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| **Project Title:** | Palmdale Energy Project (Formerly Palmdale Hybrid Power Plant) - Compliance |
| **TN #:** | 206506 |
| **Document Title:** | Issues Identification and Scoping Report |
| **Description:** | Palmdale Energy Project (PEP) Petition to Amend (PTA) Major Issues Identification and Scoping Report |
| **Filer:** | Eric Veerkamp |
| **Organization:** | California Energy Commission |
| **Submitter Role:** | Commission Staff |
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State Of California The Resources Agency of California

# Memorandum

**Date:** November 3, 2015

**File:** **08-AFC-9C**

**To:** Commissioner Karen Douglas, Presiding Member
Commissioner Janea A. Scott, Associate Member

**From:** California Energy Commission -
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**SUBJECT: PALMDALE ENERGY PROJECT (08-AFC-9C) - PETITION TO AMEND ISSUES IDENTIFICATION AND SCOPING REPORT**

Attached is the Energy Commission staff's Issues Identification and Scoping Report for the Palmdale Energy Project (PEP). This report is a preliminary scoping document that identifies issues that staff believes will require careful attention and consideration or could cause delay in processing the Petition to Amend. This report also provides a proposed schedule. Energy Commission staff will present the Issues Identification and Scoping Report at the Informational Hearing and Site Visit to be held on Monday, November 16, 2015.

cc: Docket (08-AFC-9C)
Proof of Service List

Attachment (1) Issues Identification and Scoping Report

# PALMDALE ENERGY PROJECT (PEP)

(08-AFC-9C)

# ISSUES IDENTIFICATION AND SCOPING REPORT

**CALIFORNIA ENERGY COMMISSION**

**Siting, Transmission & Environmental Protection Division**

# PALMDALE ENERGY PROJECT
(08-AFC-9C)

# ISSUES IDENTIFICATION AND SCOPING REPORT

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## ISSUES IDENTIFICATION AND SCOPING REPORT

This report has been prepared by the California Energy Commission (Energy Commission) staff to inform the Palmdale Energy Project (PEP) Petition to Amend (PTA) Committee and all interested parties of the potential issues that have been identified in this case thus far, as well as the expected scope of staff's assessment and staff's proposed schedule for the proceeding. The Issues Identification and Scoping Report contains a project description, summary of potentially significant issues, and a discussion of the proposed project schedule. The staff will address the status of issues and progress towards their resolution in periodic status reports to the Committee.

## AMENDMENT PROCESS

The PEP PTA will be processed as an amendment to the Final Decision for the Palmdale Hybrid Power Project (PHPP) that was certified by the Energy Commission on August 10, 2011. The purpose of the Energy Commission's review process is to assess the impacts of this proposal on environmental quality and on public health and safety. The review process includes an evaluation of the consistency of the proposed changes with the Energy Commission's Decision and a determination on whether the project, as modified, will remain in compliance with applicable federal, state, and local laws, ordinances, regulations, and standards (LORS)(Title 20, Calif. Code of Regulations, section 1769).

## PROJECT DESCRIPTION

The PHPP was originally licensed as a nominal 570 megawatt (MW) hybrid facility utilizing combined-cycle and solar trough technologies located in the city of Palmdale, CA. The facility was not constructed.

The PTA filed on April 30, 2015 was determined to be incomplete due to missing technical sections. The project owner submitted a revised comprehensive PTA on July 17, 2015, also requesting to rename the project "Palmdale Energy Project". The PTA requests primary modifications to the PHPP to eliminate the solar component, to incorporate newer, fast start, "flexible" natural gas turbine technology, and to replace the water cooling tower with an air-cooled condenser (ACC).

The proposed PEP would have a nominal capacity of 645 MWs. Primary equipment for the generating facility would include two natural gas-fired combustion turbine-generators (CTGs) rated at 220 MW each, one heat recovery steam generator (HRSG), one steam turbine-generator (STG) rated at 232 MW, and one auxiliary boiler. The plant would have a maximum overall gross output of 699.4 MWs (net) with HRSG duct burners in-service.

