BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE AVENAL ENERGY PROJECT	DOCKET NO. 08-AFC-1 (AFC filed February 21, 2008)

AVENAL POWER CENTER, LLC'S OPENING BRIEF

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I. INTRODUCTION

Pursuant to the instructions of the Avenal Application for Certification ("AFC") Committee (the "Committee") at the evidentiary hearing on July 7, 2009, Avenal Power Center, LLC ("Avenal Power") hereby files its opening brief. The Committee instructed the parties to brief all issues that were put into contention by the parties at the evidentiary hearing. (July 7, 2009 Evidentiary Hearing Transcript ["7/7/2009 RT"] 451:14-21.) Avenal Power has not briefed areas where there is no controversy between the parties. The uncontested subject areas include: Executive Summary, Cultural Resources, Land Use, Noise and Vibration, Traffic and Transportation, Transmission Line Safety and Nuisance, Visual Resources, Facility Design, Geology and Paleontology, Power Plant Efficiency, Power Plant Reliability, Transmission System Engineering, General Conditions, Compliance Monitoring, and Facility Closure.

Before addressing the more specific issues raised by the intervenors in this proceeding, Avenal Power would like to begin with an overarching summary of the opposition received and how the careful planning of the Avenal Energy Project (the "Project") addresses many of these concerns. The bulk of the Project's opposition has come from communities with residents living over six miles distant from the Project site. The opposition is concerned primarily with environmental justice and the effects of placing the Project near population centers. Yet it is important to remember that the Project site lies far from any population centers. Census block information reveals a population of only 331 within a six mile radius of the Project site. (Ex.

200, Socioeconomics Figure 1.) The nearest residence is located more than one mile from the Project site. (Ex. 200 at 4.4-5.) This site was carefully chosen in order to avoid impacts to human populations. The site is located in Avenal's industrial zoned area on the east side of the hills and on the east side of Interstate 5. (Ex. 200 at 3-1.)

Furthermore, as confirmed by the Mayor and demonstrated by those members of the public who provided comment in support of the Project, there is support for the Project from the local Avenal community. (7/7/09 RT 7:5-7:9.) The community has demonstrated this by the careful zoning designations made by the City of Avenal, as well as by the support from the City's elected representatives, including Mayor Harlan Casida (7/7/2009 RT 5:5-7:15), Councilman Sid Craighead (7/7/2009 RT 11:18-12:21) and City Manager Melissa Whitten (7/7/2009 RT 8:6-9:19). The Kings County Economic Development Corporation has repeatedly expressed its support for the Project. (See Ex. 60; 7/7/2009 RT 9:21-11:9.) The record clearly shows support for, as well as opposition to, the Project. Avenal Power believes the outlying location of this Project responds to many of the concerns expressed by members of the public regarding public health or impacts to a disadvantaged community.

II. SPECIFIC ISSUES BY TOPIC AREA

The Commission's regulations require an applicant to present sufficient substantial evidence to support the findings and conclusions required for certification of the site and related facility. (20 C.C.R. § 1748[d].) The Warren-Alquist Act (California Public Resources Code § 25500 et seq.) provides the general findings required for a final decision on an application. Such a decision must include:

> Specific provisions relating to the manner in which the proposed facility is to be designed, sited, and operated in order to protect environmental quality and assure public health and safety. (Pub. Res. Code § 25523[a].)
>
> Findings regarding the conformity of the proposed site and related facilities with standards adopted by the commission pursuant to Section 25216.3 and subdivision (d) of Section 25402, with public safety standards and the applicable air and water quality standards, and with other applicable local, regional, state, and federal standards, ordinances, or laws. (Pub. Res. Code § 25523[d][1].)
>
> The Commission's own regulations, contained in Title 20 of the California Code of

Regulations, provide additional findings required for certification of a power plant site. The pertinent findings are: (1) compliance with all applicable LORS (20 C.C.R. § 1752[a]); and (2) if any significant adverse impacts have been identified, a finding that changes or alterations have been incorporated into the project which mitigate or avoid such impacts. (20 C.C.R. § 1755[c].)

In this case, Avenal Power has more than met this burden, and has presented sufficient substantial evidence to support the findings required for certification in all topic areas. The following sections discuss specific issues put into contention by the parties at the July 7, 2009 evidentiary hearing. Based upon the evidence in the record in these contested areas this brief supports the following conclusions:

- The Project is proposed for the City of Avenal's industrially zoned area located six miles northeast of the City's residential area and separated by the Kettleman Hills and Interstate 5 from the City of Avenal, and separated by a distance of more than 7.5 miles from Kettleman City.

- The Project provides efficient bridging technology to support the electric sector's transformation to a low greenhouse gas emitting, sustainable future while reducing greenhouse gas emissions from the current electric system serving California load.

- The Project will not result in any significant unmitigated air quality, public health, or environmental justice impacts locally or regionally.

- The Project has worked extensively with the biological resource agencies and has agreed to protective measures and mitigation that will protect biological resources.

- The Project will not create a significant adverse public health risk alone or in combination with existing or reasonably foreseeable projects as demonstrated by the evaluation of the public health risk conducted by California Energy Commission Staff and Avenal Power's consultants.

- The Project is not subject to the water supply assessment requirement of Water Code Section 10910 but nonetheless employs dry cooling, zero liquid discharge and water recycling equipment in its design to reduce water use.

- The Project's decision to obtain a license prior to a power purchase agreement allows Avenal Power to accurately bid the project into ongoing requests for offers or sell the output at known costs, and

- The California Energy Commission Staff provided the required notices and information for public participation in this proceeding.

A. Greenhouse Gases

It is common knowledge that any fossil-fueled power plant generates greenhouse gas ("GHG") emissions as a result of producing electricity. However, this does not mean all fossil-fueled generation is counterproductive to achieving California's goals for reducing GHG emissions. Indeed, some new fossil-fueled generation is necessary to reduce GHG emissions in the interim period and provide a bridge to the next era of power supply options for California. (Ex. 203 at 1.) The Project would be a highly efficient and state-of-the-art resource to supplant existing older, higher GHG emitters, supporting the state's electricity demand that cannot yet be filled by renewable resources, while providing the necessary ancillary services to support the growing demand for renewable energy sources. (Ex. 26 at A11.)

The Commission has extensively studied the role of natural gas-fired generation in achieving California's objectives of reducing GHG emissions and increasing the amount of electrical energy produced from renewable energy sources. The results of this research informed the testimony of California Energy Commission Staff ("Staff") in this proceeding, and these results confirm the Project would help further California's goals for reducing GHG emissions and for fostering the development of additional renewable energy sources. For the reasons set forth below, the Commission should find the analysis of the Project's GHG emissions satisfies the requirements of the Warren-Alquist Act and applicable LORS, and the Project will not cause any significant adverse GHG impacts.

1. The Project's Analysis of GHG Impacts Under the California Environmental Quality Act Is More Than Adequate.

Intervenors Center on Race, Poverty, and the Environment ("CRPE") and Rob Simpson have challenged various aspects of the GHG analysis for the Project, claiming it does not satisfy the requirements of the California Environmental Quality Act ("CEQA"). The evidence shows the Project's GHG impacts have been fully evaluated in this proceeding, and the construction and operation of the Project will create no significant adverse impacts related to GHG emissions.

(1) *CEQA Requires Analysis of Impacts from GHG Emissions.*

The Commission's power plant siting process is a certified regulatory program under CEQA, and thus is required to assess the environmental impacts of any proposed power plant

rated at 50 MW or larger, and adopt feasible mitigation measures that would substantially lessen significant adverse effects on the environment. (Pub. Res. Code § 21080.5[d][2][A].) California's Global Warming Solutions Act of 2006 ("AB 32") (Health & Safety Code § 38560 *et seq*.), along with other laws, regulations and policies, requires substantial reductions in the state's overall GHG emission levels. CEQA has been identified as one of the primary vehicles for implementing the goals of AB 32. Consequently, environmental review of proposed projects under CEQA and CEQA-equivalent programs (such as Application for Certification proceedings before the Commission) must at the very least include an assessment of the proposed project's GHG emissions.

Recent superior court rulings in California, none of which have been published, have invalidated environmental documents for failing to analyze a project's impacts on global warming. For example, in *Center for Biological Diversity v. City of Desert Hot Springs, et al.*, No. RIC464585 (County of Riverside Aug. 6, 2008), the court invalidated a project's EIR partially because the lead agency "failed to make a meaningful attempt to determine the project's effect upon global warming before determining that any such analysis would be speculative." (*Center for Biological Diversity* Ruling at 1.) In *Environmental Council of Sacramento, et. al., v. California Dept. of Transportation, et. al*., No. 07CS00967 (Sacramento County July 15, 2008), the court similarly held that Caltrans, the lead agency in that case, "must meaningfully attempt to quantify the Project's potential impacts on GHG emissions and determine their significance, or at the very least explain what steps it has taken that show such impacts are too speculative for evaluation." (*Environmental Council* Minute Order at 11.) As discussed below, the Project's potential contribution to global warming has been extensively analyzed in this case. This analysis would more than satisfy the obligation discussed in these superior court rulings to "meaningfully attempt to quantify" a project's potential impact on GHG emissions and global warming.

The California Attorney General ("AG") has also filed comment letters and lawsuits in cases where lead agencies have failed to conduct an analysis of a project's GHG impacts.[1] Like the superior court rulings discussed above, these comment letters and settlements occurred

[1] For a summary of the AG's efforts to combat climate change, please see http://www.ag.ca.gov/globalwarming/ceqa.php (last visited August 8, 2009).

largely when lead agencies entirely failed to conduct a meaningful analysis of the project's GHG emission impacts. (See, e.g., Order Regarding Settlement Between the People of the State of California and the County of San Bernardino [August 21, 2007].[2]) In at least two settlements, lead agencies agreed to implement mitigation measures as well. (See Settlement Agreement Between Cilion, Inc. and Edmund G. Brown Jr. [August 2008][3]; see also Settlement Agreement Between Great Valley Ethanol, LLC and Edmund G. Brown, Jr. [March 17, 2008].[4]) Again, the facts in these cases are distinguishable from the Project, as a great deal of GHG emission impact analysis has been conducted both at a facility-specific and system-wide level, ultimately concluding that the Project would lead to a net GHG emission decrease under any realistic circumstances. (See Section A[1][d], below.)

Where a significant impact is found to exist, CEQA also requires agencies to adopt feasible mitigation measures in order to substantially lessen or avoid such an impact. (Cal. Pub. Res. Code §§ 21002, 21081[a]; 14 C.C.R. §§ 15002[a][3], 15021[a][1]-[2].) However, under CEQA, mitigation measures are not required for effects which are not found to be significant. (14 C.C.R. § 15126.4[a][3].)

b. The Proper Baseline for Analyzing GHG Emissions of a Power Plant Is the Pre-Project Emission Level of the Electric System.

CRPE has expressed disagreement that the baseline for the Project's GHG emission analysis should be established on a system-wide level rather than at a facility-specific level. In recent years, the Commission and other state agencies have dedicated an extensive amount of time and resources to studying the proper scope of the baseline for GHG emissions from power generating facilities, with great focus given to the issue identified by CRPE. In order to understand the issue, it is critical to recognize that any discussion of GHGs must first look at the scope of the impacts – GHG impacts are global in nature and, as recognized by the Siting Committee, potentially a cumulative concern. (Committee CEQA Guidance [identified below] at 28.) As discussed below, while any individual gas-fired power plant's contribution to global

[2] Available at http://ag.ca.gov/cms_pdfs/press/2007-08-21_San_Bernardino_settlement_agreement.pdf (last visited August 8, 2009).

[3] Available at http://ag.ca.gov/globalwarming/pdf/Cilion_Agreement.pdf (last visited August 8, 2009).

[4] Available at http://ag.ca.gov/globalwarming/pdf/Great_Valley_Ethanol_Settlement.pdf (last visited August 8, 2009).

GHG emissions would be de minimis, the need to address the potential cumulative impact remains.

Just a few months ago, the Commission's Siting Committee released a comprehensive report on this issue. (See Siting Committee Guidance on Fulfilling California Environmental Quality Act Responsibilities for Greenhouse Gas Impacts in Power Plant Siting Applications [March 2009] [the "Committee CEQA Guidance"].[5]) The Siting Committee did not conclusively answer the questions presented in this report, recommending instead that these issues be addressed both in individual siting cases and in the 2009 Integrated Energy Policy Report. (Committee CEQA Guidance at 2.) However, the Siting Committee devoted many pages of this report to weighing the various arguments on this issue, and ultimately concluded that the GHG impacts from new electric generation projects are different from other sources for which GHG emissions are analyzed on a facility-specific basis. (Committee CEQA Guidance at 20.)

To further address the somewhat unique nature of GHG emissions from power plants, the Committee tasked Staff with developing a report demonstrating natural gas plant impacts on GHG emissions from the overall electric system. (Committee CEQA Guidance at 29-30.) Staff commissioned an independent consultant, MRW and Associates, to complete this report, which is titled "Framework for Evaluating Greenhouse Gas Implications of Natural Gas-Fired Power Plants in California" (May 2009) (the "MRW Report", or Ex. 203). The MRW Report demonstrates that new, efficient natural gas generation designed to meet specified system needs, such as the Project, will cause a net reduction in GHG emissions systemwide. (See Ex. 203 at 98-99.) The MRW Report further shows some new natural gas-fired generation is required in the near term to facilitate the integration of renewable generation facilities. (See *id.*; 7/7/2009 RT 187:6-15.)

CRPE's claim that the Project's GHG emissions should be measured purely as an addition is unsupported by any authority and does not accurately reflect the impacts of new electric generation. (See Ex. 203 at 98.) It is undisputed that the addition of electricity from a

[5]The Committee took official notice of this report pursuant to section 1213 of Title 20 of the California Code of Regulations on June 15, 2009. (See 7/7/2009 RT 18:5-13.) This report is available at http://www.energy.ca.gov/2009publications/CEC-700-2009-004/CEC-700-2009-004.PDF (last visited July 21, 2009).

new, efficient, combined cycle power plant to the existing grid will displace generation from other less-efficient resources. (Ex. 200 at 4.1-87.) The Siting Committee recognized the electric system is an interconnected grid. Power plants connected to this grid do not operate in isolation and power plants only operate at times when demand actually exists for the energy. (See Committee CEQA Guidance at 20-22; 7/7/2009 RT 83:2-84:17.) The demand for electricity must be balanced with the supply at all times. (Ex. 19[a] at Response 1.) If a more efficient power plant is asked to produce power, a less efficient facility must therefore be asked turn down its electric output, as it is not yet feasible to store excess electricity. (*Id.*; see Ex. 203 at 47.) Therefore, it is factually inaccurate to look at the GHG emissions of a power plant without looking at the resulting, reasonably foreseeable decreases in GHG emissions from other parts of the system. (See Committee CEQA Guidance at 20-21.) Therefore, the only appropriate baseline under which a proposed new power plant should be analyzed is as part of a larger, integrated system. The Project is more efficient than existing older power plants, and it would displace these older facilities in the dispatch order. (Committee CEQA Guidance at 20; 2007 Integrated Energy Policy Report ["IEPR"] at 184; Ex. 19[a] at Response 1; Ex. 23 at 10-12; Ex. 200 at 4.1-75; Ex. 203 at 98; see 7/7/2009 RT 144:13-21.)

Even from a purely economic perspective, new gas-fired generation will displace generation from older, less efficient facilities producing more GHG emissions per megawatt-hour ("MWh"). This in itself will produce some amount of GHG emission reductions. (Committee CEQA Guidance at 20; Ex. 200 at 4.1-87, 6-8; Ex. 203 at 8, 23, 28 [see fn. 18], 86, 98; 7/7/2009 RT 73:18-75:3.) This is because natural gas facilities are normally dispatched in order of their variable cost, which is predominantly determined by natural gas prices and heat rates. (Committee CEQA Guidance at 20; 2005 IEPR at 63; 2007 IEPR at 48.) The record demonstrates that the construction and operation of the Project will result in a statewide net decrease of GHG emissions. (Ex. 200 at 4.1-79 through 4.1-86, 4.1-88, 6-8; Ex. 23 at 10-14; *see* Ex. 203 at 8 and 28.)

c. <u>The Baseline for the Project Was Properly Set At the Time Environmental Review Began.</u>

CRPE also questioned the timing under which the baseline was set for the Project. (7/7/2009 RT 161:7-10.) CRPE is correct that the CEQA guidelines require an EIR to include "a

description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced…." (14 C.C.R. § 15125[a].) However, the CEQA guidelines for preparing an environmental impact report do not directly apply to the Commission's AFC process, since this process is a certified regulatory program exempted from CEQA's EIR requirements. (See Cal. Pub. Res. Code § 21080.5.)

Appendix B to the Commission's Title 20 regulations contains the information requirements for an AFC. These regulations require "a discussion of the existing site conditions…." (Appendix B to Article 1 of Chapter 5 of Title 20 of the California Code of Regulations at section [g][1].) At the evidentiary hearing, Staff's witness on the topic of GHG, Brewster Birdsall, clarified that "normally the environmental baseline is set at the beginning of the notice of preparation of a CEQA document, which is essentially the beginning of this proceeding." (7/7/2009 RT 160:21-25.) Mr. Birdsall explained that in this case, the baseline for both air quality and GHG emissions was set at that time in 2008. (7/7/2009 RT 161:1-10.) The record contains no evidence suggesting this baseline is inappropriate for the evaluation of the Project's environmental impacts.

