

Throughout this Application, all references to Federal Power, Federal Power Avenal, LLC, and Federal Power Avenal refer to Avenal Power Center, LLC.

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6.0 ENVIRONMENTAL INFORMATION

6.1 INTRODUCTION

This chapter presents an evaluation of the potential impacts of the Project for 17 identified environmental resource areas based on state laws that require consideration of a wide range of potential environmental impacts from a proposed project (see the Warren-Alquist Act, PRC Section 25500 et seq., Commission requirements, PRC Section 25519, and CEQA requirements, PRC Section 21080 et seq.).

For each resource area that follows, the analysis begins with a description of the existing environment and is followed by an evaluation of potential environmental consequences associated with the Project. Project design features and/or mitigation measures to reduce or avoid significant impacts are identified, as appropriate. A cumulative impacts analysis is included that considers other activities in the region which, when considered together with the Project, could potentially compound or increase environmental impacts. Supporting information to confirm compliance with applicable LORS is included in the specific environmental resource sections.

The analyses presented in this chapter are based on the following: (1) details of the Project as presented in Chapter 2.0 - Project Description; (2) consideration of Commission regulations (Rules of Practice and Procedure & Power Plant Site Certification Regulations, CCR Title 20, Chapters 1, 2, 5, 6 and 7); and (3) consideration of input from Commission staff and various responsible and reviewing agencies. The analyses comply with Commission requirements for an AFC. Additionally, information in this chapter supports the various approvals and permitting requirements discussed herein.

The resource areas analyzed in this chapter are as follows:

- Air Quality (6.2)
- Geologic Hazards and Resources (6.3)
- Agriculture and Soils (6.4)
- Water Resources (6.5)
- Biological Resources (6.6)
- Cultural Resources (6.7)
- Paleontological Resources (6.8)
- Land Use (6.9)
- Socioeconomics (6.10)
- Traffic and Transportation (6.11)
- Noise Control (6.12)
- Visual Resources (6.13)

- Waste Management (6.14)
- Hazardous Materials Handling (6.15)
- Public Health (6.16)
- Worker Safety (6.17)
- Transmission Systems Safety and Nuisance (6.18)

6.1.1 DESCRIPTION OF EXISTING CONDITIONS

The existing environment for each resource area is presented in this chapter to establish baseline conditions for consideration of potential Project-related environmental impacts. Both local and regional conditions are described, based on the resources and the area of reasonable potential Project impact, as well as Commission and CEQA requirements. Each description of existing conditions is intended to allow the reader to understand baseline conditions relevant to the nature and extent of potential impacts of the Project.

6.1.2 EVALUATION OF ENVIRONMENTAL IMPACTS

The impact evaluations in this chapter address foreseeable positive and negative environmental effects that could occur as a result of Project construction and operation. The analyses are formulated on the basis of planned Project design and operations, available information from secondary sources, and site and regional field investigations. Projections of potential impacts are conservative, in order to consider maximum likely impact scenarios.

For purposes of this AFC, an environmental impact is defined as a beneficial or adverse change in the status of physical conditions as a result of Project construction or operations. Impacts can be direct and occur within the same time frame and location as the Project, or indirect, occurring later in time, farther removed in distance, and/or as a result of a direct impact. The duration of the impact can be short-term (primarily construction impacts) or long-term (life-of-Project). Anticipated impacts are assessed quantitatively and/or qualitatively, as appropriate.

The significance of anticipated impacts is assessed based upon criteria established for each environmental resource area. Significance criteria were determined based on CEQA Guidelines, Appendix G, Environmental Checklist Form, and on performance standards or thresholds used in the past by responsible agencies for projects in their jurisdictions.

Considerations of significance are based on potential changes to the existing environment and a determination of what may constitute a substantial detrimental effect. They include:

- Resource sensitivity, or the probable response of a particular resource to Project-related activities.
- Resource quality, or the present condition of the resource potentially affected.
- Resource quantity, or the amount of the resource potentially affected.
- Duration of impact, or period of time, over which the resource would be affected, stated as short-term (up to a few years) or long-term (consistent with the operational life of the Project or beyond).

