# APPENDIX G: 2030 LOCAL CAPACITY TECHNICAL STUDY

# Executive Summary

This report documents the results of the 2030 Long-Term Local Capacity Technical (LCT) Study. The LCT Study objectives, inputs, methodologies and assumptions are the same as those discussed in the 2021 LCT Study to be adopted by the CAISO and submitted to the CPUC for adoption in its 2021 Local Resource Adequacy process.

Overall, the Local Capacity area resource Requirements (LCR) trend compared with 2025, is up by about 2140 MW or about 9.7%. It is worth mentioning the following areas: (1) LA Basin where LCR has decreased mostly due to reduction in imports from South-West; (2) Bay Area where LCR has increased mostly due to load forecast increase as well as increase in S-N flow on Path 15; (3) North Coast/North Bay where LCR has increased mostly due to change in limiting contingency and equipment; (4) Sierra, Stockton, Fresno, Big Creek/Ventura and San Diego/Imperial Valley where LCR has increased mainly due to load forecast increase; (5) Kern where LCR has increased mainly due to definition change triggered by removal of a previously approved transmission project; (6) Humboldt, where LCR needs are steady.

The load forecast used in this study is based on the final adopted California Energy Demand 2020-2030 Revised Forecast, developed by the CEC; namely the load-serving entity (LSE) and balancing authority (BA) mid baseline demand with low additional achievable energy efficiency and photo voltaic (AAEE-AAPV), posted on 3/4/2020: https://efiling.energy.ca.gov/GetDocument.aspx?tn=232305&DocumentContentId=64305.

The 2030 and 2028 total LCR needs are provided below for comparison:

**2030 Local Capacity Needs**

| | Qualifying Capacity | | | | Capacity Available at Peak | 2030 LCR Need Category C |
|---|---|---|---|---|---|---|
| Local Area Name | QF/ Muni (MW) | Non-Solar (MW) | Solar (MW) | Total (MW) | Total (MW) | Capacity Needed |
| Humboldt | 0 | 191 | 0 | 191 | 191 | 135 |
| North Coast/ North Bay | 119 | 723 | 0 | 842 | 842 | 842* |
| Sierra | 1183 | 920 | 5 | 2108 | 2103 | 1518* |
| Stockton | 116 | 491 | 12 | 619 | 607 | 619* |
| Greater Bay | 604 | 6732 | 8 | 7344 | 7344 | 7344* |
| Greater Fresno | 216 | 2815 | 361 | 3392 | 3191 | 2296* |
| Kern | 5 | 330 | 78 | 413 | 335 | 413* |
| Big Creek/ Ventura | 424 | 3220 | 250 | 3894 | 3644 | 1151 |
| LA Basin | 1197 | 6187 | 11 | 7395 | 7261 | 6194 |
| San Diego/ Imperial Valley | 2 | 4438 | 378 | 4818 | 4440 | 3718 |
| Total | 3866 | 26047 | 1103 | 31016 | 29958 | 24230 |

### 2025 Local Capacity Needs

| | Qualifying Capacity | | | | Capacity Available at Peak | 2025 LCR Need Category C |
|---|---|---|---|---|---|---|
| Local Area Name | QF/ Muni (MW) | Non-Solar (MW) | Solar (MW) | Total (MW) | Total (MW) | Capacity Needed |
| Humboldt | 0 | 191 | 0 | 191 | 191 | 132 |
| North Coast/ North Bay | 119 | 723 | 0 | 842 | 842 | 837 |
| Sierra | 1183 | 920 | 5 | 2108 | 2103 | 1367* |
| Stockton | 116 | 491 | 12 | 619 | 607 | 619* |
| Greater Bay | 604 | 6732 | 8 | 7344 | 7344 | 6110* |
| Greater Fresno | 216 | 2815 | 361 | 3392 | 3191 | 1971* |
| Kern | 5 | 330 | 78 | 413 | 335 | 186* |
| Big Creek/ Ventura | 424 | 2963 | 250 | 3637 | 3637 | 1002 |
| LA Basin | 1197 | 6215 | 11 | 7423 | 7423 | 6309 |
| San Diego/ Imperial Valley | 2 | 4438 | 378 | 4818 | 4440 | 3557 |
| Total | 3866 | 25818 | 1103 | 30787 | 30113 | 22090 |

* Details about magnitude of deficiencies can be found in the applicable section below. Resource deficient sub-area implies that in order to comply with the criteria, at summer peak, load may be shed immediately after the first contingency.

The narrative for each Local Capacity Area lists important new projects included in the base cases as well as a description of reason for changes between the 2025 Long-Term LCT study and this 2030 Long-Term LCT study.

This 2030 Long-Term Local Capacity Technical (LCT) Study was prepared in keeping with the ISO's current commitment to prepare biennial 10-year local capacity technical studies on an informational basis, to assist with the CPUC's Integrated Resource Planning process.

This 10-year study is the first prepared by the ISO that provides stakeholders with comprehensive load profile and transmission capacity profile information to provide additional insight into the nature of the local capacity needs additional information to understand the nature. As well, in keeping with the stated intent in the 2020-2021 transmission planning process, the ISO has explored and identified alternatives for reducing reliance on local gas-fired generation capacity in at least half of the areas and sub-areas. Several of these alternatives were transitioned to the ISO's economic study phase in this transmission planning cycle for further consideration as potential economic-driven transmission solutions.

# Intentionally left blank

## Table of Contents

**Intentionally left blank**

# 1 Overview of the Study: Inputs, Outputs and Options

## 1.1 Objectives

The intent of the 2030 Long-Term LCT Study is to identify specific areas within the CAISO Balancing Authority Area that have limited import capability and determine the minimum generation capacity (MW) necessary to mitigate the local reliability problems in those areas, as was the objective of all previous Local Capacity Technical Studies.

This 2030 Long-Term Local Capacity Technical (LCT) Study was prepared in keeping with the ISO's current commitment to prepare biennial 10-year local capacity technical studies on an informational basis, to assist with the CPUC's Integrated Resource Planning processes.

This 10-year study goes beyond the scope of previous 10-year local capacity technical studies and is the first prepared by the ISO that provides stakeholders with comprehensive load profile and transmission capacity profile information to provide additional insight into the nature of the local capacity needs additional information to understand the nature. As well, in keeping with the stated intent in the 2020-2021 transmission planning process, the ISO has explored and identified alternatives for reducing reliance on local gas-fired generation capacity. Several of these alternatives were transitioned to the ISO's economic study phase in this transmission planning cycle for further consideration as potential economic-driven transmission solutions.

## 1.2 Key Study Assumptions

### 1.2.1 Inputs and Methodology

The CAISO used the same Inputs and Methodology as agreed upon by interested parties and previously incorporated into the 2021 LCT Study. The following table sets forth a summary of the approved inputs and methodology that have been used in the 2021 LCT Study as well as this 2030 LCT Study:

Table 1.2-1 Summary Table of Inputs and Methodology Used in this LCT Study:

| Issue | How Incorporated into THIS LCT Study: |
|---|---|
| Input Assumptions: | |
| Transmission System Configuration | The existing transmission system has been modeled, including all projects operational on or before June 1, of the study year and all other feasible operational solutions brought forth by the PTOs and as agreed to by the CAISO. |
| Generation Modeled | The existing generation resources has been modeled and also includes all projects that will be on-line and commercial on or before June 1, of the study year |
| Load Forecast | Uses a 1-in-10 year summer peak load forecast |
| Methodology: | |
| Maximize Import Capability | Import capability into the load pocket has been maximized, thus minimizing the generation required in the load pocket to meet applicable reliability requirements. |
| QF/Nuclear/State/Federal Units | Regulatory Must-take and similarly situated units like QF/Nuclear/State/Federal resources have been modeled on-line at qualifying capacity output values for purposes of this LCT Study. |
| Maintaining Path Flows | Path flows have been maintained below all established path ratings into the load pockets, including the 500 kV. For clarification, given the existing transmission system configuration, the only 500 kV path that flows directly into a load pocket and will, therefore, be considered in this LCT Study is the South of Lugo transfer path flowing into the LA Basin. |

| Performance Criteria: | |
|---|---|
| All Performance Levels, including incorporation of PTO operational solutions | This LCT Study is being published based on the most stringent of all mandatory reliability standards. In addition, the CAISO will incorporate all new projects and other feasible and CAISO-approved operational solutions brought forth by the PTOs that can be operational on or before June 1, of the study year. Any such solutions that can reduce the need for procurement to meet the mandatory standards will be incorporated into the LCT Study. |
| Load Pocket: | |
| Fixed Boundary, including limited reference to published effectiveness factors | This LCT Study has been produced based on load pockets defined by a fixed boundary. The CAISO only publishes effectiveness factors where they are useful in facilitating procurement where excess capacity exists within a load pocket. |

Further details regarding the 2021 as well as 2030 LCT Study methodology and assumptions are provided in Section III, below.

## 1.3 Grid Reliability

Service reliability builds from grid reliability because grid reliability is reflected in the Reliability Standards of the North American Electric Reliability Council (NERC) and the Western Electricity Coordinating Council ("WECC") Regional Criteria (collectively "Reliability Standards"). The Reliability Standards apply to the interconnected electric system in the United States and are intended to address the reality that within an integrated network, whatever one Balancing Authority Area does can affect the reliability of other Balancing Authority Areas. Consistent with the mandatory nature of the Reliability Standards, the CAISO is under a statutory obligation to ensure efficient use and reliable operation of the transmission grid consistent with achievement of the Reliability Standards.[1] The CAISO is further under an obligation, pursuant to its FERC-approved Transmission Control Agreement, to secure compliance with all "Applicable Reliability Criteria." Applicable Reliability Criteria consists of the Reliability Standards as well as reliability criteria adopted by the CAISO (Grid Planning Standards).

The Reliability Standards define reliability on interconnected electric systems using the terms "adequacy" and "security." "Adequacy" is the ability of the electric systems to supply the

1 Pub. Utilities Code § 345

aggregate electrical demand and energy requirements of their customers at all times, taking into account physical characteristics of the transmission system such as transmission ratings and scheduled and reasonably expected unscheduled outages of system elements. "Security" is the ability of the electric systems to withstand sudden disturbances such as electric short circuits or unanticipated loss of system elements. The Reliability Standards are organized by Performance Categories. Certain categories require that the grid operator not only ensure that grid integrity is maintained under certain adverse system conditions (e.g., security), but also that all customers continue to receive electric supply to meet demand (e.g., adequacy). In that case, grid reliability and service reliability would overlap. But there are other levels of performance where security can be maintained without ensuring adequacy.

## 1.4 Application of N-1, N-1-1, and N-2 Criteria

The CAISO will maintain the system in a safe operating mode at all times. This obligation translates into respecting the Reliability Criteria at all times, for example during normal operating conditions (N-0) the CAISO must protect for all single contingencies (N-1) and common mode (N-2) double line outages. Also, after a single contingency, the CAISO must re-adjust the system to support the loss of the next most stringent contingency. This is referred to as the N-1-1 condition.

The N-1-1 vs N-2 terminology was introduced only as a temporal differentiation between two existing NERC Category P6 and P7 events. N-1-1 represents NERC Category C6 ("category P1 contingency, manual system adjustment, followed by another category P1 contingency"). The N-2 represents NERC Category P7 ("any two circuits of a multiple circuit tower line") as well as WECC-S2 (for 500 kV only) ("any two circuits in the same right-of-way") with no manual system adjustment between the two contingencies.

## 1.5 Performance Criteria

As set forth on the Summary Table of Inputs and Methodology, this LCR Report is based on the most stringent mandatory standard (NERC, WECC or CAISO). The CAISO tests the electric system in regards to thermal overloads as well as dynamic and reactive margin compliance with the existing standards.

### 1.5.1 Performance Criteria

Category P0, P1 & P3 system performance requires that all thermal and voltage limits must be within their "Applicable Rating," which, in this case, are the emergency ratings as generally determined by the PTO or facility owner. Applicable Rating includes a temporal element such that emergency ratings can only be maintained for certain duration. Under this category, load cannot be shed in order to assure the Applicable Ratings are met however there is no guarantee that facilities are returned to within normal ratings or to a state where it is safe to continue to operate the system in a reliable manner such that the next element out will not cause a violation of the Applicable Ratings.

The NERC Planning Standards require system operators to "look forward" to make sure they safely prepare for the "next" N-1 following the loss of the "first" N-1 (stay within Applicable Ratings after the “next” N-1). This is commonly referred to as N-1-1. Because it is assumed that some time exists between the “first” and “next” element losses, operating personnel may make any reasonable and feasible adjustments to the system to prepare for the loss of the second element, including, operating procedures, dispatching generation, moving load from one substation to another to reduce equipment loading, dispatching operating personnel to specific station locations to manually adjust load from the substation site, or installing a “Special Protection Scheme” that would remove pre-identified load from service upon the loss of the “next “ element.[2] All Category P2, P4, P5, P6, P7 and extreme event requirements in this report refer to situations when in real time (N-0) or after the first contingency (N-1) the system requires additional readjustment in order to prepare for the next worst contingency. In this time frame, load drop is not allowed per existing planning criteria.

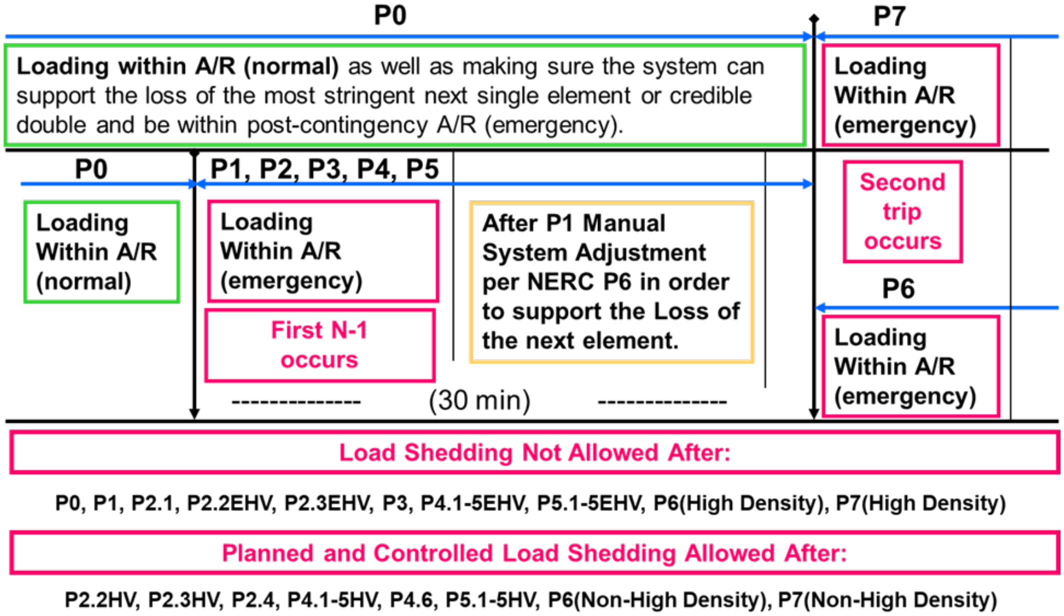
Generally, Category P2, P4, P5, P6, P7 and extreme event describes system performance that is expected following the loss of two or more system elements. This loss of two elements is generally expected to happen simultaneously, referred to as N-2. It should be noted that once the “next” element is lost after the first contingency, as discussed above under the Performance Criteria P1, the event is effectively a Category P6 or N-1-1 scenario. As noted above, depending on system design and expected system impacts, the **planned and controlled** interruption of supply to customers (load shedding), the removal from service of certain generators and curtailment of exports may be utilized to maintain grid “security.”

### 1.5.2 CAISO Statutory Obligation Regarding Safe Operation

The ISO must maintain the system in a safe operating mode at all times. This obligation translates into respecting the Reliability Criteria at all times. For example, during normal operating conditions (8760 hours per year), the ISO must protect for all single contingencies (P1, P2) and multiple contingencies (P4, P5) as well as common mode double line outages (P7). As a further example, after a single contingency, the ISO must readjust the system in order to be able to support the loss of the next most stringent contingency (P3 , P6 and P1+P7 resulting in potential voltage collapse or dynamic instability).

Figure 1.5-1 Temporal graph of LCR Category P0-P7

[2] A Special Protection Scheme is typically proposed as an operational solution that does not require additional generation and permits operators to effectively prepare for the next event as well as ensure security should the next event occur. However, these systems have their own risks, which limit the extent to which they could be deployed as a solution for grid reliability augmentation. While they provide the value of protecting against the next event without the need for pre-contingency load shedding, they add points of potential failure to the transmission network. This increases the potential for load interruptions because sometimes these systems will operate when not required and other times they will not operate when needed.




The following definitions guide the CAISO's interpretation of the Reliability Criteria governing safe mode operation and are used in this LCT Study:

**Applicable Rating:**

This represents the equipment rating that will be used under certain contingency conditions.

*Normal rating* is to be used under normal conditions.

*Long-term emergency ratings*, if available, will be used in all emergency conditions as long as "system readjustment" is provided in the amount of time given (specific to each element) to reduce the flow to within the normal ratings. If not available, the normal rating is to be used.

*Short-term emergency ratings*, if available, can be used as long as "system readjustment" is provided in the "short-time" available in order to reduce the flow to within the long-term emergency ratings where the element can be kept for another length of time (specific to each element) before the flow needs to be reduced the below the normal ratings. If not available long-term emergency rating should be used.

*Temperature-adjusted ratings* shall not be used because this is a year-ahead study, not a real-time tool, and as such the worst-case scenario must be covered. In case temperature-adjusted ratings are the only ratings available then the minimum rating (highest temperature) given the study conditions shall be used.

*CAISO Transmission Register* is the only official keeper of all existing ratings mentioned above.

*Ratings for future projects* provided by PTO and agreed upon by the CAISO shall be used.

*Other short-term ratings* not included in the CAISO Transmission Register may be used as long as they are engineered, studied and enforced through clear operating procedures that can be followed by real-time operators.

*Path Ratings* need to be maintained within their limits in order to assure that proper capacity is available in order to operate the system in real-time in a safe operating zone.

**Controlled load drop:**

This is achieved with the use of a Special Protection Scheme.

**Planned load drop:**

This is achieved when the most limiting equipment has short-term emergency ratings AND the operators have an operating procedure that clearly describes the actions that need to be taken in order to shed load.

**Special Protection Scheme:**

All known SPS shall be assumed. New SPS must be verified and approved by the CAISO and must comply with the new SPS guideline described in the CAISO Planning Standards.

**System Readjustment:**

This represents the actions taken by operators in order to bring the system within a safe operating zone after any given contingency in the system.

*Actions that can be taken as system readjustment after a Category P1, P2.1, P2.2(EHV), P2.3(EHV), P3, P4.1-5(EHV), P5.1-5(EHV), P6(high density area)&P7(high density area) contingency:*

1. System configuration change – based on validated and approved operating procedures
2. Generation re-dispatch
    a. Decrease generation (up to 1150 MW) – limit given by single contingency SPS as part of the ISO Grid Planning standards (ISO SPS3)
    b. Increase generation – this generation will become part of the LCR need

*Actions, which shall not be taken as system readjustment after a Category P1, P2.1, P2.2(EHV), P2.3(EHV), P3, P4.1-5(EHV), P5.1-5(EHV), P6(high density area)&P7(high density area) contingency:*

1. Load drop – based on the intent of the ISO/WECC and NERC criteria for category P1 contingencies.

An objective of the planning process is to minimize the likelihood and magnitude of Non-Consequential Load Loss following Contingency events. NERC and ISO Planning standards mandate that no load shedding should be done immediately after a Category P1, P2.1, P2.2(EHV), P2.3(EHV), P3, P4.1-5(EHV), P5.1-5(EHV), P6(high density area)&P7(high density area) contingency. The system should be planned with no load shedding regardless of when it may occur (immediately or within 15-30 minutes after the first contingency). It follows that load shedding may not be utilized as part of the system readjustment period – in order to protect for the next most limiting contingency. Therefore, if there are available resources in the local area, such resources should be used during the manual adjustment period (and included in the LCR need) before resorting to shedding firm load.

Firm load shedding is allowed in a planned and controlled manner after the first contingency in P2.2(HV), P2.3(HV), P2.4, P4.1-5(HV), P4.6, P5.1-5(HV) and after the second contingency in P6(non-high density area), P7(non-high density area) & P1 system adjusted followed by P7 category events.

This interpretation tends to guarantee that firm load shedding is used to address Category P1, P2.1, P2.2(EHV), P2.3(EHV), P3, P4.1-5(EHV), P5.1-5(EHV), P6(high density area)&P7(high density area) conditions only under the limited circumstances where no other resource or validated operational measure is available. A contrary interpretation would constitute a departure from existing practice and degrade current service expectations by increasing load's exposure to service interruptions.

**Time allowed for manual readjustment:**

Tariff Section 40.3.1.1, requires the CAISO, in performing the Local Capacity Technical Study, to apply the following reliability criterion:

Time Allowed for Manual Adjustment: This is the amount of time required for the Operator to take all actions necessary to prepare the system for the next Contingency. The time should not be more than thirty (30) minutes.

The CAISO Planning Standards also impose this manual readjustment requirement. As a parameter of the Local Capacity Technical Study, the CAISO must assume that as the system operator the CAISO will have sufficient time to:

(1) make an informed assessment of system conditions after a contingency has occurred;

(2) identify available resources and make prudent decisions about the most effective system redispatch;

(3) manually readjust the system within safe operating limits after a first contingency to be prepared for the next contingency; and

(4) allow sufficient time for resources to ramp and respond according to the operator's redispatch instructions. This all must be accomplished within 30 minutes.

Local capacity resources can meet this requirement by either (1) responding with sufficient speed, allowing the operator the necessary time to assess and redispatch resources to effectively reposition the system within 30 minutes after the first contingency, or (2) have sufficient energy available for frequent dispatch on a pre-contingency basis to ensure the operator can meet minimum online commitment constraints or reposition the system within 30 minutes after the first contingency occurs. Accordingly, when evaluating resources that satisfy the requirements of the CAISO Local Capacity Technical Study, the CAISO assumes that local capacity resources need to be available in no longer than 20 minutes so the CAISO and demand response providers have a reasonable opportunity to perform their respective and necessary tasks and enable the CAISO to reposition the system within the 30 minutes in accordance with applicable reliability criteria.

# 2 Assumption Details: How the Study was Conducted

## 2.1 System Planning Criteria

The following table provides a comparison of system planning criteria, based on the NERC performance standards, used in the study:

Table 2.1-1: Criteria Comparison for Bulk Electric System contingencies

| Contingency Component(s) | Mandatory Reliability Standards | Old Local Capacity Criteria | New Local Capacity Criteria |
|---|---|---|---|
| P0 – No Contingencies | X | X | X |
| P1 – Single Contingency | | | |
| 1. Generator (G-1) | X | X[1] | X[1] |
| 2. Transmission Circuit (L-1) | X | X[1] | X[1] |
| 3. Transformer (T-1) | X | X[1,2] | X[1] |
| 4. Shunt Device | X | | X[1] |
| 5. Single Pole (dc) Line | X | X[1] | X[1] |
| P2 – Single contingency | | | |
| 1. Opening a line section w/o a fault | X | | X |
| 2. Bus Section fault | X | | X |
| 3. Internal Breaker fault (non-Bus-tie Breaker) | X | | X |
| 4. Internal Breaker fault (Bus-tie Breaker) | X | | X |
| P3 – Multiple Contingency – G-1 + system adjustment and: | | | |
| 1. Generator (G-1) | X | X | X |
| 2. Transmission Circuit (L-1) | X | X | X |
| 3. Transformer (T-1) | X | X[2] | X |
| 4. Shunt Device | X | | X |
| 5. Single Pole (dc) Line | X | X | X |
| P4 – Multiple Contingency - Fault plus stuck breaker | | | |
| 1. Generator (G-1) | X | | X |
| 2. Transmission Circuit (L-1) | X | | X |
| 3. Transformer (T-1) | X | | X |
| 4. Shunt Device | X | | X |
| 5. Bus section | X | | X |
| 6. Bus-tie breaker | X | | X |

| | | | |
|---|---|---|---|
| P5 – Multiple Contingency – Relay failure (delayed clearing) | | | |
| 1. Generator (G-1) | X | | X |
| 2. Transmission Circuit (L-1) | X | | X |
| 3. Transformer (T-1) | X | | X |
| 4. Shunt Device | X | | X |
| 5. Bus section | X | | X |
| P6 – Multiple Contingency – P1.2-P1.5 system adjustment and: | | | |
| 1. Transmission Circuit (L-1) | X | x | X |
| 2. Transformer (T-1) | X | x | X |
| 3. Shunt Device | X | | X |
| 4. Bus section | X | | X |
| P7 – Multiple Contingency - Fault plus stuck breaker | | | |
| 1. Two circuits on common structure (L-2) | X | X | X |
| 2. Bipolar DC line | X | X | X |
| Extreme event – loss of two or more elements | | | |
| Two generators (Common Mode) G-2 | X[4] | X | X[4] |
| Any P1.1-P1.3 & P1.5 system readjusted (Common Mode) L-2 | X[4] | X[3] | X[5] |
| All other extreme combinations. | X[4] | | X[4] |

1 System must be able to readjust to a safe operating zone in order to be able to support the loss of the next contingency.
2 A thermal or voltage criterion violation resulting from a transformer outage may not be cause for a local area reliability requirement if the violation is considered marginal (e.g. acceptable loss of facility life or low voltage), otherwise, such a violation will necessitate creation of a requirement.
3 Evaluate for risks and consequence, per NERC standards. No voltage collapse or dynamic instability allowed.
4 Evaluate for risks and consequence, per NERC standards.
5 Expanded to include any P1 system readjustment followed by any P7 without stuck breaker. For voltage collapse or dynamic instability situations mitigation is required "if there is a risk of cascading" beyond a relatively small predetermined area – less than 250 MW - directly affected by the outage.

Table 2.1-2: Criteria Comparison for non-Bulk Electric System contingencies

| Contingency Component(s) | Mandatory Reliability Standards | Old Local Capacity Criteria | New Local Capacity Criteria |
|---|---|---|---|
| P0 – No Contingencies | X | X | X |
| P1 – Single Contingency | | | |
| 1. Generator (G-1) | X | X[1] | X |
| 2. Transmission Circuit (L-1) | X | X[1] | X |
| 3. Transformer (T-1) | X | X[1,2] | X |
| 4. Shunt Device | X | | X |
| 5. Single Pole (dc) Line | X | X[1] | X |

| | | | |
|---|---|---|---|
| P2 – Single contingency<br>1. Opening a line section w/o a fault<br>2. Bus Section fault<br>3. Internal Breaker fault (non-Bus-tie Breaker)<br>4. Internal Breaker fault (Bus-tie Breaker) | | | |
| P3 – Multiple Contingency – G-1 + system adjustment and:<br>1. Generator (G-1)<br>2. Transmission Circuit (L-1)<br>3. Transformer (T-1)<br>4. Shunt Device<br>5. Single Pole (dc) Line | <br>X<br>X<br>X<br>X<br>X | <br>X<br>X<br>X[2]<br><br>X | <br>X<br>X<br>X<br>X<br>X |
| P4 – Multiple Contingency - Fault plus stuck breaker<br>1. Generator (G-1)<br>2. Transmission Circuit (L-1)<br>3. Transformer (T-1)<br>4. Shunt Device<br>5. Bus section<br>6. Bus-tie breaker | | | |
| P5 – Multiple Contingency – Relay failure (delayed clearing)<br>1. Generator (G-1)<br>2. Transmission Circuit (L-1)<br>3. Transformer (T-1)<br>4. Shunt Device<br>5. Bus section | | | |
| P6 – Multiple Contingency – P1.2-P1.5 system adjustment and:<br>1. Transmission Circuit (L-1)<br>2. Transformer (T-1)<br>3. Shunt Device<br>4. Bus section | | <br>x<br>x | |
| P7 – Multiple Contingency - Fault plus stuck breaker<br>1. Two circuits on common structure (L-2)<br>2. Bipolar DC line | | <br>X<br>X | |
| Extreme event – loss of two or more elements<br>Two generators (Common Mode) G-2<br>Any P1.1-P1.3 & P1.5 system readjusted (Common Mode) L-2<br>All other extreme combinations. | | <br>X<br>X[3] | |

[1] System must be able to readjust to a safe operating zone in order to be able to support the loss of the next contingency.
[2] A thermal or voltage criterion violation resulting from a transformer outage may not be cause for a local area reliability requirement if the violation is considered marginal (e.g. acceptable loss of facility life or low voltage), otherwise, such a violation will necessitate creation of a requirement.
[3] Evaluate for risks and consequence, per NERC standards. No voltage collapse or dynamic instability allowed.

A significant number of simulations were run to determine the most critical contingencies within each local area. Using power flow, post-transient load flow, and stability assessment tools, the system performance results of all tested contingencies were measured against the system performance requirements defined by the criteria shown in Tables 1 and 2. Where the specific system performance requirements were not met, generation was adjusted until performance requirements were met for the local area. The adjusted generation constitutes the minimum generation needed in the local area. The following describes how the criteria were tested for the specific type of analysis performed.

### 2.1.1 Power Flow Assessment:

Table 2.1-3 Power flow criteria

| Contingencies | Thermal Criteria[1] | Voltage Criteria[2] |
|---|---|---|
| P0 | Applicable Rating | Applicable Rating |
| P1 [3] | Applicable Rating | Applicable Rating |
| P2 | Applicable Rating | Applicable Rating |
| P3 | Applicable Rating | Applicable Rating |
| P4 | Applicable Rating | Applicable Rating |
| P5 | Applicable Rating | Applicable Rating |
| P6 [4] | Applicable Rating | Applicable Rating |
| P7 | Applicable Rating | Applicable Rating |
| P1 + P7 [4] | - | No Voltage Collapse |

[1] Applicable Rating – Based on CAISO Transmission Register or facility upgrade plans including established Path ratings.

[2] Applicable Rating – CAISO Grid Planning Criteria or facility owner criteria as appropriate.

[3] Following the first contingency (N-1), the generation must be sufficient to allow the operators to bring the system back to within acceptable operating range (voltage and loading) and/or appropriate OTC following the studied outage conditions and be able to safely prepare for the loss of the next most stringent element and be within Applicable Rating after the loss of the second element.

[4] During normal operation or following the first contingency (N-1), the generation must be sufficient to allow the operators to prepare for the next worst N-1 or common mode N-2 without pre-contingency interruptible or firm load shedding. SPS/RAS/Safety Nets may be

utilized to satisfy the criteria after the second N-1 or common mode N-2 except if the problem is of a thermal nature such that short-term ratings could be utilized to provide the operators time to shed either interruptible or firm load.

### 2.1.2 Post Transient Load Flow Assessment:

Table 2.1-4 Post transient load flow criteria

| Contingencies | Reactive Margin Criteria [2] |
|---|---|
| Selected [1] | Applicable Rating |

[1] If power flow results indicate significant low voltages for a given power flow contingency, simulate that outage using the post transient load flow program. The post-transient assessment will develop appropriate Q/V and/or P/V curves.

[2] Applicable Rating – positive margin based on the higher of imports or load increase by 5% for N-1 contingencies, and 2.5% for N-2 contingencies.

### 2.1.3 Stability Assessment:

Table 2.1-5 Stability criteria

| Contingencies | Stability Criteria [2] |
|---|---|
| Selected[1] | Applicable Rating |

[1] Base on historical information, engineering judgment and/or if power flow or post transient study results indicate significant low voltages or marginal reactive margin for a given contingency.

[2] Applicable Rating – CAISO Grid Planning Criteria or facility owner criteria as appropriate.

## 2.2 Load Forecast

### 2.2.1 System Forecast

The California Energy Commission (CEC) derives the load forecast at the system and Participating Transmission Owner (PTO) levels. This relevant CEC forecast is then distributed across the entire system, down to the local area, division and substation level. The PTOs use an econometric equation to forecast the system load. The predominant parameters affecting the system load are (1) number of households, (2) economic activity (gross metropolitan products, GMP), (3) temperature and (4) increased energy efficiency and distributed generation programs.

### 2.2.2 Base Case Load Development Method

The method used to develop the load in the base case is a melding process that extracts, adjusts and modifies the information from the system, distribution and municipal utility forecasts. The melding process consists of two parts: Part 1 deals with the PTO load and Part 2 deals with the municipal utility load. There may be small differences between the methodologies used by each PTO to disaggregate the CEC load forecast to their level of local area as well as bar-bus model.

#### 2.2.2.1 *PTO Loads in Base Case*

The methods used to determine the PTO loads are, for the most part, similar. One part of the method deals with the determination of the division3 loads that would meet the requirements of 1-in-5 or 1-in-10 system or area base cases and the other part deals with the allocation of the division load to the transmission buses.

**a. Determination of division loads**

The annual division load is determined by summing the previous year division load and the current division load growth. Thus, the key steps are the determination of the initial year division load and the annual load growth. The initial year for the base case development method is based heavily on recorded data. The division load growth in the system base case is determined in two steps. First, the total PTO load growth for the year is determined, as the product of the PTO load and the load growth rate from the system load forecast. Then this total PTO load growth is allocated to the division, based on the relative magnitude of the load growth projected for the divisions by the distribution planners. For example, for the 1-in-10 area base case, the division load growth determined for the system base case is adjusted to the 1-in-10 temperature using the load temperature relation determined from the latest peak load and temperature data of the division.

**b. Allocation of division load to transmission bus level**

Since the loads in the base case are modeled at the various transmission buses, the division loads developed must be allocated to those buses. The allocation process is different depending on the load types. For the most part, each PTO classifies its loads into four types: conforming, non-conforming, self-generation and generation-plant loads. Since the non-conforming and self-generation loads are assumed to not vary with temperature, their magnitude would be the same in the system or area base cases of the same year. The remaining load (the total division load developed above, less the quantity of non-conforming and self-generation load) is the conforming load. The remaining load is allocated to the transmission buses based on the relative magnitude of the distribution forecast. The summation of all base case loads is generally higher than the load forecast because some load, i.e., self-generation and generation-plant, are behind the meter and must be modeled in the base cases. However, for the most part, metered or aggregated data with telemetry is used to come up with the load forecast.

3 Each PTO divides its territory in a number of smaller area named divisions. These are usually smaller and compact areas that have the same temperature profile.

#### 2.2.2.2 *Municipal Loads in Base Case*

The municipal utility forecasts that have been provided to the CEC and PTOs for the purposes of their base cases were also used for this study.

## 2.3 Power Flow Program Used in the LCR analysis

The technical studies were conducted using General Electric's Power System Load Flow (GE PSLF) program version 21.0_07 and PowerGem's Transmission Adequacy and Reliability Assessment (TARA) program version 1902. This GE PSLF program is available directly from GE or through the Western System Electricity Council (WECC) to any member and TARA program is commercially available.

To evaluate Local Capacity Areas, the starting base case was adjusted to reflect the latest generation and transmission projects as well as the one-in-ten-year peak load forecast for each Local Capacity Area as provided to the CAISO by the PTOs.

Electronic contingency files provided by the PTOs were utilized to perform the numerous contingencies required to identify the LCR. These contingency files include remedial action and special protection schemes that are expected to be in operation during the year of study. A CAISO created EPCL (a GE programming language contained within the GE PSLF package) routine and/or TARA software were used to run the combination of contingencies; however, other routines are available from WECC with the GE PSFL package or can be developed by third parties to identify the most limiting combination of contingencies requiring the highest amount of generation within the local area to maintain power flows within applicable ratings.

## 2.4 Estimate of Battery Storage Needs due to Charging Constraints

Local areas and sub-areas have limited transmission capability and therefore rely on internal resources to be available in order to reliably serve internal load. Battery storage will help serve local load during the discharge cycle, however it will also increase local load during the charging cycle.

Due to recent procurement activities geared toward the acquisition of this type of technology, the CAISO is herein estimating the characteristics (MW, MWh, discharge duration) required from battery storage technology in order to seamlessly integrate in each local area and sub-area.

The CAISO expects that for batteries that displace other local resource adequacy resources, the transmission capability under the most limiting contingency and the other local capacity resources must be sufficient to recharge the batteries in anticipation of the outage continuing through the night and into the next day's peak load period.

For each local area and sub-area, the CAISO has estimated the battery storage characteristics, given their unique load shape, constraints and requirements as well as the energy characteristics of other resources required to meet standards. Due to this fact, the strict addition of the sub-area battery storage characteristics (MW, MWh and duration) may not closely align with the overall local area battery storage characteristic requirements (MW, MWh and duration).

**Assumptions**

1) Total load serving capability includes capability from transmission system and local generation needed for LCR under the worst contingency.
2) Storage added replaces existing generation MW for MW. First the batteries will replace as much as possible of existing gas resources, Second if the area and/or sub-area has run out of gas resources to displace then other technologies may be reduced in order to determine the maximum battery charging limit.
3) Effectiveness factors are assumed not to be a factor. Battery storage is assumed to be installed at the same sites where resources are displaced or assumed to have the same effectiveness factors.
4) Deliverability of incremental storage capacity is not evaluated. It is assumed battery storage will take over deliverability from old resources through repower. Any new battery storage resource needs to go through the generation interconnection process in order to receive deliverability and it is not evaluated in this study. CAISO cannot guaranty that there is enough deliverability available for new resources. New transmission upgrades may be required in order to make such new resources deliverable to the aggregate of load.
5) Includes battery storage charging/discharging efficiency of 85%.
6) Daily charging required is distributed to all non-discharging hours proportionally using delta between net load and the total load serving capability.
7) Energy required for charging, beyond the transmission capability under contingency condition, is produced by other LCR required resources within the local area and sub-area that are available for production during off-peak hours.
8) Hydro resources are considered to be available for production during off-peak hours, however these resources are energy limited themselves and based on past availability data they can have severely limited output during off-peak hours especially during late summer peaks under either normal or dry hydro years.
9) The study assumes the ability to provide perfect dispatch and the ability to enforce charging requirements for multiple contingency conditions (like N-1-1) in the day ahead time frame while the system is under normal (no contingency) conditions. CAISO software improvements and/or augmentations are required in order to achieve this goal.

Installing battery storage with insufficient characteristics (MW, MWh and duration) will not result in a one for one reduction of the local area or sub-area need for other types of resources. The CAISO expects that the overall RA portfolio provided by all LSEs to account for the uplift, beyond the minimum LCR need, in MWs required from other type of resources for all areas and sub-areas where LSEs have procured battery storage beyond the charging capability or with incorrect characteristics (MW, MWh and duration). If uplift is not provided the CAISO may use its back stop authority to assure that reliability standards are met throughout the day, including off-peak hours.

# 3 Locational Capacity Requirement Study Results

## 3.5 Summary of Study Results

LCR is defined as the amount of resource capacity that is needed within a Local Capacity Area to reliably serve the load located within this area. The results of the CAISO's analysis are summarized in the Executive Summary Tables.

Table 3.4-1 2030 Local Capacity Needs vs. Peak Load and Local Area Resources

| | 2030 Total LCR (MW) | Peak Load (1 in10) (MW) | 2030 LCR as % of Peak Load | Total NQC Local Area Resources (MW) | 2030 LCR as % of Total NQC |
|---|---|---|---|---|---|
| Humboldt | 135 | 167 | 81% | 191 | 71% |
| North Coast/North Bay | 842 | 1472 | 57% | 842 | 100% |
| Sierra | 1518 | 1957 | 78% | 2108 | 72% |
| Stockton | 619 | 964 | 64% | 619 | 100% |
| Greater Bay | 7344 | 11195 | 66% | 7344 | 100% |
| Greater Fresno | 2296 | 3589 | 64% | 3392 | 68% |
| Kern | 413 | 1110 | 37% | 413 | 100% |
| Big Creek/Ventura | 1151 | 4478 | 26% | 3894 | 30% |
| LA Basin | 6194 | 19244 | 32% | 7395 | 84% |
| San Diego/Imperial Valley | 3718 | 4857 | 77% | 4818 | 77% |
| Total* | 24230 | 49033 | 49% | 31016 | 78% |

Table 3.4-2 2025 Local Capacity Needs vs. Peak Load and Local Area Resources

| | 2025 Total LCR (MW) | Peak Load (1 in10) (MW) | 2025 LCR as % of Peak Load | Total NQC Local Area Resources (MW) | 2025 LCR as % of Total NQC |
|---|---|---|---|---|---|
| Humboldt | 132 | 153 | 86% | 191 | 69% |
| North Coast/North Bay | 837 | 1481 | 57% | 842 | 99% |
| Sierra | 1367 | 1918 | 71% | 2108 | 65% |
| Stockton | 619 | 950 | 65% | 619 | 100% |
| Greater Bay | 6110 | 10743 | 57% | 7344 | 83% |
| Greater Fresno | 1971 | 3279 | 60% | 3392 | 58% |
| Kern | 186 | 1651 | 11% | 413 | 45% |
| Big Creek/Ventura | 1002 | 4429 | 23% | 3637 | 28% |
| LA Basin | 6309 | 18826 | 34% | 7423 | 85% |
| San Diego/Imperial Valley | 3557 | 4675 | 76% | 4818 | 74% |
| Total* | 22090 | 48105 | 46% | 30787 | 72% |

* Value shown only illustrative, since each local area peaks at a different time.

Table 3.4-1 and Table 3.4-2 shows how much of the Local Capacity Area load is dependent on local resources and how many local resources must be available in order to serve the load in those Local Capacity Areas in a manner consistent with the Reliability Criteria. These tables also indicate where new transmission projects, new resource additions or demand side management programs would be most useful in order to reduce the dependency on existing, generally older and less efficient local area resources.

The term "Qualifying Capacity" used in this report is the "Net Qualifying Capacity" ("NQC") posted on the CAISO web site at:

http://www.caiso.com/planning/Pages/ReliabilityRequirements/Default.aspx

The NQC list includes the area (if applicable) where each resource is located for units already operational. Neither the NQC list nor this report incorporates Demand Side Management programs and their related NQC. Units scheduled to become operational before June 1 of 2030 have been included in this 2030 Long-Term LCR Report and added to the total NQC values for those respective areas (see detail write-up for each area).

Regarding the main tables up front (page 2), the first column, "August Qualifying Capacity," reflects three sets of resources. The first set is comprised of resources that would normally be expected to be on-line such as Municipal and Regulatory Must-take resources (state, federal, municipal and QFs). The second set is "market" based resources (market, net seller, wind and battery). The third set are solar resources, since they may or may not be available during the actual peak hour for the respective local area. The second column, "Capacity at Peak" identifies how much of the August Qualifying Capacity is expected to be available during the peak time for each particular local area. The third column, "YEAR LCR Need", sets forth the local capacity requirements, without the deficiencies that must be addressed, necessary to attain a service reliability level required to comply with NERC/WECC/CAISO mandatory reliability standards.

Table 3.1-3 includes estimated characteristics (MW, MWh, discharge duration) required from battery storage technology in order to seamlessly integrate in each local area and sub-area. The CAISO expects that for batteries that displace other local resource adequacy resources, the transmission capability under the most limiting contingency and the other local capacity resources must be sufficient to recharge the batteries in anticipation of the outage continuing through the night and into the next day's peak load period.

Table 3.1-3 2030 Battery Storage Characteristics Limited by Charging Capability

| Area/Sub-area | Pmax MW | Energy MWh | Max. # of discharge hours | Max. MW of 4 hour battery (1 for 1 MW replacement) | Replacing mostly | Comment |
|---|---|---|---|---|---|---|
| Humboldt | 43 | 131 | 5 | 32 | gas | |
| North Coast/North Bay Overall | 285 | 1913 | 11 | 55 | geothermal | |
| Eagle Rock | 29 | 200 | 9 | 15 | geothermal | |
| Fulton | - | - | - | - | - | Need eliminated |
| Sierra | - | - | - | - | - | Flow through |

| Area/Sub-area | Pmax MW | Energy MWh | Max. # of discharge hours | Max. MW of 4 hour battery (1 for 1 MW replacement) | Replacing mostly | Comment |
|---|---|---|---|---|---|---|
| Placer | 71 | 586 | 9 | 27 | hydro | |
| Pease | - | - | - | - | - | Need eliminated |
| South of Rio Osos | - | - | - | | - | Flow through |
| Stockton | - | - | - | - | - | Sum of sub-areas |
| Lockeford | - | - | - | - | - | Need eliminated |
| Tesla-Bellota | 400 | 2800 | 8 | 120 | gas | |
| Greater Bay Overall | 2630 | 15804 | 10 | 1500 | gas | |
| Llagas | 32 | 168 | 7 | 13 | gas | |
| San Jose | 448 | 3248 | 11 | 200 | gas | |
| South Bay-Moss Landing | 477 | 2722 | 12 | 375 | gas | |
| Oakland | 36 | 271 | 13 | | distillate | |
| Greater Fresno Overall | 2290 | 2207 | 6 | 600 | hydro | |
| Panoche | 35 | 240 | 13 | 22 | gas | |
| Herndon | 475 | 1832 | 9 | 280 | hydro | |
| Borden | - | - | - | - | - | Need eliminated |
| Hanford | 65 | 231 | 6 | 65 | - | |
| Coalinga | 75 | 275 | 7 | 75 | - | |
| Reedley | 71 | 429 | 9 | 33 | - | |
| Kern Overall | - | - | - | - | - | N/A |
| Westpark | 45 | 227 | 8 | 41 | gas | |
| Kern 70 kV | - | - | - | - | - | Need eliminated |
| Kern Tevis | 45 | 200 | 7 | 35 | none | |
| Kern Oil | 115 | 624 | 10 | 76 | gas | |
| South Kern PP | 430 | 2600 | 12 | 275 | gas | |
| Big Creek/Ventura Overall | 363 | 2752 | 13 | 128 | gas | |
| Vestal | 115 | 1003 | 12 | 15 | hydro | |
| Santa Clara | 148 | 1159 | 11 | 18 | gas | |
| LA Basin Overall | 3550 | 27244 | 11 | 1070 | gas | |
| Eastern | 1610 | 12142 | 11 | 475 | gas | |
| Western | 1510 | 12348 | 11 | 420 | gas | |
| El Nido | 231 | 1587 | 11 | 91 | gas | |
| San Diego/Imperial Valley Overall | 1187 | 6994 | 10 | 680 | gas | |
| San Diego | 1187 | 6973 | 10 | 680 | gas | |
| Border | 31 | 185 | 8 | 16 | gas | |

## 3.6 Summary of Results by Local Area

Each Local Capacity Area's overall requirement is determined by also achieving each sub-area requirement. Because these areas are a part of the interconnected electric system, the total for each Local Capacity Area is not simply a summation of the sub-area needs. For example, some sub-areas may overlap and therefore the same units may count for meeting the needs in both sub-areas.

### 3.6.1 Humboldt Area

#### 3.6.1.1 *Area Definition:*

The transmission tie lines into the area include:

Bridgeville-Cottonwood 115 kV line #1

Humboldt-Trinity 115 kV line #1

Laytonville-Garberville 60 kV line #1

Trinity-Maple Creek 60 kV line #1

The substations that delineate the Humboldt Area are:

Bridgeville is in, Low Gap, Wildwood and Cottonwood are out

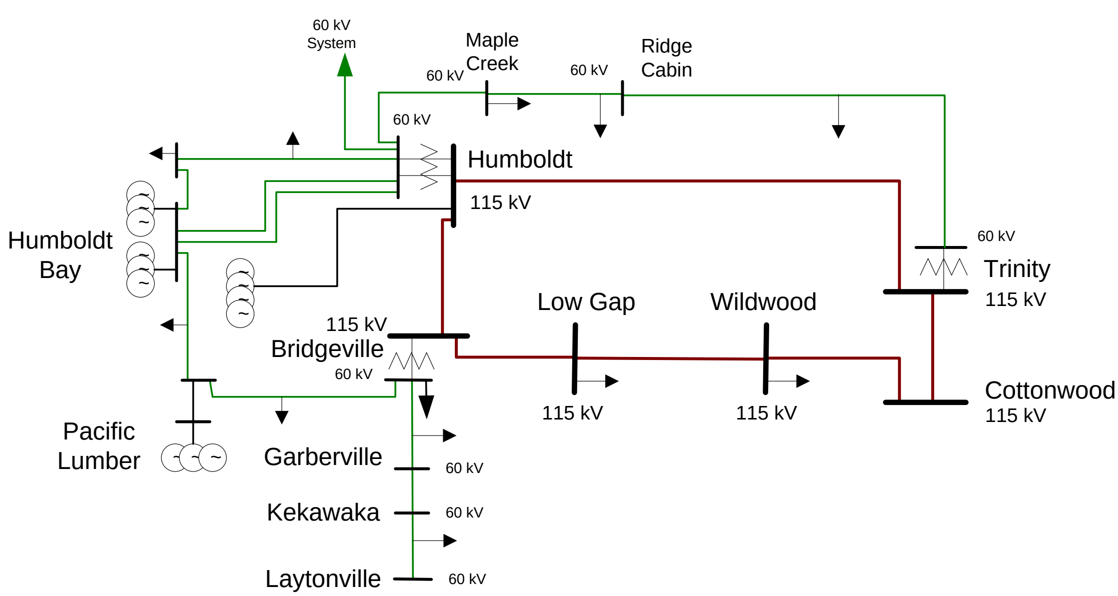
Humboldt is in, Trinity is out

Kekawaka and Garberville are in, Laytonville is out

Maple Creek is in, Trinity and Ridge Cabin are out

##### 3.6.1.1.1 Humboldt LCR Area Diagram

Figure 3.6-1 Humboldt LCR Area



#### 3.6.1.1.2 Humboldt LCR Area Load and Resources

Table 3.6-1 provides the forecasted load and resources. The list of generators within the LCR area are provided in Attachment A.

In year 2030 the estimated time of local area peak is 19:00 PM.

This area does not contain models of solar resources capable of providing resource adequacy.

If required, all non-solar technology type resources are dispatched at NQC.

Table 3.6-1 Humboldt LCR Area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 160 | Market | 191 | 191 |
| AAEE | -2 | MUNI | 0 | 0 |
| Behind the meter DG | 0 | QF | 0 | 0 |
| Net Load | 158 | LTPP Preferred Resources | 0 | 0 |
| Transmission Losses | 9 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 167 | Total | 191 | 191 |

#### 3.6.1.1.3 Humboldt LCR Area Hourly Profiles

Figure 3.6-2 illustrates the forecast 2030 profile for the peak day for the Humboldt LCR area along with the Category P6 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-3 illustrates the forecast 2030 hourly profile for Humboldt LCR area with the Category P6 transmission capability without local capacity resources.

Figure 3.6-2 Humboldt 2030 Peak Day Forecast Profiles

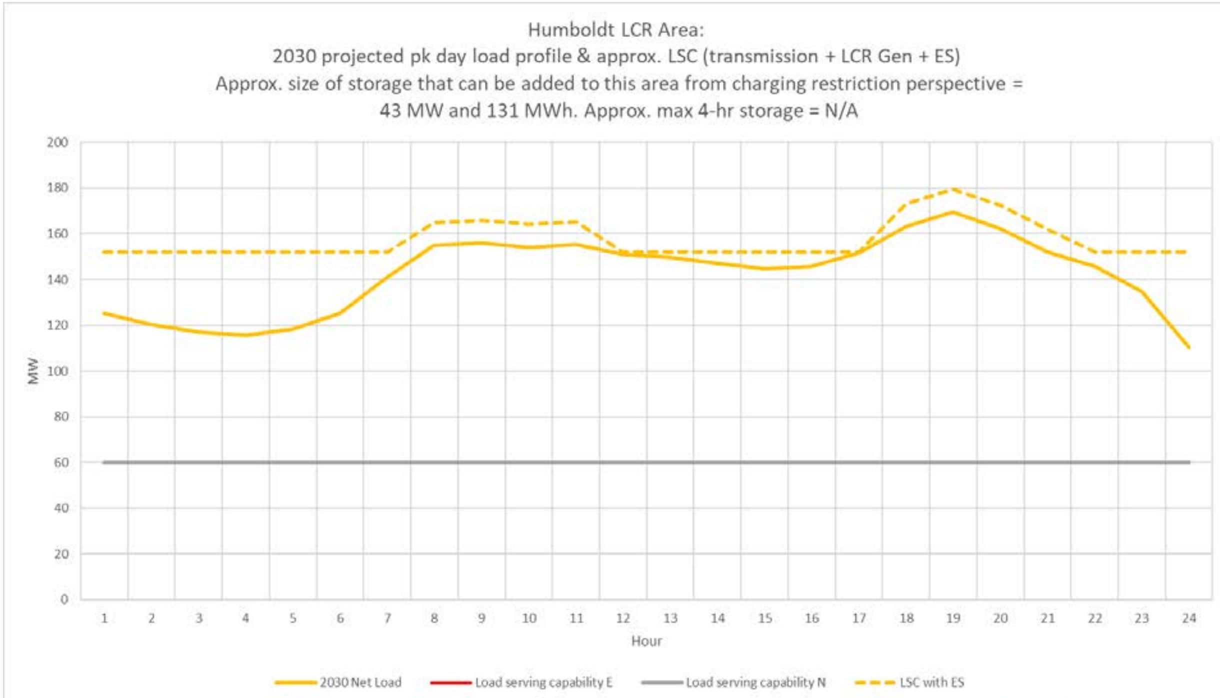
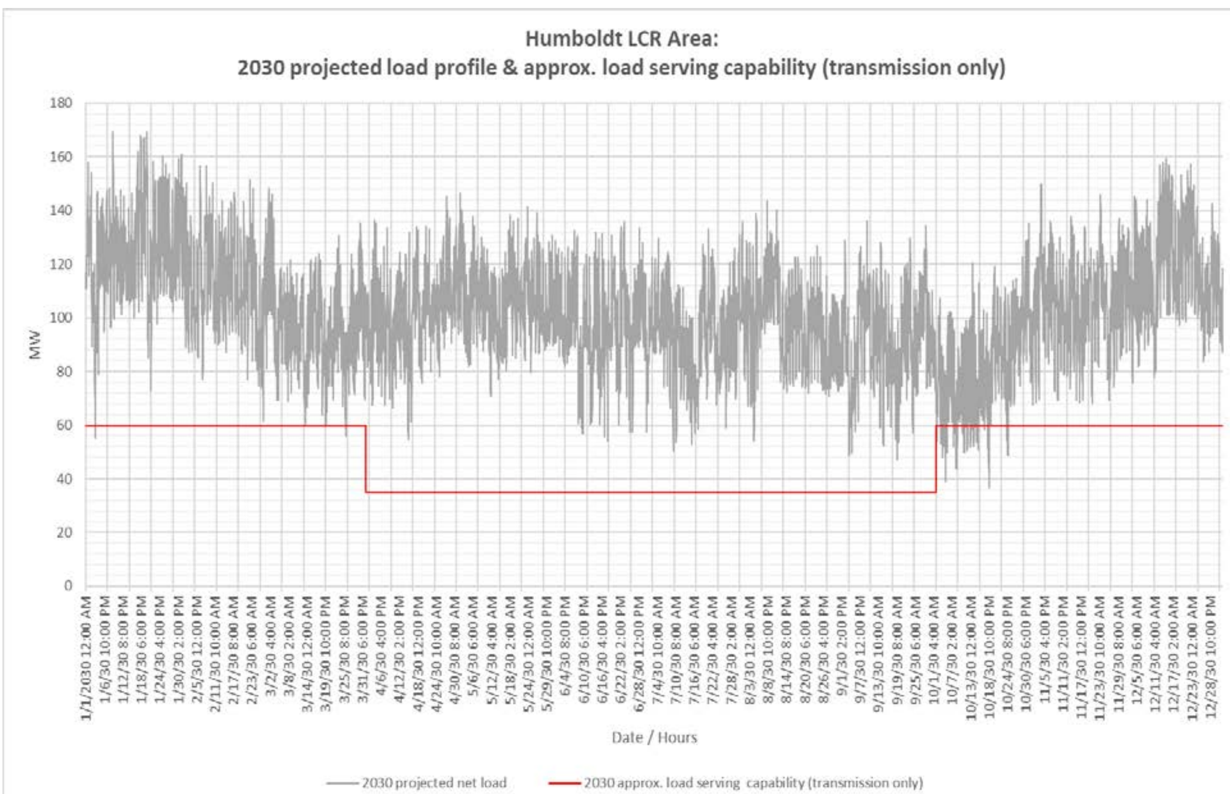



Figure 3.6-3 Humboldt 2030 Forecast Hourly Profile



#### 3.6.1.1.4 Approved transmission projects included in base cases

Maple Creek Reactive Support

Garberville Reactive Support

Bridgeville 115/60 kV #1 transformer replacement

### 3.6.1.2 *Humboldt Overall LCR Requirement*

Table 3.6-2 identifies the area LCR requirements. The LCR requirement for Category P6 contingency is 135 MW.

Table 3.6-2 Humboldt LCR Area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P6 | Humboldt-Trinity 115 kV | Cottonwood-Bridgeville 115 kV & Humboldt - Humboldt Bay 115 kV | 135 |

#### 3.6.1.2.1 Effectiveness factors:

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7110 sted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.1.2.2 Changes compared to the 2025 LCT study:

Load forecast decreased by 14 MW and the total LCR has increased by 3 MW.

