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DOCKET	
07-AFC-8	
DATE	NOV 05 2007
RECD.	NOV 06 2007

November 5, 2007

Ms. Mary Dyas
Project Manager
California Energy Commission
Facilities Siting Division
1516 Ninth Street, MS 15
Sacramento, California 95814-5512

Re: Carrizo Energy Application for Certification (07-AFC-08)

Dear Ms. Dyas:

Confirming our previous discussions, Pacific Gas and Electric (PG&E) has announced that they have entered into a 20-year Power Purchase Agreement (PPA) to purchase the output from the Carrizo Energy Solar Farm. The terms of the PPA are consistent with those discussed in our AFC.

The Project has executed our System Impact Study Agreement (SISA). The SISA is attached along with proof of payment.

I understand that URS Corporation has previously supplied a copy of the permit application submitted to the San Luis Obispo County Air Pollution Control District for the firewater pump.

Thank you for your efforts. As always, please do not hesitate to call me if you have any questions.

Sincerely,

Carrizo Energy, LLC

Perry H. Fontana, QEP
Manager

INTERCONNECTION SYSTEM IMPACT STUDY AGREEMENT

THIS AGREEMENT is made and entered into this 1st day of November, 2007 by and between Ausra, Inc., a corporation organized and existing under the laws of the State of Delaware, ("Interconnection Customer,") and the California Independent System Operator Corporation, a California nonprofit public benefit corporation existing under the laws of the State of California, ("ISO"). The Interconnection Customer and the ISO each may be referred to as a "Party," or collectively as the "Parties."

RECITALS

WHEREAS, the Interconnection Customer is proposing to develop a Large Generating Facility or generating capacity addition to an existing Generating Facility consistent with the Interconnection Request submitted by the Interconnection Customer dated March 29, 2007; and

WHEREAS, the Interconnection Customer desires to interconnect the Large Generating Facility with the ISO Controlled Grid; and

WHEREAS, the ISO has completed an Interconnection Feasibility Study (the "Feasibility Study") and provided the results of said study to the Interconnection Customer¹; and

WHEREAS, the Interconnection Customer has requested the ISO to conduct or cause to be performed an Interconnection System Impact Study to assess the impact of interconnecting the Large Generating Facility;

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

- 1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated in the ISO's FERC-approved Standard Large Generation Interconnection Procedures ("LGIP") or the Master Definitions Supplement, Appendix A to the ISO Tariff, as applicable.
- 2.0 The Interconnection Customer elects and the ISO shall conduct or cause to be performed an Interconnection System Impact Study consistent with the LGIP in accordance with the ISO Tariff.

¹ This recital to be omitted if the Interconnection Customer has elected to forego the Interconnection Feasibility Study.

- 3.0 The scope of the Interconnection System Impact Study shall be subject to the assumptions set forth in Attachment A to this Agreement.
- 4.0 The Interconnection System Impact Study will be based upon the results of the Interconnection Feasibility Study and the technical information provided by the Interconnection Customer in the Interconnection Request, subject to any modifications in accordance with Section 4.4 of the LGIP. The ISO reserves the right to request additional technical information from the Interconnection Customer as may reasonably become necessary consistent with Good Utility Practice during the course of the Interconnection System Impact Study. If the Interconnection Customer modifies its designated Point of Interconnection, Interconnection Request, or the technical information provided therein is modified, the time to complete the Interconnection System Impact Study may be extended.
- 5.0 The Interconnection System Impact Study report shall provide the following information:
- identification of any circuit breaker short circuit capability limits exceeded on the Participating TO's electric system or the ISO Controlled Grid as a result of the interconnection;
 - identification of any thermal overload or voltage limit violations on the Participating TO's electric system or the ISO Controlled Grid resulting from the interconnection;
 - identification of any instability or inadequately damped response to system disturbances on the Participating TO's electric system or the ISO Controlled Grid resulting from the interconnection;
 - a description and non-binding, good faith estimate of cost and cost responsibility for and time for construction of facilities on the Participating TO's electric system required to interconnect the Large Generating Facility to the ISO Controlled Grid and to address the identified short circuit, instability, and power flow issues on the ISO Controlled Grid; and
 - a Deliverability Assessment on the ISO Controlled Grid pursuant to Section 3.3 of the LGIP; and
 - assessment of the potential magnitude of financial impacts, if any, on Local Furnishing Bonds and a proposed resolution.
- 6.0 The Interconnection Customer shall provide a deposit of \$50,000 for the performance of the Interconnection System Impact Study. The good faith estimate for the time of completion of the Interconnection System Impact

Study is March 20, 2008 (30 days for IC execution, 120 days for study completion).

