV	EPC (BOOT)
Cove Fort	Utah, USA	Enel Green Power North America	27	2013	Geothermal	EPC Repeat Order
Dora 3, Unit 1	Turkey	MEGE	21	2013	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Ngatamariki	New Zealand	Mercury	95	2013	Geothermal	EPC Repeat Order
Thermo I Re-power	Utah, USA	Cyrq Energy	13	2013	Geothermal	EPC
OEC MODEL 1350AC-LN	Connecticut, USA	FuelCell Energy	2	2013	REG utilizing Waste heat from fuel cell exhaust stack	Supply of Equipment
TOPP 1	New Zealand	Ngati Tuwharetoa Geothermal Assets (NTGA)	24	2012	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Deniz	Turkey	Maren	22	2012	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order



Project	Location	Customer	Capacity (MW)*	Operational Since	Application	Project Type
Sinem	Turkey	Maren	22	2012	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Insheim	Germany	Bestec GmbH	5	2012	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Huelva	Spain	Enagas	5	2012	REG on LNG Terminal	EPC
IREM	Turkey	Maren	20	2011	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Las Pailas	Costa Rica	Instituto Costarricense de Electricidad (ICE)	42	2011	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Almendralejo	Spain	Enagas	5	2011	REG on 4 Gas Turbines Model Solar C-50	Supply of Equipment
Te Huka	New Zealand	Contact Energy	28	2010	Geothermal	EPC Repeat Order
Dora 2	Turkey	MEGE	11	2010	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Tuzla	Turkey	Enda (THE)	8	2010	Geothermal	Supply of Equipment, Supervision of Installation and Start Up



Project	Location	Customer	Capacity (MW)*	Operational Since	Application	Project Type
Goodsprings	Nevada, USA	NV Energy	7	2010	REG on 3 Gas Turbines Model Solar Mars 100	EPC
Blue Mountain	Nevada, USA	Nevada Geothermal Power	50	2009	Geothermal	EPC
MDU - CS6	North Dakota, USA	Montana-Dakota Utilities	6	2009	Gas Turbine Model RB- 211	EPC
Ngawha II	New Zealand	Top Energy	19	2008	Geothermal	EPC Repeat Order
BJE (Kizildere Saraköy)	Turkey	Bereket	7	2008	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Kawerau - GDL	New Zealand	Eastland Group	10	2008	Geothermal	EPC (BOT)
Savona	British Columbia, Canada	EnPower	6	2008	REG on 1 Gas Turbine Model LM-2000	Supply of Equipment
150 Miles	British Columbia, Canada	EnPower	6	2008	REG on 1 Gas Turbine Model LM-2500	Supply of Equipment
Manferdonia	Italy	Sangalli	3	2008	REG on Glass mill	Supply of Equipment
Estlin	Saskatchewan, Canada	Alliance Pipeline	6	2008	REG on 1 Gas Turbine Model LM-2500	EPC
Alameda	Saskatchewan, Canada	Alliance Pipeline	6	2008	REG on 1 Gas Turbine Model LM-2500	EPC
Loreburn	Saskatchewan, Canada	Alliance Pipeline	6	2008	REG on 1 Gas Turbine Model LM-2000	EPC
Soglliano Arubicone	Italy	Soglliano Ambiente	1	2008	REG on Landfill Plant	Supply of Equipment



Project	Location	Customer	Capacity (MW)*	Operational Since	Application	Project Type
Mokai 1A	New Zealand	Tuaropaki Power	8	2007	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Blundell	Utah, USA	Pacific Corp. Energy	11	2007	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Landau	Germany	Geox GmbH	3	2007	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
AP Cement	India	Ultratech Cement	4	2007	REG on Cement Plant	Supply of Equipment
Pico Vermelho	Azores Islands, Portugal	SOGEO	12	2006	Geothermal	EPC Repeat Order
Dora 1	Turkey	MEGE	8	2006	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Long Lake Upgrader	Canada	OPTI-Nexen J.V.	23	2006	REG on Refining Plant	Supply of Equipment
Kerrobert	Saskatchewan, Canada	NR Green	6	2006	REG on 1 Gas Turbine Model LM-2500	EPC
APS	Arizona, USA	Arizona Public Service Company	2	2006	Solar Thermal	EPC
Lecce	Italy	Bio Sud	1	2006	REG on Industrial Waste	Supply of Equipment
Mokai II	New Zealand	Tuaropaki Power	45	2005	Geothermal	EPC Repeat Order
Wairakei	New Zealand	Contact Energy	18	2005	Geothermal	EPC



Project	Location	Customer	Capacity (MW)*	Operational Since	Application	Project Type
Miravalles V	Costa Rica	Instituto Costarricense de Electricidad (ICE)	19	2004	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Oserian	Kenya	Oserian Development Co.	2	2004	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Enterprise	Louisiana, USA	Enterprise Products LP	4	2004	REG on Gas processing Plant	EPC
Hatchobaru	Japan	Nishinippon Environmental Construction Co.	2	2003	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Rotokawa Extension	New Zealand	Mercury	7	2002	Geothermal	Supply of Equipment, Supervision of Installation and Start Up. Repeat Order
Momotombo	Nicaragua	MPC (Momotombo Power Company)	8	2002	Geothermal	EPC (BOT)
Rogner Hotel	Austria	Bad Blumau GmbH	1	2001	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Mokai I	New Zealand	Tuaropaki Power	61	2000	Geothermal	EPC
Gold Creek	Alberta, Canada	Trans Canada Pipeline	7	1999	REG on 1 Gas Turbine Model RB- 211	EPC
Zementwerk Lengfurt	Germany	Heidelberg Cement Group	2	1999	REG on Cement Plant	Supply of Equipment
Ngawha I	New Zealand	Top Energy	12	1998	Geothermal	EPC
Ribeira Grande - Phase B	Azores Islands, Portugal	SOGEO	5	1998	Geothermal	EPC Repeat Order



Project	Location	Customer	Capacity (MW)*	Operational Since	Application	Project Type
Aluto Langano	Ethiopia	Ethiopian Electric Power Corporation (EEPCO)	9	1998	Geothermal	EPC
Leyte Optimization	Philippines	PNOC-EDC	50	1997-1998	Geothermal	EPC (BOOT) Repeat Order
Rotokawa	New Zealand	Mercury	26	1997	Geothermal	EPC
Upper Mahiao	Philippines	PNOC-EDC / NPC	132	1996	Geothermal	EPC
Ribeira Grande - Phase A	Azores Islands, Portugal	SOGEO	5	1994	Geothermal	EPC
Mak Ban	Philippines	Aboitiz	19	1994	Geothermal	EPC
Svartsengi	Iceland	Sudurnes Regional Heating	6	1993	Geothermal	Supply of Equipment.  Repeat Order
Kawerau TG 2	New Zealand	Nova Energy	4	1993	Geothermal	Supply of Equipment. Repeat Order
Nagqu	China	United Nations Development Programme (UNDP)	1	1993	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Soda Lake 2	Nevada, USA	Nevada Operations Inc / Sierra Pacific Power	14	1991	Geothermal	EPC Turnkey
Svartsengi	Iceland	Sudurnes Regional Heating	5	1989	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Kawerau TOI	New Zealand	Nova Energy	3	1989	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Fang	Thailand	Electricity Generating Authority of Thailand – EGAT	1	1989	Geothermal	Supply of Equipment, Supervision of Installation and Start Up
Wabuska	Nevada, USA	Homestretch / Sierra Pacific Power	2	1987	Geothermal	EPC Repeat Order
Soda Lake 1	Nevada, USA	Nevada Operations / Sierra Pacific Power	6	1986	Geothermal	EPC Turnkey