#### 3.6.1.2.3 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Humboldt LCR Area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

## 3.6.2 North Coast / North Bay Area

### 3.6.2.1 *Area Definition:*

The transmission tie facilities coming into the North Coast/North Bay area are:

Cortina-Mendocino 115 kV Line

Cortina-Eagle Rock 115 kV Line

Willits-Garberville 60 kV line #1

Vaca Dixon-Lakeville 230 kV line #1

Tulucay-Vaca Dixon 230 kV line #1

Lakeville-Sobrante 230 kV line #1

Ignacio-Sobrante 230 kV line #1

The substations that delineate the North Coast/North Bay area are:

Cortina is out, Mendocino and Indian Valley are in

Cortina is out, Eagle Rock, Highlands and Homestake are in

Willits and Lytonville are in, Kekawaka and Garberville are out

Vaca Dixon is out, Lakeville is in

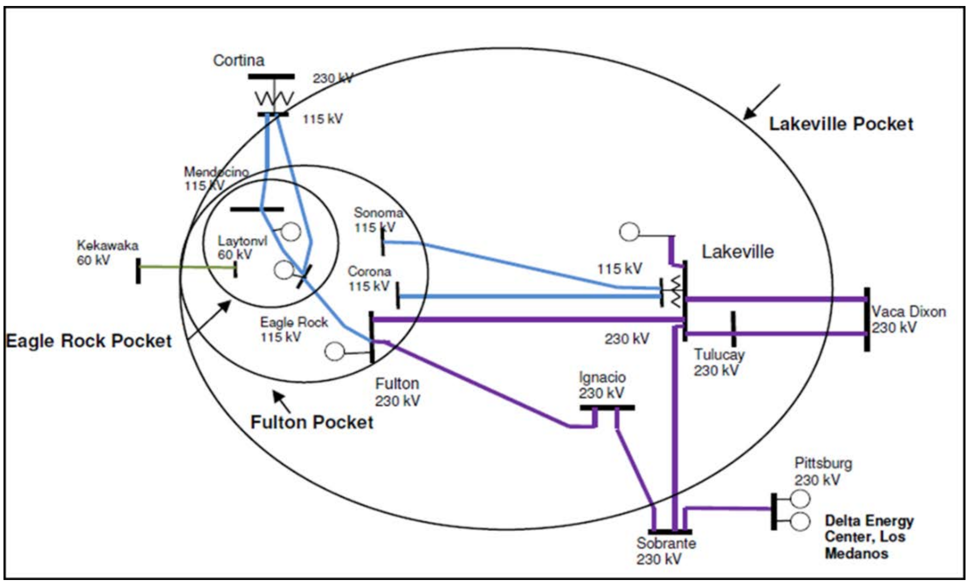
Tulucay is in, Vaca Dixon is out

Lakeville is in, Sobrante is out

Ignacio is in, Sobrante and Crocket are out

#### 3.6.2.1.1 North Coast and North Bay LCR Area Diagram

Figure 3.6-4 North Coast and North Bay LCR Area




#### 3.6.2.1.2 North Coast and North Bay LCR Area Load and Resources

Table 3.6-3 provides the forecasted load and resources. The list of generators within the LCR area are provided in Attachment A.

In year 2030 the estimated time of local area peak is 18:20 PM.

This area does not contain models of solar resources capable of providing resource adequacy.

If required, all non-solar technology type resources are dispatched at NQC.

Table 3.6-3 North Coast and North Bay LCR Area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 1492 | Market, Net Seller | 723 | 723 |
| AAEE | -31 | MUNI | 114 | 114 |
| Behind the meter DG | 0 | QF | 5 | 5 |
| Net Load | 1461 | Solar | 0 | 0 |
| Transmission Losses | 11 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 1472 | Total | 842 | 842 |

#### 3.6.2.1.3 North Coast and North Bay LCR Area Hourly Profiles

Figure 3.6-5 illustrates the forecast 2030 profile for the peak day for the North Coast/North Bay LCR area along with the Category P3 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-6 illustrates the forecast 2030 hourly profile for North Coast North Bay LCR area with the Category P3 emergency load serving capability without local capacity resources.

Figure 3.6-5 North Coast and North Bay 2030 Peak Day Forecast Profiles

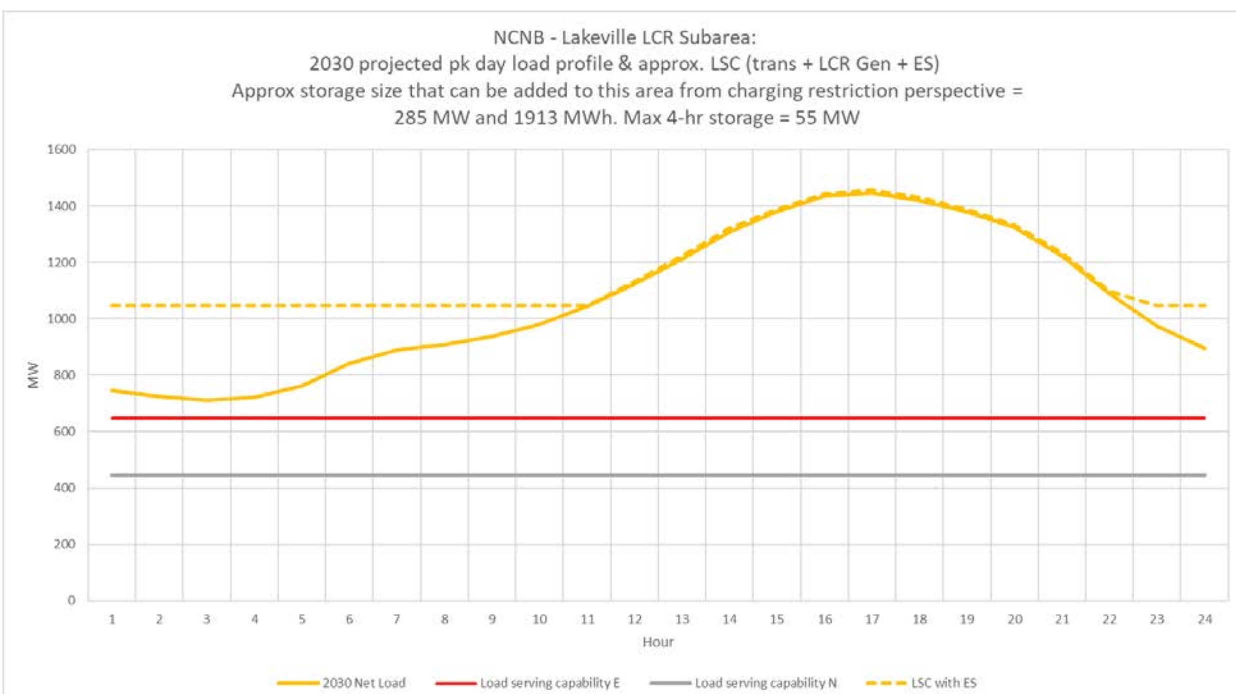
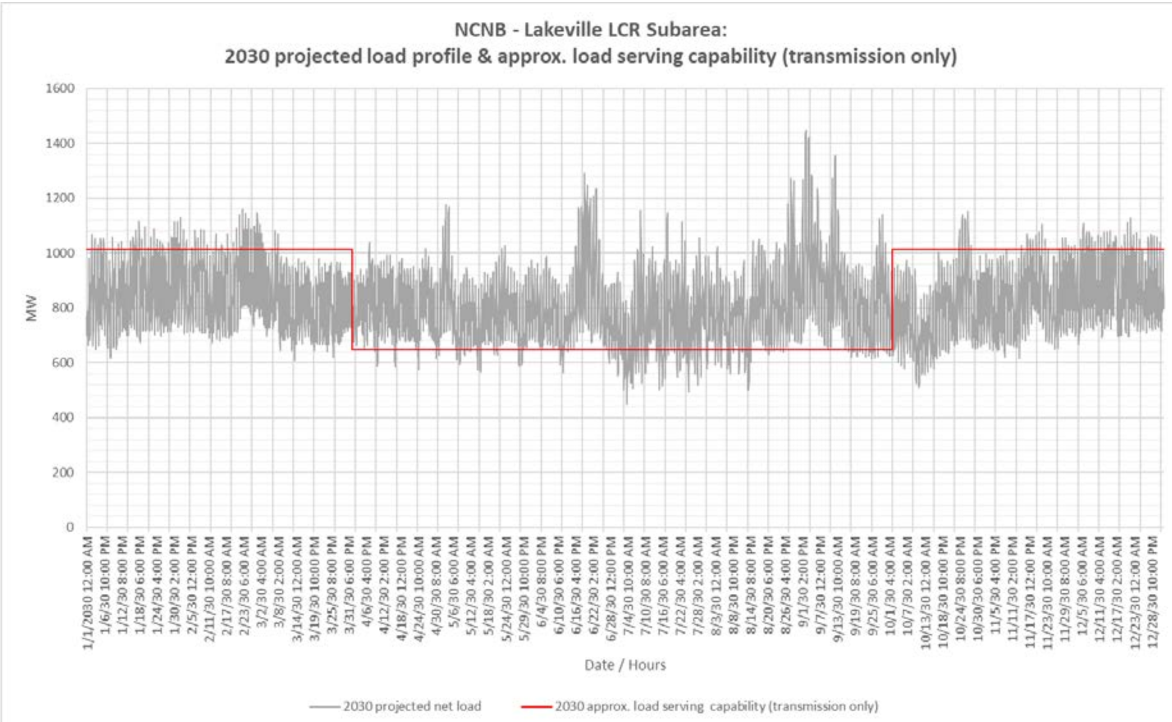


Figure 3.6-6 North Coast and North Bay 2030 Forecast Hourly Profile




#### 3.6.2.1.4 Approved transmission projects modeled in base cases

Vaca Dixon-Lakeville 230 kV Corridor Series Compensation

Fulton-Fitch Mountain 60 kV Line Reconductor

Clear Lake 60 kV System Reinforcement

Ignacio-Alta 60 kV Line Conversion

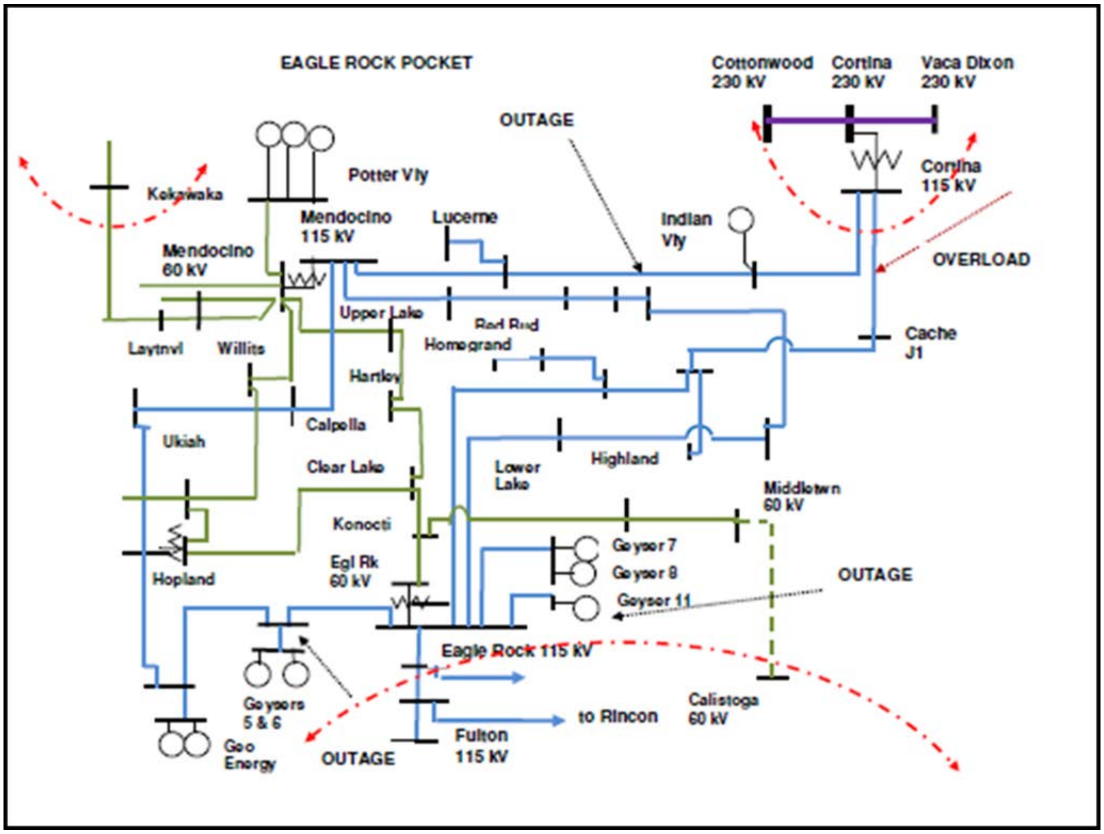
Lakeville 60 kV Area Reinforcement

### 3.6.2.2 *Eagle Rock LCR Sub-area*

Eagle Rock is a Sub-area of the North Coast and North Bay LCR Area.

#### 3.6.2.2.1 Eagle Rock LCR Sub-area Diagram

Figure 3.6-7 Eagle Rock LCR Sub-area




### 3.6.2.2.2 Eagle Rock LCR sub-area Load and Resources

Table 3.6-4 provides the forecasted load and resources. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-4 Eagle Rock LCR Area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 231 | Market, Net Seller | 248 | 248 |
| AAEE | -6 | MUNI | 2 | 2 |
| Behind the meter DG | 0 | QF | 0 | 0 |
| Net Load | 225 | Solar | 0 | 0 |
| Transmission Losses | 15 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 240 | Total | 250 | 250 |

#### 3.6.2.2.3 Eagle Rock LCR Sub-area Hourly Profiles

Figure 3.6-8 illustrates the forecast 2030 profile for the peak day for the Eagle Rock LCR Sub-area with the Category P3 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-9 illustrates the forecast 2030 hourly profile for Eagle RockLCR sub-area with the Category P3 emergency load serving capability without local capacity resources.

Figure 3.6-8 Eagle Rock LCR Sub-area 2030 Peak Day Forecast Profiles

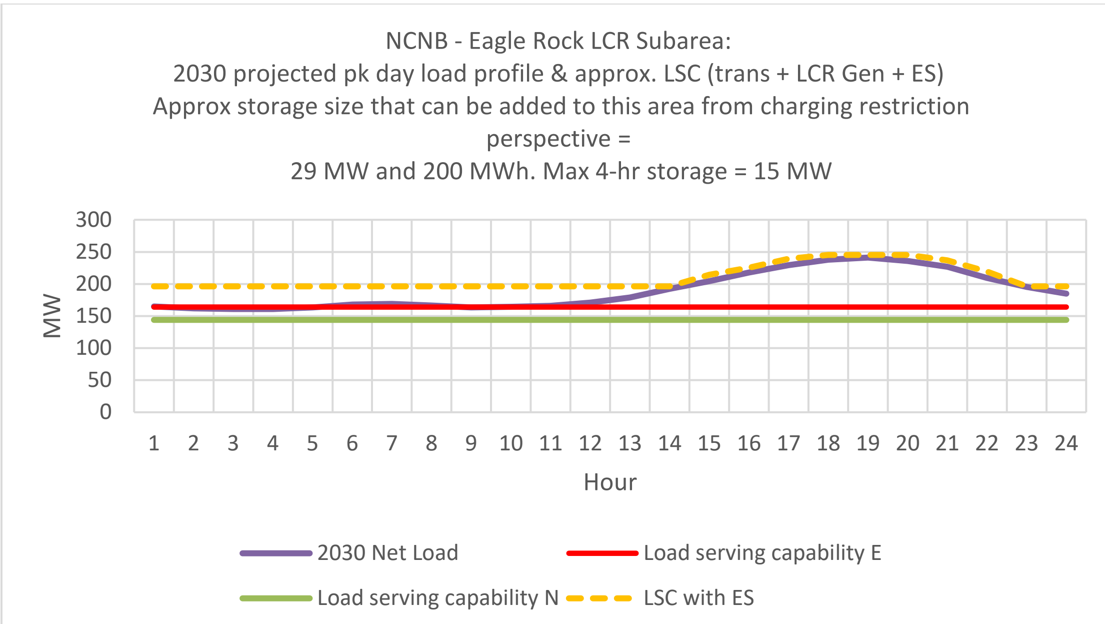
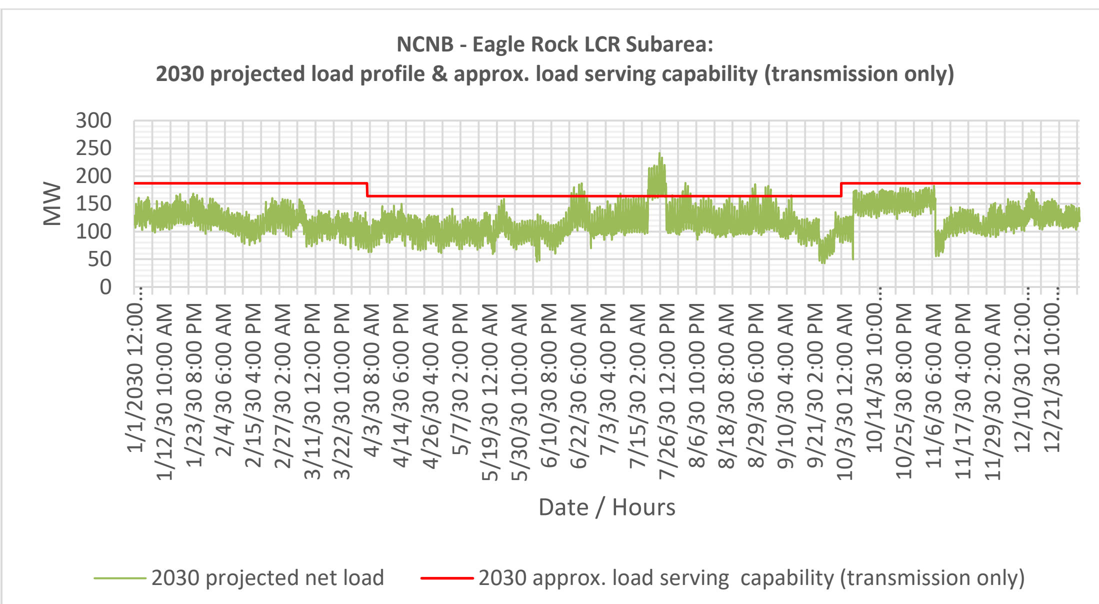



Figure 3.6-9 Eagle Rock LCR Sub-area 2030 Forecast Hourly Profiles



#### 3.6.2.2.4 Eagle Rock LCR Sub-area Requirement

Table 3.6-5 identifies the sub-area LCR requirements. The LCR requirement for Category P6 contingency is 125 MW.

Table 3.6-5 Eagle Rock LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P3 | Eagle Rock-Cortina 115 kV line | Cortina-Mendocino 115 kV with Geyser #11 unit out | 122 |
| 2030 | First Limit | P6 | Eagle Rock-Cortina 115 kV line | Cortina-Mendocino and Geysers #3-Geysers #5 115 kV lines out | 125 |

#### 3.6.2.2.5 Effectiveness factors:

Effectiveness factors for generators in the Eagle Rock LCR Sub-area are in Attachment B table titled Eagle Rock.

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7120 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.2.2.6 Alternatives to Reduce or Eliminate Gas Generation

This sub-area has no gas generation therefor no studies are required.

### 3.6.2.3 *Fulton Sub-area*

Fulton is a Sub-area of the North Coast and North Bay LCR Area. The 2030 LCT study identified that the Fulton Sub-area will no longer be required due to Lakeville #2 60 kV line (Lakeville-Petaluma-Cotati 60 kV) being permanently open.

### 3.6.2.4 *North Coast and North Bay Overall*

#### 3.6.2.4.1 North Coast and North Bay Overall Requirement

Table 3.6-6 identifies the sub-area LCR requirements. The LCR requirement for Category P3 contingency are 1068 MW including a 226 MW deficiency.

Table 3.6-6 North Coast and North Bay LCR area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P3 | Vaca Dixon-Tulucay 230 kV | Vaca Dixon-Lakeville 230 kV with DEC power plant out of service | 1068 (226) |

#### 3.6.2.4.2 Effectiveness factors:

Effectiveness factors for generators in the North Coast and North Bay LCR area are in Attachment B table titled Lakeville.

#### 3.6.2.4.3 Changes compared to the 2025 LCT study:

Overall the load forecast went down by 9 MW compared to 2025. The overall LCR requirement went up by 231 MW as a result of a change in limiting contingency and equipment.

#### 3.6.2.4.4 Alternatives to Reduce or Eliminate Gas Generation

This sub-area has no gas generation therefor no studies are required.

## 3.6.3 Sierra Area

### 3.6.3.1 *Area Definition:*

The transmission tie lines into the Sierra Area are:

Table Mountain-Rio Oso 230 kV line

Table Mountain-Palermo 230 kV line

Table Mt-Pease 60 kV line

Caribou-Palermo 115 kV line

Drum-Summit 115 kV line #1

Drum-Summit 115 kV line #2

Spaulding-Summit 60 kV line

Brighton-Bellota 230 kV line

Rio Oso-Lockeford 230 kV line

Gold Hill-Eight Mile Road 230 kV line

Lodi-Eight Mile Road 230 kV line

Gold Hill-Lake 230 kV line

The substations that delineate the Sierra Area are:

Table Mountain is out Rio Oso is in

Table Mountain is out Palermo is in

Table Mt is out Pease is in

Caribou is out Palermo is in

Drum is in Summit is out

Drum is in Summit is out

Spaulding is in Summit is out

Brighton is in Bellota is out

Rio Oso is in Lockeford is out

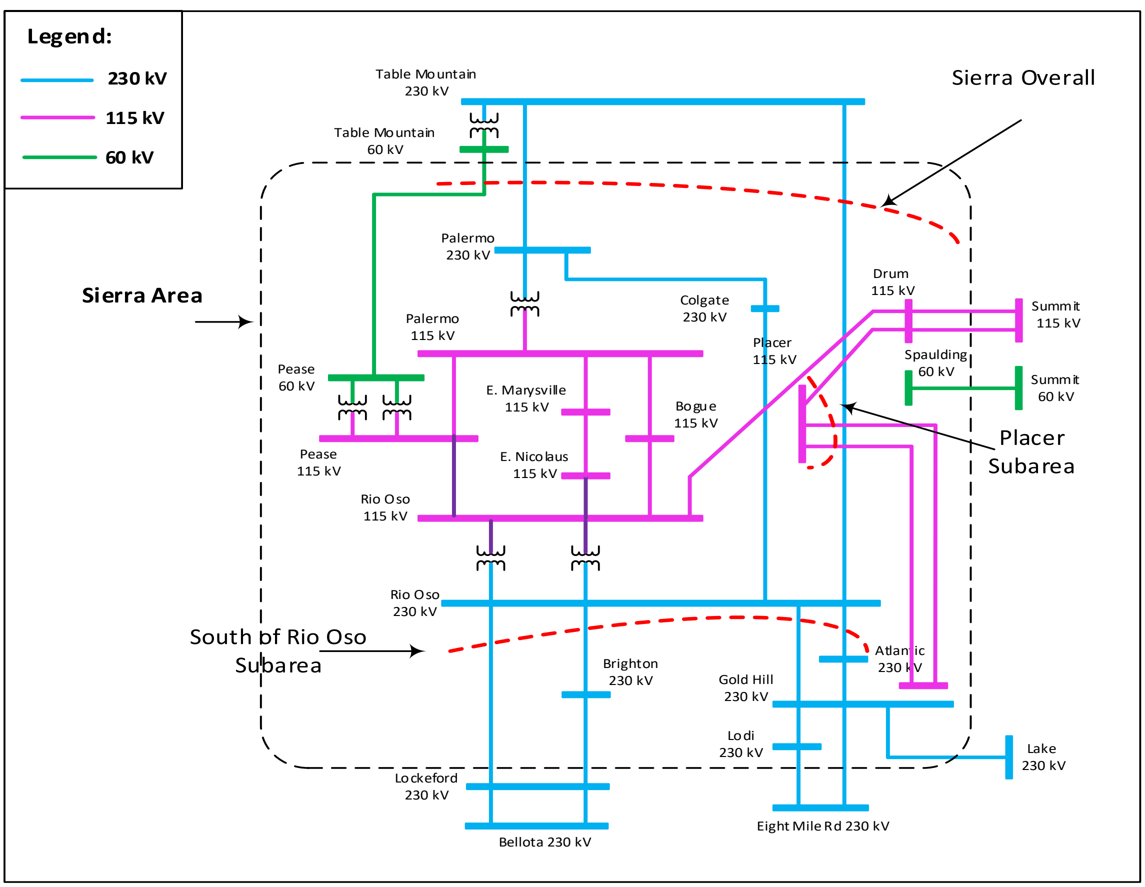
Gold Hill is in Eight Mile is out

Lodi is in Eight Mile is out

Gold Hill is in Lake is out

#### 3.6.3.1.1 Sierra LCR Area Diagram

Figure 3.6-10 Sierra LCR Area



#### 3.6.3.1.2 Sierra LCR Area Load and Resources

Table 3.6-7 provides the forecasted load and resources. The list of generators within the LCR area are provided in Attachment A.

In year 2030 the estimated time of local area peak is 19:30 PM.

At the local area peak time the estimated, ISO metered, solar output is 0.00%.

If required, all non-solar technology type resources are dispatched at NQC.

Table 3.6-7 Sierra LCR Area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 1911 | Market, Net Seller | 920 | 920 |
| AAEE | -42 | MUNI | 1142 | 1142 |
| Behind the meter DG | 0 | QF | 41 | 41 |
| Net Load | 1869 | Solar | 5 | 0 |
| Transmission Losses | 87 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 1957 | Total | 2108 | 2103 |

#### 3.6.3.1.3 Approved transmission projects modeled:

Rio Oso #1 and #2 230/115 kV transformer replacement

South of Palermo 115 kV Reinforcement

Vaca-Davis Area Reinforcement

Rio Oso Area 230 kV Voltage Support

East Marysville 115/60 kV

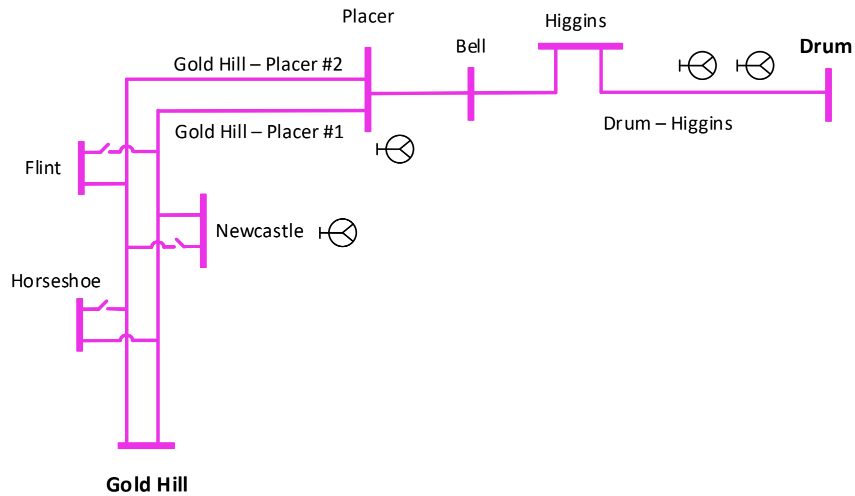
Gold Hill 230/115 kV Transformer Addition

### 3.6.3.2 *Placer Sub-area*

Placer is a sub-area of the Sierra LCR area.

#### 3.6.3.2.1 Placer LCR Sub-area Diagram

Figure 3.6-11 Placer LCR Sub-area




#### 3.6.3.2.2 Placer LCR Sub-area Load and Resources

Table 3.6-8 provides the forecasted load and resources. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-8 Placer LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 174 | Market, Net Seller | 54 | 54 |
| AAEE | -4 | MUNI | 42 | 42 |
| Behind the meter DG | 0 | QF | 0 | 0 |
| Net Load | 170 | Solar | 0 | 0 |
| Transmission Losses | 12 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 182 | Total | 96 | 96 |

#### 3.6.3.2.3 Placer LCR Sub-area Hourly Profiles

Figure 3.6-12 illustrates the forecast 2030 profile for the peak day for the Placer LCR sub-area with the Category P6 normal and emergency capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-13 illustrates the forecast 2030 hourly profile for Placer LCR sub-area with the Category P6 emergency load serving capability without local capacity resources.

Figure 3.6-12 Placer LCR Sub-area 2030 Peak Day Forecast Profiles

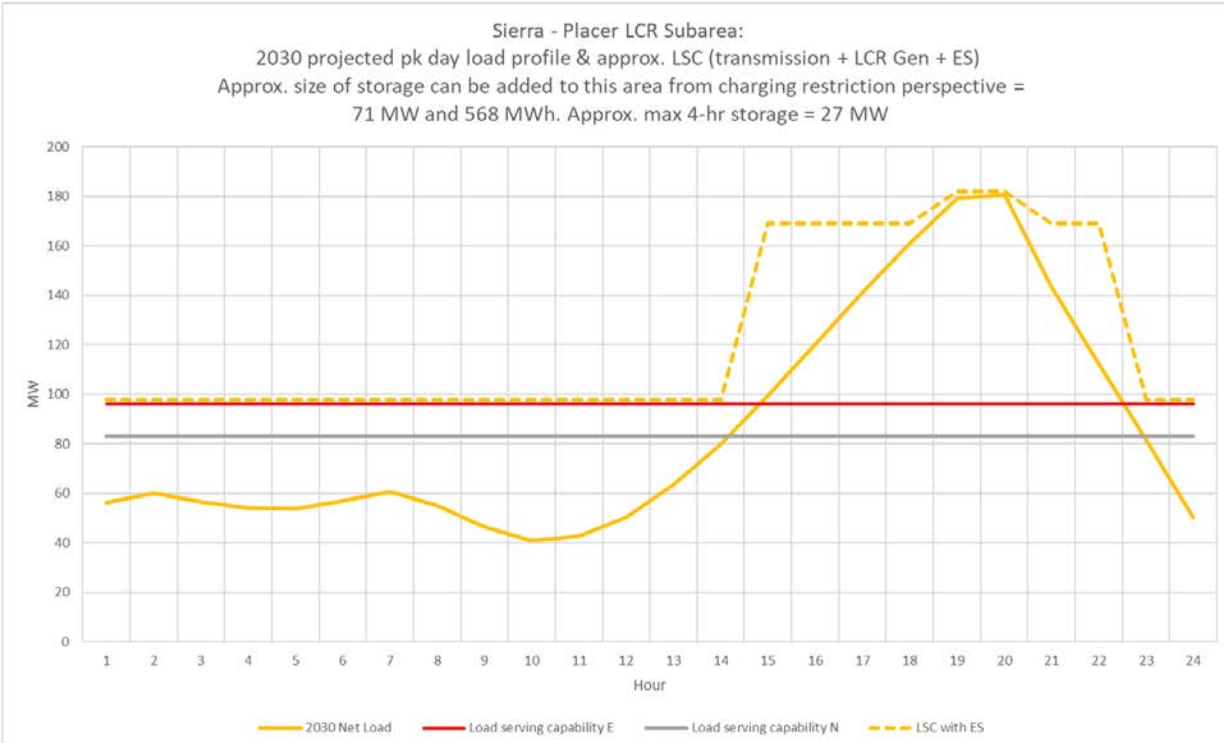
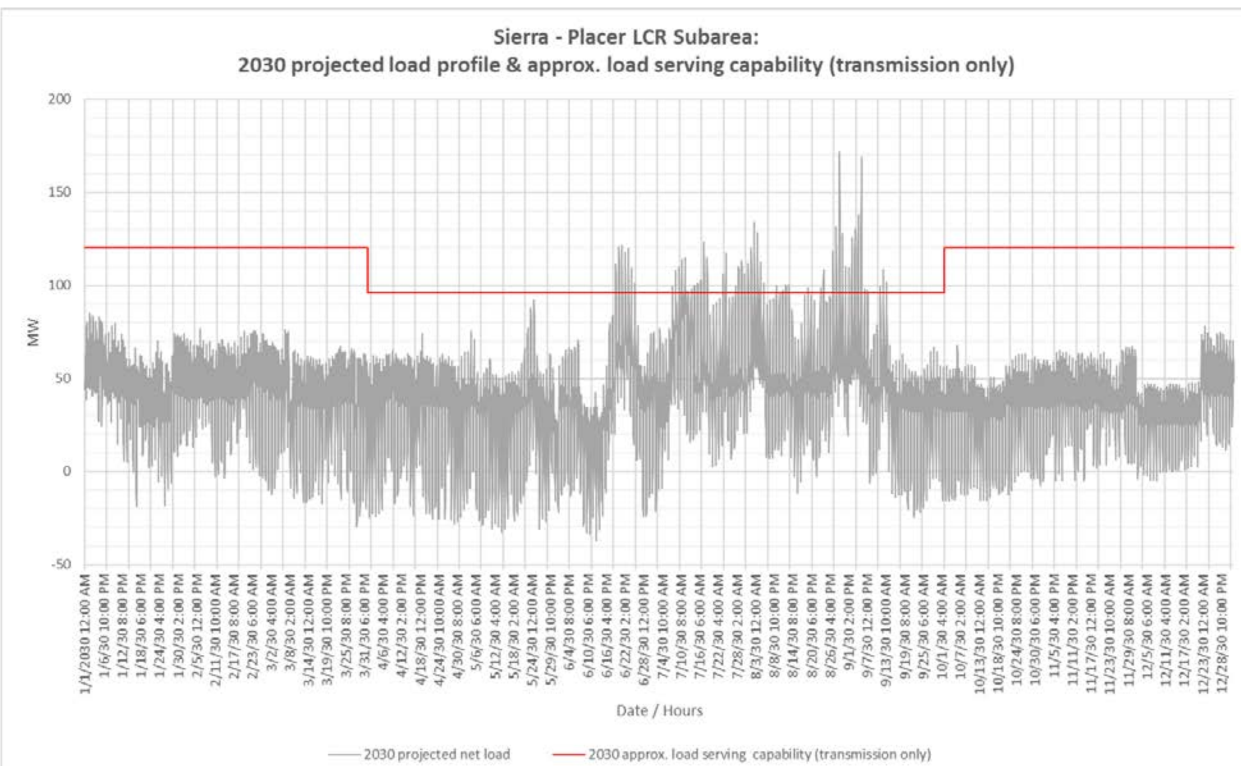



Figure 3.6-13 Placer LCR Sub-area 2030 Forecast Hourly Profiles



#### 3.6.3.2.4 Placer LCR Sub-area Requirement

Table 3.6-9 identifies the sub-area LCR requirements. The LCR requirement for Category P6 contingency is 106 MW, including 10 MW of deficiency.

Table 3.6-9 Placer LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P6, P7 | Low voltage at Placer, Bell, and Higgins 115 kV busses | Gold Hill-Placer #1 115 kV & Gold Hill-Placer #2 115 kV | 106 (10) |

#### 3.6.3.2.5 Effectiveness factors

All units within the Placer Sub-area have the same effectiveness factor.

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7240 posted at: http://www.caiso.com/Documents/2210Z.pdf

### 3.6.3.3 *Pease Sub-area*

Pease is a sub-area of the Sierra LCR area.

Pease sub-area will be eliminated due to the East Marysville 115/60 kV transmission project

### 3.6.3.4 *Drum-Rio Oso Sub-area*

Drum-Rio Oso is a sub-area of the Sierra LCR area.

Drum-Rio Oso sub-area will be eliminated due to the Rio Oso 230/115 kV transformer upgrade transmission project.

### 3.6.3.5 *Gold Hill-Drum Sub-area*

Gold Hill-Drum is a sub-area of the Sierra LCR area.

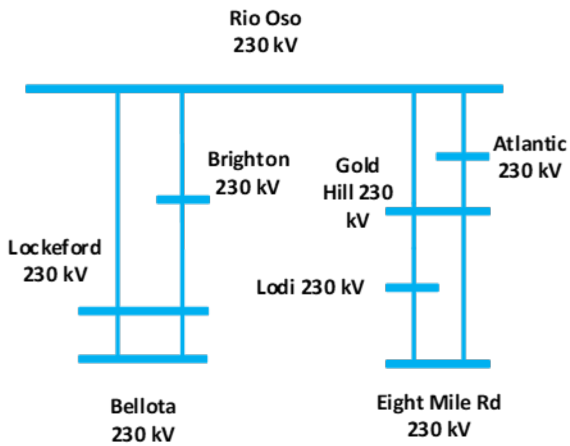
Golh Hill-Drum sub-area will be eliminated due to the Gold Hill 230/115 kV Transformer Addition transmission project.

### 3.6.3.6 *South of Rio Oso Sub-area*

South of Rio Oso is a sub-area of the Sierra LCR area.

#### 3.6.3.6.1 South of Rio Oso LCR Sub-area Diagram

Figure 3.6-14 Pease LCR Sub-area




### 3.6.3.6.2 South of Rio Oso LCR Sub-area Load and Resources

The South of Rio Oso sub-area does not have a defined load pocket with the limits based upon power flow through the area. Table 3.6-10 provides the forecasted resources in the sub-area. The list of generators within the LCR area are provided in Attachment A.

Table 3.6-10 South of Rio Oso LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|
| The South of Rio Oso Sub-area does not has a defined load pocket with the limits based upon power flow through the area. | Market | 122 | 122 |
| | MUNI | 621 | 621 |
| | QF | 0 | 0 |
| | LTPP Preferred Resources | 0 | 0 |
| | Existing 20-minute Demand Response | 0 | 0 |
| | Mothballed | 0 | 0 |
| | Total | 743 | 743 |

### 3.6.3.6.3 South of Rio Oso LCR Sub-area Hourly Profiles

The South of Rio Oso Sub-area does not have a defined load pocket with the limits based upon power flow through the area. As such, no load profile is provided for this sub-area.

### 3.6.3.6.4 South of Rio Oso LCR Sub-area Requirement

Table 3.6-11 identifies the sub-area LCR requirements. The LCR requirements for Category P6 contingency is 227 MW.

Table 3.6-11 South of Rio Oso LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First limit | P6 | Rio Oso – Atlantic 230 kV | Rio Oso – Gold Hill 230 kV<br>Rio Oso – Brighton 230 kV | 227 |

#### 3.6.3.6.5 Effectiveness factors:

Effectiveness factors for generators in the South of Rio Oso LCR Sub-area are in Attachment B table titled Rio Oso.

For other helpful procurement information please read procedure 2210Z Effectiveness Factors under 7230 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.3.6.6 Alternatives to Reduce or Eliminate Gas Generation

The 2028 LCT study identified for the South of Rio Oso Sub-area that the LCR requirement can be met by the non-gas generation in the area. Therefore no alternatives were required to be assessed in the 2020-2021 transmission planning process.

### 3.6.3.7 *South of Palermo Sub-area*

South of Palermo is a sub-area of the Sierra LCR area.

South of Palermo sub-area will be eliminated due to the South of Palermo transmission project.

### 3.6.3.8 *Sierra Area Overall*

#### 3.6.3.8.1 Sierra LCR Area Hourly Profiles

The Sierra LCR Area limits are based upon power flow through the area. As such, no load profile is provided for the area.

#### 3.6.3.8.2 Sierra LCR Area Requirement

Table 3.6-12 identifies the area requirements. The LCR requirement for Category P6 contingency is 1518 MW.

Table 3.6-12 Sierra Area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First limit | P6 | Table Mountain – Pease 60 kV | Table Mountain – Palermo 230 kV<br>Table Mountain – Rio Oso 230 kV | 1518 |

#### 3.6.3.8.3 Effectiveness factors:

Effectiveness factors for generators in the Sierra overall area are in Attachment B table titled Sierra Overall.

For other helpful procurement information please read procedure 2210Z Effectiveness Factors under 7230 and 7240 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.3.8.4 Changes compared to the 2025 LCT study:

The load forecast went up by 39 MW. The total LCR need has increased by 119 MW and the total existing capacity required has increased by 151 MW mostly due to increase in load forecast.

#### 3.6.3.8.5 Alternatives to Reduce or Eliminate Gas Generation

The 2028 LCT study identified for the Sierra overall area that the LCR requirement can be met by the non-gas generation in the area. With this no alternatives were required to be assessed in the 2020-2021 transmission planning process.

## 3.6.4 Stockton Area

The LCR requirement for the Stockton Area is driven by the sum of the requirements for the Tesla-Bellota and Weber sub-areas.

### 3.6.4.1 *Area Definition:*

*Tesla-Bellota Sub-Area Definition*

The transmission facilities that establish the boundary of the Tesla-Bellota sub-area are:

Bellota 230/115 kV Transformer #1

Bellota 230/115 kV Transformer #2

Tesla-Tracy 115 kV Line

Tesla-Salado 115 kV Line

Tesla-Salado-Manteca 115 kV line

Tesla-Schulte #1 115 kV Line

Tesla-Schulte #2 115kV line

Tesla-Vierra 115 kV Line

The substations that delineate the Tesla-Bellota Sub-area are:

Bellota 230 kV is out Bellota 115 kV is in

Bellota 230 kV is out Bellota 115 kV is in

Tesla is out Tracy is in

Tesla is out Salado is in

Tesla is out Salado and Manteca are in

Tesla is out Schulte is in

Tesla is out Schulte is in

Tesla is out Thermal Energy is in

*Weber Sub-Area Definition*

The transmission facilities that establish the boundary of the Weber Sub-area are:

Weber 230/60 kV Transformer #1

Weber 230/60 kV Transformer #2

The substations that delineate the Weber Sub-area are:

Weber 230 kV is out Weber 60 kV is in

Weber 230 kV is out Weber 60 kV is in

#### 3.6.4.1.1 Stockton LCR Area Diagram

The Stockton LCR Area is comprised of the individual noncontiguous Sub-areas with diagrams provided for each of the Sub-areas below.

#### 3.6.4.1.2 Stockton LCR Area Load and Resources

Table 3.6-13 provides the forecast load and resources in the area. The list of generators within the LCR area are provided in Attachment A.

In year 2030 the estimated time of local area peak is 19:30 PM.

At the local area peak time the estimated, ISO metered, solar output is 0.00%.

If required, all non-solar technology type resources are dispatched at NQC.

Table 3.6-13 Stockton LCR Area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 964 | Market, Net Seller | 491 | 491 |
| AAEE | -20 | MUNI | 116 | 116 |
| Behind the meter DG | 0 | QF | 0 | 0 |
| Net Load | 944 | Solar | 12 | 0 |
| Transmission Losses | 20 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 964 | Total | 619 | 607 |

#### 3.6.4.1.3 Stockton LCR Area Hourly Profiles

The Stockton LCR Area is comprised of the individual noncontiguous sub-areas with profiles provided for each of the sub-areas below.

#### 3.6.4.1.4 Approved transmission projects modeled

Vierra 115 kV Looping Project

Lockeford-Lodi Area 230 kV Development

### 3.6.4.2 *Weber Sub-area*

Weber sub-area has been eliminated due to change in LCR criteria.

### 3.6.4.3 *Lockeford Sub-area*

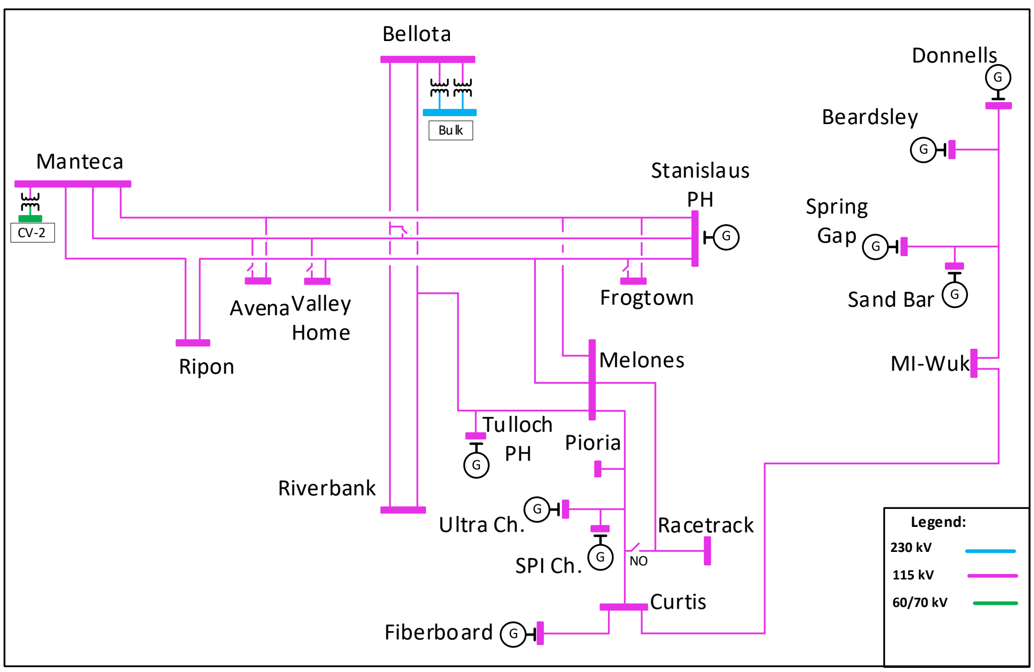
Lockeford sub-area will be eliminated due to the Lockeford-Lodi Area 230 kV Development transmission project.

### 3.6.4.4 *Stanislaus Sub-area*

Stanislaus is a sub-area of the Stockton LCR area.

#### 3.6.4.4.1 Stanislaus LCR Sub-area Diagram

Figure 3.6-15 Stanislaus LCR Sub-area




#### 3.6.4.4.2 Stanislaus LCR Sub-area Load and Resources

The Stanislaus sub-area does not has a defined load pocket with the limits based upon power flow through the area. Table 3.6-14 provides the forecasted resources in the sub-area. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-14 Stanislaus LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|
| The Stanislaus Sub-area does not has a defined load pocket with the limits based upon power flow through the area. | Market, Net Seller | 117 | 117 |
| | MUNI | 94 | 94 |
| | QF | 0 | 0 |
| | Solar | 0 | 0 |
| | Existing 20-minute Demand Response | 0 | 0 |
| | Mothballed | 0 | 0 |
| | Total | 211 | 211 |

#### 3.6.4.4.3 Stanislaus LCR Sub-area Hourly Profiles

The Stanislaus sub-area does not has a defined load pocket with the limits based upon power flow through the area. As such, no load profile is provided for this sub-area.

#### 3.6.4.4.4 Stanislaus LCR Sub-area Requirement

Table 3.6-15 identifies the sub-area requirements. The LCR requirement for Category P3 contingency is 212 MW including 1 MW deficiency.

Table 3.6-15 Stanislaus LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First limit | P3 | Manteca – Ripon 115 kV | Bellota-Riverbank-Melones 115 kV and Stanislaus PH | 212 (1) |

#### 3.6.4.4.5 Effectiveness factors:

All units within the Stanislaus Sub-area have the same effectiveness factor.

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7410 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.4.4.6 Alternatives to Reduce or Eliminate Gas Generation

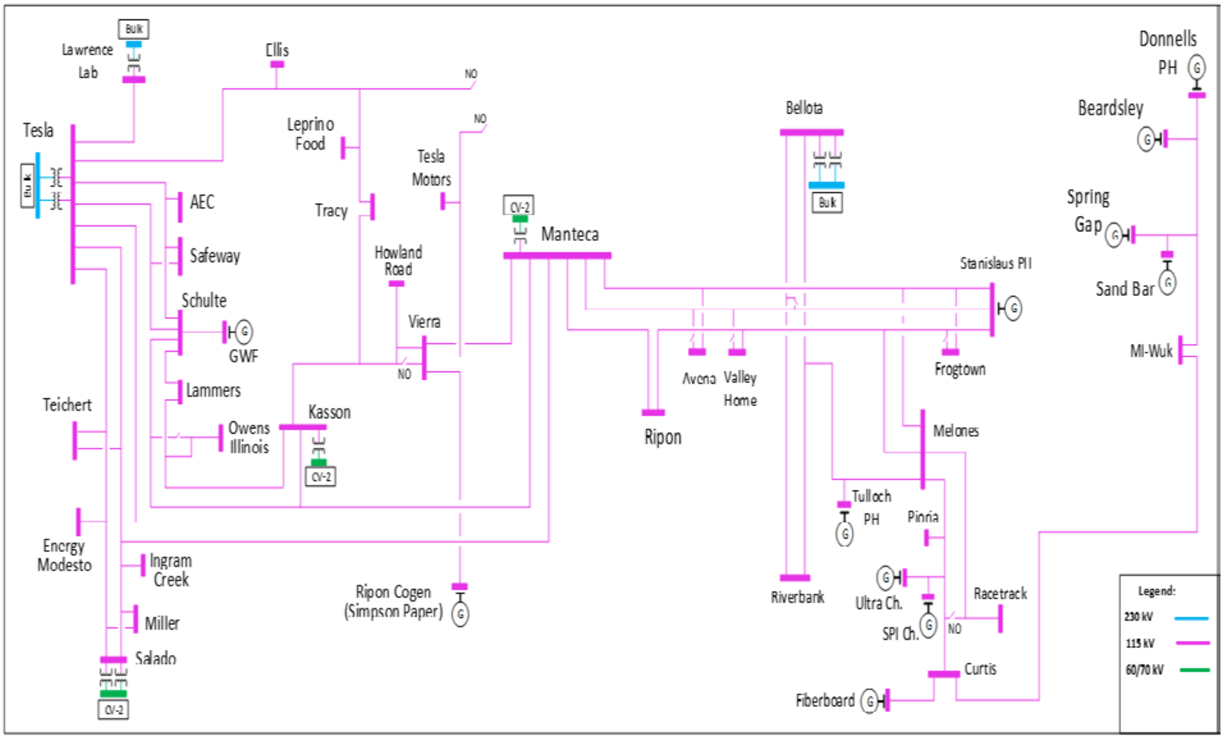
The 2029 LCT study identified for the Stanislaus sub-area that the LCR requirement can be met by the non-gas generation in the area. Therefore no alternatives were required to be assessed in the 2020-2021 transmission planning process.

### 3.6.4.5 *Tesla-Bellota Sub-area*

Tesla-Bellota is a sub-area of the Stockton LCR area.

#### 3.6.4.5.1 Tesla-Bellota LCR Sub-area Diagram

Figure 3.6-16 Tesla-Bellota LCR Sub-area




#### 3.6.4.5.2 Tesla Bellota LCR Sub-area Load and Resources

Table 3.6-16 provides the forecasted load and resources. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-16 Tesla-Bellota LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 964 | Market, Net Seller | 491 | 491 |
| AAEE | -20 | MUNI | 116 | 116 |
| Behind the meter DG | 0 | QF | 0 | 0 |
| Net Load | 944 | LTPP Preferred Resources | 12 | 0 |
| Transmission Losses | 20 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 964 | Total | 619 | 607 |

All of the resources needed to meet the Stanislaus sub-area count towards the Tesla-Bellota sub-area LCR need.

#### 3.6.4.5.3 Tesla-Bellota LCR Sub-area Hourly Profiles

Figure 3.6-17 illustrates the forecast 2030 profile for the peak day for the Tesla-Bellota sub-area with the Category P6 normal and emergency load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-18 illustrates the forecast 2030 hourly profile for Tesla-Bellota sub-area with of the Category P6 emergency load serving capability without local capacity resources.

Figure 3.6-17 Tesla-Bellota LCR Sub-area 2030 Peak Day Forecast Profiles

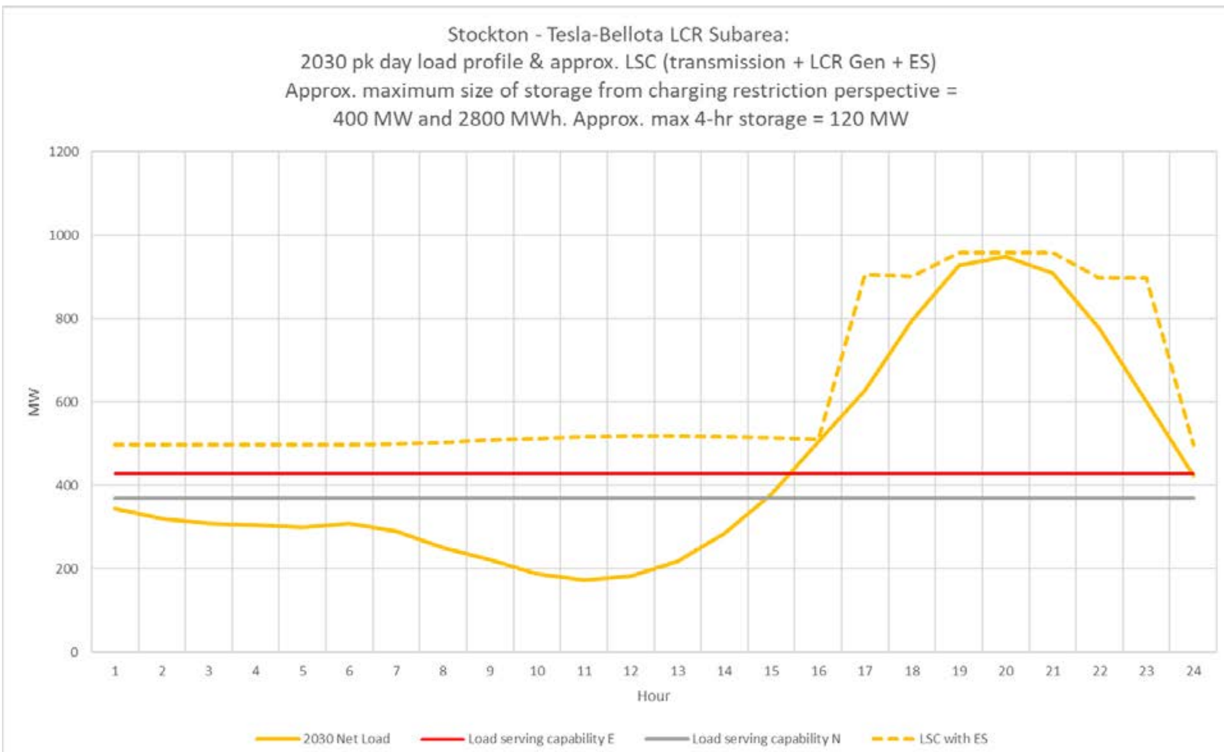
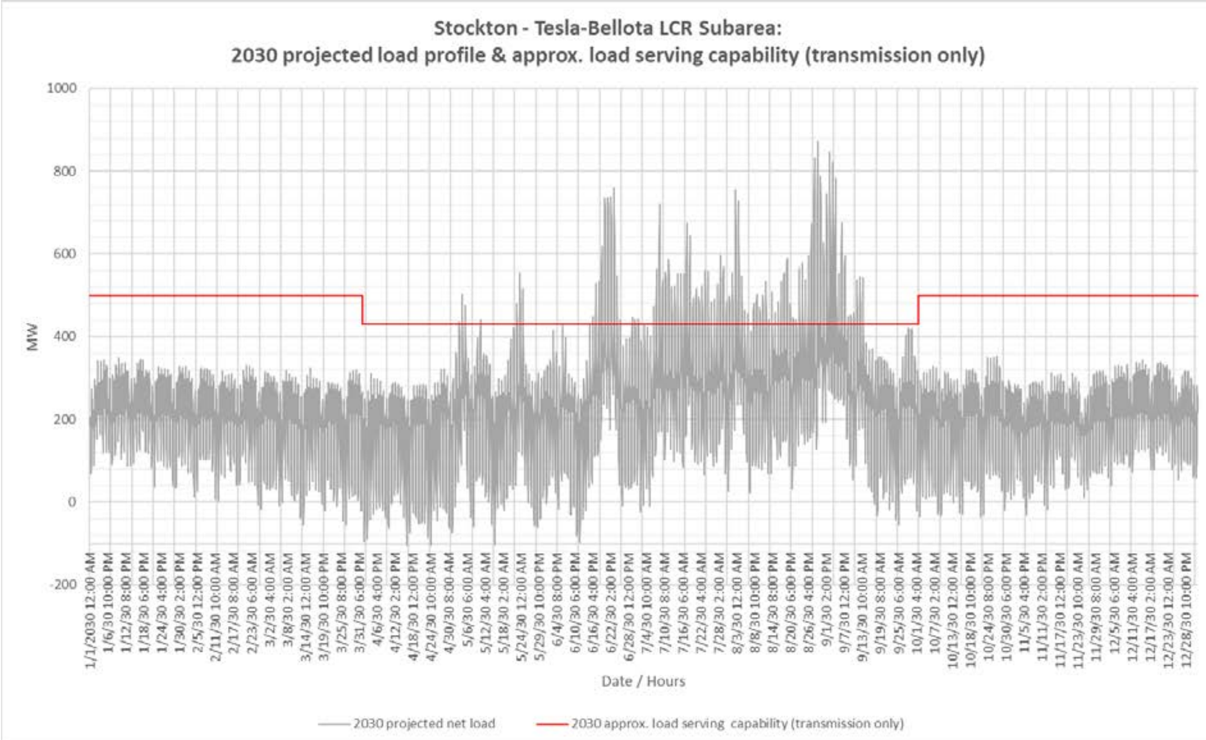


Figure 3.6-18 Tesla-Bellota LCR Sub-area 2030 Forecast Hourly Profile




#### 3.6.4.5.4 Tesla-Bellota LCR Sub-area (Stockton Overall) Requirement

Table 3.6-17 identifies the sub-area LCR requirements. The LCR requirement for Category P2 and P6 contingency is 918 MW including a 299 MW of NQC deficiency or 311 MW of at peak deficiency.