At the evidentiary hearing, CRPE seemed to suggest that the baseline for the Project's GHG impact analysis was established at some indeterminate point in the future. (7/7/2009 RT 162:14-163:1.) CRPE appears to confuse the concept of baseline with the Project's analysis of potential impacts. As discussed above, the baseline for the Project is the environmental condition at the site before the construction of the Project. (See Appendix B to Article 1 of Chapter 5 of Title 20 of the California Code of Regulations at section [g][1].) Staff's witness, Brewster Birdsall, explained that the baseline for the Project's GHG emission analysis was established at the time the Project's environmental review began. (7/7/2009 RT 161:1-10.) However, the impact analysis itself is necessarily "forward looking," since the impacts from both construction and operation would occur at a point after the Project's environmental review begins. (7/7/2009 RT 163:2-18.) Therefore, Staff correctly evaluated the Project's impacts at the point when the Project will actually be built and begin operation, since that is the time when any potential impacts would occur. (*Id*.) Staff also noted the displacement of generation by less efficient sources, discussed in the next section of this brief, will occur at the same time the

Project is operated, rather than at an indeterminate point in the future. (7/7/2009 RT 144:22-145:3.) Therefore, neither the baseline nor the impact analysis for the Project was established at an indeterminate future date, and the Project's analysis fully complied with CEQA and the Commission's regulations.

d. The Project Will Not Create Any Significant GHG Impacts.

The Commission has extensively studied how GHG emissions should be addressed under CEQA. On October 8, 2008, the Commission adopted an order initiating an informational proceeding to solicit comments on how to satisfy its responsibilities under CEQA for analyzing GHG impacts of proposed new power plants. (Committee CEQA Guidance at 1.) In March 2009, the Siting Committee released the Committee CEQA Guidance document discussed above. The Committee has taken official notice of the Committee CEQA Guidance in this proceeding, and this document has informed the GHG emissions impact analysis for the Project. In addition, as discussed above, the Staff-sponsored MRW Report has provided strong guidance to the Commission regarding the role of natural gas-fired generation as California integrates additional renewable generation and moves toward its GHG emission reduction goals.

(1) *Natural Gas-Fired Generation Has a Continuing Role in Achieving California's GHG Goals and Requirements.*

Both the Committee CEQA Guidance and the Staff-sponsored MRW Report recognize the continuing role of natural gas-fired generation in California's electrical system. The Committee CEQA Guidance was prepared before the MRW Report and therefore, without the benefit of the extensive analysis in that report. However, even at that earlier time the Committee cautioned against the assumption that California does not need additional gas-fired power plants. (Committee CEQA Guidance at 24.)

The MRW Report identifies five roles that gas-fired power plants are most likely to fulfill in the future: (1) intermittent generation support, (2) local capacity requirements, (3) grid operations support, (4) extreme load/system emergencies support, and (5) general energy support. (Ex. 203 at 93.) At the evidentiary hearing, Staff testified that there will be a greater need in the future for gas-fired power plants to provide certain ancillary services because the preferred resources - energy efficiency and renewable generating resources - generally are not

dispatchable, and because energy storage technologies are not yet sufficiently developed to provide these services. (Ex. 203 at 47 and 93; 7/7/2009 RT 74:5-19, 75:3-25, 140:14-18.)

Furthermore, the Commission can help reduce natural gas consumption for electric generation by taking steps to retire older, less efficient natural gas power plants, and replace or repower them with new, more efficient power plants. (Ex. 200 at 4.1-79.) New, efficient, natural gas-fired generation promotes the state's efforts to improve GHG electrical generation efficiencies and therefore, to reduce the amount of natural gas consumed by electricity generation and the GHG emissions caused thereby.

Efficient, clean gas-fired generation has been repeatedly recognized as the technology needed to (1) fill the gap that cannot now be bridged by renewable generation, (2) provide system stability to integrate new renewable generation, and (3) replace existing coal contracts and aging plants employing once-through cooling technology. (*See* 2007 IEPR at 70-71 and 186; Ex. 19[a] at Response 1; Committee CEQA Guidance at 16 and 21 [discussing need to retire older plants using once-through cooling]; Ex. 203 at 93.) Thus, Staff concluded the Project furthers the state's strategy to promote generation system efficiency and reduce fuel use and GHG emissions. (Ex. 200 at 4.1-79.)

(2) *The Project Will Result in Net GHG Reductions Under Any Realistic Circumstances.*

Staff testified that because the Project's emissions per MWh would be lower than those of other power plants that the Project would displace, the addition of the Project would cause a net reduction of the California and overall Western Electricity Coordinating Council system GHG emissions and GHG emission rate average. (See Ex. 200 at 4.1-71; 7/7/2009 RT 82:10-83:1; 144:13-145:3.) Both Staff and Avenal Power determined the Project will reduce GHG emissions no matter how much the Project is economically dispatched. (7/7/2009 RT 84:18-85:5, 169:6-22.) This is because the nature of the dispatch order ensures that new, efficient power plants producing less GHG emissions per MWh will be dispatched before less-efficient power plants, which are more costly to run. (7/7/2009 RT 73:18-74:4, 92:9-17; Ex. 203 at 8, 28 [see fn. 18].) The Project will not create a significant adverse cumulative impact on GHG emissions, based on a comparative analysis conducted to show the relative impacts of the Project

as well as to minimize potential analytical variations associated with future projections of the Western and California energy markets. (Ex. 23 at 14; Ex. 26 at A6.)

The conclusion that the Project would not produce any net GHG emissions increases holds true under any realistic circumstances. (Ex. 26 at A6; 7/7/2009 RT 72:4-21, 83:7-21, 84:22-85:5, 150:3-24.) The Project will not increase GHG emissions by displacing renewable energy sources such as solar, wind, or geothermal, because these renewable sources have "must take" contracts that require utilities to purchase their output. (Ex. 26 at A10, 7/7/2009 RT 73:18-23; 194:12-195:22, Committee CEQA Guidance at 22). Staff and Avenal Power both observed the Project will not increase GHG emissions by displacing lower-emitting hydroelectric power because hydroelectric power has a higher dispatch priority and zero fuel cost. (Ex. 26 at A10; 7/7/2009 RT 74:9-19, 148:11-18, 149:2-8.). The same holds true for wind and solar power. (7/7/2009 RT 149:9-13.) The Project would not increase GHG emissions by displacing nuclear power because a nuclear plant has a lower variable cost and is designed to run at full capacity all the time as a base load facility. (Ex. 26 at A10; Ex. 203 at 28; 7/7/2009 RT 148:11-18.)

(a) The Project Would Not Cause Any Net GHG Emissions Increases Even In a Worst-Case Scenario Where the Project Does Not Run.

CRPE expressed concern with the finding of no significant GHG impacts given that the Project does not have a power purchase agreement ("PPA"). At the evidentiary hearing, CRPE cited language from the FSA describing potential uncertainty created by the lack of a PPA. However, Staff's witness, Matthew Layton, clarified that this uncertainty pertains to how much the Project will operate, not to whether or not the Project will result in GHG emission reductions. (7/7/2009 RT 167:7-14.) Both Staff and Avenal Power observed the Project would emit no GHG if it does not run, which could occur when electric demand rises and the preferred sources described above are dispatched first. (Ex. 26 at A6; 7/7/2009 RT 84:22-85:5, 116:2-117:4, 121:10-122:2, 169:6-22.) If the Project is dispatched, its GHG emissions would still be less than any units not selected to run in its place (for example, less efficient natural gas-fired plants). (Ex. 26 at A11; Ex. 200 at 4.1-71 and -72; 7/7/2009 72:4-21, 84:3-85:2, 114:25-115:15, 143:20-144:3, 148:11-23, 150:3-24.) Therefore, the more the Project is dispatched, the greater the net decreases in GHG emissions. Yet even under a worst-case scenario, if the Project is not

dispatched at all, it will not cause a net increase in GHG emissions. (7/7/2009 RT 72:4-9; 115:17-117:7.)

(b) The Project May Reduce GHGs By Displacing Out-Of-State Coal-Fired Generation.

Although most of the energy displaced by the Project will be from less efficient gas-fired generation, the Project may also reduce GHG emissions by displacing electricity produced from coal. (Committee CEQA Guidance at 10; 7/7/2009 RT 128:15-130:19.) While Senate Bill 1368 ("SB 1368") prohibits new long-term contracts for importing electricity produced from coal, California public utilities are currently able to import electricity from out-of-state coal plants under existing long-term contracts and short-term transactions. (7/7/2009 RT 186:13-21.) At present, out-of-state coal plants, while less efficient than a gas-fired combined cycle plant, have a lower fuel cost, and an overall lower cost per kilowatt hour produced. (Committee CEQA Guidance at 24; 2007 IEPR at 51.) These plants are therefore, often dispatched before a natural gas-fired plant. (See Committee CEQA Guidance at 24.)

However, between now and 2020, more than 18,000 GWh of energy procured by California utilities under existing contracts will have to be replaced. (Ex. 200 at 4.1-82.) Some of this electricity could potentially be displaced by electricity from natural gas-fired plants as either the cap-and-trade program implemented by the California Air Resources Board ("CARB") or some other regulatory mechanism translates power plant GHG emissions into an economic dispatch penalty. (See Ex. 200 at 4.1-83.)

As the economic dispatch penalties are imposed, there is no doubt the GHG emissions associated with coal-fired power will increase coal plants' variable costs and therefore, reduce coal plant dispatch as compared to a natural gas-fired plant with lower GHG emissions. (See Ex. 200 at 4.1-83; 7/7/2009 RT 129:7-130:4.). As Mr. Lauckhart testified, his analysis assumed a modest carbon adder, but even that cost increase was sufficient to allow the Project to displace some coal-fired power by 2017. (Ex. 23 at 8; 7/7/2009 RT 129:13-130:4.) Therefore, if the Project does displace some out-of-state coal-fired generation, then the benefit would be proportional to the difference between the coal and natural gas CO_2 emission factors of 205 and 116.6 lbs CO_2 per MMBtu, respectively. (See Ex. 23 at 7; Ex. 200 at 4.1-72 and -83.)

(c) New Gas-Fired Generation Produces Net GHG Emission Reductions Even In a Reduced-Demand Scenario.

At the evidentiary hearing, Commissioner Douglas inquired whether potential increases or decreases in demand would affect the conclusions of Staff and Avenal Power regarding the GHG benefits of the Project. (7/7/2009 RT 114:3-17.) In addressing this question, it is important to understand the dispatch order would continue to maximize the efficiency of the system, even if demand for electricity were to increase or decrease. (7/7/2009 RT 114:18-115:15.) Reductions or increases in demand are not expected to significantly affect the dispatch order, since under either scenario there would continue to be gas plants across the state operating with a range of efficiencies. (*Id.*) Assuming a reduced demand scenario, if less efficient resources had been running in addition to the Project before the demand reduction, then those less efficient resources would be turned off first. (See 7/7/2009 RT 116:12-24.) If the reduction in demand is sufficiently large to turn off the Project, lower GHG-emitting resources—including nuclear, solar, wind, and hydro—would continue to provide the needed power. As discussed above, the GHG-reducing potential of the Project simply decreases to zero when the Project does not run. (7/7/2009 RT 72:4-9, 84:22-85:2, 115:17-117:7, and 169:6-22.)

(d) New Gas-Fired Generation Produces Net GHG Emission Reductions Even In a Highly-Electrified Industry Scenario.

Under a highly electrified industry scenario, in which the demand for electric energy increases as a result of regulatory initiatives to reduce fossil fuel use for industrial or transportation purposes, the renewable resource plants, hydro and nuclear plants will be dispatched first, as in other scenarios. (7/7/2009 RT 148:11-18.) The Project and any other new, efficient natural gas-fired power plants will be dispatched next, followed by the less efficient gas-fired plants. Peaker plants will be dispatched as needed to match the growth of hot season afternoon and evening peak demand. Again, as discussed above, if electricity from the Project or other new gas-fired power plants is not needed at any given time, those plants will not run and will not generate GHG emissions. (7/7/2009 RT 72:4-9; 115:17-117:7.) At worst, this would result in no net emission reductions, but it would also cause no increase in GHG emissions. (*Id.*) If electricity from the Project is needed, its operation will reduce the number of hours peakers or other less efficient plants must operate to meet the demand, thereby reducing overall GHG

emissions compared to the no Project case. (7/7/2009 RT 114:25-115:15.)

(3) *Additional Gas-Fired Generation Is Needed.*

Staff's witness on GHG issues, Steve McClary, testified that there would be a point in the future when further development of gas-fired generation would conflict with California's GHG goals under AB 32 and the renewable portfolio standard ("RPS") established by SB 1078. (7/7/2009 RT 187:19-188:15.) However, both Mr. McClary and Mr. Rubenstein, Avenal Power's witness, clarified that the electric generating system has not approached this point. (7/7/2009 RT 90:5-91:20, 188:10-15.) California is nowhere near the time when "enough" similar natural gas-fired power plants or suitable renewable energy facilities have been built, because of the continuing need to replace 20,000 to 30,000 MW of capacity from current natural gas-fired coastal boiler plants using once-through cooling technology and aging "legacy" power plants. (Committee CEQA Guidance at 16, 21; 7/7/2009 RT 89:16-91:8, 93:5-15, 187:19-188:15.) Once the time arrives when enough natural gas generation has been built, the market will self-correct, and there will be no adverse GHG impacts because a plant that does not run does not generate GHG emissions. (Committee CEQA Guidance at 22.)

(4) *The Project Facilitates the Implementation of California's Renewable Portfolio Standard.*

The Project will not impede development of renewable energy sources because renewable projects are developed in response to specific Requests for Offers ("RFOs") from the utility companies. Many federal subsidies encourage the development of renewable projects, and the developers of such projects are guaranteed to sell their output by the utility power purchase agreements that accompany accepted offers to RFOs. (Ex. 26 at A10, 7/7/2009 RT 194:12-195:22, Committee CEQA Guidance at 22). To meet their state-required goals, utilities in California must purchase virtually all energy made available by renewable sources. (*Id.*) The procurement process and the loading order therefore, prevent the possibility that new gas-fired facilities will "crowd out" new renewable facilities that are necessary for reaching AB-32 goals, even in the unlikely event that speculators in California "overbuild" gas fired facilities. (7/7/2009 RT 148:24-149:13; Committee CEQA Guidance at 22.)

Furthermore, solar and wind generation are highly intermittent types of power generation,

and are not always able to meet system load requirements because no economically viable method exists to bridge the gap between availability of energy and demand on a minute-to-minute basis. (See Committee CEQA Guidance at 17 and 24; 2007 IEPR at 115; Ex. 23 at A11; 7/7/2009 RT 197:18-21.) The system needs natural gas-fired plants such as the Project, with its rapid-ramping capabilities, to support the development and use of renewable resources. (Ex. 200 at 4.1-71 and -88; Ex. 26 at A7[a] and A10.) There is no evidence in the record of any reasonably foreseeable scenario under which construction of the Project would impede the development of renewable energy resources.

Staff also expressed concern in the FSA that the Project is not located within a local reliability constrained resource adequacy area. (Ex. 200 at 4.1-72.) Avenal Power notes the Project is eligible to provide resource adequacy service to California utilities and therefore, additional reliability to the grid. (Ex. 26 at A7[b].) Furthermore, Staff concluded the Project would be able to help a load-serving entity meet resource adequacy requirements. (Ex. 200 at 4.1-88.)

(5) *The Project Will Not "Crowd Out" Renewable Resources By Consuming Transmission Capacity.*

The intervenors have raised concerns that gas-fired generation has the potential to "crowd out" renewable generation from the transmission system. (7/7/2009 RT 87:19-23.) However, such a scenario will not occur because any new renewable project would have the same right to interconnect to the grid as the Project. (7/7/2009 RT 87:24-88:20.) The right to use the transmission system is largely determined by the dispatch order, and is conveyed to the resource that is dispatched first within that process. (7/7/2009 RT 88:14-88:20.) Given the fact that renewable energy carries a lower variable cost, a renewable resource would be dispatched before the Project, and it would have the right to use transmission capacity before the Project. (7/7/2009 RT 88:21-89:7.) The Project would then be able to use whatever transmission capacity is left in the system. (*Id.*)

(6) *The Project Is Able to Provide Fast Start and Other Ancillary Services to Support Development of Renewables.*

In the FSA, Staff suggested the Project is less than ideal for integrating renewables because it is unable to provide rapid start capability. (Ex. 200 at 4.1-81.) However, 100 MW of

the Project's capacity comes from supplemental firing and can rapidly be turned on or off to provide spinning reserve, load following, and other ancillary services when the turbines are operating. (Ex. 26 at A7[a].) Additionally, the facility would be licensed with an auxiliary boiler to provide for hot starts within approximately two hours, providing some flexibility to facilitate expanded deployment of renewable energy. (*Id.*; 7/7/2009 RT 25:11-13, 86:1-9.) It is important to note that no facility will be able to meet all of the potential services identified by Staff. (7/7/2009 RT 87:2-18.) While a peaking facility would provide more rapid starts, both Staff and Avenal Power noted such a facility is also inherently less efficient on a steady state basis due to its simple-cycle technology. (7/7/2009 RT 86:10-87:9, 201:8-202:1.) A peaking facility would therefore, produce greater GHG emissions per MWh.

(7) *Additional Gas-Fired Generation Will Not Cause Increased Electricity Demand.*

During the evidentiary hearing, Mr. Simpson attempted to question whether new gas-fired generation has the potential to cause a decrease in energy prices and therefore, an increase in demand. (7/7/2009 RT 110:12-112:7.) Power plants cannot create demand for electricity, but instead they simply respond to changes in demand based on their cost to produce versus what the energy price is. (7/7/2009 RT 83:13-21; Ex. 26 at A10.) The economic reality of developing a facility with such a large capital investment ensures that natural gas plants will not be built unless there is already sufficient demand for the electricity to be produced by the plant. (*See, e.g.,* Committee CEQA Guidance at 22.)

(8) *The Project's GHG Emissions During Construction Would Be Less Than Significant*

At the evidentiary hearing, CRPE asked about the significance threshold for GHG emissions during construction. (7/7/2009 RT 173:22-175:20.) The significance of the Project's construction GHG emissions is evaluated by analyzing the efficiency of the construction activities, not by a quantitative threshold (in tons per year, for example). (7/7/2009 RT 174:9-25.) Staff believes this non-quantitative threshold of significance for construction GHG emissions is appropriate. (7/7/2009 RT 147:3-148:7, 174:9-175:20.) Brewster Birdsall, Staff's witness on GHG issues, testified: "There is a presumption that a certain amount of construction has to occur to move the world forward. The question is whether or not that construction is

occurring in a way that causes a significant impact to the environment." (7/7/2009 RT 174:15-19.) Staff concluded that these emissions "…would be sufficiently reduced by 'best practices' and would not be significant." (Ex. 200 at 4.1-72.)