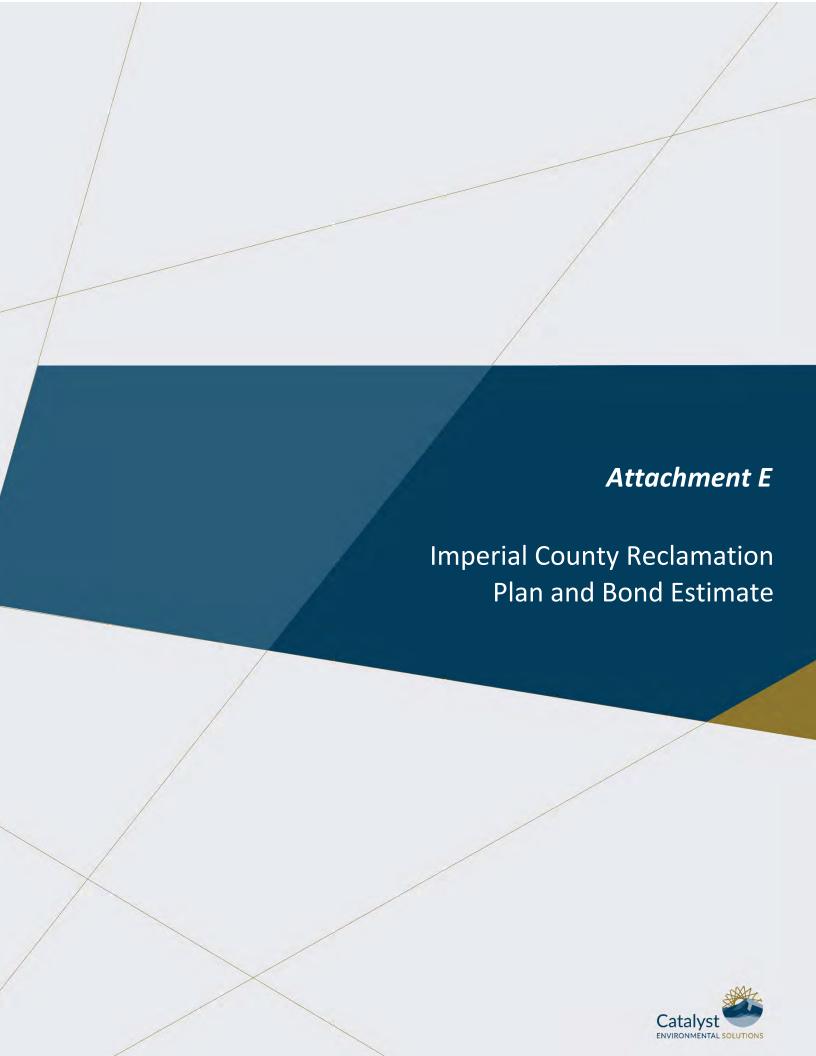


Project	Location	Customer	Capacity (MW)*	Operational Since	Application	Project Type
Union Carbide	California, USA	Union Carbide	1	1985	REG on Hydrogen Processing Plant	Supply of Equipment
Wabuska	Nevada, USA	Homestretch Geothermal / Sierra Pacific Power	1	1984	Geothermal	EPC
Shell	Texas, USA	Shell	1	1982	REG on Refinery Column	Supply of Equipment

<sup>\*</sup> In power plant supplied by Ormat the capacity figure given is gross at design point

# **Attachment D** APN and Area of Interest (AOI) Calculations

APN	General Plan Land Use Category	Imperial County Zoning Code/Western Shores Salton City Urban Area Plan Designation	APN Acres	Area of AOI Impact (Acres) for Proposed Geothermal Overlay Zone Extension
17010004	Urban	R-1-L5	7.888123104	6.842968838
17010016	Urban	R-1-L5	114.6325143	85.12063802
17010027	Urban	R-1-L5	19.97917534	TBD
17010028	Urban	R-1-L5	0.051798744	TBD
17010032	Urban	R-1-L5	146.1026349	12.44044932
17010044	Urban	C-2	2.899401088	2.899401088
17010045	Urban	C-2	3.50245493	3.50245493
17010046	Urban	R-1-L5	475.5950586	TBD
17010047	Urban	R-1-L5	3.404629688	TBD
17010048	Urban	R-1-L5	4.168434998	TBD
17010056	Urban	R-1-L5	170.0116829	101.4343761
17010057	Urban	R-1-L5	520.0044207	520.0041904
17970007	Urban	S-1	7.374499611	TBD
17970008	Urban	S-1	91.27408238	0.000546012
17970009	Urban	S-1	40.96062617	TBD
17970011	Urban	S-1	203.1934917	0.000546012
17970012	Urban	S-1	49.79677448	TBD
17970013	Urban	S-1	63.60663979	TBD
Total			1924.446443423	TBD



# **OWNER, OPERATOR AND AGENT:**

A	Applicant (Name, Mailing Address and Telephone Number): Orni 5 LLC				
-	6884 Sierra Center Pkwy, Reno, NV 89511				
	cjim@ormat.com				
-	775-233-8477				
	Property Owner (s), or owner of Surface Rights (Name, Mailing Address and Telephone Number): [if different from applicant] Same as 1.				
-					
	Owner of Mineral Rights (Name, Mailing Address and Telephone Number): [if different han applicant] Same as 1.				
-					
_ L	essee (Name, Mailing Address and Telephone Number): N/A				
-					
-					
(	Operator (Name, Mailing Address and Telephone Number): [if different than applicant] Same as 1.				
_					
_					
_					
_					

7.	Agent of Process (Name, Mailing Address and Telephone Number): Catalyst Environmental Solutions Inc.					
	Attn: Ben Pogue					
	315 Montana Ave., Suite 311					
	Santa Monica, CA 90403					
	bpogue@ce.solutions; 503-477-2792					
LOC	CATION:					
8.	Legal Description: (must be full legal) T10S, R09E - Sections 36 T10S, R10E - Sections 28, 29, 31, 32, 33					
	T11S, R09E - Sections 1, 12 T11S, R10E - Sections 4, 5, 6, 7, 8					
	Assessor Parcel No.: 15 APNs					
	Longitude:					
	Latitude:					
	Elevation:					
9.	Size of the land(s) that will be affected by mining operation. Total acreage: 49.35 acres for 14 well pads					
10.	Describe existing and proposed access to the mine site: (please be specific) Open space, undeveloped. Access will be provided via State Hwy 86 and					
	existing access roads to the County dump and Salton Sea Airport.					
GEO	DLOGICAL BACKGROUND:					
11.	Mineral commodity to be minded: Geothermal brine/fluids					
	Geothermal brine/fluids					

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2

12.	General Geological description of the	ne area:				
	The site is located within the Pilioc	ene to Holocene, Q Geologic Unit.				
		province spans central Imperial County,				
		erred to as the Salton Trough. Low-lying				
		vium-covered, active branches of the				
	San Andreas Fault.					
13.	13. Detailed description of the geology of the actual site in which surface mining is to be conducted:  Site is underlain by Cenozoic sedimentary rocks and alluvial, lacustrine, a eloian deposits. Surface sediments are about 275 feet below sea level. The contains Holtville silty clays (wet) and Imperial-Glenbar silty clay loams (wet)					
4.4						
14.	Existing land uses, soil, vegetal characteristics. Site is generally vacant open	ental setting of the site and the surrounding areas. tion, ground water elevation and surface water a space. The County dump is adjacent to the				
	west/southwest of the project site. The Salton Sea Airport is also present					
	in the project area. Dry washes and sparse desert soils are present					
	in the project area.					
МІК	IING OPERATION AND PRODUCTION	ON-				
IVIIIV	IIING OF ERATION AND FRODUCTION					
15.	Proposed starting date of operation:	May 2028				
	Estimated life of operation:	30 years				
	Termination Date:	2058				
	Duration of first phase:	15 years				
	Second phase:	15 years				
	Third phase:	NA				
	Fourth phase:	NA				
16.	Operation will be (include days and h	nours of operation):				
	Continuous: 24/7 operation	on of wells				
	Intermittent:					
	Seasonal:					

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N/A N/A	m anticipated annual production	
Total ar	ticipated production:	
Minerals	s: NA	cubic yards/tons
Tailings	retained on site:	cubic yards/tons
Tailings	disposed off site:	cubic yards/tons
depth):	m anticipated depth (indicate	e on map location of benchmarks to verify mine
Geoth	e mining method: nermal production wells pu osit used brine back into g	ump brine to surface, and injection wells eothermal reservoir.
All dri	lling wastes/fluids will be d	plain disposal of tailings or waste. captured in portable baker tanks for disposa- lo wastes will be generated during operatio testing.
Do you No	plan to use cyanide or other to	oxic materials in your operations?
Do you site? No	plan to use or store petroleu	um products or other hazardous materials on th
Const will be to cor Spill p	e limited to diesel and gase estruction equipment will b	es will be fueled on-site, as necessary. Fuel oline for heavy and light equipment. Repair performed on-site by certified mechanics handling techniques will be employed

22. Indicate the quantity of water to be used, source of water, method of conveyance to the mine site, the quantity, quality and method of disposal of used and/or surplus water. Indicate if water well to be used for mine operation (drilling, reactivation, changing use or increasing volume of water well may require Conditional Use Permit approval).