Table 3.6-17 Tesla-Bellota LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First limit | P2-4 | Stanislaus – Melones – Riverbank Jct 115 kV | Tesla 115 kV Bus | 748 (129 NQC/ 141 Peak) |
| 2030 | First limit | P6 | Tesla – Vierra 115 kV | Schulte – Lammers 115 kV & Schulte-Kasson-Manteca 115 kV | 608 (299 NQC/ 311 Peak) |
| Total LCR Need for Tesla – Bellota Sub-area in 2030 | | | | | 918 (299 NQC/ 311 Peak) |

#### 3.6.4.5.5 Effectiveness factors:

All units within the Tesla-Bellota Sub-area have the same effectiveness factor.

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7410 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.4.5.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Tesla-Bellota LCR Sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement. As a part of the 2019-2020 transmission planning process the ISO undertook an assessment of the Tesla-Bellota sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

### 3.6.4.6 *Stockton Overall*

#### 3.6.4.6.1 Stockton LCR Area Overall Requirement

The requirement for this area is driven by the requirement for the Tesla-Bellota sub-area. Table 3.6-18 identifies the area requirements. The LCR requirement for Category P6 contingency is 918 MW with a 299 MW NQC deficiency or 311 MW at peak deficiency.

Table 3.6-18 Stockton LCR Sub-area Overall Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | | P6 | Stockton Overall | | 918 (299 NQC/ 311 Peak) |

#### 3.6.4.6.2 Changes compared to the 2025 LCT study

The load forecast went up by 14 MW and the total LCR need has increased by 177 MW mostly due to load growth.

#### 3.6.4.6.3 Alternatives to Reduce or Eliminate Gas Generation

Stockton overall is just a mathematical addition of sub-area requirements, alternatives for all the sub-areas were assessed above.

## 3.6.5 Greater Bay Area

### 3.6.5.1 *Area Definition:*

The transmission tie lines into the Greater Bay Area are:

Lakeville-Sobrante 230 kV

Ignacio-Sobrante 230 kV

Parkway-Moraga 230 kV

Bahia-Moraga 230 kV

Lambie SW Sta-Vaca Dixon 230 kV

Peabody-Contra Costa P.P. 230 kV

Tesla-Kelso 230 kV

Tesla-Delta Switching Yard 230 kV

Tesla-Pittsburg #1 230 kV

Tesla-Pittsburg #2 230 kV

Tesla-Newark #1 230 kV

Tesla-Newark #2 230 kV

Tesla-Ravenswood 230 kV

Tesla-Metcalf 500 kV

Moss Landing-Metcalf 500 kV

Moss Landing-Metcalf #1 230 kV

Moss Landing-Metcalf #2 230 kV

Oakdale TID-Newark #1 115 kV

Oakdale TID-Newark #2 115 kV

The substations that delineate the Greater Bay Area are:

Lakeville is out Sobrante is in

Ignacio is out Sobrante is in

Parkway is out Moraga is in

Bahia is out Moraga is in

Lambie SW Sta is in Vaca Dixon is out

Peabody is out Contra Costa P.P. is in

Tesla is out Kelso is in

Tesla is out Delta Switching Yard is in

Tesla is out Pittsburg is in

Tesla is out Pittsburg is in

Tesla is out Newark is in

Tesla is out Newark is in

Tesla is out Ravenswood is in

Tesla is out Metcalf is in

Moss Landing is out Metcalf is in

Moss Landing is out Metcalf is in

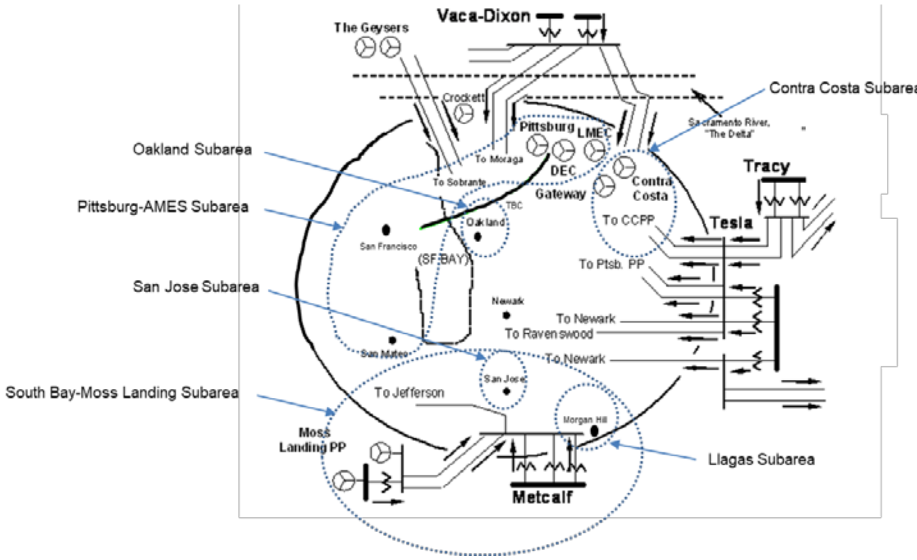
Moss Landing is out Metcalf is in

Oakdale TID is out Newark is in

Oakdale TID is out Newark is in

### 3.6.5.1.1 Greater Bay LCR Area Diagram

Figure 3.6-19 Greater Bay LCR Area




### 3.6.5.1.2 Greater Bay LCR Area Load and Resources

Table 3.6-19 provides the forecasted load and resources. The list of generators within the LCR area are provided in Attachment A.

In year 2030 the estimated time of local area peak is 17:50 PM.

At the local area peak time the estimated, ISO metered, solar output is 44.00%.

If required, all technology type resources, including solar, are dispatched at NQC.

Table 3.6-19 Greater Bay Area LCR Area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 10889 | Market, Net Seller, Battery, Wind | 6138 | 6138 |
| AAEE | -217 | MUNI | 377 | 377 |
| Behind the meter DG | 0 | QF | 227 | 227 |
| Net Load | 10672 | Solar | 8 | 8 |
| Transmission Losses | 259 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 264 | Future preferred resource and energy storage | 594 | 594 |
| Load + Losses + Pumps | 11195 | Total | 7344 | 7344 |

#### 3.6.5.1.3 Approved transmission projects modeled

Oakland Clean Energy Initiative Project (Oakland CTs are assumed retired)

Morgan Hill Area Reinforcement (revised scope)

Metcalf-Piercy & Swift and Newark-Dixon Landing 115 kV Upgrade

East Shore-Oakland J 115 kV Reconductoring Project

Vaca Dixon-Lakeville 230 kV Corridor Series Compensation

Metcalf-Evergreen 115 kV Line Reconductoring

Trimble-San Jose B 115 kV Line Limiting Facility Upgrade

Trimble-San Jose B 115 kV Series Reactor

Moss Landing-Panoche 230 kV Path Upgrade

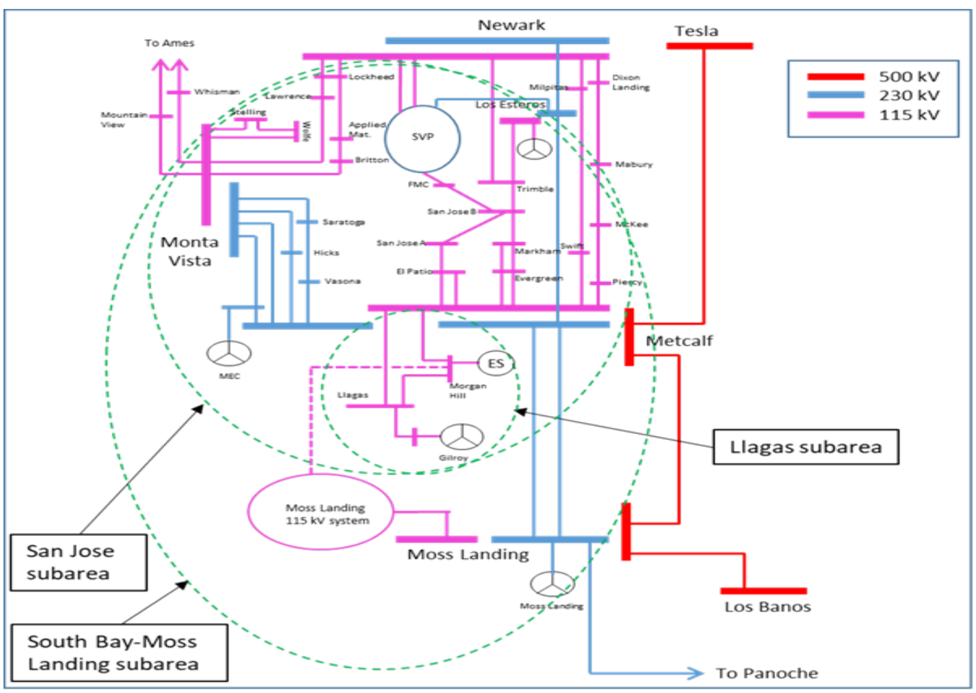
South of San Mateo Capacity Increase

### 3.6.5.2 *Llagas Sub-area*

Llagas is a sub-area of the Greater Bay LCR area.

#### 3.6.5.2.1 Llagas LCR Sub-area Diagram

Figure 3.6-20 Llagas LCR Sub-area




#### 3.6.5.2.2 Llagas LCR Sub-area Load and Resources

Table 3.6-20 provides the forecasted load and resources. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-20 Llagas LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 202 | Market, Net Seller, Battery, Solar | 246 | 246 |
| AAEE | -4 | MUNI | 0 | 0 |
| Behind the meter DG | 0 | QF | 0 | 0 |
| Net Load | 198 | LTPP Preferred Resources | 0 | 0 |
| Transmission Losses | 0 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 198 | Total | 246 | 246 |

### 3.6.5.2.3 Llagas LCR Sub-area Hourly Profiles

Figure 3.6-21 illustrates the forecast 2030 profile for the peak day for the Llagas LCR sub-area with the Category P6 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-22 illustrates the forecast 2030 hourly profile for Llagas LCR sub-area with the Category P6 emergency load serving capability without local capacity resources.

Figure 3.6-21 Llagas LCR Sub-area 2030 Peak Day Forecast Profiles

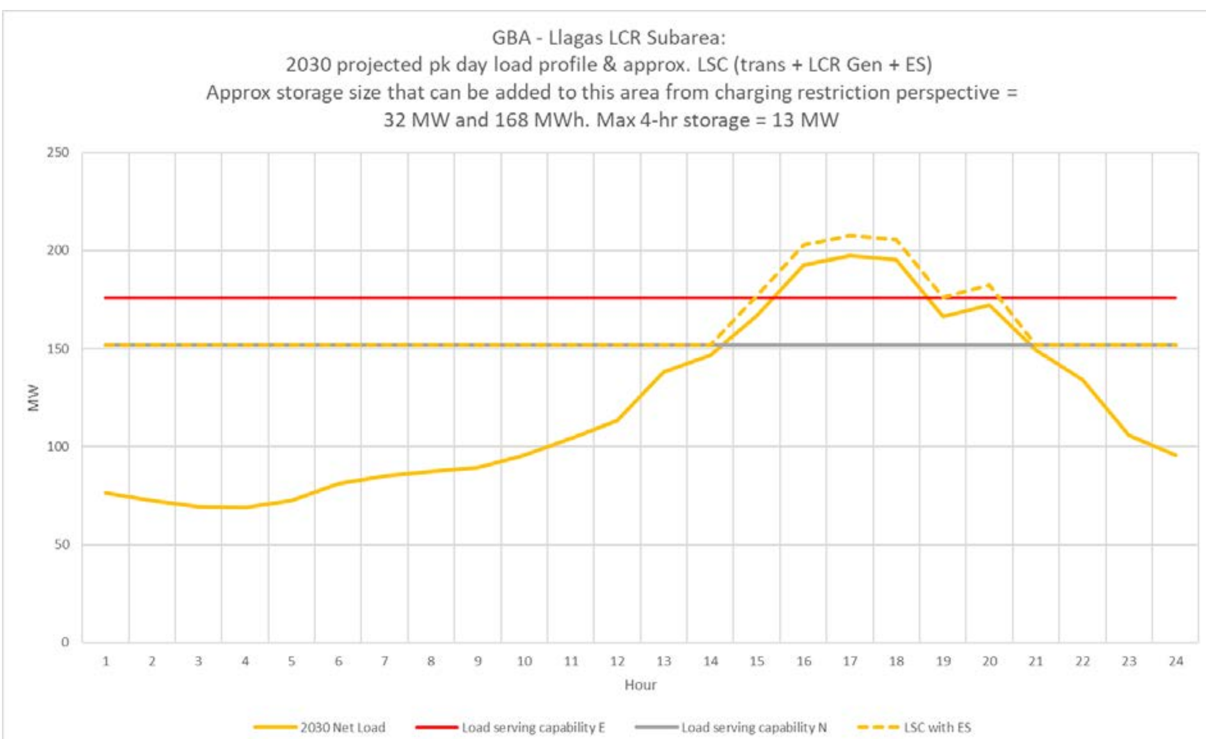
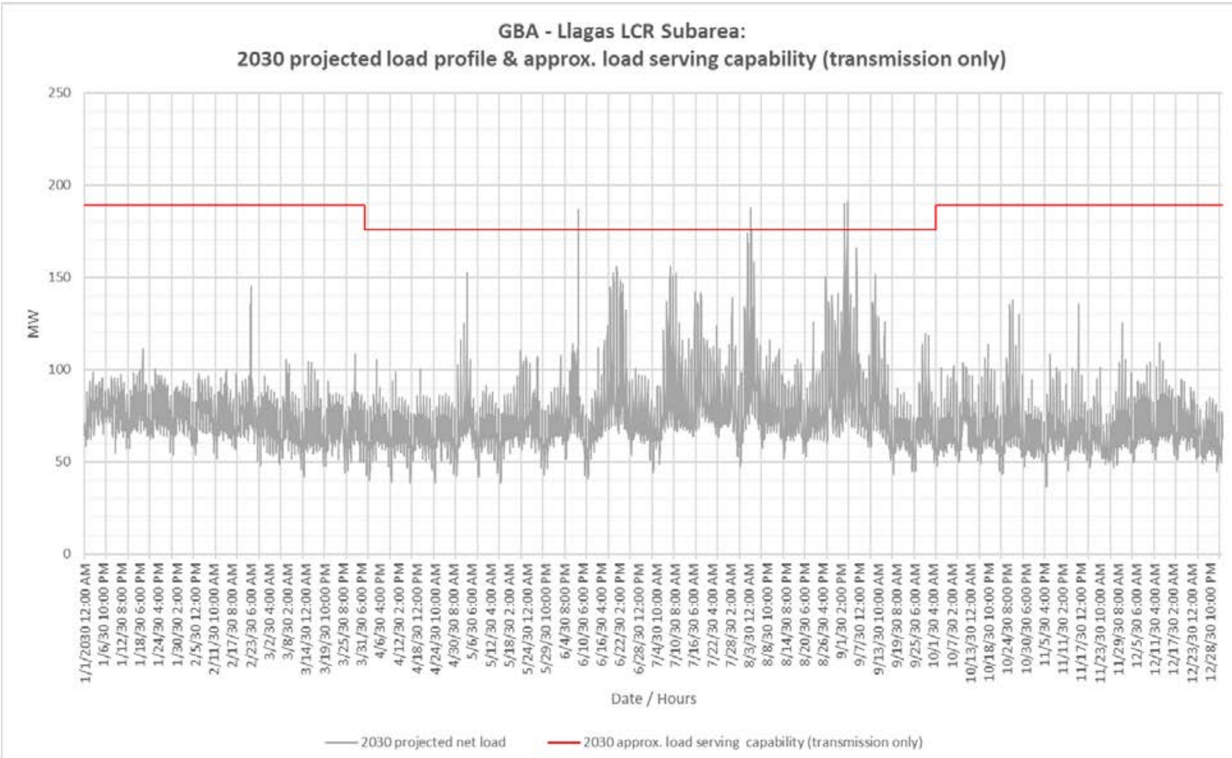


Figure 3.6-22 Llagas LCR Sub-area 2030 Forecast Hourly Profiles




#### 3.6.5.2.4 Llagas LCR Sub-area Requirement

Table 3.6-21 identifies the sub-area LCR requirements. The LCR requirement for the Category P6 contingency is 31 MW.

Table 3.6-21 Llagas LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) |
|---|---|---|---|---|---|
| 2030 | First limit | P6 | Morgan Hill-Llagas 115 kV line | Metcalf-Morgan Hill 115 kV & Morgan Hill-Green Valley 115 kV | 31 |

#### 3.6.5.2.5 **Effectiveness factors:**

All units within the Llagas Sub-area have the same effectiveness factor.

#### 3.6.5.2.6 Alternatives to Reduce or Eliminate Gas Generation

As a part of the 2020-2021 transmission planning process the Llagas LCR Sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

As a part of the 2019-2020 transmission planning process the ISO undertook an assessment of the Llagas sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

### 3.6.5.3 *San Jose Sub-area*

San Jose is a sub-area of the Greater Bay LCR area.

#### 3.6.5.3.1 San Jose LCR Sub-area Diagram

The San Jose LCR sub-area is identified in Figure 3.6-20.

#### 3.6.5.3.2 San Jose LCR Sub-area Load and Resources

Table 3.6-22 provides the forecast load and resources in San Jose LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-22 San Jose LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 2,737 | Market, Net Seller, Battery, Solar | 575 | 575 |
| AAEE | -61 | MUNI | 198 | 198 |
| Behind the meter DG | 0 | QF | 0 | 0 |
| Net Load | 2,676 | LTPP Preferred Resources | 75 | 75 |
| Transmission Losses | 76 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 2,752 | Total | 848 | 848 |

#### 3.6.5.3.3 San Jose LCR Sub-area Hourly Profiles

Figure 3.6-23 illustrates the forecast 2030 profile for the peak day for the San Jose LCR sub-area with the Category P2 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-24 illustrates the forecast 2030 hourly profile for San Jose LCR sub-area with the Category P2 emergency load serving capability without local capacity resources.

Figure 3.6-23 San Jose LCR Sub-area 2030 Peak Day Forecast Profiles

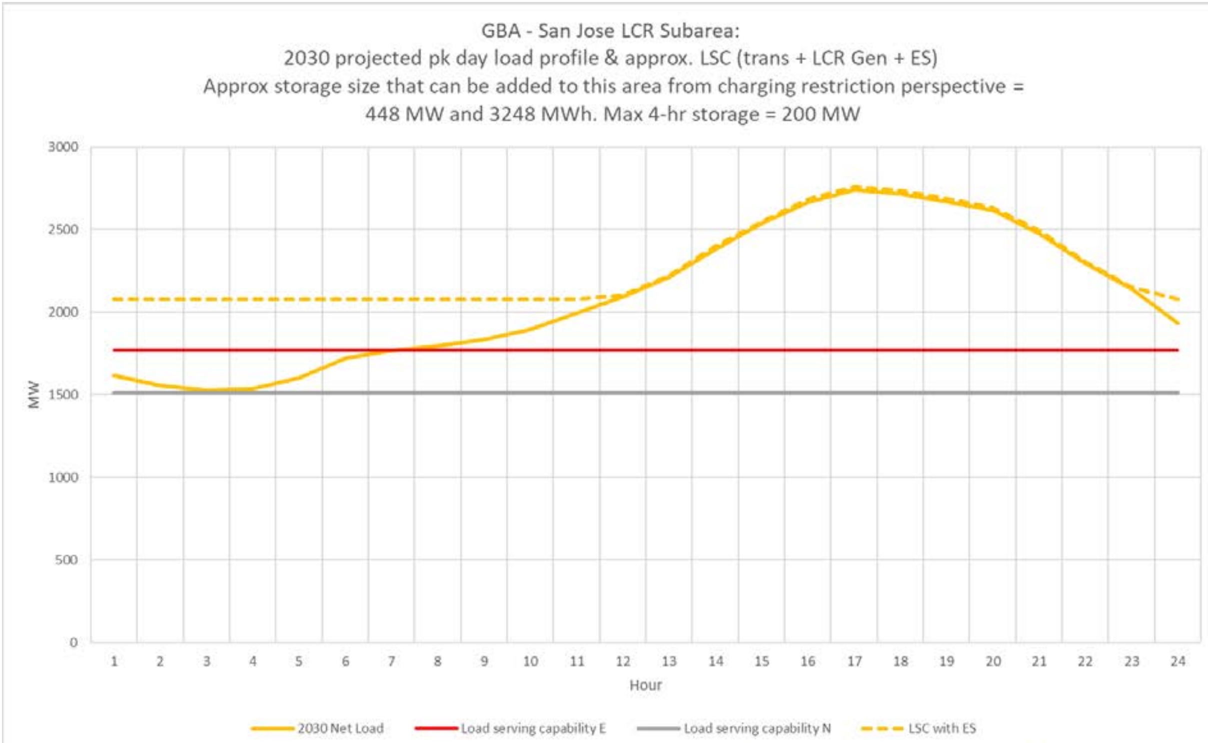
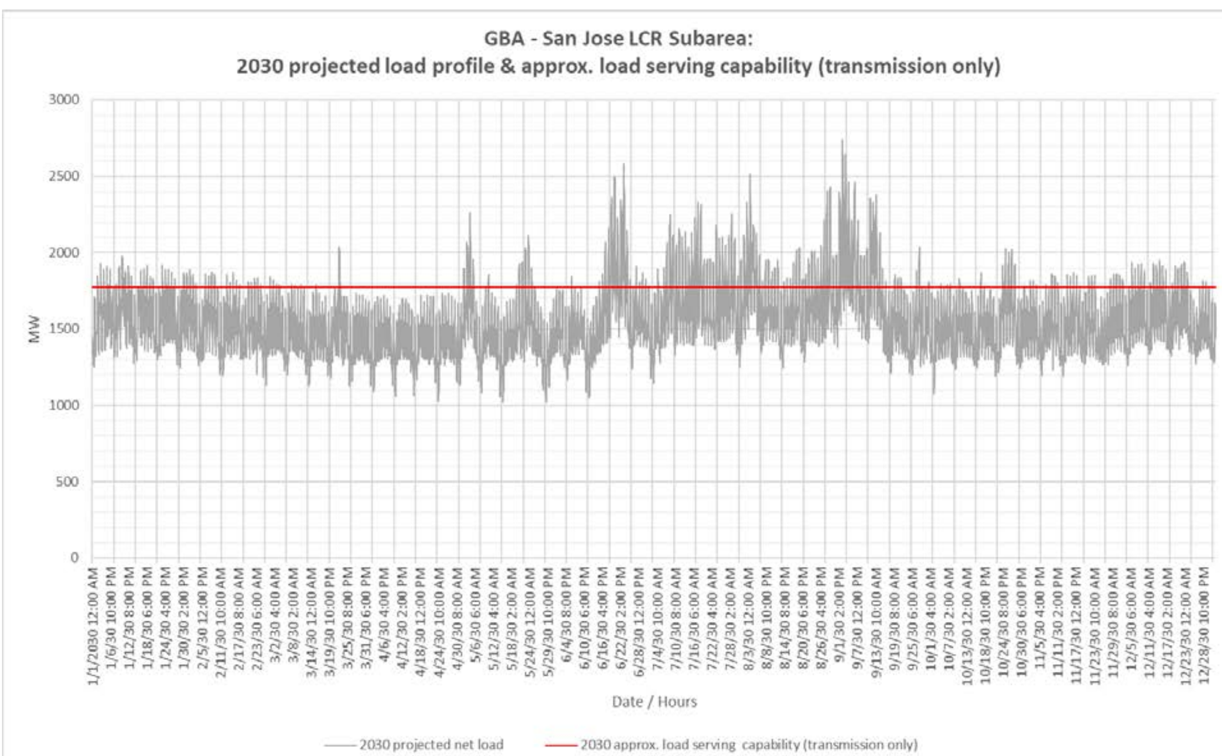



Figure 3.6-24 San Jose LCR Sub-area 2030 Forecast Hourly Profiles



#### 3.6.5.3.4 San Jose Sub-area Requirement

Table 3.6-23 identifies the sub-area LCR requirements. The LCR requirement for the Category P2 contingency is 918 MW wchich includes deficiency of 70 MW.

Table 3.6-23 San Jose LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First limit | P2 | Metcalf 230/115 kV transformer # 1 or # 3 | Metcalf 230kV - Section 2D & 2E | 918 (70) |

#### 3.6.5.3.5 Effectiveness factors:

Effectiveness factors for generators in the San Jose LCR sub-area are in Attachment B table titled San Jose.

For other helpful procurement information please read procedure 2210Z Effectiveness Factors under 7320 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.5.3.6 Alternatives to Reduce or Eliminate Gas Generation

As a part of the 2018-2019 transmission planning process the ISO undertook an assessment of the San Jose sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

As a part of the 2020-2021 transmission planning process the following alternatives were considered.

- Horizon West's Metcalf 230 kV substation project

Table 3.6-24 provides the LCR requirement for the alternatives identified above. For the alternatives that reduced the LCR requirement but did not eliminate the requirement, the limiting facility and contingency have been provided.

Table 3.6-24 Alternatives to Reduce or Eliminate the San Jose Sub-Area Requirement for Gas-fired generation

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | Second Limit | P2 | Metcalf-El Patio 2 115 kV Line | MTCALF D Section 1D & MTCALF E Section 1E 115KV | 611 |
| With HWT-Metcalf 230 kV substation | | | | | |
| 2030 | First Limit | P2 | Metcalf-El Patio 2 115 kV Line | MTCALF D Section 1D & MTCALF E Section 1E 115KV | 611 |

Table 3.6-25 provides the cost estimates and the total San Jose LCR Sub-area requirement and portion of requirement that would need to be supplied from gas-fired and non-gas generation for the alternatives identified above.

Table 3.6-25 Alternative Cost Estimate and LCR Requirement

| Alternatives | Submitted By | Estimated Cost ($M) | Requirement (MW) | | | |
|---|---|---|---|---|---|---|
| | | | Total | Market Gas | Other Gas | Non-Gas |
| HWT-Metcalf 230 kV substation | HWT | 80 | 611 | 335 | 198 | 78 |

### 3.6.5.4 *South Bay-Moss Landing Sub-area*

South Bay-Moss Landing is a sub-area of the Greater Bay LCR area.

#### 3.6.5.4.1 South Bay-Moss Landing LCR Sub-area Diagram

The South Bay-Moss Landing LCR sub-area is identified in Figure 3.6-20.

#### 3.6.5.4.2 South Bay-Moss Landing LCR Sub-area Load and Resources

Table 3.6-26 provides the forecast load and resources in South Bay-Moss Landing LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-26 South Bay-Moss Landing LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 4435 | Market, Net Seller, Battery, Solar | 2165 | 2165 |
| AAEE | -95 | MUNI | 198 | 198 |
| Behind the meter DG | 0 | QF | 0 | 0 |
| Net Load | 4,340 | LTPP Preferred Resources | 558 | 558 |
| Transmission Losses | 128 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 4,468 | Total | 2921 | 2921 |

#### 3.6.5.4.3 South Bay-Moss Landing LCR Sub-area Hourly Profiles

Figure 3.6-25 illustrates the forecast 2030 profile for the peak day for the South Bay-Moss Landing LCR sub-area with the Category P6 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. The energy storage amount is incremental to the existing system and doesn't include approved energy storage. Figure

3.6-26 illustrates the forecast 2030 hourly profile for South Bay-Moss Landing LCR sub-area with the Category P6 emergency load serving capability without local capacity resources.

Figure 3.6-25 South Bay-Moss Landing LCR Sub-area 2030 Peak Day Forecast Profiles

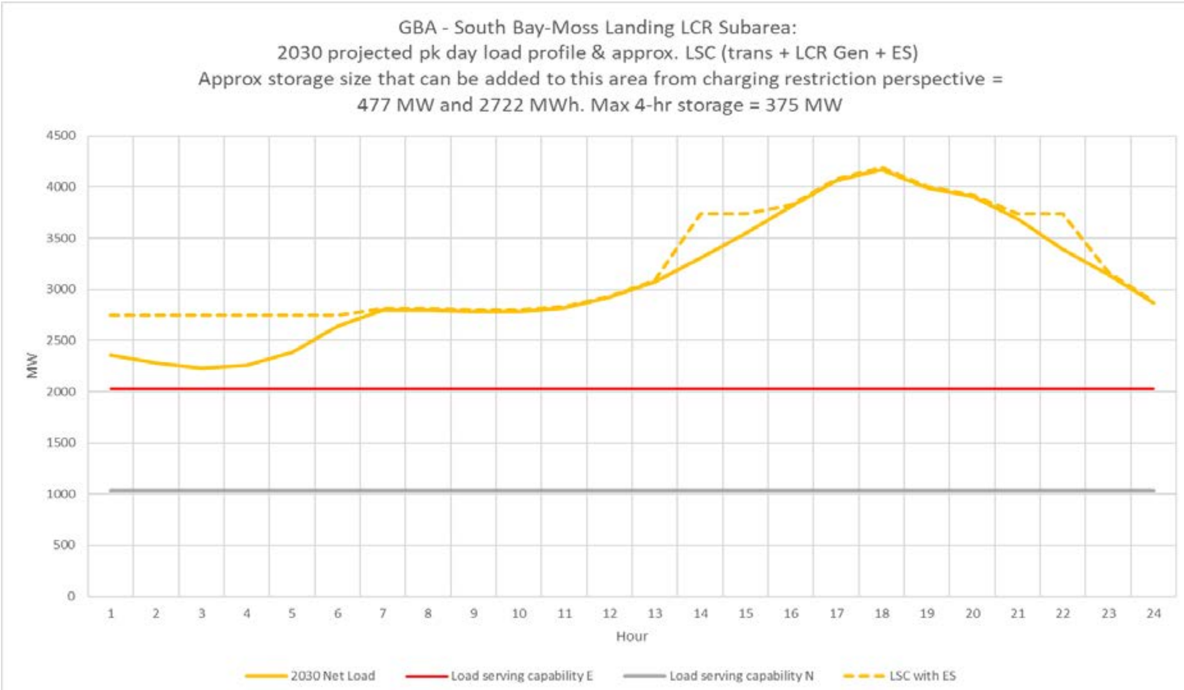
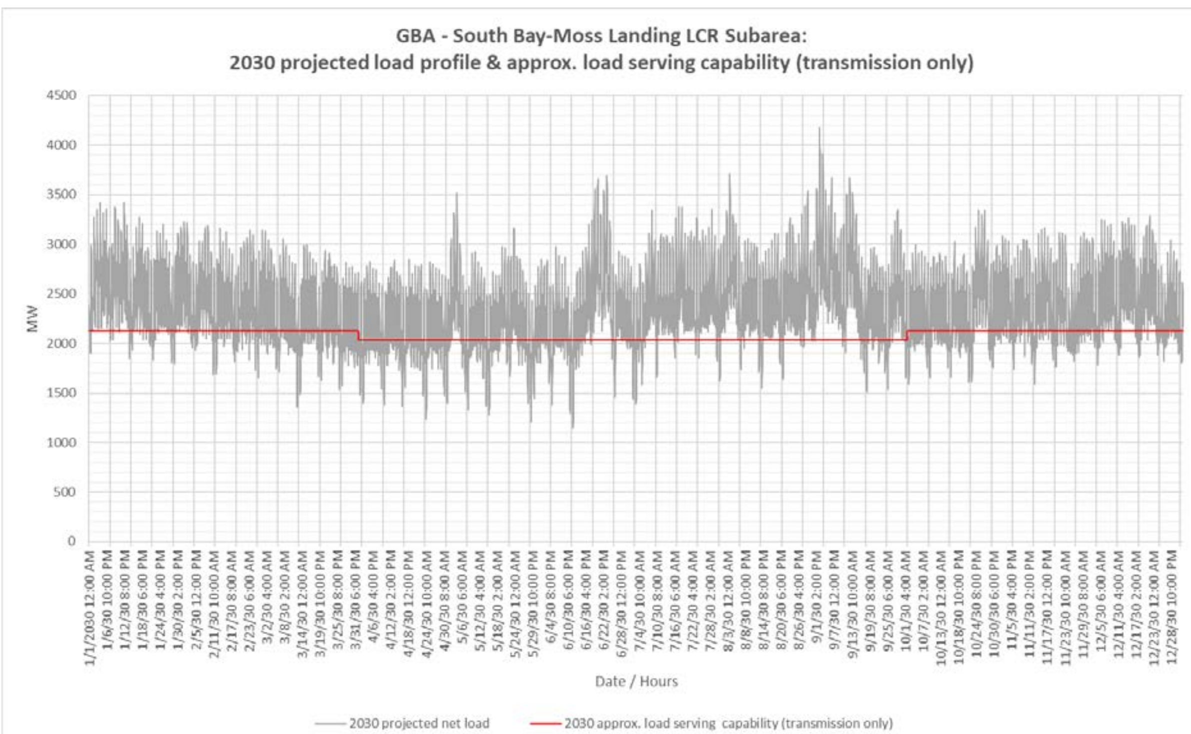



Figure 3.6-26 South Bay-Moss Landing LCR Sub-area 2030 Forecast Hourly Profiles



#### 3.6.5.4.4 South Bay-Moss Landing LCR Sub- Requirement

Table 3.6-27 identifies the sub-area LCR requirements. The LCR requirement for the Category P6 contingency is 2185 MW.

Table 3.6-27 South Bay-Moss Landing LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) |
|---|---|---|---|---|---|
| 2025 | First Limit | P6 | Moss Landing-Las Aguilas 230 kV | Tesla-Metcalf 500 kV and Moss Landing-Los Banos 500 kV | 2185 |

#### 3.6.5.4.5 Effectiveness factors:

Effectiveness factors for generators in the South Bay-Moss Landing LCR sub-area are in Attachment B table titled South Bay-Moss Landing.

For other helpful procurement information please read procedure 2210Z Effectiveness Factors under 7230 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.5.4.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the South Bay-Moss Landing LCR sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

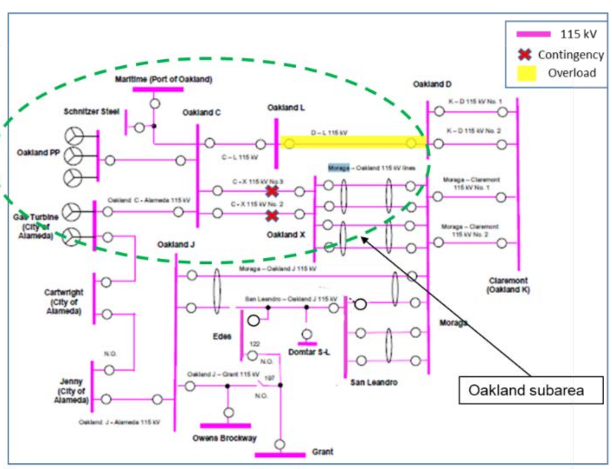
As a part of the 2018-2019 transmission planning process the ISO undertook an assessment of the South Bay-Moss Landing sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

### 3.6.5.5 *Oakland Sub-area*

Oakland is a sub-area of the Greater Bay LCR area.

#### 3.6.5.5.1 Oakland LCR Sub-area Diagram

Figure 3.6-27 Oakland LCR Sub-area



### 3.6.5.5.2 Oakland LCR Sub-area Load and Resources

Table 3.6-28 provides the forecast load and resources in Oakland LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-28 Oakland LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 193 | Market, Net Seller, Battery, Solar | 0 | 0 |
| AAEE | -4 | MUNI | 48 | 48 |
| Behind the meter DG | 0 | QF | 0 | 0 |
| Net Load | 189 | LTPP Preferred Resources | 36 | 36 |
| Transmission Losses | 0 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 189 | Total | 84 | 84 |

### 3.6.5.5.3 Oakland LCR Sub-area Hourly Profiles

Figure 3.6-28 illustrates the forecast 2030 profile for the peak day for the Oakland LCR sub-area with the Category P6 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-29 illustrates the forecast 2030 hourly profile for Oakland LCR sub-area with the Category P6 emergency load serving capability without local capacity resources.

Figure 3.6-28 Oakland LCR Sub-area 2030 Peak Day Forecast Profiles

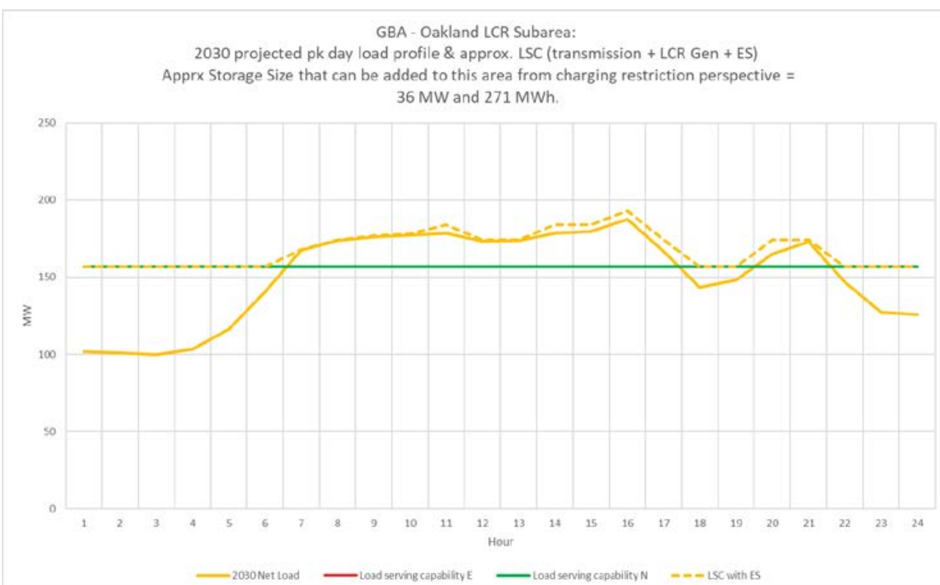
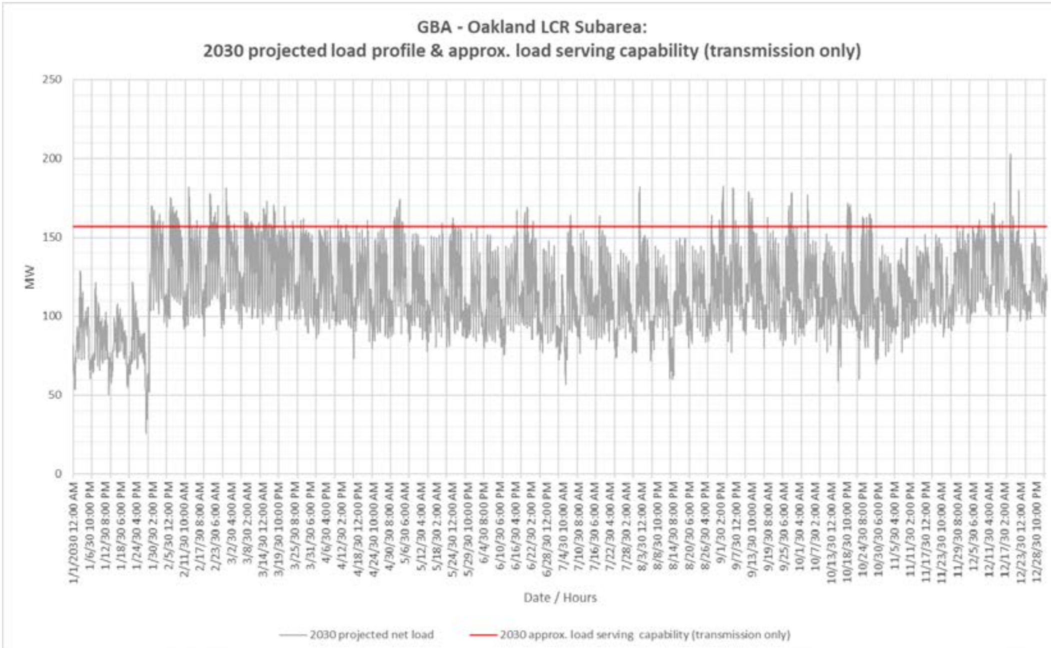


Figure 3.6-29 Oakland LCR Sub-area 2030 Forecast Hourly Profiles




#### 3.6.5.5.4 Oakland LCR Sub-area Requirement

Table 3.6-29 identifies the sub-area requirements. The LCR requirement for the Category P6 contingency is 36 MW.

Table 3.6-29 Oakland LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) |
|---|---|---|---|---|---|
| 2030 | First limit | P6 | Oakland D-L 115 kV | Oakland C-X #2 & #3 115 kV cables | 36[4] |

#### 3.6.5.5.5 **Effectiveness factors:**

All units within the Oakland sub-area have the same effectiveness factor.

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7320 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.5.5.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Oakland LCR Sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

[4] This requirement doesn't reflect potential load transfer that could occur following the first contingency. An approved operating procedure including this load transfer could reduce this requirement.

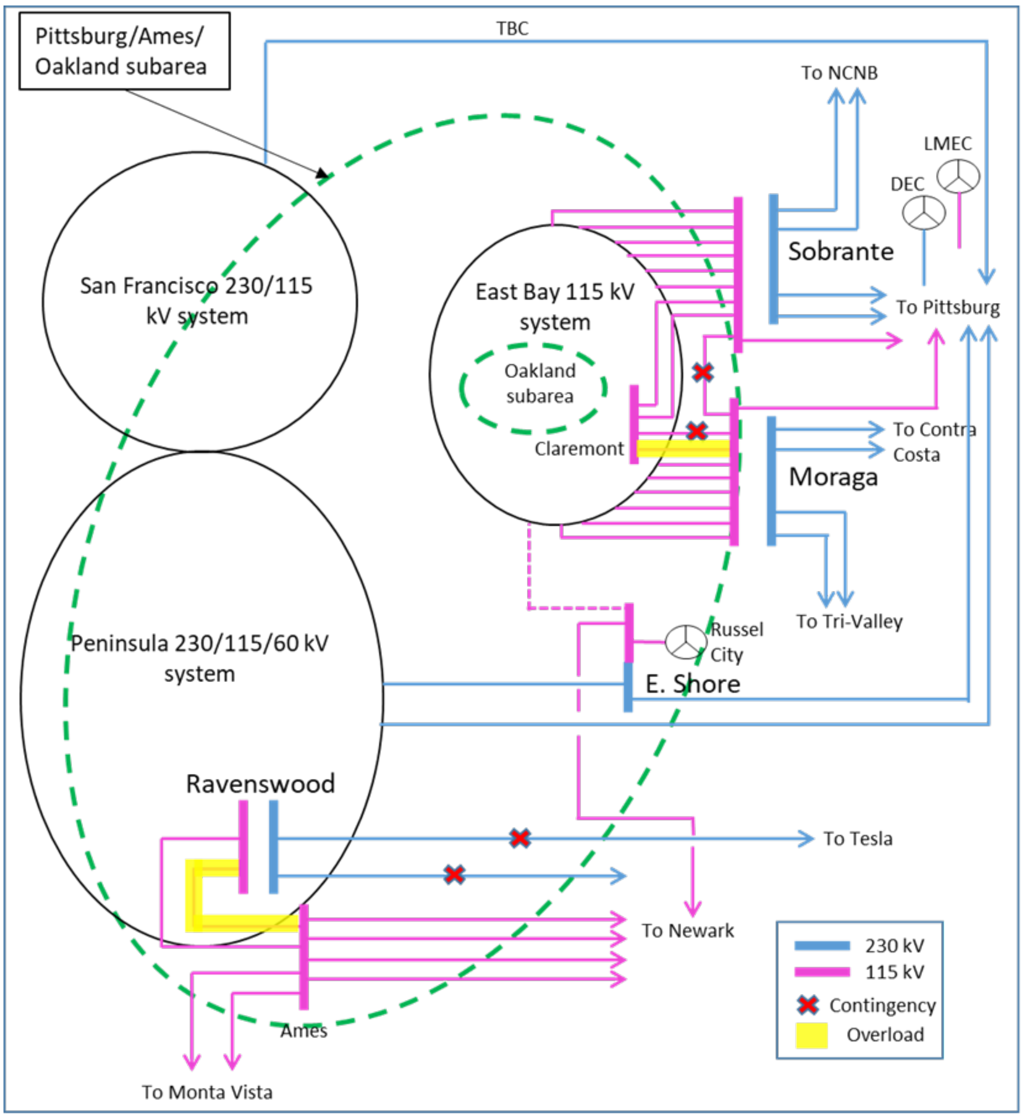
As a part of the 2019-2020 transmission planning process the ISO undertook an assessment of the Oakland sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

### 3.6.5.6 *Ames-Pittsburg-Oakland Sub-areas Combined*

Ames-Pittsburg-Oakland is a sub-area of the Greater Bay LCR area.

#### 3.6.5.6.1 Ames-Pittsburg-Oakland LCR Sub-area Diagram

Figure 3.6-30 Ames-Pittsburg-Oakland LCR Sub-area




#### 3.6.5.6.2 Ames-Pittsburg-Oakland LCR Sub-area Load and Resources

Table 3.6-30 provides the forecast load and resources in Ames-Pittsburg-Oakland LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-30 Ames-Pittsburg-Oakland LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|
| The Ames-Pittsburg-Oakland Sub-area does not has a defined load pocket with the limits based upon power flow through the area. | Market, Net Seller, Battery, Wind | 2152 | 2152 |
| | MUNI | 48 | 48 |
| | QF | 225 | 225 |
| | Solar | 5 | 5 |
| | Existing 20-minute Demand Response | 0 | 0 |
| | LTPP Preferred Resources | 36 | 36 |
| | Total | 2466 | 2466 |

### 3.6.5.6.3 Ames-Pittsburg-Oakland LCR Sub-area Hourly Profiles

The Ames-Pittsburg-Oakland sub-area does not has a defined load pocket with the limits based upon power flow through the area. As such, no load profile is provided for this sub-area.

### 3.6.5.6.4 Ames-Pittsburg-Oakland LCR Sub-area Requirement

Table 3.6-31 identifies the sub-area LCR requirements. The LCR requirement for the Category P7 or P2 contingency is 1643 MW.

Table 3.6-31 Ames-Pittsburg-Oakland LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) |
|---|---|---|---|---|---|
| 2030 | First limit | P7 | Ames-Ravenswood #1 115 kV line | Newark-Ravenswood 230 kV & Tesla-Ravenswood 230 kV | 1643 |
| | | P2 | Martinez-Sobrante 115 kV line | Pittsburg Section 1D & 1E 230 kV | |

### 3.6.5.6.5 Effectiveness factors:

Effectiveness factors for generators in the Ames-Pittsburg-Oakland LCR sub-area are in Attachment B table titled Ames/Pittsburg/Oakland.

For other helpful procurement information please read procedure 2210Z Effectiveness Factors under 7320 (T-165Z) posted at: http://www.caiso.com/Documents/2210Z.pdf

### 3.6.5.6.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Ames-Pittsburg-Oakland LCR sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

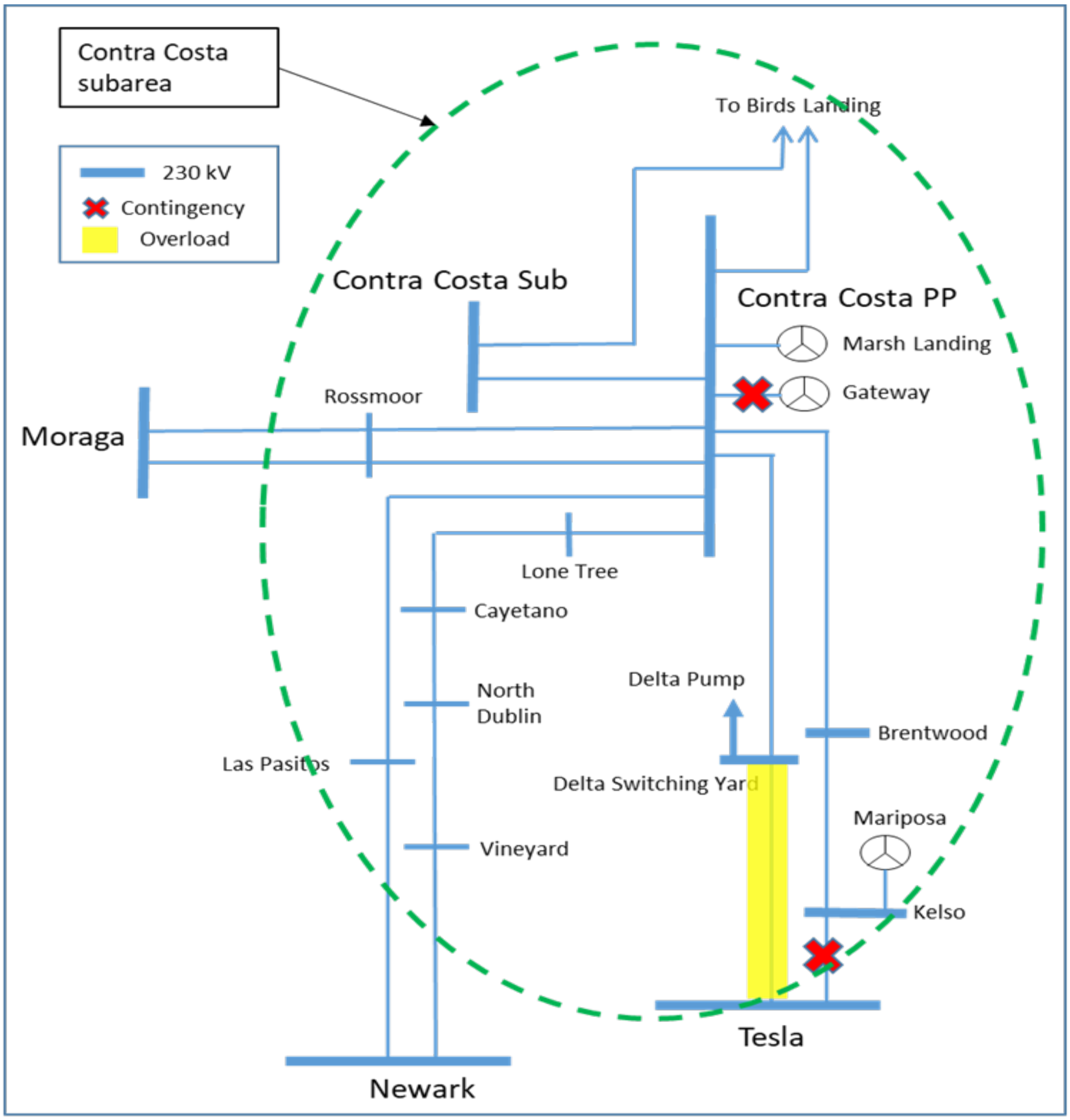
As a part of the 2018-2019 transmission planning process the ISO undertook an assessment of the Ames-Pittsburg-Oakland sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

### 3.6.5.7 *Contra Costa Sub-area*

Contra Costa is a sub-area of the Greater Bay LCR area.

#### 3.6.5.7.1 Contra Costa LCR Sub-area Diagram

Figure 3.6-31 Contra Costa LCR Sub-area




#### 3.6.5.7.2 Contra Costa LCR Sub-area Load and Resources

Table 3.6-32 provides the forecast load and resources in Contra Costa LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-32 Contra Costa LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|
| The Contra Costa Sub-area does not have a defined load pocket with the limits based upon power flow through the area. | Market, Net Seller, Battery, Solar | 1669 | 1669 |
| | MUNI | 127 | 127 |
| | QF | 0 | 0 |
| | Wind | 244 | 244 |
| | Existing 20-minute Demand Response | 0 | 0 |
| | Mothballed | 0 | 0 |
| | Total | 2040 | 2040 |

#### 3.6.5.7.3 Contra Costa LCR Sub-area Hourly Profiles

The Contra Costa sub-area does not has a defined load pocket with the limits based upon power flow through the area. As such, no load profile is provided for this sub-area.

#### 3.6.5.7.4 Contra Costa LCR Sub-area Requirement

Table 3.6-33 identifies the sub-area LCR requirements. The LCR requirement for the Category P6 contingency is 1460 MW.

Table 3.6-33 Contra Costa LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) |
|---|---|---|---|---|---|
| 2030 | First limit | P3 | Delta Switching Yard-Tesla 230 kV | Kelso-Tesla 230 kV line and Gateway unit | 1460 |

#### 3.6.5.7.5 Effectiveness factors:

For other helpful procurement information please read procedure 2210Z Effectiveness Factors under 7230 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.5.7.6 Alternatives to Reduce or Eliminate Gas Generation

As a part of the 2019-2020 transmission planning process the ISO undertook an assessment of the Contra Costa sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

As a part of the 2020-2021 transmission planning process the following alternatives were considered.

- Contra Costa – Pittsburg 230 kV Reliability Project
- Tesla – Delta Switchyard 230 kV line reactance

Table 3.6-34 provides the LCR requirement for the alternatives identified above. For the alternatives that reduced the LCR requirement but did not eliminate the requirement, the limiting facility and contingency have been provided.

Table 3.6-34 Alternatives to Reduce or Eliminate the Contra Costa Sub-Area Requirement for Gas-fired generation

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| Contra Costa – Pittsburg 230 kV Reliability Project | | | | | |
| 2030 | First Limit | P3 | Delta Switching Yard-Tesla 230 kV Line | Kelso-Tesla 230 kV with the Gateway off line | >1460[5] |
| Tesla – Delta Switchyard 230 kV line reactance | | | | | |
| 2030 | First Limit | P3 | None | None | 0 |

Table 3.6-35 provides the cost estimates and the total Contra Costa LCR Sub-area requirement and portion of requirement that would need to be supplied from gas-fired and non-gas generation for the alternatives identified above.

Table 3.6-35 Alternative Cost Estimate and LCR Requirement

| Alternatives | Submitted By | Estimated Cost ($M) | Requirement (MW) | | | |
|---|---|---|---|---|---|---|
| | | | Total | Market Gas | Other Gas | Non-Gas |
| Contra Costa-Pittsburg 230 kV Reliability Project | HWT | 200 | >1460 | N/A | N/A | N/A |
| Tesla – Delta Switchyard 230 kV line reactance | Smart Wires | 7.7-14.4 | 0 | 0 | 0 | 0 |

The Tesla-Delta Switchyard 230 kV line reactance project eliminates the Contra Costa sub-area LCR requirement. However, based on the latest publically available 2018 RA prices and the benefit cost ratio analysis done in chapter 4 this project only provides marginal benefit for this area. For this reason, the alternative is not recommended for approval at this time.

[5] *Contra Costa – Pittsburg 230 kV Reliability Project increases the requirement as the overload increases by significant amount post project. The new requirements were not calculated for this project.*

## 3.6.5.8 *Bay Area overall*

### 3.6.5.8.1 Bay Area LCR Area Hourly Profiles

Figure 3.6-32 illustrates the forecast 2030 profile for the peak day for the Bay Area LCR area with the Category P6 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-33 illustrates the forecast 2030 hourly profile for Bay Area LCR area with the Category P6 emergency load serving capability without local capacity resources.