Following the issuance of the Interconnection System Impact Study, the ISO shall charge and the Interconnection Customer shall pay the actual costs of the Interconnection System Impact Study, inclusive of any re-studies and amendments to the Interconnection System Impact Study, pursuant to Section 9 of this Agreement.

Any difference between the deposit made toward the Interconnection System Impact Study, amendments and re-studies to the Interconnection System Impact Study, and the actual cost of the study shall be paid by or refunded to the Interconnection Customer, as appropriate in accordance with Section 13.3 of the LGIP.

- 7.0 Pursuant to Section 3.7 of the LGIP, the ISO will coordinate the conduct of any studies required to determine the impact of the Interconnection Request on Affected Systems. The ISO may provide a copy of the Interconnection System Impact Study results to an Affected System Operator and the Western Electricity Coordinating Council. Requests for review and input from Affected System Operators or the Western Electricity Coordinating Council may arrive at any time prior to interconnection, and a revision of the Interconnection System Impact Study or re-study may be required in such event.
- 8.0 Substantial portions of technical data and assumptions used to perform the Interconnection System Impact Study, such as system conditions, existing and planned generation, and unit modeling, may change after the ISO provides the Interconnection System Impact Study results to the Interconnection Customer. Study results will reflect available data at the time the ISO provides the Interconnection System Impact Study to the Interconnection Customer. The ISO shall not be responsible for any additional costs, including, without limitation, costs of new or additional facilities, system upgrades, or schedule changes, that may be incurred by the Interconnection Customer as a result of changes in such data and assumptions.
- 9.0 In the event that a re-study or amendment of the Interconnection System Impact Study is required, the ISO shall provide notification of the need for such re-study or amendment, and the Interconnection Customer shall provide direction as to whether to proceed with the re-study or amendment and any associated deposit payment pursuant to Section 7.6 or Section 12.2.4 of the LGIP, as applicable.
- 10.0 The ISO shall maintain records and accounts of all costs incurred in performing the Interconnection System Impact Study, inclusive of any re-

studies or amendments thereto, in sufficient detail to allow verification of all costs incurred, including associated overheads. The Interconnection Customer shall have the right, upon reasonable notice, within a reasonable time at the ISO's offices and at its own expense, to audit the ISO's records as necessary and as appropriate in order to verify costs incurred by the ISO. Any audit requested by the Interconnection Customer shall be completed, and written notice of any audit dispute provided to the ISO representative, within one hundred eighty (180) Calendar Days following receipt by the Interconnection Customer of the ISO's notification of the final costs of the Interconnection System Impact Study, inclusive of any re-study or amendment thereto.

- 11.0 In accordance with Section 3.8 of the LGIP, the Interconnection Customer may withdraw its Interconnection Request at any time by written notice to the ISO. Upon receipt of such notice, this Agreement shall terminate.
- 12.0 Pursuant to Section 7.2 of the LGIP, this Agreement shall become effective upon the date the fully executed Agreement and deposit specified in Section 6 of this Agreement are received by the ISO. If ISO does not receive the fully executed Agreement and payment pursuant to Section 7.2 of the LGIP, then the Interconnection Request will be deemed withdrawn upon the Interconnection Customer's receipt of written notice by the ISO pursuant to Section 3.8 of the LGIP.
- 13.0 Miscellaneous.
- 13.1 Dispute Resolution. Any dispute, or assertion of a claim, arising out of or in connection with this Interconnection System Impact Study Agreement, shall be resolved in accordance with Section 13.5 of the LGIP.
- 13.2 Confidentiality. Confidential Information shall be treated in accordance with Section 13.1 of the LGIP.
- 13.3 Binding Effect. This Interconnection System Impact Study Agreement and the rights and obligations hereof, shall be binding upon and shall inure to the benefit of the successors and assigns of the Parties hereto.
- 13.4 Conflicts. In the event of a conflict between the body of this Interconnection System Impact Study Agreement and any attachment, appendices or exhibits hereto, the terms and provisions of the body of this Interconnection System Impact Study Agreement shall prevail and be deemed the final intent of the Parties.
- 13.5 Rules of Interpretation. This Interconnection System Impact Study Agreement, unless a clear contrary intention appears, shall be construed and interpreted as follows: (1) the singular number includes the plural