Staff's decision to use a "best practices" significance threshold for construction GHG emissions is consistent with guidance from CARB and with proposed CEQA guidelines for addressing GHG emissions. In CARB's latest available guidance regarding significance thresholds for GHG emissions, CARB recommends a "hybrid" approach to setting significance thresholds: a quantitative threshold for operational emissions, and a "best practices" threshold for construction emissions. (CARB, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases Under the California Environmental Quality Act [October 24, 2008] at 9.)

Senate Bill 97 (Chapter 185, 2007) tasked the Governor's Office of Planning and Research ("OPR") with developing CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions." On April 13, 2009, OPR submitted to the Secretary for Natural Resources its proposed amendments to the state CEQA guidelines for GHG emissions.[6] Although these regulations are still in draft form, they grant the CEQA lead agency discretion in determining the significance of GHG impacts. Notably, they allow the lead agency to determine whether to "(1) use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use, or (2) rely on a qualitative analysis *or performance based standards*." (Proposed 14 C.C.R. § 15064.4[b][2] [italics added].) Based on the guidance presently available, Staff properly used a performance-based approach to establishing a threshold for construction GHG impacts. (7/7/2009 RT 173:22-175:20.)

Staff's decision to use a "best practices" threshold for construction GHG emissions is also consistent with thresholds used by other air districts around California.[7] SJVAPCD

[6] Available at http://www.opr.ca.gov/ceqa/pdfs/PA_CEQA_Guidelines.pdf (last visited August 6, 2009).

[7] A draft CEQA guideline proposed by OPR would expressly allow a lead agency to "consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts" in adopting a threshold of significance." (Proposed 14 C.C.R. § 15064.7[c].) Therefore, the thresholds used by other air districts in California are relevant to Staff's selection of a significance threshold in this case.

indicated in its latest Climate Change Action Plan (June 30, 2009) its intention to address GHG impacts of projects subject to CEQA by requiring best performance standards ("BPS"). (SJVAPCD Climate Change Action Plan, Draft Staff Report [June 30, 2009] at 52-53.[8]) Impacts from projects complying with BPS would be deemed less than significant. (*Id*. at 53.) The South Coast Air Quality Management District ("SCAQMD") also has indicated that early compliance with AB 32 measures (such as a low carbon fuel standard) or the use of best available control technology ("BACT") can be sufficient to demonstrate that a Project's GHG emissions will be below the level of significance. (SCAQMD Draft Interim CEQA Greenhouse Gas Significance Threshold Guidance [October 2008], Appendix B, at B-2.[9])

In this case, "best practices" for construction of the Project include: (1) operational measures, such as limiting engine idling time and shutting down equipment when not in use; (2) regular preventive maintenance to prevent emission increases due to engine problems; and (3) use of low-emitting diesel engines meeting federal emissions standards for construction equipment, if available. (Ex. 200 at 4.1-15.) As confirmed by Staff, the implementation of these "best practices" will ensure the GHG emissions from the construction of the Project are less than significant. (Ex. 200 at 4.1-88 to 4.1-89; 7/7/2009 RT 147:3-148:7, 173:22-175:20.)

e. <u>The Reasons Supporting New, Efficient Natural Gas Generation in California Would Not Also Serve to Justify New Coal-Fired Generation in a Coal-Dependent Western State.</u>

During the evidentiary hearing, Commissioner Douglas asked a hypothetical question pertaining to the MRW Report. Specifically, Commissioner Douglas asked how the conclusion flowing from the MRW Report pertaining to GHG benefits from the displacement of less efficient gas-fired plants by new generation would be any different if the project being proposed was a more efficient coal fired plant located in a state with intensive coal generation. (7/7/2009 RT 182:12-20.) That is, Commissioner Douglas asked, would this same argument justify the construction of a new, marginally more efficient coal-fired plant if it would displace some generation from a less efficient coal-fired plant?

[8] Available at http://www.valleyair.org/Programs/CCAP/06-30-09/DRAFT%20CCAP%20GHG%20staff%20report_June%2030,%202009.pdf (last visited August 6, 2009).

[9] Available at http://www.aqmd.gov/ceqa/handbook/GHG/oct22mtg/GHGguidance.pdf (last visited August 6, 2009).

Staff's witness on GHG issues, Steve McClary, responded that the logic behind the MRW Report would not hold true in the hypothetical coal-dependent state described by Commissioner Douglas. First, Mr. McClary noted gas plants will play a strong role in reaching California's GHG goals. (See 7/7/2009 RT 185:20-186:12.) Second, Mr. McClary noted the role of gas-fired plants in providing the support necessary for the development of renewables, which is required by the RPS mandated by Executive Order S-14-08. (7/7/2009 RT 140:7-142:8.) Coal-fired plants lack this capability. Since coal-fired plants are typically strictly baseload facilities (see Ex. 203 at 28), they would not be able to satisfy certain roles identified by the MRW Report which are satisfied by the Project, such as integration of renewable energy and other ancillary services. (See Ex. 200 at 4.1-88.) In contrast, a natural gas facility such as the Project is able to respond to fluctuations in supply and demand, facilitating the integration of highly intermittent renewable energy sources such as solar and wind power.

Third, Mr. McClary discussed the other goals and policies at work in California requiring relatively quick replacement of facilities employing once-through cooling, legacy plants, and electricity from long-term out-of-state coal contracts. (7/7/2009 RT 184:5-20.) Mr. McClary noted that the retirement of these facilities will require replacing their generation with new sources. (7/7/2009 RT 185:12-186:2.) Much of this generation will need to come from gas-fired facilities, as renewable sources are unable to provide the system reliability needed when retiring these older gas-fired sources. (7/7/2009 RT 75:4-25.)

Finally, a new coal fired power plant would be unlikely to displace other, less efficient, coal-fired power plants. Since the price of fuel is what currently drives the dispatch order for thermal generation, a new coal-fired power plant would likely displace gas-fired generation, thus increasing (not decreasing) GHG emissions. (See Committee CEQA Guidance at 20; 2005 IEPR at 63; 2007 IEPR at 48 [discussing connection between variable cost and dispatch order].)

Thus, the situation is different from a coal-dependent state in that California has adopted a programmatic approach to reducing GHG emissions including specific goals for GHG reductions, renewable energy generation, and energy efficiency increases. The development of marginally more efficient coal-fired facilities in a coal-dependent state will not provide anywhere near the GHG reductions that California's programmatic plan for GHG reduction will achieve

and, in fact, would likely result in a regional increase in GHG emissions through the displacement of marginally more expensive gas-fired generation.

f. The Center on Race, Poverty, and the Environment's Claims that the Project Uses Unenforceable Mitigation for its GHG Emissions Is Unfounded.

Throughout the Project's AFC process, CRPE has complained that the Project employs unenforceable mitigation for its GHG emissions. (See CRPE's comment letter regarding Avenal Energy Project, Application for Certification [dated March 11, 2009] at,5; CRPE's Prehearing Conference Statement at section E; 7/7/2009 RT 164:5-20.) CRPE is correct that the CEQA Guidelines require mitigation measures to be enforceable. (14 C.C.R. § 15126.4[a][2].) However, CRPE's assertion that the Project uses unenforceable mitigation for its GHG emissions is based on the mistaken assumption that mitigation is in fact required to render the Project's GHG emissions less than significant. As confirmed by Staff and Avenal Power, there are no significant adverse GHG impacts for the proposed Project. (Ex. 1 at 6.2-84; Ex. 200 at 4.1-87 through -89.) Therefore, no mitigation is required. (Exhibit 17[a]; Ex. 200 at 4.1-87 through -89.) As discussed above, Staff determined that the Project will produce net GHG benefits based on the reasonably foreseeable displacement of less efficient generation. (Ex. 200 at 4.1-87, 6-8; see Ex. 203 at 8, 23, 28 [see fn. 18], 86, 98.) This determination has nothing to do with mitigation measures, as CRPE's complaints suggest. Instead, this determination simply relates to the initial question of whether the Project will have any significant adverse GHG impacts. Because the Project will not have any such impacts, no mitigation is required, and the discussion of displacement of less efficient generating facilities should not be considered to be a discussion about mitigation in the first place.

Separate and distinct from Staff's determination of no significant impact, the Project must comply with the regulations implementing AB 32, promulgated by CARB. (Ex. 200 at 4.1-89.) CARB has indicated that these regulations implementing AB 32 are on schedule. The FSA notes that the Project owner will comply with mandatory GHG emissions reporting regulations and/or future GHG regulations formulated by CARB, such as limits set by GHG emissions cap and trade markets. Compliance with these current and future LORS should not be confused with mitigation, which is not required for the Project. Contrary to CRPE's assertions,

compliance with these requirements is not optional, and is fully enforceable.

g. CRPE's Claim that a Systemwide Consideration of GHG Impacts Results in Double-Counted Mitigation Is Unfounded.

CRPE expressed concern that taking into account the GHG reductions from displacing older, less efficient generation could result in possible double-counting of mitigation. CRPE is concerned that if credits are created in the future when those older facilities are eventually completely closed, some of these credits will have already been counted earlier as reductions from displacement of generation from these facilities.

Again, CRPE's concern is unfounded because, as explained above, the displacement of generation from older, less efficient facilities is not mitigation. Instead, it was a reasonably foreseeable impact of the Project considered during the Project's impact analysis. Mitigation is not required for the Project. Furthermore, CRPE confuses the principles of CEQA with those of a future cap-and-trade system. The CEQA Guidelines make clear that CEQA is concerned with real, physical environmental impacts of a specific proposed project. (14 C.C.R. § 15126.2[a]; see also § 15131[a] [noting that "(t)he focus of the analysis shall be on the physical changes"].) As long as the Project's analysis accurately characterizes the physical changes to the environment from that project, the requirements of CEQA are satisfied.

By contrast, the cap-and-trade system does not look at physical impacts to the environment, but instead creates a separate and distinct regulatory program. It is a program based on a limitation on the total amount of emissions that may occur across an entire system, and it is a mechanism for requiring economy-wide reductions in GHG emissions. (Ex. 19[a] at Response 1.) Under a cap-and-trade system, the Project will have to acquire credits to cover its carbon emissions; a facility that no longer runs may receive credits, or may simply not need to purchase credits. Thus, Avenal Power could purchase GHG credits from the very facilities that no longer run, or could acquire credits from a completely different facility. But the CEQA analysis of the real changes to the physical environment remains completely separate from the cap-and-trade program, ensuring the reductions in emissions will not be counted twice.

h. The Project's Analysis Properly Considered CEQA Impacts Independently From Compliance With Applicable Laws, Ordinances, Regulations, and Standards.

At the evidentiary hearing, CRPE asked Staff's GHG expert why CEQA[10] was not included as one of the LORS for the Project's GHG analysis. (7/7/2009 RT 156:20-157:19; see Ex. 200 at 4.1-73, Greenhouse Gas Table 1.) Staff's witness, Brewster Birdsall, correctly noted that a distinction exists between CEQA and LORS. (7/7/2009 RT 158:1-16.) Staff attorney Lisa DeCarlo then clarified that CEQA is not a specific LORS applicable to the Project's GHG analysis. Instead, CEQA provides the framework through which all of the environmental review for the Project is conducted. (7/7/2009 RT 158:25-8.)

The Commission's regulations recognize this distinction by essentially requiring two distinct findings when the Commission approves an application: (1) a finding of compliance with all applicable state, local or regional standards, ordinances, or laws (20 C.C.R. § 1752[k]) and (2) a finding that the project will not create any significant adverse environmental impacts (20 C.C.R. § 1755[c].) Therefore, CEQA (or, in the case of an AFC, the CEQA-equivalent process) is properly considered separately from the LORS applicable to this case. Staff's organization of the FSA reflects this principle. Whether the Commission's CEQA-equivalent program was included in Greenhouse Gas Table 1 is ultimately not relevant to the Project's analysis, since the FSA clearly indicates that both the requirements of the CEQA-equivalent program and the LORS listed in that table were satisfied. (See Ex. 200 at 4.1-86 through -89.)

2. Alternate Locations and Generating Technologies Would Not Produce Greater GHG Emission Reductions.

a. The Use of Peaking Technology Would Not Produce Greater GHG Emission Reductions.

The Project provides greater GHG benefits than those provided by a peaking power plant for two reasons. First, a combined-cycle facility such as the Project produces electricity more

[10] As a clarification to CRPE's line of questioning, the Project is not directly subject to CEQA. Section 21080.5 of the Public Resources Code specifically exempts the Commission's site certification process from the requirement of

efficiently than a simple-cycle peaker plant. (7/7/2009 RT 86:10-87:18; Ex. 200 at 4.1-80, Greenhouse Gas Table 3 [demonstrating heat rates and GHG performance of power plants in the greater Fresno area].) While a simple-cycle configuration allows peaker plants to provide a quick start, often with ten minute service to respond to rapid changes in demand or generation, this configuration cannot match the lower GHG emissions per MWh of a combined-cycle plant. (*Id*.)

The second reason why the use of peaking technology would not produce greater GHG emission reductions is simply because the Project would run more often (largely due to its greater efficiency) and therefore would be able to displace less-efficient generation more of the time. (7/7/2009 RT 86:10-87:18, 92:9-24.) The Project is designed as a combined-cycle power plant to provide intermediate or base load services. Peaking power plants are typically not anticipated to operate for long periods of time because they cannot take advantage of the efficiencies provided by a combined-cycle facility. (*Id.*) Peaking plants would only decrease GHG emissions when they operate, and then only when they displace less efficient peaking technologies. A peaker typically has a capacity factor of 3-4%. (7/7/2009 RT 92:9-24.) In contrast, the Project would decrease GHG emissions at all times when it operates which, by virtue of its greater efficiency than peaking plants, would be much more frequent than peaking plant operation, around 70% of the time. (*Id*.) Thus, while a modern peaker plant would potentially reduce GHG emissions on a system-wide level by displacing generation from less-efficient peaker plants, there are no operating scenarios under which it would generate greater GHG reductions than the Project. (*Id.*)

b. Transmission Distances from Avenal Will Not Compromise the Benefits of Locating the Project in Avenal.

At the evidentiary hearing, Mr. Simpson asked questions regarding potential line loss due to transmission distances from the Project, particularly whether distance is a primary factor in line loss. (7/7/2009 RT 105:14-23.) Distance is one important factor in determining the transmission loss between the Project and a load center. (7/7/2009 RT 105:14-23.) The voltage of the available transmission lines (e.g., 230 kV, 500 kV) is the other important factor that must

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preparing an environmental impact report ("EIR") under CEQA. However, power plant applications presented to the Commission undergo environmental review substantially equivalent to the review normally conducted in an EIR.

be included in the calculation of transmission loss. (*Id.*) Due to the Project's central location in California, it can deliver electric power within a relatively short distance east to the Fresno load center, and to urban areas in both Northern and Southern California with approximately equal transmission distances. (See 7/7/2009 RT 20-23.) Importing electricity from out-of-state coal-burning power plants requires far greater transmission distances. Even with high transmission voltage on these long-distance transmission lines (i.e., 500 kV), the losses from importing out-of-state electricity exceed the in-state line losses.

The record demonstrates that the Project strikes an excellent balance between locating power generation away from potential receptors, while maintaining the ability to efficiently serve load areas in both northern and southern California. (See Alternatives section of this brief, below.) When the Project operates it will displace less efficient gas-fired generation, and will reduce GHG emissions not only locally but across the entire state. There is nothing in the record to support the notion that transmission losses are sufficiently large to challenge that conclusion.

B. Air Quality

1. The Project Will Comply With Applicable Federal, State, And Local Laws, Ordinances, Regulations, And Standards, and Will Not Result In Any Significant Unmitigated Air Quality Impacts.

For the reasons set forth below, the Committee should find that the Project is safe, and will meet all of the air quality standards under all operating conditions, under all meteorological conditions and at all locations, based on conservative assumptions regarding background or existing air quality, operating levels, emission rates and meteorology. In addition, the Committee should find that there are no significant, unmitigated air quality impacts associated with the Project if the conditions proposed by Staff and Avenal Power are adopted.

2. The Project Will Have No Significant Unmitigated Impacts on Local Air Quality.

The Project's local air quality impacts were addressed by conducting three different types of analyses: (a) pollution control technologies (Ex. 200 at 4.1-17), (b) air quality impacts analysis (Ex. 200 at 4,1-20 through -35), and (c) preparation of a health risk assessment ("HRA") (Ex. 200 at 4.7-1 through 20; 7/7/2009 RT 205:18-206:25.)

a. Avenal Power Center Will Meet Or Exceed San Joaquin Valley Air Pollution Control District's BACT Requirements, Meaning Avenal Will Cause No Significant Unmitigated Impacts to Local Air Quality.

With respect to addressing local air quality impacts, the Project analyzed the appropriate pollution control technology and BACT. (Ex. 1 at 6.2-28 and -29, -73 through -76, and 6.2-4.1 through -4.8; 7/7/2009 RT 205:18-25.) The BACT requirement is a cornerstone of licensing a project with air emissions, requiring new facilities to use the cleanest technologies available. (Ex. 1 at 6.2-29.) Ensuring that projects use the cleanest technologies minimizes potential impacts on local air quality. (7/7/2009 RT 205:18-25.) In this case, the San Joaquin Valley Air Pollution Control District's ("SJVAPCD") Final Determination of Compliance ("FDOC," or Ex. 58) dated October 30, 2008, confirms that the Project complies with or exceeds SJVAPCD's BACT requirements. (Ex. 58 at 36-37; Appendix F, pp. F-2 through F-28.) Staff came to the same conclusion in the FSA. (Ex. 200 at 4.1-36.) With respect to carbon monoxide ("CO"), the Project will comply with this BACT requirement through the use of dry low-NOx duct burners that minimize incomplete combustion, and an oxidation catalyst. (Ex. 58 at 36 and Appendix F. pp. F-4 and F-5; Ex. 200 at 4.1-17; 7/7/2009 RT 24:25.) SJVAPCD determined that BACT for CO is an emission limit of 4.0 parts per million by volume, dry basis ("ppmvd") at 15% oxygen ("O_2"), averaged over three hours. (Ex. 58 at Appendix F. p. F-4.) Avenal proposed a CO emission limit of 2.0 ppmvd at 15% O_2, averaged over three hours (Ex. 18), which the SJVAPCD determined goes "beyond BACT." (Ex. 58 at Attachment F, p. F-4.) In simplest terms, the CO requirements in the permit are so stringent that the CO concentrations inside the stack will be below the ambient air quality standard for CO, which is the level that is deemed safe to breathe in ambient air. (Ex. 1 at 6.2-5.)