A complete description of the proposed modifications follows:

- Replacement of the General Electric gas turbines with new Siemens SGT6-5000Fs to meet pending need for "Flexible Resources" to support integration of renewable energy.

- Steam turbine
- Auxiliary boiler
- Elimination of the solar components of the approved project.
- Elimination of brine concentrator/crystallizer systems.
- Replacement of the wet cooling towers with an ACC.
- Reduction of the site from 333 acres to 50 acres.
- Reduction of the construction laydown and parking area from 50 acres to 20 acres.
- Reorientation of the power block with the HRSG stacks now on the east and the combustion turbine inlets to the west.
- Relocation of the site access road connection to East Avenue M easterly approximately 900 feet to the western edge of the site property border.
- Relocation of the point where the 230 kilovolt (kV) transmission line turns south to the generating facility from East Avenue M to a point approximately 1,800 feet further west on East Avenue M.
- Addition of three 230 kV transmission line towers along the south side of East Avenue M north of the project site and extension of the generation tie-line westerly approximately 1,800 feet along the south side of East Avenue M.
- Addition of waste stream consisting of combustion turbine inlet evaporative cooler blowdown, water treatment system reject, and plant drains.
- Reduction in the length of the Approved Project sewer pipeline which will now interconnect with an existing city of Palmdale sewer pipeline along the south side of East Avenue M.
- Change in the water steam cycle chemistry control system from a phosphate based system to an all volatile system.
- Possible change from a $CO_2$ based fire suppression system for some components to an FM200 based system.

The proposed PEP facilities would require permanent use of 50 acres located south of East Avenue M in the city of Palmdale at 950 East Avenue M. The site is bordered on the west by vacant land, and on the south and east by the U.S. Air Force Plant 42 site. The site's northern boundary is East Avenue M, the boundary between the cities of Palmdale and Lancaster. Air Force Plant 42 supports facilities for the production, engineering, final assembly and flight testing of high performance aircraft. Construction laydown would require a separate 20-acre parcel located north of and adjacent to the PEP site. After project completion, the laydown area would be restored and revegetated, if necessary, and remain under the ownership of the city of Palmdale. The project site is situated approximately 60 miles north of downtown Los Angeles in the city of Palmdale in the high desert region of Los Angeles County.

The majority of the proposed transmission system for the proposed PEP is unchanged from the original approval, with one exception. Three additional 230 kV transmission

towers are to be added along the south side of East Avenue M on the north side of the project site in order to extend the generation tie-line an additional approximately 1,800 feet to the west. The PEP will maintain the interconnect point through Southern California Edison's (SCE's) existing Vincent Substation located approximately 11 miles directly south-southwest of the proposed PEP site.

Natural gas will be delivered to the project through an as-yet-to-be constructed 8.7-mile, 20-inch diameter gas pipeline to serve the project in the same manner (route and design) as approved in the final license.

On an annual basis, the proposed PEP would consume a maximum of about 320 acre-feet/year (AFY) of water for power plant processes, a significant reduction of approximately 2,800 AFY, due to the fact that primary cooling needs will be met through the use of an ACC. Process water needs would be met by the use of reclaimed water supplied by either the Palmdale Water Reclamation Plant (PWRP) or the city of Lancaster Advanced Waste Water Treatment Plant (AWWTP). Likely is an interconnection to the existing reclaimed water pipeline located near the intersection of Sierra Highway and East Avenue M. Reclaimed water will also be able to be conveyed to the project site, via a one-mile extension from the PWRP located southeast of the proposed site, via a pipeline to be installed primarily in existing street rights-of-way (ROWs) within the city of Palmdale. This petition does not modify the route of the reclaimed water supply line. In the event that neither of the above options is ready to serve the project, water will be trucked from the PWRP to the plant site until the connection is made.

Potable water during operations for drinking, sanitary use, safety showers, etc. will be supplied to the PEP by Los Angeles County Waterworks District No. 40 via a new 1.0-mile pipeline extending from a connection at an existing District 40 pipeline near the intersection with Sierra Highway. No modifications are proposed to the water pipeline or route contained in the approved final license. Portable sanitary facilities and bottled water will be used during construction.