Water required for well drilling would typically average 50,000 gpd. A temporary pipeline from the respective irrigation canal could be used for water delivery to well site. Any temporary pipeline would be lain on the surface immediately adjacent to the access road. If need be, water for operations would be obtained from Coachella Valley Water District.

23. Describe phases of mining if applicable and concurrent reclamation including time schedule for concurrent activities.

Well Drilling - installation of the new well, approximately six months

Well Testing - flow testing the well, approximately two months

Well Operation - connect wells to pipeline network for delivery to geothermal power plants approximately 2 months.

24. Describe the types of equipment that will be used in the operation, including the estimated average daily trips (ADT) that will be generated by the operation.

Heavy construction equipment, including drill rigs, drilling equipment, semi-truck trailers, flatbed trucks, forklifts, excavators/bulldozers, roller, and cranes will be used to deliver and place the proposed facility equipment on the Project Site. Smaller powered hand tools, such as drills, compressors, and welding equipment will also be used. Employee vehicles will be used to

transport workers to the Site and parked at the designated parking locations.

- 25. Include the following maps: (NOTE: Without these the application is automatically incomplete.)
  - (1) Topographic Map with overlay showing proposed area to be mined.
  - (2) Site Plan showing mine layout and dimensions.
  - (3) General Vicinity Map showing the location of the mine site in Imperial County.
  - (4) Cross Section Map.

# **RECLAMATION:**

26. Indicate by overlay of map of Item No. 24, or by color or symbol on map those areas to be covered by the reclamation plan:

Total acreage: 49.35 acres for 14 well pads

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27.	Describe the ultimate physical condition of the site and specify the proposed use (s) or potential uses of the land after reclamation. Explain if utilities, haul or access roads will be removed or reclaimed.  The project area is generally open space, vacant land currently. Very arid.
	This area would be returned to a similar open space state after reclamation.
28.	Describe relationship of the interim uses than mining and the ultimate physical condition to:
	(a) Imperial County Zoning Ordinance
	(b) Imperial County General Plan  The project would require a CUP and zone change to be compliant with County plans.
29.	Notarized statement that all owners of the possessory interest in the land have been notified of the proposed uses or potential uses identified in Item No. 25 (see Attachment "A").  Applicant is the sole owner of the site.
30.	Describe soil conditions and proposed topsoil salvage plan.
- 3.	Very arid, desert soils. Top soils would be scraped and stored for interim reclamation.

31.	of th	cribe the methods, their sequence and timing, to be used in bringing the reclamation ne land to its end state. Indicate on map (Items Nos. 24 and 25) or on diagrams as essary. Include discussion of the pertinent items listed below.					
	(a)	Backfilling and grading					
	(b)	Stabilization of slopes					
	(c)	Stabilization of permanent waste dumps, tailings, etc.					
	(d)	Rehabilitation of pre-mining drainage					
	(e)	Removal, disposal or utilization of residual equipment, structure, refuse, etc.					
	(f)	Control and disposal of contaminants, especially with regard to surface runoff and ground water					
	(g)	Treatment of streambeds and streambanks to control erosion and sedimentation					
	(h)	Removal or minimization of residual hazards					
	(i) S	(i) Resoiling, revegetation with evidence that selected plants can survive given the site's topography, soil and climate:  See Attachment D below.					
32.	spe Into	oplicant has selected a short term phasing of his reclamation, describe in detail the cific reclamation to be accomplished during the first phase:  erim reclamation would consist of replacing stored topsoil on areas that were disturbed for II pad construction but are not needed for operations. Reclamation activities at the inclusion of the facilities' life cycle would focus on returning the lands to a natural or arable te. These activities would not affect any future mining, agricultural, or geothermal terations on the site or in the vicinity.					
33.	and Tr pr	cribe how reclamation of this site in this manner may affect future mining at this site in the surrounding area:  ne wells would be plugged and abandoned in accordance with all CalGem regulations and otocols. The safe abandonment of the wells will ensure that future mining at these sites will be significantly impacted.					
	MAIN OF	FICE: 801 Main Street El Centro, CA 92243 (760) 482-4236 FAX: (760) 353-8338 E-MAIL: planning@imperialcounty.net EV. OFFICE: 836 Main Street El Centro, CA 92243 (760) 482-4900 FAX: (760) 337-8907					

34.	Notarized statement that the person submitting the plan accepts responsibility for reclaiming the mined lands in accordance with the Reclamation Plan (Attachment "B"):  Attached.
35.	Include Reclamation Cost Calculations as Attachment "C": Attached
,	36. Describe proposed Revegetation Plan (attach as "Attachment D" if necessary):  Attached.

# **ATTACHMENT "A"**

# STATEMENT OF NOFICATION

I, the undersigned, have notified all owners of the possessory interest in the land of the proposed use (s) or potential uses identified in Item No. 26 of the Reclamation Plan.

Signed this	30th	_ day of	
July	, 2025.		
Operator or Operator's Agent			

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# **ATTACHMENT "B"**

# STATEMENT OF RESPONSIBILITY

I, the undersigned, hereby agree to accept full responsibility for reclaiming all mined lands as described and submitted herein with any modifications requested by the County of Imperial as conditions of approval.

Signed this	30th	day
of July		_, 2025.
Operator or Op	erator's A	gent

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# ATTACHMENT "C" RECLAMATION COST ANALYSIS

MAIN OFFICE: 801 Main Street El Centro, CA 92243 (760) 482-4236 FAX: (760) 353-8338 E-MAIL: planning@imperialcounty.net El Centro, CA 92243 (760) 482-4900 FAX: (760) 337-8907



# Reclamation Cost Estimate for Truckhaven Geothermal Energy Project

**Date:** July 25, 2025

RE: Reclamation Cost Estimate for the Truckhaven Geothermal Energy

**Project** 

This cost estimate has been prepared for the Truckhaven Geothermal Energy Project Conditional Use Permit Application to Imperial County. This memo provides a general estimate to perform well abandonment and site reclamation/revegetation for up to 14 geothermal production and injection wells.

# **Geothermal Well Abandonment**

Cost of Abandoning 14 Production and/or Injection Wells

14 wells x 200 feet $^{1}$  x \$16.10/foot $^{2}$  = \$45,080

# **Site Reclamation and Revegetation**

Cost of Reclaiming 49.35 acres for 14 well pads
 \$143,290 (\$10,235² per first 14 acres) + \$199,197.25 (\$5,635/acre² for 35.35 acres) =
 \$342,487.25

# **TOTAL RECLAMATION COST ESTIMATE: \$387,567.25**

## References

<sup>1</sup> California Department of Conservation Oil, Gas, and Geothermal Resources. April 2019. California Code of Regulations, Section 1723. Available online at: https://www.conservation.ca.gov/index/Documents/DOGGR-SR-1%20Web%20Copy.pdf

<sup>&</sup>lt;sup>2</sup> New Mexico Energy, Minerals, and Natural Resources Department. 2013. Guidance for Estimating Reclamation Costs. Available online at: <a href="http://www.emnrd.state.nm.us/MMD/MARP/documents/MMD">http://www.emnrd.state.nm.us/MMD/MARP/documents/MMD</a> Part3FAGuidelines Sept2013.pdf Reclamation estimates provided in this document were increased by 15% to account for inflation and potential contingency costs.

# **ATTACHMENT "D" REVEGATION PLAN**

(REVISED MARCH 25, 2005) JH/lh/S:/forms\_lists/reclamation plan aplication

MAIN OFFICE: 801 Main Street El Centro, CA 92243 (760) 482-4236 FAX: (760) 353-8338 ECON. DEV. OFFICE: 836 Main Street El Centro, CA 92243 (760) 482-4900 FAX: (760) 337-8907 E-MAIL: planning@imperialcounty.net

# **Revegetation Plan for Truckhaven Energy Project**

**Date:** July 15, 2025

From: Catalyst Environmental Solutions (on behalf of ORMAT)

RE: Revegetation Plan for the Truckhaven Energy Project

#### INTRODUCTION

Orni 5 LLC (Applicant; wholly owned subsidiary of Ormat Technologies, Inc. [Ormat]) proposes to develop up to 14 geothermal production and injection wells and well pads in support of the Truckhaven Energy Project (Project). This Revegetation Plan has been prepared as part of the CUP Application and the County Reclamation Application, pursuant to Imperial County's municipal code for sub-surface projects.

## **Project Location and Site Description**

The 2,782-acre Project site includes the following Assessor's Parcel Numbers (APNs) 17010004; 17010016; 17010032; 17010056; 17010057; 17161006; 17161007; 17172001; 17184001; 17970007; 017970008; 17970011; 17970012; 017970013; and 017-970-015, in northwest Imperial County, California. The site is just south of Truckhaven and Salton City, and approximately 45 miles to the southeast of the City of Palm Springs.