Nitrogen oxides ("NOx") will be controlled through a combination of three technologies. The first is the use of dry low-NOx combustors, discussed above. Second, the heat recovery steam generators ("HRSGs") will be equipped with low-NOx duct burners, which are designed to minimize NOx emissions. Third, the Project will employ a control system called selective catalytic reduction ("SCR"). (Ex. 200 at 3-3 and 3-4, and 4.1-17; Ex. 58 at 5 and 7, and Appendix F at F-2 and F-3; Ex. 1 at 6.2-7.7.) Each gas turbine train (which includes the turbine, HRSG with duct burners, and SCR) is designed to meet a NOx emission concentration limit of 2.0 ppmvd NOx at 15% O_2, averaged over 1 hour, during all operating modes. (Ex. 1 at 6.2-74-

75; Ex. 58 at 5 and Appendix F at F-3, Ex. 200 at 4.1-18). This meets the current District, United States Environmental Protection Agency ("US EPA") and CARB BACT requirements for NOx. (Ex. 1 at 6.2-4.4 through 6.2-4.)

Volatile organic compounds ("VOCs") will be controlled through the use of dry low-NOx combustors. (Ex. 1 at 6.2-76; Ex. 58 at Appendix F-4.) Oxidation catalysts would also be located within each heat recovery steam generator to reduce CO and VOCs in the exhaust gases exiting the stack. (Ex. 200 at 4.1-17.) Avenal Power has agreed to VOC emission limitations of 5.96 pounds per hour and 0.0025 lb/MM BTU, equivalent to an emission concentration of 2.0 ppmvd at 15% O_2, during duct firing, and limitations of 3.28 pounds per hour and 0.0018 lb/MM BTU, equivalent to an emission concentration of 1.4 ppmvd at 15% O_2 without duct firing. (Ex. 1 at 6.243.) These emission limitations also meet the current SJVAPCD BACT determination and the current CARB BACT determination for VOC of 2 ppmvd at 15% O_2, averaged over 3 hours. (Ex. 1 at 6.2-4.3 through 4.5; Ex. 200 at 4.1-18.) Therefore, the Project satisfies BACT requirements for VOCs. (Ex. 1 at 6.2-4.7; Ex. 58 at Appendix F. p. F-7.)

Emissions of sulfur dioxide ("SO_2") and particulate matter ("PM_{10}") are controlled through the use of natural gas as a fuel. The Project will use natural gas exclusively, with a maximum sulfur content of 1.0 grains per 100 cubic feet ("scf"), and an annual average sulfur content of 0.36 grains per 100 scf, which satisfies the BACT requirement for SO_2. (Ex. 58 at 37; Ex. 1 at 6.2-4.5.) Similarly, PM_{10} emissions are controlled through the use of clean burning natural gas for the combustion turbines and the HRSG units, and the use of air inlet filtration and lube oil vent coalescers, which will result in minimal PM_{10} emissions and minimal formation of secondary PM_{10}. (Ex. 58 at 37.) These practices satisfy BACT requirements for all of the emissions discussed above. (Ex. 200 at 4.1-38; Ex. 1 at 6.2-4.7.)

b. <u>The Air Quality Impact Analyses for the Project Confirm That Even Under Worst Case Conditions There Will Be No Significant Local Air Quality Effects.</u>

Mr. Rubenstein testified that the Project had performed a thorough air quality impact analysis, often referred to as a modeling analysis. (7/7/2009 RT 206:1-1.) The air quality impact analysis uses dispersion models required by the United States Environmental Protection Agency ("US EPA") and SJVAPCD, and a number of worst-case assumptions. (Ex.1 at 6.2-51 through -

61 and Appendix 6.2-2; and Ex. 200 at 4.1-21.) This analysis is based on the assumption of worst-case operating scenarios for the Project. (Ex. 1 at 6.2-40.) Specifically, the analysis superimposes on that assumption of worst-case operating scenarios, the assumption of worst-case emissions, the maximum allowable emissions from the Project, and worst-case weather conditions at the Project site, even if those physically cannot occur at the same time. (Ex. 1 at 6.2-40; 7/7/2009 RT 206:1-15.) For example, worst-case emissions from a power plant might occur during winter conditions when the ambient temperatures are lowest and the mass flow through the engines are highest. The worst-case meteorological conditions for dispersion might occur in the summer. The air quality impacts analysis nonetheless assumes that those worst-case emissions aspects of the wintertime apply during the summer meteorological conditions, even though that is not physically possible. (Ex. 1 at 6.16-18.)

The purpose of these conservative assumptions is to make sure that the Project will not cause violations of any state or national ambient air quality standard anywhere at any time under any weather conditions, and under any operating conditions. (Ex. 1 at 6.2-65 and -66 ; Ex. 200 at 4.1-24; 7/7/2009 RT 241:10-14.) The air quality impacts analysis confirms that the Project will not cause any violations of any state or federal air quality standards at any location, at any time, under any conditions. (*Id.*) Any health-related impacts from the Project would occur very close to the Project site, and would decrease rapidly from there. (Ex. 200 at 4.7-9.) By ensuring the Project is safe for the local area, assuming all worst-case scenarios, the analysis also ensures the Project will not significantly affect more distant areas. For NO_2, the most stringent hourly and annual ambient air quality standards are 339 and 100 $\mu g/m^3$, respectively. (Ex. 21[a] at 2.) The Project's maximum modeled impacts at the City of Avenal and Kettleman City were calculated to be a mere fraction of this amount, at 33 and 5.0 $\mu g/m^3$ respectively for hourly emissions and 0.016 and 0.061 $\mu g/m^3$ respectively for annual emissions. (Ex. 21[a] at 2.) The modeling for the rest of the pollutants reveals even smaller hourly relative impacts from the Project to the City of Avenal and Kettleman City. (*Id.*) The $PM_{2.5}$ impacts from the Project to the City of Avenal and Kettleman City are a mere 0.068 percent and 0.29 percent of the most stringent ambient air quality standard, respectively. (*Id.*) Staff indicated in the FSA that it adopted the results of Avenal Power's modeling. (Ex. 200 at 4.1-24.)

c. The Health Risk Assessment Performed for the Project Confirms the Project Will Not Cause Any Significant Unmitigated Local Air Quality Impacts.

The Project's HRA confirms that there will be no significant adverse local air quality impacts associated with the Project. (Ex. 1 at 6.16-17 through -18.) The results of the HRA show that the health risk is not significant at any location, at any time, under any operating conditions. (*Id*.) In response to concerns voiced by the intervenors and members of the public, Avenal Power calculated the maximum individual health risks within the City of Avenal and Kettleman City. This analysis revealed that the cancer risks presented by the Project are particularly low in these locations, at 0.0079 per million for the City of Avenal and 0.028 per million for Kettleman City, out of a significance threshold of 10 per million. (Ex. 21[a] at page 3.) The acute and chronic health hazard indices are similarly far below the level of significance in both the City of Avenal and Kettleman City. The acute health hazard index is 0.041 for the city of Avenal, and 0.0043 for Kettleman City, with a significance threshold of 1.0. (Ex. 21[a] at page 3.) The chronic health hazard index is 0.00045 for the City of Avenal and 0.0014 for Kettleman City, both of which are well below the significance threshold of 1.0. (Ex. 21[a] at page 3.) All of these potential health risks are far below the level of significance. Staff does not dispute these conclusions. (Ex. 200 at 4.7-10.)

3. The Project Will Not Result in Any Significant Unmitigated Impacts on Regional Air Quality.

The Project will have no significant impacts on regional air quality. This finding is confirmed by the two components to the regional air quality studies performed by the Project: (1) cumulative impacts analyses regarding regional air quality; and (2) emission offset requirements.

a. The Project Will Not Cause Any Significant Unmitigated Cumulative Air Quality Impacts.

Several cumulative air quality impacts analyses have been conducted for the Project to address the impacts of the Project and other reasonably foreseeable projects against the backdrop of existing background air quality levels. (Ex. 1 at 6.2-82 through -84; Ex. 200 at 4.1-32 through -35; 7/7/2009 RT 207:208:1, 224:3-21.) As with the local air quality analysis, Avenal Power used conservative assumptions on top of conservative assumptions in its cumulative air quality

impact analyses. The first such analysis was included in the AFC (Ex. 1 6.2-6.5 and -66) and reviewed by both Staff (Ex. 200 at 4.1-22 and 4.1-24) and SJVAPCD. (Ex. 58 at 54 and Appendix G, p. 5 [p. 4 of 4 in District's Risk Management Review].) For example, in this analysis, if the highest PM_{10} levels currently in this region occurred in the wintertime, and if the highest project impacts for PM_{10} were to occur in the summertime, the analysis would nonetheless assume that they occurred at the same time. Even with this level of conservatism the Project will not cause any new violations of any state or federal air quality standards. (Ex. 1 at 6.2-65 through -68, -70 and -72; Ex. 58 at 54.) This analysis did show, not surprisingly, that existing air quality violations occur in the area from time to time. (Ex. 1 at 6.2-8, -13, -14 and -66; Ex. 200 at 4.1-8 through 4.1-12.) The analysis demonstrated that the Project could contribute to existing violations of the ozone, PM_{10} and $PM_{2.5}$ standards. (Ex 1 at 6.2-65 and -66; 7/7/2009 RT 224:14-21, 245:17-24.) However, these contributions would not be considered to be significant in comparison with US EPA significance levels. (Ex. 1 at 6.2-68; Ex. 58 at 54.) Air quality regulations require Avenal Power to provide the second element of the regional air quality analysis, emissions offsets, to offset these contributions to existing air quality exceedences, as discussed in the next section below.

A second cumulative air quality impact analysis was included in the AFC. (Ex. 1 at 6.2-83 and -84, and Appendix 6.2-6.) SJVAPCD reported four facilities with pending changes, but none would emit more than ten pounds per day of any contaminant other than VOC. (Ex. 1 at Appendix 6.2-6, Table 6.2-6.2.) The annual emissions of these projects are negligible, and the VOC emissions are not subject to air dispersion impact analysis. (*Id.*) While these sources could contribute to the Project-related impacts to secondary ozone formation, there are no agency-recommended models or procedures for quantifying the cumulative ozone impacts. (Ex. 200 at 4.1-35.) Further, the contributions of Avenal to these violations would be mitigated to a less than significant level through offsets. (Ex 1 at 6.2-77; 7/7/2009 RT 208:2-22, 255:7-256:16.)

Due to the rapid reduction of ground-level concentrations with distance from a proposed power plant, the Commission ordinarily only requires the cumulative impact analysis to include other projects within a six mile radius of the proposed power plant. (Ex. 1 at 6.2-83 and Appendix 6.2-6, p.1; Ex. 21[p] at pages 1-2; Ex. 200 at 4.1-35.) However, in response to comments from the intervenors and members of the public, Avenal Power analyzed the potential

impact of the Project at the location of the proposed expansion of the Kettleman Hills Facility ("KHF"), which lies nearly ten miles from the Project site. (Ex. 21[p] at pp. 1-2.) This analysis revealed that the Project does not have the potential to add to a significant cumulative impact to any air quality impacts from the expansion of the KHF. (Ex. 21[p] at page 1.) For example, the maximum potential contribution of NOx from the Project to the ground-level 1-hour concentration of NO_2 at KHF is approximately 5 $\mu g/m^3$ compared to the maximum ground-level impact of 190 $\mu g/m^3$ and the most stringent ambient air quality standard of 339 $\mu g/m^3$. (Ex. 21[p] at page 1.)

In summary, there have been two cumulative air quality impact analyses prepared for the Project, and each of these analyses reached the same conclusions: the Project will not cause any new violations of state or federal ambient air quality standards, and the Project will contribute to existing violations of the state and federal standards for ozone, PM_{10} and $PM_{2.5}$. (Ex. 58 at Attachment G, p. 4; Ex 1 at 6.2-81 through -84; Ex. 200 at 4.1-32 and -35; 7/7/2009 RT 207:1-208:7.) These potential cumulative, regional air quality impacts are addressed through the provision of emission reduction credits ("ERCs"). These mitigation measures are discussed further below.

b. <u>The Project has Identified and Obtained Emission Reduction Credits to Fully Offset and Mitigate Any Potential Regional Air Quality Impacts.</u>

Emission offsets are one of the most misunderstood aspects of the air quality regulatory program. Emission offsets are not intended to protect local air quality, which, as discussed above, is protected through design features that keep maximum potential air quality impacts below significance thresholds. (7/7/2009 RT 208:2-14.) However, Staff's expert air quality witness, Brewster Birdsall, noted that emission offsets from one part of the basin "do provide a benefit to the other parts of the basin that share that same air." (7/7/2009 RT 260:24-261:3.) Emission offsets primarily serve as part of a regional mitigation program designed to ensure that new plants of any type can be constructed while still making sure that progress towards cleaner air is maintained. Emission offsets are not an option that can be elected by a project applicant to avoid any other requirements. Emission offsets are mandated by local regulations, state law, and federal law. (Ex. 1 at p. 6.2-29, 76, and -77; Ex. 58 at 38.) Avenal Power has provided offsets for the Project as required by SJVAPCD. Specifically, Avenal Power has provided offsets for

precursors of ozone (hydrocarbons and oxides of nitrogen), and for PM_{10} and its precursors, in the quantities required by applicable law and regulations. (Ex. 200 at 4.1-27 through -31; Ex. 58 at 38-47; Ex. 1 at 6.2-76 through 78 and at Appendix 6.2-5; 7/7/2009 RT 266:14-19.)

Emission offsets are required under a regulatory program that was established in California in the late 1970s to replace a program that previously had been based on dispersion modeling and had proven ineffective. The emissions offset program was intended to ensure that improvements in air quality can be achieved without completely halting industrial growth. The emissions offset program is also intended to mesh economic growth with air quality objectives. The District's regulations allow those offsets to come from anywhere within the District's jurisdiction, because ozone, PM_{10}, and $PM_{2.5}$ are regional air quality issues. Although some of the Project's offsets are from reductions in other parts of SJVAPCD's jurisdiction, Staff emphasized that the surrendering of these ERCs will improve local air quality since the airshed is self-contained. Furthermore, to account for the fact that some of the Project's ERCs come from other parts of the central valley, Avenal Power has agreed to provide offsets at a 1.5:1 ratio. (7/7/2009 RT 261:4-262:2; Ex. 58 at 39-46; Ex. 200 at 4.1-27.) The surrendering of these emission offsets fully mitigates the potential regional cumulative impacts associated with the Project. (Ex. 1 at 6.2-76 through -78 and Appendix 6.2-5; Ex. 58 at 38-47 and Attachment H; 7/7/2009 RT 208:8-14; and Ex. 200 at 4.1-27 through -35.)

In Appendix H to the FDOC, SJVAPCD set forth a detailed and rational procedure for evaluating the air quality impacts of emission reduction credits in the air basin in determining what interpollutant offset ratios for $PM_{2.5}$ precursors should be to ensure that a net air quality benefit. (Ex. 58 at Attachment H.) SJVAPCD concluded that the increases in PM_{10} emissions as a result of the operation of the Project would not result in a significant adverse impact. (Ex. 58 at 54.) As a result, SJVAPCD concluded that the Project would not cause any significant, localized adverse PM_{10} impacts,. (*Id.*) Because of questions from the PSA workshop, SJVAPCD also submitted a letter to the Commission containing a supplemental explanation of the methodology it used to calculate the interpollutant offset ratio for the Project. (Ex. 61.)

c. <u>The Project's Contribution to Particulate Matter Levels Is Insignificant.</u>

At the evidentiary hearing, Mr. Simpson asked questions about a table in the FSA

indicating that the Project would bring PM_{10} levels, averaged over a 24 hour period, to 708% of the standard. (7/7/2009 RT 245:8-12.) Avenal Power's air quality witness, Gary Rubenstein, noted that "the vast majority, 99 percent of that 708 percent number, is attributable to existing background levels." (7/7/2009 RT 245:17-19.) Of the total impact of 353.9 $\mu g/m^3$, 351 $\mu g/m^3$ is attributable to background levels. (Ex. 200 at 4.1-24.) That leaves a mere 2.9 $\mu g/m^3$ as attributable to the Project. (*Id.*) Mr. Rubenstein explained that the Project will mitigate this relatively small contribution to preexisting violations by providing emission offsets. (7/7/2009 RT 245:20-24.)

4. The Project's Cumulative Impacts Analysis Is More Than Sufficient Under CEQA.

Mr. Rubenstein testified that there have been several different types of cumulative impact analyses performed for the project, and none of them identified any significant impacts. (7/7/2009 RT 224:3-5 and 14-21.) The projects cited by CRPE (Kettleman Hills Facility and the "sludge farm") are all at a much greater distance from AEP than would be expected to result in the potential for any significant, localized cumulative air quality or public health impact. (See Ex. 21[p] at pages 1-2.) Mr. Rubenstein testified that beyond about six miles, the localized impacts from a power plant of this type are so low as to be considered cumulatively less than significant and too small to analyze. (7/7/2009 RT 223:19-224:20.) With respect to public health issues in particular, Staff testified that the proper way to address these is to ensure that the potential for health impacts (cancer risk, non-cancer chronic and acute health hazard indices) in each individual project is well below all applicable significance levels. (Ex. 200 at 4.7-12 and -13; 7/7/2009 RT 224:25-225:16.) In fact, this approach is the standard for evaluating the potential for cumulative health impacts from toxic air contaminants. (7/7/2009 RT 225:6-16.)

