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March 28, 2019

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

Re: Premium Energy Holdings' Application for Preliminary Permit for the  
Owens Valley Pumped Storage Project, FERC Project No. \_\_\_\_\_

Dear Secretary Bose:

Pursuant to 18 C.F.R. §§ 4.32 and 4.81 of the Federal Energy Regulatory Commission's ("FERC") regulations, enclosed for filing is Premium Energy Holdings, LLC's ("Premium Energy") Application for Preliminary Permit for the Owens Valley Pumped Storage Project. As detailed in the application, Premium Energy proposes to evaluate the potential development of a series of three closed-loop pumped storage power plants in the Owens Valley. Premium Energy has a keen interest in harnessing and increasing renewable energy production in California. The submittal of this application is purposed for securing priority during the licensing process. Feasibility studies will be carried out during the term of this preliminary permit in order to support the license application.

Premium Energy looks forward to working with the commission while developing this important new source of clean and sustainable energy storage. If you have any questions or require additional information regarding this submittal, please contact me at (909) 595-5314 or email me at [victor.rojas@ptei.net](mailto:victor.rojas@ptei.net).

Sincerely,

Victor M. Rojas

Managing Director at Premium Energy  
Holdings, LLC

Enclosures

cc:

**BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**APPLICATION FOR PRELIMINARY PERMIT  
FOR THE  
OWENS VALLEY PUMPED STORAGE PROJECT**

FERC Project No. \_\_\_\_\_

Prepared by

**Premium Energy Holdings, LLC**

March 28, 2019

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**INITIAL STATEMENT**  
**BEFORE THE**  
**FEDERAL ENERGY REGULATORY COMMISSION**

**Application for Preliminary Permit**  
**for the Owens Valley Pumped Storage Project**

Premium Energy Holdings, LLC ("Premium Energy"), a California based limited liability corporation, applies to the Federal Energy Regulatory Commission for a preliminary permit for the Owens Valley Pumped Storage Project, as described in the attached exhibits. This application is made in order that the applicant may secure and maintain priority of application for a license for the project under Part I of the Federal Power Act while obtaining the data and performing the acts required to determine the feasibility of the project and to support an application for a license.

1. The location of the proposed project is:

State or territory:	California
Counties:	Mono County and Inyo County
Township or nearby town:	Bishop
Streams:	Rock Creek, Owens River

2. The exact name, business address, and telephone number of the applicant are:

Premium Energy Holdings, LLC  
355 South Lemon Ave, Suite A  
Walnut, CA 91789  
Telephone: (909) 595-5314

3. The name, business address, and telephone number of the persons authorized to act as agent for the applicant in this application are:

Victor M. Rojas  
Managing Director at Premium Energy Holdings, LLC  
355 South Lemon Ave, Suite A  
Walnut, CA 91789  
Telephone: (909) 595-5314  
Email: victor.rojas@ptei.net

Maria Hernandez  
Project Manager at Premium Energy Holdings, LLC  
355 South Lemon Ave, Suite A  
Walnut, CA 91789  
Telephone: (909) 595-5314  
Email: maria.hernandez@ptei.net



4. Preference under Section 7(a) of the Federal Power Act
5. Premium Energy is a corporation operating in California and is not claiming preference under section 7(a) of the Federal Power Act. Premium Energy's business primarily involves the retrofit and modernization of pumping plants, transmission planning and design, power system studies, testing and commissioning of power plants and substations.

6. Term of Permit:

The proposed term of the requested permit is twenty-four (24) months.

7. Existing Dams or Other Project Facilities:

The proposed project would make use of the waters within the Owens Lake Watershed, specifically the Lower Rock Creek water and the Owens River Gorge water. However, once the proposed reservoirs are filled, the proposed project will operate in a closed loop and will not divert water from the existing streams. No existing dams or other project facilities will be part of the Owens Valley Pumped Storage Project.

**ADDITIONAL INFORMATION REQUIRED BY 18 C.F.R. § 4.32(a)**

1. Identification of persons, associations, domestic corporations, municipalities, or state that has or intends to obtain and will maintain any proprietary right necessary to construct, operate, or maintain the project:

Premium Energy Holdings, LLC  
355 South Lemon Ave, Suite A  
Walnut, CA 91789  
Telephone: (909) 595-5314

2. Identify (names and mailing addresses):

- i. Every county in which any part of the project, and any Federal facilities that would be used by the project, would be located.