number and vice versa; (2) reference to any person includes such person's successors and assigns but, in the case of a Party, only if such successors and assigns are permitted by this Interconnection System Impact Study Agreement, and reference to a person in a particular capacity excludes such person in any other capacity or individually; (3) reference to any agreement (including this Interconnection System Impact Study Agreement), document, instrument or tariff means such agreement, document, instrument, or tariff as amended or modified and in effect from time to time in accordance with the terms thereof and, if applicable, the terms hereof; (4) reference to any applicable laws and regulations means such applicable laws and regulations as amended, modified, codified, or reenacted, in whole or in part, and in effect from time to time, including, if applicable, rules and regulations promulgated thereunder; (5) unless expressly stated otherwise, reference to any Article, Section or Appendix means such Article or Section of this Interconnection System Impact Study Agreement or such Appendix to this Interconnection System Impact Study Agreement, or such Section to the LGIP or such Appendix to the LGIP, as the case may be; (6) "hereunder", "hereof", "herein", "hereto" and words of similar import shall be deemed references to this Interconnection System Impact Study Agreement as a whole and not to any particular Article, Section, or other provision hereof or thereof; (7) "including" (and with correlative meaning "include") means including without limiting the generality of any description preceding such term; and (8) relative to the determination of any period of time, "from" means "from and including", "to" means "to but excluding" and "through" means "through and including".

- 13.6 **Entire Agreement.** This Interconnection System Impact Study Agreement, including all Appendices and Schedules attached hereto, constitutes the entire agreement between the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between the Parties with respect to the subject matter of this Interconnection System Impact Study Agreement. There are no other agreements, representations, warranties, or covenants which constitute any part of the consideration for, or any condition to, any Party's compliance with its obligations under this Interconnection System Impact Study Agreement.
- 13.7 **No Third Party Beneficiaries.** This Interconnection System Impact Study Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and, where permitted, their assigns.

- 13.8 Waiver.** The failure of a Party to this Interconnection System Impact Study Agreement to insist, on any occasion, upon strict performance of any provision of this Interconnection System Impact Study Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.

Any waiver at any time by either Party of its rights with respect to this Interconnection System Impact Study Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Interconnection System Impact Study Agreement. Termination or default of this Interconnection System Impact Study Agreement for any reason by the Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Participating TO or ISO. Any waiver of this Interconnection System Impact Study Agreement shall, if requested, be provided in writing.

Any waivers at any time by any Party of its rights with respect to any default under this Interconnection System Impact Study Agreement, or with respect to any other matter arising in connection with this Interconnection System Impact Study Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Interconnection System Impact Study Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Interconnection System Impact Study Agreement shall not constitute or be deemed a waiver of such right.

- 13.9 Headings.** The descriptive headings of the various Articles and Sections of this Interconnection System Impact Study Agreement have been inserted for convenience of reference only and are of no significance in the interpretation or construction of this Interconnection System Impact Study Agreement.
- 13.10 Multiple Counterparts.** This Interconnection System Impact Study Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.
- 13.11 Amendment.** The Parties may by mutual agreement amend this Interconnection System Impact Study Agreement by a written instrument duly executed by both of the Parties.
- 13.12 Modification by the Parties.** The Parties may by mutual agreement amend the Appendices to this Interconnection System Impact Study Agreement by a written instrument duly executed by both of the Parties. Such amendment shall become effective and a part of this Interconnection

System Impact Study Agreement upon satisfaction of all applicable laws and regulations.

- 13.13 Reservation of Rights.** The ISO shall have the right to make a unilateral filing with FERC to modify this Interconnection System Impact Study Agreement with respect to any rates, terms and conditions, charges, classifications of service, rule or regulation under section 205 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder, and Interconnection Customer shall have the right to make a unilateral filing with FERC to modify this Interconnection System Impact Study Agreement pursuant to section 206 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by another Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Interconnection System Impact Study Agreement shall limit the rights of the Parties or of FERC under sections 205 or 206 of the Federal Power Act and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 13.14 No Partnership.** This Interconnection System Impact Study Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon any Party. No Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, another Party.
- 13.15 Assignment.** This Interconnection System Impact Study Agreement may be assigned by a Party only with the written consent of the other Party; provided that a Party may assign this Interconnection System Impact Study Agreement without the consent of the other Party to any Affiliate of the assigning Party with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Interconnection System Impact Study Agreement; and provided further that the Interconnection Customer shall have the right to assign this Interconnection System Impact Study Agreement, without the consent of the other Party, for collateral-security purposes to aid in providing financing for the Large Generating Unit, provided that the Interconnection Customer will require any secured party, trustee or mortgagee to notify the other Party of any such assignment. Any financing arrangement entered into by the Interconnection Customer pursuant to this Article will provide that prior to or upon the exercise of the secured party's, trustee's or mortgagee's assignment rights pursuant to said arrangement, the secured creditor, the trustee or mortgagee will notify the other Party of the date and particulars of any such exercise of