CRPE cited specific concerns regarding cumulative impacts between the Project and the ChemWaste Kettleman Hills Facility. At the hearing, Staff testified that the information required to add this facility to the cumulative analysis is not yet available. (7/7/2009 RT 277:4-21.) However, the record shows that the impact from the Project to health risks in the local area is well below all applicable significance levels, and therefore the risks from the project would not contribute significantly to localized cumulative health risks. (Ex. 1 at 6.16 and Appendix 6.16; Ex. 200 at 4.7-12 and -13; 7/7/2009 RT 223:19-225:25, 372:19-373:7.)

As shown in the AFC, the maximum potential cancer risk at a residence of 0.017 in one million and maximum potential non-cancer chronic and acute health hazard indices of 0.0008 and 0.082 are less than one-fiftieth, one-twelve hundredth, and one-twelfth of the respective significance thresholds. (Ex. 1 at 6.16-17.) Because Kettleman City and the Kettleman Hills Facility are approximately eight and 9.6 miles, respectively, from the Project while the residence with the maximum potential health impacts noted above is located no more distant than approximately two miles from the Project, it is expected that the maximum potential health impacts of the Project at Kettleman City would be no more than one-fifth to one-fourth of the levels noted above for the residence, which would be no more than one-two hundredth, one-forty eight hundredth, and one-forty eighth of the significance thresholds for cancer risk and non-cancer chronic and acute health hazard indices. (Ex. 21[a] at PSA Comment Table 2.)

5. The Air Models for the Project Were Properly Developed Using Data from the Points Closest to the Project Site.

At the evidentiary hearing, a public commenter and CRPE asked why the Project's modeling did not use data from the Arvin monitoring station. (7/7/2009 RT 248:15-249:3, 275:10-13.) Staff's air quality expert, Brewster Birdsall, explained that the data from the Arvin station were not used because Staff has a practice of using data from the monitoring stations closest to the project site. (7/7/2009 RT 275:18-23.) Avenal Power's air quality analyses used the best available ambient data, from the Visalia, Corcoran, Hanford, and Bakersfield/ Sacramento (for SO_2) sites during the three-year period of 2004-2006. (Ex. 1 at 6.2-7 through -15.) Specifically, existing ambient levels of NO_2, CO, SO_2, PM_{10}, and $PM_{2.5}$ recorded from the monitoring stations closest to the Project during 2004, 2005 and 2006 (operated by the SJVAPCD or CARB) were used in the analysis (*Id.*) The Staff testified that the ambient air quality data were representative, and were obtained from the closest monitoring points to the Project site. (7/7/2009 RT 275:18-23.) Staff provided some later ambient air quality data in its FSA (Ex. 200 at 4.1-8 through -12), but these additional data did not affect the conclusion that potentially significant impacts would be mitigated by the proposed offsets to a less-than-significant level. (Ex. 200 at 4.1-24 through -31.)

The Commission's regulations require an AFC to include "a discussion of the existing site conditions…." (including the existing ambient air quality) at the proposed Project site.

(Appendix B to Article 1 of Chapter 5 of Title 20 of the California Code of Regulations at section [g][1].) Arvin is located approximately 100 miles southeast of the proposed Project site, and therefore, the ambient air quality monitored at Arvin is not as relevant to the "existing site conditions" as data acquired from closer monitoring stations. (7/7/2009 RT 275:10-23.) The comprehensive air dispersion modeling conducted for the project included computation of the maximum potential impact at 25,344 receptors. (See Ex. 1 at 6.2-51 through -70; Ex. 2.) The maximum potential air quality impacts are already far below significance thresholds at all of these receptors, which extend in a rectangular grid approximately 10 kilometers (6 miles) from the Project. (Ex. 1 at 6.2-58.) Continued turbulent dispersion in the atmosphere throughout the remaining long distance to Arvin would reduce the modeled less-than-significant concentrations even further.

6. The Project's Best Available Control Technology Analysis for Oxides of Nitrogen Emissions Is More Than Sufficient.

a. Avenal Power Followed SJVAPCD Guidance in Determining BACT for NOx Emissions.

Avenal Power prepared a BACT analysis for oxides of nitrogen ("NOx") in accordance with SJVAPCD guidance (Ex. 1 at 6.2-74 and -75 and Appendix 6.2-4.) Avenal Power's BACT analysis considered various levels of NOx control ranging from 2.0 to 2.5 ppmvd at 15% O_2 with averaging periods ranging from 1 to 3 hours. (*Id*.) Avenal's BACT analysis evaluated the controlled NOx emission rates permitted and achieved by other, similar projects and concluded that the most stringent controlled level, 2.0 ppm, and the shortest averaging period, 1 hour, should be considered BACT for the project. (*Id*.) The SJVAPCD performed an independent assessment of BACT for the project and came to the same conclusion, stating that Avenal Power was proposing to use "the highest ranking control option" and that "BACT is satisfied." (Ex. 58 at Attachment F, pp. F-2 and F-3.) The Staff analysis also concluded that "the project would use the Best Available Control Technology (BACT) as defined by the District." (Ex. 200 at 4.1-36.)

b. No More Stringent NOx Control Level or Control Technology Has Been Identified.

The record does not include any testimony or evidence that a different or more stringent controlled NOx emission limit should have been considered in the BACT analysis, or that a

different or more stringent NOx emissions limit or other NOx control technology should be considered BACT for the Project, or that any other NOx control technology would have resulted in lower NOx emissions. The AFC included a comprehensive BACT analysis (Ex. 1 at 6.2-73 through -76 and Appendix 6.2-4.1 through -4.8), including a review of BACT determinations from the SJVAPCD BACT Clearinghouse (Ex. 1 at Appendix 6.2-4.3), South Coast Air Quality Management District (Ex. 1 at Appendix 6.2-4.3), ARB BACT Clearinghouse (Ex. 1 at Appendix 6.2-4.4), and USEPA RACT/BACT/LAER Clearinghouse (Ex. 1 at Appendix 6.2-4.6), and from ARB BACT Guidance for Power Plants (Ex. 1 at Appendix 6.2-4.5).

7. The Interpollutant Trading Ratio For Sulfur Oxides to Particulate Matter Is Sufficient to Mitigate the Project's Particulate Matter Impacts.

a. <u>The SOx to PM Trading Ratio Approved by the SJVAPCD for the Project Was Based On Sound Technical Analysis Which Is Fully Consistent with the Approach Recommended By US EPA.</u>

Mr. Rubenstein testified that the District prepared a technical analysis supporting the SOx to PM_{10} offset ratio that has been proposed by Avenal Power for the Project. On May 27, 2009, the District sent a letter to the Commission explaining, in detail, the District's technical basis for the interpollutant ratio proposed for the Project. (Ex. 61.) No flaws have been identified in the District's analysis, and US EPA did not comment on the proposed interpollutant trading ratio for the Project, or on the District's supporting analysis for that ratio. (7/7/2009 RT 210:9-22.)

b. <u>The Offset Ratio Approved by US EPA for a Project in Pennsylvania is Not Relevant to the Appropriate Offset Ratio for the Project.</u>

Intervenors Simpson and CRPE asserted that a US EPA rulemaking that discussed $PM_{2.5}$ offset ratios should have led to the use of a 40:1 ratio for SOx to $PM_{2.5}$ for the Project. (7/7/2009 RT 262:22-24; Ex. 300 at 1.) However, this rulemaking specifically allows states and local air agencies to develop locally appropriate trading ratios. (7/7/2009 RT 263:1-264:24; see Implementation of the New Source Review Program for Particulate Matter Less Than 2.5 Micrometers, 73 Fed. Reg. 28,339 [May 16, 2008].) US EPA's technical analysis supporting the rulemaking indicated that the SOx to $PM_{2.5}$ trading ratio varied from something less than 1.0 to more than 300:1. (7/7/2009 RT 211:18-212:8.) The 40:1 ratio that US EPA settled on as the "preferred" or "default" ratio was in the 90th percentile highest value of all of the ratios it assessed for the entire country. (7/7/2009 RT 212:9-212:13.)

The 40:1 ratio has been approved by US EPA for a project in Pennsylvania. (*Id.*) This ratio was based on an assessment of emissions in the area for that project. Mr. Rubenstein testified that in the underlying emissions inventory for that particular county (York County), the annual SOx emissions were 14 times the annual direct emissions of $PM_{2.5}$. (7/7/2009 RT 213:21-214:1.) By contrast, in the San Joaquin Valley air basin, the ratio is inverted: direct $PM_{2.5}$ emissions are more than four times the annual SOx emissions. (7/7/2009 RT 214:2-8.) This difference illustrates why calculated interpollutant trading ratios for PM precursors vary so dramatically across the country and why a ratio appropriate for Pennsylvania is not appropriate for the San Joaquin Valley. (7/7/2009 RT 214:9-15.)

c. The Project's SO_2 Emissions Have Been Adequately Mitigated.

Both Avenal Power and Staff found that the Project has adequately mitigated all of the Project's air quality impacts – including those related to SOx emissions. (7/7/2009 RT 266:14-19; Ex. 200 at 4.1-31.) Thus, the Project has satisfied all SJVAPCD mitigation requirements, as well as all Staff mitigation requirements. There is no support anywhere in the record for a claim that SOx emissions have not been mitigated.

C. Biological Resources

1. The Project's Analysis of Noise Impacts to Biological Resources Is More Than Sufficient.

During the evidentiary hearing, Mr. Simpson questioned the Project's analysis of noise impacts to biological resources. Specifically, Mr. Simpson was concerned that the mitigation for the Project's noise impacts is insufficient, since the impact area used to determine the mitigation is smaller than the total size of the 148-acre property upon which the Project is situated. (7/7/2009 RT 328:3-7.) Mr. Simpson also expressed concern that the Project's noise impacts extend beyond the fence line for the Project. (7/7/2009 RT 329:16-22.)

The Project will use state-of-the-art combined-cycle technology designed to operate with low noise levels. (Ex. 1 at 6.6-35 and 6.12-1; Ex. 19[g] at Response 49.) Furthermore, the Commission, Avenal Power, California Department of Fish and Game ("CDFG"), and United States Fish and Wildlife Service ("USFWS") have agreed upon habitat compensation ratios of

1.1 acres for every acre permanently impacted by the Project. (Ex. 200 at 4.2-15.) Wildlife will become accustomed to the noise levels within a relatively short period of time, similar to their acclimation to noise from ongoing agricultural activities within the Project vicinity. (Ex. 1 at 6.6-35; Ex. 19[g] at Response 50.) Avenal Power previously submitted a table providing examples of equipment usage and activities typical of land uses in the Project vicinity, along with associated noise levels. (See Ex. 19[g] at Response 50.) The Project lies near the center of an active agricultural field, an area routinely subject to substantial noise from farm equipment and operations. (*Id.*)

Standards from the Occupational Safety and Health Administration ("OSHA") and other authorities for noise will be followed during construction and will protect biological resources from significant indirect impacts associated with construction noise. (Ex. 1 at 6.6-29.) The predicted operational noise at the property line will be toward the low end of the range that can cause behavioral change in animals, and the CDFG and USFWS both concluded that the Project will not cause any significant negative impacts to sensitive species in the vicinity. (Ex. 200 at 4.2-17.) Furthermore, condition of certification BIO-8 requires Avenal Power to provide temporary fencing to provide a construction buffer zone during the nesting season for sensitive bird species. (Ex. 200 at 4.2-14.) Condition of Certification BIO-12 also requires noise monitoring for burrowing owl pairs and other setbacks. (Ex. 200 at 4.2-31.)

Staff, Avenal Power, and the wildlife agencies agreed upon a total of 54.1 acres of mitigation area, which more than offsets the direct impacts of the 36 acre permanent Project footprint. This mitigation will thereby account for indirect impacts to biological resources, including noise-related impacts. (7/7/2009 RT 327:12-330:15.) This additional acreage offset, combined with project noise control measures, will ensure the Project does not have any significant unmitigated noise impacts to biological resources. (See Ex. 1 at 6.6-29, -30, -34 and -35; Ex. 19[g] at Response 49; Ex. 200 at 4.2-14; Ex. 204 at pages 8 and 29.)

In addressing Mr. Simpson's concerns, it is also important to note that the remainder of the 148-acre parcel upon which the Project will be built will continue its current use as agricultural land. Furthermore, all of the temporary disturbance areas will be returned to substantially similar conditions as they exist prior to the initiation of construction at the site.

(Ex. 15 at section 2[b].)

2. Nitrogen Deposition from the Project's Air Emissions Would Not Have a Significant Impact on Biological Resources.

At the evidentiary hearing, Mr. Simpson asked whether nitrogen deposition could have a negative effect on plant life. (7/7/2009 RT 330:19-20.) Avenal Power addressed this issue in the AFC, explaining that the Project's emissions will not have a significant impact on soils and agricultural crops because the maximum ground-level concentrations of nitrogen dioxide would be much lower than the relevant ambient air quality standard that is designed to protect public health. (Ex. 1 at 6.4-8 and -9.) Compliance with this standard indirectly protects against secondary welfare effects on plants, animals and materials. At the evidentiary hearing, Staff's expert witness on the topic of biological resources, Richard Anderson, confirmed that nitrogen deposition has never been a matter of concern for the Project. (7/7/20009 RT 330:21-331:9.) Mr. Anderson explained that given the basic nature of the valley soil, a slight increase in acidity would not harm plant life. (*Id.*) Mr. Anderson also explained that Staff was not concerned with such impacts since no listed species exist near the Project which are sensitive to a rise in acidity. (7/7/2009 RT 331:2-4.) Avenal Power concurs with Staff's assessment of this issue.

D. Public Health

1. The Project's Cumulative Public Health Analysis Is More Than Sufficient.

As discussed above under the closely related topic of air quality, Avenal Power conducted a comprehensive multi-pathway health risk assessment ("HRA"), which included a complete inventory of toxic air contaminant emissions (Ex. 1 at 6.2-47 through -50), air dispersion modeling (Ex. 1 at 6.2-51 through -70 and Appendix 6.2-2), and risk analysis (Ex. 1 at 6.16-1 through -21). The FSA's discussion of potential public health impacts clearly demonstrates that the maximum possible cancer risk and non-cancer chronic and acute health hazards are each less than one-fifth of the appropriate significance thresholds. (Ex. 200 at 4.7-1 through 4.7-20.) This conclusion was repeated in the Staff's Minor Errata to the FSA. (Ex. 202 at 6.)

2. The Project Will Not Cause Any Significant Public Health Impacts to an Environmental Justice Population.

Population within six miles of the site is minimal; census block information reveals a population of only 331 within a six mile radius of the Project site. (Ex. 200 at 4.8 [Socioeconomics] Figure 1.) The nearest farmhouses are located more than 1 mile from the Project site. (*Id.*) This site was carefully chosen in order to avoid impacts to human populations. Because the maximum potential public health impacts would not be significant at any location, as demonstrated in the FSA, Staff concluded "…there would be neither environmental justice issues nor significant impacts on agricultural field workers…." (Ex. 200 at 4.7-14.) The results of the HRA show that the health risk is not significant at any location, at any time, under any operating conditions. (Ex. 200 at 4.7-1.) As discussed below in the socioeconomics section, where no significant adverse impacts exist, it follows that there cannot be any significant impacts to an environmental justice population.

3. The Project's Mitigation Measures Ensure Public Health Risks to Construction Workers From Potential Former Pesticide Use Will Be Less Than Significant.

At the evidentiary hearing, CRPE continued to voice concerns regarding human exposure to residual pesticides during Project construction. (7/7/2009 RT 357:6-358:20.) CRPE and intervenor California Unions for Reliable Energy ("CURE") have voiced this concern at various points during the Project proceeding. (Ex. 19[b]; CRPE's comment letter regarding Avenal Energy, Application for Certification [dated March 11, 2009] at pages 6-7.) However, human exposure to pesticide use has been thoroughly analyzed. Staff has directly responded to this comment from CRPE. (Ex. 200 at 4.14-14.) The FSA proposes a soil sampling and analysis program to ensure there is no significant risk to public or worker health and safety, which Avenal Power has accepted as a condition of certification. (Ex. 200 at 4.13-9 through 4.13-11; see also condition of certification WASTE-1 at 4.13-18.) Avenal Power addressed measures it will take to ensure any aerial spraying will not compromise worker safety. (Ex. 7[i] 52 [Response 74].) All agricultural leases allowing farming activities on the Project site will require that both pesticide and farming practices remain consistent with organic farming practices. (Ex. 7[i] at 52 [Footnote 9].) In addition, conditions of certification WASTE-2 and WASTE-3 protect against human exposure to other types of soil contamination. (See Ex. 200 at 4.13-19.) Therefore, the

potential for risks to the public or worker safety is insignificant.

4. Concerns Raised by the Center on Race, Poverty, and the Environment Pertaining to the Project's Potential Contribution to Birth Defect Clusters Are Unfounded.

At the FSA workshop in Avenal on June 23, 2009, Staff member Dr. Greenberg, a toxicologist, responded to the CRPE representative that in his professional opinion the toxic air contaminant emissions from the Project would not likely have an effect in Kettleman City, where the birth defect clusters were asserted to occur. (7/7/2009 RT 383:20-25.)

Regarding the Project, the FSA confirms that the project would not be able to cause a significant cancer risk or non-cancer (chronic or acute) health hazard at any distance in any direction, including Kettleman City, which is located approximately 8 miles southeast of the Project. (Ex. 200 at 4.7-12 and -13.)