Mono County, California Board of Supervisors  
278 Main Street  
BridgePort, CA 93517  
Telephone: (866) 745-9719

Inyo County, California Board of Supervisors  
224 N Edwards Street  
Independence, CA 93526  
Telephone: (760) 878-0373

- ii. Every city, town or similar local political subdivision:

- (A) In which any part of the project, and any Federal facilities that would be used by the project, would be located:

*None.*

- (B) That has a population of 5,000 or more people and is located within 15 miles of the project dam:

*None.*

- iii. Every irrigation district, drainage district, or similar special purpose political subdivision:

- (A) In which any part of the project, and any Federal facilities that would be used by the project, would be located:

Los Angeles Department of Water and Power  
111 N Hope Street  
Los Angeles, CA 90012  
Telephone: (800) 499-8840

- (B) That owns, operates, maintains, or uses any project facilities or any Federal facilities that would be used by the project:

*None.*

- iv. Every other political subdivision in the general area of the project that there is reason to believe would likely be interested in, or affected by, the application; and interest:

California Department of Water Resources  
P.O. Box 942836  
1416 9th Street  
Sacramento, CA 95814

State Water Resources Control Board  
1001 I Street  
P.O. Box 100  
Sacramento, CA 95814

California Department of Fish and Game  
Inland Deserts Region  
3602 Inland Empire Boulevard  
Suite C-220  
Ontario, CA 91764

Inyo County Water Department  
P.O. Box 337  
135 South Jackson St. Independence, CA 93526

- v. All Indian tribes that may be affected by the project:

Chairperson  
Bishop Paiute Tribe of the Owens Valley  
50 Tu Su Lane  
Bishop, CA 93514  
Telephone: (760) 873-3584

Chairperson  
Big Pine Paiute Tribe of the Owens Valley  
P.O. Box 700  
Big Pine, CA 93513  
Telephone: (760) 938-2003

Chairperson  
Lone Pine Paiute Shoshone Reservation  
P.O. Box 747  
Lone Pine, CA 93545  
Telephone: (760) 8761034

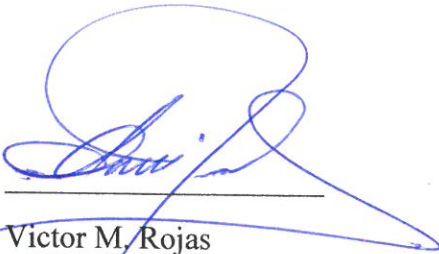
Chairperson  
Fort Independence Reservation  
P.O. Box 67  
Independence, CA 93526  
Telephone: (760) 878-5160

# VERIFICATION STATEMENT

This application for a preliminary permit for the proposed Owens Valley Pumped Storage Project is executed in the state of California, county of Los Angeles.

By: Victor M. Rojas  
Premium Energy Holdings, LLC  
355 South Lemon Ave, Suite A  
Walnut, CA 91789

Being duly sworn, deposes, and says that the contents of this application for a preliminary permit are true to the best of his knowledge or belief. The undersigned applicant has signed the application on this 28th day of March of 2019.



Victor M. Rojas  
Managing Director at Premium Energy Holdings, LLC

Subscribed and sworn before me, a Notary Public of the State of California, County of Los Angeles, this day of Mar 30, 2019.



NOTARY PUBLIC

SUSAN M. DUNN, NOTARY PUBLIC



## EXHIBIT 1 – DESCRIPTION OF THE PROPOSED PROJECT

### 1. GENERAL CONFIGURATION

The proposed Owens Valley Pumped Storage Project would be located 15 miles of Bishop, California between the Mono County and Inyo County. The project concept envisions the construction of three pumped storage generating facilities. The project would be constructed in three successive stages for each pumped storage facility. The project's stage 1 would introduce an 800 MW pumped storage power plant. Succeeding the completion of stage 1, a second 2,000 MW pumped storage power plant would be constructed during the project's stage 2. Finally, the project's stage 3 proposes the construction of a third pumped storage power plant rated at 2,400 MW.