6.1.3 PROJECT DESIGN FEATURES AND/OR MITIGATION MEASURES

As part of the Project, various measures to reduce potential environmental impacts will be implemented through Project design. In this way, Federal Power has identified and resolved potential environmental impacts in advance, in order to develop and maintain a Project that minimizes impacts to the environment. Measures to reduce environmental impacts are also included based on applicable LORS. Planning and design efforts for the Project will incorporate provisions for compliance with these LORS.

In addition to design/operational plans and applicable LORS-derived measures incorporated into the Project, mitigation measures are presented in this AFC to reduce the extent of potential significant environmental impacts identified in the environmental resource area analyses. Methods available to mitigate potential environmental impacts generally include:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of an action.
- Rectifying the impact by repairing, rehabilitating or reclaiming the impacted environment.
- Reducing or eliminating the impact over time by preservation and maintenance.
- Compensating for the impact by replacing or providing substitute resources or environments.

The feasibility and effectiveness of Project design features and/or mitigation measures have been considered in developing the measures included in this AFC. If a particular measure has been

incorporated into Project design/operational plans or is provided based on applicable LORS, it is considered integral to the Project rather than a mitigation measure.

6.1.4 CUMULATIVE PROJECTS

The Commission's regulations [CCR Title 20, Division 2, Appendix B (G)(1)] (see also CEQA Guidelines §§15130 and 15065) require identification of other past, current or probable projects in the area (both public and private) that, when considered together with the Project, could result in cumulative impacts in the region. Cumulative impacts could occur to the extent that impacts related to the Project combine with impacts from these other projects and, together, have a greater impact than when considered separately.

The Site is located in an agricultural region of the western San Joaquin Valley, far from regional population centers and pressures of urbanization. As a result, there are few other projects in the area that could have cumulative impacts with the Project. To identify other planned or ongoing development projects, local and regional government staff were consulted. In addition, the Commission's records on recent AFC filings were reviewed to determine if there have been recent filings for other new power plants that might have the potential for cumulative impacts. The projects that were identified through this process that might result in cumulative impacts are listed in Table 6.1-1. The location of these projects is provided in Figure 6.1-1.

Table 6.1-1 shows the environmental resource areas where the Project may have a cumulative impact with the other identified projects. In general, the potential for cumulative impacts is limited because projects that could have cumulative impacts are either small or located relatively far away. Potential cumulative impacts are analyzed and described in the environmental resource Sections 6.2 through 6.18 of this AFC.

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**TABLE 6.1-1
PROJECTS FOR CUMULATIVE IMPACT ANALYSES**

POTENTIAL DEVELOPMENTS ⁽¹⁾	ENVIRONMENTAL RESOURCE AREA																	
	Air Quality	Geologic Hazards and Resources	Agriculture and Soils	Water Resources	Biological Resources	Cultural Resources	Paleontological Resources	Land Use	Socioeconomics	Traffic and Transportation	Noise	Visual Resources	Waste Management	Hazardous Materials Handling	Public Health	Worker Safety	Transmission Systems Safety and Nuisance	
AVENAL ENERGY (Addressed in this AFC)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
PROJECTS WITH POTENTIAL FOR CUMULATIVE IMPACTS																		
1. Panoche Energy Center	○	○	○	○	○	○	○	○	○	○	○	○	○	●	○	○	○	●
2. Starwood Power-Midway	○	○	○	○	○	○	○	○	○	○	○	○	○	●	○	○	○	●
3. Great Valley Ethanol Project	○	○	○	○	○	○	○	○	○	●	○	○	○	●	○	○	○	○

LEGEND: ● = Potential Cumulative Impacts.
 ○ = No Potential Cumulative Impacts when considered with the Project.
 (1) See Figure 6.1-1 for location of offsite development projects that correspond to the numbers on this table.

The following paragraphs describe other projects considered for potential significant cumulative impacts. The projects in this section were identified by consultation with the City of Avenal, Kings County, nearby cities and counties, and other government agencies, as well as review of filings on the CEC's website.