Process blowdowns and sanitary wastewater will be disposed of through a connection to the city of Palmdale's sewer system, through a newly constructed (since the issuance of the final license) 18-inch sewer line that runs along the south side of East Avenue M. The connection to the existing sewer would be where the sewer line intercepts the PEP site access road, approximately 0.25 mile north of the plant site.

Incorporated into the project design will be air pollution emission controls designed to meet Antelope Valley Air Quality Management District (AVAQMD) regulations for the CTGs, the auxiliary boiler, the fire pump engine, and the emergency generator engine. The dry cooling system has no emissions and is therefore exempt from emission limits; however, there will be a thermal plume, an invisible discharge caused by a column of warm air rising above the PEP.

The construction workforce would average 339 workers over the entire construction period, and would peak during month 12 with up to 706 workers onsite. Construction costs are estimated to be between $700 and $800 million. The operation workforce is expected to require 23 full-time employees. If the PTA is approved by the Energy

Commission, construction of the PEP is likely to begin as early as the end of 2016. With construction planned to proceed over the course of a 25-month construction period, PEP would be operational around the first quarter of 2019.

## SCOPE OF STAFF ANALYSIS

Based upon staff's initial review of the PTA, staff in each technical area will do one of the following:

**Confirm adequacy of current analysis** – Staff will evaluate the proposed modifications in the PTA against the current approved project to determine that there is no change in impacts/mitigation between then and now.

**Update Current Analysis** – Staff will look at changes since the project was approved and update certain areas of the analysis. Example: cumulative impacts.

**Prepare New Analysis of Proposed Changes** – Staff will be preparing a full analysis to address the proposed project changes.

Staff proposes the following scope of analysis for each technical area. The level of analysis in each technical area will be commensurate to the changes proposed in the amendment.

**LORS Conformance** – Staff will review applicable LORS to determine if the project as amended will remain in conformance.

**Review of Amendment** – Staff will review the proposed changes and determine if additional data and analysis is required beyond the analysis, impacts, mitigation and conditions of certification in the Commission Decision.

**Development of Data Requests** – Staff will develop data requests if additional information is required to supplement the environmental analysis of the proposed changes pursuant to Title 20, California Code of Regulations, Section 1769(a)(1)(E).

**Analysis and Preparation of Preliminary Staff Assessment (PSA)** – Staff will prepare a PSA that addresses the impacts of the proposed project changes on the environment and the modified project's compliance with LORS.

**Respond to Comments** – Staff will respond to substantive comments received during the public comment period on the PSA.

**Preparation of Final Staff Assessment** – Staff will make appropriate changes to the PSA and finalize its analysis in the Final Staff Assessment (FSA).

**Evidentiary Hearings** – Staff will participate in hearings as required by the Committee.

**Review and Comment on Presiding Member's Proposed Decision** – As appropriate, staff will review and comment on the Presiding Member's Proposed Decision.

**Contribute to Staff Briefs** – As appropriate, Siting Division staff will contribute to briefs prepared by legal counsel.

## POTENTIAL MAJOR ISSUES

This portion of the report contains a discussion of the potential major issues the Energy Commission staff has identified to date. The Committee should be aware that this report might not identify all of the significant issues that may arise during the case. Discovery is not yet complete, and other parties and participants in the process have not had an opportunity to voice their concerns. The identification of the potential major issues contained in this report is based on comments of other government agencies and on our judgment of whether there may be:

- Potential significant impacts which may be difficult to mitigate;
- Potential areas of noncompliance with applicable LORS;
- Areas of conflict or potential conflict between the parties; or
- Areas where resolution may be difficult or may affect the schedule.