The three power plants would operate as closed loop hydro-power pumped storage plants. The project's operation would not alter the existing streaming beds. Once the proposed reservoirs are filled with enough stored water for project operation, water will not be diverted from the upstream Lake Crowley, Owens River, or Rock Creek.

The three pumped storage power plants would use new reservoirs in the Wheeler Ridge of the Sierra Nevada as upper reservoirs. The project's lower reservoirs would be created in either the Lower Rock Creek Gorge or the Owens River Gorge. Each of the project's new reservoirs would require the construction of a new embankment for them to be filled, and hydro power penstocks for pumped storage operation. The embankments for the project's proposed reservoirs would consist of roller compacted concrete dams. Conceptual dimensions for the project's dams and penstocks are detailed in tables 1 and 2, respectively.

Table 1. New Reservoirs' Embankment Dimensions

Description	Reservoir	Dam Crest Elev. [ft]	Dam Height [ft]	Dam Length at Crest [ft]
Upper Reservoirs	Wheeler Ridge Reservoir 1	10,915	360	1,348
	Wheeler Ridge Reservoir 2	11,165	260	1,264
	Wheeler Ridge Reservoir 3	10,935	195	1,012
Lower Reservoirs Alternative 1	Lower Rock Creek Reservoir 1	5,265	225	986
	Lower Rock Creek Reservoir 2	5,575	315	910
	Lower Rock Creek Reservoir 3	5,865	295	720
Lower Reservoirs Alternative 2	Owens River Gorge Reservoir 1	4,735	180	485
	Owens River Gorge Reservoir 2	5,840	400	749
	Owens River Gorge Reservoir 3	6,335	255	796

Table 2. Hydro Power Penstock Dimensions

	Upper Reservoir	Lower Reservoir	Head [ft]	Penstock Diameter [ft]	Penstock Length [mi]
Lower Reservoirs Alternative 1	Wheeler Ridge Reservoir 1	Lower Rock Creek Reservoir 1	5,650	16	4.8
	Wheeler Ridge Reservoir 2	Lower Rock Creek Reservoir 2	5,600	25	5.2
	Wheeler Ridge Reservoir 3	Lower Rock Creek Reservoir 3	5,070	28	4.3
Lower Reservoirs Alternative 2	Wheeler Ridge Reservoir 1	Owens River Gorge Reservoir 1	6,180	15	7.7
	Wheeler Ridge Reservoir 2	Owens River Gorge Reservoir 2	5,400	25	6.9
	Wheeler Ridge Reservoir 3	Owens River Gorge Reservoir 3	4,600	30	6.4

Each of the project's stages will require the construction of the new upper and lower reservoirs, water conveyance penstocks, generating/pumping powerhouses, electrical switchyards, and interconnecting transmission lines. The final combined pumped storage power plants would deliver a total of 5,200 MW through 500 kV transmission lines. The project's transmission lines would interconnect with Los Angeles Department of Water and Power (LADWP) or Southern California Edison's (SCE) transmission system to facilitate the pumped storage operation. Upgrades to existing transmission lines and substations would be necessary to deliver the electrical power to the existing high-voltage regional transmission system.

## 2. RESERVOIRS

The upper and lower reservoirs configuration is to be the best suited to maximize the available hydraulic head, as well as minimize the penstock layout within environmental constraints. The proposed reservoir sites within this application are the result of conceptual engineering completed by Premium Energy and its consultants. During the term of the preliminary permit, Premium Energy will further investigate on the new reservoirs configuration and select the best suited location for energy, economic and environmental considerations.

The project concept includes a new Wheeler Ridge reservoir serving as upper reservoir for each of the three pumped storage power plants. A new reservoir in the Lower Rock Creek Gorge or the Owens River Gorge will serve as the lower reservoir for each pumped storage power plant. A hydraulic head of up to 6,200 ft would exist between the new reservoirs, which would be exploited for hydro power generation.

### A. Upper Reservoirs Configuration

The project's three pumped storage power plants will employ new reservoirs in the Wheeler Ridge of the Sierra Nevada as upper reservoirs. The new Wheeler Ridge reservoirs' physical characteristics are detailed in table 3.