Figure 3.6-32 Bay Area LCR Area 2030 Peak Day Forecast Profiles

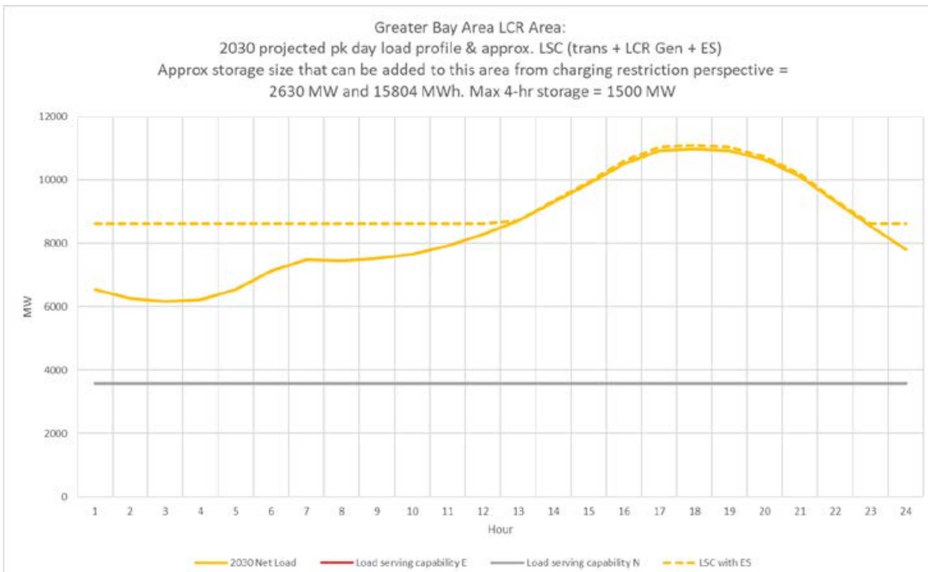
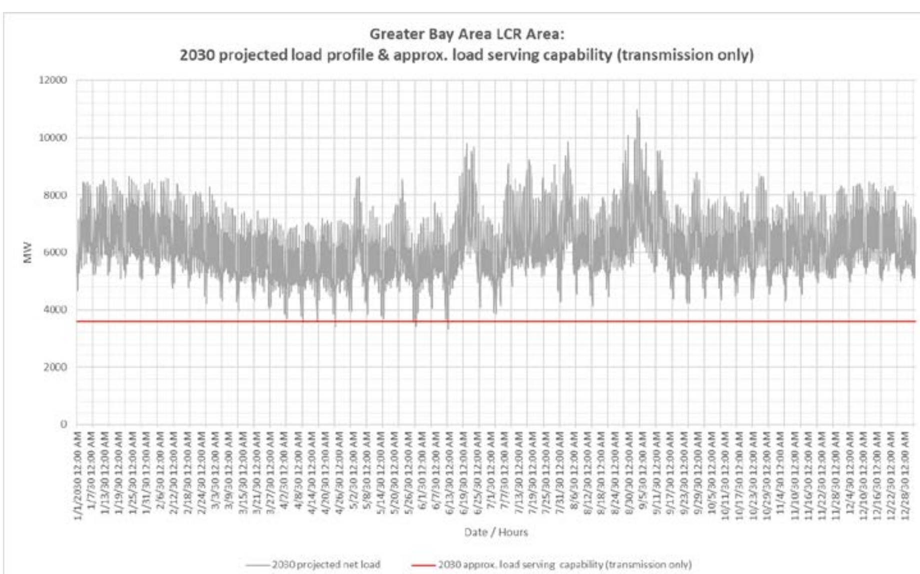



Figure 3.6-33 Bay Area LCR Area 2030 Forecast Hourly Profiles



#### 3.6.5.8.2 Greater Bay LCR Area Overall Requirement

Table 3.6-36 identifies the area LCR requirements. The LCR requirement for the Category P6 contingency is 7455 MW.

Table 3.6-36 Bay Area LCR Overall area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) |
|---|---|---|---|---|---|
| 2030 | First limit | P6 | Metcalf 500/230 kV #13 transformer | Metcalf 500/230 kV #11 & #12 transformers | 7455 (111) |

#### 3.6.5.8.3 Changes compared to the 2025 LCT study

Load forecast went up by 452 MW and total LCR need went up by 1345 MW mainly due to the load increase and higher S-N flow on Path 15.

#### 3.6.5.8.4 Alternatives to Reduce or Eliminate Gas Generation

As a part of the 2018-2019 and 2019-2020 transmission planning process the ISO undertook an assessment of the Bay Area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

As a part of the 2020-2021 transmission planning process the following alternatives were considered.

- Metcalf 500/230kV transformer dynamic series reactor project

Table 3.6-37 provides the LCR requirement for the alternatives identified above. For the alternatives that reduced the LCR requirement but did not eliminate the requirement, the limiting facility and contingency have been provided.

Table 3.6-37 Alternative to Reduce or Eliminate Greater Bay Requirement for Gas-fired generation

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | Second Limit | Aggregate of sub-areas | | | 5358 (70) |
| With Metcalf 500/230 KV Transformers Dynamic Series Reactor Project | | | | | |
| 2030 | First Limit | Aggregate of sub-areas | | | 5358 (70) |

The Metcalf 500/230kV transformer dynamic series reactor project eliminates the largest bay area LCR requirement. However, based on the latest publically available 2018 RA prices and the benefit cost ratio analysis done in chapter 4 this project only provides marginal benefit for this area. For this reason, the alternative is not recommended for approval at this time.

Table 3.6-38 provides the cost estimate and the total Grater Bay LCR Area overall requirement and portion of requirement that would need to be supplied from gas-fired and non-gas generation for the alternative identified above.

Table 3.6-38 Alternative Cost Estimate and LCR Requirement

| Alternatives | Submitted By | Estimated Cost ($M) | Requirement (MW) | | | |
|---|---|---|---|---|---|---|
| | | | Total | Market Gas | Other Gas | Non-Gas |
| Metcalf 500/230 KV Transformers Dynamic Series Reactor Project | PG&E | 32 | 5288 | 3634 | 688 | 966 |

### 3.6.6 Greater Fresno Area

#### 3.6.6.1 *Area Definition:*

The transmission facilities coming into the Greater Fresno area are:

Gates-Mustang #1 230 kV

Gates-Mustang #2 230 kV

Gates #5 230/70 kV Transformer Bank

Mercy Spring 230 /70 Bank # 1

Los Banos #3 230/70 Transformer Bank

Los Banos #4 230/70 Transformer Bank

Warnerville-Wilson 230kV

Melones-North Merced 230 kV line

Panoche-Tranquility #1 230 kV

Panoche-Tranquility #2 230 kV

Panoche #1 230/115 kV Transformer Bank

Panoche #2 230/115 kV Transformer Bank

Corcoran-Smyrna 115kV

Coalinga #1-San Miguel 70 kV

The substations that delineate the Greater Fresno area are:

Gates is out Mustang is in

Gates is out Mustang is in

Gates 230 is out Gates 70 is in

Mercy Springs 230 is out Mercy Springs 70 is in

Los Banos 230 is out Los Banos 70 is in

Los Banos 230 is out Los Banos 70 is in

Warnerville is out Wilson is in

Melones is out North Merced is in

Panoche is out Tranquility #1 is in

Panoche is out Tranquility #2 is in

Panoche 230 is out Panoche 115 is in

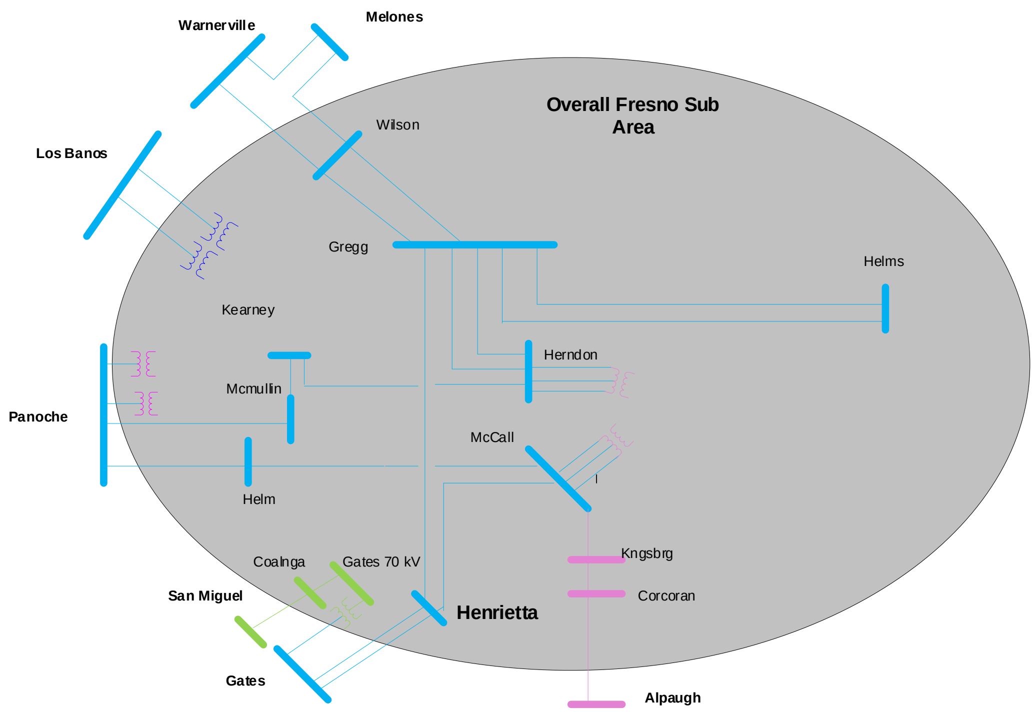
Panoche 230 is out Panoche 115 is in

Corcoran is in Smyrna is out

Coalinga is in San Miguel is out

#### 3.6.6.1.1 Fresno LCR Area Diagram

Figure 3.6-34 Fresno LCR Area




#### 3.6.6.1.2 Fresno LCR Area Load and Resources

Table 3.6-39 provides the forecast load and resources in Fresno LCR Area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

In year 2030 the estimated time of local area peak is 18:40 PM.

At the local area peak time the estimated, ISO metered, solar output is 12.00%.

If required, all non-solar technology type resources are dispatched at NQC.

Table 3.6-39 Fresno LCR Area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 3537 | Market, Net Seller, Battery | 2815 | 2815 |
| AAEE | -76 | MUNI | 212 | 212 |
| Behind the meter DG | 0 | QF | 4 | 4 |
| Net Load | 3461 | Solar | 361 | 160 |
| Transmission Losses | 128 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 3589 | Total | 3392 | 3191 |

#### 3.6.6.1.3 Approved transmission projects modeled

Wilson 115 kV SVC (May 2021)

Gregg-Herndon #2 230 kV Line Circuit Breaker Upgrade (Jan 2020)

Northern Fresno 115 kV Reinforcement (Revised scope – Jan 2021)

Wilson-Legrand 115 kV Reconductoring (April 2021)

Panoche-Oro Loma 115 kV Reconductoring (July 2022)

Oro Loma 70 kV Reinforcement (April 2024)

Reedley 70 kV Reinforcement Projects (May 2022)

Herndon-Bullard Reconductoring Projects (April 2022)

Kingsburg-Lemoore 70 kV Line Reconductoring (March 2022)

Giffen Line Reconductoring (April 2024)

Borden 230/70 kV Transformer Bank #1 Capacity Increase (Jan 2025)

Wilson-Oro Loma 115 kV Line Reconductoring (Jan 2026)

Wilson 115 kV Area Reinforcement (May 2023)

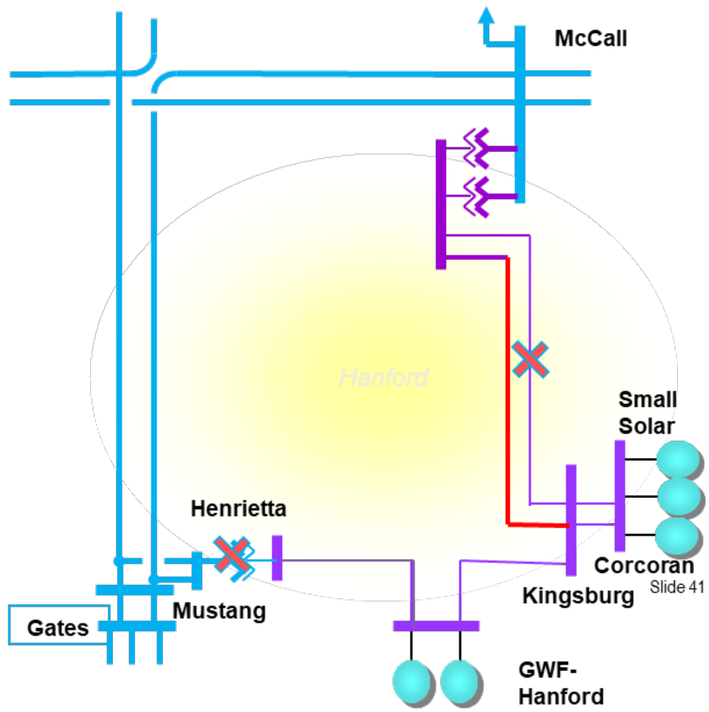
Bellota-Warnerville 230 kV Line Reconductoring (March 2024)

### 3.6.6.2 *Hanford Sub-area*

Hanford is a sub-area of the Fresno LCR area.

#### 3.6.6.2.1 Hanford LCR Sub-area Diagram

Figure 3.6-35 Hanford LCR Sub-area




#### 3.6.6.2.2 Hanford LCR Sub-area Load and Resources

Table 3.6-40 provides the forecast load and resources in Hanford LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-40 Hanford LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 217 | Market, Net Seller, Battery | 125 | 125 |
| AAEE | -4 | MUNI | 0 | 0 |
| Behind the meter DG | 0 | QF | 0 | 0 |
| Net Load | 213 | Solar | 25 | 11 |
| Transmission Losses | 5 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 218 | Total | 150 | 136 |

#### 3.6.6.2.3 Hanford LCR Sub-area Hourly Profiles

Figure 3.6-36 illustrates the forecast 2030 profile for the peak day for the Hanford LCR sub-area with the Category P6 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-37 illustrates the forecast 2030 hourly profile for Hanford LCR sub-area with the Category P6 emergency load serving capability without local capacity resources.

Figure 3.6-36 Hanford LCR Sub-area 2030 Peak Day Forecast Profiles

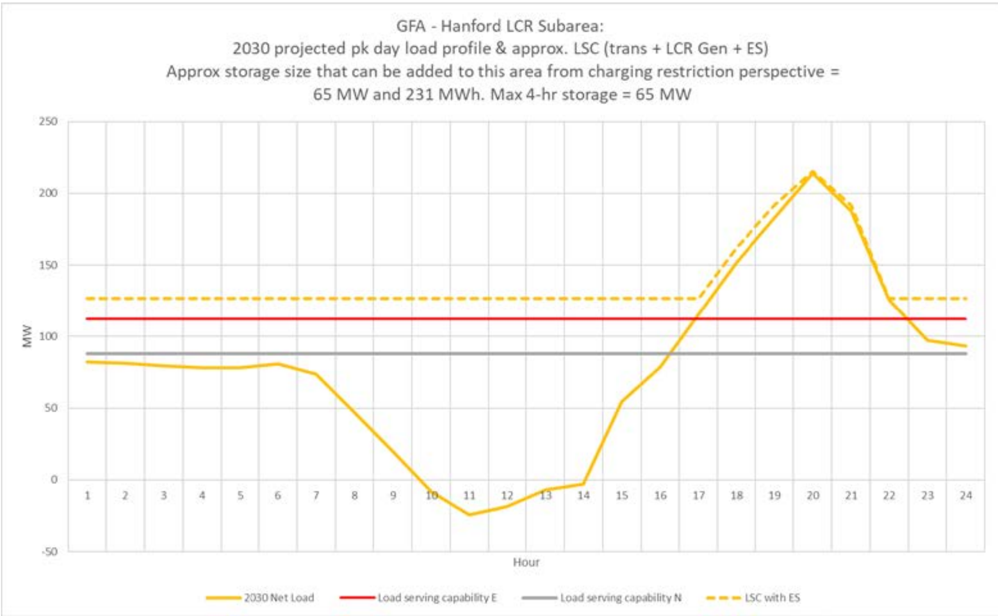
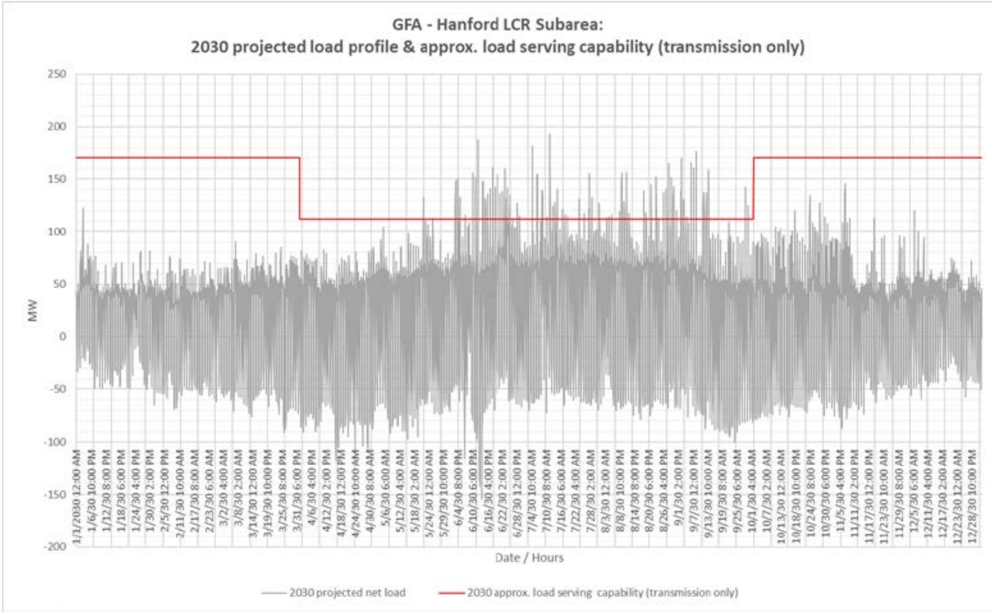



Figure 3.6-37 Hanford LCR Sub-area 2030 Forecast Hourly Profiles



#### 3.6.6.2.4 Hanford LCR Sub-area Requirement

Table 3.6-41 identifies the sub-area requirements. The LCR Requirement for a Category P6 contingency is 69 MW.

Table 3.6-41 Hanford LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P6 | McCall-Kingsburg #2 115 kV | McCall-Kingsburg #1 115kV line and Henrietta 230/115kV TB#3 | 69 |

#### 3.6.6.2.5 Effectiveness factors:

All units within the Hanford sub-area have the same effectiveness factor.

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7430 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.6.2.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Hanford LCR sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

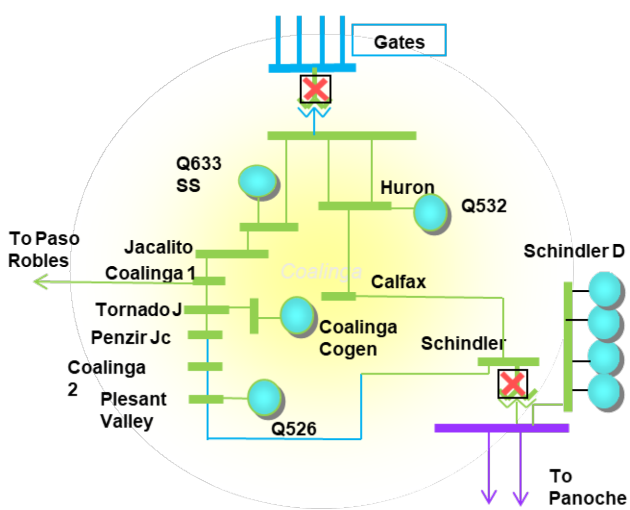
As a part of the 2018-2019 transmission planning process the ISO undertook an assessment of the Hanford sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

### 3.6.6.3 *Coalinga Sub-area*

Coalinga is a sub-area of the Fresno LCR area.

#### 3.6.6.3.1 Coalinga LCR Sub-area Diagram

Figure 3.6-38 Coalinga LCR Sub-area



#### 3.6.6.3.2 Coalinga LCR Sub-area Load and Resources

Table 3.6-42 provides the forecast load and resources in Coalinga LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-42 Coalinga LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 117 | Market, Net Seller, Battery | 0 | 0 |
| AAEE | -2 | MUNI | 0 | 0 |
| Behind the meter DG | 0 | QF | 3 | 3 |
| Net Load | 115 | Solar | 13 | 6 |
| Transmission Losses | 2 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 117 | Total | 16 | 9 |

#### 3.6.6.3.3 Coalinga LCR Sub-area Hourly Profiles

Figure 3.6-39 illustrates the forecast 2030 profile for the peak day for the Coalinga LCR sub-area with the Category P6 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-40 illustrates the forecast 2030 hourly profile for Coalinga LCR sub-area with the Category P6 emergency load serving capability without local capacity resources.

Figure 3.6-39 Coalinga LCR Sub-area 2030 Peak Day Forecast Profiles

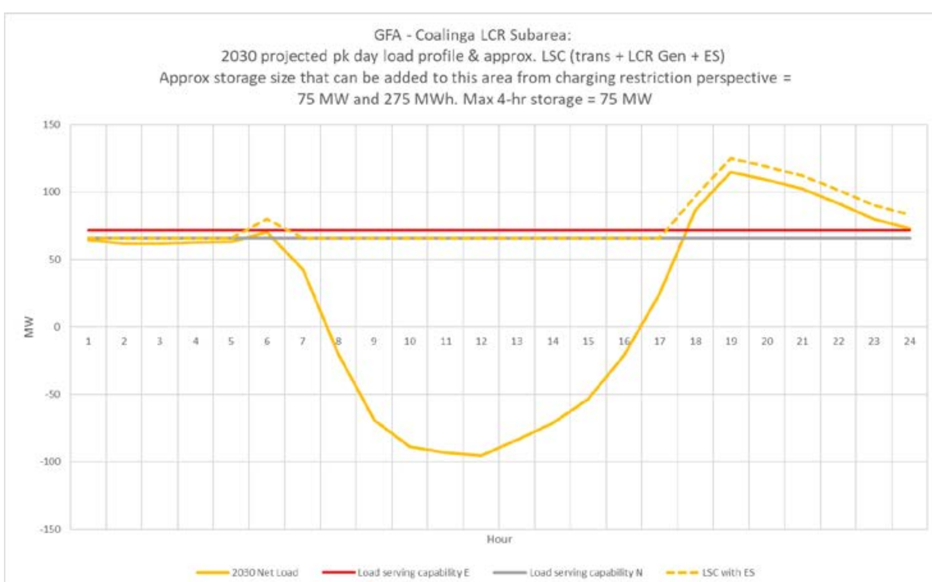
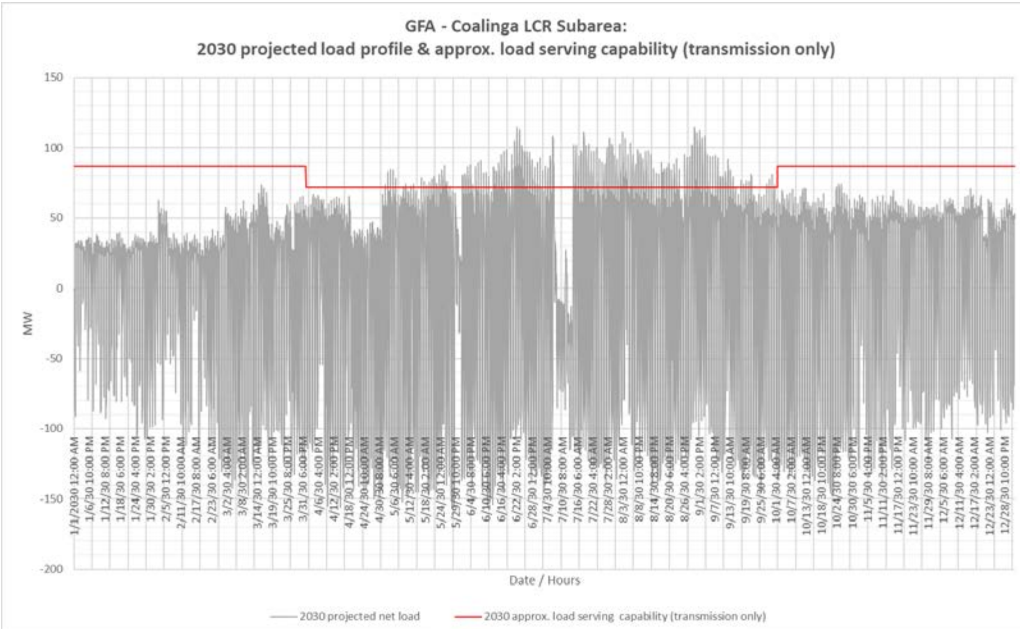


Figure 3.6-40 Coalinga LCR Sub-area 2030 Forecast Hourly Profiles




#### 3.6.6.3.4 Coalinga LCR Sub-area Requirement

Table 3.6-43 identifies the sub-area requirements. The LCR Requirement for a Category P6 contingency is 75 MW including a 64 MW at peak deficiency and 59 MW NQC deficiency.

Table 3.6-43 Coalinga LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2025 | First Limit | P6 | Overload on San-Miguel-Coalinga 70kV Line and Voltage Instability | T-1/T-1: Gates 230/70kV TB #5 and Schindler 115/70 kV TB#1 | 75<br>(64 at Peak)<br>(59 NQC) |

#### 3.6.6.3.5 Effectiveness factors:

All units within the Coalinga Sub-area have the same effectiveness factor.

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7430 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.6.3.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Coalinga LCR sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

As a part of the 2019-2020 transmission planning process the ISO undertook an assessment of the Coalinga sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

### 3.6.6.4 *Borden Sub-area*

Borden is a sub-area of the Fresno LCR area.

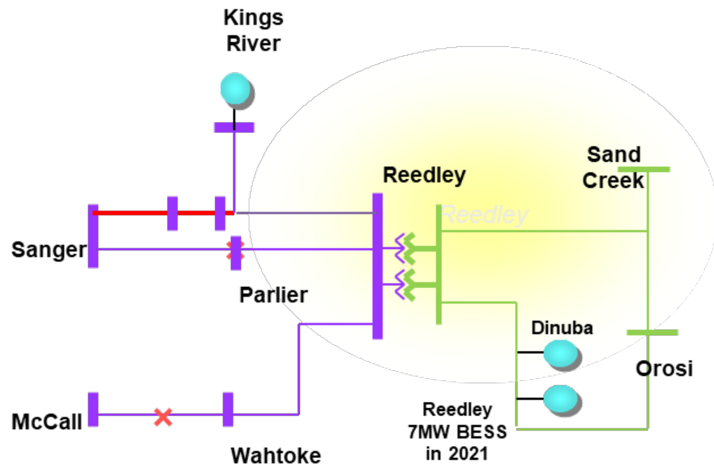
Borden Sub-area will be eliminated due to the Borden transformer capacity increase transmission project.

### 3.6.6.5 *Reedley Sub-area*

Reedley is a sub-area of the Fresno LCR area.

#### 3.6.6.5.1 Reedley LCR Sub-area Diagram

Figure 3.5-41 Reedley LCR Sub-area




#### 3.6.6.5.2 Reedly LCR Sub-area Load and Resources

Table 3.6-44 provides the forecast load and resources in Reedley LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-44 Reedley LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 239 | Market | 51 | 51 |
| AAEE | -5 | MUNI | 0 | 0 |
| Behind the meter DG | 0 | QF | 0 | 0 |
| Net Load | 233 | LTPP Preferred Resources | 0 | 0 |
| Transmission Losses | 39 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 272 | Total | 51 | 51 |

#### 3.6.6.5.3 Reedley LCR Sub-area Hourly Profiles

Figure 3.6-42 illustrates the forecast 2030 profile for the peak day for the Reedley LCR sub-area with the Category P6 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-43 illustrates the forecast 2030 hourly profile for Reedley LCR sub-area with the Category P6 emergency load serving capability without local capacity resources.

Figure 3.6-42 Reedley LCR Sub-area 2030 Peak Day Forecast Profiles

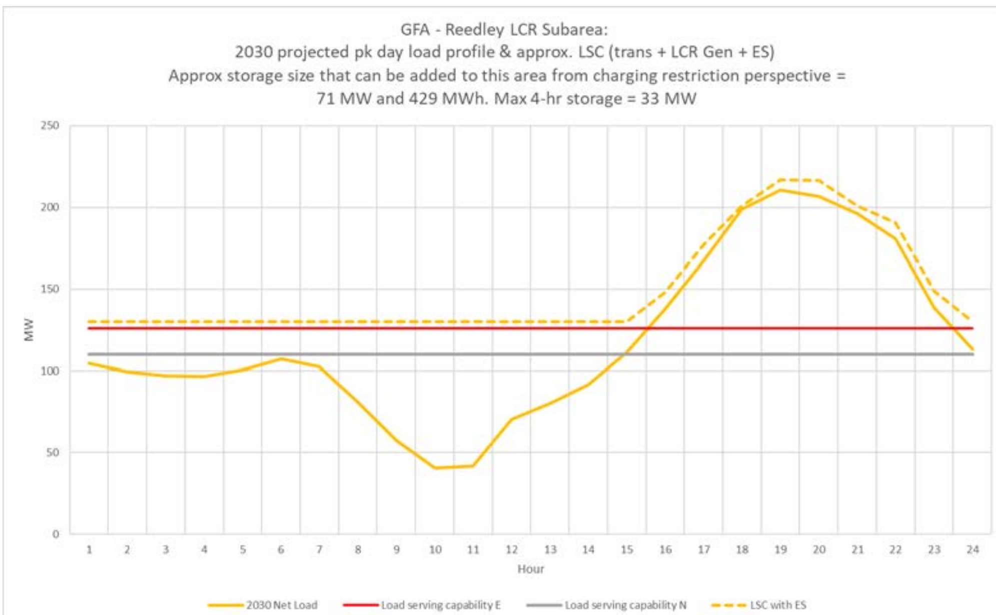
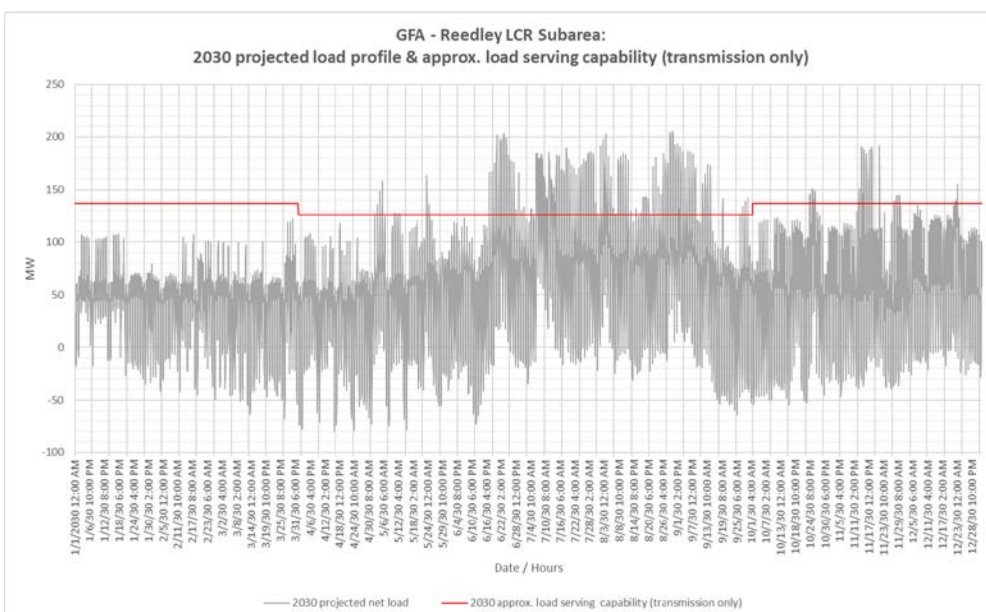



Figure 3.6-43 Reedley LCR Sub-area 2030 Forecast Hourly Profiles



#### 3.6.6.5.4 Reedley LCR Sub-area Requirement

Table 3.6-45 identifies the sub-area requirements. The LCR Requirement for a Category P6 contingency is 120 MW including a 69 MW of deficiency.

Table 3.6-45 Reedley LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P6 | Kings River-Sanger-Reedley 115 kV line with Wahtoke load online | McCall-Reedley 115 kV & Sanger-Reedley 115 kV | 120 (69) |

#### 3.6.6.5.5 **Effectiveness factors:**

All units within the Reedley Sub-area have the same effectiveness factor.

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7430 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.6.5.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Reedley LCR sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

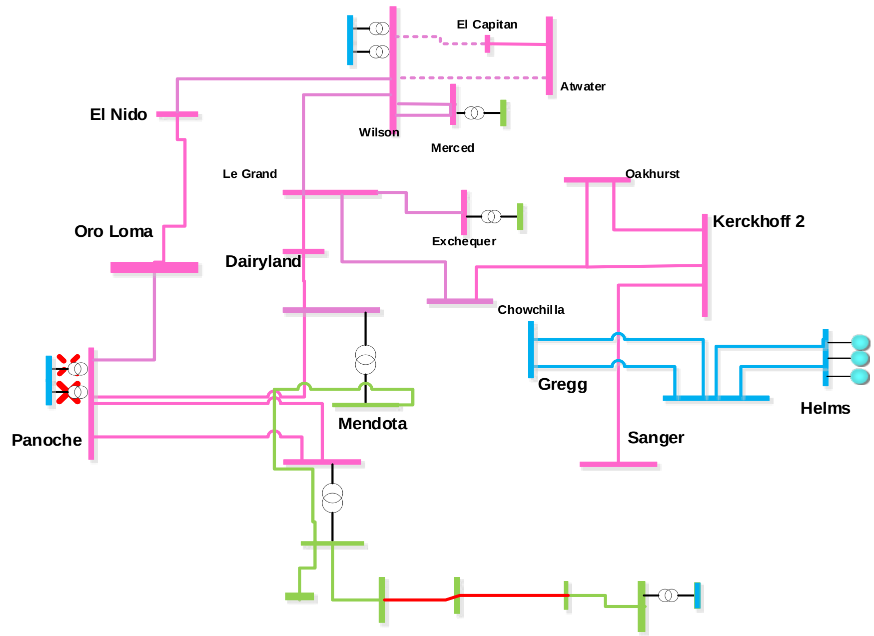
As a part of the 2018-2019 and the 2019-2020 transmission planning process the ISO undertook an assessment of the Reedley sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation. The 2028 LCT study identified that the requirement in the Reedley Sub-area can be addressed with non-gas generation.

### 3.6.6.1 *Panoche Sub-area*

Panoche is a sub-area of the Fresno LCR area.

#### 3.6.6.1.1 Panoche LCR Sub-area Diagram

Figure 3.6-44 Panoche LCR Sub-area




### 3.6.6.1.2 Panoche LCR Sub-area Load and Resources

Table 3.6-46 provides the forecast load and resources in Panoche LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-46 Panoche LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 486 | Market, Net Seller | 282 | 282 |
| AAEE | -9 | MUNI | 100 | 100 |
| Behind the meter DG | -1 | QF | 3 | 3 |
| Net Load | 477 | Solar | 89 | 40 |
| Transmission Losses | 16 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 493 | Total | 474 | 425 |

### 3.6.6.1.3 Panoche LCR Sub-area Hourly Profiles

Figure 3.6-45 illustrates the forecast 2030 profile for the peak day for the Panoche LCR sub-area with the Category P6 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-46 illustrates the forecast 2030 hourly profile for Panoche LCR sub-area with the Category P6 emergency load serving capability without local capacity resources.

Figure 3.6-45 Panoche LCR Sub-area 2030 Peak Day Forecast Profiles

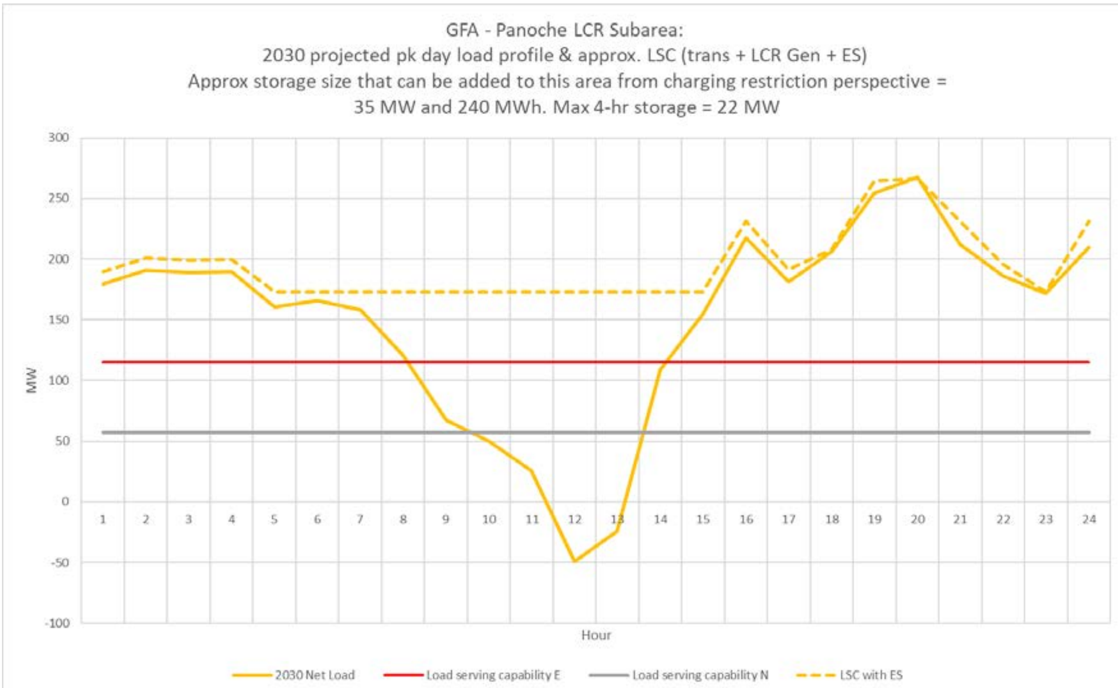
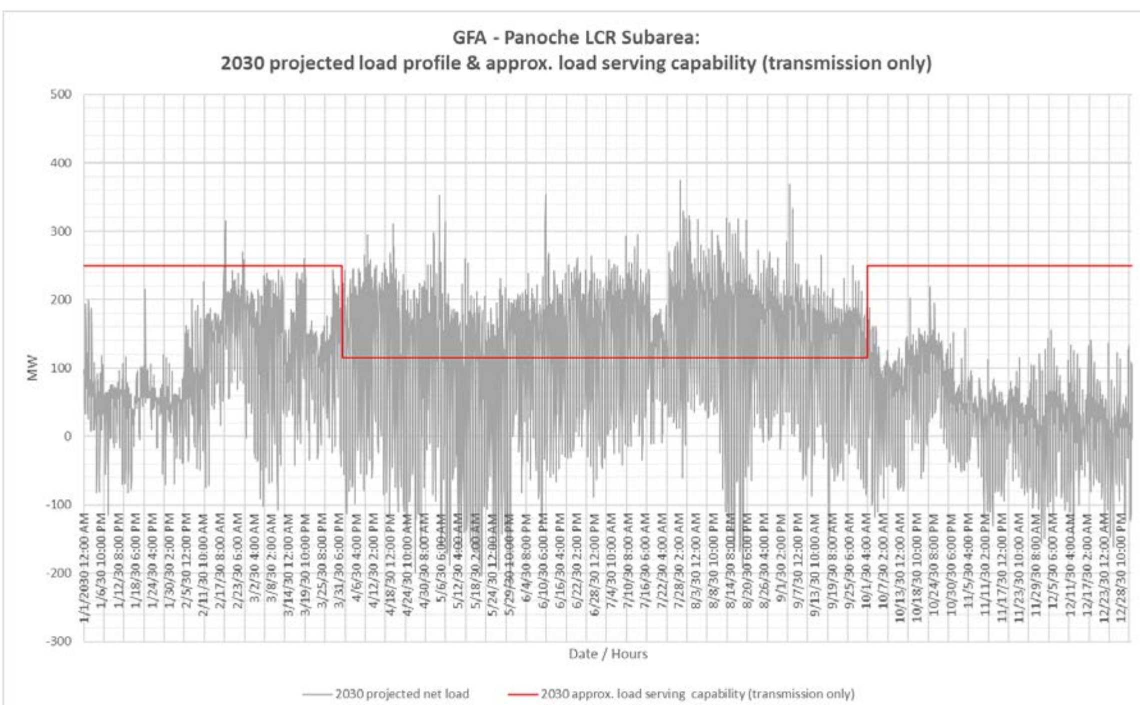



Figure 3.6-46 Panoche LCR Sub-area 2030 Forecast Hourly Profiles



#### 3.6.6.1.4 Panoche LCR Sub-area Requirement

Table 3.6-47 identifies the sub-area LCR requirements. The LCR Requirement for a Category P6 contingency is 275 MW.

Table 3.6-47 Panoche LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First limit | P6 | Five Points-Huron-Gates 70 kV line | Panoche 230/115 kV TB #2 and Panoche 230/115 kV TB # | 275 |

#### 3.6.6.1.5 **Effectiveness factors:**

Effective factors for generators in the Panoche LCR sub-area are in Attachment B table title Panoche.

For other helpful procurement information please read procedure 2210Z Effectiveness Factors under 7430 posted at: http://www.caiso.com/Documents/2210Z.pdf

### 3.6.6.2 *Wilson 115 kV Sub-area*

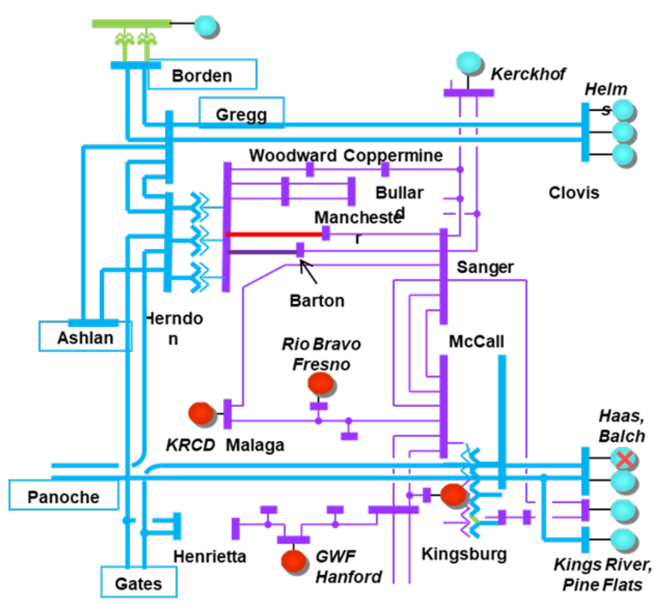
Wilson 115 kV sub-area will be eliminated due to the Wilson #3 230/115 kV transformer coming into service as part of the Wilson 115 kV area reinforcement transmission project.

### 3.6.6.3 *Herndon Sub-area*

Herndon is a sub-area of the Fresno LCR area.

#### 3.6.6.3.1 Herndon LCR Sub-area Diagram

Figure 3.6-47 Herndon LCR Sub-area



#### 3.6.6.3.2 Herndon LCR Sub-area Load and Resources

Table 3.6-48 provides the forecast load and resources in Herndon LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-48 Herndon LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 1680 | Market, Net Seller, Battery | 997 | 997 |
| AAEE | -35 | MUNI | 98 | 98 |
| Behind the meter DG | 0 | QF | 1 | 1 |
| Net Load | 1644 | Solar | 63 | 28 |
| Transmission Losses | 33 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 1677 | Total | 1159 | 1124 |

#### 3.6.6.3.3 Herndon LCR Sub-area Hourly Profiles

Figure 3.6-48 illustrates the forecast 2030 profile for the peak day for the Herndon LCR sub-area with the Category P6 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-49 illustrates the forecast 2030 hourly profile for Herndon LCR sub-area with the Category P6 emergency load serving capability without local capacity resources.

Figure 3.6-48 Herndon LCR Sub-area 2030 Peak Day Forecast Profiles

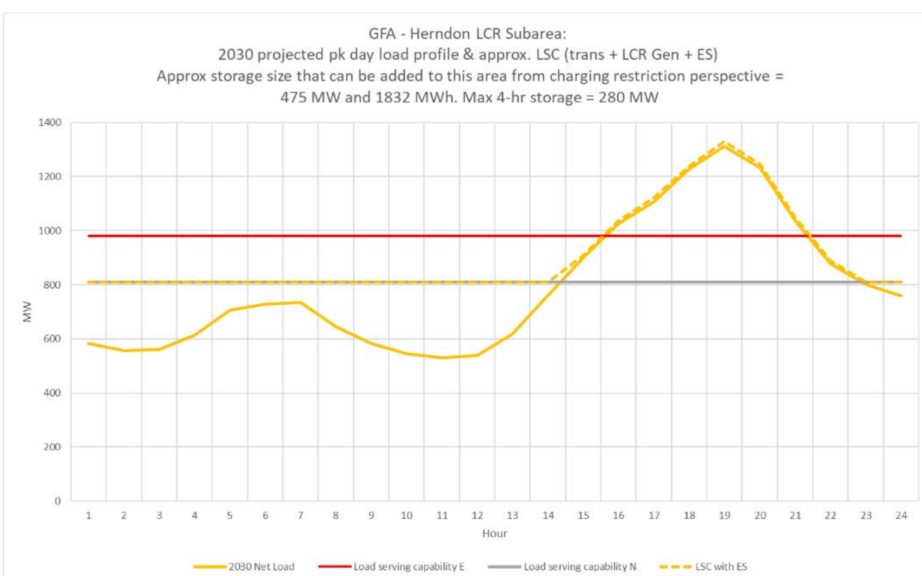
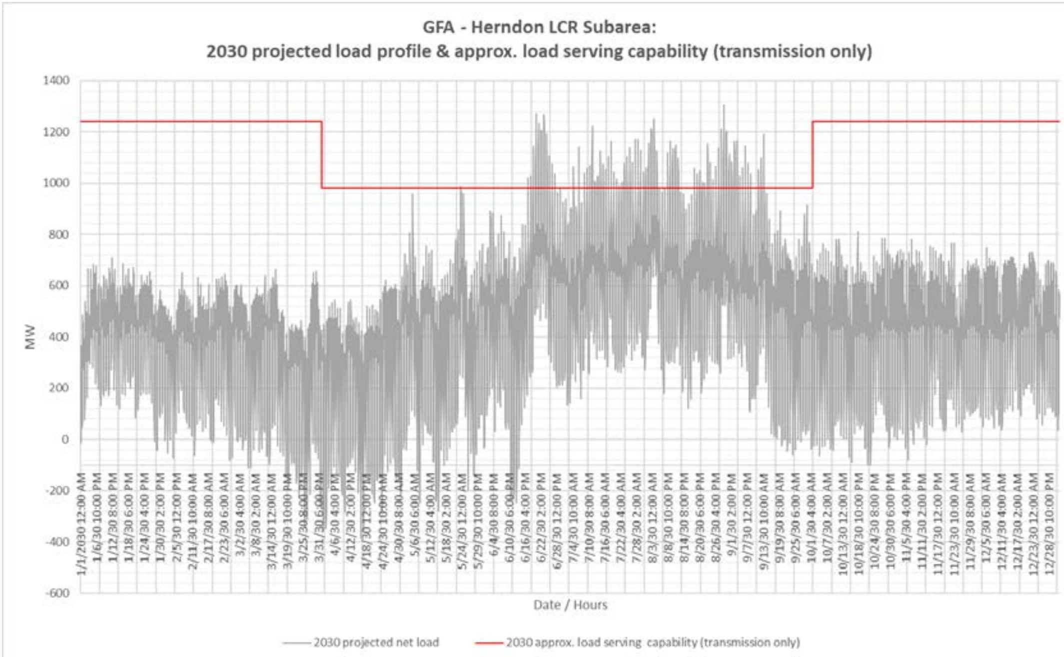


Figure 3.6-49 Herndon LCR Sub-area 2030 Forecast Hourly Profiles




#### 3.6.6.3.4 Herndon LCR Sub-area Requirement

Table 3.6-49 identifies the sub-area LCR requirements. The LCR Requirement for a Category P6 contingency is 476 MW.

Table 3.6-49 Herndon LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First limit | P6 | Herndon-Manchester 115 kV | Herndon-Woodward 115 kV line & Herndon-Barton 115 kV line | 476 |

#### 3.6.6.3.5 **Effectiveness factors:**

Effectiveness factors for generators in the Herndon LCR sub-area are in Attachment B table titled Herndon.

For other helpful procurement information please read procedure 2210Z Effectiveness Factors under 7430 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.6.3.6 Alternatives to Reduce or Eliminate Gas Generation

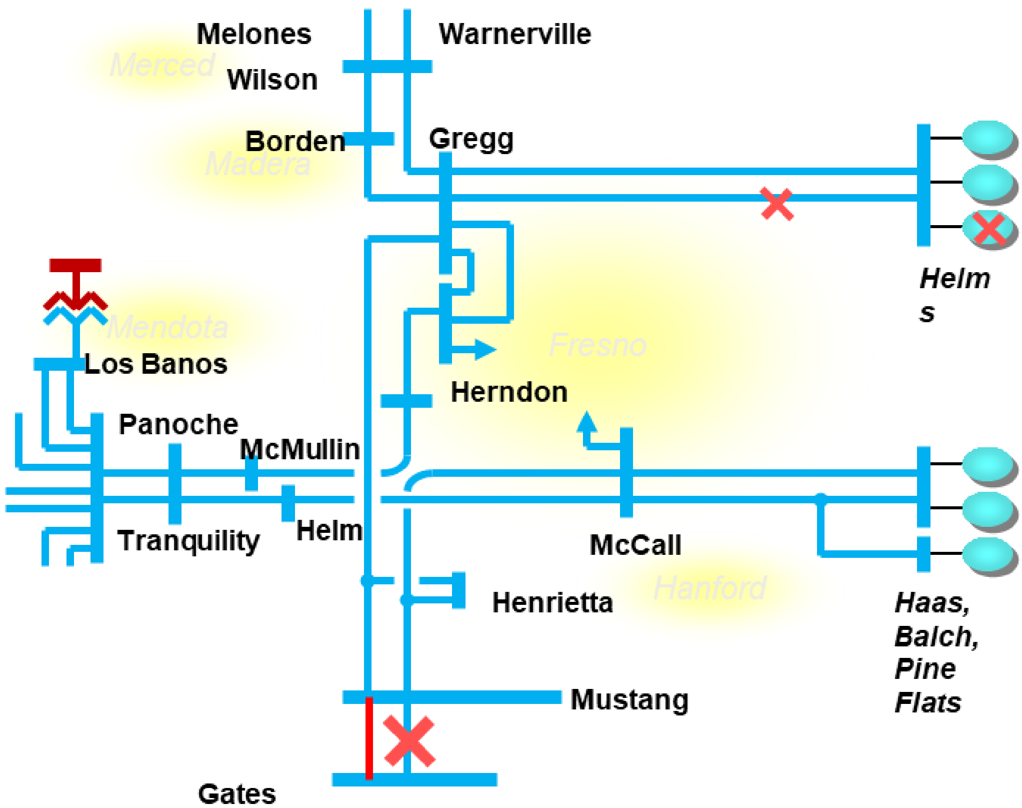
In the 2020-2021 transmission planning process the Herndon LCR sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

As a part of the 2018-2019 transmission planning process the ISO undertook an assessment of the Herndon sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation. The 2028 LCR assessment indicates that the Herndon LCR sub-area requirement can be addressed by non-gas generation in the sub-area.

### 3.6.6.4 *Fresno Area Overall*

#### 3.6.6.4.1 Fresno Overall Area Diagram

Figure 3.6-50 Fresno Overall LCR Area




#### 3.6.6.4.2 Fresno Overall LCR Area Load and Resources

Table 3.6-39 provides the forecast load and resources in Fresno LCR area in 2030. The list of generators within the LCR area are provided in Attachment A.

#### 3.6.6.4.3 Fresno Overall LCR Area Hourly Profiles

Figure 3.6-51 illustrates the forecast 2030 profile for the peak day for the overall LCR area with the Category P6 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-52 illustrates the forecast 2030 hourly profile for overall LCR area with the Category P6 emergency load serving capability without local capacity resources.

Figure 3.6-51 Greater Fresno Overall LCR Area 2030 Peak Day Forecast Profiles

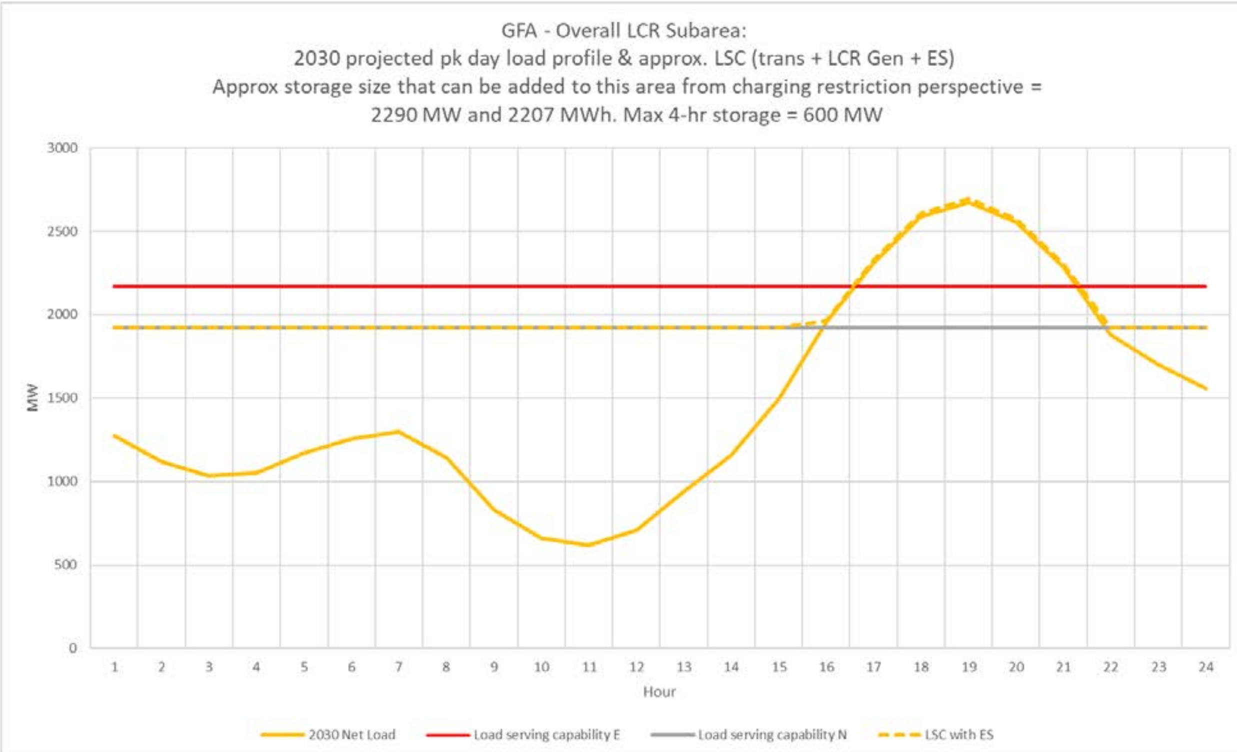
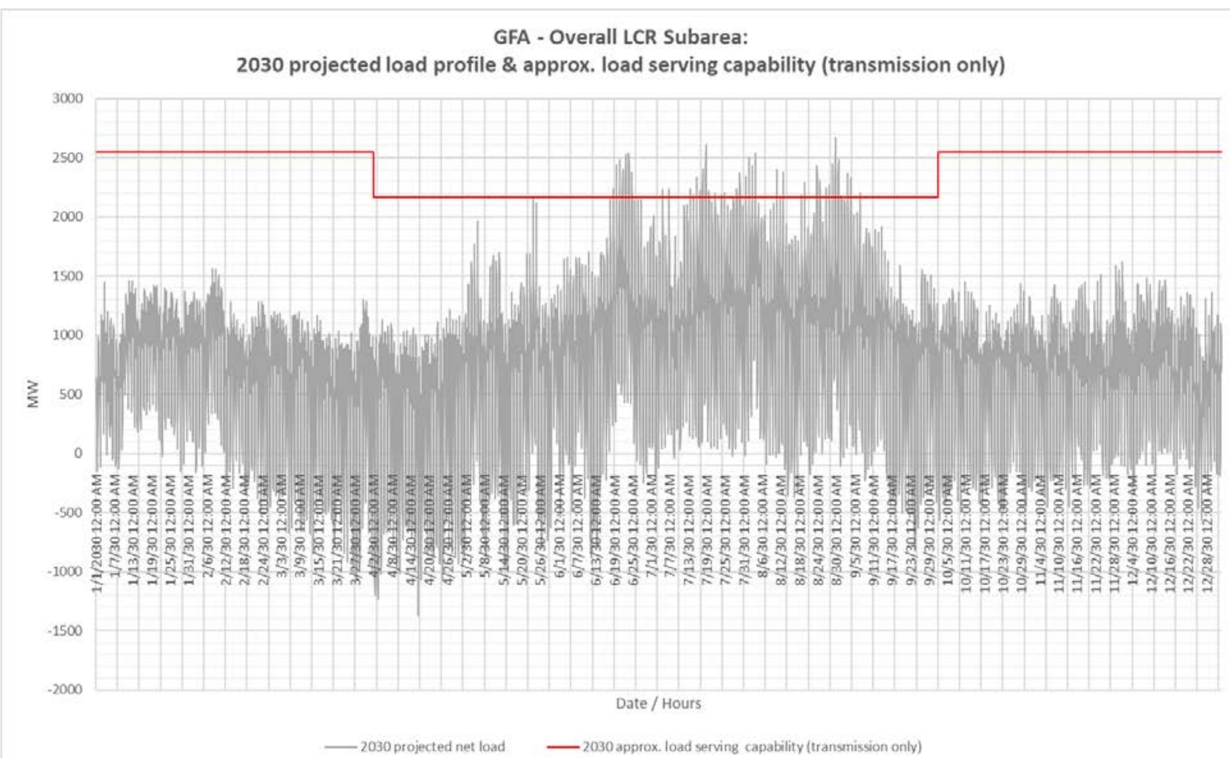



Figure 3.6-52 Greater Fresno Overall LCR Area 2030 Forecast Hourly Profiles



#### 3.6.6.4.4 Fresno Overall LCR Sub-area Requirement

Table 3.6-50 identifies the area LCR requirements. The LCR requirement Category P6 contingency is 2296 MW.