The following table lists all the PTA subject areas evaluated and notes those areas where potential major issues have been identified, the scope of analysis and whether data requests will/have been prepared. Although most technical areas are identified as having no potential issues, it does not mean that an issue will not arise in the future. In addition, disagreements regarding the appropriate conditions of certification may arise between staff and project owner that would require discussion at workshops and potentially during subsequent hearings.

| Subject Area | Major Issues | Scope of Analysis | Data Requests |
|---|---|---|---|
| Air Quality and Greenhouse Gasses | **Yes** | New Analysis of proposed changes | **Yes** |
| Alternatives | No | Update current analysis | No |
| Biological Resources | No | Update current analysis | No |
| Cultural Resources | No | Update current analysis | **Yes** |
| Efficiency | No | Update current analysis | No |
| Facility Design | No | Confirm adequacy of current analysis | No |
| Geological and Paleontological Resources | No | Update current analysis | No |
| Hazardous Materials | No | Update current analysis | **Yes** |
| Land Use | No | Confirm adequacy of current analysis | No |
| Noise and Vibration | No | Update current analysis | No |
| Public Health | No | New analysis of proposed changes | **Yes** |
| Reliability | No | Confirm adequacy of | No |

| | | | |
|---|---|---|---|
| | | current analysis | |
| Socioeconomics | No | Update current analysis | **Yes** |
| Soil and Water Resources | No | New analysis of proposed changes | **Yes** |
| Traffic and Transportation | No | Update current analysis | No |
| Transmission Line Safety and Nuisance | No | Update current analysis | No |
| Transmission System Engineering | **Yes** | New analysis of proposed changes | **Yes** |
| Visual Resources | No | Update current analysis | No |
| Waste Management | No | Update current analysis | **Yes** |
| Worker Safety and Fire Protection | No | Update current analysis | **Yes** |

This report does not limit the scope of staff's analysis throughout this proceeding, but it acts to aid in the analysis of the potentially significant issues that the PEP proposal poses. The following discussion summarizes the potential issues, identifies the parties needed to resolve the issues, and where applicable, suggests a process for achieving resolution. At this time, staff does not see these potential issues as non-resolvable.

# AIR QUALITY AND GREENHOUSE GASSES

## BACKGROUND AND MAJOR ISSUES

Staff reviewed the proposed PEP PTA and has identified air quality mitigation as an air quality issue that could potentially delay the Energy Commission review process.

### Air Quality Mitigation

The proposed project would be located in northern Los Angeles County, within the Antelope Valley Air Quality Management District (AVAQMD) portion of the Mojave Desert Air Basin. The AVAQMD is designated non-attainment with the state and federal ambient air quality standards (AAQS) for ozone ($O_3$) and the state ambient air quality standard for particulate matter less than 10 microns (PM10). The PTA proposes changes for PEP that would result in emissions exceeding the AVAQMD offset triggers for PM10, volatile organic compounds (VOCs), nitrogen oxides (NOx) and carbon monoxide (CO). The AVAQMD requires emissions reduction credits (ERCs) to be used to offset the proposed emissions. The Energy Commission also requires mitigation for potential significant impacts. Pollutants in this category for this proposed project could include PM10, VOCs, sulfur oxides (SOx) and NOx.

The PTA did not identify the specific ERCs that would be used as mitigation for the PEP. The PTA stated that ERCs could be acquired through one or a combination of options. The options identified in the PTA include: (1) ERCs from the AVAQMD ERC bank, (2) other air district ERC banks either within or outside the local air basin, (3) generation of ERCs through road paving, and (4) inter-pollutant offsets. For example, the PTA identified the entire AVAQMD registry as potential sources of ERCs. However, this does not mean the ERCs are available for purchase or use as mitigation. Because

the ERC proposals are only generally described, it will likely require multiple levels of analysis and approval.

This project is considered a new project under AVAQMD rules and regulations and therefore a complete project re-evaluation is required. The PTA includes options for mitigation which would require AVAQMD board, state, and federal approvals as applicable. In addition, approval from other air district boards may be required if ERCs are acquired from air districts other than AVAQMD. Some of the identified strategies for obtaining ERCs have previously been legally challenged in other air districts. Also, it is unclear if the AVAQMD rules in place allow for the use of some of the non-traditional mitigation methods proposed in the PTA.