Table 3. Upper Reservoirs Characteristics

Reservoir	Surface Area [acre]	Storage Capacity [acre-ft]	Maximum Surface Elevation [ft]
Wheeler Ridge Reservoir 1	40	2,525	10,900
Wheeler Ridge Reservoir 2	49	5,720	11,150
Wheeler Ridge Reservoir 3	125	7,470	10,920

To enable pumped storage operation, the new reservoirs will have intake-outlet structures with a submerged intake elevation at an adequate height. Below this elevation, a permanent reserve of water will remain in the reservoirs. From the intake-outlet structures, the hydro power penstocks will unfold to connect the new Wheeler Ridge reservoirs to the powerhouses located at the right bank of the new Lower Rock Creek reservoirs or the new Owens River Gorge reservoir.

The new Wheeler Ridge reservoirs site naturally discharges runoff to streams reaching the Lower Rock Creek. During high water level season, excess water in the new reservoirs would be discharged to the Lower Rock Creek. Rock Creek is a tributary stream to the Owens River, joining the river upstream Pleasant Valley Reservoir.

### B. Lower Reservoirs Configuration

The project proposes two lower reservoir alternatives. Alternative 1 proposes the new lower reservoirs to be created in the Lower Rock Creek Gorge, while alternative 2 depicts them in the Owens River Gorge. The new lower reservoirs physical characteristics for alternative 1 and alternative 2, are detailed in tables 4 and 5.

Furthermore, if the reservoirs are created in the Lower Rock Creek, a new water conveyance penstock will be required to connect the Owens River to the Lower Rock Creek Gorge. This penstock will serve the purpose of filling the new lower reservoirs. After the proposed reservoirs are filled, the water conveyance penstock will be out of service.

The Owens River currently supplies water for the L.A. Aqueduct System, which delivers water from the Owens River to Los Angeles. However, the project's pumped storage power plants will operate in a closed loop. Therefore, operation will reuse the water in a cyclic manner and will not divert water from the upstream water sources. The project's new reservoirs will provide enough water storage capacity for approximately ten to twelve hours of continuous output.



Table 4. Lower Reservoirs Alternative 1 Characteristics

Reservoir	Surface Area [acre]	Storage Capacity [acre-ft]	Maximum Surface Elevation [ft]
Lower Rock Creek Reservoir 1	34	2,650	5,250
Lower Rock Creek Reservoir 2	50	5,220	5,560
Lower Rock Creek Reservoir 3	72	7,240	5,850

Table 5. Lower Reservoirs Alternative 2 Characteristics

Reservoir	Surface Area [acre]	Storage Capacity [acre-ft]	Maximum Surface Elevation [ft]
Owens River Gorge Reservoir 1	55	2,450	4,720
Owens River Gorge Reservoir 2	50	5,170	5,825
Owens River Gorge Reservoir 3	80	6,860	6,320

### 3. TRANSMISSION LINES

The Project proposes three interconnection alternatives with the regional electric utility network:

- Transmission alternative 1 interconnects the project to LADWP's Control Gorge Substation. The power is then transmitted through upgraded LADWP's 500 kV AC transmission lines to a new Sylmar Converter Station AC Switchyard.
- Transmission alternative 2 will deliver the power to Sylmar Converter Station making use of a segment of the existing PDCI. This alternative will require the construction of a new converter station near Pleasant Valley Reservoir and a new converter station in a rebuilt Sylmar Converter Station West.
- A third transmission alternative follows the same configuration of transmission alternative 2, except it will not make use of the PDCI corridor. Instead, this alternative will employ underground HVDC cables going through the L.A. Aqueduct corridor.

In order to harness and store excess renewable energy, the project proposes interconnection with Southern California Edison's (SCE) wind power Windhub Substation for all transmission alternatives. Transmission alternative 1 would require a new 500 kV mid-point substation to interconnect with SCE's Windhub substation. On the other hand, a new converter station near Windhub Substation would be required for transmission alternatives 2 and 3. This new converter station would allow for the transmission of HVDC electrical power for the project's operation.