Table 3.6-50 Fresno Overall LCR Area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First limit | P6 | GWF-Contandida 115 kV Line | Panoche-Helm 230 kV Line and Gates-McCall 230 kV line | 2296 |

#### 3.6.6.4.5 **Effectiveness factors:**

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7430 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.6.4.6 Changes compared to the 2025 LCT study

The load forecast increased by 310 MW and the LCR has increased by 325 MW, due to load increase.

#### 3.6.6.4.7 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Fresno overall area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

As a part of the 2018-2019 transmission planning process the ISO undertook an assessment of the Wilson sub-area (Fresno overall area) in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation. The 2028 LCT study identified that the requirement in the Wilson Sub-area (Fresno overall area) can be addressed with non-gas generation.

### 3.6.7 Kern Area

#### 3.6.7.1 *Area Definition:*

The transmission facilities coming into the Kern PP sub-area are:

Midway-Kern PP #1 230 kV Line

Midway-Kern PP #2 230 kV Line

Midway-Kern PP #3 230 kV Line

Midway-Kern PP #4 230 kV Line

Wind Gap-Wheeler Ridge #1 230 kV Line

Wind Gap-Wheeler Ridge #2 230 kV Line

Famoso-Lerdo 115 kV Line (Normal Open)

Wasco-Famoso 70 kV Line (Normal Open)

Copus-Old River 70 kV Line (Normal Open)

Copus-Old River 70 kV Line (Normal Open)

Weedpatch CB 32 70 kV (Normal Open)

The substations that delineate the Kern-PP sub-area are:

Midway 230 kV is out and Bakersfield 230 kV is in

Midway 230 kV is out Kern PP 230 kV is in

Midway 230 kV is out and Stockdale 230 kV is in

Midway 230 kV is out Kern PP 230 kV is in

Wind Gap 230 kV is out Wheeler Ridge 230 kV is in

Wind Gap 230 kV is out Wheeler Ridge 230 kV is in

Famoso 115 kV is out Cawelo 115 kV is in

Wasco 70 kV is out Mc Farland 70 kV is in

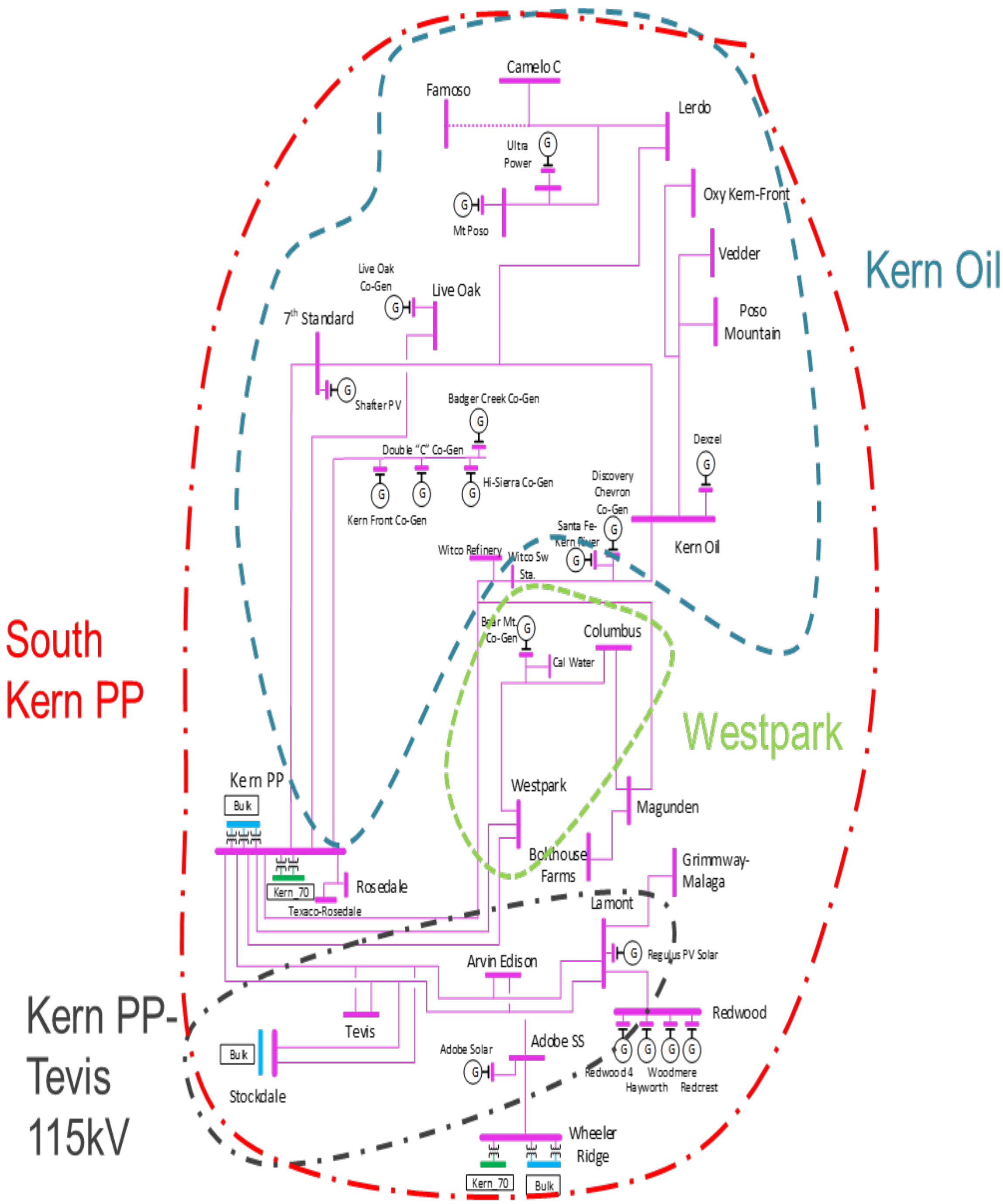
Copus 70 kV is out, South Kern Solar 70 kV is in

Lakeview 70 kV is out, San Emidio Junction 70 kV is in

Weedpatch 70 kV is out, Wellfield 70 kV is in

#### 3.6.7.1.1 Kern LCR Area Diagram

Figure 3.6-53 Kern LCR Area




#### 3.6.7.1.2 Kern LCR Area Load and Resources

Table 3.6-57 provides the forecast load and resources in Kern LCR area in 2030. The list of generators within the LCR area are provided in Attachment A.

In year 2030 the estimated time of local area peak is 19:20 PM.

At the local area peak time the estimated, ISO metered, solar output is 0.00%.

If required, all non-solar technology type resources are dispatched at NQC.

Table 3.6-51 Kern LCR Area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 1125 | Market, Net Seller | 330 | 330 |
| AAEE | -26 | MUNI | 0 | 0 |
| Behind the meter DG | 0 | QF | 5 | 5 |
| Net Load | 1099 | Solar | 78 | 0 |
| Transmission Losses | 11 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 1110 | Total | 413 | 335 |

#### 3.6.7.1.3 Approved transmission projects modeled

Kern PP 230 kV area reinforcement project

Midway-Kern PP 1, 3 &4 230 kV line capacity increase project

Kern PP 115 kV area reinforcement project

### 3.6.7.2 *Kern PP 70 kV Sub-area*

Kern PP 70 kV is a sub-area of the Kern LCR area.

The Kern PP 70 kV Sub-area has been eliminated due to load changes and project modeling changes in the area.

### 3.6.7.3 *Westpark Sub-area*

Westpark is a sub-area of the Kern LCR area.

#### 3.6.7.3.1 Westpark LCR Sub-area Diagram

Please see Figure 3.6-53 for Westpark sub-area diagram.

#### 3.6.7.3.2 Westpark LCR Sub-area Load and Resources

Table 3.6-58 provides the forecast load and resources in Westpark LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-52 Westpark LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 443 | Market, Net Seller | 139 | 139 |
| AAEE | -10 | MUNI | 0 | 0 |
| Behind the meter DG | 0 | QF | 5 | 5 |
| Net Load | 433 | Solar | 7 | 0 |
| Transmission Losses | 1 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 434 | Total | 151 | 144 |

### 3.6.7.3.3 Westpark LCR Sub-area Hourly Profiles

Figure 3.6-54 illustrates the forecast 2030 profile for the peak day for the Westpark LCR sub-area with the Category P6 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-55 illustrates the forecast 2030 hourly profile for Westpark LCR sub-area with the Category P6 contingency transmission capability without local capacity resources.

Figure 3.6-54 Westpark LCR Sub-area 2030 Peak Day Forecast Profiles

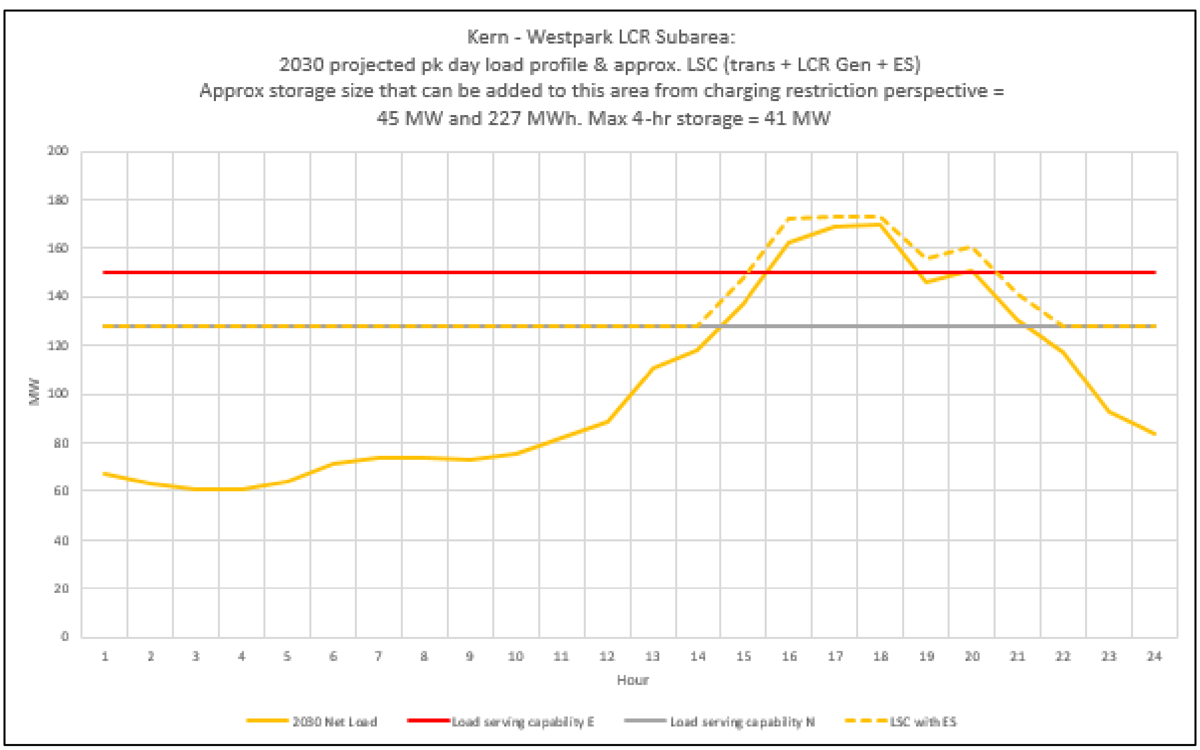
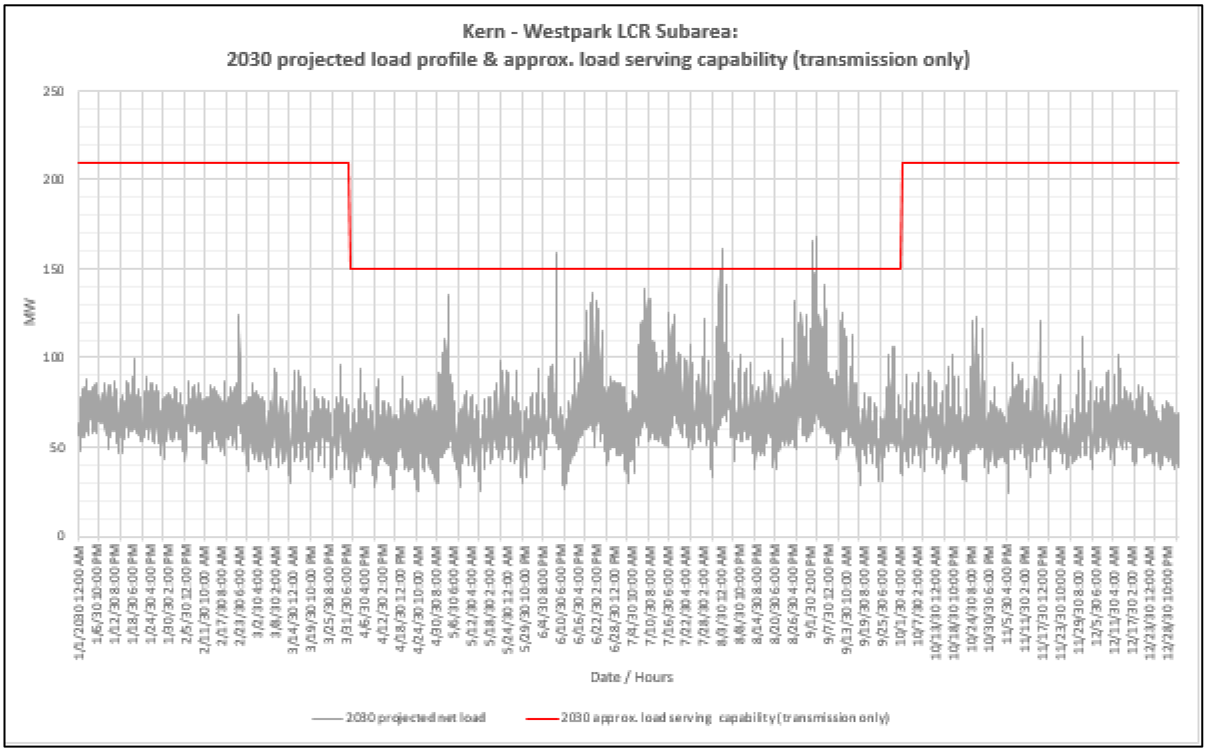


Figure 3.6-55 Westpark LCR Sub-area 2030 Forecast Hourly Profiles




#### 3.6.7.3.4 Westpark LCR Sub-area Requirement

Table 3.6-59 identifies the sub-area LCR requirements. The LCR requirement for Category P3 contingency is 150 MW with a 6 MW deficiency at peak.

Table 3.6-53 Westpark LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P3 | Kern-West Park #2 115 kV | Kern-West Park #1 115 kV and PSE-Bear Generation | 150 (6 Peak) |

#### 3.6.7.3.5 **Effectiveness factors:**

All units within the Westpark Sub-area have the same effectiveness factor.

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7450 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.7.3.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Westpark LCR sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

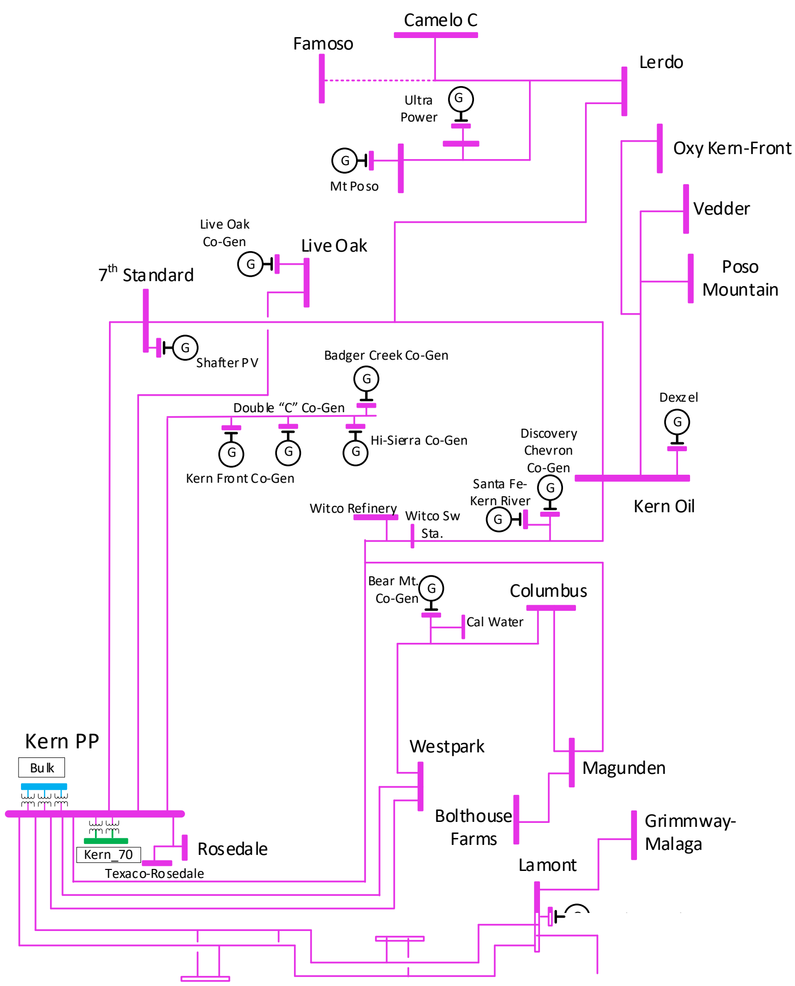
As a part of the 2018-2019 transmission planning process the ISO undertook an assessment of the Westpark sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

### 3.6.7.4 *Kern Oil Sub-area*

Kern Oil is a sub-area of the Kern LCR area.

#### 3.6.7.4.1 Kern Oil LCR Sub-area Diagram

Figure 3.6-56 Kern Oil LCR Sub-area




#### 3.6.7.4.2 Kern Oil LCR Sub-area Load and Resources

Table 3.6-60 provides the forecast load and resources in Kern Oil LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-54 Kern Oil LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 632 | Market | 95 | 95 |
| AAEE | -12 | MUNI | 0 | 0 |
| Behind the meter DG | 0 | QF | 5 | 5 |
| Net Load | 620 | Solar | 7 | 0 |
| Transmission Losses | 1 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 619 | Total | 107 | 100 |

### 3.6.7.4.3 Kern Oil LCR Sub-area Hourly Profiles

Figure 3.6-57 illustrates the forecast 2030 profile for the peak day for the Kern Oil LCR sub-area with the Category P6 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-58 illustrates the forecast 2030 hourly profile for Kern Oil LCR sub-area with the Category P6 contingency transmission capability without local capacity resources.

Figure 3.6-57 Kern Oil LCR Sub-area 2030 Peak Day Forecast Profiles

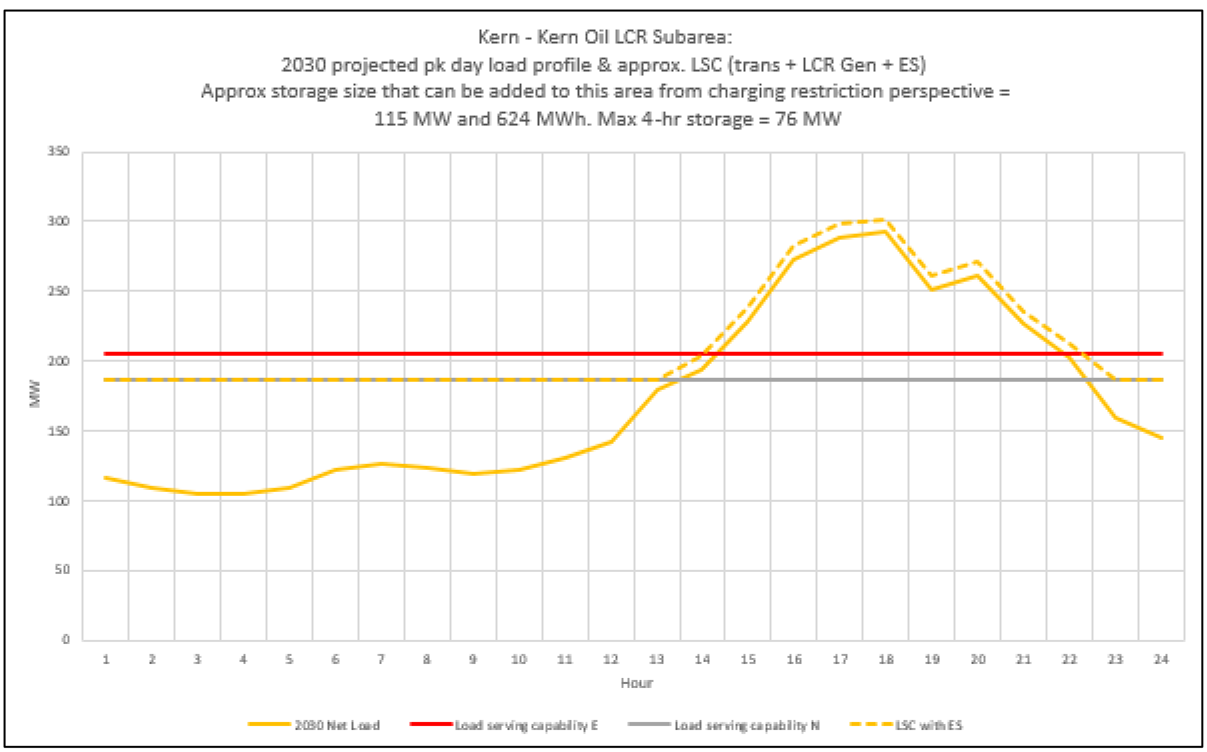
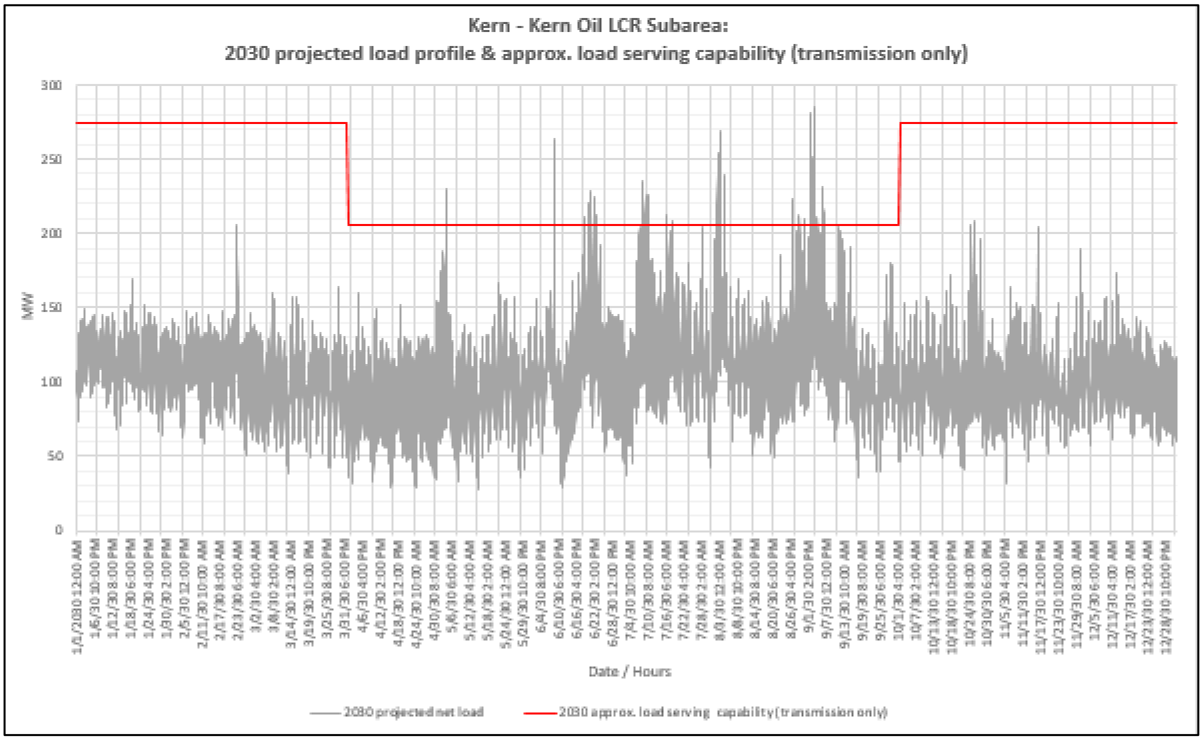


Figure 3.6-58 Kern Oil LCR Sub-area 2030 Forecast Hourly Profiles




#### 3.6.7.4.4 Kern Oil LCR Sub-area Requirement

Table 3.6-61 identifies the sub-area LCR requirements. The LCR requirement for Category Category P6 contingency LCR requirement is 115 MW with a 8 MW NQC deficiency (15 MW peak deficiency).

Table 3.6-55 Kern Oil LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency- | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P6 | Kern Power to Kern Water 115 kV line section | Kern PP-7th Standard 115 kV lines & Kern PP-Live Oak 115 kV Line | 115 (8 NQC/15 Peak) |

#### 3.6.7.4.5 **Effectiveness factors:**

All units within the Kern Oil Sub-area have the same effectiveness factor.

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7450 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.7.4.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Kern Oil LCR sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

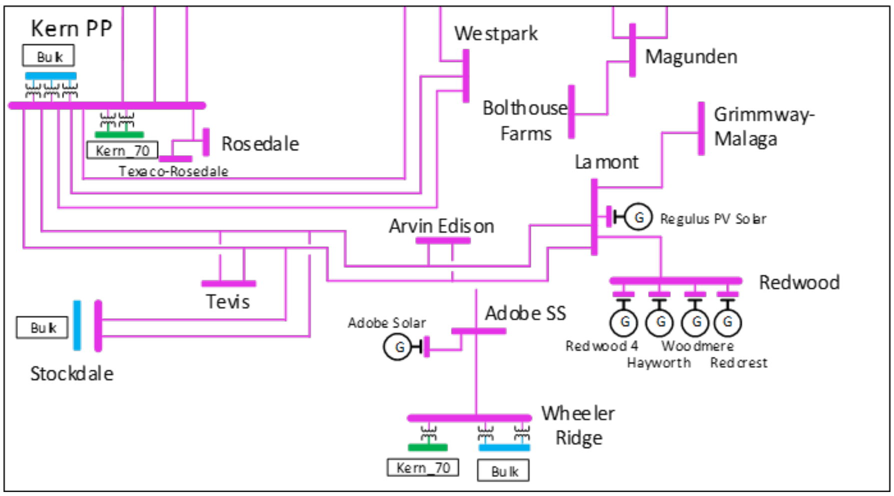
As a part of the 2018-2019 transmission planning process the ISO undertook an assessment of the Kern Oil sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

### 3.6.7.5 *Kern PP-Tevis 115 kV Sub-area*

Kern PP-Tevis 115 kV is a sub-area of the Kern LCR area.

#### 3.6.7.5.1 Kern PP-Tevis 115 kV LCR Sub-area Diagram

Figure 3.6-59 Kern PP-Tevis 115 kV LCR Sub-area




#### 3.6.7.5.2 Kern PP-Tevis 115 kV LCR Sub-area Load and Resources

Table 3.6-56 provides the forecast load and resources in Kern PP-Tevis LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-56 Kern PP-Tevis LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 189 | Market | 0 | 0 |
| AAEE | -4 | MUNI | 0 | 0 |
| Behind the meter DG | 0 | QF | 0 | 0 |
| Net Load | 185 | Solar | 52 | 0 |
| Transmission Losses | 0 | Existing 20-minute Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 185 | Total | 52 | 0 |

#### 3.6.7.5.3 Kern PP-Tevis 115 kV LCR Sub-area Hourly Profiles

Figure 3.6-60 illustrates the forecast 2030 profile for the peak day for the Kern PP-Tevis LCR sub-area with the Category P6 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-61 illustrates the forecast 2030 hourly profile for Kern PP-Tevis LCR sub-area with the Category P6 contingency transmission capability without local capacity resources.

Figure 3.6-60 Kern PP-Tevis LCR Sub-area 2030 Peak Day Forecast Profiles

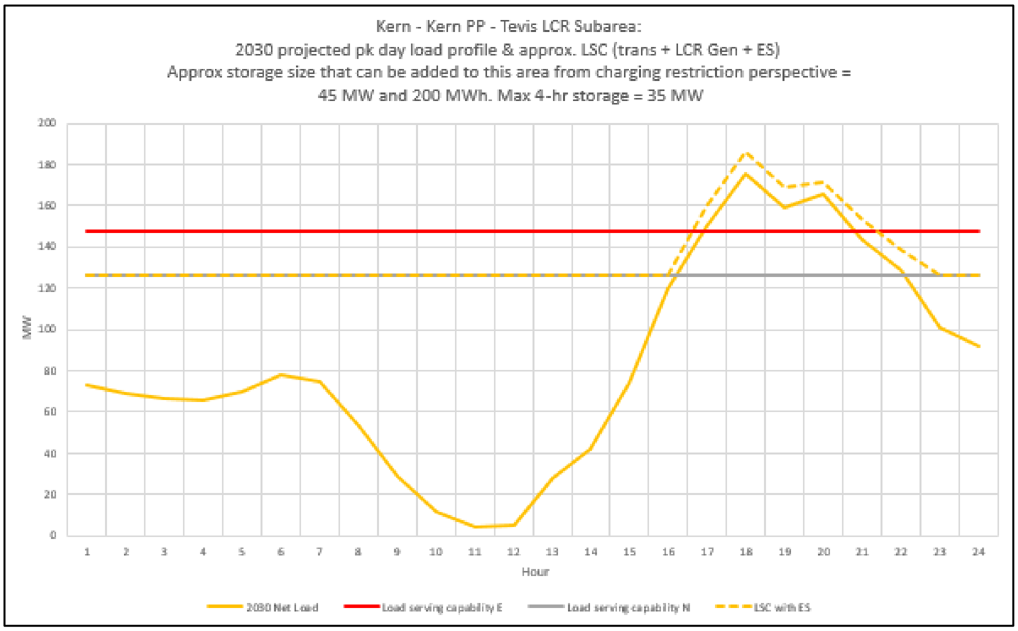
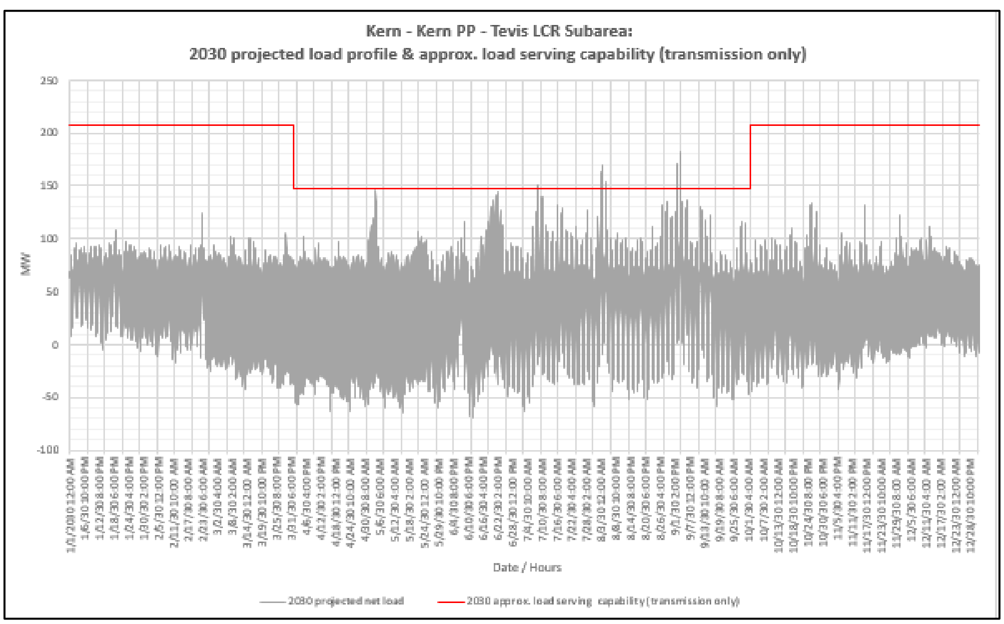



Figure 3.6-61 Kern PP-Tevis LCR Sub-area 2030 Forecast Hourly Profiles



#### 3.6.7.5.4 Kern PP-Tevis 115 kV LCR Sub-area Requirement

Table 3.6-57 identifies the sub-area LCR requirements. The LCR requirement for Category Category P2 contingency LCR requirement is 57 MW including a 57 MW deficiency at peak and 7 MW NQC deficiency.

Table 3.6-57 Kern pp-Tevis LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency- | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P2 | Kern Power -TevisJ2 115 kV Line | Kern-Tevis-Stockdale 115 kV (Kern Pwr-Tevis J1 section) | 57 (57 Peak, 7 NQC) |

#### 3.6.7.5.5 **Effectiveness factors:**

All units within the Kern PP-Tevis 115 kV Sub-area have the same effectiveness factor.

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7450 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.7.5.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Kern PP 70 kV LCR sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

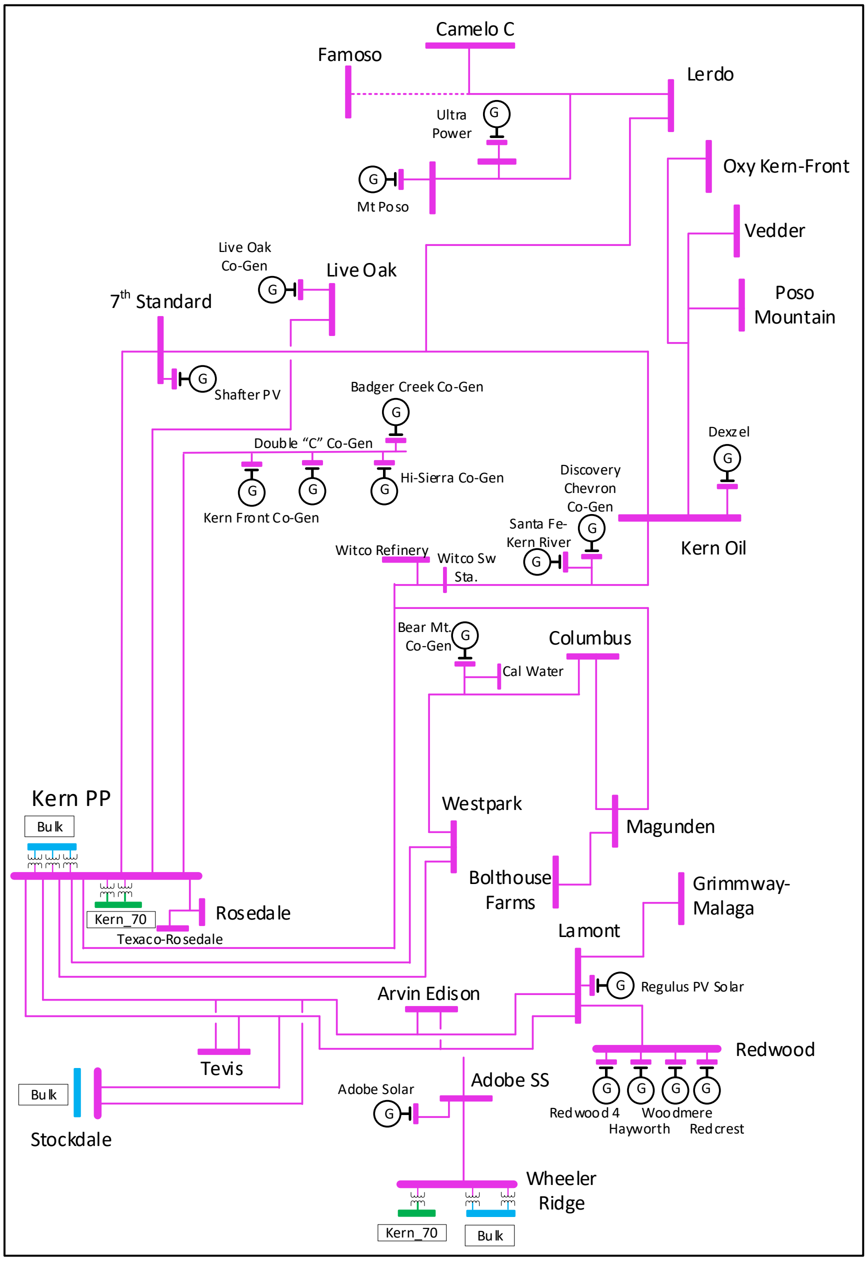
As a part of the 2018-2019 transmission planning process the ISO undertook an assessment of the Kern PP 70 kV sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation. There is no gas-fired generation within the Kern PP 70 kV sub-area.

### 3.6.7.6 ***South Kern PP Sub-area***

South Kern PP is a sub-area of the Kern LCR area.

#### 3.6.7.6.1 South Kern PP LCR Sub-area Diagram

Figure 3.6-62 South Kern PP LCR Sub-area




### 3.6.7.6.2 South Kern PP LCR Sub-area Load and Resources

Refer to Table 3.2-51 Kern Area Load and Resources table.

### 3.6.7.6.3 South Kern PP LCR Sub-area Hourly Profiles

Figure 3.6-63 illustrates the forecast 2030 profile for the summer peak, winter peak and spring off-peak days for the South Kern PP LCR sub-area with the Category P6 contingency transmission capability without resources. Figure 3.6-64 illustrates the forecast 2030 hourly profile for South Kern PP LCR sub-area with the Category P6 contingency transmission capability without resources.

Figure 3.6-63 South Kern PP LCR Sub-area 2030 Peak Day Forecast Profiles

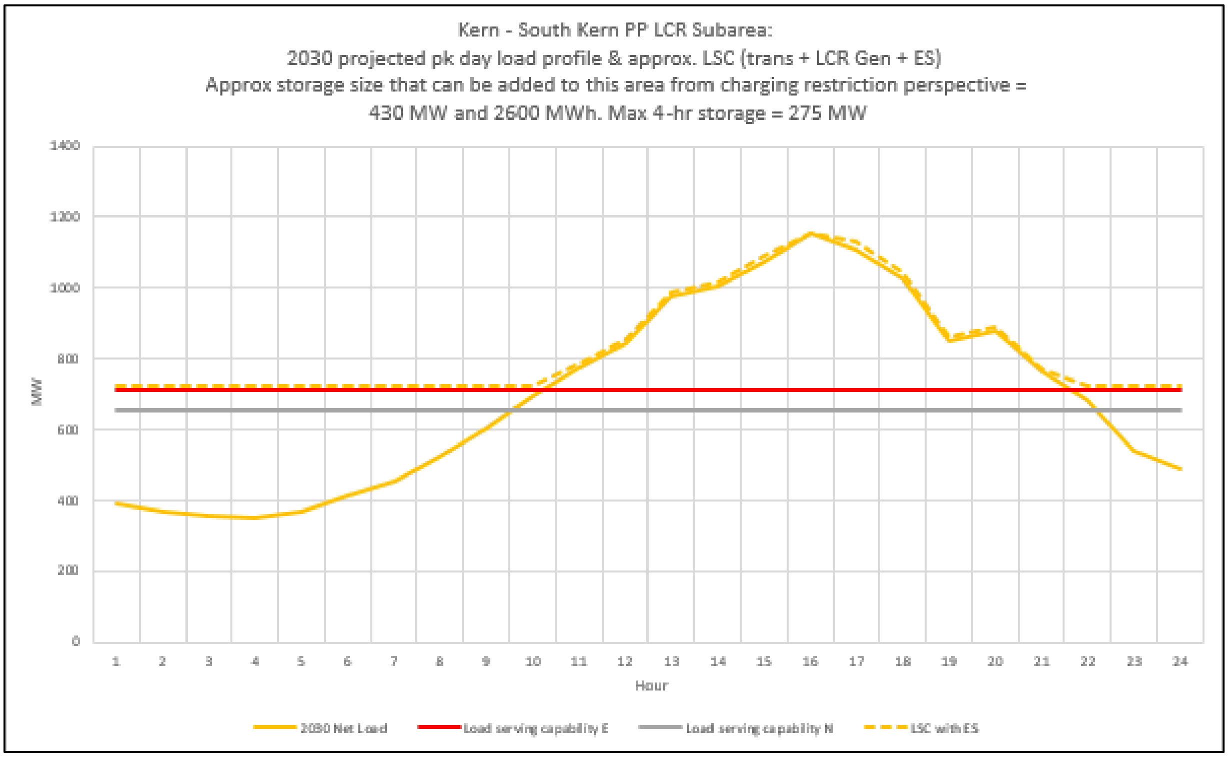
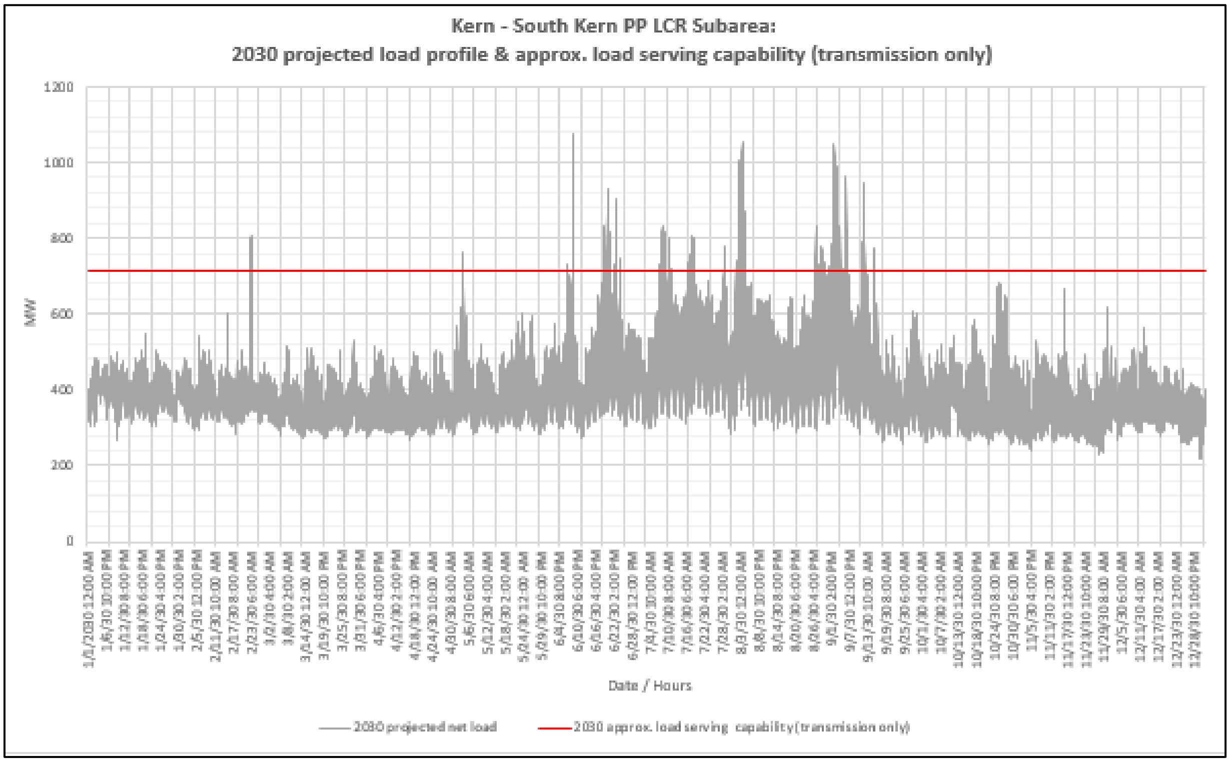



Figure 3.6-64 South Kern Overall LCR Area 2030 Forecast Hourly Profiles



#### 3.6.7.6.4 South Kern PP LCR Sub-area Requirement

Table 3.6-58 identifies the sub-area LCR requirements. The LCR requirement for Category P6 contingency is 502 MW with a 167 MW deficiency at peak and 89 MW NQC deficiency.

Table 3.6-58 South Kern PP LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P6 | Kern 230/115 kV T/F # 5 | Kern 230/115 kV T/F # 3 & Kern 230/115 kV T/F # 4 | 502 (167 at peak/ 89 NQC) |

#### 3.6.7.6.5 **Effectiveness factors:**

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7450 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.7.6.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Suth Kern LCR sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

As a part of the 2018-2019 transmission planning process the ISO undertook an assessment of the South Kern sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

### 3.6.7.7 *Kern Area Overall Requirements*

#### 3.6.7.7.1 Kern LCR Area Overall Requirement

Table 3.6-59 identifies the limiting facility and contingency that establishes the Kern Area 2030 LCR requirements. The LCR requirement for Category P6 contingency the LCR requirement is 502 MW with a 89 MW NQC deficiency or 167 MW of at peak deficiency.

Table 3.6-59 Kern Overall LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | N/A | P6 | Aggregate of Sub-areas. | | 502 (89 NQC/ 167 Peak) |

#### 3.6.7.7.2 Changes compared to the 2025 LCT study

Due to the definition change, the load has decreased by 541 MW and the LCR requirement has increased by 230 MW. The definition change was triggered due to re-evaluation of the Wheeler Ridge Junction project (modeled in the 2025 case and not modeled in the 2030 case).

#### 3.6.7.7.3 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Kern overall LCR area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

As a part of the 2018-2019 and 2019-2020 transmission planning process the ISO undertook an assessment of the Kern overall area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

## 3.6.8 Big Creek/Ventura Area

### 3.6.8.1 *Area Definition:*

The transmission tie lines into the Big Creek/Ventura Area are:

Antelope #1 500/230 kV Transformer

Antelope #2 500/230 kV Transformer

Sylmar - Pardee 230 kV #1 and #2 Lines

Vincent - Pardee 230 kV #2 Line

Vincent - Santa Clara 230 kV Line

The substations that delineate the Big Creek/Ventura Area are:

Antelope 500 kV is out Antelope 230 kV is in

Antelope 500 kV is out Antelope 230 kV is in

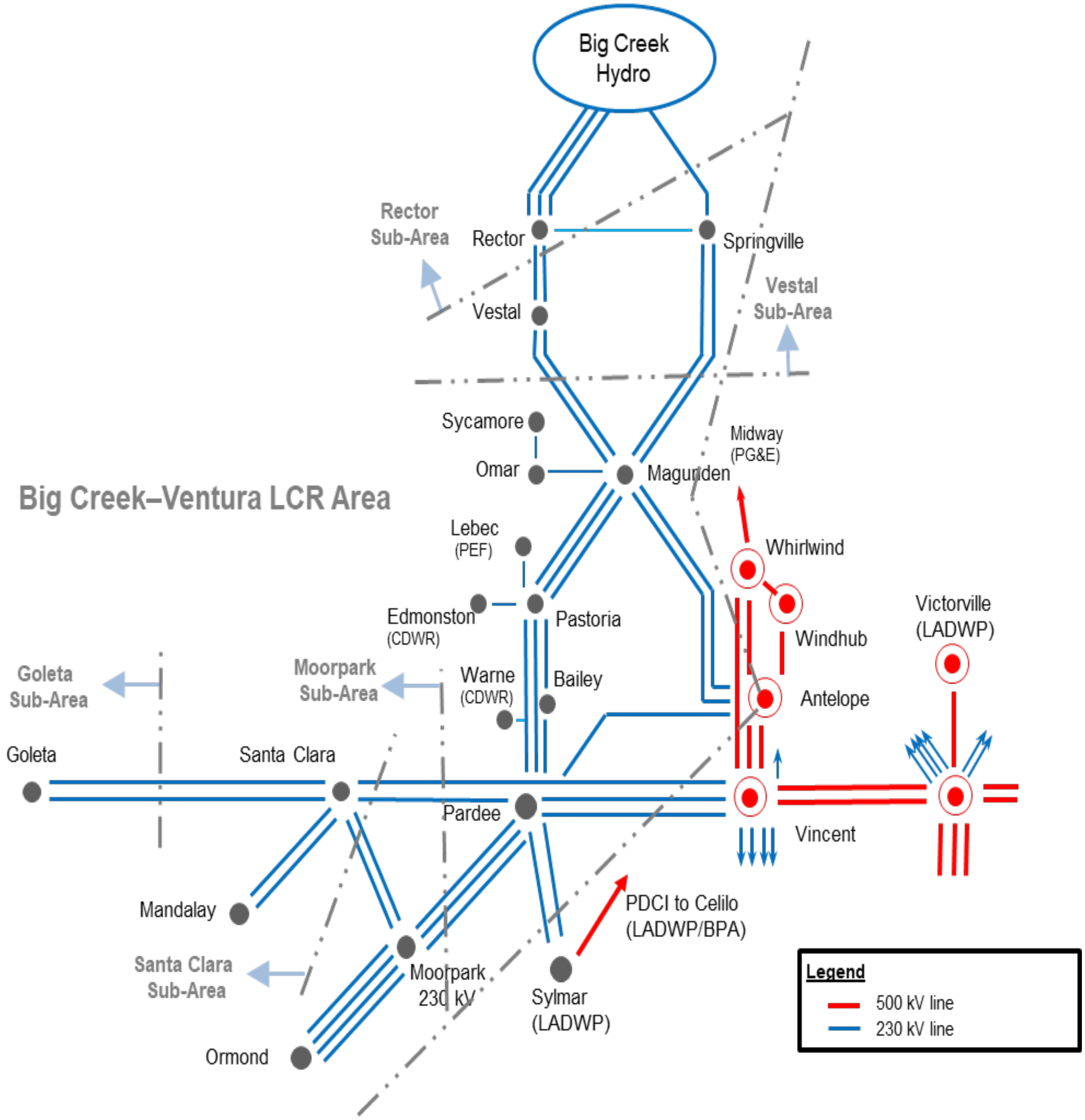
Sylmar is out Pardee is in

Vincent is out Pardee is in

Vincent is out Santa Clara is in

#### 3.6.8.1.1 Big Creek/Ventura LCR Area Diagram

Figure 3.6-65 Big Creek/Ventura LCR Area




### 3.6.8.1.2 Big Creek/Ventura LCR Area Load and Resources

Table 3.6-60 provides the forecast load and resources in the Big Creek/Ventura LCR area in 2030. The list of generators within the LCR area are provided in Attachment A and does not include new LTPP Preferred resources or existing DR.

In year 2030 the estimated time of local area peak is hour ending 19:00 PST (HE 20:00 PDT).

At the local area peak time the estimated, ISO-metered solar output is 0.0%.

If required, all non-solar technology type resources are dispatched at NQC.

Table 3.6-60 Big Creek/Ventura LCR Area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 4293 | Market, Net Seller, Battery, Wind | 3132 | 3132 |
| AAEE | -106 | MUNI | 312 | 312 |
| Behind the meter DG | 0 | QF | 112 | 112 |
| Net Load | 4187 | Solar | 250 | 0 |
| Transmission Losses | 68 | Other preferred resources and storage | 25 | 20 |
| Pumps | 223 | Existing Demand Response | 63 | 63 |
| Load + Losses + Pumps | 4478 | Total | 3894 | 3644 |

#### 3.6.8.1.3 Approved transmission projects modeled:

Pardee-Moorpark No. 4 230 kV Transmission Circuit (ISD – 6/1/2021)

Pardee-Sylmar 230 kV Rating Increase Project (ISD- 5/31/2023)

### 3.6.8.2 *Rector Sub-area*

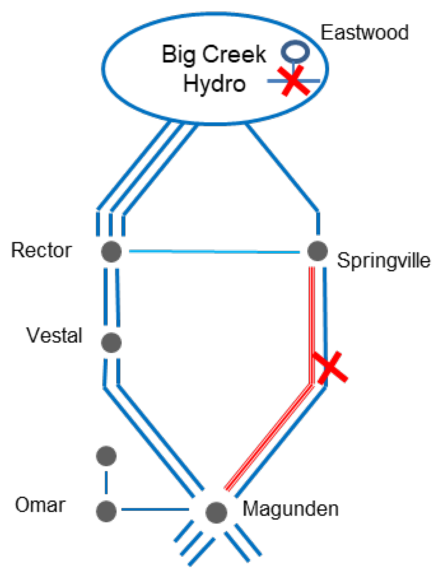
LCR need is satisfied by the need in the larger Vestal sub-area.

### 3.6.8.3 *Vestal Sub-area*

Vestal is a sub-area of the Big Creek/Ventura LCR area.

#### 3.6.8.3.1 Vestal LCR Sub-area Diagram

Figure 3.6-66 Vestal LCR Sub-area



#### 3.6.8.3.2 Vestal LCR Sub-area Load and Resources

Table 3.6-61 provides the forecast load and resources in Vestal LCR sub-area in 2030. The list of generators within the LCR sub-area is provided in Attachment A.

Table 3.6-61 Vestal LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 1287 | Market, Net Seller, Battery, Wind | 1055 | 1055 |
| AAEE | 31 | MUNI | 0 | 0 |
| Behind the meter DG | 0 | QF | 22 | 22 |
| Net Load | 1256 | Solar | 9 | 0 |
| Transmission Losses | 31 | Other preferred resources and storage | 0 | 0 |
| Pumps | 0 | Existing 20-minute Demand Response | 27 | 27 |
| Load + Losses + Pumps | 1287 | Total | 1113 | 1104 |

#### 3.6.8.3.3 Vestal LCR Sub-area Requirement

Table 3.6-62 identifies the sub-area LCR requirements. The 2030 LCR requirement for Category P3 contingency is 434 MW.

Table 3.6-62 Vestal LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P3 | Magunden–Springville #2 230 kV line | Magunden–Springville #1 230 kV line with Eastwood out of service | 434 |
| 2030 | Second Limit[6] | P3 | Magunden–Vestal 230 kV lines | One Magunden–Vestal 230 kV line with Eastwood out of service | 419 |

#### 3.6.8.3.4 Effectiveness factors:

For helpful procurement information please read procedure 2210Z Effectiveness Factors under 7500 posted at: http://www.caiso.com/Documents/2210Z.pdf

[6] Due to the larger difference between normal and emergency ratings of the limiting facility associated with the second limit compared to that associated with the first limit, the second limit is the binding constraint for energy storage local capacity. Therefore, the energy storage local capacity analysis is performed based on the second limit

#### 3.6.8.3.5 Vestal LCR Sub-area Hourly Profiles

Figure 3.6-69 illustrates the forecast 2030 profile for the peak day for the Vestal LCR sub-area along with the Category P3 normal and emergengy load serving capabilities without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-70 illustrates the forecast 2030 hourly profile for Vestal LCR sub-area along with the Category P3 emergency load serving capability without local capacity resources.