The US EPA addressed potential birth defects in its February 2007 Draft Refined Environmental Justice Assessment In Support of the US EPA Region 9 PCB Permit Decision for the Chemical Waste Management Kettleman Hills Facility.[11] No connection was found to exist between the Kettleman Hills Facility or any other industrial facility and any birth defects in the area. (*Id*. at 57.) The Director of the California Birth Defects Monitoring Program informed the US EPA that the small size of Kettleman City and its total number of less that 50 births per year would not be sufficient to yield useful birth defects data. (*Id.*) Based on the average rate of birth defects in California of about 3%, less than 2 cases of birth defects per year would be expected in Kettleman City. (*Id.*) This expected number of birth defects per year is too small to calculate a statistically significant difference between the number of observed cases and the number of expected cases. (*Id.*)

While Avenal Power sympathizes with the families of children who have exhibited these birth defects, there is nothing in the record of this proceeding that even remotely suggests that the impacts from the Project will in any way contribute to these health effects.

[11] Available at http://www.epa.gov/region09/toxic/pcb/kettleman/docs/kettleman-draft-enviro-assess.pdf (last visited August 8, 2009).

5. Concerns Raised by Intervenor Rob Simpson Regarding the Potential for the Project to Cause Ammonia to Reach the San Luis Canal Are Unfounded.

At the evidentiary hearing, Staff addressed concerns raised by Mr. Simpson regarding the potential for ammonia used by the Project to reach the San Luis Canal. In the AFC, Avenal Power included an offsite consequence analysis for the Project, which addressed hypothetical releases of aqueous ammonia. (See Ex. 1 at 6.15-11 through -17.) This analysis was performed under two hypothetical accidental release scenarios: "worst case" and "alternative." (Ex. 1 at 6.15-10 through -15 and Appendix 6.15-1.) This analysis concluded that even as a result of a "worst case" hypothetical instantaneous release of a full storage tank at the Project site, potential ammonia concentrations would not exceed the benchmark concentration established by the American Industrial Hygienists Association of 200 ppmvd anywhere off the Project site. (Ex. 1 at 6.15-16.) This analysis also demonstrated such an improbable release would not exceed the Commission's own stricter benchmark concentration of 75 ppmvd at a distance of beyond 200 feet outside the Project site, stopping well short of any residence or sensitive receptor. (*Id*.)

Staff explained at the evidentiary hearing that the offsite consequence analysis conducted for the Project actually overestimated the distance that a plume of ammonia vapor could travel offsite. (7/7/2009 RT 374:11-25.) Avenal Power and Staff both concluded that the potential for the Project's aqueous ammonia to reach the canal, whether by accidental release or as a result of a security breach, is extremely remote and does not constitute a potential significant impact. (7/7/2009 RT 374:11-25, 406:1-408:18.)

E. Alternatives

1. The Project's Location Is Ideal for Minimizing Impacts to the Population.

As described above in Section I of this brief, the Project's location was carefully selected to minimize impacts to the population while maximizing potential benefits. In this case, the bulk of the opposition comes from residents and representatives of communities over six miles distant from the Project site. The opposition is concerned with the Project's potential cumulative impact to the local population. Yet it is important to remember that the Project site lies far from any population centers. Census block information reveals a population of only 331 within a six mile radius of the Project site. (Ex. 200, Socioeconomics Figure 1.) The nearest residence is located

more than 1 mile from the Project site. (*Id.*) This site was carefully chosen in order to avoid impacts to human populations.

Furthermore, the site is located in Avenal's industrial zoned area on the east side of the hills and on the east side of Interstate 5. (Ex. 200 at 3-1.) The industrial zone location itself provides evidence of the City's careful land use planning. (See Ex. 200 at Project Description Figure 2 and Ex. 1 at Figure 2.1-2.) The city limits essentially run for six miles along the Kings County side of the Kings County/Fresno County line. (See *id.*) At one end of this area lies the commercial and residential portion of the city. (See *id.*) At the other end, approximately six miles distant from the population center, across Interstate 5 and the Kettleman Hills, lies the industrial zone. (See *id.*) At the outermost edge of this industrial zone lies the Project site. (See *id.*) The City could not have more carefully selected a site for industrial development such as the Project.

2. The Project Is Supported by the Local Community.

During the evidentiary hearing, CRPE noted that one of the Project objectives is to develop a site consistent with community planning and existing zoning at a location that is supported by the local community. (7/7/2009 RT 420:10-14; see Ex. 200 at 6-5.) CRPE asked Staff's expert witness on the topic of alternatives, Christopher Meyer, how Staff measured support from the local community. (7/7/2009 RT 420:15-16.)

Mr. Meyer began his response by explaining how the zoning of the Project site demonstrates the local community's support for a use such as the Project. In 1992, the City of Avenal changed the zoning at the Project site to M2 (heavy industrial). (Ex. 7[e] at Response 22.) This heavy industrial zone is the proper zoning for a power plant. (City of Avenal Zoning Ordinance section 9.31; see Ex. 200 at 3-2.) It is undisputed that the Project site in this case was zoned heavy industrial to accommodate development such as the Project. Mr. Meyer stated that in evaluating community support, "one of the major things that the Energy Commission looks at is zoning for a project." (7/7/2009 RT 420:19-21.) Zoning specifically allowing a proposed project "is seen as a significant sign by [Staff] that there is support." (7/7/2009 RT 420:24-421:4.)

In addition, elected representatives from the City of Avenal support the Project. Mr. Meyer noted that City representatives have expressed support since the initial informational hearing and subsequent Staff workshops. (7/7/2009 RT 421:5-10.) Several local officials from the City of Avenal also expressed their support at the evidentiary hearing, including Mayor Harlan Casida (7/7/2009 RT 5:5-7:15), Councilman Sid Craighead (7/7/2009 RT 11:18-12:21) and City Manager Melissa Whitten (7/7/2009 RT 8:6-9:19). The City has noted in various grant applications that the Project would be valuable to the community. (7/7/2009 RT 8:11-9:4, 11:2-8.) It is noteworthy that the bulk of the opposition to the Project comes from individuals and groups residing or operating outside the City of Avenal. Finally, over the last two years , Avenal Power has maintained a project website available to the public; there has been outreach by the Commission, as well as proper public notices by US EPA, SJVAPCD and the Commission; and nearly two years of interaction with the City, local and regional businesses as well as a number of public meetings. During that time there has been very little to no community opposition to the Project. In short, the City of Avenal has expressed support for the Project in several different ways.

3. The Project's Location Is Ideal for Serving Multiple Parts of the State With Electricity.

The California Independent System Operator ("CAISO") operates a transmission system that is designed to serve load-serving entities ("LSEs") from generation supply located all over the state of California as well as the Pacific Northwest and Desert Southwest. The Project's interconnection at PG&E's 230 kV Gates substation enables the Project to take advantage of the CAISO system to deliver efficient low cost energy throughout California as needed. (See Ex. 200 at 6-9 and 6-21; 7/7/2009 RT 76:15-77:2, 103:4-9.) The transmission lines passing through the Gates substation are an integral part of a system designed to move substantial amounts of energy both in a northerly and southerly direction. This transmission system runs north from Gates to the Bay Area and Sacramento, and south to the greater Los Angeles area. The system is also designed to readily serve load in the major load centers of the San Joaquin Valley, including Fresno and Bakersfield. (See 7/7/2009 RT 103:4-9.)

The CAISO requires all LSEs to procure and identify sufficient resources to meet planning year reserve margins. (See Ex. 200 at 5.4-2.) LSEs fulfill this requirement with a

combination of allocated import capacity, system wide resources and local resources. The Project is situated to satisfy some resource adequacy needs for utilities in both northern and southern California as well as various municipals, cooperatives and community choice aggregators throughout the San Joaquin Valley, while providing efficient energy at a low cost. (7/7/2009 RT 76:15-77:15.)

The MRW Report identifies several future roles for gas-fired generation, including intermittent generation support, local capacity requirements, grid operations support, extreme load/system emergencies support, and general energy support. (Ex. 203 at 93.) These predetermined roles essentially help identify whether a new power source would provide efficient low cost generation to replace older, less efficient units, or facilitate the development of renewable resources. (See *id.*) The Project can provide spinning and non-spinning reserves, voltage-ampere reactive ("VAR") support as well as rapid ramping and automatic load following ("AGC") services to all the same customers that would benefit from contracting with this facility for resource adequacy. (7/7/2009 RT 75:4-16; 78:5-79:1; 93:16-94:9.) Additionally, the proximity of this facility to large solar resource developments would position this plant to provide local generation to meet the varying conditions of supply that these plants would experience. (7/7/2009 RT 78:5-79:1, 93:12-94:9.)

4. The Project Provides Many Benefits to the Local Community.

At the evidentiary hearing, members of the public and local elected officials noted the high unemployment rate and lack of jobs in the City of Avenal. (See, e.g., 7/7/2009 RT 6:18-21.) The Project would help the community by providing up to 25 new permanent well-paid jobs located within the City. The Project would have a construction payroll of $126 million and an annual operation payroll in excess of $2.1 million per year. (Ex. 200 at 4.8-11.) During construction, an estimated average of 326 jobs will be created directly by the Project. (*Id.*) These activities will result in a net benefit to the community and surrounding areas of at least $197 million of economic impact over the life of the Project. (See Ex. 1 at 6.10-21, -22, and -25.) Much of this benefit would remain within the surrounding communities, as services and employees would be drawn first from the surrounding area. (Ex. 1 at 6.10-16.) Therefore, through local hiring practices, local residents would have the opportunity to directly benefit from

the construction of the Project.

The Project would pay approximately $5.3 million in property taxes per year, of which an estimated $1 million would be distributed to the City (7/7/2009 RT 26:5-9; Ex. 200 at 4.8-6.) Total sales and use taxes during construction would be approximately $181,000, and the local sales tax during construction is estimated to be $145,000 per year over the life of the Project. (Ex. 200 at 4.8-11.) The Project may also pay a natural gas transportation franchise fee surcharge that could be as high as $2.5 million annually for the City of Avenal. (7/7/2009 RT 26:10-15, Ex. 200 at 4.8-7.)

Members of the public and local elected officials such as Mayor Casida also noted the role the Project will play in demonstrating the viability of industrial development in the City. (See, e.g., 7/7/2009 RT 6:25-7:3, 10:2-10:25.) As discussed above, the City originally zoned the Project site and adjacent lands for industrial use in 1992. (Ex. 7[e] at Response 22.) Since then, industry has been slow to arrive to the City. However, some members of the public view the Project as an important demonstration of the City's potential for industrial development. (7/7/2009 RT 6:25-7:3.)

5. The Project's Generation System Is Ideal for the Project Location and Objectives.

Avenal Power evaluated a variety of technologies and locations, which are identified in the alternatives analysis of the AFC. Avenal Power elected to develop a natural gas-fired combined cycle facility to meet the growing demand for energy and capacity resources that provide high efficiency, relatively low cost energy, while facilitating renewable development. The location was selected based on meeting the objective of developing a natural gas plant while minimizing environmental impacts. (Ex. 1 at 1-1.)

A solar facility with comparable output (600 MW) would likely require at least 50 times the land as the proposed Project. (Ex. 200 at 6-20.) This amount of land was not available within the City of Avenal's M-2 industrial zone. Further, should sufficient land adjacent to the M-2 industrially zoned property be available, it would require rezoning Williamson Act farm land to construct a solar facility. (7/7/2009 RT 416:6-12.) Finally, the solar intensity in the San Joaquin Valley near Avenal is estimated to be lower than that of most other large solar facilities

in California, resulting in a project that would need to be much larger in size to generate the same output as other projects and therefore additional environmental impacts. (Ex. 200 at 6-20.) Additionally, the Project is not located in a prime wind power location. (Ex. 200 at 6-20.) There does not appear to be any area in the vicinity that would be conducive to wind development. (See Ex. 1 at 5-18.) Ultimately, Staff concluded that alternative technologies such as geothermal, solar, wind, biomass, or hydroelectric do not present feasible alternatives to the Project. (Ex. 200 at 6-25.)

CRPE questioned whether the Project objectives contain a specific megawatt capacity figure. (7/7/2009 RT 422:10-13.) While Avenal Power's project objectives do not specifically identify the objective of building a 600 MW facility, the Project Description section does identify the Project as a 600 megawatt combined-cycle electric power generating plant and ancillary facilities. The AFC also identifies the project objective to "[d]evelop a site consistent with community planning and existing zoning, at a location that is supported by the local community." (Ex. 1 at 2-1.) The Project as proposed effectively meets all of these objectives while minimizing adverse environmental impacts.

F. Socioeconomics (Environmental Justice)

1. The Project Has No Significant Environmental Impacts That Fall Disproportionately on Minority or Low-Income Populations.

Both Staff and Avenal Power correctly concluded that the Project will not result in a disproportionate impact on an environmental justice population. (Ex. 1 at 6.10-30; Ex. 200 at 4.8-11.) The FSA indicates that Staff examined the impact of the Project on potential environmental justice populations in 11 technical areas: Air Quality, Hazardous Materials Management, Land Use, Noise, Public Health, Socioeconomics, Soil and Water Resources, Traffic and Transportation, Transmission Line Safety and Nuisance, Visual Resources, and Waste Management. (Ex. 200 at 1-4.) Because neither Staff nor Avenal Power found significant impacts in any area, Staff concluded that Avenal Power would not have a significant disproportionate impact on the environmental justice population. (Ex. 1 at 6.10-30; Ex. 200 at 4.8-11.) The analysis used by Staff and Avenal Power complied with the Commission's methodology and with applicable state and federal guidance.

2. The Applicable State and Federal Guidance Require an Analysis to Determine Whether Any Significant Impact Falls Disproportionately on an Identified Environmental Justice Population.

California law defines environmental justice as ". . . the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." (Cal. Gov't Code, § 65040.12[e]; Cal. Pub. Resources Code, § 71116[j].) The Office of Planning and Research coordinates California's environmental justice program but outside the limited context of city and county general plans, it does not issue guidelines for addressing environmental justice matters. (Cal. Gov't Code, § 65040.12[a], [c].) The Office of Planning and Research does consult with the California Resources Agency ("Resources Agency") and the Resources Agency, in turn, directs the entities under its jurisdiction to consider environmental justice in the entities' decision-making process. (See *id*. at [b][1]; *see* California Resources Agency, Environmental Justice Policy 1 ["All Departments, Boards, Commissions, Conservancies and Special Programs of the Resources Agency must consider environmental justice in their decision-making process if their actions have an impact on the environment, environmental laws, or policies"].[12])

As an entity under the Resources Agency's jurisdiction (see Pub. Res. Code § 25200), the Commission must consider environmental justice in its decision-making process. The Resources Agency provides some guidance on how to incorporate environmental justice in decisions. This guidance includes: identifying relevant populations that might be adversely affected, holding required public workshops and hearings at times and in locations that encourage meaningful public participation, and working in conjunction with other agencies on the state and federal level to ensure consideration of disproportionate impacts on relevant populations. (California Resources Agency, Environmental Justice Policy, *supra*.) The Resources Agency's guidance therefore identifies demographic screening, public outreach, and impact analysis as important factors in implementing its environmental justice policy.

Two federal documents also provide guidance on how to incorporate environmental justice in a California agency's decision-making process. First, Executive Order 12898 requires that "each Federal agency shall make achieving environmental justice part of its mission by

identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects. . .on minority populations and low-income populations." (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, Exec. Order No. 12,898, 3 C.F.R. 859 [1995], *reprinted as amended in* 42 U.S.C. § 4321 at 73, § 3-301[b] [1994 and Supp. VI 1998] [hereafter cited as Executive Order 12898].) Second, the US EPA issued guidance that calls for a two-step environmental justice analysis: (1) does the potentially affected community include minority and/or low-income populations, and (2) if it does, are the environmental impacts likely to fall disproportionately on minority and/or low-income members of the community? (United States Environmental Protection Agency, Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses 3.2.1 [1998].[13]) Thus, federal guidance identifies demographic screening and impact analysis as questions that must be addressed in order to incorporate environmental justice into the decision-making process.

3. The Commission's Methodology Complies with Applicable Policy and Guidance.

The Commission's environmental justice approach is consistent with guidance from both the Resources Agency and the federal government. The Commission's approach "consists of: (1) specific public outreach efforts . . . to notify, inform and involve community members, including non-English speaking people; (2) analysis of the applicable demographics to determine the percentage of minority and low-income population living in the potentially affected area; and (3) assessing the potential environmental and health impacts of the proposed project." (California Energy Commission, Environmental Justice: Frequently Asked Questions;[14] *see* Ex. 200 at 1-3 and -4.) The Commission's methodology mirrors the three primary factors outlined by the Resources Agency (public outreach, demographics, impact assessment) and includes both factors identified by the federal government (demographics and impact assessment).

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[12] Available at http://www.resources.ca.gov/environmental_justice_policy_20031030.pdf (last visited August 11, 2009).
[13] Available at http://www.epa.gov/compliance/resources/policies/ej/ej_guidance_nepa_epa0498.pdf (last visited August 11, 2009).
[14] Available at http://www.energy.ca.gov/public_adviser/environmental_justice_faq.html (last visited August 11, 2009).

a. Public Outreach

Public outreach for a proposed project is conducted on an on-going basis and begins with the dissemination of information on the proposed project to all local area media and public libraries. (California Energy Commission Staff Approach to Environmental Justice;[15] Ex. 200 at 2-4.) The Commission's Public Advisor's Office then contacts community individuals and groups, local leaders, and community activists to inform them of the project and the Commission's process. Concurrently, Staff makes similar contacts with the community to provide project details, answer questions about the project and application proceeding, and to explain Staff's analysis. Staff holds multiple local public participation workshops and hearings, with translators provided as needed. (California Energy Commission Staff Approach to Environmental Justice, *supra*.)

b. Demographics

Census-block data are used to develop a demographic screening map covering both a one and a six-mile radius around the proposed project. (California Energy Commission Staff Approach to Environmental Justice, *supra*.) The demographic screening map is used to identify whether a minority or low-income population of greater than 50 percent exists within the potentially affected area. (*Id.*) Areas with such populations are considered to have potential environmental justice issues. (*Id.*)

c. Impact Assessment

If an identified environmental justice population exists, Staff analyzes whether there is a significant impact on the population as a whole and, if there is, whether the significant impact falls disproportionately on the environmental justice population. (California Energy Commission Staff Approach to Environmental Justice, *supra*; Ex. 200 at 1-3 and -4.) Generally, technical staff follow a five-step analysis: (1) describe the existing setting; (2) analyze 'unique circumstances,' if any, of the affected population; (3) analyze the project's direct, indirect, and

cumulative impacts; (4) assess and recommend appropriate mitigation; and (5) determine whether the project creates an unavoidable significant adverse impact on the affected population and, if so, consider whether the impact is disproportionate. (California Energy Commission Staff Approach to Environmental Justice, *supra*.)