State Highway 86 runs along the Project site's eastern boundary and provides exclusive access to the site. The Project site is generally vacant Sonoran Desert with numerous small desert washes, sparse vegetation/shrub steppe, and hardpan soils (site photos below). Land uses in the Project vicinity include residential, commercial, waste disposal (Imperial County Dump), recreational (ATV and off-road vehicles trails), and transportation (State Highway 86; Salton Sea airport). The only other existing roads near/through the Project site include Pole Line Road, Air Park Drive, and Thermal Road which provides public access to the Imperial County Dump and Salton Sea Airport. Two (2) geothermal pilot/test wells are present on the Project site and are the only developed energy facilities on the Project site.

## Reclamation, Abandonment, and Revegetation Schedule

Reclamation, abandonment, and revegetation activities would commence at the closure of the Truckhaven energy facilities in 2058, after 30 years of facility use. Reclamation activities would commence after all energy facilities have been dismantled and removed from the site. If necessary, reseeding would be held off until the appropriate season (e.g. fall, spring). Activities would take approximately four to six months to complete.

## Site Preparation

After all geothermal wells have been plugged and facilities are removed from the site, any soil piles or grades will be evened out by an excavator. The site is near zero elevation and is very flat and absent of topography. Reclamation activities will mimic the existing grade of the site and not introduce a new gradient/slope to the area. The site will then be rolled with a soil aerator/loosener. After site reclamation, topsoil will be transported to the site and deposited evenly across the site.

## **Selection of Plant Materials**

The site is presently open space, arid desert. The Applicant will reseed the entire site with a seed mix approved by Imperial County or return the land to similar open space state.

# Irrigation and Maintenance

Revegetation of the site will be maintained by a contractor every two weeks to conduct weeding, watering, and removing trash/debris. The site will be irrigated by water truck as necessary to establish the new vegetation.			

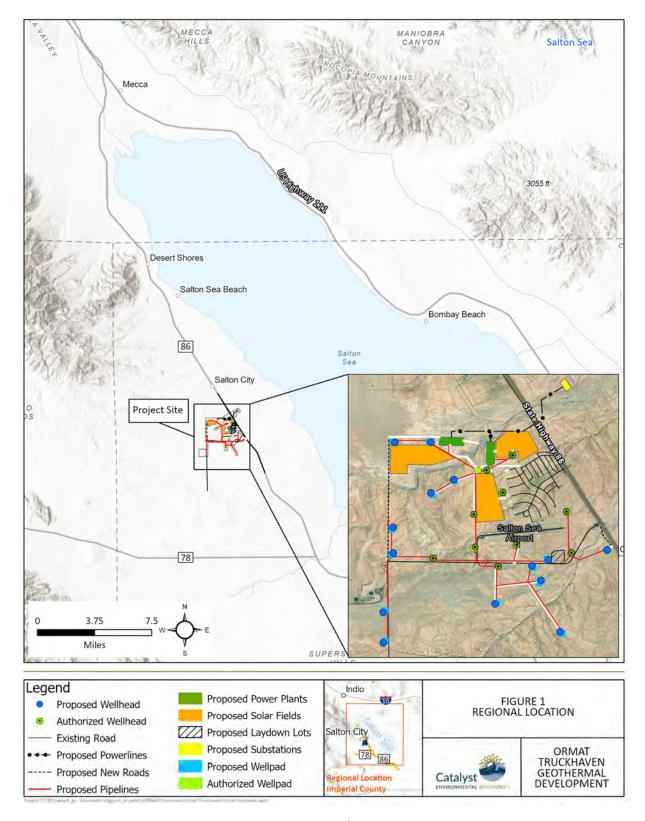


Figure 1. Regional Location

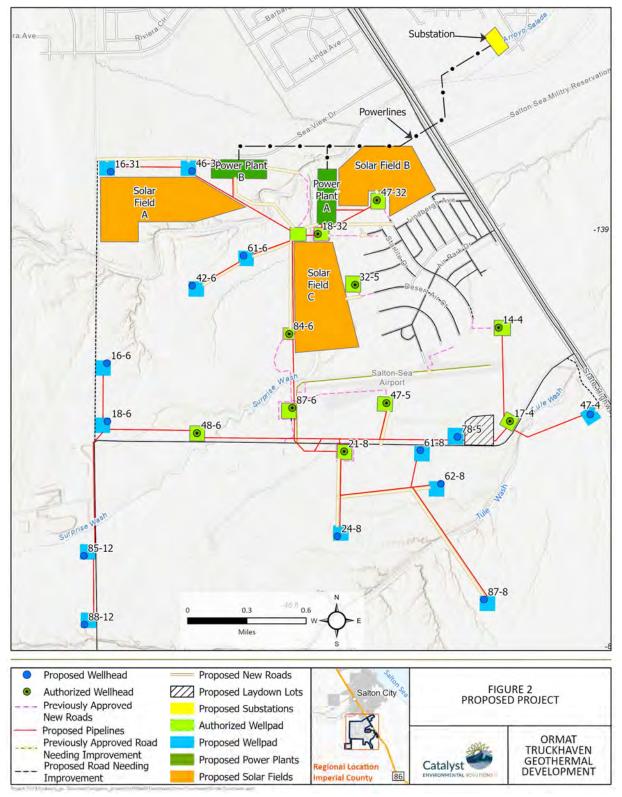


Figure 2. Proposed Project

Photo A



Photo B



Photo C



Photo D



Photo E:



Photo F



Photo G



Photo H



# Photo I



Photo J



#### SCOPE OF WORK

# National Environmental Policy Act and Project Management Assistance

# **Third-party Contract Support**

### **Environmental Document**

#### 1.0 BACKGROUND

The Bureau of Land Management (BLM) received a right-of-way (ROW) grant application , for the (Project Na	
The Project was assigned case file number The applicant for the Project hereafter referred to as "APPLICANT NAME." The BLM and Applicant are hereafter collect referred to as the "Parties."	
The BLM will consider granting, granting with conditions, or denying a right-of-way under authority of Subchapter V of the Federal Land Policy and Management Act of 1976 (43 U §1761), and BLM implementing regulations found at 43 C.F.R. Part 2800. In accordance with National Environmental Policy Act (NEPA) (42 U.S.C. § 4321 et seq.), and the Counce Environmental Quality (CEQ) implementing regulations found at 40 C.F.R. §§1500-1508 BLM has determined that an Environmental Assessment (EA) or Environmental Impact State (EIS) is required to support its consideration of the application and its decision on wheth approve the project. This Scope of Work is based on the requirements under an EIS.	S.S.C. th the il on S, the ment
It is anticipated that an Environmental Impact Report (EIR) could be required	joint joint EQA

## 1.1 Agency Roles

The Parties have executed a Memorandum of Understanding (MOU) detailing the terms and conditions by which these Parties will work together to produce the NEPA environmental review of the project. A separate MOU is anticipated to be executed between the Lead CEQA Agency, and Applicant concerning the Lead CEQA Agency's intent to conduct an environmental review of the Project through the CEQA process. The BLM and Lead CEQA Agency will decide whether or not to agree to produce a joint document that will satisfy both agencies' obligations for environmental review under NEPA and CEQA.

## 1.2 Scope of this Request for Proposals

The BLM and Lead CEQA Agency will require the services of a third-party environmental services contractor to provide technical support in the preparation of the joint document that will

serve as an EA or EIS for the NEPA review, and an EIR for the CEQA review. The contractor associated with performing this work is herein referred to as the Environmental Contractor.

In addition to NEPA and CEQA compliance support, the BLM and Lead CEQA Agency require a contractor's project management support. The contractor associated with performing this work is herein referred to as the Project Management Assistance Contractor (PMAC). Both contractor roles are detailed in this document. Bidders may bid either or both roles through this Request for Proposals (RFP). Respondents shall note that this RFP does not include CEQA-specific items, which will be completed by Lead CEQA Agency, and therefore will not require support of the PMAC. This includes preparation of any CEQA notices, preparation for any separate hearings/meetings specific to just CEQA, and/or required CDFW consultations such as those required under AB 52.

## 2.0 ENVIRONMENTAL CONTRACTOR

## 2.1 Overview

Pursuant to NEPA and CEQA, the BLM and Lead CEQA Agency will be directing an Environmental Contractor in the environmental analysis for, and preparation of the EIR/EIS and any Resource Management Plan Amendment(s) (RMPA) that may be required, including associated tasks as detailed in this Statement of Work (SOW). The contents of this document will be incorporated into the contract between Applicant and the Environmental Contractor.