assignment right(s). Any attempted assignment that violates this Article is void and ineffective. Any assignment under this Interconnection System Impact Study Agreement shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. Where required, consent to assignment will not be unreasonably withheld, conditioned or delayed.

IN WITNESS THEREOF, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

California Independent System Operator Corporation

By: 
ALI ASRAF CHOWDHURY, DIRECTOR
REGIONAL TRANSMISSION SOUTH

Title: _____

Date: 10/19/07

Ausra, Inc.

By: 

Title: EVP

Date: 11/1/07

Attachment A

**Interconnection System Impact
Study Agreement**

**ASSUMPTIONS USED IN CONDUCTING THE
INTERCONNECTION SYSTEM IMPACT STUDY**

The Interconnection System Impact Study will be based upon the results of the Interconnection Feasibility Study, subject to any modifications in accordance with Section 4.4 of the LGIP, and the following assumptions:

Designation of Point of Interconnection and configuration to be studied:

- **Loop Morro Bay-Midway 230kV Line #1**

Designation of alternative Point(s) of Interconnection and configuration:

- **Loop Morro Bay-Midway 230kV #1 and #2 Lines**

Attachment B

**Interconnection System Impact
Study Agreement**

INTERCONNECTION SYSTEM IMPACT STUDY PLAN

Interconnection System Impact Study Plan

Generation Interconnection

Ausra, Inc.

Carrizo Plain Solar Project

(Revision 1)



California ISO
Your Link to Power

November 1, 2007

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	<u>Attachment 1 - Generation Projects</u>	

1. Introduction

Ausra, Inc., an Interconnection Customer (IC), has submitted a completed Interconnection Request (IR) to the California Independent System Operator Corporation (CAISO) for their proposed Carrizo Plain Solar Project (Project). The Project is located in San Luis Obispo County near Pacific Gas and Electric Company's (PG&E) Carrizo Plains Substation. The proposed Project utilizes solar thermal technology with two 98.6 MW steam turbine generators with a maximum gross output of 190 MW.

The Project proposes to interconnect in two separate phases. Phase one proposes to begin commercial operation of steam turbine #1 with an initial generating capacity of 30 MW by May 2010, and be fully capable of rated generating capacity (98.6 MW) by December 2010. Phase two proposes to begin commercial operation of steam turbine #2 with an initial generating capacity of 30 MW by December 2010, and be fully capable of rated generating capacity (98.6 MW) by December 2011. The Project will be fully operational at 190 MW by December 31, 2011.

The Project proposes to interconnect to PG&E's transmission system by looping into the Morro Bay – Midway 230 kV #1 Line via a new 230 kV switching station, which will be located less than one mile west of Carrizo Plain Substation. The IC has also chosen an alternative point of interconnection which is to loop into the Morro Bay – Midway 230 kV #1 and #2 Lines.

The CAISO and PG&E have performed an Interconnection Feasibility Study (IFS) and issued a Report on September 7, 2007. This report indicated that the proposed Project is technically feasible.

In accordance with the Federal Energy Regulatory Commission (FERC) Large Generator Interconnection Procedures (LGIP), the IC, the CAISO, and PG&E have agreed to proceed with an Interconnection System Impact Study (ISIS) to determine the impact of the Project on the CAISO Controlled Grid. This ISIS will:

1. Identify transmission system impacts on the CAISO Controlled Grid caused solely by the addition of the proposed Project
2. Identify the system reinforcements necessary to mitigate the adverse impacts of the Project, if any, under various system conditions
3. Identify the level of deliverability of the Project by means of a Deliverability Assessment, conducted by CAISO per section 3.3.3 of the LGIP

This ISIS Plan will form the basis for the ISIS Agreement (ISISA) by defining the scope, content, assumptions, and terms of reference of the ISISA.