Lastly, the petitioner is proposing to permit the facility to accommodate multiple operating profiles; however, there is uncertainty that they will be able to acquire the necessary ERCs needed to mitigate the impacts of full operations. The PTA proposes that the facility would limit its operations to mitigation levels incrementally obtained, and the facility would be given the authority to potentially increase actual operations as more ERCs are obtained. This stepped approach is not consistent with either the AVAQMD permitting process or Energy Commission licensing process. The Energy Commission staff is unaware of any project where the project applicant has not been required to obtain full mitigation for the proposed operating profile during the licensing process.

## TRANSMISSION SYSTEM ENGINEERING

## BACKGROUND AND MAJOR ISSUES

The PEP as proposed would generate a nominal electrical output of 645 MWs and a maximum output of 700 MWs with duct burners in-service.

The final California Independent System Operator (California ISO) Interconnection Facilities Study for the currently licensed PHPP dated November 23, 2009, studied an output of a 570 MW power generation facility. The net increase of 130 MWs will require an update of the existing California ISO Interconnection Facilities Study or a new Interconnection Study for the additional 130 MWs generation.

The California ISO received the Interconnection Request for the additional 130 MWs on April 29, 2015. The Interconnection Study is not available for staff to review at this time; it is anticipated to be available in mid-January 2016. The Interconnection Study is required for staff to determine the potential need for new or upgraded transmission facilities beyond the first point of interconnection with the existing grid. If the studies show the project would cause any transmission line overloads which might require transmission line reconductoring or other significant downstream upgrades, a general CEQA analysis will be required for these “downstream” transmission facilities. The environmental analysis of potential upgrades could cause a delay in the amendment process; staff will prepare data requests requesting Phase I and/or Phase II Interconnection Studies.

## ENVIRONMENTAL JUSTICE

Staff will review the impacts resulting from the construction and operation of the proposed amended project to determine if minority or low-income populations would be significantly impacted. Staff is working with the Hearing Officer and Public Adviser to ensure that adequate public outreach and noticing takes place for workshops and document availability.

## PROJECT SCHEDULE

Although staff has experienced some delays early in processing this PTA, the proposed schedule reflects an assumption that the PTA can be processed according to the Energy Commission's normal 12-month schedule for Applications for Certification (AFCs). The delays experienced to date are attributable primarily to deficiencies in the original submittal of the PTA necessitating a revised submittal. Every attempt is being made to prepare a comprehensive first round of data requests in order to minimize the need for a second round of data requests as well as expediting other activities.

The schedule could also be affected if the AVAQMD is for any reason delayed in issuing its Preliminary and Final Determinations of Compliance or if the California ISO is delayed in releasing their Interconnection Study. Staff will continue to work closely with the AVAQMD and the California ISO to support the efficient processing of the proposed PTA and analysis of air quality impacts and the transmission issues. Staff's proposed schedule is presented below and assumes that it is not necessary for staff to prepare and the project owner to respond to any more than two rounds of data requests.

# STAFF'S PROPOSED SCHEDULE – PALMDALE ENERGY PROJECT
## (08-AFC-9C)

| Activity | Proposed Date |
|---|---|
| Project Owner files Final Revised Petition to Amend (PTA) | 7/20/2015 |
| Staff files Issue Identification Report | Anticipate 11/3/2015 |
| Staff files Data Request - Set 1 | 10/30/2015 |
| Information Hearing and Site Visit | 11/16/2015 |
| Data Response and Issue Resolution Workshop | 11/17/2015 |
| Project Owner provides Data Responses - Set 1 | 1st week December |
| Staff files Data Request - Set 2 (if necessary) | TBD |
| Status Report 1 | 12/1/2015 |
| Preliminary Determination of Compliance (PDOC) | TBD |
| Project Owner provides Data Responses - Set 2 (if necessary) | TBD |
| Preliminary Staff Assessment (PSA) filed | PDOC+30 days |
| PSA workshop(s) | 30 days after PSA |
| Final Determination of Compliance (FDOC) | TBD |
| Final Staff Assessment (FSA) filed | 30 days from FDOC date |
| Prehearing Conference* | TBD by Committee |
| Evidentiary hearings* | TBD by Committee |
| Committee files proposed decision* | TBD by Committee |
| Commission Decision* | TBD by Committee |

* The assigned Committee will determine this part of the schedule.