Further studies of the project's transmission lines location, voltage, number of circuits, and interconnection alternatives will be carried out during the term of this preliminary permit, to select the most preferable alternative. The interconnection voltage may be 230 or 500 kV, depending upon the results of studies to be carried out. In case the project uses 500 kV transmission lines, the upgrade of subsequent transmission lines and involved substations will be necessary.

#### 4. PROJECT CAPACITY

The project is proposed to store excess renewable energy, helping to integrate renewables onto the grid, and to supply firm peaking power generation with primary load following capability. Based on preliminary analysis, the planned total installed capacity of the three pumped storage power plants would be 5,200 MW. However, the project's rating may change as studies proceed. Premium Energy also plans to conduct transmission system studies and power market investigations to help further refine the range of suitable generation capabilities.

Assuming a plant capacity factor of 40%, the Owens Valley Pumped Storage Plant #1, rated at 800 MW, will produce a total of 2,760 GWh of annual energy production. The Owens Valley Pumped Storage Plant #2, rated at 2,000 MW, will have an annual energy production of 6,910 GWh. Finally, the Owens Valley Pumped Storage Plant #3 with a rating of 2,400 MW, will have an 8,290 GWh annual energy production. The three closed-loop pumped-storage power plants involved in this project would have a total combined annual energy production of 17,960 GWh.

On a preliminary basis, the maximum gross head may be up to 6,200 feet depending on the reservoirs' location. At the present time, the project concept envisions procurement of two new pump-turbine generator-motor sets for the first pumped storage power plant. Five new units will be required for the second pumped storage power plant, and six new units for the third pumped storage power plant. Each unit would have a nominal rating at 400 MW.

#### 5. FEDERAL LANDS

The project study boundary, as shown on Exhibit 3, encompasses part of the Inyo National Forest, the Bureau of Land Management California lands and City land belonging to Los Angeles Department of Water and Power (LADWP).

The project's new Wheeler Ridge reservoirs would be in part of the Inyo National Forest, managed by the U.S. Forest Service. The hydro power penstocks would go through part of the Inyo National Forest and the Bureau of Land Management lands. The new Lower Rock Creek reservoirs 1 and 2 of alternative 1 would be in Bureau of Land Management lands, while the new Lower Rock Creek reservoir 3 would occupy part of the Inyo National Forest. The Owens River Gorge, where alternative 2's new lower reservoirs would be created, is currently owned by LADWP.

The interconnection of the project will require new transmission lines in the Owens Valley to interconnect the project's power plants to either the Control Gorge Substation

or a new converter station south of Pleasant Valley reservoir. This new transmission corridor will occupy the Bureau of Land Management lands. After this new transmission lines, the subsequent existing transmission lines and substations that will be upgraded are Los Angeles Department of Water and Power lands. These lands correspond to either the subsequent 230 kV AC transmission lines corridor, the PDCI corridor, or the L.A. Aqueduct corridor; for transmission alternatives 1, 2, and 3, respectively.

**LAND DESCRIPTION**

**Public Land States  
 (Rectangular Survey System Lands)**

1. STATE CALIFORNIA 2. FERC PROJECT NO. Not applicable

3. TOWNSHIP 4S RANGE 30E MERIDIAN Mount Diablo

4. Check one:

License  
 Preliminary Permit

Check one:

Pending  
 Issued

If preliminary permit is issued, give expiration date: Not applicable

**5. EXHIBIT SHEET NUMBERS OR LETTERS**

<b>Section 6</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
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<b>31</b>	<b>32</b>	<b>33</b>	<b>34</b>	<b>35</b> Exhibit 3	<b>36</b> Exhibit 3

6. Contact's name Victor M. Rojas

Telephone no. (909-595-5314)

Date submitted March 28, 2019

This information is necessary for the Federal Energy Regulatory Commission to discharge its responsibilities under Section 24 of the Federal Power Act.