The applicable environmental justice guidelines and policies do not provide any specific guidance with regard to identifying whether an impact is significant. In performing the fifth step of this analysis, Staff has traditionally used the same standards of significance as those used during the environmental review process required by the Commission, which is based on the requirements for an Environmental Impact Report (EIR) under CEQA.[16] The CEQA guidelines provide more detailed criteria than the applicable environmental justice guidelines for establishing whether an impact is significant. (See CEQA Guidelines, Appendix G.[17]) CEQA itself does not expressly require analysis of impacts to environmental justice populations. However, the analysis of impacts under CEQA is sufficient to meet the requirements of all applicable environmental justice guidelines and standards. This is because CEQA review is triggered by impacts that are merely significant, while the applicable environmental justice guidelines refer to "high and adverse" impacts. Any "high and adverse" impacts to any part of the population are revealed as a significant impact during CEQA review. Staff therefore, considers CEQA significant adverse impacts under CEQA to be synonymous with "high and adverse" impacts as described in Executive Order 12898. (See California Energy Commission Staff Approach to Environmental Justice.[18])

4. Staff Followed its Methodology in Correctly Concluding that the Project Will Not Result in a Disproportionate Impact on an Environmental Justice Population.

As part of the Commission's environmental justice methodology Staff conducted

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[15] Available at http://www.energy.ca.gov/public_adviser/staff_env_justice_approach.html (last visited August 11, 2009).

[16] The power plant siting process is exempt from CEQA provisions requiring the preparation of a traditional Environmental Impact Report. However, the Commission has established a certified state regulatory program that requires a similar level of environmental review. This program includes the preparation of the AFC and the PSA and FSA. (*See* Pub. Res. Code § 25500 et seq.) When Staff prepares its PSA and FSA, Staff therefore performs a process that is equivalent to CEQA environmental review. (*See* 20 C.C.R. § 15250, 15251(j), 1716(b).)

[17] Available at http://ceres.ca.gov/ceqa/guidelines/pdf/appendix_g-3.pdf (last visited July 15, 2009).

[18] Available at http://www.energy.ca.gov/public_adviser/staff_env_justice_approach.html (last visited July 15, 2009).

extensive public outreach for the Project, evaluated and found an environmental justice population, and conducted an extensive evaluation of potentially disproportionate high and adverse impacts. Staff did so by conducting an extensive evaluation of significant adverse impacts in accordance with federal and state law and guidelines, and ultimately concluded that there was no disproportionate impact.

a. Staff Conducted Extensive Public Outreach.

Staff's outreach program is an ongoing process involving coordination with the Public Advisor's Office ("PAO"). (Ex. 200 at 2-4.) Staff sent the Project AFC to a comprehensive list of libraries, agencies, organizations, and to property owners affected by the Project. (Ex. 200 at 1-2.) This included local libraries in Avenal, Hanford, Lemoore, Kettleman City, Stratford, and Coalinga. (7/7/2009 RT 54:17-21.) Pursuant to Commission regulations, Staff also sent notices to property owners within 1,000 feet of the Project and 500 feet of all linear facilities associated with the Project. (Ex. 200 at 1-2.) Furthermore, a majority of residents and property owners within a six-mile radius of the proposed project site were also notified of publication and noticed events such as workshops and hearings. (Ex. 200 at 1-2.) (For complete information regarding Staff's outreach efforts, please see Ex. 200 at 1-2 through 1-3 and 2-4 through 2-5; see also section H(2) of this brief, *infra*.)

CRPE argues that because the Preliminary Staff Assessment ("PSA") was released only in English, there was insufficient outreach to the area's minority population. (CRPE's comment letter regarding Avenal Energy Project, Application for Certification [dated March 11, 2009] at 7; CRPE's Prehearing Conference Statement at section H.) At no time prior to CRPE's March 11, 2009 comment letter had anyone requested information in Spanish, and in fact, neither did CRPE. Nothing in the applicable guidance requires the PSA to be distributed in Spanish or any other language. The Resources Agency guidelines suggest ensuring that public documents relating to environmental issues are printed in multiple languages if appropriate. (California Resources Agency, Environmental Justice Policy, *supra* at 2.) In this case, though, the size of the PSA document, combined with the strict timeframe of the Project siting proceedings, makes a translation of the entire PSA infeasible. Avenal Power hired a translator for the PSA workshop, as Avenal Power did for all public meetings on the Project. Therefore, the outreach performed

by Staff and supplemented by Avenal Power through translation services was sufficient under all applicable environmental justice guidelines.

CRPE suggests that the decision in *Emmington v. Solano County Redevelopment Agency*, 195 Cal.App.3d 491 (1987) stands for the proposition that the failure to translate the "draft SEIR" into Spanish denied the public its statutory right under CEQA to comment meaningfully upon its conclusions. (CRPE's comment letter regarding Avenal Energy Project, Application for Certification [dated March 11, 2009] at 7.) However, *Emmington* had nothing to do with the translation of environmental documents. In that case, Solano County prepared documentation to comply with CEQA, consisting of a five-page initial report referring to nineteen previously prepared EIRs and planning documents spanning the course of eight years. (*Emmington*, 195 Cal.App.3d 491 at 502.) The court held this documentation was inadequate to satisfy the requirements of CEQA. (*Id*. at 502-503.) At a minimum, the court held, the county should have compiled all of the relevant environmental data into a single format report. (*Id*.) The concern in that case - compiling all of the relevant environmental data into a single report – has nothing to do with translation of environmental documents, and is not relevant here.

b. Both Staff and Avenal Power Identified an Environmental Justice Population Within the Project's Affected Area.

The purpose of the screening analysis is to determine whether a minority or low-income population, defined as greater than 50 percent of the affected area's general population, exists. (California Energy Commission, Environmental Justice: Frequently Asked Questions, *supra*; Ex. 200 at Socioeconomics Figure 1.) Staff reviewed Census 2000 information that shows the minority population by census block is 306 out of a total of 331 persons within a six-mile radius of the Project, a minority percentage of 92.44%. (Ex. 200 at 1-4.) Avenal Power similarly concluded that the census tracts in the affected area contain minority populations over 50% of the total population. (Ex. 1 at 6.10-30.) Therefore, an environmental justice population exists within Project's affected area. (Ex. 200 at 1-4; Ex. 1 at 6.10-30.) No party has challenged this determination.

c. Both Staff and Avenal Power Properly Concluded the Project Will Not Have a Disproportionate Impact on the Environmental Justice Population.

Once the existence of an environmental justice population has been established, the key

determination to be made is whether the project would cause *significant* adverse impacts to an environmental justice population. (*See* California Energy Commission Staff Approach to Environmental Justice, *supra,* "Impact Assessment"; Ex. 200 at 1-4.) Because Staff and Avenal Power determined that an environmental justice population exists, Staff and Avenal Power analyzed whether any significant impact would disproportionately affect the environmental justice population.

Staff examined the impact of Avenal Power on all populations in 11 technical areas: Air Quality, Hazardous Materials Management, Land Use, Noise, Public Health, Socioeconomics, Soils and Water Resources, Traffic and Transportation, Transmission Line Safety and Nuisance, Visual Resources, and Waste Management. (Ex. 200 at 1-4.) Likewise, Avenal Power examined the impact of the Project on all technical areas addressed by the AFC, which includes the 11 areas examined by Staff. (Ex. 1 at 6.10-30 and -32.) Staff identified no significant impacts in any of the technical areas evaluated. (Ex. 200 at 1-4.) Because neither Staff nor Avenal Power found any significant impacts in any area, Staff and Avenal Power concluded that the Project would not have a significant disproportionate impact on any environmental justice population. (Ex. 200 at 1-4; Ex. 1 at 6.10-32.) Staff's analysis complied with its own methodology and with applicable policy and guidance.

The intervenors have raised issues with the environmental justice analysis for the Project. CRPE claims in its late-filed prehearing conference statement that Staff's methodology is not sufficient to comply with its obligation to consider environmental justice in its decision-making. CRPE makes two claims: (1) Staff improperly limited its analysis to significant *socioeconomic* impacts, and (2) Staff failed to consider the cumulative impacts associated with certain other potential nearby public health impacts. (CRPE's Prehearing Conference Statement at section IV[B].)

In addition, Mr. Simpson raised two issues with the environmental justice analysis for the Project: (1) whether sensitive receptors were adequately considered, and (2) concern that the "15,000 farm workers within six miles of the facility" will have more exposure than the farmhouses nearby. (7/7/2009 RT 400:8-11, 401:4-6, 403:6-8, 403:14-20, 405:6-13.) These claims are based on a misguided understanding of both what the applicable environmental justice

policies require and how the analysis performed by Staff satisfies those requirements.

(1) *Staff Did Not Limit Its Environmental Justice Analysis to Significant Socioeconomic Impacts.*

In its prehearing conference statement CRPE claims Staff improperly limited its environmental justice analysis to significant *socioeconomic* impacts. (CRPE's Prehearing Conference Statement at section IV[B].) At the evidentiary hearing, CRPE again claimed certain topic areas were left out of the environmental justice analysis. (7/7/2009 RT 391:3-11.) CRPE misunderstands the connection between the environmental justice analysis and the impact analyses conducted for the Project. As discussed above, the first step in the environmental justice analysis (after conducting outreach and public involvement) is to identify whether an environmental justice population in fact exists. (Ex. 200 at 1-4.) Both Staff and Avenal Power identified a potential environmental justice population. (See section F[4][b] of this brief, *supra*.) The second step in an environmental justice analysis is to determine whether any *significant disproportionate* impacts exist to an environmental justice population. (See section F[3][c] of this brief, *supra*.) Because the Project will not cause any significant unmitigated impacts in any topic area, to any member of the population, it follows that the Project will not cause any significant disproportionate impacts to any environmental justice population. (See 7/7/2009 RT 223:5-18.) It is important to note that although Staff did not specifically analyze the topic of environmental justice in every topic area, this analysis is the same for any topic. (*Id*.)

At the evidentiary hearing, both CRPE and Mr. Simpson questioned whether Staff ever reaches the final step in the environmental justice analysis. (7/7/2009 RT 287:6-11, 392:1-6.) Staff's air quality witness, Brewster Birdsall, answered in the negative, giving a simple and effective explanation: "[b]ecause we work hard to identify mitigation." (7/7/2009 RT 287:14-16.) Commissioner Byron and Staff Counsel Lisa DeCarlo clarified this point by noting that Staff's practice is to mitigate not just significant impacts of proposed power plants, but *all* impacts. (7/7/2009 RT 287:25-288:11.) The Commission's AFC process is very thorough, and it routinely goes above and beyond what is required by law to ensure that all impacts are more than adequately addressed and mitigated. The Project has been before the Commission since filing its AFC on February 21, 2008. While the intervenors view the Project's lack of environmental justice impacts with skepticism, the simple fact remains that there are no such

impacts because those involved with the Project have made careful decisions about its design and planning.

(2) *The Public Health Aspect of the Project's Environmental Justice Analysis Includes Cumulative Impacts From Other Nearby Facilities.*

In its prehearing conference statement, CRPE claimed the public health aspect of the environmental justice analysis for the Project fails to consider "the existing hazardous waste facility, the pending hazardous waste expansion, the pending PCB permit, the nearby interstate highways, the diesel transfer station, and the pending sludge farm." (CRPE Prehearing Conference Statement at section IV[B].)

The Commission's regulations contain specific requirements for evaluating a project's cumulative air quality impacts. (Appendix B to Article 1 of Chapter 5 of Title 20 of the California Code of Regulations at section [l].) Although the CEQA requirements pertaining to an EIR do not directly apply to the AFC process, they are instructive in establishing the bounds of the cumulative impacts analysis. CEQA requires that an EIR discuss cumulative impacts when they are significant and the project's incremental contribution is cumulatively considerable. (14 C.C.R. § 15130[a].) A project's incremental contribution is cumulatively considerable if the incremental effects of the project are significant "when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." (14 C.C.R. § 15065[a][3].) Reasonably foreseeable future projects are those that are either currently under construction or in the process of being approved by a local air district or municipality. (Ex. 200 at 4.1-35.) Staff's witness on air quality issues, Brewster Birdsall, indicated the Kettleman Hills Facility had not submitted a complete application, which means any emissions increases due to that facility are not reasonably foreseeable. (7/7/2009 RT 277:4-20.) However, as discussed above, the record shows that the impact from the Project to health risks in the local area is well below all applicable significance levels, and therefore the risks from the project would not contribute significantly to localized cumulative health risks. (Ex. 1 at 6.16 and Appendix 6.16; Ex. 200 at 4.7-13 and -14; 7/7/2009 RT 223:19-225:25, 372:19-373:7, 384:1-14.)

As shown in the AFC, the maximum potential cancer risk at a residence of 0.017 in one

million and maximum potential non-cancer chronic and acute health hazard indices of 0.0008 and 0.082 are less than one-fiftieth, one-twelve hundredth, and one-twelfth of the respective significance thresholds. (Ex. 1 at 6.16-17 and -18.) Because Kettleman City and the Kettleman Hills Facility are approximately 8 and 9.6 miles, respectively, from the Project while the residence with the maximum potential health impacts noted above is located no more distant than approximately 2 miles from the Project, it is expected that the maximum potential health impacts of the Project at Kettleman City would be no more than one-fifth to one-fourth of the levels noted above for the residence, which would be no more than one-two hundredth, one-forty eight hundredth, and one-forty eighth of the significance thresholds for cancer risk and non-cancer chronic and acute health hazard indices. (See Ex. 21[a] at PSA Comment Table 2; see also Ex. 200 at 4.7-9.) These extremely slight public health impacts demonstrate that the Project will not cause a significant cumulative public health impact to any population.

(3) *The Project's Public Health Analysis Extended to the Most Sensitive Populations.*

Mr. Simpson expressed concern that Staff failed to take into account the sensitive receptors in the community surrounding the Project (7/7/2009 400:8-10.) While sensitivity of individual members of the population and their ability to access health care are not required factors in the applicable public health impact analysis, the analysis conducted by Staff and Avenal Power does take into account those parts of the population which are already particularly susceptible to the substances emitted from the Project. Regulations issued by the Commission require an AFC to include a discussion of public health impacts, including information revealing "sensitive receptors" within the area. (Appendix B to Article 1 of Chapter 5 of Title 20 of the California Code of Regulations at section [g][9][D].) The regulations define a "sensitive receptor" as "infants and children, the elderly, and the chronically ill, and any other member of the general population who is more susceptible to the effects of the exposure than the population at large." (Appendix B to Article 1 of Chapter 5 of Title 20 of the California Code of Regulations at section [g][9][E][i].)

Dr. Obed Odoemelam, Staff's expert witness on public health issues, testified that the standards used by Staff as a basis for determining the significance of the Project's air quality and public health impacts are set at levels to adequately protect the health of all members of the

public, including sensitive receptors such as schools and hospitals. (7/7/2009 RT 401:17-402:2.) The FSA explains that the analysis for noncancer health effects essentially compares the Project's maximum contaminant levels to safe levels called "reference exposure levels" ("RELs"). (Ex. 200 at 4.7-4.) These RELs are amounts of contaminants to which even sensitive people can be exposed and suffer no adverse health effects. (*Id*.) The RELs serve to protect such sensitive individuals as infants, school pupils, the aged, and people suffering from illness or disease. (*Id.*) Furthermore, public health impacts were estimated at the point of maximum air quality impact, incorporating the highest ambient background concentration. (Ex. 200 at 4.7-3.) Therefore, the public health analysis does take into account those parts of the population which are already particularly susceptible to the substances emitted from the Project.

(4) *The Project Will Not Significantly Impact the Health of Nearby Farm Workers.*

Mr. Simpson's concerns about farm worker exposure are similarly unsubstantiated. At the evidentiary hearing, Mr. Simpson claimed there are "15,000 farm workers within six miles of the facility." (7/7/2009 RT 405:6-13.) Mr. Simpson claimed "they probably spend more time in the field than people who live in the farmhouses spend in the farmhouses." (*Id*.) Mr. Simpson then speculated that the farm workers in the nearby fields would be subject to more health impacts than the residents of the farmhouses nearby. (*Id*.) While Avenal Power disagrees with Mr. Simpson's statement, whether workers might encounter greater health impacts than residents is ultimately irrelevant. This is true because the Project's analysis revealed the worst case impacts will be less than significant at any location outside the site boundaries. The FSA details the extremely conservative methods used to ensure the public health analysis considers the maximally-impacted individual, whether a resident or a worker, over an extremely long period of time. (Ex. 200 at 4.7-3 through 4.7-5.) For example, the analysis of a resident's exposure to cancer-causing agents is calculated based on exposure outdoors for 24 hours per day, 365 days per year, for 70 years, at the location where the worst-case residential exposures are found. (Ex. 21[a] at page 2; see also Ex. 200 at 4.7-3.) Similarly, worst-case worker exposures are calculated based on outdoor exposures for 8 hours per day, 245 days per year, for 40 years. (Ex. 1 at 6.6-17.)

Furthermore, Staff's public health witness, Dr. Greenberg, explained that the standards

guiding Staff's public health analysis were created by toxicologists, physicians and epidemiologists who are charged with taking into account particularly sensitive populations. (7/7/2009 RT 403:22-404:16.) Similarly, Gary Rubenstein, Avenal Power's expert witness on public health issues, explained that the primary goal in conducting a public health analysis is to establish that a project is safe to anyone, anywhere. (7/7/2009 RT 241:1-23.) Staff's analysis established that no significant health impacts will result anywhere around the Project area. (Ex. 200 at 4.7-12.)