2. Study Fee

The CAISO has estimated a study cost of \$46,000 for performing the ISIS. The final cost to complete the ISIS will be based on actual cost. According to the LGIP, a \$50,000 deposit will be needed when the IC returns the signed ISISA to PG&E.

If the actual cost of the study is less than the collected deposit, the CAISO will refund the balance to the IC. If the actual cost is higher than the collected deposit, the CAISO will invoice the IC for the remaining balance.

3. Schedule

Table 3-1 shows the tentative milestones/schedules associated with the ISIS.

Table 3-1: Study Schedule

Task	Milestone Description	Target Date
1	CAISO tenders an ISISA to the IC	October 19, 2007
2	The IC returns the signed ISISA and study deposit of \$50,000 to CAISO	+ 30 CD
3	Establish study start date based on receipt of executed ISISA with deposit—ISO issues an Engagement letter	+ 0 CD
4	PG&E issues draft ISIS report to ISO for review	+ 90 CD
5	CAISO issue final ISIS report to the IC	+ 30 CD

Per the LGIP, the IC must execute and return the attached ISISA with the deposit of \$50,000 within 30 calendar days (CD) from the tendering of ISISA. If the IC fails to return an executed ISISA and the deposit within 30 CD, the IR will be deemed withdrawn and will be processed pursuant to Section 3.8 of the LGIP.

4. Cost Estimates

The ISIS will provide a list of required facilities to reliably interconnect the Project to the CAISO Controlled Grid. A non-binding good faith estimate of cost responsibility and a non-binding good faith estimate of time to construct these facilities will also be provided.

5. Project and Interconnection Information

Table 5-1 provides general information about the Project.

Table 5-1: Carrizo Plain Project General Information

Project Location	San Luis Obispo County, California
PG&E Planning Area	Los Padres Division
Number and Type of Generators	2-98.6 MW Steam Turbine Generators
Maximum Generator Output	190 MW
Generator Auxiliary Load	4 MW
Maximum Net Output to Grid	186 MW
Power Factor	0.85 lag – 0.9 lead
Step-up Transformer(s)	Two-115 MVA, 13.8/230 kV transformers with 7.5 % impedance on 69 MVA base
Description Of Interconnection Configuration	Construct a new 230 kV switching station and loop the Morro Bay – Midway 230 kV # 1 Line
Connection Voltage	230 kV
Description Of Alternate Interconnection Configuration	Construct a new 230 kV switching station and loop Morro Bay – Midway 230 kV #1 and #2 Lines
Alternate Connection Voltage	230 kV

Figure 5-1 provides the map for the Project and the transmission facilities in the vicinity. Figure 5-2 shows the single-line diagram of the Project.