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## **EXHIBIT 2 – DESCRIPTION OF THE PROPOSED STUDIES**

### **1. GENERAL REQUIREMENT**

Premium Energy proposes to carry out an exhaustive feasibility study to evaluate the proposed reservoirs layout alternatives, as well as the power transmission alternatives. The primary aspects to be studied are the geological, environmental and water resources, and electrical engineering of the project. The studies will also include the economic viability and financing of the project. The complete feasibility study will include:

- Project site land surveys.
- Geological and seismic investigations.
- Soil surveys, test pits, core holes and topographical surveying.
- Hydrological studies including runoff, rain, evaporation and groundwater flow.
- Evaluation of reservoirs configuration alternative.
- Devising of the project water supply plan, including legal and water rights matters.
- Environmental and cultural impact study comprising environmental surveys, impact identification, evaluation and mitigation measures.
- Engineering studies to optimize the project's physical configuration.
- Energy market studies and determining preliminary power sales and supply expectations.
- Evaluation of transmission interconnection alternatives including electrical system impact studies.
- Determination of size and specifications of the required equipment.
- Cost estimates, economic feasibility and financing options investigation.

Based on the results and findings of the initial stages of the feasibility study, the applicant will prepare a Notice of Intent and Pre-Application Document as detailed in 18 C.F.R. §§5.5 and 5.6.

Temporary access roads will be required to reach the project's new reservoirs site and perform the required studies. The access roads will lead to the Wheeler Ridge, Lower Rock Creek Gorge and the Owens River Gorge. Conceptual access roads for the project include temporary access roads starting from the Owens Gorge Road leading to each of the project's proposed pumped storage power plants and lower reservoirs. The second set of access roads will be start from Rock Creek Road and lead to the Wheeler Ridge new reservoirs site.

Additionally, access roads leading to the new substation site to interconnect Windhub Substation will be required for transmission alternative 1. Likewise, access roads to the proposed converter stations site will be required for transmission alternatives 2 and 3.

### **2. WORK PLAN FOR NEW DAMS CONSTRUCTION**

The new dams' construction will require subsurface investigations at the Wheeler Ridge, as well as the Lower Rock Creek Gorge and the Owens River Gorge. The investigations

will be carried out at the proposed reservoirs site, as depicted in exhibit 3. Soil and rock borings will be necessary to determine the rock/soil structure and stability for the proposed dams and power plants foundations. Soil and rock samples shall be extracted to conduct studies and determine the soil mechanical properties. Therefore, assessing the project site's suitability for construction of the new dams. Furthermore, seismic surveys will also be required.

The schedule of activities will be completed by the applicant during the permit period as shown in the table below:

Table 6. Schedule of Activities

<b>Schedule</b>	<b>Activity</b>
Beginning in Month 1 to the end of Month 4	Conceptual engineering and evaluation of the alternative reservoir configurations
Beginning in Month 1 to the end of Month 6	Initial scoping and consultation
Beginning in Month 5 to the end of Month 10	Geotechnical and hydrological studies
Beginning in Month 7 to the end of Month 12	Soil and topographical surveying
Beginning in Month 1 to the end of Month 16	Environmental and cultural impact study
Beginning in Month 1 to the end of Month 14	Engineering studies to optimize the project's physical configuration
Beginning in Month 4 to the end of Month 16	Planning and evaluation of transmission interconnection alternatives
Beginning in Month 1 to the end of Month 12	Devising of water supply plan
Beginning in Month 12 to the end of Month 18	Legal and water rights matters
Beginning in Month 14 to the end of Month 24	Determination of size and specifications of the required equipment
Beginning in Month 10 to the end of Month 16	Energy market evaluation
Beginning in Month 6 to the end of Month 16	Cost estimating, economic feasibility & financial planning investigation
Beginning in Month 10 to the end of Month 16	Preliminary licensing proposal, consultation, and documentation
Beginning in Month 16 to the end of Month 24	Preparation, review and filing of the FERC license application

The schedule of activities may deviate from its initial formulation. Activities may be adjusted or supplemented depending upon circumstances which may develop as the studies proceed. Remedial actions to the possible disturbance of the proposed studies

include the implementation of an erosion and material disposal plan, backfilling of core borings and test pits and replanting any disturbed vegetation.

### 3. STATEMENT OF COSTS AND FINANCING

The total estimated cost of carrying out or preparing the studies, investigations, tests, surveys, maps, plans or specifications described above is \$5 Million.

The expected sources of financing available to carry out the activities of the described feasibility study are:

- Premium Energy's available funds.
- Balance raising through investors.