Figure 3.6-67 Vestal LCR Sub-area 2030 Peak Day Forecast Profiles

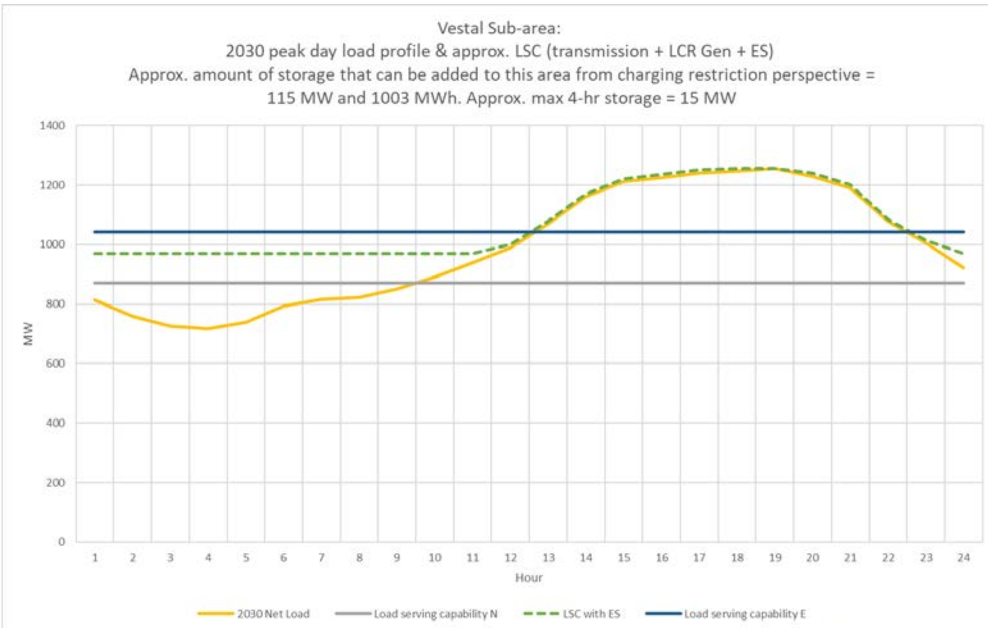
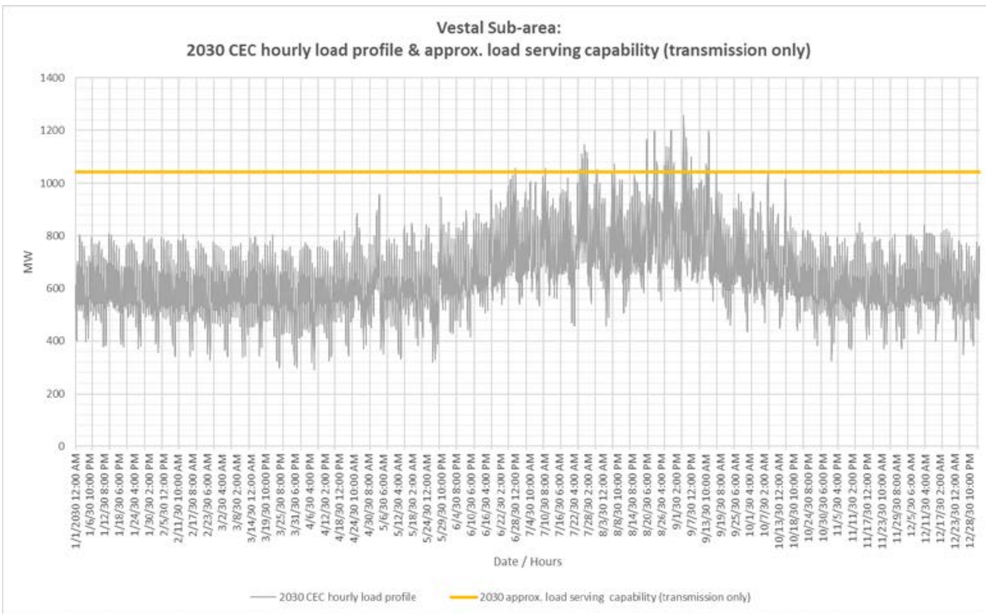



Figure 3.6-68 Vestal Sub-area 2030 Forecast Hourly Profile



#### 3.6.8.3.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Vestal sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

As a part of the 2018-2019 transmission planning process the ISO undertook an assessment of the Vestal sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation. The 2028 LCT study identified that the requirement in the Vestal sub-area can be addressed with non-gas generation.

### 3.6.8.4 *Goleta Sub-area*

Goleta is a sub-area of the Big Creek/Ventura LCR area.

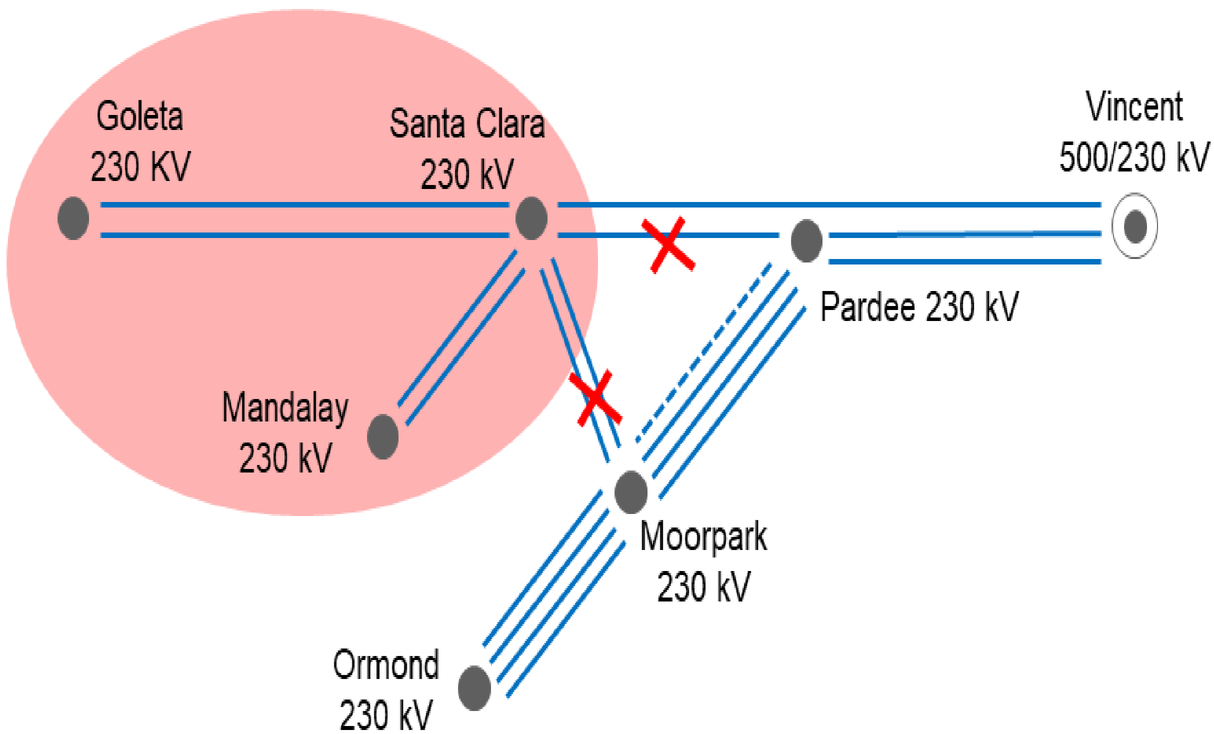
The LCR need is satisfied by the need in the larger Santa Clara sub-area.

### 3.6.8.5 *Santa Clara Sub-area*

Santa Clara is a sub-area of the Big Creek/Ventura LCR area.

#### 3.6.8.5.1 Santa Clara LCR Sub-area Diagram

Figure 3.6-69 Santa Clara LCR Sub-area




#### 3.6.8.5.2 Santa Clara LCR Sub-area Load and Resources

Table 3.6-63 provides the forecast load and resources in Santa Clara LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-63 Santa Clara LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 806 | Market, Battery | 283 | 283 |
| AAEE | 19 | MUNI | 0 | 0 |
| Behind the meter DG | 0 | QF | 84 | 84 |
| Net Load | 787 | Other preferred resources and storage | 16 | 15 |
| Transmission Losses | 3 | Existing Demand Response | 5 | 5 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 790 | Total | 388 | 387 |

#### 3.6.8.5.3 Santa Clara LCR Sub-area Requirement

Table 3.6-64 identifies the sub-area requirement. The 2030 LCR requirement for Category P1 + P7 contingency is 191 MW.

Table 3.6-64 Santa Clara LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P1 + P7 | Voltage collapse | Pardee - Santa Clara 230 kV followed by Moorpark - Santa Clara #1 & #2 230 kV | 191 |

#### 3.6.8.5.4 Santa Clara LCR Sub-area Hourly Profiles

Figure 3.6-74 illustrates the forecast 2030 profile for the peak day for the Santa Clara sub-area along with the Category P1+P7 load serving capability without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-75 illustrates the forecast 2030 hourly profile for Santa Clara sub-area along with the Category P1+P7 emergency load serving capability without local capacity resources.

Figure 3.6-70 Santa Clara LCR Sub-area 2030 Peak Day Forecast Profiles

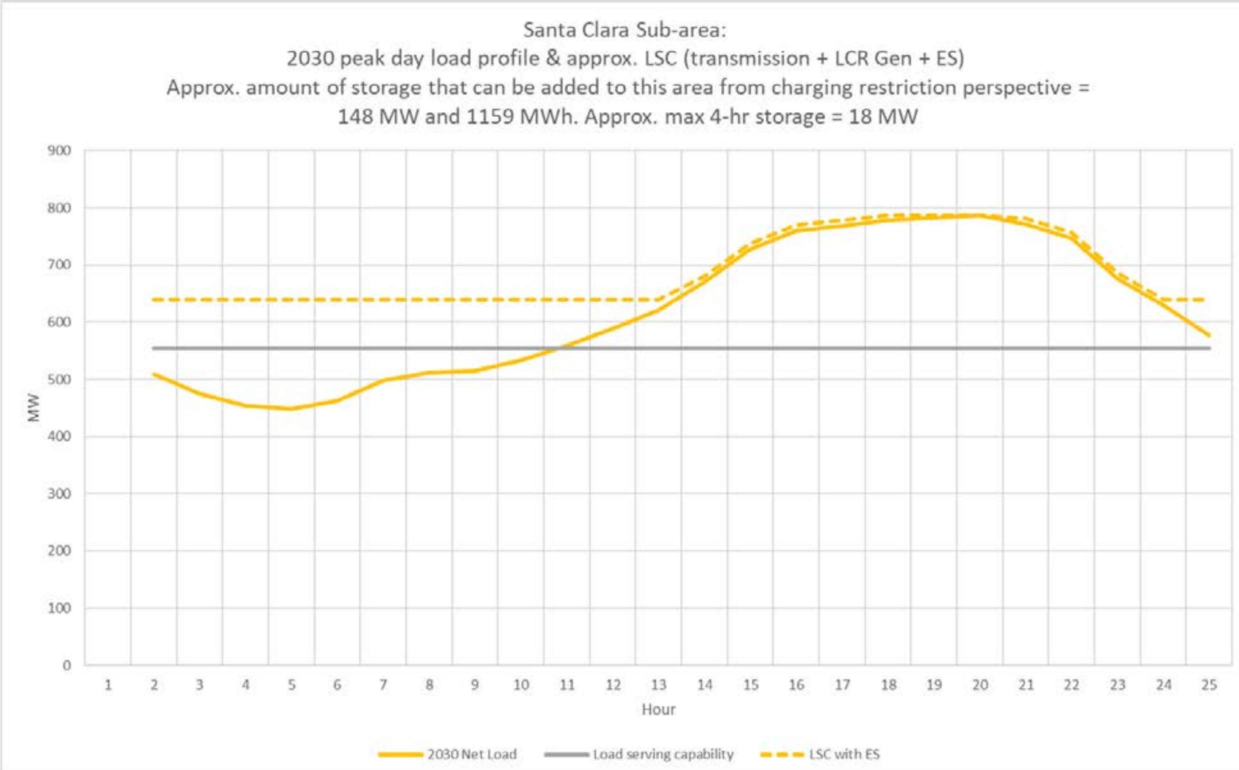
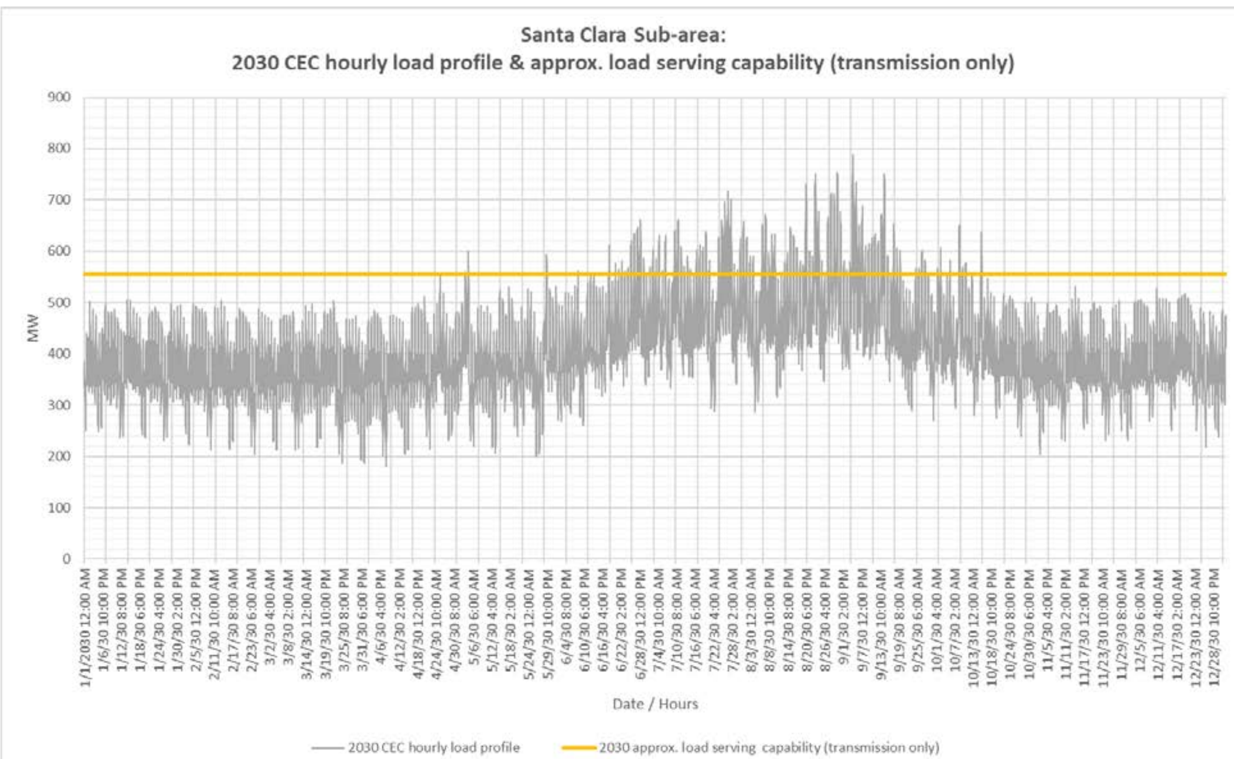



Figure 3.6-71 Santa Clara Sub-area 2030 Forecast Hourly Profiles



#### 3.6.8.5.5 Effectiveness factors:

For helpful procurement information please read procedure 2210Z Effectiveness Factors under 7500, 7510, 7550 , 7680 and 8610 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.8.5.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Santa Clara sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

As a part of the 2019-2020 transmission planning process the ISO undertook an assessment of the Santa Clara sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

### 3.6.8.6 *Moorpark Sub-area*

Moorpark is a sub-area of the Big Creek/Ventura LCR area.

No requirement is identified for the sub-area due to the Pardee-Moorpark No. 4 230 kV Transmission Project.

### 3.6.8.7 *Big Creek/Ventura Overall*

#### 3.6.8.7.1 Big Creek/Ventura LCR area Requirement

Table 3.2-65 identifies the area LCR requirements. The LCR requirement for Category P6 contingency is 1151 MW.

Table 3.6-65 Big Creek/Ventura LCR area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) |
|---|---|---|---|---|---|
| 2030 | First limit | P6 | Remaining Sylmar - Pardee 230 kV | Lugo - Victorville 500 kV line followed by one of the Sylmar - Pardee #1 or #2 230 kV lines | 1151 |

#### 3.6.8.7.2 Effectiveness factors:

For helpful procurement information please read procedure 2210Z Effectiveness Factors under 7500, 7510, 7550, 7680 and 8610 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.8.7.3 Changes compared to the 2025 LCT study

The load forecast is up by 49 MW and the LCR went up by 149 MW mostly due to load increase.

#### 3.6.8.7.4 Big Creek/Ventura LCR Sub-area Hourly Profiles

Figure 3.6-75 illustrates the forecast 2030 profile for the peak day for Big Creek/Ventura area along with the Category P6 normal and emergency load serving capability without local capacity resources. The chart also includes an estimated amount of energy storage that can be added to this local area from charging restriction perspective and the amount of 4-hour storage that can be added to replace local capacity on a 1 MW for 1 MW basis. Figure 3.6-76 illustrates the forecast 2030 hourly profile for Santa Clara sub-area along with the Category P6 emergency load serving capability without local capacity resources.

Figure 3.6-72 Big Creek/Ventura LCR area 2030 Peak Day Forecast Profiles

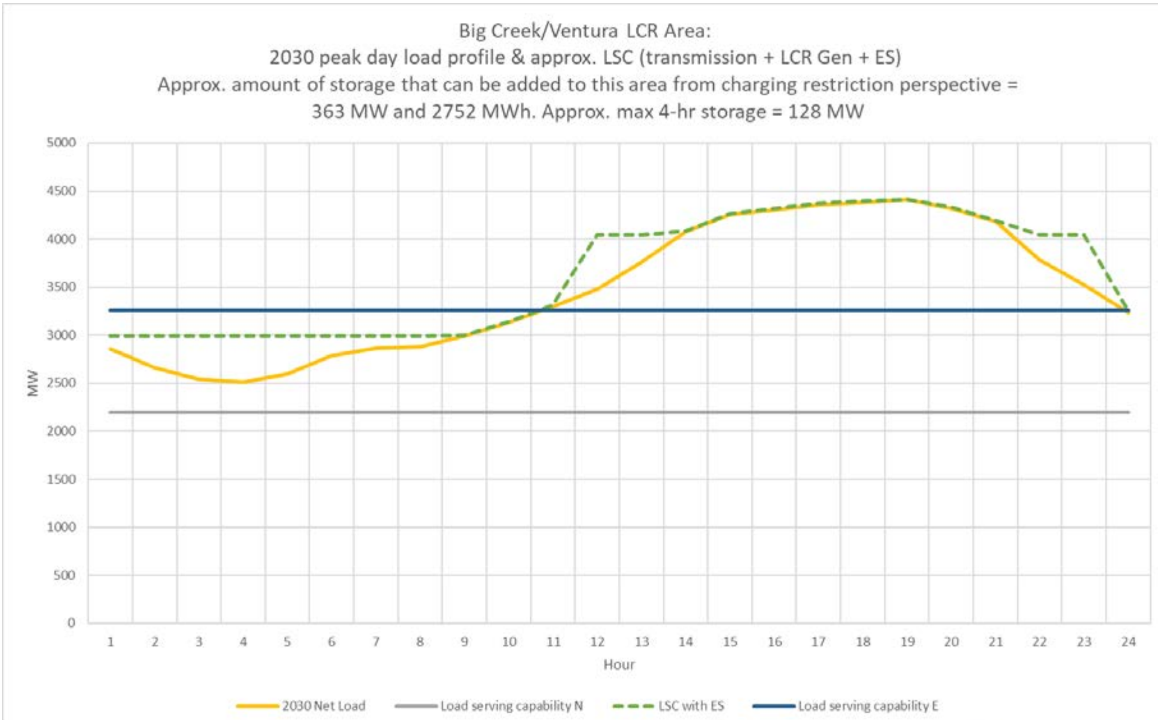
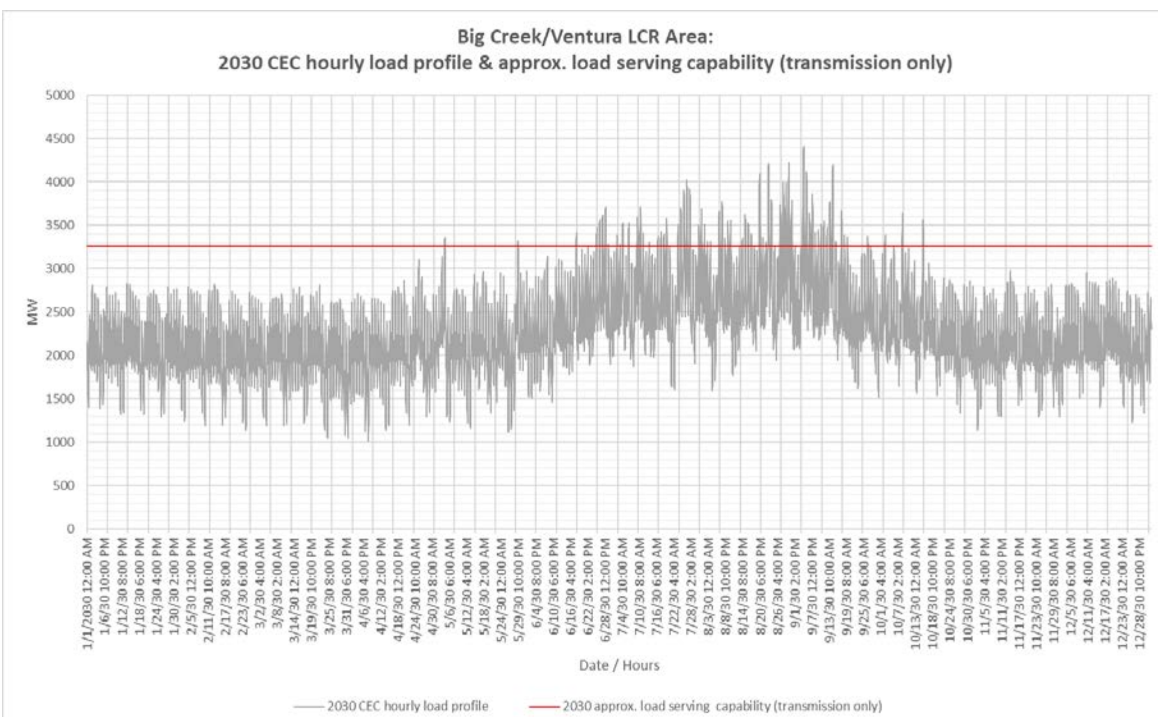



Figure 3.6-73 Big Creek/Ventura LCR area 2030 Peak Day Forecast Profiles



##### 3.6.8.7.5 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Big Creek-Ventura overall area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

As a part of the 2019-2020 transmission planning process the ISO undertook an assessment of the Big Creek-Ventura overall area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation. The following alternatives were considered.

- Pardee-Sylmar lines rating increase
- Pacific Transmission Expansion (PTE) HVDC

The Pardee-Sylmar Line rating increase project was approved as a reliability project with economic benefits derived from LCR and production cost reduction. The PTE was found to reduce the Big Creek/Ventura LCR requirement by approximately 393 MW due to its 500 MW terminal at Goleta.

The PTE project with some configuration alternatives is being assessed in the current planning cycle as part of LA Basin local capacity area assessment. Since the configuration of the project in the Big Creeck/Ventura area has not changed from last year, its LCR reduction benefit in the area is not expected to change. As a result, the project's LCR reduction benefit with respect to the Big Creek/Ventura area determined in the previous planning cycle will be used as an input in the assessment performed as part of the LA Basin local capacity area.

### 3.6.9 LA Basin Area

#### 3.6.9.1 *Area Definition:*

The transmission tie lines into the LA Basin Area are:

San Onofre - San Luis Rey #1, #2, and #3 230 kV Lines

San Onofre - Talega #2 230 kV Lines

San Onofre - Capistrano #1 230 kV Lines

Lugo - Mira Loma #2 & #3 500 kV Lines

Lugo - Rancho Vista #1 500 kV Line

Vincent – Mesa 500 kV Line

Sylmar - Eagle Rock 230 kV Line

Sylmar - Gould 230 kV Line

Vincent - Mesa #1 & #2 230 kV Lines

Vincent - Rio Hondo #1 & #2 230 kV Lines

Devers - Red Bluff 500 kV #1 and #2 Lines

Mirage – Coachela Valley # 1 230 kV Line

Mirage - Ramon # 1 230 kV Line

Mirage - Julian Hinds 230 kV Line

The substations that delineate the LA Basin Area are:

San Onofre is in San Luis Rey is out

San Onofre is in Talega is out

San Onofre is in Capistrano is out

Mira Loma is in Lugo is out

Rancho Vista is in Lugo is out

Eagle Rock is in Sylmar is out

Gould is in Sylmar is out

Mira Loma is in Vincent is out

Mesa is in Vincent is out

Rio Hondo is in Vincent is out

Devers is in Red Bluff is out

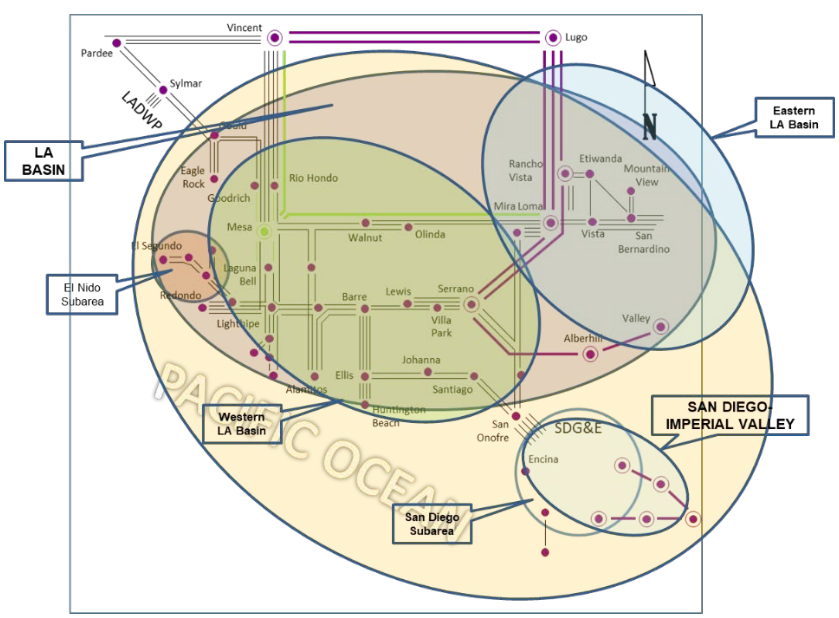
Mirage is in Coachela Valley is out

Mirage is in Ramon is out

Mirage is in Julian Hinds is out

#### 3.6.9.1.1 LA Basin LCR Area Diagram

Figure 3.6-74 LA Basin LCR Area



#### 3.6.9.1.2 LA Basin LCR Area Load and Resources

Table 3.2-67 provides the forecast load and resources in the LA Basin LCR area in 2030. The list of generators within the LCR area are provided in Attachment A and does not include new LTPP Preferred resources or DR.

In year 2030 the estimated time of local area peak is 8:00 PM (PDT) on September 3, 2030.

At the local area peak time the estimated, ISO metered, solar output is 0%.

If required, all non-solar technology type resources are dispatched at NQC.

Table 3.6-66 LA Basin LCR Area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 19503 | Market, Net Seller, Battery, Wind | 5597 | 5597 |
| AAEE | -563 | MUNI | 1056 | 1056 |
| Behind the meter DG | 0 | QF | 141 | 141 |
| Net Load | 18940 | LTPP Preferred Resources (BTM BESS, EE, DR, PV) | 331 | 208 |
| Transmission Losses | 284 | Existing Demand Response | 259 | 259 |
| Pumps | 20 | Solar | 11 | 0 |
| Load + Losses + Pumps | 19244 | Total | 7395 | 7261 |

#### 3.6.9.1.3 Approved transmission projects modeled:

Mesa Loop-In Project and Laguna Bell Corridor 230 kV line upgrades

Delaney – Colorado River 500 kV Line

Hassayampa – North Gila #2 500 kV Line (APS)

West of Devers 230 kV line upgrades

CPUC-approved long-term procurement plan (431 MW) for preferred resources in the western LA Basin sub-area

Retirement of 1,356 MW of the existing Redondo Beach OTC generation

Alamitos repowering (640 MW)

Retirement of 2,010 MW of the existing Alamitos OTC generation

Huntington Beach repowering (644 MW)

Retirement of 452 MW of the existing Huntington Beach OTC generation

Stanton Energy Reliability Center (98 MW)

### 3.6.9.2 *El Nido Sub-area*

El Nido is a sub-area of the LA Basin LCR area.

#### 3.6.9.2.1 El Nido LCR Sub-area Diagram

Please refer to Figure 3.6-74 above.

#### 3.6.9.2.2 El Nido LCR Sub-area Load and Resources

Table 3.6-67 provides the forecast load and resources in El Nido LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-67 El Nido LCR Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 1054 | Market, Net Seller, Battery, Wind, Solar | 534 | 534 |
| AAEE | -34 | MUNI | 3 | 3 |
| Behind the meter DG | 0 | QF | 0 | 0 |
| Net Load | 1020 | LTPP Preferred Resources | 23 | 23 |
| Transmission Losses | 2 | Existing Demand Response | 9 | 9 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 1022 | Total | 569 | 569 |

#### 3.6.9.2.3 El Nido LCR Sub-area Hourly Profiles

Figure 3.6-75 illustrates the forecast 2030 profile for the summer peak day in the El Nido LCR sub-area with the Category P7 normal and emergengy load serving capabilities without local capacity resources.

Figure 3.6-76 and Figure 3.6-77 illustrate hourly load profiles with transmission only load serving capability and estimated amount of storage that can be added based on charging restriction. For this case, an estimated 231 MW and 1587 MWh of energy storage can be accommodated from the charging limitation perspective as shown on Figure 3.6-77. The estimated amount of 4-hour energy storage is 91 MW.

Figure 3.6-75 El Nido LCR Sub-area 2030 Peak Day Forecast Profiles

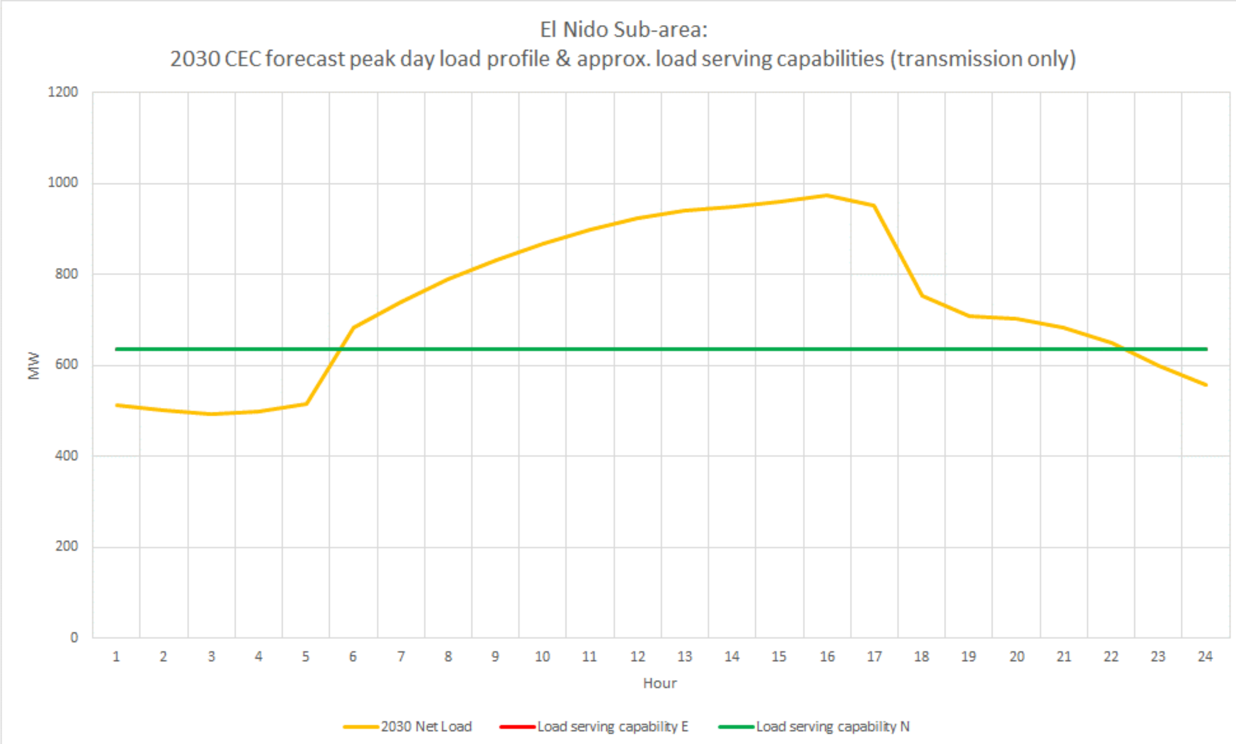



Figure 3.6-76 El Nido LCR Sub-area 2030 Hourly Load Profile and Approximate Load Serving Capability (Transmission Only)

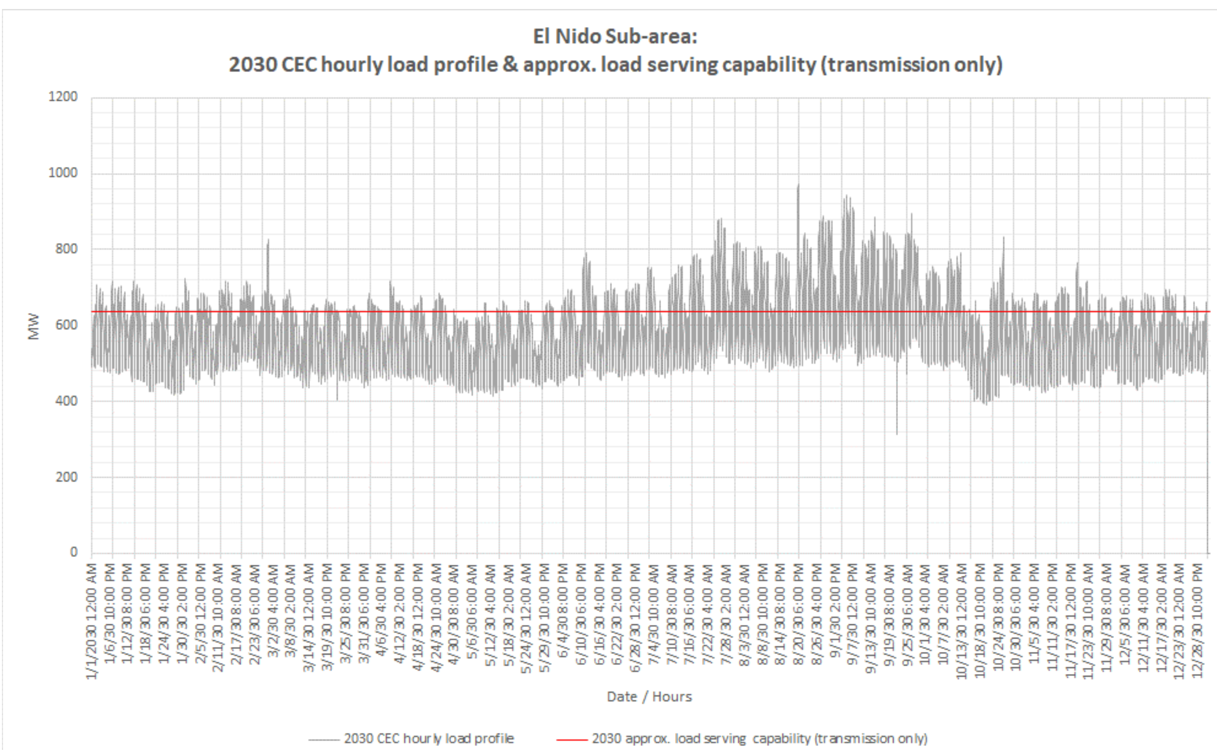
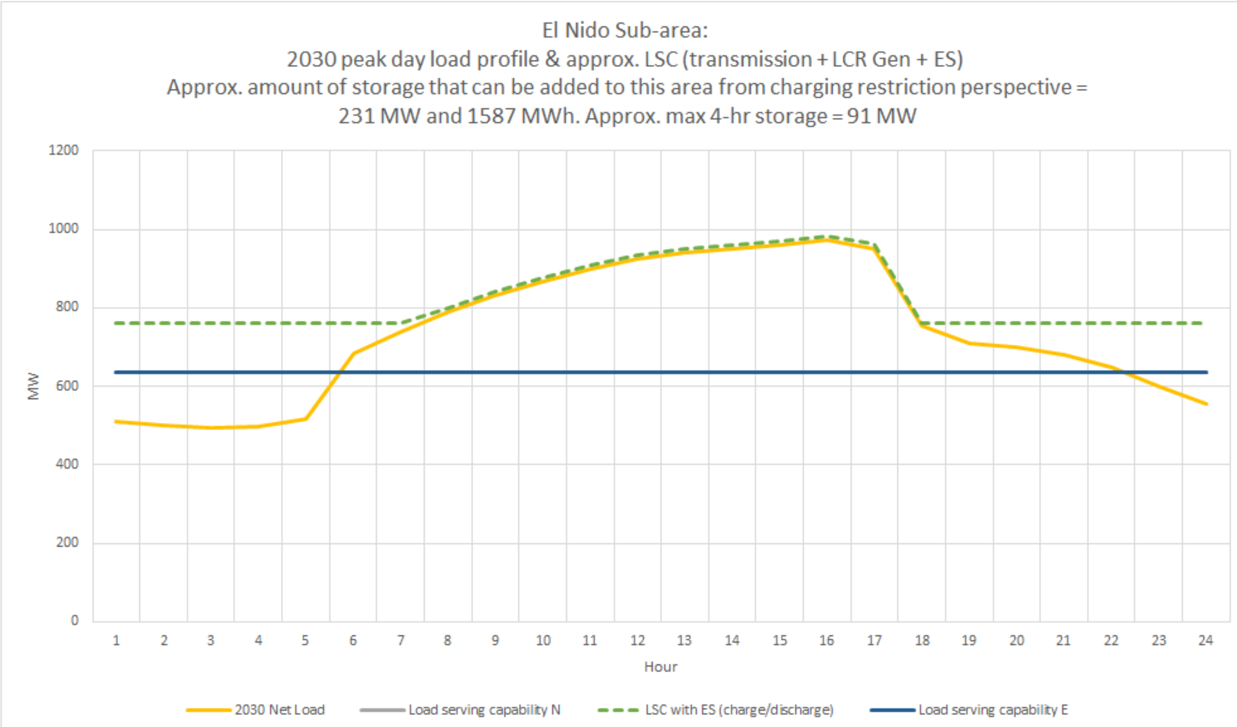


Figure 3.6-77 El Nido LCR Sub-area 2030 Estimated Amount of Storage that Can Be Added Based on Charging Restriction




### 3.6.9.2.4 El Nido LCR Sub-area Requirement

Table 3.6-68 identifies the sub-area requirements. The LCR requirement for Category P7 contingency is 355 MW.

Table 3.6-68 El Nido LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P7 | La Fresa-La Cienega 230 kV | La Fresa – El Nido #3 & #4 230 kV | 355 |

### 3.6.9.2.5 Effectiveness factors:

All units within the El Nido Sub-area have the same effectiveness factor.

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7630 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.9.2.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the El Nido sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

As a part of the 2019-2020 transmission planning process the ISO undertook an assessment of the El Nido sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

### 3.6.9.3 *Western LA Basin Sub-area*

Western LA Basin is a sub-area of the LA Basin LCR area.

#### 3.6.9.3.1 Western LA Basin LCR Sub-area Diagram

Please refer to Figure 3.6-74 above.

#### 3.6.9.3.2 Western LA Basin LCR Sub-area Load and Resources

Table 3.6-69 provides the forecast load and resources in Western LA Basin LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-69 Western LA Basin Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 12244 | Market, Net Seller, Battery, Wind | 3212 | 3212 |
| AAEE | -466 | MUNI | 584 | 584 |
| Behind the meter DG | 0 | QF | 58 | 58 |
| Net Load | 11778 | LTPP Preferred Resources (BTM BESS, EE, DR, PV) | 331 | 316 |
| Transmission Losses | 225 | Existing Demand Response | 161 | 161 |
| Pumps | 0 | Solar | 2 | 0 |
| Load + Losses + Pumps | 12003 | Total | 4348 | 4331 |

#### 3.6.9.3.3 Western LA Basin LCR Sub-area Hourly Profiles

Figure 3.6-78 illustrates the forecast 2030 profile for the summer peak day in the Western LA Basin LCR sub-area with the Category P1 normal and emergengy load serving capabilities without local capacity resources.

Figure 3.6-79 and Figure 3.6-80 illustrate hourly load profiles with transmission only load serving capability and estimated amount of storage that can be added based on charging restriction. For this case, an estimated 1510 MW and 12348 MWh of energy storage can be accommodated from the charging limitation perspective as shown on Figure 3.6-80 . The estimated amount of 4-hour energy storage is 420 MW.

Figure 3.6-78 Western LA Basin LCR Sub-area 2030 Peak Day Forecast Profiles

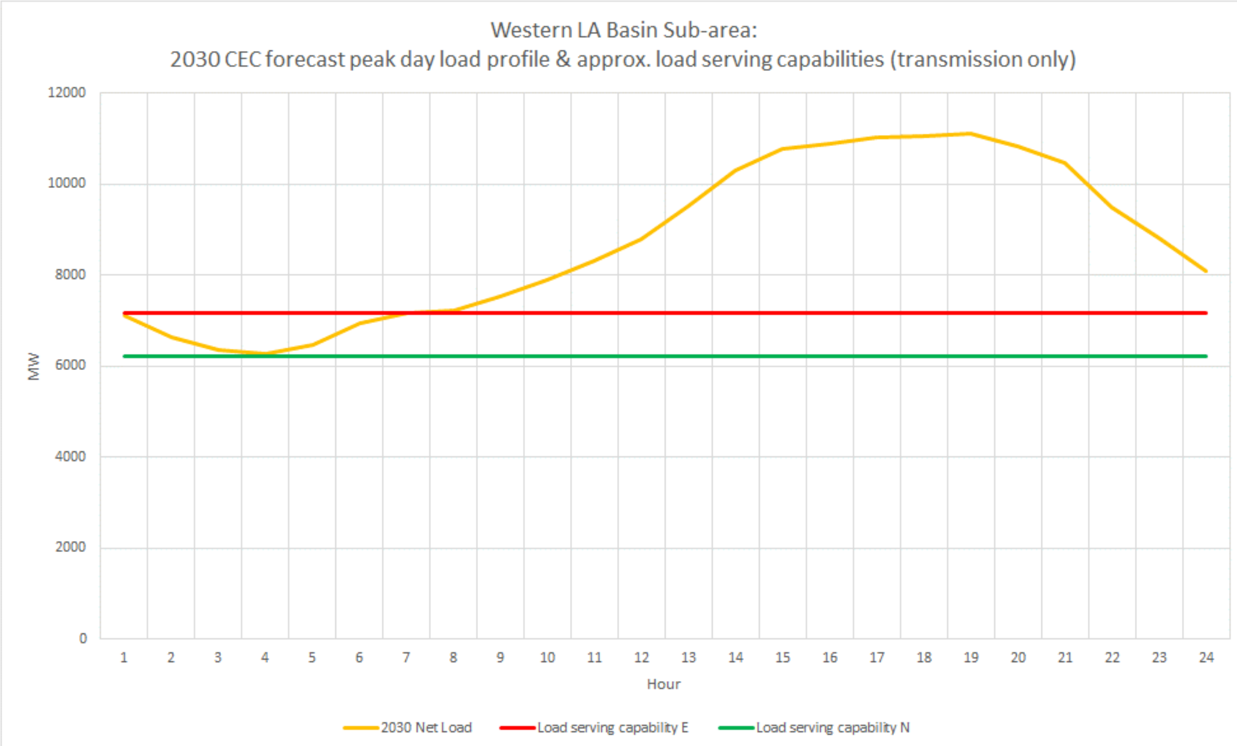



Figure 3.6-79 Western LA Basin LCR Sub-area 2030 Hourly Load Forecast Profiles with Transmission Only Load Serving Capability

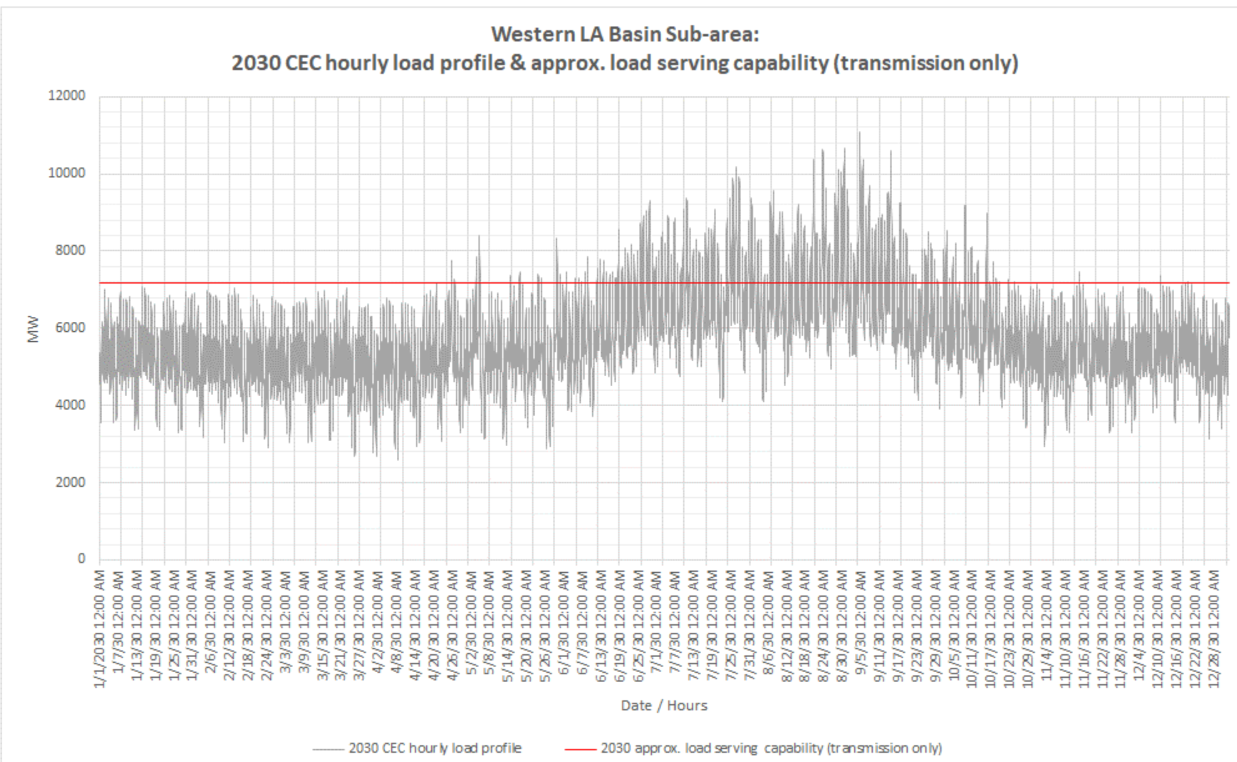
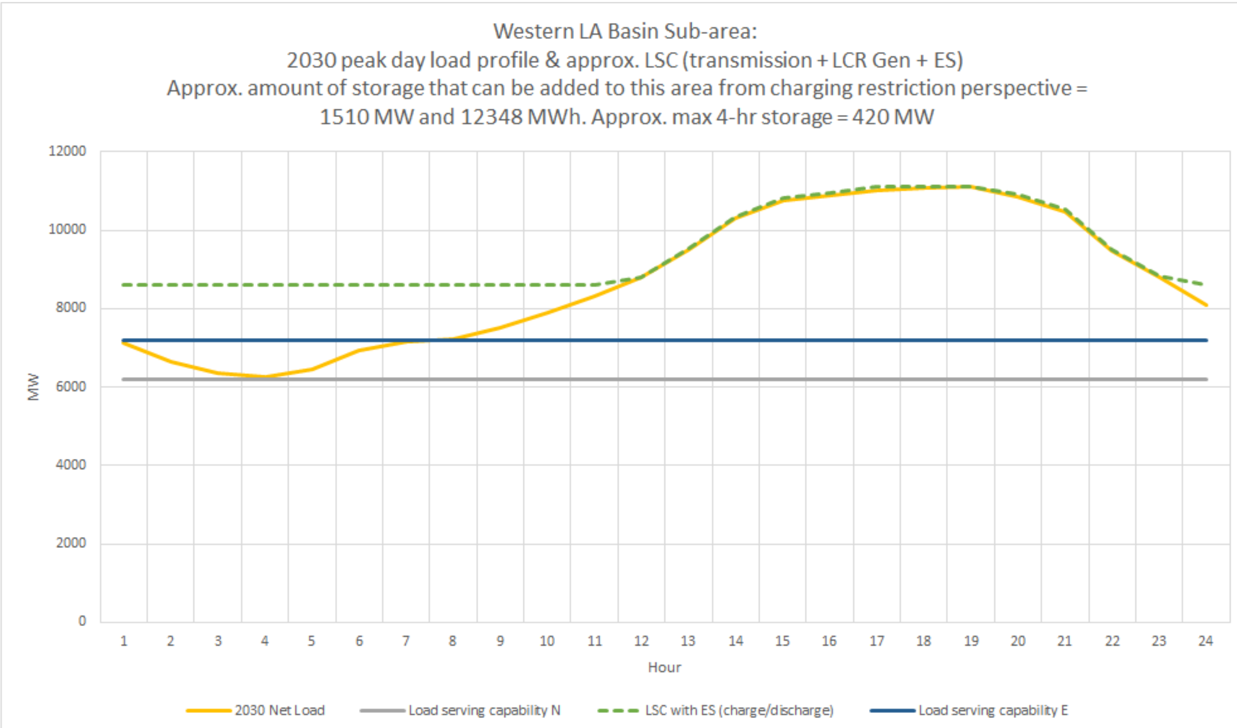


Figure 3.6-80 LCR Sub-area 2030 Estimated Amount of Storage that Can Be Added Based on Charging Restriction




### 3.6.9.3.4 Western LA Basin LCR Sub-area Requirement

Table 3.6-70 identifies the sub-area LCR requirements. The LCR requirement for Category P6 contingency is 3924 MW. The 2030 LCR need is lower than 2025 LCR need due to slightly lower load forecast for the western LA Basin sub-area.

Table 3.6-70 Western LA Basin LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P6 | Mesa-Laguna Bell 230 kV | Mesa-La Fresa 230 kV, followed by Mesa-Lighthipe 230 kV line or vice versa | 3924 |

### 3.6.9.3.5 Effectiveness factors:

See Attachment B - Table titled LA Basin.

For other helpful procurement information please read procedure 2210Z Effectiveness Factors under 7630 posted at: http://www.caiso.com/Documents/2210Z.pdf

There are other combinations of contingencies in the area that could overload a significant number of 230 kV lines in this sub-area have less LCR need. As such, anyone of them (combination of contingencies) could become binding for any given set of procured resources. As a result, these effectiveness factors may not be the best indicator towards informed procurement.

#### 3.6.9.3.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Western LA Basin sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

As a part of the 2019-2020 transmission planning process the ISO undertook an assessment of the Western LA Basin sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

### 3.6.9.4 *West of Devers Sub-area*

West of Devers is a sub-area of the LA Basin LCR area.

There are no local capacity requirements due to implementation of the Mesa Loop-in as well as West of Devers reconductoring projects.

### 3.6.9.5 *Valley-Devers Sub-area*

Valley-Devers is a sub-area of the LA Basin LCR area.

There are no local capacity requirements due to implementation of the Colorado River-Delaney 500 kV line project.

### 3.6.9.6 *Valley Sub-area*

Valley is a sub-area of the LA Basin LCR area.

There are no local capacity requirements due to implementation of the Colorado River-Delaney 500 kV line project.

### 3.6.9.7 *Eastern LA Basin Sub-area*

Eastern LA Basin is a sub-area of the LA Basin LCR area.

#### 3.6.9.7.1 Eastern LA Basin LCR Sub-area Diagram

Please refer to Figure 3.6-74 above.

#### 3.6.9.7.2 Eastern LA Basin LCR Sub-area Load and Resources

Table 3.6-71 provides the forecast load and resources in Eastern LA Basin LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-71 Eastern LA Basin Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 8854 | Market, Net Seller, Battery, Wind | 2384 | 2384 |
| AAEE | -273 | MUNI | 472 | 472 |
| Behind the meter DG | 0 | QF | 83 | 83 |
| Net Load | 8181 | LTPP Preferred Resources | 0 | 0 |
| Transmission Losses | 160 | Existing Demand Response | 126 | 126 |
| Pumps | 20 | Solar | 9 | 0 |
| Load + Losses + Pumps | 8361 | Total | 3074 | 3065 |

#### 3.6.9.7.3 Eastern LA Basin LCR Sub-area Hourly Profiles

Figure 3.6-81 illustrates the forecast 2030 profile for the summer peak day in the Eastern LA Basin LCR sub-area with the Category P1 normal and emergengy load serving capabilities without local capacity resources.

Figure 3.6-82 and Figure 3.6-83 illustrate hourly load profiles with transmission only load serving capability and estimated amount of storage that can be added based on charging restriction. For this case, an estimated 1610 MW and 12142 MWh of energy storage can be accommodated from the charging limitation perspective as shown on Figure 3.6-83. The estimated amount of 4-hour energy storage is 475 MW.

Figure 3.6-81 Eastern LA Basin LCR Sub-area 2030 Peak Day Forecast Profiles

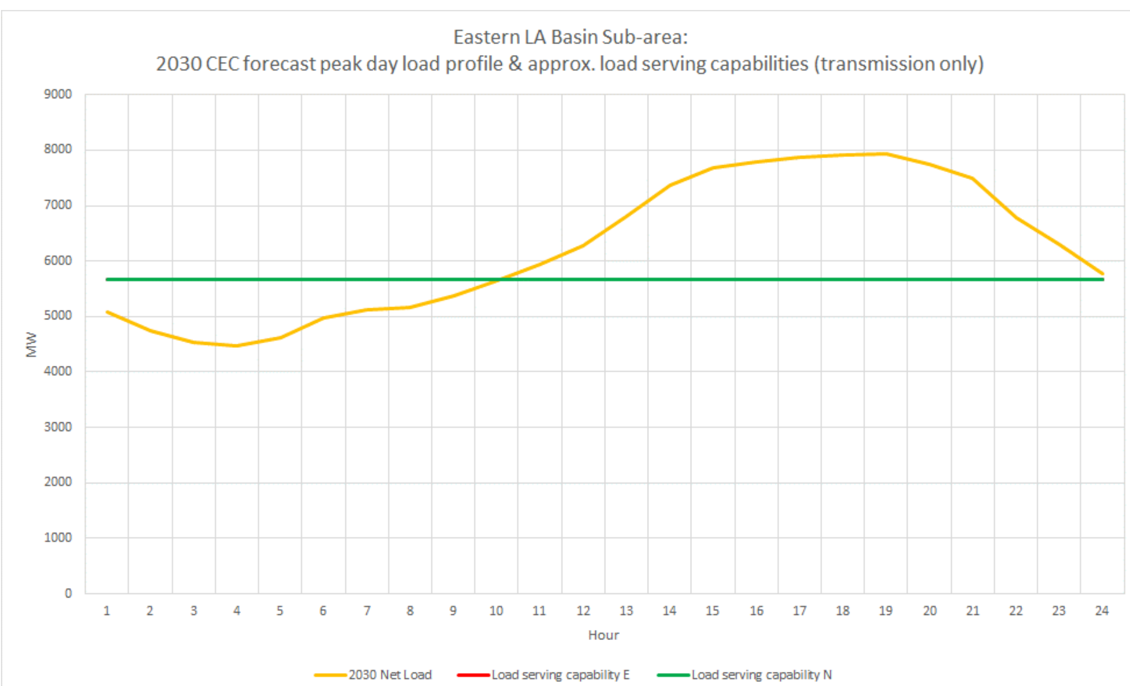


Figure 3.6-82 Eastern LA Basin LCR Sub-area 2030 Hourly Load Forecast Profiles with Transmission Only Load Serving Capability

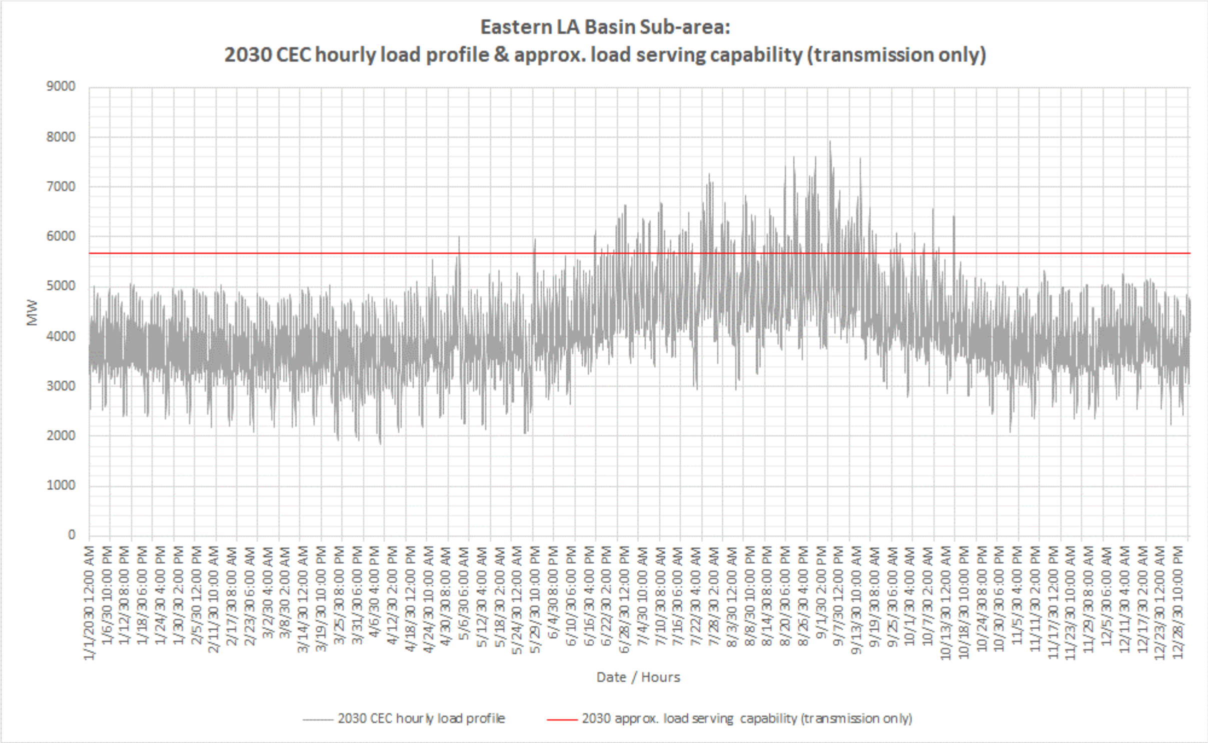
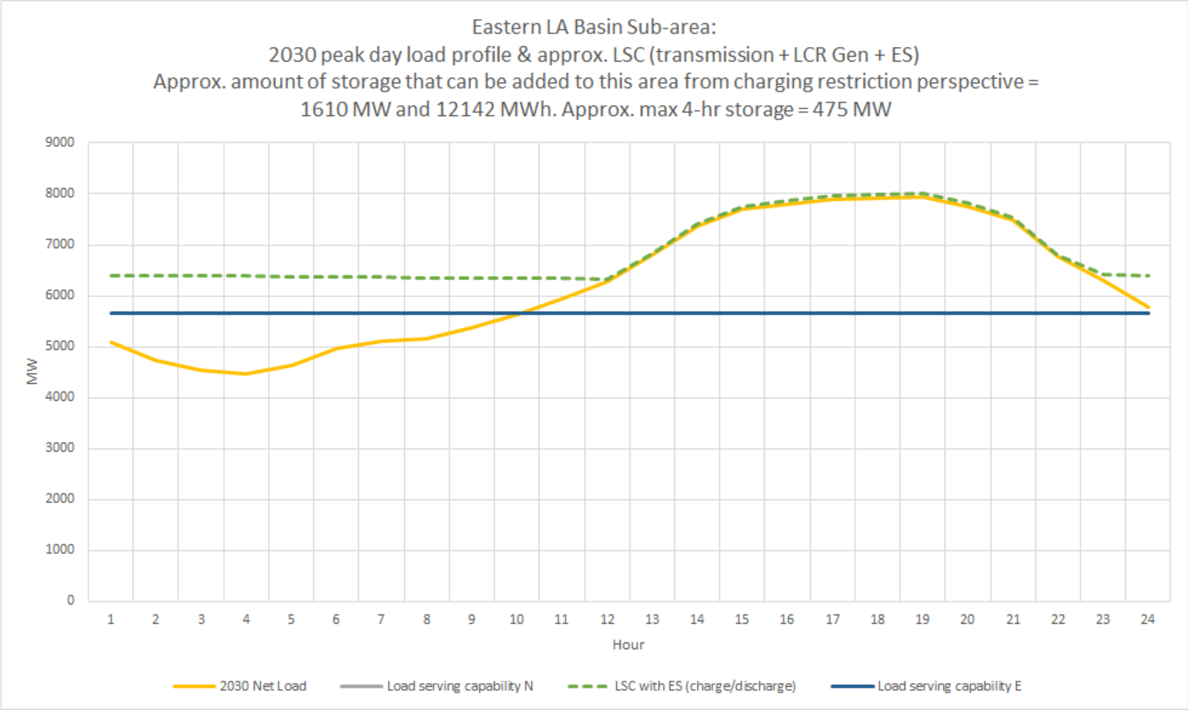



Figure 3.6-83 Eastern LCR Sub-area 2030 Estimated Amount of Storage that Can Be Added Based on Charging Restriction



#### 3.6.9.7.4 Eastern LA Basin LCR Sub-area Requirement

Table 3.6-72 identifies the sub-area LCR requirements. The LCR requirement for Category P1+P7 contingency is 2270 MW. The 2030 LCR need for the Eastern LA Basin is lower than the 2025 local capacity need due to lower Path 49 and Path 46 flows into the ISO BA, mostly due to unavailability of solar resources near Colorado River during early evening peak load hours as well as less resources available from the Southwest during peak load hours. Lower path flows result in lower line voltage drop, which reduces the potential voltage stability concern under a critical overlapping P1 and P7 transmission contingency.