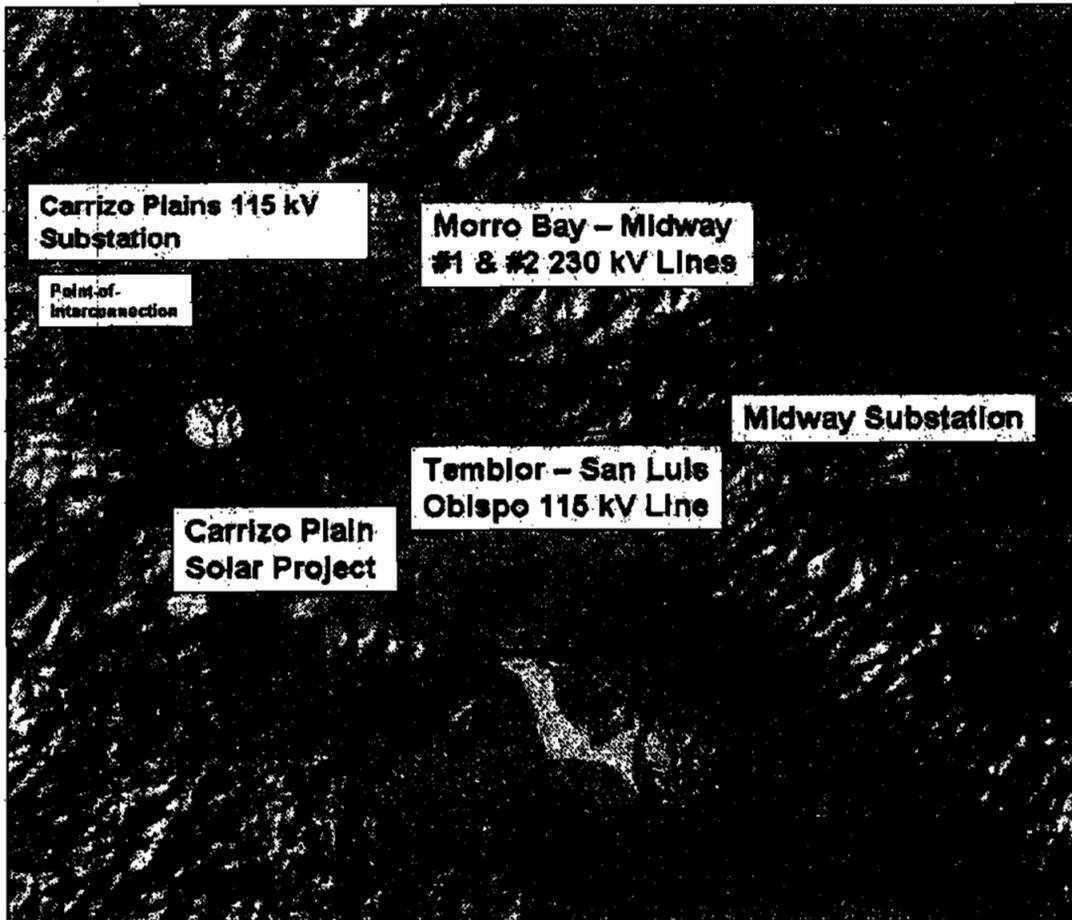


Figure 5-1: Location Map

7. Power Flow Study Base Cases

One power flow base case will be used to evaluate the impact of the Project on the CAISO Controlled Grid. While it is impractical to study all combinations of system load and generation levels during all seasons and at all times of the day, this base case represents extreme loading and generation conditions for the study area.

The CAISO and PG&E cannot guarantee that the Project can operate at maximum rated output 24 hours a day, year round, without system impacts, nor can the CAISO and PG&E guarantee that the Project will not have system impacts during the times and seasons other than those studied in the ISIS.

The following power flow base case will be used for the analysis in the ISIS:

2012 Summer Peak Full Loop Base Case:

Power flow analysis will be performed using PG&E's 2012 Summer Peak Full-Loop Base Case (in General Electric Power Flow format). This base case was developed from PG&E's 2007 base case series and has a 1-in-10 year extreme weather load level for the Central Coast and Los Padres Areas.

This base case will model all approved PG&E transmission reliability projects that will be operational by 2012. This base case will also model all proposed higher-queued generation projects that will be operational by 2012. However, some generation projects that are electrically far from the proposed project will be either turned off or modeled with reduced generation to balance the loads and resources in the power flow model. The major generation projects included are shown in Attachment 1.

8. Sensitivity Study

Morro Bay Modernization Project Sensitivity Study

The IC has requested a sensitivity power flow analysis which assumes that the Morro Bay Modernization Project is not constructed. It is important to note that the existing Morro Bay Power Plant Units #1 & #2 were not dispatched in the Morro Bay sensitivity base cases developed for Interconnection Feasibility Study. After further investigation, it was determined that these units are not officially retired, but are only mothballed. These units will be dispatched at maximum power in the Interconnection System Impact Study, which may have an effect on facility loading and assignment of Network Upgrades.

This sensitivity study will use the 2012 Summer Peak base case. Only normal and emergency Category "B" contingencies will be evaluated.

California Valley PV Project Sensitivity Study

The IC has also requested a sensitivity power flow analysis without the California Valley PV Project (210 MW) modeled in the Base cases. This sensitivity analysis will use the same 2011 base cases that will be used for the original study. Only the summer Peak base case (after necessary modifications) will be used and only normal and emergency Category B contingencies will be evaluated for this sensitivity.

9. Interconnection System Impact Study Scope

This ISIS will determine the impact of the Project on the CAISO Controlled Grid. The specific studies conducted are outlined below:

9.1 Steady State Power Flow Analysis

Power Flow analysis will be performed using the base case described in Section 7. The base case will be used to simulate the impact of the Project during normal operating conditions as well as during single (CAISO Category "B") and selected multiple (CAISO Category "C") contingency conditions. The study will cover the transmission facilities within PG&E's Central Coast planning area.

The single (CAISO Category "B") and selected multiple (CAISO Category "C") contingencies include the following outages:

9.1.1 CAISO Category "B"

- All single generator outages within the study area.
- All single (60 - 230 kV) transmission circuit outages within the study area.
- All single (60 - 230 kV) transformer outages within the study area.
- Overlapping single generator and transmission circuit outages for the transmission lines and generators within the study area.