G. Soil and Water Resources

1. The Project Is Not Subject to the Water Supply Assessment Requirements of Water Code Section 10910.

At the evidentiary hearing, CRPE questioned why no water supply assessment was prepared for the Project pursuant to section 10910 of the Water Code. Section 10910 does not apply in this case because the Project would not qualify as a "project" requiring a section 10910 water supply assessment. Section 10910 provides:

> Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act…under Section 21080 of the Public Resources Code shall comply with this part."
> (Cal. Water Code § 10910[a].)

Section 10912 therefore contains the definitions of a "project" triggering section 10910's water supply analysis requirements. Section 10912's "project" definition could potentially apply to an industrial project per sections 10912(a)(5) or (a)(7). But Section 1091I2(a)(5) applies only to "[a] proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area." The Project will require an average of 326 workers per month during construction and 25 permanent employees during operations, none of which will be housed at the Project site. (See Ex. 200 at 4.8-4.) The Project will occupy only 36.0 acres of land. (Ex. 200 at 4.2-15.) Finally, Avenal Power's best estimate of the floor area of the Project facility is approximately 98,400 square feet (pending more detailed design planning), which is far less than 650,000 square feet. (Calculated from Ex. 1 at Figure 2.3-3.)

Section 10910(a)(7) applies only to a "project" as "a project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project." The Project would use less water than such a dwelling unit project. A typical single-family residence uses approximately .0776 acre-feet per year ("AFY") of water per day for internal household purposes. (See Water Use Statistics, American Water Works Association Research Foundation.[19]) This translates to approximately 38.8 AFY for a 500 dwelling unit project. Outdoor residential water use for a residential property in the southern San Joaquin Valley (which includes Kings County) is approximately 0.36 AFY. (Public Policy Institute of California, Lawns and Water Demand in California [2006].[20]) With an average combined use of 0.438 AFY per residence, a 500-unit subdivision will consume approximately 218.8 AFY, which is almost more than 10 times the Project's estimated water use of 20 AFY.

Nor does the Project qualify under section 10912(b), which applies to projects that would cause an increase of 10 percent or more in the number of the public water system's existing service connections. The City of Avenal has 1,902 service connections, per Kings County data. The Project is expected to have two service connections, which will not come close to increasing the number of existing connections by ten percent (which would require at least 190 new connections.)

As the Project does not meet the section 10912 criteria for a "project," no section 10910 water supply analysis is required in connection with the Project's approval.

2. Even Though Compliance with Section 10910 Is Not Required, A Thorough Water Supply Analysis Has Been Prepared for the Project.

Despite the fact that the Water Code section 10910 water supply analysis does not apply, the Project's water supply has been extensively analyzed. (Ex. 1 at 6.5-1 through -21; Ex. 7[f[at Responses 39-53; Ex. 14[d] at Responses 90-92; Ex. 19[c] at Response 8; Ex. 200 at 4.9-7 through 4.9-25.) The Project employs a dry cooling unit for process heat reduction, includes water recycling equipment to minimize raw water requirements, and is a zero liquid discharge ("ZLD") facility to further restrict water consumption. (Ex. 200 at 4.9-4.) These technologies

[19] Available at http://www.drinktap.org/consumerdnn/Default.aspx?tabid=85 (last visited August 7, 2009).

[20] Available at www.cuwcc.org/WorkArea/downloadasset.aspx?id=5742 (last visited August 7, 2009).

will limit water consumption to a maximum of 104 AFY and an average of 20 AFY. (Ex. 200 at 4.9-8.) The limited amount of water consumption per MWhr of generation and the mitigation of both canal and groundwater result in no significant impacts associated with water consumption at the proposed facility. (Ex. 200 at 4.9-1.)

In addition, the Project will have a net water demand of less than zero. The Project will permanently remove approximately 38.4 acres of land from irrigation, since the land used for the Project facilities will no longer need to be irrigated. This fact, combined with other efficiency measures, will save more water each year compared with previous usages for the site than the Project will actually use. (Ex. 200 at 4.9-8.) Therefore, the 34.8 acre permanent Project footprint has mitigated more than the Project's 20 AFY average water consumption. (*Id.*)

3. The Project's Water Use Complies With All Applicable Laws, Ordinances, Regulations and Standards, and Will Not Cause Any Significant Adverse Impacts to Water Resources.

The Project complies with the state constitutional mandate that water resources of the state be put to beneficial use to the fullest extent possible, and that the waste, unreasonable use, or unreasonable method of use of water is prohibited. (Ex. 200 at 4.9-24.) The Commission has also adopted the state water policy contained in State Water Resources Control Board Resolution 75-58, which strongly discourages the use of freshwater for power plant cooling. (Ex. 200 at 4.9-24; see 2003 IEPR at 39-41.) Staff determined that the water conservation measures discussed above, such as the use of dry cooling, ZLD, and dry NOx controls, comply with the applicable water conservation policies. (Ex. 200 at 4.9-24.)

The City of Avenal has provided a will-serve letter to provide municipal and industrial water from its current allocation. (Ex. 1 at Appendix 6.5-3.) Additionally, the Project has arranged for a back up water supply from groundwater wells within the vicinity of the Project. (Ex. 1 at 6.5-1.) As a condition of the agreement allowing access to this backup groundwater supply, Avenal Power has agreed to offset any groundwater used by the Project by altering onsite farm practices so as to avoid the use of an equivalent amount of water. (Ex. 1 at 6.5-15.)[21] The

[21] In addition to mitigating the Project's water use, Avenal Power will also mitigate the Project's conversion of prime farmland by preserving prime farmland at a 1:1 ratio for the Project's permanent disturbed acreage. (Ex. 200 at 4.5-8.) Proposed condition of certification LAND-2 would enforce this mitigation requirement. (See Ex. 200 at 4.5-18.)

water supply analysis for the Project more than sufficiently demonstrates that the Project will not cause any significant impacts to water resources. (Ex. 1 at 6.5-17; Ex. 200 at 4.9-1 and 4.9-24 through -25.)

The Project has obtained a sufficient backup water supply with associated mitigation to ensure that there is no significant impact on the local water supply. (Ex. 200 at 4.9-20.) In light of the foregoing, the Commission should find that the Project's water resources analysis complies with CEQA and all applicable LORS.

H. Miscellaneous Issues and Clarifications

1. Waiting for a Power Purchase Agreement Is Not a Detriment to the Project.

Not having a power purchase agreement ("PPA") before applying for certification is neither a benefit nor a detriment. The choice of whether to obtain a PPA before or after certification is simply a way to allocate risk. (See 7/7/2009 RT 102:7-11; 102:24-103:1.) Projects are not required to obtain a PPA before applying to the Energy Commission for certification. This is a benefit for California consumers, as they are not taking (1) development and construction risk, (2) capital cost risks, and (3) permitting risks. Avenal Power chose to apply for the permits required for construction of the Project before attempting to sell the offtake to a utility so that Avenal Power could fully understand and quantify the regulatory and environmental costs associated with the Project. (7/7/2009 RT 79:11-14.) This substantially reduces the risk that the Project cannot be constructed as a result of permitting limitations, providing a more reliable and less cost-sensitive potential resource to be provided to potential LSE's. In turn, this substantially reduces the potential cost to the end user.

Obtaining purchase power agreements prior to completion of licensing has the potential to put pressure on developers to force the licensing process into the revenue and economics of the existing PPA. (7/7/2009 RT 102:12-118.) Construction and environmental compliance costs can increase substantially after the PPA is obtained, jeopardizing the ability to construct the project under the terms of the proposed PPA. (See 7/7/2009 RT 102:12-18.) These costs ultimately pass on to the consumer and result in higher average electricity prices associated with renegotiating a contract or obtaining short-term replacement power. Further, under certain economic environments projects could be constructed without obtaining a long term agreement

from the utility, in which case all the economic risk of the project is borne by shareholders rather than ratepayers.

2. Public Notice for All Aspects of the Project More Than Satisfied All Applicable Laws and Regulations.

a. Staff Satisfied All Circulation Requirements.

The Commission's regulations establish the minimum noticing requirements for the Commission's AFC process. Staff is required to circulate a summary of the application to many different sources, including public libraries in communities near the proposed sites, including the main branch of a public library in each county in which a facility is proposed to be located in whole or in part; to libraries in Eureka, Fresno, Los Angeles, San Diego, and San Francisco; and to all members, to the ex officio members, to the public adviser, to the hearing officer, to the general counsel, to the applicant, to any person who requests such mailing or delivery, and to all parties to the proceeding. (20 C.C.R. § 1713[b].) These requirements were satisfied. Staff also sent copies of the AFC to local libraries in Avenal, Hanford, Lemoore, Kettleman City, Stratford, and Coalinga. (7/7/2009 RT 54:17-21.) The regulations also require Staff to publish the summary in a newspaper of general circulation in each county in which a site and related facility, or any part thereof, designated in the notice or application, are proposed to be located." (20 C.C.R. § 1713[c].) This was also done. (Ex. 200 at 2-5.)

b. Staff Satisfied All Specific Notice Requirements.

Staff is also required to provide notice to property owners within 1,000 feet of a project and 500 feet of a linear facility, which Staff did. (Ex. 200 at 1-2, 2-4.) Notice of the initial public hearing on an application must be sent at least 14 days in advance of the hearing to the applicant, intervenors, and to all persons who have requested notice in writing. (20 C.C.R. § 1710[b].) The regulations also require notice of the first informational presentation to be mailed to all adjacent landowners. (20 C.C.R. § 1709.7[a].) This notice was given in a timely manner. (See Notice of Public Site Visit and Informational Hearing.[22])

[22] Available at http://www.energy.ca.gov/sitingcases/avenal/notices/2008-05-20_informational_hearing+site_visit.html (last visited August 3, 2009.)

Commission regulations require the FSA to be published "[a]t least 14 days before the start of the evidentiary hearings … or at such other time as required by the presiding member…." (20 C.C.R. § 1747.) The regulations also require Staff to "distribute the final staff assessment to interested agencies, parties, and to any person who requests a copy." (*Id.*) Staff fully satisfied these requirements, providing notice of the availability of the FSA and of the FSA workshop in June 9, 2009. (See Notice of Availability of Final Staff Assessment for the Proposed Avenal Energy Project and Notice of Public Workshop [dated June 9, 2009].[23]) This notice included a form to request a copy of the entire FSA, in either paper or electronic form. (See *id.*) Staff's FSA notification letters provided project website information, Staff contact information, and a means to access, review or acquire published documents. (Ex. 200 at 1-2.)

Section 1208 governs noticing procedures for conferences: "The conference shall be publicly noticed and the notice served in person or by mail on all parties at least ten (10) days before the conference." (20 C.C.R. § 1208.) In this case, notice of the prehearing conference and evidentiary hearing was given on June 15, 2009. (See Avenal Energy Project Notice of Prehearing Conference and Evidentiary Hearing.[24]) The Commission's regulations ensure the public advisor has an opportunity to review and provide feedback on the scheduling and location of many events in the application proceedings. (20 C.C.R. § 1710[c]-[e].)

c. Staff and the Public Advisor's Office Provided Additional Notification Beyond That Required By Law.

It is important to note that the noticing procedures discussed above are the *required* noticing procedures. Staff and the Public Adviser's Office routinely goes far above and beyond these requirements in providing notice during the application process, as they did in this case. Elena Miller, the Public Adviser for the Commission, explained the different roles of Staff and the Public Adviser in detail at the evidentiary hearing. (7/7/2009 RT 56:15-58:1.)

Staff's FSA notification letters provide project website information, staff contact information, and a means to access, review or acquire published documents. (Ex. 200 at 1-2.)

[23] Available at http://www.energy.ca.gov/sitingcases/avenal/notices/2009-06-23_Notice_of_FSA_and_Workshop_TN-51919.pdf (last visited July 20, 2009).

[24] Available at http://www.energy.ca.gov/sitingcases/avenal/notices/2009-06-30_Notice_of_PHC_Evid_Hrg.pdf (last visited July 20, 2009).

The letters request public and agency review, comment, and continued participation in the Commission's certification process through oral and written comment and participation in events including workshops and hearings. (Ex. 200 at 1-2.) As a measure of goodwill to the local community, the Commission also held nonmandatory workshops on both the PSA and FSA, with translation services provided by Avenal Power. (Ex. 200 at 1-3.) Notice of both of these events was given in both English and Spanish. (7/7/2009 RT 32:11-33:19.) Both intervenors questioned why these workshops were not recorded. (June 30, 2009 Prehearing Conference Transcript ["6/30/2009 RT"] at 37:20-24, 40:5-41:19.) Staff explained these workshops are not required by law; they are simply held by Staff to provide more opportunities for public participation. (6/30/2009 RT 37:25-38:10.) However, the Commission has valid reasons for choosing not to record them, such as maintaining an informal discourse between all parties in advance of the formal prehearing conference and evidentiary hearing for the Project. (6/30/2009 RT 41:1-19.)

A majority of residents and property owners within a six mile radius of the Project site were also notified of publication and noticed events such as workshops and hearings. (Ex. 200 at 1-2.) Notice of the PSA workshop was sent to a comprehensive list of libraries, agencies, organizations, and property owners within 1,000 feet of the Project and 500 feet of the linear facilities. (Ex. 200 at 2-4.) These notification letters requested public and agency review, comment, and continued participation in the Energy Commission's certification process. (*Id.*)

The FSA details many other noticing and outreach steps taken by Staff and the Public Adviser's Office which need not be repeated in full here. (Ex. 200 at 1-2 through 1-3; 2-4 through 2-5.) Elena Miller, the Public Adviser, made clear at the evidentiary hearing that the PAO went far beyond the notice and outreach legally required in this case. (7/7/2009 RT 56:15-59:12.) The concerns expressed by CRPE and by Mr. Simpson are simply unfounded, and neither can point to a single requirement that was not more than satisfied by Staff and by the PAO during the Project proceedings.

Ms. Miller also noted the common phenomenon in siting cases of a lack of public response in the early stages of the proceeding (despite efforts to notice as broadly as possible from the start of the project), followed by a strong response toward the end of the proceedings.

(7/7/2009 RT 66:11-24.) Mr. Simpson is no exception to this trend. Despite asking pointed questions regarding the notice given in this case (see 7/7/2009 RT 64:4-66:5), neither Mr. Simpson nor any other party could point to a single noticing requirement that has not been met or exceeded. Nevertheless, Mr. Simpson chose to intervene at the last possible date. Mr. Simpson's choice to wait until the eleventh hour to participate in this case should not be taken as any indication whatsoever that the noticing was insufficient.

d. The Contents of All Notices Were Sufficient.

At the evidentiary hearing, Mr. Simpson questioned why the notices in this proceeding did not contain a physical address for the Project. (7/7/2009 RT 34:18-35:12, 285:23-286:1.) However, Mr. Simpson has been informed that no physical address existed at the time these notices were mailed. Instead, other descriptors of the site location, such as maps, were included in these notices. (7/7/2009 RT 34:18-35:15, 286:2-4.)

Mr. Simpson also objected to the absence of certain language in notices for the Project, including the absence of the information contained in Air Table 14 and a statement from one notice stating that the Project would use 97 percent less water, and effects on air quality. (7/7/2009 RT 35:16-43:11.) Staff and the witness from SJVAPCD informed Mr. Simpson that this information is not required to appear in these notices, and that the inclusion of information about the impacts of a project is not the purpose of a notice. Instead, the purpose of notice is to direct its recipient to other sources containing the Project's analysis. (7/7/2009 RT 36:23-39:23.) Including all of the analysis in the notice itself would render the notice ineffective. (*Id*.)

Mr. Simpson further complained that certain noticing requirements had not been met by the notice for the Project's FDOC. (7/7/2009 RT 283:19-287:1.) However, the expert witness from SJVAPCD, Jim Swaney, explained that the noticing provisions cited by Mr. Simpson are not applicable to the FDOC noticing process. (7/7/2009 RT 284:3-285:22.) Instead, the rules applicable to the FDOC noticing process appear in section 5.5 of SJVAPCD Rule 2201. (7/7/2009 RT 284:11-17.) Neither Mr. Simpson nor any other party has provided any evidence that SJVAPCD did not meet these requirements.

Finally, at the evidentiary hearing Staff made clear that all Staff-issued notices for the Project proceedings contained contact information for the Project Manager, Joseph Douglas, as

well as the Commission's website for the Project. (7/7/2009 RT 52:15-53:6.) The concerns voiced by Mr. Simpson regarding alleged insufficiencies in the notices for the Project are completely unsupported by the record in this case. The noticing for the Project was entirely sufficient, and it complied with all applicable requirements.

III. CONCLUSION

The record in this proceeding shows the Project:

- Will comply with applicable laws, ordinances, regulations and standards,
- Will not create any significant adverse environmental impacts, and
- Will not create a public health risk alone or in combination with other existing or reasonably foreseeable project.

Avenal Power respectfully requests the Committee find this project meets the requirements of the Warren-Alquist Act and the Commission's regulations and present a recommendation to the Commission to grant the Application for Certification of the Avenal Energy Project.

Respectfully,

/s/

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Attorney for Avenal Power Center, LLC

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE AVENAL ENERGY PROJECT	DOCKET NO. 08-AFC-1

PROOF OF SERVICE
(Revised 6/17/09)

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Declaration of Service

I, Lois Navarrot, declare that on August 12, 2009, I served and filed copies of the attached **Avenal Power Center, LLC's Opening Brief.** The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: www.energy.ca.gov/sitingcases/avenal. The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service List) and to the Commission's Docket Unit, in the following manner:

(check all that apply)

For Service to All Other Parties

__X__ sent electronically to all email addresses on the Proof of Service list;

__X__ by personal delivery or by depositing in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service List above to those addresses **NOT** marked "email preferred."

AND

For Filing with the Energy Commission

__X__ sending an original paper copy to the address below;

OR

_____ depositing in the mail an original and 12 paper copies as follow:

California Energy Commission
Attn: Docket No. 08-AFC-1
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

/s/
Lois Navarrot