The NEPA analysis and documentation will identify and evaluate all relevant impacts, conditions, and issues associated with the proposed action and its alternatives in accordance with the CEQ regulations outlined in 40 C.F.R. §§1500-1508, and the BLM's H-1790-1 National Environmental Policy Act Handbook. CEQA analysis and documentation will conform to the requirements of CEQA in the Public Resources Code §21000 et seq. and its amendments, the regulations contained in Title 2, Division 3, Chapter 10 of the California Administrative Code (CEQA Guidelines), and all other applicable laws, ordinances, rules and regulations.

# 2.2 Principal Deliverables

The principal objective of this SOW is to provide the BLM and Lead CEQA Agency with the following deliverables, as described in detail in the sections below:

- A Joint Draft EIS and EIR Preparation Plan developed in consultation with the BLM and Lead CEQA Agency
- Relevant and necessary technical data to the resources being analyzed to evaluate the potential environmental effects of the project package
- Development and analysis of a reasonable range of alternatives as directed by the BLM and Lead CEQA Agency
- Federal Register Notice of Intent package preparation
- Public Scoping Report that details scoping activities, records and summarizes public scoping comments and identifies issues pertinent to the purpose and need of the project

- Draft EIS/EIR
- EIS comment parsing, response, and report if needed
- Final EIS/EIR
- Federal Register Notice package for the Draft EIS
- Federal Register Notice package for Final EIS
- Administrative record updated at publication of the Final EIS and Record of Decision

## 2.3 Specific Tasks

The specific tasks associated with producing the EIR/EIS for this project are detailed in sections 2.3.1 through 2.3.9.

### 2.3.1 Task 1: Work Plan

Produce a joint EIR/EIS Preparation Plan approved by the BLM and Lead CEQA Agency. The Preparation Plan should clearly demonstrate the Environmental Contractor's knowledge of and experience with completing complex NEPA and CEQA documents. This plan shall include, but is not limited to:

- Work breakdown structure with narrative description
- Timeline and other organizational details (e.g., critical path items, agency and interdisciplinary meetings, deliverables) via use of Microsoft Project software (or equivalent)
- Monthly status reports
- List of applicable Standard Operating Procedures and/or Best Management Practices currently being used by the BLM to process all federal actions within the proposed Project area
- Explanation of how it will comply with the timing and EIS page limit requirements of the regulations
- Communications, Coordination, and Public Participation Plan developed by the PMAC

Adhere, to the extent of its control, to the project schedule developed and maintained by the PMAC and the agencies. The schedule will be governed by these requirements:

- 30 to 45 calendar day public scoping period from publishing of the NOI and the NOP
- 45 to 90 calendar day comment period from the publishing of the NOA for the Draft EIR/EIS and draft plan amendment(s), if required
- 30-day availability period, 90-day RMPA protest and resolution period (if required), and 60-day Governor's review period for the RMPA(s), if required (these may run concurrently)
- Issuance of Record of Decision not more than 24 months following the NOI

## 2.3.2 Task 2: Resource Management Plan Conformance

Assist the BLM with analyzing the projects' conformance to current applicable land and resource management plans. If one or more plan amendments are necessary for the project to conform, assist the BLM in developing the amendment(s) so that the project would conform.

### 2.3.3 Task 3: Technical Reviews

Provide technical reviews including:

- Technical reviews of applicant-prepared materials performed by qualified staff possessing professional-level expertise in the subject discipline
- Coordinate and communicate with applicant's consultants as necessary to perform these reviews in accordance with the protocols established for the project
- Provide edits, comments and recommendations for applicant-prepared technical materials specifically including, but not limited to:
  - o Plans of development
  - Resource plans
  - Survey findings
  - o Biological Assessment (BA)
  - Any other applicant-prepared documents requiring review by the BLM and Lead CEQA Agency

## 2.3.4 Task 4: Public and Agency Scoping

Assist with internal and external scoping of the project, including:

- Host virtual public scoping meetings using video conference, including technical support
- Provide technical information as directed by the BLM or Lead CEQA Agency to the PMAC for organizing public scoping meetings
- Attend up to two public scoping meetings and assist with presenting information and answering questions, as directed by the BLM or Lead CEQA Agency
- Prepare Public Scoping Report according to template or sample report provided by the agencies

## 2.3.5 Task 5: Development of Alternatives

Assist the BLM and Lead CEQA Agency in developing an appropriate array of alternatives conforming to applicable laws and regulations and addressing the issues raised during scoping. Coordination with other government agencies will be key to this process, as will be public involvement and consultation. In conjunction with the BLM and Lead CEQA Agency staff:

• Develop a detailed description of the proposed BLM and Lead CEQA Agency action

- Identify the environmental issues to be analyzed based on the scoping comments
- Identify project alternatives developed by the BLM or Lead CEQA Agency staff
- Identify and assess potential alternatives to the proposed Project that:
  - o Meet the Project's goals
  - o Address the issues raised during internal and public scoping
  - Meet the requirements of NEPA and CEQA
  - o Reduce potentially significant effects associated with the proposed Project
  - o Foster informed decision-making
  - Are based on information contained in the resource reports

## 2.3.6 Task 6: Environmental Analysis

Analyze the effect of the project on the environmental resources in the project area:

- Apply principles of issue based NEPA analysis to focus analysis on potentially affected resources
- Fully describe the existing condition for each resource to be analyzed, using information from the applicant's resource reports and survey results
- Identify missing information and coordinate with the PMAC to forward data requests to appropriate parties and receive responses
- Analyze the effect of the project on environmental resources
- Ensure that the analysis includes the full scope of the environmental issues identified in the Scoping Report

### 2.3.7 Task 7: Section 7 ESA Consultation

Assist the BLM in its consultation with the United States Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act, including:

- Review and comment as needed on the applicant's draft Biological Assessment (BA) or Biological Opinion (BO) depending on project needs
- Coordinate with the applicant and its consultants for reviewing and editing the BA
- Provide the final BA/BO to the BLM. The BA/BO shall include all Threatened, Endangered, and Candidate species potentially impacted by the Project

For budgeting purposes, assume up to 5 coordination teleconferences with the BLM to convey and discuss concepts, conservation measures and effects determination.

The Environmental Contractor's staff shall include one or more competent, qualified, professional biologist(s) holding at least a Bachelor's degree in the biological sciences or closely related degree, and possessing the experience to perform the task independently.

#### 2.3.8 Task 8: Draft EIR/EIS

Develop the administrative Draft EIR/EIS in accordance with agency standards, address public and agency comments, and prepare the final Draft EIR/EIS:

- Fully describe the existing condition and the results of the environmental analysis
- In conjunction with the agencies, develop best management practices, minimization measures, and mitigating measures to reduce or eliminate environmental impacts of the project
- Provide technical information and attend public meetings on the Draft EIR/EIS
- Provide technical information as directed by the BLM or Lead CEQA Agency to the PMAC for organizing public meetings
- Attend up to two public meetings and assist with presenting information and answering questions, as directed by the BLM or Lead CEQA Agency
- Assist agencies in identifying substantive comments, draft initial responses to comments for agencies' review, and produce final documentation of comments and responses for inclusion in the Final EIR/EIS
- Prepare and revise administrative drafts as needed based on agency review Coordinate with PMAC to maintain an accurate record of the document development
- Provide final electronic documents to the PMAC for distribution. Final documents shall be prepared for printing in accordance with applicable agency standards

## 2.3.9 Task 9: Project meetings

Attend regularly scheduled project meetings and extra meetings as called by the BLM or Lead CEQA Agency. Typically, a project includes:

- one kickoff meeting
- one alternatives development meeting (teleconference)
- one comment response meeting (teleconference)
- biweekly project team meetings (teleconference)
- monthly applicant meetings (teleconference)

Additional meetings as needed may be called by the BLM or Lead CEQA Agency Project Manager. For budgeting purposes, assume up to 10 additional meetings may be called over the project duration. Travel expenses for face-to-face meetings will be expensed monthly<sup>1</sup>.

<sup>&</sup>lt;sup>1</sup> During the national and local responses to the coronavirus pandemic, meetings that otherwise would be held in person may be held by videoconferencing or other electronic means instead.