Table 3.6-72 Eastern LA Basin LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P1+P7 | Post transient voltage stability | Alberhill-Serrano 500 kV, followed by Devers–Red Bluff #1 and #2 500 kV | 2270 |

#### 3.6.9.7.5 Effectiveness factors:

All units within the Eastern LA Basin Sub-area have the same effectiveness factor.

For most helpful procurement information please read procedure 2210Z Effectiveness Factors under 7750 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.9.7.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the Eastern LA Basin sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

As a part of the 2018-2019 transmission planning process the ISO undertook an assessment of the Eastern LA Basin sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

### 3.6.9.8 *LA Basin Overall*

#### 3.6.9.8.1 LA Basin LCR Sub-area Hourly Profiles

Figure 3.6-84 illustrates the forecast 2030 profile for the summer peak day in the overall LA Basin LCR area with the Category P1 normal and emergengy load serving capabilities without local capacity resources.

Figure 3.6-85 and Figure 3.6-86 illustrate hourly load profiles with transmission only load serving capability and estimated amount of storage that can be added based on charging restriction. For this case, an estimated 3550 MW and 27244 MWh of energy storage can be accommodated from the charging limitation perspective as shown on Figure 3.6-86. The estimated amount of 4-hour energy storage is 1070 MW.

Figure 3.6-84 Overall LA Basin LCR area 2030 Peak Day Forecast Profiles

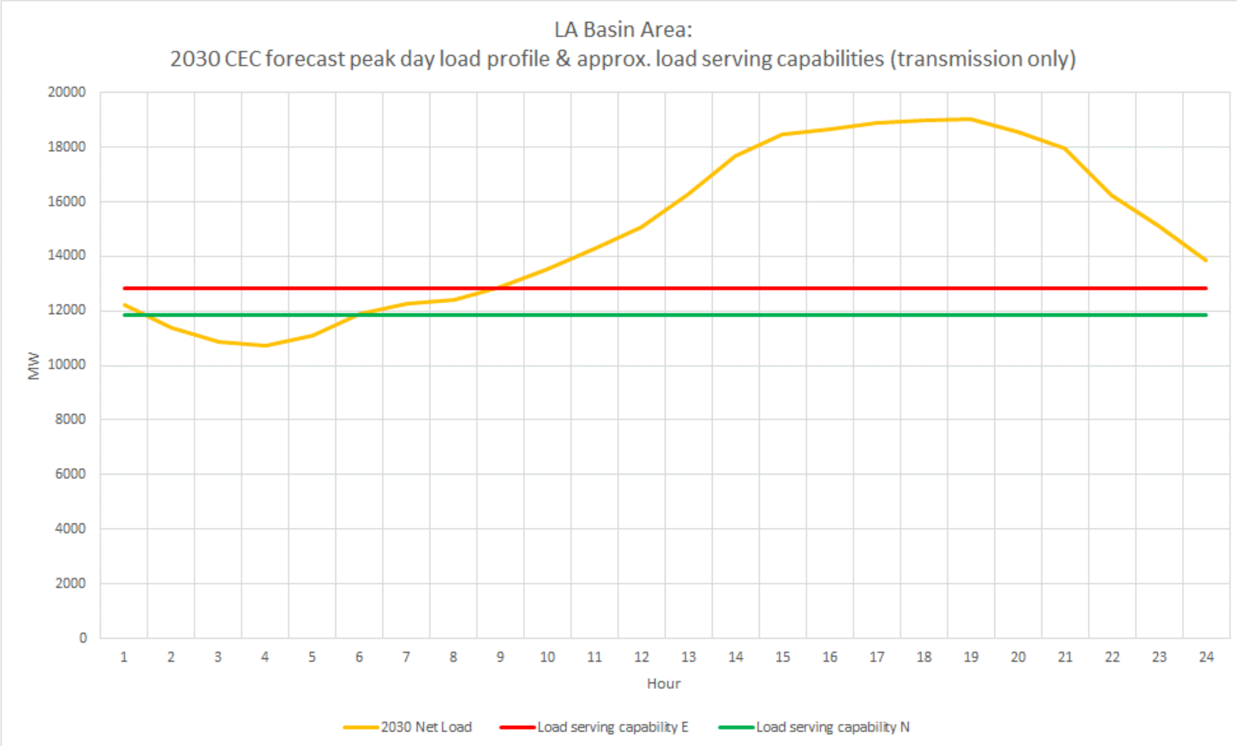



Figure 3.6-85 Overall LA Basin LCR area 2030 Hourly Load Forecast Profiles with Transmission Only Load Serving Capability

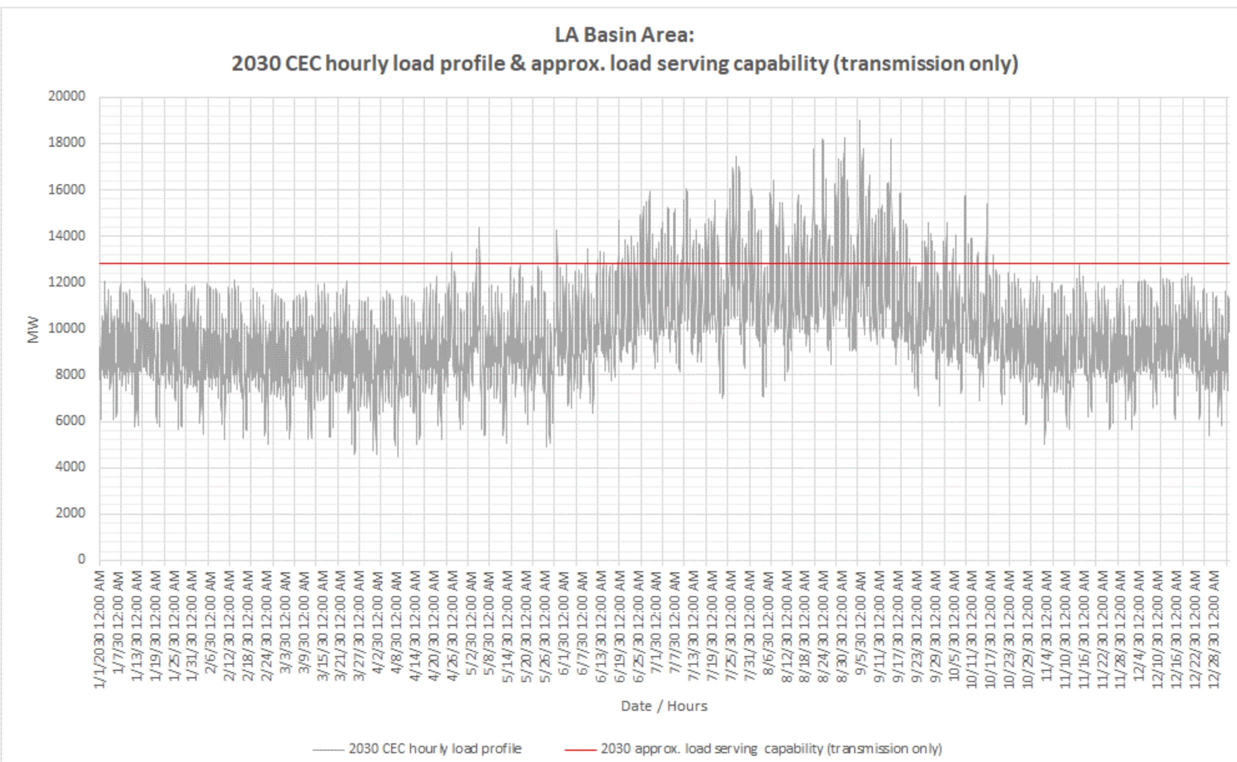
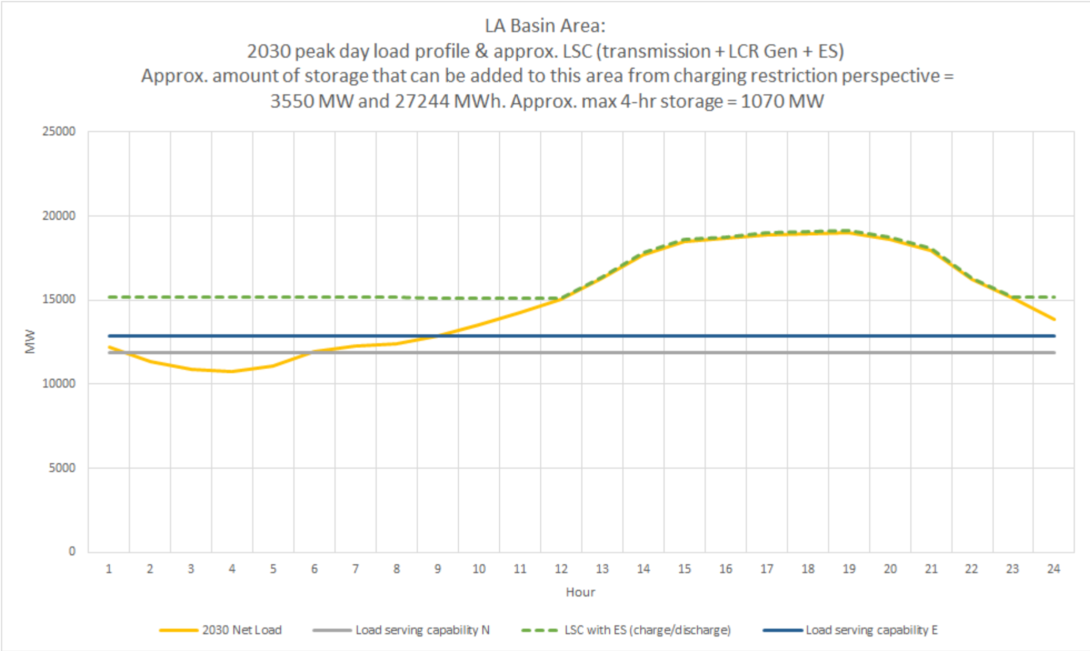


Figure 3.6-86 Overall LA Basin LCR Area 2030 Estimated Amount of Storage that Can Be Added Based on Charging Restriction




The following is a summary of estimated amount of storage for the sub-areas and the overall area based on maximum charging capability perspective. Due to non-linearity of power system and the various critical contingencies and load shapes for each sub-area and the overall area, it is noted that the estimated maximum amount of storage for the sub-areas many not add up to be sum of the overall area. The estimated maximum amount of storage for the LCR area is the amount listed in the last row in the table.

Table 3.6-73 Estimated LA Basin Sub-areas and Overall Area Energy Storage Capacity and Energy Based on Maximum Charging Capability Perspective

| Area/Sub-area | Estimated Energy Storage Maximum Capacity (MW) | Estimated Energy Storage Maximum Energy (MWh) | Estimated Maximum 4-hour Energy Storage |
|---|---|---|---|
| El Nido sub-area | 231 | 1587 | 91 |
| Western LA Basin sub-area | 1510 | 12348 | 420 |
| Eastern LA Basin sub-area | 1610 | 12142 | 475 |
| Overall LA Basin area | 3550 | 27244 | 1070 |

### 3.6.9.8.2 LA Basin LCR area Requirement

Table 3.6-74 identifies the area’s LCR requirement. The LCR requirement is driven by the sum of the LCR needs for the Western LA Basin and Eastern LA Basin sub-areas, at 6194 MW.

Additionally, the LCR need in the same amount is also caused by a Category P3 contingency of G-1 of TDM power plant, system readjustment, followed by an outage on the Imperial Valley – North Gila 500 kV line.

Table 3.6-74 LA Basin LCR area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | N/A | Sum of Western and Eastern. | | 6194 |
| 2030 | Second Limit | P3 | El Centro 230/92 kV | TDM, system readjustment and Imperial Valley–North Gila 500 kV line | 6194 |

#### 3.6.9.8.3 Effectiveness factors:

See Attachment B - Table titled LA Basin.

For other helpful procurement information please read procedure 2210Z Effectiveness Factors under 7550, 7570, 7580, 7590, 7590, 7680 and 7750 posted at: http://www.caiso.com/Documents/2210Z.pdf

There are other combinations of contingencies in the area that could overload a significant number of 230 kV lines in this sub-area have less LCR need. As such, anyone of them (combination of contingencies) could become binding for any given set of procured resources. As a result, these effectiveness factors may not be the best indicator towards informed procurement.

#### 3.6.9.8.4 Changes compared to the 2025 LCT study

The load forecast is higher by 418 MW. The LCR need has decreased by 115 MW primarily due to lower LCR need in the Eastern LA Basin. Lower path flows result in lower line voltage drop, which reduces the potential voltage instability concern under a critical overlapping P1 and P7 transmission contingency during peak load condition.

#### 3.6.9.8.5 Alternatives to Reduce or Eliminate Gas Generation

As a part of the 2018-2019 and 2019-2020 transmission planning process the ISO undertook an assessment of the LA Basin overall area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

As a part of the 2020-2021 transmission planning process the following alternatives were considered.

- Upgrade La Fresa-La Cienega 230kV line and install series reactors on the Mesa-Laguna Bell and Mesa-Lighthipe 230kV lines;

- Pacific Transmission Expansion (PTE) Voltage-Source HVDC Project (two options for terminations in the LA Basin);
- Devers-Lighthipe HVDC line;
- Install a new Lugo area to LA Basin HVDC line with underground AC cable connections to Lighthipe and La Cienega Substations;
- Lake Elsinore Advanced Pumped Storage (LEAPS) Project with three options for terminations (i.e., (a) connections to both SCE and SDG&E via transmission lines only; (b) connection to both SCE and SDG&E with addition of pumped storage; and (c) connection to SDG&E only. For this alternative and its subsections, please see San Diego-Imperial Valley section (3.6.10) as the local capacity benefits were identified for this area.

Table 3.6-75 provides the LCR requirement for the alternatives identified above. The top four alternatives are included in the LA Basin section as these alternatives primarily benefit the LA Basin LCR area. The LEAPS alternatives are included in the write-up for San Diego-Imperial Valley area. For the alternatives that reduced the LCR requirement but did not eliminate the requirement, the limiting facility and contingency have been provided.

Table 3.6-75 Alternatives to Reduce or Eliminate the LA Basin Overal Area Requirement for Gas-fired generation

| Year | Limit | Category | Limiting Facility | Contingency | LA Basin LCR (MW) | Notes |
|---|---|---|---|---|---|---|
| **Upgrade La Fresa-La Cienega 230kV line and install series reactors on the Mesa-Laguna Bell and Mesa-Lighthipe 230kV lines** | | | | | | |
| 2030 | First Limit | P6 | Mesa-Redondo #1 230 kV | Mesa-Laguna Bell #1 230 kV followed by Mesa-Lighthipe 230 kV or vice versa | 5057 | Increases San Diego-Imperial Valley LCR need 465 MW |
| **Pacific Transmission Expansion Project – Option 1 (Diablo Canyon to Goleta, Redondo Beach and Huntington Beach)** | | | | | | |
| 2030 | First Limit | P6 | Mesa-Laguna Bell #1 230 kV | Mesa-Redondo #1 230 kV followed by Mesa-Lighthipe 230 kV or vice versa | 4454[7] | Increases San Diego-Imperial Valley LCR need by140 MW |

[7] This option assumes that an amount of 2,000 MW of replacement capacity will be injected to the proposed Diablo Canyon HVDC terminal for delivery to Southern California terminals.

| Year | Limit | Category | Limiting Facility | Contingency | LA Basin LCR (MW) | Notes |
|---|---|---|---|---|---|---|
| **Pacific Transmission Expansion Project – Option 2 (Diablo Canyon to Goleta, El Segundo, Huntington Beach and San Onofre)** | | | | | | |
| 2030 | First Limit | P6 | Mesa-Laguna Bell #1 230 kV | Mesa-Redondo #1 230 kV followed by Mesa-Lighthipe 230 kV or vice versa | 5539 | No negative impact to San Diego-IV LCR |
| **Devers-Lighthipe HVDC Line** | | | | | | |
| 2030 | First Limit | P6 | Mesa-Laguna Bell #1 230 kV | Mesa-Redondo #1 230 kV followed by Mesa-Lighthipe 230 kV or vice versa | 5345 | Negative impact to SD-IV LCR need (increased by 211 MW) |
| **Lugo Areas – LA Basin HVDC Line with AC Connections to Lighthipe and La Cienega Substations** | | | | | | |
| 2030 | First Limit | P6 | Mesa-Laguna Bell #1 230 kV | Mesa-Redondo #1 230 kV followed by Mesa-Lighthipe 230 kV or vice versa | 5576 | Negative impact to SD-IV LCR need (increased by 75 MW) |

Table 3.6-76 provides the cost estimates and the total LA Basin overall area requirement and portion of requirement that would need to be supplied from gas-fired and non-gas generation for the alternatives identified above.

Table 3.6-76 Alternative Cost Estimate and LCR Requirement LA Basin Overall

| Alternatives | Submitted By | Estimated Cost ($M) | LA Basin LCR Requirement (MW) | | | |
|---|---|---|---|---|---|---|
| | | | Total | Market Gas | Other Gas | Non-Gas |
| Base case – No Alternative | N/A | 0 | 6194 | 5300 | 100 | 794 |
| Upgrade La Fresa-La Cienega 230 kV line and install 3 Ω line series reactor on the Mesa-Laguna Bell and Mesa-Lighthipe 230 kV lines | ISO | 119 | 5057 | 4163 | 100 | 794 |

| Alternatives | Submitted By | Estimated Cost ($M) | LA Basin LCR Requirement (MW) | | | |
|---|---|---|---|---|---|---|
| | | | Total | Market Gas | Other Gas | Non-Gas |
| Pacific Transmission Expansion Project HVDC – Option 1 | Western Grid Developer | 1,850 | 4454 | 3560 | 100 | 794 |
| Pacific Transmission Expansion Project HVDC – Option 2 | Western Grid Developer | 1,850 | 5539 | 4645 | 100 | 794 |
| Devers-Lighthipe HVDC Line | ISO | 1,100 | 5345 | 4451 | 100 | 794 |
| Lugo Area – LA Basin HVDC Line with Underground AC Cable Connections to Lighthipe & La Cienega 230kV Substation | ISO | 1,100 | 5576 | 4682 | 100 | 794 |

The LA Basin overall LCR need is limited by the requirements in the San Diego-Imperial Valley area as well as the requirements in the Eastern LA Basin and Western LA Basin. It is, therefore, that in addition to evaluate for positive LCR benefits (i.e., reduction of LCR need), additional study be performed to evaluate for potential negative impact to LCR need in adjacent areas.

The economic analysis of the local capacity reduction benefits is discussed further in details in Chapter 4.

### 3.6.10 San Diego-Imperial Valley Area

#### 3.6.10.1 *Area Definition:*

The transmission tie lines forming a boundary around the Greater San Diego-Imperial Valley area include:

Imperial Valley – North Gila 500 kV Line

Otay Mesa – Tijuana 230 kV Line

San Onofre - San Luis Rey #1 230 kV Line

San Onofre - San Luis Rey #2 230 kV Line

San Onofre - San Luis Rey #3 230 kV Line

San Onofre – Talega  230 kV Line

San Onofre – Capistrano 230 kV Line

Imperial Valley – El Centro 230 kV Line

Imperial Valley – La Rosita 230 kV Line

The substations that delineate the Greater San Diego-Imperial Valley area are:

Imperial Valley is in North Gila is out

Otay Mesa is in Tijuana is out

San Onofre is out San Luis Rey is in

San Onofre is out San Luis Rey is in

San Onofre is out San Luis Rey is in

San Onofre is out Talega is in

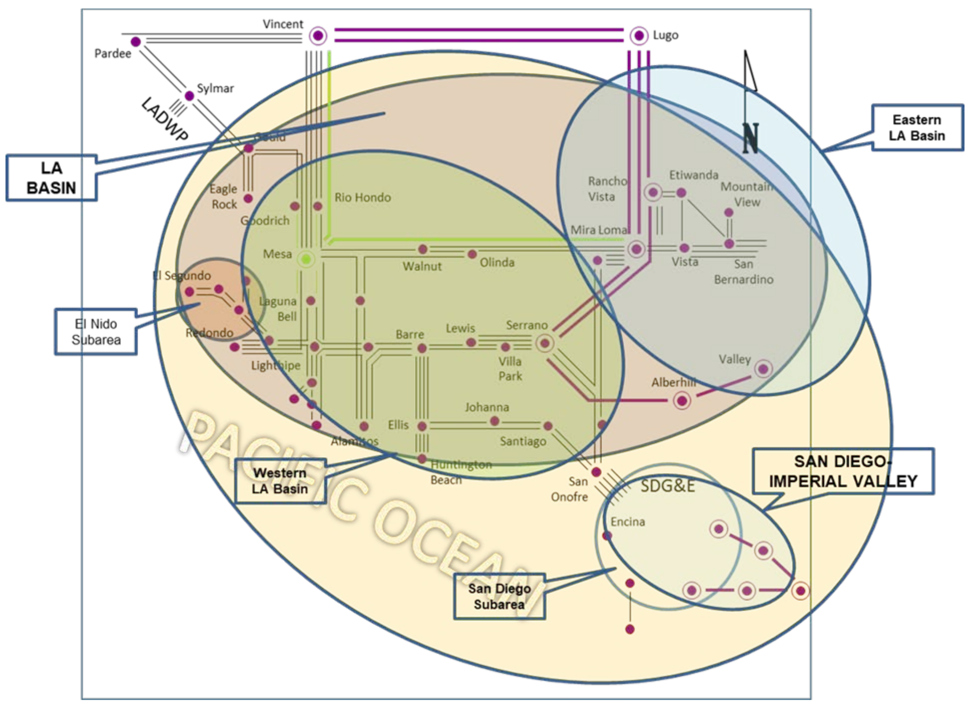
San Onofre is out Capistrano is in

Imperial Valley is in El Centro is out

Imperial Valley is in La Rosita is out

#### 3.6.10.1.1 San Diego-Imperial Valley LCR Area Diagram

Figure 3.6-87 San Diego-Imperial Valley LCR Area




#### 3.6.10.1.2 San Diego-Imperial Valley LCR Area Load and Resources

Table 3.6-77 provides the forecast load and resources in the San Diego-Imperial Valley LCR area in 2030. The list of generators within the San Diego-Imperial Valley area are provided in Attachment A.

In year 2030 the estimated time of local area peak is HE 8:00 P.M. (PDT) on September 4, 2030 per the CEC hourly demand forecast.[8]

At the local area peak time the estimated, ISO metered solar output is 0.00%.

If required, all non-solar technology type resources are dispatched at NQC.

Table 3.6-77 San Diego-Imperial Valley LCR Area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 4857 | Market, Net Seller, Battery, Wind | 4431 | 4431 |
| AAEE | -108 | Solar | 378 | 0 |
| Behind the meter DG | 0 | QF | 2 | 2 |
| Net Load | 4749 | LTPP Preferred Resources | 0 | 0 |
| Transmission Losses | 108 | Existing Demand Response | 7 | 7 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 4857 | Total | 4818 | 4440 |

#### 3.6.10.1.3 Approved transmission projects modeled:

Ocean Ranch 69 kV substation

Mesa Height TL600 Loop-in

Re-conductor of Kearny-Mission 69 kV line

TL6906 Mesa Rim rearrangement

Re-conductor of Japanese Mesa–Basilone–Talega Tap 69 kV lines

By-passing 500 kV series capacitor banks on the Southwest Powerlink and Sunrise Powerlink lines

Battery energy storage projects (total of 389 MW/615 MWh) at various locations

TL632 Granite loop-in and TL6914 reconfiguration

2nd San Marcos–Escondido 69 kV line

Reconductor of Stuart Tap–Las Pulgas 69 kV line (TL690E)

2nd Poway–Pomerado 69 kV line

Artesian 230 kV expansion with 69 kV upgrade

Kearny – Clairemont Tap (TL600) Reconductor and Loop into Mesa Heights

[8] https://ww2.energy.ca.gov/2019_energypolicy/documents/Demand_2020-2030_revised_forecast_hourly.php (the CEC forecast is based on PST throughout the year)

Reconductor TL605 Silvergate – Urban

Open Sweetwater Tap (TL603) and Loop into Sweetwater

South Orange County Reliability Enhancement

Imperial Valley-El Centro 230 kV (“S”) line upgrade

### 3.6.10.2 *El Cajon Sub-area*

El Cajon sub-area will be eliminated due to the TL632 Granite loop-in and TL6914 reconfiguration project and change in LCR criteria.

### 3.6.10.3 *Mission Sub-area*

Mission sub-area has been eliminated due to the TL600 Mesa Heights 69 kV Loop-in and the TL676 Mission-Mesa Heights 69 kV Reconductoring projects being in-service.

### 3.6.10.4 *Esco Sub-area*

Esco sub-area has been eliminated due to change in LCR criteria.

### 3.6.10.5 *Pala Inner Sub-area*

Pala Inner sub-area has been eliminated due to change in LCR criteria.

### 3.6.10.6 *Pala Outer Sub-area*

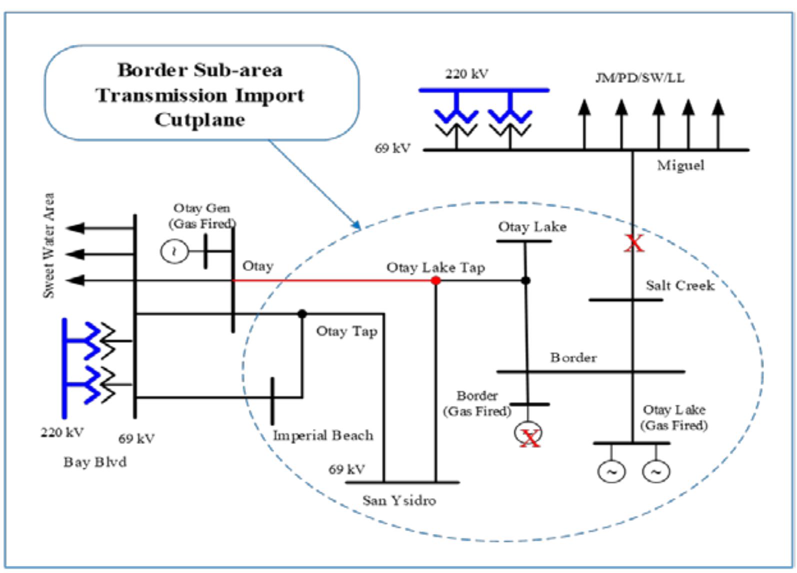
Pala Outer sub-area has been eliminated due to change in LCR criteria.

### 3.6.10.7 *Border Sub-area*

Border is Sub-area of the San Diego-Imperial Valley LCR Area.

#### 3.6.10.7.1 Border LCR Sub-area Diagram

Figure 3.6-88 Border LCR Sub-area



### 3.6.10.7.2 Border LCR Sub-area Load and Resources

Table 3.6-78 provides the forecast load and resources in Border LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-78 Border Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 173 | Market, Net Seller, Battery | 143 | 143 |
| AAEE | -3 | Solar | 0 | 0 |
| Behind the meter DG | 0 | QF | 0 | 0 |
| Net Load | 167 | LTPP Preferred Resources | 0 | 0 |
| Transmission Losses | 3 | Demand Response | 0 | 0 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 170 | Total | 143 | 143 |

### 3.6.10.7.3 Border LCR Sub-area Hourly Profiles

Figure 3.6-89 illustrates the 2030 annual load forecast profile in the Border LCR sub-area and the Category P1 (L-1 Contingency) transmission capability without local capacity generation. Figure 3.6-90 illustrates the 2030 daily load forecast profile for the peak day in the sub-area along with the load serving capabilities. The illustration also includes an estimate of 31/185 MW/MWh energy storage that could be added in this local area from charging restriction perspective. In addition, it is estimated that up to 16 MW of 4-hour energy storage could be installed to displace 1 for 1 MW of gas generation in the Border LCR sub-area.

Figure 3.6-89 Border LCR Sub-area 2030 Annual Load Forecast Profiles

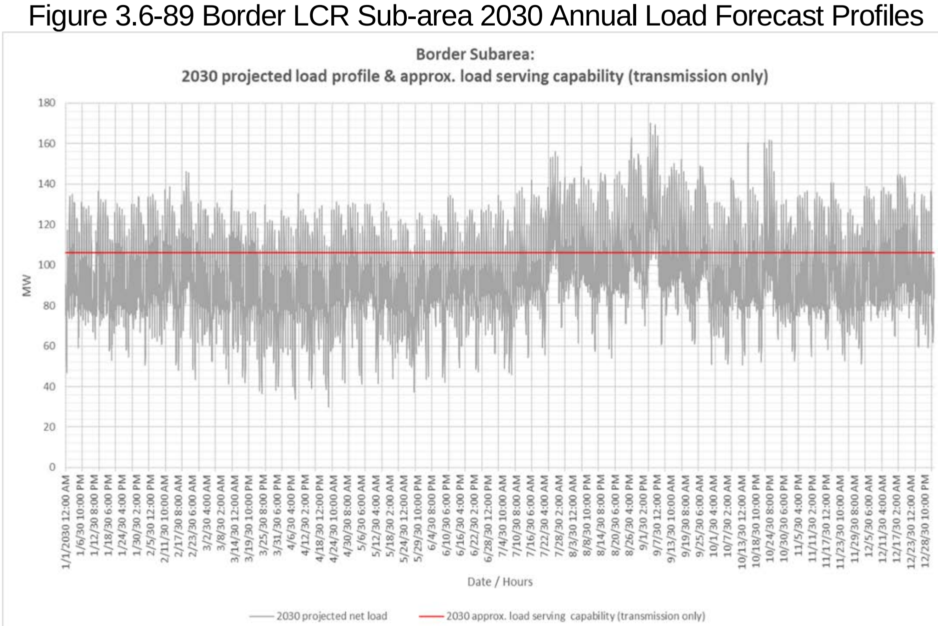
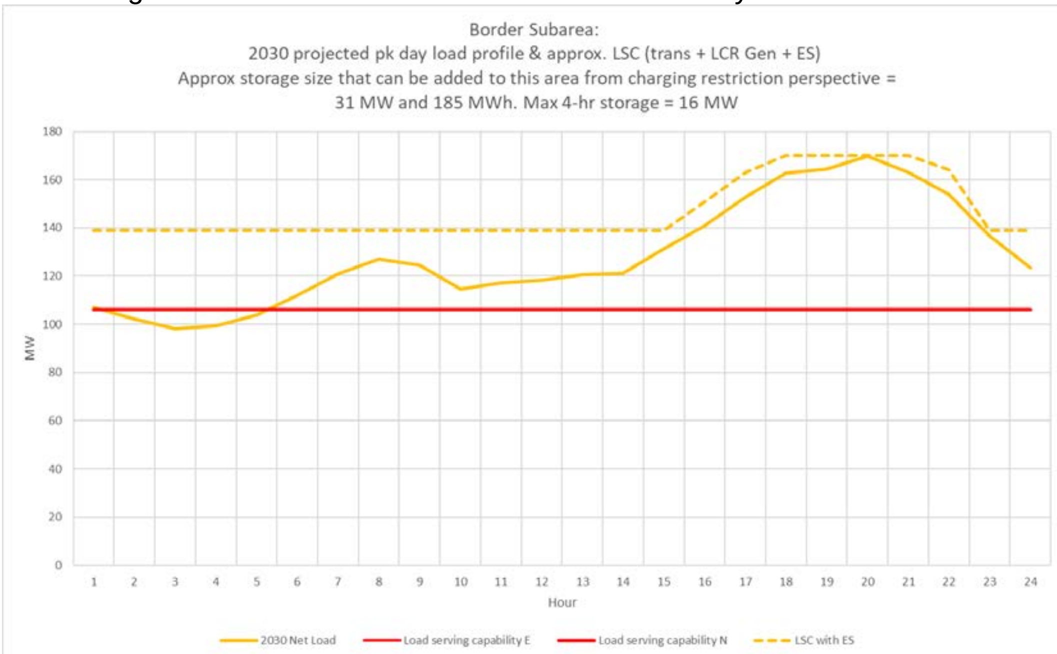


Figure 3.6-90 Border LCR Sub-area 2030 Peak Day Forecast Profiles




#### 3.6.10.7.4 Border LCR Sub-area Requirement

Table 3.2-80 identifies the sub-area requirements. The LCR requirement for Category P3 contingency is 93 MW.

Table 3.6-79 Border 2030 LCR Sub-area Requirements

| Year | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|
| 2030 | P3 | Otay – Otay Lake Tap 69 kV (TL649) | Border unit out of service followed by the outage of Miguel-Salt Creek 69 kV #1 | 93 |

#### 3.6.10.7.5 Effectiveness factors:

All units within the Border Sub-area have the same effectiveness factor.

#### 3.6.10.7.6 Alternatives to Reduce or Eliminate Gas Generation

As a part of the 2018-2019 transmission planning process the ISO undertook an assessment of the Border sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

As a part of the 2020-2021 transmission planning process the following transmission alternative was assessed.

- Upgrade Otay-Otay Lake Tap 69 kV.

The transmission alternative will fully eliminate the LCR requirement. The cost estimate of the alternative needs to be determined.

### 3.6.10.8 *Miramar Sub-area*

Miramar sub-area has been eliminated due to the Sycamore-Penasquitos 230 kV project being in-service.

### 3.6.10.9 *San Diego Sub-area*

San Diego is a sub-area of the San Diego-Imperial Valley LCR area.

#### 3.6.10.9.1 San Diego LCR Sub-area Diagram

Please refer to Figure 3.6-87 above.

#### 3.6.10.9.2 San Diego LCR Sub-area Load and Resources

Table 3.6-80 provides the forecast load and resources in San Diego LCR sub-area in 2030. The list of generators within the LCR sub-area are provided in Attachment A.

Table 3.6-80 San Diego Sub-area 2030 Forecast Load and Resources

| Load (MW) | | Generation (MW) | Aug NQC | At Peak |
|---|---|---|---|---|
| Gross Load | 4857 | Market, Net Seller, Battery, Wind | 2987 | 2987 |
| AAEE | -108 | Solar | 29 | 0 |
| Behind the meter DG | 0 | QF | 2 | 2 |
| Net Load | 4749 | LTPP Preferred Resources | 0 | 0 |
| Transmission Losses | 108 | Existing Demand Response | 7 | 7 |
| Pumps | 0 | Mothballed | 0 | 0 |
| Load + Losses + Pumps | 4857 | Total | 3025 | 2996 |

#### 3.6.10.9.3 San Diego LCR Sub-area Hourly Profiles

Figure 3-92 illustrates the forecast 2030 profile for the summer peak day in the San Diego LCR sub-area with the Category P1 normal and emergengy load serving capabilities without local capacity resources.

Figure 3-93 and Figure 3-94 illustrate hourly load profiles with transmission only load serving capability and estimated amount of storage that can be added based on charging restriction. For this case, an estimated 1187 MW and 6973 MWh of energy storage can be accommodated from the charging limitation perspective as shown on Figure 3-94. The estimated amount of 4-hour energy storage is 680 MW.

Figure 3.2-91 San Diego LCR Sub-area 2030 Peak Day Forecast Profiles

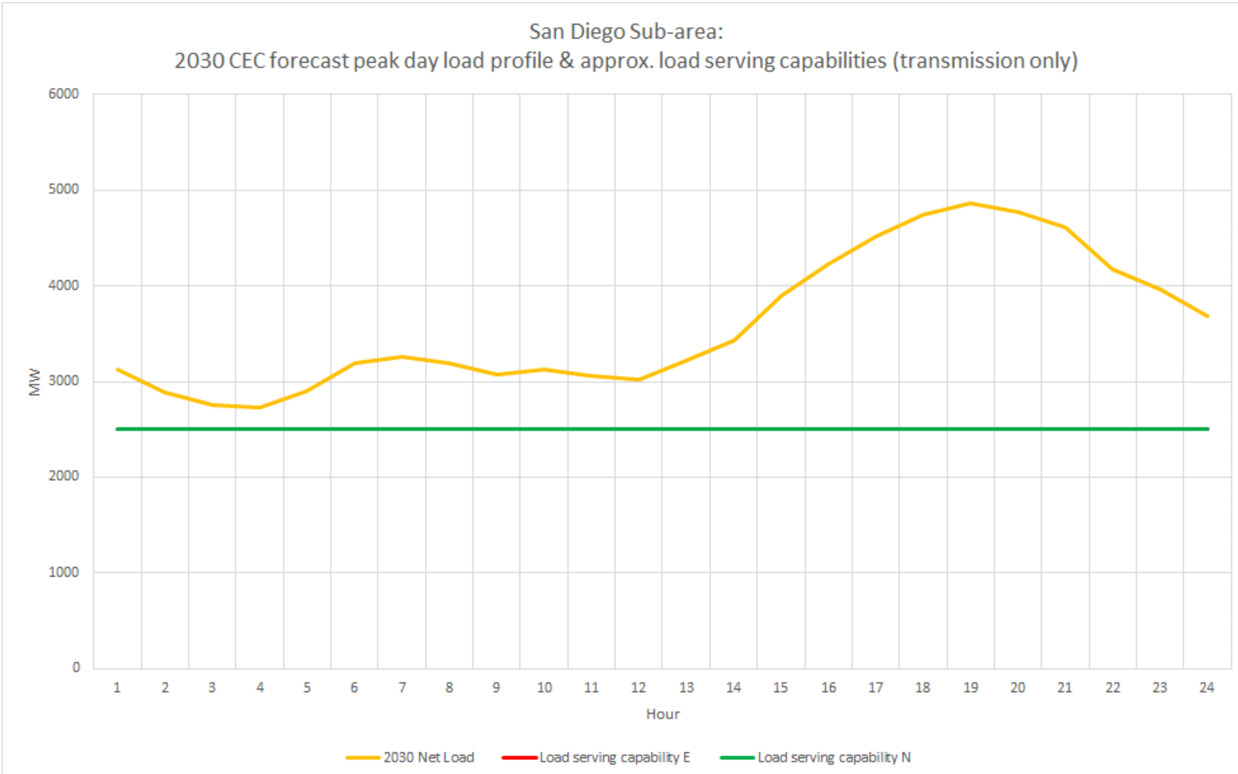



Figure 3-92 San Diego LCR sub-area 2030 Hourly Load Forecast Profiles with Transmission Only Load Serving Capability

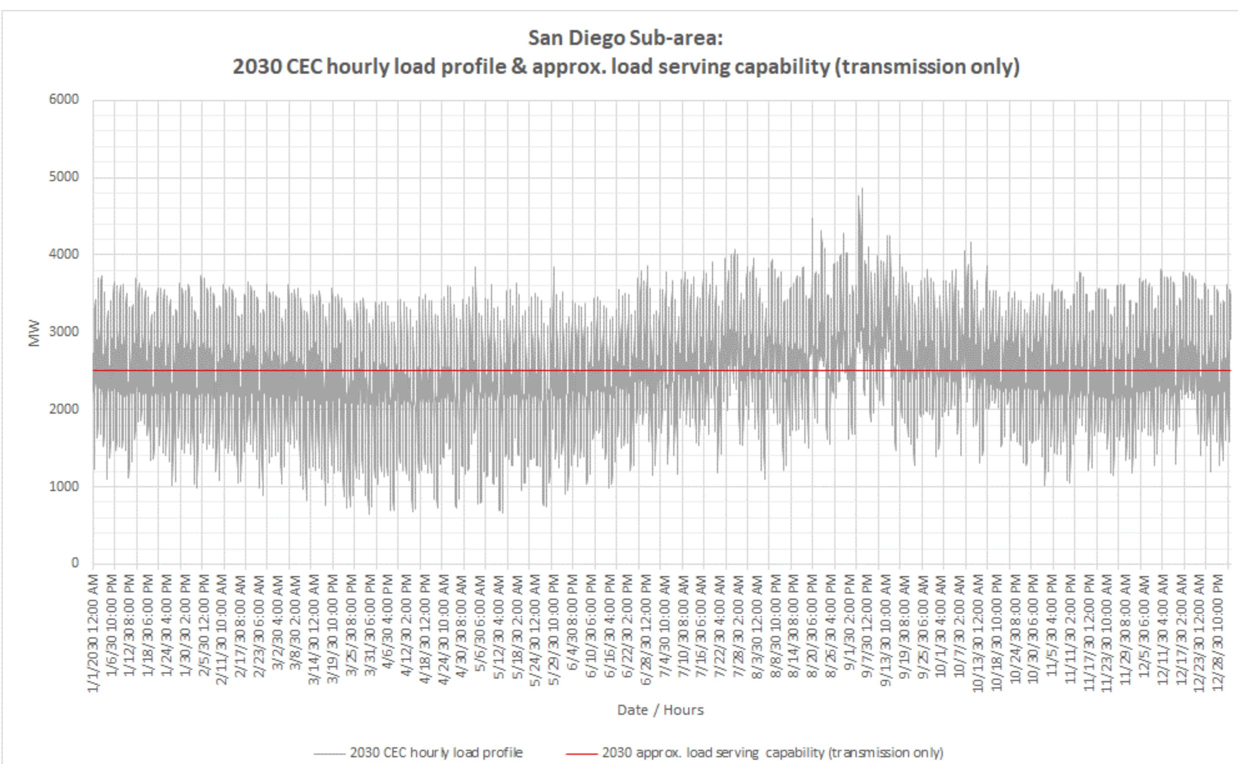
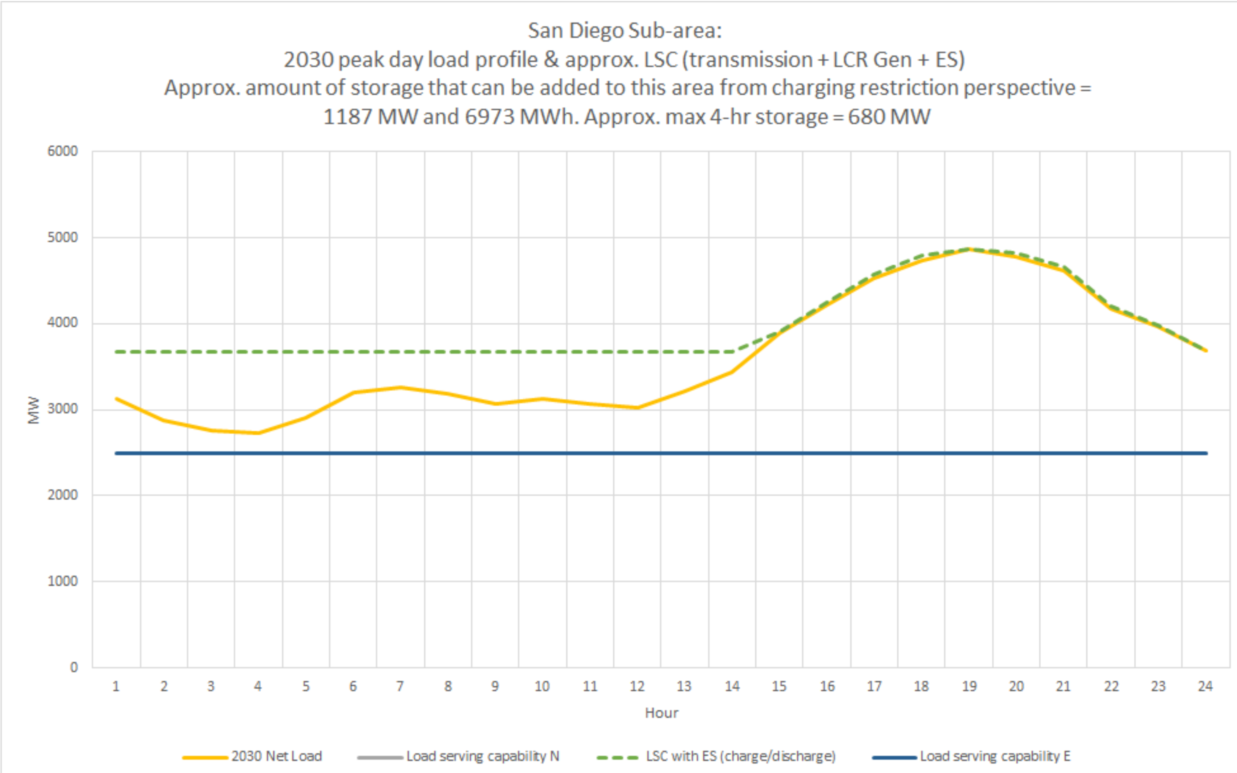


Figure 3-93 San Diego LCR Sub-area 2030 Estimated Amount of Storage that Can Be Added Based on Charging Restriction




### 3.6.10.9.4 San Diego LCR Sub-area Requirement

Table 3.6-81 identifies the sub-area LCR requirements. The LCR requirement for Category P6 contingency is 2842 MW.

Table 3.6-81 San Diego LCR Sub-area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P6 | Remaining Sycamore – Suncrest 230 kV | Eco – Miguel 500 kV, system readjustment followed by one of the Sycamore – Suncrest 230 kV lines | 2842 |

### 3.6.10.9.5 Effectiveness factors:

See Attachment B - Table titled San Diego.

For other helpful procurement information please read procedure 2210Z Effectiveness Factors under 7820 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.10.9.6 Alternatives to Reduce or Eliminate Gas Generation

In the 2020-2021 transmission planning process the San Diego sub-area was not selected to assess alternatives to reduce or eliminate the requirement for gas-fired generation to address the LCR requirement.

As a part of the 2018-2019 transmission planning process the ISO undertook an assessment of the San Diego sub-area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

### 3.6.10.10 *San Diego-Imperial Valley Overall*

#### 3.6.10.10.1 San Diego-Imperial Valley LCR area Hourly Profiles

Since the San Diego sub-area has all the substation loads, the overall San Diego-Imperial Valley area has the same load profile as the San Diego bulk sub-area. The Imperial Valley area has generating resources. Figure 3.6-94 illustrates the forecast 2030 profile for the summer peak day in the San Diego-Imperial Valley LCR area with the Category P1 normal and emergency load serving capabilities without local capacity resources.

Figure 3.6-95 and Figure 3.6-96 illustrate hourly load profiles with transmission only load serving capability and estimated amount of storage that can be added based on charging restriction. For this case, an estimated 1187 MW and 6973 MWh of energy storage can be accommodated from the charging limitation perspective as shown on Figure 3.6-96. The estimated amount of 4-hour energy storage is 680 MW.

Figure 3.6-94 San Diego-Imperial Valley area 2030 Peak Day Forecast Profiles and Load Serving Capability Without Local Gas Generation

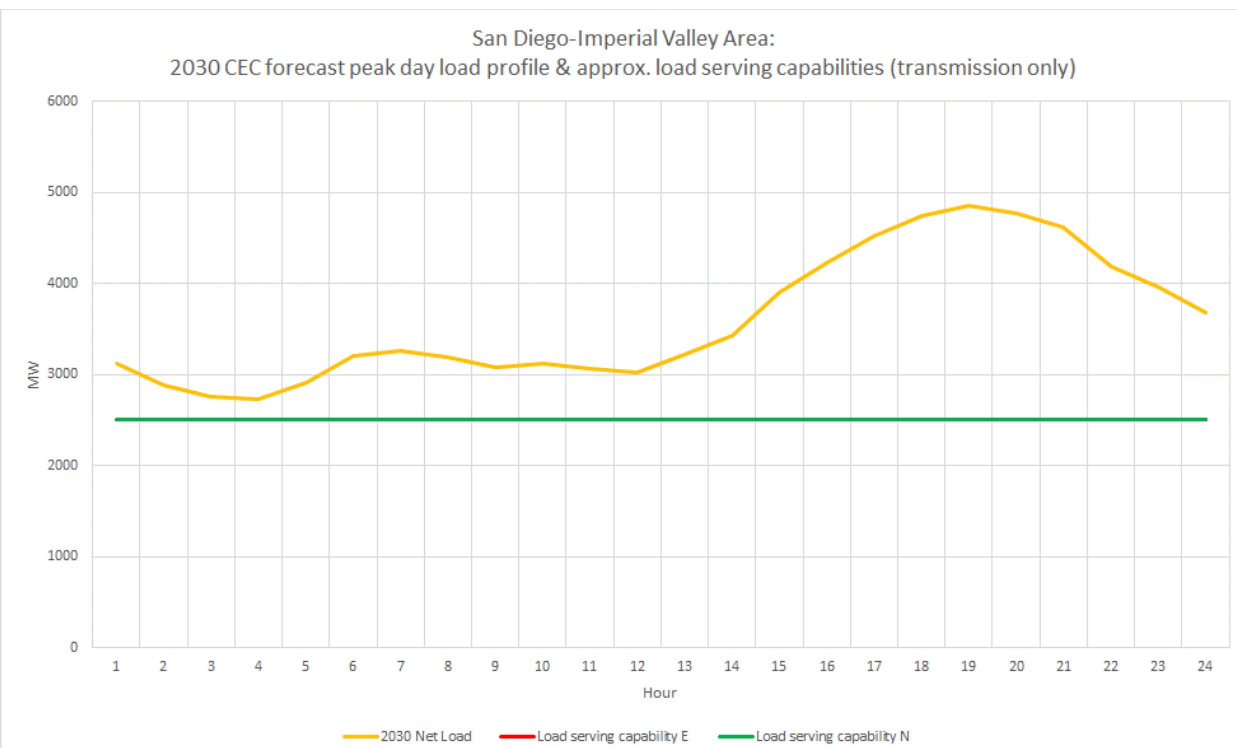


Figure 3.6-95 San Diego-Imperial Valley Area 2030 Hourly Load Forecast Profiles with Transmission Only Load Serving Capability

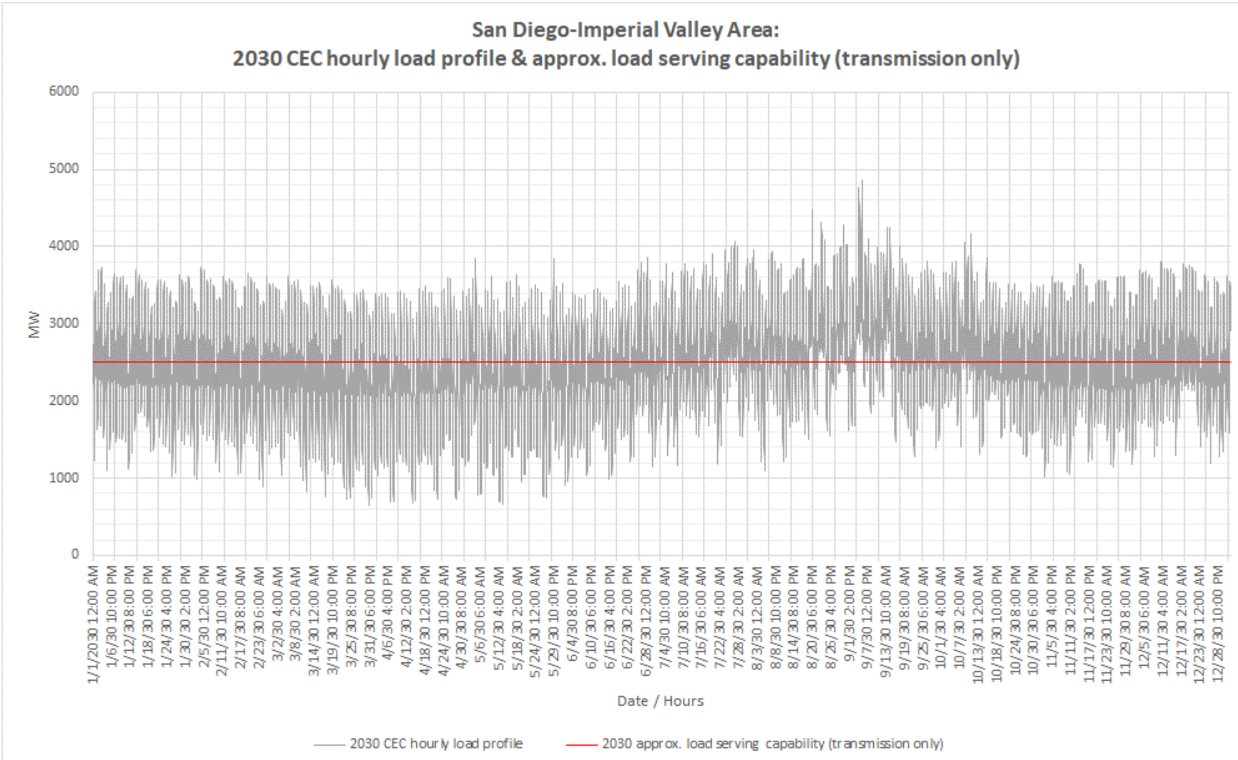
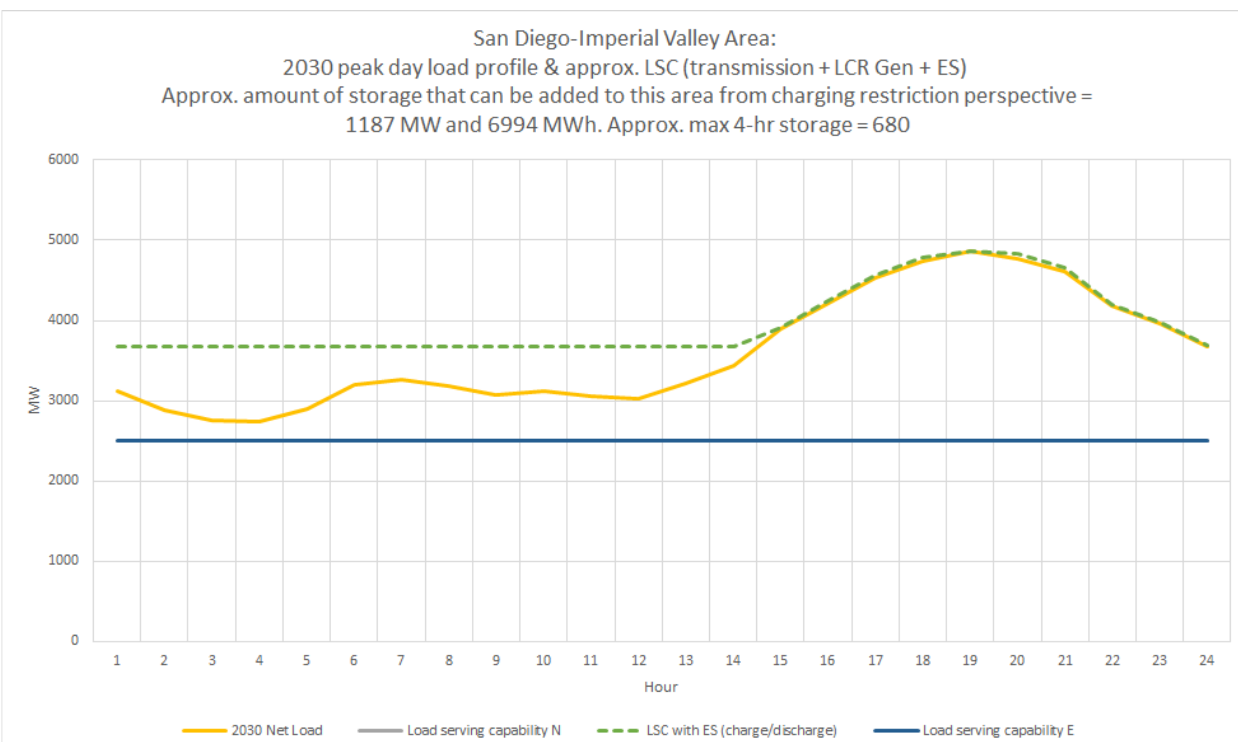



Figure 3.6-96 San Diego-Imperial Valley LCR Area 2030 Estimated Amount of Storage that Can Be Added Based on Charging Restriction



The following is a summary of estimated amount of storage for the sub-areas and the overall area based on maximum charging capability perspective. Due to non-linearity of power system and the various critical contingencies and load shapes for each sub-area and the overall area, it is noted that the estimated maximum amount of storage for the sub-areas many not add up to be sum of the overall area. Since the San Diego sub-area has all the substation loads, the overall San Diego-Imperial Valley area has the same load profile as the San Diego bulk sub-area and therefore same amount of energy storage for the San Diego sub-area. The Imperial Valley area (of the overall San Deigo-Imperial Valley) has generating resources only. The estimated maximum amount of storage for the LCR area is the amount listed in the last row in the table.