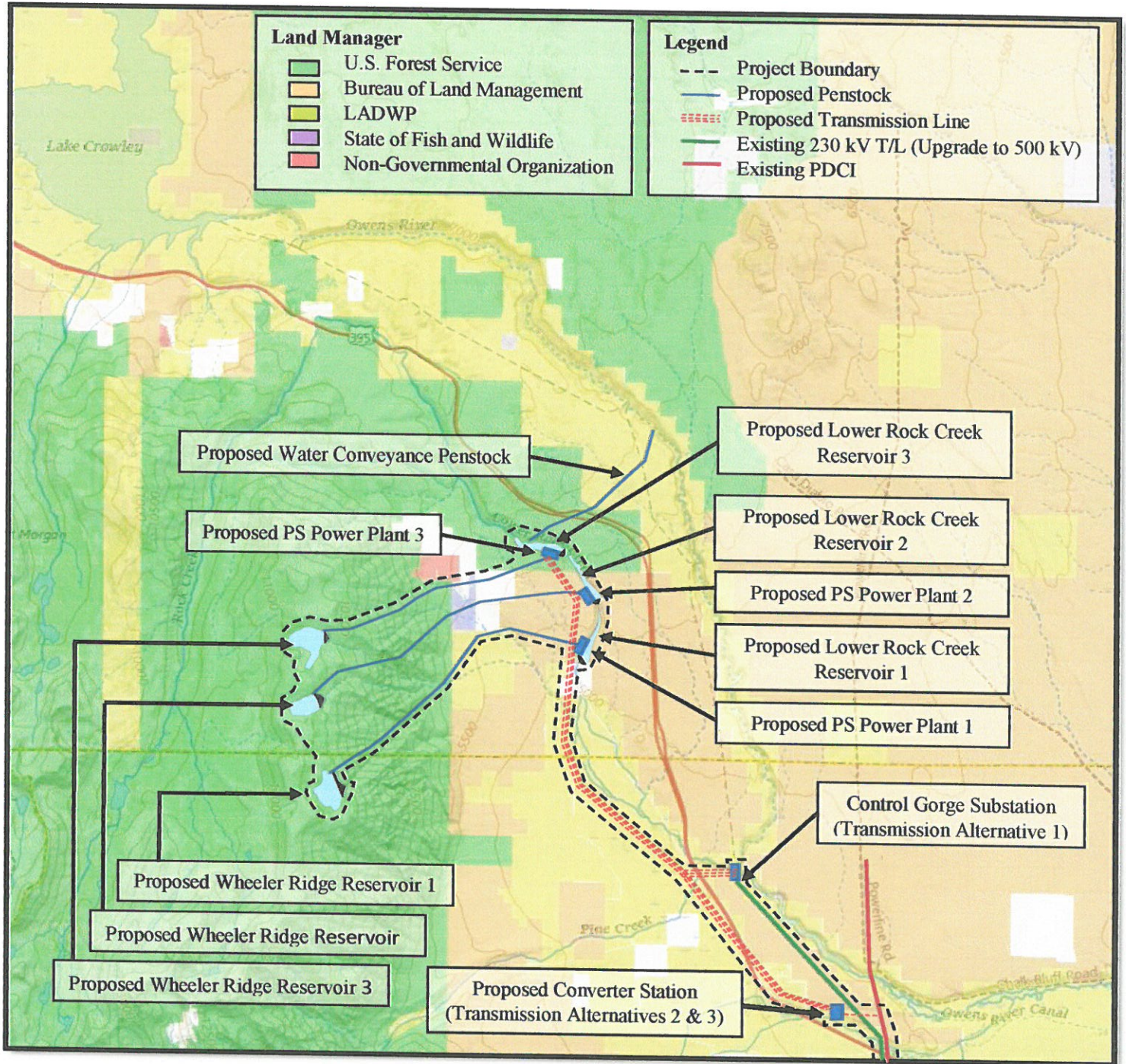
The proposed market for the energy storage and production covers the electric markets in California. Power purchasing entities and other potential off-takers will be identified in further investigations during the term of the preliminary permit.