Panoche Energy Center – The AFC for the Panoche Energy Center (PEC) indicates that construction for this proposed 400 MW simple-cycle natural gas-fired combustion turbine power generation project is planned to begin in December 2007 and last for 13 months. The PEC site is located approximately 55 miles northwest of Avenal Energy in northwestern Fresno County. The PEC site will occupy approximately 12.8 acres of land in an agricultural area.

Starwood Power-Midway Peaking Project – The AFC for the Starwood Power-Midway Peaking Project (Midway) indicate that construction for this proposed 120 MW simple-cycle natural gas-fired combustion turbine power generation project is planned to begin in June 2008 and last for approximately 13 months. The Midway site is located approximately 55 miles northwest of Avenal Energy, adjacent to the PEC site, in northwestern Fresno County. The Midway site will occupy approximately 5.6 acres of land in an agricultural area.

Great Valley Ethanol Project – The Great Valley Ethanol Project is a proposed ethanol plant planned for construction in the City of Hanford in Kings County, approximately 27 miles northwest of Avenal Energy. The plant would have a capacity of 63 million gallons of denatured ethanol production per year that would be used as a gasoline blending component to help meet the increasing demand for clean-burning and locally-produced transportation fuel. The plant would be located on a 112-acre site in the City of Hanford's Kings Industrial Park on property zoned for industrial use. The project is scheduled to begin construction in early 2008 with substantial completion of construction expected within about 16 months of construction start-up. The project will create approximately 40 full-time jobs.

6.1.5 SUMMARY

The analyses in Sections 6.2 through 6.18 present detailed evaluations of environmental impacts associated with the Project and with the projects identified for evaluation of potential significant cumulative projects. No significant Project impacts were identified for any environmental resource area that could not be reduced to below a level of significance by Project design features. Similarly, no significant cumulative impacts were identified after evaluation of Project

impacts with the cumulative projects for the environmental resource areas. Therefore, mitigation measures are not required for cumulative impacts. Based on the evaluations contained in each environmental resource area analysis in the following sections of this chapter, it is concluded that overall environmental impacts from the Project are less than significant.

6.1.6 REFERENCES

City of Avenal, Steve Sopp, Community Development Director. Personal communication with Joshua Taylor. August 2007.

City of Avenal, Steve Sopp, Community Development Director. Personal communication with Joe Stenger. October 12, 2007.

City of Coalinga, Bill Skinner, Director of Community Development. Personal communication with Joshua Taylor. September 2007.

City of Corcoran, Jeri Grant, Director of Community Development. Personal communication with Joshua Taylor. September 2007.

City of Hanford, Barbara Marty, Economic Development Director. Personal communication with Joshua Taylor. September 2007.

City of Hanford. Draft Environmental Impact Report for the Great Valley Ethanol Project. SCH # 2007051088. September, 2007.

City of Hanford. Initial Study for the Great Valley Ethanol Project. May 2007.

City of Huron, Anita Choper, Community Development. Personal communication with Joshua Taylor. September 2007.

City of Lemoore, Holly Smyth, Chief Planner. Personal communication with Joshua Taylor. October 2007.

Fresno County, Ejaz Ahmad, Planner. Personal communication with Joshua Taylor. October 2007.

Fresno County, Margie Mchenry, Senior Planner. Personal communication with Joshua Taylor. September 2007.