9.1.2 CAISO Category "C"

- Selected bus (60-230 kV) outages within the study area.
- Selected outages caused by selected breaker failures (excluding bus tie and sectionalizing breakers) at the same above bus section.

- Selected combination of any two generator/transmission line/transformer outages (except ones included above in Category "B") within the study area.
- Selected outages of double circuit tower lines (60-230 kV) within the study area.

9.1.3 Overload Mitigation

- This ISIS will investigate the possibility of re-rating the San Luis Obispo #3 115/70 kV transformer as mitigation for the overload identified in the Interconnection Feasibility Study.

9.2 Short Circuit Analysis

Short circuit studies will be performed to determine the maximum fault currents on various buses in the vicinity of the Project. This ISIS will assess the impact of increased fault duty resulting from the added generation. Equipment that may become overstressed as a result of increased fault duty will be identified.

9.3 Dynamic Stability Analysis

Dynamic stability studies will be conducted using the 2012 Summer Peak Full Loop Base Case to ensure that the transmission system remains in operating equilibrium through abnormal operating conditions after the new facility begins operation.

Disturbance simulations will be performed for a study period of up to 20 seconds to determine whether the new facility will create any system instability during the following line and generator outages:

9.3.1 CAISO Category "B"

- Full load rejection of the Project.
- A three-phase close-in fault on the Carrizo Plains Sw. Sta. – Midway 230 kV Line at the Carrizo Plains 230 kV bus with normal clearing time followed by loss of the Carrizo Plains Sw. Sta. – Midway 230 kV Line.
- A three-phase close-in fault on the Carrizo Plains Sw. Sta. – Morro Bay 230 kV Line at the Carrizo Plains 230 kV bus with normal clearing time followed by loss of the Carrizo Plains Sw. Sta. – Morro Bay 230 kV Line.

9.3.2 CAISO Category "C"

- A three-phase fault on the Midway Substation 230 kV Bus followed by the loss of the Carrizo Plains Sw. Sta. – Midway 230 kV Line and the Midway – California Opti-solar 230 kV Line
- A three-phase fault on the Morro Bay Substation 230 kV Bus followed by the loss of the Carrizo Plains Sw. Sta. – Morro Bay 230 kV Line and the Morro Bay – California Opti-solar 230 kV Line

9.4 Reactive Power Deficiency Analysis

With the proposed project included in the system model, CAISO Category "B" and "C" contingencies will be analyzed to identify any reactive power deficiency:

- Whether the results show voltage drops of 5% or more from the pre-project levels, or
- Whether the results fail to meet applicable voltage criteria.

A post-transient power flow analysis will be performed, if deemed necessary, after considering the network topology or power transfer paths involved when a significant amount of power transfer occurs.

9.5 Deliverability Assessment

A Deliverability Assessment will determine the Project's ability to deliver its energy to the CAISO Controlled Grid under peak load conditions. The Deliverability Assessment will provide the IC with information as to the level of deliverability without Network Upgrades, and the required Network Upgrades to deliver the full output of the Project. The Deliverability Assessment will provide:

- Deliverability Level with no Network Upgrades
- Required Network Upgrades to support 100% Deliverability

CAISO will conduct the Deliverability Assessment in accordance with Section 3.3.3 of the LGIP.

9.6 System Protection Requirements

Preliminary system protection requirements will be provided based on the scope and assumptions outlined in this study plan and technical information provided by the IC.

9.7 Substation Evaluation

The substation evaluation will identify any existing equipment requiring upgrades to mitigate overstress or overload caused by the interconnection of the Project.

At the request of the IC, the substation evaluation will also investigate the possibility of interconnecting the Project via a 230 kV ring bus configuration.

9.8 Transmission Line Evaluation

PG&E's transmission line evaluation will identify any existing transmission lines or equipment requiring upgrades to mitigate overload or overstress caused by the Project.

9.9 Land Evaluation

For the ISIS, PG&E's Corporate Real Estate Department will not perform an evaluation to determine if any new land rights are necessary to upgrade PG&E facilities that may be impacted by the Project, such as constructing the new generator tie line and reconductoring of existing PG&E transmission lines, if required.

A land right evaluation will be provided when the Project progresses to the Interconnection Facilities Study.