## 2.4 General Requirements of the Environmental Contractor

## 2.4.1 EIS Preparation Standards

The EIS shall be prepared as follows:

- The EIS must meet the requirements of NEPA and the BLM NEPA Handbook H-1791-
- The EIS must also meet other federal requirements including the National Historic Preservation Act, the Endangered Species Act, all relevant Executive Orders and Secretarial Orders and any other applicable laws and regulations
- Preparation of the EIS shall meet any additional requirements of the BLM staff
- The Environmental Contractor shall provide the Draft and Final EIR/EIS in the required electronic file format for submitting in the Environmental Protection Agency's (EPA) e-NEPA electronic filing system (eNEPA) as directed by BLM
- All documents that will be publicly available must be Rehabilitation Act Section 508 compliant

## 2.4.2 EIR Preparation Standards

The EIR shall be prepared as follows:

- Preparation of the EIR must conform to the requirements of CEQA in the Public Resources Code § 21000 et seq. and its amendments, the CEQA Guidelines, and all other applicable laws, ordinances, rules and regulations
- The EIR shall meet any additional requirements of Lead CEQA Agency staff and responsible agency requirements and should also address any scoping and public meeting issues.

#### 2.5 Technical Data

## 2.5.1 Analysis and Data Requests

The Environmental Contractor shall conduct a data gap analysis through review of proponent-provided data for accuracy and adequacy to meet the needs of NEPA and CEQA for the preparation of an EIS and EIR. The Environmental Contractor shall prepare data requests on behalf of the BLM and Lead CEQA Agency for any other data that may be deemed needed.

### 2.5.2 Data Sources

The Environmental Contractor shall incorporate information provided by the Project Applicant from the following inventories and surveys into their EIS and EIR analysis, as applicable:

- Cultural resource surveys, records searches, reports of findings, and recommendations, to meet the requirements of the BLM and CDFW Native American and historical resource consultation obligations
- Vegetation and wildlife habitat assessments, surveys, analyses, and reports of findings that meet the protocols and requirements of the BLM and CDFW
- Geotechnical studies and reports, including a desktop analysis of existing conditions and geologic hazards, and a description of future geotechnical explorations that would be required for project design and construction

The Environmental Contractor shall incorporate information from existing agency data and geospatial datasets into the EIS and EIR analyses in addition to geospatial data collected by Project Owner. Other GIS layers and data provided by the BLM and CDFW, the applicant, and other federal, state, and local agencies will also be used as directed by the BLM or Lead CEQA Agency.

Contractor shall also be responsible for collecting and analyzing other data for the EIS and EIR analysis not noted above but required by the BLM, CDFW, Lead CEQA Agency and/or not already prepared by the Applicant.

## 2.6 Agency Reviews

In the event that agency staff cannot meet review deadlines, the BLM and Lead CEQA Agency Project Managers may request that a third-party reviewer evaluate resource-specific technical compliance documents. This support may include review by contractor mapping, archaeology, biology, botany, soils, land use, visual, or recreation specialists, among others. In the case of a resource-specific technical review request, the BLM and Lead CEQA Agency Project Managers will provide written documentation of the specific contractor technical review request to the Applicant's Project Manager. The Environmental Contractor shall include hourly billing rates for technical specialists who will be utilized to provide support for agency staff, including those services that may be needed to assist in Section 7 consultation.

## 2.7 Existing Conditions and Analysis of Effects

The Environmental Contractor shall, at the BLM's and/or Lead CEQA Agency's direction, use the collected data to identify the existing condition of the project sites and environmental resources, to analyze the project's effects on environmental resources for each alternative, and to develop avoidance, minimization, and mitigation measures to reduce or eliminate adverse effects. The Environmental Contractor shall obtain from the Applicant all project plans needed to conduct this work. The environmental resources analyzed typically include:

- Geology
  - The potential effect of geologic hazards (active faults, earthquakes, unstable slopes, seismic activity, and soil liquefaction) on project and to public safety
  - o Geotechnical concerns
  - o Effects on paleontological resources in the project area
- Water Resources

- The effect of project construction and operations on local groundwater quality and quantity
- The effect of potential spills and leaks on water aquatic resources
- O Potential effects on water quality and quantity in protected water resources, such as sole source aquifers and water supplies
- The effects of runoff from disturbed areas on other resources
- The effects of soil erosion from disturbed areas on surface water quality
- o The effects of the project on riparian systems
- o Detecting, monitoring, and quantifying potential surface water impacts
- Analysis of the project water demand on water resources for construction, operations, maintenance, and eventual decommissioning
- Assessment of available water supply sources to meet the project demand

## Air Quality

- o Effect of the project construction and operation on air quality, including quantification of criteria pollutants (NO<sub>x</sub>, SO<sub>2</sub>, O<sub>3</sub>, and CO) and volatile compounds, particulate (PM<sub>10</sub>) emissions, and greenhouse gas production
- Emissions have the potential to affect regional visibility and the Air Quality Related Values at distant Class I airsheds. All potential impacts must be included as part of the analysis
- o The effects of fugitive dust from construction and reclamation activities
- The effects on atmospheric visibility (Visual Resources) and the potential need to coordinate with the Imperial County Air Quality District
- The cumulative effects of pollution emissions and dust on local and regional air quality, including areas with existing problems (non-attainment status) or protected and sensitive airsheds (Class I)

#### Soils

- The effects of surface disturbances on soil stability, structure, texture and biotic components
- The effects of increased sedimentation and runoff on water quality of surface waters and other resource conditions and uses
- o Impacts of soil stability and fertility on areas with poor revegetation potential
- Permanent soil disturbance
- o Identify problem reclamation areas
- O Potential hazards to the general public from possible soil contamination from transported products

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## Vegetation

- o The loss of vegetative diversity and productivity from construction and implementation, and secondary effects on wildlife and erosion
- Fugitive dust effects on vegetation and crops near roads
- Impacts on noxious weed distribution
- o Effects of reclamation of disturbed areas or possible future contaminated areas

## Wetlands and Riparian Areas

- O Riparian and wetland communities are scattered across the project area. Short-and long-term impacts to wetlands and riparian areas, such as change in wetland function and values, noxious weed invasion, loss of wildlife and soil erosion may occur as a result of soil disturbance. Assuming long-term restoration, these impacts may result in a short-term loss of wildlife habitat and a general loss in native species and community diversity. Impacts to wetlands and riparian areas may also affect visual resources
- The loss of wetland functions and values associated with noxious weed infestation and control; road and facility construction
- Secondary effects on wildlife, vegetation, and the hydrologic system as a result of impacts to wetlands and riparian zones
- o Compliance with Section 404 of the Clean Water Act
- O Potential effects of spills and leaks on wetland and riparian communities

### Wildlife

- Displacement of wildlife from facility construction areas because of increased human presence and loss of vegetation and habitat
- The effects on wildlife habitat suitability, including habitat fragmentation and degradation in the short-term during construction, and in the long-term during reclamation, operation and maintenance
- o The impact of high value and critical winter range from disturbances associated with project construction and operation
- o The effects on wildlife migration and reproduction
- The effects on raptors
- Threatened, Endangered, and Special Status Plant and Wildlife Species
  - The effects on State and Federally listed species, candidate species, and sensitive species; indirect effects on applicable species as a result of effects on vegetation, habitat, water quality, or other resources
  - O Cultural resources, including Native American traditional cultural properties (TCP), are considered critical elements of the human environment. These elements require specific consideration and analysis as defined in the National Historic Preservation Act (NHPA), the Archaeological Resources Protection

- Act (ARPA), the American Indian Religious Freedom Act (AIRFA), and other state and federal statutes, policies and implementing regulations
- The effects of project activities on Native American sites with religious or cultural significance
- o The effects of the project on historic landscapes
- Communication and consultation with Native Americans and need for a Programmatic Agreement
- The effects of ground disturbances and indirect impacts to cultural resources including archaeological sites
- o The effects on cultural resources located on adjacent private lands

#### Land Use

- o Analyze potentially conflicting land uses in the project areas
- Impacts on access to public and private lands within and adjacent to the project area as a result of the project, including construction of new access roads and support facilities
- Land that may be temporarily or permanently removed from existing land uses by the construction and operation of the project and any new access roads, and other associated facilities
- Potential that project facilities and operations are incompatible with existing land uses;
- The rights of property owners, including but not restricted to mineral and surface rights, impacts to private lands, and wildlife habitat restrictions
- The impacts on private landowners, including the sight and sound of project facilities and the construction operations on nearby residences, the short-term increase in traffic
- The compatibility of project during construction and operations with land management objectives
- o The effects on existing land uses, including residential, agricultural and recreational
- o Coordination with local governments for land and road use and local plans
- o Consistency with adopted plans and policies of federal, state and local agencies