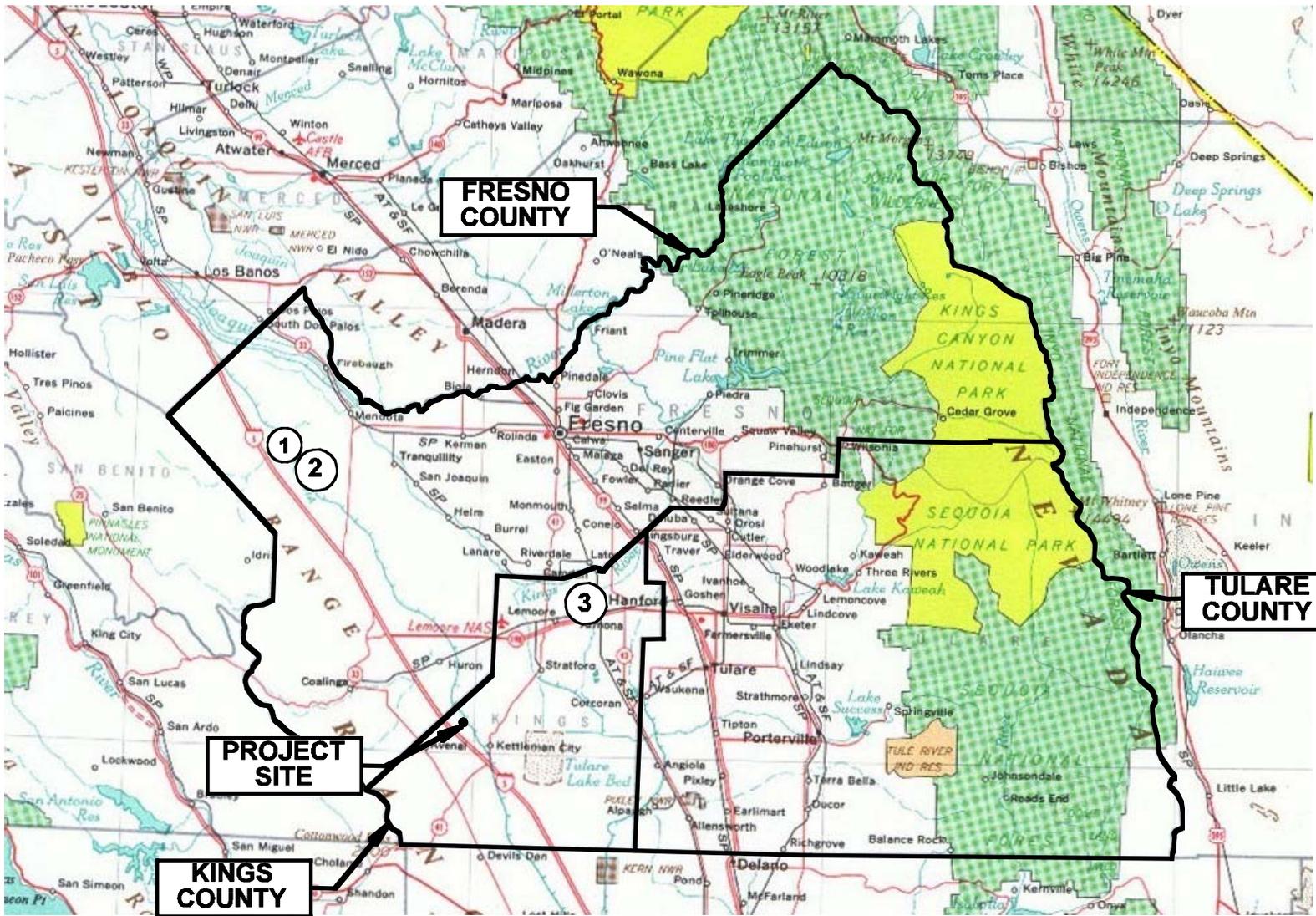
Great Valley Ethanol. <http://gr8valley.com> site visited October 15, 2007.

Kings County, Chuck Kenny, Principal Planner. Personal communication with Joshua Taylor. August 2007.

Tulare County, Beverly Cates, Project Review Division Manager. Personal communication with Joshua Taylor. September 2007.

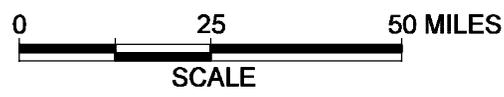
URS Corporation. Application for Certification for the Panoche Energy Center Project. August 2, 2006.

URS Corporation. Application for Certification for the Starwood Power - Midway Project. November 17, 2006.



LEGEND

- ① LOCATION OF PROJECT (NUMBER CORRESPONDS TO TABLE 6.1-1.)



LOCATION OF PROJECTS WITH POTENTIAL FOR CUMULATIVE IMPACTS	
FEDERAL POWER AVENAL, LLC	
AVENAL ENERGY	FIGURE 6.1-1

REFERENCE: USGS NATIONAL ATLAS SOUTHERN CALIFORNIA MAP, 1973.