10. Re-study

The ISIS will be performed according to the assumptions shown in Section 7. If these assumptions are changed, a re-study may be required to re-evaluate the Project's impact on the CAISO Controlled Grid. The IC would be responsible for paying for any such re-study. Examples of changes that might prompt such a study are:

- Change in Interconnection date
- Change in Interconnection queue position
- Change in Project's MW size
- Change in Interconnection Plan
- Withdrawal of a higher queued project from the CAISO queue

ATTACHMENT 1 - GENERATION PROJECTS

[REDACTED]					
1	Confidential	Russell	92	2007	Yes

[REDACTED]					
SMUD	Confidential	Rancho Seco (SMUD)	500	2007	Yes
TID	Confidential	Walnut (TID)	250	2007	Yes
SVP	Confidential	SSS (SVP)	320	2008	Yes

[REDACTED]					
1	Confidential	Contra Costa	590	2009	Yes
2	Confidential	Tesla	1156	2008	Yes
3	Confidential	Morro Bay	1200	2008	Yes
P0302	Confidential	Cabrillo	120	2009	Yes
P0304	Confidential	New Birds Landing SW STA	38	2011	Yes
P0401	Confidential	Birds' Landing Switchyard	150	2007	Yes
P0402	Confidential	Potrero	145.1	2008	Yes

P0403	Confidential	Collector Station at Geysers #17 & Fulton Line	201	2009	Yes
P0404	Confidential	San Francisco Airport	48.7	2008	Yes
P0409	Confidential	Tesla	74.9	2007	Yes
P0411	Confidential	Humboldt Power Plant Substation	146.4	2008	Yes
P0412	Confidential	Birds' Landing Switchyard	200	2009	Yes
P0413	Confidential	East Shore	118	2007	Yes
P0418	Confidential	McCall 115 kV Bus	300	2008	Yes
P0424	Confidential	East Shore	361	2010	Yes
P0429	Confidential	Hemdon-Keamey 230 kV Line	200	2008	Yes
P0435	Confidential	Panoche Substation	401	2008	Yes
P0504	Confidential	Panoche Substation	120	2009	Yes
P0507	Confidential	Helm Substation	673	2008	Yes
P0506	Confidential	Cottonwood-Vaca Dixon 230 kV lines	715	2010	Yes
P0513	Confidential	Kern Oil Substation (115 kV)	94	2009	Yes
P0526	Confidential	Eastshore 230 kV Bus	245	2008	Yes
P0528L	Confidential	Pit 3-Round Mountain 230 kV	102	2007	Yes
P0529	Confidential	Le Grand- Chowchilla 115 kV	10.5	2007	Yes
P0530	Confidential	Merced #1 70 kV	10.5	2007	Yes
P0532L	Confidential	PG&E Geysers #17 Fulton 230 kV Line	55	2007	Yes

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P0602L	Confidential	Diablo Canyon	37	2006	Yes
P0603L	Confidential	Diablo Canyon	45	2006	Yes
P0605L	Confidential	Coburn 230 kV Bus	210	2008	Yes
P0609L	Confidential	Lambie-Contra Costa 230 kV	128	2011	Yes
P0610L	Confidential	Chevron 70 kV Tap	20	2009	Yes
P0611L	Confidential	Birds' Landing Switchyard	30	2009	Yes
P0614L	Confidential	Oleum 115 kV Bus	27.2	2008	Yes
P0615L	Confidential	Mc Call 230 kV Bus	565/600	2010	Yes
P0616L	Confidential	Mesa-Divide #1 & #2 115 kV Lines	105	2009	Yes
P0617L	Confidential	Oakland C Substation 115 kV Bus	300	2010	Yes
P0701L	Confidential	Morro Bay – Midway 230 kV Line	210	2010	Yes
P0702L	Confidential	Vaca – Tesla 500 kV Line	500	2011	Yes
P0703L	Confidential	Tesla – Bellota 230 kV Line	508	2011	Yes
P0704L	Confidential	Bahia-Moraga 230 kV Line	100	2011	Yes
P0705L	Confidential	Los Banos Substation 230 kV Bus	200	2011	Yes
P0706	Confidential	Geysers #3 – Cloverdale 115 kV Line	35	2010	Yes
P0707	Confidential	Stagg 230 kV	211	2009	Yes
P0708	Confidential	Geysers – Fulton 230 kV Line	50	1/1/2011	Yes
P0709	Confidential	Loop 230kV Lines near Carrizo Plain Sub	190	12/1/2010	Yes