## Recreation

- The effects of construction and operation on recreational opportunities and amenities
- The effects of the proposed project on recreationists
- The potential for change in the quality of recreational experiences

- Construction and operation of project facilities may conflict with management objectives on public and forest lands
- Changes in public access may affect the utilization of existing recreational opportunities
- o The removal of land from existing recreational uses may result in lost opportunities
- Aesthetics are an important component of a recreational experience. The sight and noise of project construction or operations may be intrusive, degrading the experience

#### • Visual Resources

- The effects of the project construction and operation on scenic qualities
- The effects of night lighting of facilities (sky shine)
- o Compliance with Visual Resource Management classifications
- Effects of visual impacts from recreational areas and Class I viewsheds and key observation points

#### Noise

- o Effects of construction, operation, and vehicular traffic on ambient noise levels
- o Evaluation and effects of facility noise on wildlife and humans
- Existing and anticipated land uses near the project area that are sensitive to noise
- o Existing noise sources and levels adjacent to the site

### • Socioeconomic Resources and Environmental Justice

- The existing setting with respect to demography, employment, infrastructure, social services, etc.
- Economic effect of the proposed project
- The effects of the project taxes and revenues to counties and states
- o The effects on quality of life and tourism
- o The socioeconomic impacts of the project construction
- Environmental Justice and compliance with Executive Orders

### Health and Safety

- The effects of the project (construction and operation) on public health and safety
- Health and safety issues during construction will be associated with activities including heavy equipment and other construction-related increases in traffic, construction and operation of access roads, and alterations in traffic patterns; worker safety under a variety of environmental conditions; spills of petroleum,

oil and lubricants (POL) and hydraulic fluids from fueling and maintenance activities and construction equipment accidents; spills of other hazardous and potentially hazardous substances utilized or generated during construction, including waste oil and solvents; wild land fires associated with construction activities; generation of noise and dust; impacts to existing adjacent facilities

- o Health and safety issues associated with operation of the solar project
- O Spill response plans and mobilization procedures for accidents, leaks, spill

#### Hazardous Materials and Wastes

- o Hazardous materials identification; what materials used, how much
- Hazardous waste identification; how generated, what volume, how disposed, safety procedures and practices
- Pollution prevention
- o The potential for hazardous substance releases including spills, leaks and seeps and effects on the public and the environment (Health and Safety)
- Generation of hazardous wastes and impacts associated with facility and ROW maintenance (vegetation control, use of pesticides / herbicides, etc.)

#### Wildfire

- Effects of a wildfire on the project and the potential for those effects to impact the public
- o Effects of the project on the risk of wildfire

#### 3.0 PROJECT MANAGEMENT ASSISTANCE CONTRACTOR

#### 3.1 Overview

The PMAC shall provide project management support for the BLM and Lead CEQA Agency. The PMAC role includes project planning, planning for public meetings, coordination of document reviews, development of internal agency documents, and Federal Register notices.

#### 3.2 Deliverables

The PMAC shall:

- Maintain the Decision File/Administrative Record for the Project
- Create and maintain one or more secure, web-based sites that will serve as the clearinghouse for document review and comments throughout the Project
- Develop and maintain current mailing lists for project mailings; coordinate with agencies and the Environmental Contractor on all mailings, including Project documents; and prepare and distribute mailings of the draft and final EIR/EIS

- Develop public outreach logistics and presentations, including preparations for public meetings; prepare a Communication and Coordination Plan, which includes a Public Participation Plan
- Develop and maintain project schedule, coordinating with the agencies and the Environmental Contractor
- Develop Federal Register notices and briefing packages for the Notice of Intent and Notices of Availability
- Facilitate project team meetings
- Provide comprehensive administrative support to the BLM and Lead CEQA Agency. Engage with other agencies and contractors as directed by the BLM and Lead CEQA Agency. Facilitate the preparation of data requests prepared by the Environmental Contractor on behalf of the agencies to the applicant(s), and track the responses
- Prepare Federal Register notices and briefing packages for the Notice of Intent and Notices of Availability
- Prepare drafts of the Record of Decision and, if applicable, Temporary Use Permits and Right of Way Grants, coordinate with the BLM on revisions, and produce final documents
- Assist the BLM and Lead CEQA Agency with responses to public information requests under the Freedom of Information Act or other state or federal public records laws, regulations, and policies

### 3.3 Specific Tasks

The specific tasks associated with project management assistance for this project are detailed in sections 3.3.1 through 3.3.12:

## 3.3.1 Task 1: Decision/Project Files/Administrative Record

- Set up and maintain a dedicated project email box for the purpose of receiving electronic records from the agencies
- Develop a records schema for agencies' approval; maintain up-to-date record of project records
- Develop a project-specific Administrative Record (AR) Database for the Record of Decision. The database shall be searchable by multiple variables and will allow the PMAC to develop searchable reports. While the databases will remain the proprietary property of the PMAC, the BLM will retain ownership of all inventories, generated reports and associated information
- Incorporate all NEPA/CEQA related documents, data, records, transactions and correspondence into the Administrative Record(s) System throughout the project
- Retrieve and prepare reports at the request of the BLM and/or Lead CEQA Agency from this automated administrative record for information, civil administrative appeals,

FOIA responses, court actions, and other purposes required by the BLM or Lead CEQA Agency. The PMAC shall provide an electronic copy of all said documents for the administrative record

- Collect copies of all physical and electronic files for the AR currently housed at the BLM, and maintain and house the record at its location until such time as the BLM determines the record should be delivered to the appropriate BLM office or at the conclusion of the project
- Update the AR regularly to ensure it is current. Solicit and incorporate missing documents from the beginning to the end of the project. Specific maintenance activities include collecting, indexing, and filing relevant documents, correspondence, and data related to the project
- Maintain the administrative record inventory. The BLM Project Manager and the PMAC will review the administrative record periodically throughout the project. For budgeting purposes, assume reviews will occur during the public scoping period, during the public comment period on the Draft EIR/EIS, and between the Final EIR/EIS and the Record of Decision
- For budgeting purposes, assume that during contract period an estimated 10,000 documents will be incorporated into the record

## 3.3.2 Task 2: Secure project web sites

- Host and maintain a secure project website for the duration of the project
- Upload relevant project documents such as schedules, calendars, contact information, technical documents, resources, and related links to these sites for collaborative work efforts and file sharing
- Manage permissions for using the site, establish and maintain a current list of persons with access to the site, and provide technical support

## 3.3.3 Task 3: Project Contacts and Mailing Lists

- In coordination with the BLM and Lead CEQA Agency, develop and maintain current contact information for the BLM and Lead CEQA Agency project team, cooperating agencies, key stakeholders; excluding Section 106 consulting parties
- Create and maintain stakeholder and agency mailing lists for distribution of the public scoping report, draft and final EIR/EIS, and Record of Decision. Coordinate with the agencies to identify which recipients will receive a hardcopy, an electronic copy on USB drive or DVD (at the agencies' discretion), or a notification postcard

## 3.3.4 Task 4: Document Preparation and Distribution

• Documents will include the Scoping Report, administrative and final Draft EIR/EIS, administrative and Final EIR/EIS, and the Record of Decision

- Print, assemble, and distribute final documents received from the Environmental Contractor
- For budgeting purposes, assume:
  - o Scoping Report: electronic upload only
  - o Draft and Final EIR/EIS: 50 hardcopies, 50 USB drives, and 100 postcards
  - When submitting the Draft EIR to the State Clearinghouse, provide one printed copy of the CEQA Notice of Completion, plus 15 electronic copies on CD, USB drive or DVD

#### 3.3.5 Task 5: Schedules

- Assist the agencies in developing and updating project schedules in Microsoft Project
- Track task assignments and accomplishments
- Report progress and incomplete tasks to the BLM and Lead CEQA Agency project managers

# 3.3.6 Task 6: Schedule and Facilitate Project Meetings<sup>2</sup>

- Prepare agenda, record and distribute meeting notes
- Meeting organization over the duration of the project typically includes:
  - o one kickoff meeting
  - o one alternatives development meeting (teleconference)
  - o one comment response meeting (teleconference)
  - o biweekly project team meetings (teleconference)
  - o monthly applicant meetings (teleconference)
- Additional meetings as needed may be called by the BLM or Lead CEQA Agency Project Manager For budgeting purposes, assume up to 10 additional meetings may be called over the project duration. Most meetings are by conference call. Travel expenses for face-to-face meetings will be expensed monthly

## 3.3.7 Task 7: Support for Project Teams

Track action item accomplishments, schedules, document reviews, and resolution of issues

<sup>&</sup>lt;sup>2</sup> During the national and local responses to the coronavirus pandemic, meetings that otherwise would be held in person may be held by videoconferencing or other electronic means instead.