# EXHIBIT 3 – OWENS VALLEY PUMPED STORAGE PROJECT MAP

## Owens Valley Pumped Storage Project Study Area Boundary

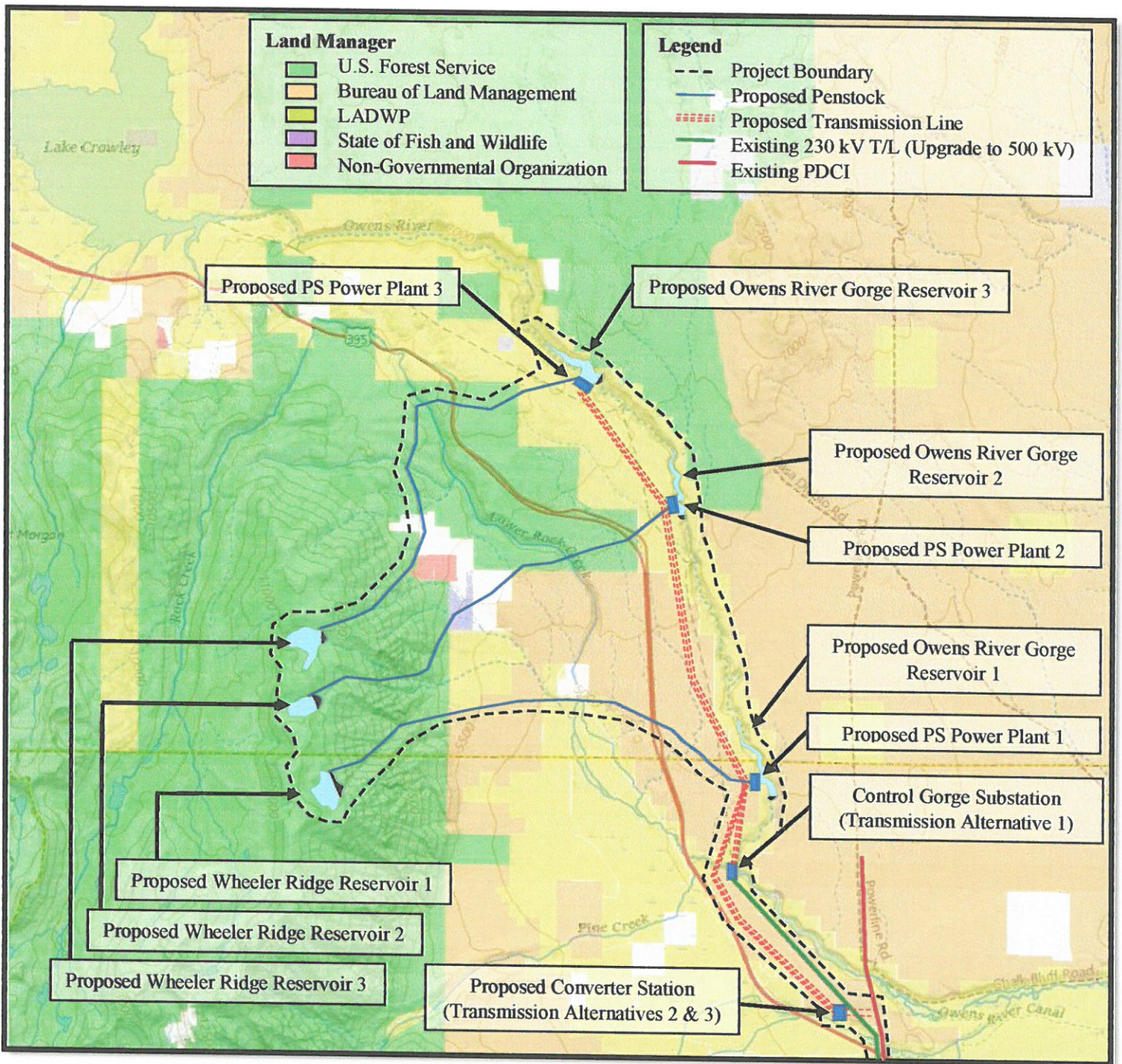
### Lower Reservoirs Alternative 1





# Owens Valley Pumped Storage Project Study Area Boundary

## Lower Reservoirs Alternative 2





# Owens Valley Pumped Storage Project Study Area Boundary

## Transmission Alternative 1 (AC)