- Provide weekly task lists to the BLM and Lead CEQA Agency project managers for the following week
- Provide brief, written monthly progress reports for the BLM and Lead CEQA Agency, suitable for circulation to other agencies. The monthly report shall include:
  - o activities in the past month
  - o planned activities for the next month
  - o review of budget and schedule for such activities
  - o potential problem areas and their suggested solutions
  - o explanation of schedule or budget deviations
- Coordinate with the Environmental Contractor to track deadlines, coordinate followup with reviewers, and coordinate meetings as requested by the BLM and Lead CEQA Agency
- Serve as the point of contact for data requests from and to the BLM, Lead CEQA Agency, and other project consultants. Forward and track requests to appropriate parties and will gather responses

## 3.3.8 Task 8: Communications, Coordination, and Public Participation Plan

This plan will serve as the basis for involving the public and for coordinating/consulting with other governmental agencies with interest or expertise in the activities or issues being addressed and outline the strategy that the BLM and Lead CEQA Agency will use to implement the release of public documents associated with the Project.

- Prepare, in conjunction with the BLM and Lead CEQA Agency, a Communications, Coordination, and Public Participation Plan in advance of the federal NOI or the state Notice of Preparation (NOP). The plan shall:
  - o State how the BLM and Lead CEQA Agency will notify the public of future notices and the availability of environmental documents
  - Outline the logistics for holding public scoping meetings and public comment meetings
  - Forward to the Environmental Contractor for incorporation into the Draft EIS and EIR Preparation Plans

# 3.3.9 Task 9: Public Outreach, Public Notices, and Public Meetings<sup>3</sup>

- Prepare drafts, revisions, and final copies of internal and public notification materials, including:
  - Notice of Intent
  - o Notices of Availability for the draft and Final EIR/EIS and Record of Decision
  - Briefing packages, presentations, letters to stakeholders or agencies, letters to elected officials, or other materials as directed by the BLM or Lead CEQA Agency. Documents will be created from agency-furnished samples
- Develop newspaper advertisements for the BLM's and Lead CEQA Agency's review and arrange for publication of approved ads in advance of the meetings. Expenses for advertisements and additional services will be invoiced monthly
- Prepare meeting materials which typically include:
  - o Posters, handouts, sign-in sheets, and comment cards as appropriate
  - Obtaining additional services as needed (for example, the services of a court reporter to transcribe oral comments)
  - o Coordinate with the Environmental Contractor for technical materials needed
- Organize, attend, and help staff joint NEPA/CEQA public meetings to be held in the vicinity of the project sites, typically in the El Centro area. This specifically includes:
  - o Two virtual or public scoping meetings following publication of the NOI/NOP
  - Two virtual or public comment meetings following publication of the draft EA/EIR
- Create and maintain records of all public meetings, including:
  - List of attendees
  - o Addresses of attendees desiring to be added to the mailing list
  - Notes or minutes of the proceedings
- Receive and record public comments during scoping and on the Draft EIS/EIR
- Develop a system for capturing and tracking public comments received via handwritten letters, facsimile, internet, and email. Ensure that the system will have the functionality necessary to track how the comments were submitted, who submitted them, and what category the comments may cover

<sup>&</sup>lt;sup>3</sup> During the national and local responses to the coronavirus pandemic, meetings that otherwise would be held in person may be held by videoconferencing or other electronic means instead.

- Compile, parse, and code comments on the Draft EIR/EIS, and provide the BLM and Lead CEQA Agency with a table of issues and concerns identified in the public meetings and after the close of public comment periods
- Forward prepared comments to the Environmental Contractor and the agencies
- Coordinate with the BLM and NEPA contractor for any materials to be uploaded to the project website
- For budgeting purposes, assume:
  - Notice of Intent 1
  - Notices of Availability 3
  - O Briefing packages 6. Each briefing package shall meet the requirements of the BLM and Lead CEQA Agency. Generally, each package includes a briefing paper in agency-prescribed format, a Microsoft PowerPoint presentation up to 10 slides long, a timeline, Congressional notification letters, press release, interim communications plan, draft notices developed under this task, and draft documents furnished by others

#### 3.3.10 Task 10: Record of Decision

- Coordinate with the BLM and the Environmental Contractor to develop a draft Record of Decision Package
- Incorporate agency revisions and prepare the final documents for distribution and uploading to the BLM project website
- For budgeting purposes, assume two reviews of the draft ROD package will be required by the BLM

## 3.3.11 Task 11: Right of Way Grant and Temporary Use Permit

- If the BLM approves the project, assist the BLM in preparing stipulations, and prepare draft and final grant and permit documents
- For budgeting purposes, assume two rounds of review with the BLM prior to final document preparation

### 3.3.12 Task 12: FOIA Responses

- Assist the BLM with responses to any Freedom of Information Act (FOIA) requests received for the project
- Research the project record for responsive documents and provide results to the BLM
- For budgeting purposes, allow a total of five hours of time for the duration of the project

# 4.0 Requirements Applying to Both the Environmental Contractor and the PMAC

# 4.1 **Duration of project**

A Record of Decision is expected to be issued with 19 months of the Notice of Intent. All responses shall include a detailed schedule to meet these dates.

RFP responses shall include resumes for key staff, documenting their experience in preparing joint NEPA and CEQA documents for energy project, and/or PMAC role, and will confirm availability of key staff to perform their proposed role on the solar project.

#### 4.2 Deliverables

Provide the BLM and Lead CEQA Agency with items necessary for review by the public, other agencies, and/or Native American tribes. Typically, these reviews require fifty (50) color copies of a project map (i.e., proposed project depicted on a topographic map), and one Section 508 compliant PDF file of the entire Draft and Final EIS including appendices for posting on the BLM website. Incorporate comments and input received from external reviewers into the EIS and EIR with BLM and Lead CEQA Agency guidance.

- Software Requirements MS Word format is required for all documents
- Adobe PDF format for final printed materials and web posting
- ArcGIS is the required mapping software and data medium
- Document Formats Working draft text documents shall be delivered to the agencies as electronic documents in Word format. Figures shall be delivered in pdf format
- Final documents shall be delivered to the agencies and to the PMAC as electronic versions in pdf and Word formats
- All final documents intended for public release shall be compliant with Section 508 of the Rehabilitation Act of 1973
- All formal documents, such as environmental impact reports/statements, formal notices, letters, and briefing papers, shall be developed consistent with agency-furnished templates or sample documents

#### 5.0 Communications Protocol

## 5.1 Communications with Applicant

Questions concerning any aspect of this SOW should be directed in writing via e-mail to Applicant primary point of contact listed below. Questions may be consolidated. Questions and responses will be shared on an anonymous basis with all contractors receiving this Request for Proposals.

**Applicant Contact Info Here:** 

[First Name, Last Name]

Project Manager

[Company Name] 1201 Bird Center Drive Palm Springs, CA 92262

### 5.2 Communications with the BLM

[First Name, Last Name]
Project Manager
California Desert District Office
1201 Bird Center Drive
Palm Springs, CA 92262

# 5.3 Communications with CEQA Lead

The primary point of contact for CEQA is the Lead CEQA Agency and the contact information is:

Michael Abraham

Deputy Director, Planning & Building

Imperial County

801 Main Street

El Centro, CA 92243

### 5.4 Communications between the Environmental Contractor and the PMAC

Communications between the Environmental Contractor and the PMAC shall be between the designated primary points of contact of each.

Communications regarding the Project between the Environmental Contractor and the PMAC shall be copied to the BLM and CEQA Lead.

Requirements will apply for exchanging information and preserving confidentiality of documents. These requirements will be specified in the contract terms.

## 6.0 Conflicts of Interest and Privileged and Sensitive Information

The third-party Contractor and the PMAC shall each execute a disclosure statement prepared by the BLM specifying that they do not have any interest, financial or otherwise, in the outcome of the proposed project prior to the applicant awarding the contract (see 40 CFR 1506.5(c), and Federal Register, Vol. 48, Number 146, July 28, 1983, page 34266). The BLM will keep this statement on file throughout the life of the project. The third-party Contractor must also provide a statement affirming that information deemed privileged and confidential by the BLM and/or the Applicant, for purposes of protecting critical energy facility infrastructure will not be publicly

disclosed or otherwise made available to the public in accordance with direction from the BLM's

Project Manager.