Table 3.6-82 Estimated San Diego Sub-areas and Overall Area Energy Storage Capacity and Energy Based on Maximum Charging Capability Perspective

| Area/Sub-area | Estimated Energy Storage Maximum Capacity (MW) | Estimated Energy Storage Maximum Energy (MWh) | Estimated 4-Hour Energy Storage (MW) |
|---|---|---|---|
| Border sub-area | 31 | 185 | 16 |
| San Diego bulk sub-area | 1187 | 6973 | 680 |
| Overall San Diego-Imperial Valley area | 1187 | 6994 | 680 |

#### 3.6.10.10.2 San Diego-Imperial Valley LCR area Requirement

Table 3.6-83 identifies the area LCR requirements. The LCR requirement for Category P3 contingency is 3718 MW.

Table 3.6-83 San Diego-Imperial Valley LCR area Requirements

| Year | Limit | Category | Limiting Facility | Contingency | LCR (MW) (Deficiency) |
|---|---|---|---|---|---|
| 2030 | First Limit | P3 | El Centro 230/92 kV | TDM power plant, system readjustment and Imperial Valley–North Gila 500 kV line | 3718 |

#### 3.6.10.10.3 Effectiveness factors:

See Attachment B - Table titled San Diego.

For other helpful procurement information please read procedure 2210Z Effectiveness Factors under 7820 posted at: http://www.caiso.com/Documents/2210Z.pdf

#### 3.6.10.10.4 Changes compared to the 2025 LCT study

The demand forecast is higher by 182 MW. The overall LCR need for the San Diego – Imperial Valley area is increased by 161 MW, due to increase in load forecast.

#### 3.6.10.10.5 Alternatives to Reduce or Eliminate Gas Generation

As a part of the 2018-2019 transmission planning process the ISO undertook an assessment of the San Diego-Imperial Valley area in order to determine potential transmission alternatives to reduce or eliminate the need for gas-fired generation.

As a part of the 2020-2021 transmission planning process the following transmission alternatives[9] were considered:

1. Upgrade La Fresa-La Cienega 230kV line and install series reactors on the Mesa-Laguna Bell and Mesa-Lighthipe 230kV lines;
2. Pacific Transmission Expansion (PTE) Voltage-Source HVDC Project (two options for terminations in the LA Basin);
3. Devers-Lighthipe HVDC line;
4. Victorville-Century HVDC line with underground AC cable connections to Lighthipe and La Cienega Substations;
5. Lake Elsinore Advanced Pumped Storage (LEAPS) Project with three options for terminations (i.e., (a) connections to both SCE and SDG&E via transmission lines only; (b) connection to both SCE and SDG&E with addition of pumped storage; and (c) connection to SDG&E only.

The first four alternatives are discussed in the LA Basin section as those alternatives provide gas-fired generation reduction benefits primarily to the LA Basin. The fifth alternative (LEAPS) is evaluated in the San Diego-Imperial Valley section as these alternatives primarily provide benefit to this area.

Table 3.6-84 provides the LCR requirement for the alternatives identified above. For the alternatives that reduced the LCR requirement but did not eliminate the requirement, the limiting facility and contingency have been provided.

Chapter 4 provides further details on the economic evaluation for the proposed transmission and transmission/storage alternatives for the local capacity requirement areas.

[9] Please see Chapter 4 for further details on power flow and economic evaluation for these alternatives.

Table 3.6-84 Alternatives to Reduce or Eliminate the San Diego-Imperial Valley Area Requirement for Gas-fired generation

| Year | Limit | Category | Limiting Facility | Contingency | LCR Need (MW) | Notes |
|---|---|---|---|---|---|---|
| Lake Elsinore Advanced Pumped Storage – Alternative 1A (Transmission Only) | | | | | | |
| 2030 | First Limit | P3 | TDM generation, system readjustment, followed by Imperial Valley-North Gila 500 kV line | Yucca-Pilot Knob 161 kV line | 3275 | Positive impact to SD-IV LCR need (reduced by 443 MW) |
| Lake Elsinore Advanced Pumped Storage – Alternative 1B (Transmission + 500 MW Pumped Storage) | | | | | | |
| 2030 | First Limit | P3 | TDM generation, system readjustment, followed by Imperial Valley-North Gila 500 kV line | Yucca-Pilot Knob 161 kV line | 3204 | Positive impact to SD-IV LCR need (reduced by 514 MW) |
| Lake Elsinore Advanced Pumped Storage – Alternative 2 (Transmission + 500 MW Pumped Storage; Connection to SDG&E Only) | | | | | | |
| 2030 | First Limit | P3 | TDM generation, system readjustment, followed by Imperial Valley-North Gila 500 kV line | Yucca-Pilot Knob 161 kV line | 3185 | Positive impact to SD-IV LCR need (reduced by 533 MW) |

Table 3.6-85 provides the cost estimates and the total San Diego-Imperial Valley LCR area requirement and portion of requirement that would need to be supplied from gas-fired and non-gas generation for the alternatives identified above

Table 3.6-85 Alternative Cost Estimate and LCR Requirement

| Alternatives | Submitted By | Estimated Cost ($M) | LCR Requirement (MW) | | |
|---|---|---|---|---|---|
| | | | Total | Market Gas Decrease (SD-IV) | LCR Increase (LA Basin) |
| LEAPS (Lake Elsinore Advanced Pump Storage) Option 1A (transmission only) | Nevada Hydro | $829 | 3275 | 443 | 150 |
| LEAPS (Lake Elsinore Advanced Pump Storage) Option 1B (transmission plus pumped storage) | Nevada Hydro | $2,040 | 3204 | 514 | 0 |
| LEAPS (Lake Elsinore Advanced Pump Storage) Option 2 (transmission plus pumped storage, connecting to SDG&E only) | Nevada Hydro | $1,760 | 3185 | 533 | 0 |

### 3.6.11 Valley Electric Area

Valley Electric Association LCR area has been eliminated on the basis of the following:

- No generation exists in this area
- No category B issues were observed in this area
- Category C and beyond –
    - No common-mode N-2 issues were observed
    - No issues were observed for category B outage followed by a common-mode N-2 outage
    - All the N-1-1 issues that were observed can either be mitigated by the existing UVLS or by an operating procedure

# Attachment A – List of physical resources by PTO, local area and market ID

| PTO | MKT/SCHED RESOURCE ID | BUS # | BUS NAME | kV | NQC | UNIT ID | LCR AREA NAME | LCR SUB-AREA NAME | NQC Comments | CAISO Tag |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | ALMEGT_1_UNIT 1 | 38118 | ALMDACT1 | 13.8 | 23.40 | 1 | Bay Area | Oakland | | MUNI |
| PG&E | ALMEGT_1_UNIT 2 | 38119 | ALMDACT2 | 13.8 | 23.50 | 1 | Bay Area | Oakland | | MUNI |
| PG&E | BANKPP_2_NSPIN | 38820 | DELTA A | 13.2 | 11.55 | 1 | Bay Area | Contra Costa | Pumps | MUNI |
| PG&E | BANKPP_2_NSPIN | 38820 | DELTA A | 13.2 | 11.55 | 2 | Bay Area | Contra Costa | Pumps | MUNI |
| PG&E | BANKPP_2_NSPIN | 38820 | DELTA A | 13.2 | 11.55 | 3 | Bay Area | Contra Costa | Pumps | MUNI |
| PG&E | BANKPP_2_NSPIN | 38815 | DELTA B | 13.2 | 11.55 | 4 | Bay Area | Contra Costa | Pumps | MUNI |
| PG&E | BANKPP_2_NSPIN | 38815 | DELTA B | 13.2 | 11.55 | 5 | Bay Area | Contra Costa | Pumps | MUNI |
| PG&E | BANKPP_2_NSPIN | 38770 | DELTA C | 13.2 | 11.55 | 6 | Bay Area | Contra Costa | Pumps | MUNI |
| PG&E | BANKPP_2_NSPIN | 38770 | DELTA C | 13.2 | 11.55 | 7 | Bay Area | Contra Costa | Pumps | MUNI |
| PG&E | BANKPP_2_NSPIN | 38765 | DELTA D | 13.2 | 11.55 | 8 | Bay Area | Contra Costa | Pumps | MUNI |
| PG&E | BANKPP_2_NSPIN | 38765 | DELTA D | 13.2 | 11.55 | 9 | Bay Area | Contra Costa | Pumps | MUNI |
| PG&E | BANKPP_2_NSPIN | 38760 | DELTA E | 13.2 | 11.55 | 10 | Bay Area | Contra Costa | Pumps | MUNI |
| PG&E | BANKPP_2_NSPIN | 38760 | DELTA E | 13.2 | 11.55 | 11 | Bay Area | Contra Costa | Pumps | MUNI |
| PG&E | BRDSLD_2_HIWIND | 32172 | HIGHWINDS | 34.5 | 34.02 | 1 | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | BRDSLD_2_MTZUM2 | 32179 | MNTZUMA2 | 0.69 | 16.42 | 1 | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | BRDSLD_2_MTZUMA | 32188 | HIGHWND3 | 0.69 | 7.73 | 1 | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | BRDSLD_2_SHILO1 | 32176 | SHILOH | 34.5 | 31.50 | 1 | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | BRDSLD_2_SHILO2 | 32177 | SHILOH 2 | 34.5 | 31.50 | 1 | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | BRDSLD_2_SHLO3A | 32191 | SHILOH3 | 0.58 | 21.53 | 1 | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | BRDSLD_2_SHLO3B | 32194 | SHILOH4 | 0.58 | 21.00 | 1 | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | CALPIN_1_AGNEW | 35860 | OLS-AGNE | 9.11 | 28.56 | 1 | Bay Area | San Jose, South Bay-Moss Landing | Aug NQC | Market |
| PG&E | CAYTNO_2_VASCO | 30531 | 0162-WD | 230 | 4.30 | FW | Bay Area | Contra Costa | Aug NQC | Market |
| PG&E | CLRMTK_1_QF | | | | 0.00 | | Bay Area | Oakland | Not modeled | QF/Selfgen |
| PG&E | COCOPP_2_CTG1 | 33188 | MARSHCT1 | 16.4 | 190.00 | 1 | Bay Area | Contra Costa | Aug NQC | Market |
| PG&E | COCOPP_2_CTG2 | 33188 | MARSHCT2 | 16.4 | 189.21 | 2 | Bay Area | Contra Costa | Aug NQC | Market |
| PG&E | COCOPP_2_CTG3 | 33189 | MARSHCT3 | 16.4 | 188.50 | 3 | Bay Area | Contra Costa | Aug NQC | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | COCOPP_2_CTG4 | 33189 | MARSHCT4 | 16.4 | 189.89 | 4 | Bay Area | Contra Costa | Aug NQC | Market |
| PG&E | COCOSB_6_SOLAR | | | | 0.00 | | Bay Area | Contra Costa | Not modeled Energy Only | Solar |
| PG&E | CROKET_7_UNIT | 32900 | CRCKTCOG | 18 | 211.49 | 1 | Bay Area | Pittsburg | Aug NQC | QF/Selfgen |
| PG&E | CSCCOG_1_UNIT 1 | 36859 | Laf300 | 12 | 3.00 | 1 | Bay Area | San Jose, South Bay-Moss Landing | | MUNI |
| PG&E | CSCCOG_1_UNIT 1 | 36859 | Laf300 | 12 | 3.00 | 2 | Bay Area | San Jose, South Bay-Moss Landing | | MUNI |
| PG&E | CSCGNR_1_UNIT 1 | 36858 | Gia100 | 13.8 | 24.00 | 1 | Bay Area | San Jose, South Bay-Moss Landing | | MUNI |
| PG&E | CSCGNR_1_UNIT 2 | 36895 | Gia200 | 13.8 | 24.00 | 2 | Bay Area | San Jose, South Bay-Moss Landing | | MUNI |
| PG&E | CUMBIA_1_SOLAR | 33102 | COLUMBIA | 0.38 | 5.13 | 1 | Bay Area | Pittsburg | Aug NQC | Solar |
| PG&E | DELTA_2_PL1X4 | 33107 | DEC STG1 | 24 | 269.60 | 1 | Bay Area | Pittsburg | Aug NQC | Market |
| PG&E | DELTA_2_PL1X4 | 33108 | DEC CTG1 | 18 | 181.13 | 1 | Bay Area | Pittsburg | Aug NQC | Market |
| PG&E | DELTA_2_PL1X4 | 33109 | DEC CTG2 | 18 | 181.13 | 1 | Bay Area | Pittsburg | Aug NQC | Market |
| PG&E | DELTA_2_PL1X4 | 33110 | DEC CTG3 | 18 | 181.13 | 1 | Bay Area | Pittsburg | Aug NQC | Market |
| PG&E | DIXNLD_1_LNDFL | | | | 0.64 | | Bay Area | | Not modeled Aug NQC | Market |
| PG&E | DUANE_1_PL1X3 | 36863 | DVRaGT1 | 13.8 | 48.27 | 1 | Bay Area | San Jose, South Bay-Moss Landing | | MUNI |
| PG&E | DUANE_1_PL1X3 | 36864 | DVRbGT2 | 13.8 | 48.27 | 1 | Bay Area | San Jose, South Bay-Moss Landing | | MUNI |
| PG&E | DUANE_1_PL1X3 | 36865 | DVRaST3 | 13.8 | 46.96 | 1 | Bay Area | San Jose, South Bay-Moss Landing | | MUNI |
| PG&E | GATWAY_2_PL1X3 | 33118 | GATEWAY1 | 18 | 180.78 | 1 | Bay Area | Contra Costa | Aug NQC | Market |
| PG&E | GATWAY_2_PL1X3 | 33119 | GATEWAY2 | 18 | 171.17 | 1 | Bay Area | Contra Costa | Aug NQC | Market |
| PG&E | GATWAY_2_PL1X3 | 33120 | GATEWAY3 | 18 | 171.17 | 1 | Bay Area | Contra Costa | Aug NQC | Market |
| PG&E | GILROY_1_UNIT | 35850 | GLRY COG | 13.8 | 69.00 | 1 | Bay Area | Llagas, San Jose, South Bay-Moss Landing | Aug NQC | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | GILROY_1_UNIT | 35850 | GLRY COG | 13.8 | 36.00 | 2 | Bay Area | Llagas, San Jose, South Bay-Moss Landing | Aug NQC | Market |
| PG&E | GILRPP_1_PL1X2 | 35851 | GROYPKR1 | 13.8 | 47.60 | 1 | Bay Area | Llagas, San Jose, South Bay-Moss Landing | Aug NQC | Market |
| PG&E | GILRPP_1_PL1X2 | 35852 | GROYPKR2 | 13.8 | 47.60 | 1 | Bay Area | Llagas, San Jose, South Bay-Moss Landing | Aug NQC | Market |
| PG&E | GILRPP_1_PL3X4 | 35853 | GROYPKR3 | 13.8 | 46.20 | 1 | Bay Area | Llagas, San Jose, South Bay-Moss Landing | Aug NQC | Market |
| PG&E | GRZZLY_1_BERKLY | 32741 | HILLSIDE_12 | 12.47 | 14.67 | 1 | Bay Area | | Aug NQC | Net Seller |
| PG&E | KELSO_2_UNITS | 33813 | MARIPCT1 | 13.8 | 48.09 | 1 | Bay Area | Contra Costa | Aug NQC | Market |
| PG&E | KELSO_2_UNITS | 33815 | MARIPCT2 | 13.8 | 48.09 | 2 | Bay Area | Contra Costa | Aug NQC | Market |
| PG&E | KELSO_2_UNITS | 33817 | MARIPCT3 | 13.8 | 48.09 | 3 | Bay Area | Contra Costa | Aug NQC | Market |
| PG&E | KELSO_2_UNITS | 33819 | MARIPCT4 | 13.8 | 48.09 | 4 | Bay Area | Contra Costa | Aug NQC | Market |
| PG&E | KIRKER_7_KELCYN | | | | 3.21 | | Bay Area | Pittsburg | Not modeled | Market |
| PG&E | LAWRNC_7_SUNYVL | | | | 0.17 | | Bay Area | | Not modeled Aug NQC | Market |
| PG&E | LECEF_1_UNITS | 35858 | LECEFST1 | 13.8 | 111.58 | 1 | Bay Area | San Jose, South Bay-Moss Landing | | Market |
| PG&E | LECEF_1_UNITS | 35854 | LECEFGT1 | 13.8 | 46.49 | 1 | Bay Area | San Jose, South Bay-Moss Landing | Aug NQC | Market |
| PG&E | LECEF_1_UNITS | 35855 | LECEFGT2 | 13.8 | 46.49 | 1 | Bay Area | San Jose, South Bay-Moss Landing | Aug NQC | Market |
| PG&E | LECEF_1_UNITS | 35856 | LECEFGT3 | 13.8 | 46.49 | 1 | Bay Area | San Jose, South Bay-Moss Landing | Aug NQC | Market |
| PG&E | LECEF_1_UNITS | 35857 | LECEFGT4 | 13.8 | 46.49 | 1 | Bay Area | San Jose, South Bay-Moss Landing | Aug NQC | Market |
| PG&E | LMBEPK_2_UNITA1 | 32173 | LAMBGT1 | 13.8 | 47.50 | 1 | Bay Area | Contra Costa | Aug NQC | Market |
| PG&E | LMBEPK_2_UNITA2 | 32174 | GOOSEHGT | 13.8 | 47.60 | 2 | Bay Area | Contra Costa | Aug NQC | Market |
| PG&E | LMBEPK_2_UNITA3 | 32175 | CREEDGT1 | 13.8 | 47.40 | 3 | Bay Area | Contra Costa | Aug NQC | Market |
| PG&E | LMEC_1_PL1X3 | 33113 | LMECST1 | 18 | 243.71 | 1 | Bay Area | Pittsburg | Aug NQC | Market |
| PG&E | LMEC_1_PL1X3 | 33111 | LMECCT2 | 18 | 165.41 | 1 | Bay Area | Pittsburg | Aug NQC | Market |
| PG&E | LMEC_1_PL1X3 | 33112 | LMECCT1 | 18 | 165.41 | 1 | Bay Area | Pittsburg | Aug NQC | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | MARTIN_1_SUNSET | | | | 1.22 | | Bay Area | | Not modeled Aug NQC | QF/Selfgen |
| PG&E | METEC_2_PL1X3 | 35883 | MEC STG1 | 18 | 213.13 | 1 | Bay Area | San Jose, South Bay-Moss Landing | Aug NQC | Market |
| PG&E | METEC_2_PL1X3 | 35881 | MEC CTG1 | 18 | 178.43 | 1 | Bay Area | San Jose, South Bay-Moss Landing | Aug NQC | Market |
| PG&E | METEC_2_PL1X3 | 35882 | MEC CTG2 | 18 | 178.43 | 1 | Bay Area | San Jose, South Bay-Moss Landing | Aug NQC | Market |
| PG&E | MISSIX_1_QF | | | | 0.01 | | Bay Area | | Not modeled Aug NQC | QF/Selfgen |
| PG&E | MLPTAS_7_QFUNTS | | | | 0.00 | | Bay Area | San Jose, South Bay-Moss Landing | Not modeled Aug NQC | QF/Selfgen |
| PG&E | MOSSLD_1_QF | | | | 0.00 | | Bay Area | | Not modeled Aug NQC | Market |
| PG&E | MOSSLD_2_PSP1 | 36223 | DUKMOSS3 | 18 | 183.60 | 1 | Bay Area | South Bay-Moss Landing | 78% starting 2021 | Market |
| PG&E | MOSSLD_2_PSP1 | 36221 | DUKMOSS1 | 18 | 163.20 | 1 | Bay Area | South Bay-Moss Landing | 78% starting 2021 | Market |
| PG&E | MOSSLD_2_PSP1 | 36222 | DUKMOSS2 | 18 | 163.20 | 1 | Bay Area | South Bay-Moss Landing | 78% starting 2021 | Market |
| PG&E | MOSSLD_2_PSP2 | 36226 | DUKMOSS6 | 18 | 183.60 | 1 | Bay Area | South Bay-Moss Landing | 78% starting 2021 | Market |
| PG&E | MOSSLD_2_PSP2 | 36224 | DUKMOSS4 | 18 | 163.20 | 1 | Bay Area | South Bay-Moss Landing | 78% starting 2021 | Market |
| PG&E | MOSSLD_2_PSP2 | 36225 | DUKMOSS5 | 18 | 163.20 | 1 | Bay Area | South Bay-Moss Landing | 78% starting 2021 | Market |
| PG&E | NEWARK_1_QF | | | | 0.05 | | Bay Area | | Not modeled Aug NQC | QF/Selfgen |
| PG&E | OAK C_1_EBMUD | | | | 1.20 | | Bay Area | Oakland | Not modeled Aug NQC | MUNI |
| PG&E | OAK C_7_UNIT 1 | 32901 | OAKLND 1 | 13.8 | 0.00 | 1 | Bay Area | Oakland | Retired by 2025 | Market |
| PG&E | OAK C_7_UNIT 2 | 32902 | OAKLND 2 | 13.8 | 0.00 | 1 | Bay Area | Oakland | Retired by 2025 | Market |
| PG&E | OAK C_7_UNIT 3 | 32903 | OAKLND 3 | 13.8 | 0.00 | 1 | Bay Area | Oakland | Retired by 2021 | Market |
| PG&E | OAK L_1_GTG1 | | | | 0.00 | | Bay Area | Oakland | Not modeled Energy Only | Market |
| PG&E | OXMTN_6_LNDFIL | 33469 | OX_MTN | 4.16 | 1.47 | 1 | Bay Area | Ames | | Market |
| PG&E | OXMTN_6_LNDFIL | 33469 | OX_MTN | 4.16 | 1.47 | 2 | Bay Area | Ames | | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | OXMTN_6_LNDFIL | 33469 | OX_MTN | 4.16 | 1.47 | 3 | Bay Area | Ames | | Market |
| PG&E | OXMTN_6_LNDFIL | 33469 | OX_MTN | 4.16 | 1.47 | 4 | Bay Area | Ames | | Market |
| PG&E | OXMTN_6_LNDFIL | 33469 | OX_MTN | 4.16 | 1.47 | 5 | Bay Area | Ames | | Market |
| PG&E | OXMTN_6_LNDFIL | 33469 | OX_MTN | 4.16 | 1.47 | 6 | Bay Area | Ames | | Market |
| PG&E | OXMTN_6_LNDFIL | 33469 | OX_MTN | 4.16 | 1.47 | 7 | Bay Area | Ames | | Market |
| PG&E | PALALT_7_COBUG | | | | 4.50 | | Bay Area | | Not modeled | MUNI |
| PG&E | RICHMN_1_CHVSR2 | | | | 2.30 | | Bay Area | | Not modeled Aug NQC | Solar |
| PG&E | RICHMN_1_SOLAR | | | | 0.54 | | Bay Area | | Not modeled Aug NQC | Solar |
| PG&E | RICHMN_7_BAYENV | | | | 2.00 | | Bay Area | | Not modeled Aug NQC | Market |
| PG&E | RUSCTY_2_UNITS | 35306 | RUSELST1 | 15 | 237.09 | 3 | Bay Area | Ames | No NQC - Pmax | Market |
| PG&E | RUSCTY_2_UNITS | 35304 | RUSELCT1 | 15 | 180.15 | 1 | Bay Area | Ames | No NQC - Pmax | Market |
| PG&E | RUSCTY_2_UNITS | 35305 | RUSELCT2 | 15 | 180.15 | 2 | Bay Area | Ames | No NQC - Pmax | Market |
| PG&E | RVRVEW_1_UNITA1 | 33178 | RVEC_GEN | 13.8 | 47.60 | 1 | Bay Area | Contra Costa | Aug NQC | Market |
| PG&E | SHELRF_1_UNITS | 33142 | SHELL 2 | 12.47 | 10.91 | 1 | Bay Area | Pittsburg | Aug NQC | Net Seller |
| PG&E | SHELRF_1_UNITS | 33143 | SHELL 3 | 12.47 | 10.91 | 1 | Bay Area | Pittsburg | Aug NQC | Net Seller |
| PG&E | SHELRF_1_UNITS | 33141 | SHELL 1 | 12.47 | 5.88 | 1 | Bay Area | Pittsburg | Aug NQC | Net Seller |
| PG&E | SRINTL_6_UNIT | 33468 | SRI INTL | 9.11 | 0.78 | 1 | Bay Area | | Aug NQC | QF/Selfgen |
| PG&E | STAUFF_1_UNIT | 33139 | STAUFER | 9.11 | 0.01 | 1 | Bay Area | | Aug NQC | QF/Selfgen |
| PG&E | STOILS_1_UNITS | 32921 | CHEVGEN1 | 13.8 | 2.09 | 1 | Bay Area | Pittsburg | Aug NQC | Market |
| PG&E | STOILS_1_UNITS | 32922 | CHEVGEN2 | 13.8 | 2.09 | 1 | Bay Area | Pittsburg | Aug NQC | Market |
| PG&E | STOILS_1_UNITS | 32923 | CHEVGEN3 | 13.8 | 0.97 | 3 | Bay Area | Pittsburg | Aug NQC | Market |
| PG&E | SWIFT_1_NAS | 35623 | SWIFT | 21 | 3.00 | BT | Bay Area | San Jose, South Bay-Moss Landing | | Battery |
| PG&E | TIDWTR_2_UNITS | 33151 | FOSTER W | 12.47 | 4.05 | 1 | Bay Area | Pittsburg | Aug NQC | Net Seller |
| PG&E | TIDWTR_2_UNITS | 33151 | FOSTER W | 12.47 | 4.05 | 2 | Bay Area | Pittsburg | Aug NQC | Net Seller |
| PG&E | TIDWTR_2_UNITS | 33151 | FOSTER W | 12.47 | 3.08 | 3 | Bay Area | Pittsburg | Aug NQC | Net Seller |
| PG&E | UNCHEM_1_UNIT | 32920 | UNION CH | 9.11 | 13.10 | 1 | Bay Area | Pittsburg | Aug NQC | QF/Selfgen |
| PG&E | UNOCAL_1_UNITS | 32910 | UNOCAL | 12 | 0.02 | 1 | Bay Area | Pittsburg | Aug NQC | QF/Selfgen |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | UNOCAL_1_UNITS | 32910 | UNOCAL | 12 | 0.02 | 2 | Bay Area | Pittsburg | Aug NQC | QF/Selfgen |
| PG&E | UNOCAL_1_UNITS | 32910 | UNOCAL | 12 | 0.02 | 3 | Bay Area | Pittsburg | Aug NQC | QF/Selfgen |
| PG&E | USWNDR_2_LABWD1 | | | | 1.89 | | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | USWNDR_2_SMUD | 365574 | SOLANO2W | | 18.24 | 2 | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | USWNDR_2_SMUD | 365566 | SOLANO1W | | 3.22 | 1 | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | USWNDR_2_SMUD2 | 365600 | SOLANO3W | | 26.84 | 3 | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | USWPJR_2_UNITS | 39233 | GRNRDG | 0.69 | 16.42 | 1 | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | WNDMAS_2_UNIT 1 | 33170 | WINDMSTR | 9.11 | 7.98 | 1 | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | ZOND_6_UNIT | 35316 | ZOND SYS | 9.11 | 3.59 | 1 | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | ZZ_IBMCTL_1_UNIT 1 | 35637 | IBM-CTLE | 115 | 0.00 | 1 | Bay Area | San Jose, South Bay-Moss Landing | No NQC - hist. data | Market |
| PG&E | ZZ_IMHOFF_1_UNIT 1 | 33136 | CCCSD | 12.47 | 0.00 | 1 | Bay Area | Pittsburg | No NQC - hist. data | QF/Selfgen |
| PG&E | ZZ_MARKHM_1_CATLST | 35863 | CATALYST | 9.11 | 0.00 | 1 | Bay Area | San Jose, South Bay-Moss Landing | | QF/Selfgen |
| PG&E | ZZ_NA | 35861 | SJ-SCL W | 4.3 | 0.00 | 1 | Bay Area | San Jose, South Bay-Moss Landing | No NQC - hist. data | QF/Selfgen |
| PG&E | ZZ_NA | 36209 | SLD ENRG | 12.47 | 0.00 | 1 | Bay Area | South Bay-Moss Landing | | QF/Selfgen |
| PG&E | ZZ_SEAWST_6_LAPOS | 35312 | FOREBAYW | 22.01 | 0.00 | 1 | Bay Area | Contra Costa | No NQC - est. data | Wind |
| PG&E | ZZ_USWPFK_6_FRICK | 35320 | FRICKWND | 12 | 1.90 | 1 | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | ZZ_USWPFK_6_FRICK | 35320 | FRICKWND | 12 | 0.00 | 2 | Bay Area | Contra Costa | Aug NQC | Wind |
| PG&E | ZZ_ZANKER_1_UNIT 1 | 35861 | SJ-SCL W | 4.3 | 0.00 | RN | Bay Area | San Jose, South Bay-Moss Landing | No NQC - hist. data | QF/Selfgen |
| PG&E | ZZZ_New Unit | 30045 | MOSSLAND | 500 | 300.00 | ES | Bay Area | South Bay-Moss Landing | E-4949 | Battery |
| PG&E | ZZZ_New Unit | 30755 | MOSSLNSW | 230 | 182.50 | ES | Bay Area | South Bay-Moss Landing | E-4949 | Battery |
| PG&E | ZZZ_New Unit | 35646 | MRGN HIL | 115 | 75.00 | ES | Bay Area | San Jose, South Bay-Moss Landing | E-4949 | Battery |
| PG&E | ZZZ_New Unit | 30522 | 0354-WD | 21 | 1.83 | EW | Bay Area | Contra Costa | No NQC - Pmax | Market |
| PG&E | ZZZ_New Unit | 365540 | Q1016 | | 0.00 | 1 | Bay Area | | Energy Only | Market |
| PG&E | ZZZ_New Unit | 32741 | HILLSIDE | | 0.00 | RN | Bay Area | | Energy Only | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | ZZZ_New Unit | 365559 | STANFORD | | 0.00 | RN | Bay Area | | Energy Only | Market |
| PG&E | ZZZ_New Unit | 35302 | NUMMI-LV | 12.56 | 0.00 | RN | Bay Area | | Energy Only | Market |
| PG&E | ZZZ_New Unit | 35859 | HGST-LV | 12.41 | 0.00 | RN | Bay Area | | Energy Only | Market |
| PG&E | ZZZ_New Unit | 35307 | A100US-L | 12.56 | 0.00 | RN | Bay Area | | Energy Only | Market |
| PG&E | ZZZZ_New Unit | 32786 | OAK C115 | 115 | 10.00 | ES | Bay Area | Oakland | OCEI | Battery |
| PG&E | ZZZZ_New Unit | 32908 | OAK C12 | 12 | 2.50 | ES | Bay Area | Oakland | OCEI | Battery |
| PG&E | ZZZZ_New Unit | 32788 | STTIN L | 115 | 2.50 | ES | Bay Area | Oakland | OCEI | Battery |
| PG&E | ZZZZZ_METCLF_1_QF | | | | 0.00 | | Bay Area | | Retired | QF/Selfgen |
| PG&E | ZZZZZ_USWNDR_2_UNITS | 32168 | EXNCO | 9.11 | 0.00 | 1 | Bay Area | Contra Costa | Retired | Wind |
| PG&E | ZZZZZZ_COCOPP_7_UNIT 6 | 33116 | C.COS 6 | 18 | 0.00 | RT | Bay Area | Contra Costa | Retired | Market |
| PG&E | ZZZZZZ_COCOPP_7_UNIT 7 | 33117 | C.COS 7 | 18 | 0.00 | RT | Bay Area | Contra Costa | Retired | Market |
| PG&E | ZZZZZZ_CONTAN_1_UNIT | 36856 | CCA100 | 13.8 | 0.00 | 1 | Bay Area | San Jose, South Bay-Moss Landing | Retired | MUNI |
| PG&E | ZZZZZZ_FLOWD1_6_ALTPP1 | 35318 | FLOWDPTR | 9.11 | 0.00 | 1 | Bay Area | Contra Costa | Retired | Wind |
| PG&E | ZZZZZZ_LFC 51_2_UNIT 1 | 35310 | PPASSWND | 21 | 0.00 | 1 | Bay Area | | Retired | Wind |
| PG&E | ZZZZZZ_MOSSLD_7_UNIT 6 | 36405 | MOSSLND6 | 22 | 0.00 | 1 | Bay Area | South Bay-Moss Landing | Retired | Market |
| PG&E | ZZZZZZ_MOSSLD_7_UNIT 7 | 36406 | MOSSLND7 | 22 | 0.00 | 1 | Bay Area | South Bay-Moss Landing | Retired | Market |
| PG&E | ZZZZZZ_PITTSP_7_UNIT 5 | 33105 | PTSB 5 | 18 | 0.00 | RT | Bay Area | Pittsburg | Retired | Market |
| PG&E | ZZZZZZ_PITTSP_7_UNIT 6 | 33106 | PTSB 6 | 18 | 0.00 | RT | Bay Area | Pittsburg | Retired | Market |
| PG&E | ZZZZZZ_PITTSP_7_UNIT 7 | 30000 | PTSB 7 | 20 | 0.00 | RT | Bay Area | Pittsburg | Retired | Market |
| PG&E | ZZZZZZ_UNTDQF_7_UNITS | 33466 | UNTED CO | 9.11 | 0.00 | 1 | Bay Area | | Retired | QF/Selfgen |
| PG&E | ADERA_1_SOLAR1 | 34319 | CHWCHLAS | 0.48 | 0.00 | 1 | Fresno | Herndon, Panoche 115 kV, Wilson 115 kV | Energy Only | Solar |
| PG&E | ADMEST_6_SOLAR | 34315 | ADAMS_E | 12.47 | 0.00 | 1 | Fresno | Herndon | Energy Only | Solar |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | AGRICO_6_PL3N5 | 34608 | AGRICO | 13.8 | 22.69 | 3 | Fresno | Herndon | | Market |
| PG&E | AGRICO_7_UNIT | 34608 | AGRICO | 13.8 | 43.13 | 4 | Fresno | Herndon | | Market |
| PG&E | AGRICO_7_UNIT | 34608 | AGRICO | 13.8 | 7.47 | 2 | Fresno | Herndon | | Market |
| PG&E | AVENAL_6_AVPARK | 34265 | AVENAL P | 12 | 0.00 | 1 | Fresno | Coalinga | Aug NQC | Solar |
| PG&E | AVENAL_6_AVSLR1 | 34691 | AVENAL_1 | 21 | 0.00 | EW | Fresno | Coalinga | Energy Only | Solar |
| PG&E | AVENAL_6_AVSLR2 | 34691 | AVENAL_1 | 21 | 0.00 | EW | Fresno | Coalinga | Energy Only | Solar |
| PG&E | AVENAL_6_SANDDG | 34263 | SANDDRAG | 12 | 0.00 | 1 | Fresno | Coalinga | Aug NQC | Solar |
| PG&E | AVENAL_6_SUNCTY | 34257 | SUNCTY D | 12 | 0.00 | 1 | Fresno | Coalinga | Aug NQC | Solar |
| PG&E | BALCHS_7_UNIT 1 | 34624 | BALCH | 13.2 | 31.00 | 1 | Fresno | Herndon | Aug NQC | Market |
| PG&E | BALCHS_7_UNIT 2 | 34612 | BLCH | 13.8 | 52.50 | 1 | Fresno | Herndon | Aug NQC | Market |
| PG&E | BALCHS_7_UNIT 3 | 34614 | BLCH | 13.8 | 54.60 | 1 | Fresno | Herndon | Aug NQC | Market |
| PG&E | CANTUA_1_SOLAR | 34349 | CANTUA_D | 12.47 | 2.70 | 1 | Fresno | Panoche 115 kV | Aug NQC | Solar |
| PG&E | CANTUA_1_SOLAR | 34349 | CANTUA_D | 12.47 | 2.70 | 2 | Fresno | Panoche 115 kV | Aug NQC | Solar |
| PG&E | CHEVCO_6_UNIT 1 | 34652 | CHV.COAL | 9.11 | 2.09 | 1 | Fresno | Coalinga, Panoche 115 kV | Aug NQC | QF/Selfgen |
| PG&E | CHEVCO_6_UNIT 2 | 34652 | CHV.COAL | 9.11 | 0.85 | 2 | Fresno | Coalinga, Panoche 115 kV | Aug NQC | QF/Selfgen |
| PG&E | CHWCHL_1_BIOMAS | 34305 | CHWCHLA2 | 13.8 | 9.30 | 1 | Fresno | Herndon, Panoche 115 kV, Wilson 115 kV | Aug NQC | Market |
| PG&E | CHWCHL_1_UNIT | 34301 | CHOWCOGN | 13.8 | 48.00 | 1 | Fresno | Herndon, Panoche 115 kV, Wilson 115 kV | | Market |
| PG&E | CORCAN_1_SOLAR1 | 34690 | CORCORAN | 12.47 | 5.40 | FW | Fresno | Herndon, Hanford | Aug NQC | Solar |
| PG&E | CORCAN_1_SOLAR2 | 34692 | CORCORAN | 12.47 | 2.97 | FW | Fresno | Herndon, Hanford | Aug NQC | Solar |
| PG&E | CRESSY_1_PARKER | 34140 | CRESSEY | 115 | 1.29 | | Fresno | | Not modeled Aug NQC | MUNI |
| PG&E | CRNEVL_6_CRNVA | 34634 | CRANEVLY | 12 | 0.00 | 1 | Fresno | Borden | Aug NQC | Market |
| PG&E | CRNEVL_6_SJQN 2 | 34631 | SJ2GEN | 9.11 | 0.01 | 1 | Fresno | Borden | Aug NQC | Market |
| PG&E | CRNEVL_6_SJQN 3 | 34633 | SJ3GEN | 9.11 | 0.00 | 1 | Fresno | Borden | Aug NQC | Market |
| PG&E | CURTIS_1_CANLCK | | | | 0.00 | | Fresno | | Not modeled Aug NQC | Market |
| PG&E | CURTIS_1_FARFLD | | | | 0.47 | | Fresno | | Not modeled Aug NQC | Market |
| PG&E | DAIRLD_1_MD1SL1 | | | | 0.00 | | Fresno | | Energy Only | Solar |
| PG&E | DAIRLD_1_MD2BM1 | | | | 0.00 | | Fresno | | Energy Only | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | DINUBA_6_UNIT | 34648 | DINUBA E | 13.8 | 0.00 | 1 | Fresno | Herndon, Reedley | Mothballed | Market |
| PG&E | EEKTMN_6_SOLAR1 | 34629 | KETTLEMN | 0.8 | 0.00 | 1 | Fresno | | Energy Only | Solar |
| PG&E | ELCAP_1_SOLAR | | | | 0.00 | | Fresno | | Not Modeled Aug NQC | Solar |
| PG&E | ELNIDP_6_BIOMAS | 34330 | ELNIDO | 13.8 | 9.59 | 1 | Fresno | Panoche 115 kV, Wilson 115 kV | Aug NQC | Market |
| PG&E | EXCHEC_7_UNIT 1 | 34306 | EXCHQUER | 13.8 | 90.72 | 1 | Fresno | Panoche 115 kV, Wilson 115 kV | Aug NQC | MUNI |
| PG&E | EXCLSG_1_SOLAR | 34623 | Q678 | 0.5 | 16.20 | 1 | Fresno | Panoche 115 kV | Aug NQC | Solar |
| PG&E | FRESHW_1_SOLAR1 | 34699 | Q529 | 0.385 | 0.00 | 1 | Fresno | Herndon | Energy Only | Solar |
| PG&E | FRIANT_6_UNITS | 34636 | FRIANTDM | 6.6 | 8.56 | 2 | Fresno | Borden | Aug NQC | Net Seller |
| PG&E | FRIANT_6_UNITS | 34636 | FRIANTDM | 6.6 | 4.57 | 3 | Fresno | Borden | Aug NQC | Net Seller |
| PG&E | FRIANT_6_UNITS | 34636 | FRIANTDM | 6.6 | 1.21 | 4 | Fresno | Borden | Aug NQC | Net Seller |
| PG&E | GIFENS_6_BUGSL1 | 34644 | Q679 | 0.55 | 5.40 | 1 | Fresno | | Aug NQC | Solar |
| PG&E | GIFFEN_6_SOLAR | 34467 | GIFFEN_DIST | 12.47 | 2.70 | 1 | Fresno | Herndon | Aug NQC | Solar |
| PG&E | GIFFEN_6_SOLAR1 | | | | 0.00 | 1 | Fresno | Herndon | Energy Only | Solar |
| PG&E | GUERNS_6_SOLAR | 34463 | GUERNSEY_D2 | 12.47 | 2.70 | 5 | Fresno | | Aug NQC | Solar |
| PG&E | GUERNS_6_SOLAR | 34461 | GUERNSEY_D1 | 12.47 | 2.70 | 8 | Fresno | | Aug NQC | Solar |
| PG&E | GWFPWR_1_UNITS | 34431 | GWF_HEP1 | 13.8 | 45.30 | 1 | Fresno | Herndon, Hanford | | Market |
| PG&E | GWFPWR_1_UNITS | 34433 | GWF_HEP2 | 13.8 | 45.30 | 1 | Fresno | Herndon, Hanford | | Market |
| PG&E | HAASPH_7_PL1X2 | 34610 | HAAS | 13.8 | 72.00 | 1 | Fresno | Herndon | Aug NQC | Market |
| PG&E | HAASPH_7_PL1X2 | 34610 | HAAS | 13.8 | 72.00 | 2 | Fresno | Herndon | Aug NQC | Market |
| PG&E | HELMPG_7_UNIT 1 | 34600 | HELMS | 18 | 407.00 | 1 | Fresno | | Aug NQC | Market |
| PG&E | HELMPG_7_UNIT 2 | 34602 | HELMS | 18 | 407.00 | 2 | Fresno | | Aug NQC | Market |
| PG&E | HELMPG_7_UNIT 3 | 34604 | HELMS | 18 | 404.00 | 3 | Fresno | | Aug NQC | Market |
| PG&E | HENRTA_6_SOLAR1 | | | | 0.00 | | Fresno | | Not modeled Aug NQC | Solar |
| PG&E | HENRTA_6_SOLAR2 | | | | 0.00 | | Fresno | | Not modeled Energy Only | Solar |
| PG&E | HENRTA_6_UNITA1 | 34539 | GWF_GT1 | 13.8 | 44.99 | 1 | Fresno | | | Market |
| PG&E | HENRTA_6_UNITA2 | 34541 | GWF_GT2 | 13.8 | 44.89 | 1 | Fresno | | | Market |
| PG&E | HENRTS_1_SOLAR | 34617 | Q581 | 0.38 | 27.00 | 1 | Fresno | Herndon | Aug NQC | Solar |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | HURON_6_SOLAR | 34557 | HURON_DI | 12.47 | 2.70 | 1 | Fresno | Coalinga, Panoche 115 kV | Aug NQC | Solar |
| PG&E | HURON_6_SOLAR | 34557 | HURON_DI | 12.47 | 2.70 | 2 | Fresno | Coalinga, Panoche 115 kV | Aug NQC | Solar |
| PG&E | JAYNE_6_WLSLR | 34639 | WESTLNDS | 0.48 | 0.00 | 1 | Fresno | Coalinga | Energy Only | Solar |
| PG&E | KANSAS_6_SOLAR | 34666 | KANSASS_S | 12.47 | 0.00 | F | Fresno | | Energy Only | Solar |
| PG&E | KERKH1_7_UNIT 1 | 34344 | KERCK1-1 | 6.6 | 13.00 | 1 | Fresno | Herndon, Wilson 115 kV | Aug NQC | Market |
| PG&E | KERKH1_7_UNIT 3 | 34345 | KERCK1-3 | 6.6 | 12.80 | 3 | Fresno | Herndon, Wilson 115 kV | Aug NQC | Market |
| PG&E | KERKH2_7_UNIT 1 | 34308 | KERCKHOF | 13.8 | 153.90 | 1 | Fresno | Herndon, Wilson 115 kV | Aug NQC | Market |
| PG&E | KERMAN_6_SOLAR1 | | | | 0.00 | | Fresno | | Not modeled Energy Only | Solar |
| PG&E | KERMAN_6_SOLAR2 | | | | 0.00 | | Fresno | | Not modeled Energy Only | Solar |
| PG&E | KINGCO_1_KINGBR | 34642 | KINGSBUR | 9.11 | 34.50 | 1 | Fresno | Herndon, Hanford | Aug NQC | Net Seller |
| PG&E | KINGRV_7_UNIT 1 | 34616 | KINGSRIV | 13.8 | 51.20 | 1 | Fresno | Herndon, Reedley | Aug NQC | Market |
| PG&E | KNGBRG_1_KBSLR1 | | | | 0.00 | | Fresno | | Not modeled Energy Only | Solar |
| PG&E | KNGBRG_1_KBSLR2 | | | | 0.00 | | Fresno | | Not modeled Energy Only | Solar |
| PG&E | KNTSTH_6_SOLAR | 34694 | KENT_S | 0.8 | 0.00 | 1 | Fresno | | Energy Only | Solar |
| PG&E | LEPRFD_1_KANSAS | 34680 | KANSAS | 12.47 | 5.40 | 1 | Fresno | Herndon, Hanford | Aug NQC | Solar |
| PG&E | MALAGA_1_PL1X2 | 34671 | KRCDPCT1 | 13.8 | 48.00 | 1 | Fresno | Herndon | | Market |
| PG&E | MALAGA_1_PL1X2 | 34672 | KRCDPCT2 | 13.8 | 48.00 | 1 | Fresno | Herndon | | Market |
| PG&E | MCCALL_1_QF | 34219 | MCCALL 4 | 12.47 | 0.65 | QF | Fresno | Herndon | Aug NQC | QF/Selfgen |
| PG&E | MCSWAN_6_UNITS | 34320 | MCSWAIN | 9.11 | 9.60 | 1 | Fresno | Panoche 115 kV, Wilson 115 kV | Aug NQC | MUNI |
| PG&E | MENBIO_6_RENEW1 | 34339 | CALRENEW | 12.5 | 1.35 | 1 | Fresno | Herndon, Panoche 115 kV, Wilson 115 kV | Aug NQC | Net Seller |
| PG&E | MERCED_1_SOLAR1 | | | | 0.00 | | Fresno | | Not modeled Energy Only | Solar |
| PG&E | MERCED_1_SOLAR2 | | | | 0.00 | | Fresno | | Not modeled Energy Only | Solar |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | MERCFL_6_UNIT | 34322 | MERCEDFL | 9.11 | 3.36 | 1 | Fresno | Panoche 115 kV, Wilson 115 kV | Aug NQC | Market |
| PG&E | MNDOTA_1_SOLAR1 | 34313 | NORTHSTA | 0.2 | 16.20 | 1 | Fresno | Panoche 115 kV, Wilson 115 kV | Aug NQC | Solar |
| PG&E | MNDOTA_1_SOLAR2 | | | | 0.00 | | Fresno | | Not modeled Energy Only | Solar |
| PG&E | MSTANG_2_SOLAR | 34683 | Q643W | 0.8 | 8.10 | 1 | Fresno | | Aug NQC | Solar |
| PG&E | MSTANG_2_SOLAR3 | 34683 | Q643W | 0.8 | 10.80 | 1 | Fresno | | Aug NQC | Solar |
| PG&E | MSTANG_2_SOLAR4 | 34683 | Q643W | 0.8 | 8.10 | 1 | Fresno | | Aug NQC | Solar |
| PG&E | ONLLPP_6_UNITS | 34316 | ONEILPMP | 9.11 | 12.12 | 1 | Fresno | | Aug NQC | MUNI |
| PG&E | OROLOM_1_SOLAR1 | 34689 | ORO LOMA_3 | 12.47 | 0.00 | EW | Fresno | Panoche 115 kV | Energy Only | Solar |
| PG&E | OROLOM_1_SOLAR2 | 34689 | ORO LOMA_3 | 12.47 | 0.00 | EW | Fresno | Panoche 115 kV | Energy Only | Solar |
| PG&E | ORTGA_6_ME1SL1 | | | | 0.00 | | Fresno | | Not modeled Energy Only | Solar |
| PG&E | PAIGES_6_SOLAR | 34653 | Q526 | 0.55 | 0.00 | 1 | Fresno | Coalinga, Panoche 115 kV | Energy Only | Solar |
| PG&E | PINFLT_7_UNITS | 38720 | PINEFLAT | 13.8 | 32.63 | 1 | Fresno | Herndon | Aug NQC | MUNI |
| PG&E | PINFLT_7_UNITS | 38720 | PINEFLAT | 13.8 | 32.63 | 2 | Fresno | Herndon | Aug NQC | MUNI |
| PG&E | PINFLT_7_UNITS | 38720 | PINEFLAT | 13.8 | 32.63 | 3 | Fresno | Herndon | Aug NQC | MUNI |
| PG&E | PNCHPP_1_PL1X2 | 34328 | STARGT1 | 13.8 | 54.18 | 1 | Fresno | Panoche 115 kV | | Market |
| PG&E | PNCHPP_1_PL1X2 | 34329 | STARGT2 | 13.8 | 54.18 | 2 | Fresno | Panoche 115 kV | | Market |
| PG&E | PNOCHE_1_PL1X2 | 34142 | WHD_PAN2 | 13.8 | 49.97 | 1 | Fresno | Herndon, Panoche 115 kV | | Market |
| PG&E | PNOCHE_1_UNITA1 | 34186 | DG_PAN1 | 13.8 | 52.01 | 1 | Fresno | Panoche 115 kV | | Market |
| PG&E | REEDLY_6_SOLAR | | | | 0.00 | | Fresno | Herndon, Reedley | Not modeled Energy Only | Solar |
| PG&E | S_RITA_6_SOLAR1 | | | | 0.00 | | Fresno | | Not modeled Energy Only | Solar |
| PG&E | SCHNDR_1_FIVPTS | 34353 | SCHINDLER_D | 12.47 | 2.70 | 1 | Fresno | Coalinga, Panoche 115 kV | Aug NQC | Solar |
| PG&E | SCHNDR_1_FIVPTS | 34353 | SCHINDLER_D | 12.47 | 1.35 | 2 | Fresno | Coalinga, Panoche 115 kV | Aug NQC | Solar |
| PG&E | SCHNDR_1_OS2BM2 | | | | 0.00 | | Fresno | Coalinga | Energy Only | Market |
| PG&E | SCHNDR_1_WSTSDE | 34353 | SCHINDLER_D | 12.47 | 2.70 | 3 | Fresno | Coalinga, Panoche 115 kV | Aug NQC | Solar |
| PG&E | SCHNDR_1_WSTSDE | 34353 | SCHINDLER_D | 12.47 | 1.35 | 4 | Fresno | Coalinga, Panoche 115 kV | Aug NQC | Solar |
| PG&E | SGREGY_6_SANGER | 34646 | SANGERCO | 13.8 | 38.77 | 1 | Fresno | Herndon | Aug NQC | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | SGREGY_6_SANGER | 34646 | SANGERCO | 13.8 | 9.31 | 2 | Fresno | Herndon | Aug NQC | Market |
| PG&E | STOREY_2_MDRCH2 | 34253 | BORDEN D | 12.47 | 0.28 | | Fresno | | Not modeled Aug NQC | Market |
| PG&E | STOREY_2_MDRCH3 | 34253 | BORDEN D | 12.47 | 0.19 | | Fresno | | Not modeled Aug NQC | Market |
| PG&E | STOREY_2_MDRCH4 | 34253 | BORDEN D | 12.47 | 0.20 | | Fresno | | Not modeled Aug NQC | Market |
| PG&E | STOREY_7_MDRCHW | 34209 | STOREY D | 12.47 | 0.82 | 1 | Fresno | | Aug NQC | Net Seller |
| PG&E | STROUD_6_SOLAR | 34563 | STROUD_D | 12.47 | 2.70 | 1 | Fresno | Herndon | Aug NQC | Solar |
| PG&E | STROUD_6_SOLAR | 34563 | STROUD_D | 12.47 | 2.70 | 2 | Fresno | Herndon | Aug NQC | Solar |
| PG&E | STROUD_6_WWHSR1 | | | | 0.00 | | Fresno | Herndon | Energy Only | Solar |
| PG&E | SUMWHT_6_SWSSR1 | | | | 5.00 | | Fresno | | Aug NQC | Solar |
| PG&E | TRNQL8_2_AMASR1 | 365514 | Q1032G1 | 0.55 | 5.40 | 1 | Fresno | | Aug NQC | Solar |
| PG&E | TRNQL8_2_AZUSR1 | 365517 | Q1032G2 | 0.55 | 5.40 | 2 | Fresno | | Aug NQC | Solar |
| PG&E | TRNQL8_2_ROJSR1 | 365520 | Q1032G3 | 0.55 | 8.10 | 3 | Fresno | | Aug NQC | Solar |
| PG&E | TRNQL8_2_VERSR1 | 365520 | Q1032G3 | 0.55 | 0.00 | 3 | Fresno | | Aug NQC | Solar |
| PG&E | TRNQLT_2_SOLAR | 34340 | Q643X | 0.8 | 54.00 | 1 | Fresno | | Aug NQC | Solar |
| PG&E | ULTPFR_1_UNIT 1 | 34640 | ULTR.PWR | 9.11 | 24.07 | 1 | Fresno | Herndon | Aug NQC | Market |
| PG&E | VEGA_6_SOLAR1 | 34314 | VEGA | 34.5 | 0.00 | 1 | Fresno | | Energy Only | Solar |
| PG&E | WAUKNA_1_SOLAR | 34696 | CORCORANPV_S | 21 | 5.40 | 1 | Fresno | Herndon, Hanford | Aug NQC | Solar |
| PG&E | WAUKNA_1_SOLAR2 | 34677 | Q558 | 21 | 5.33 | 1 | Fresno | Herndon, Hanford | No NQC - Pmax | Solar |
| PG&E | WFRESN_1_SOLAR | | | | 0.00 | | Fresno | | Not modeled Energy Only | Solar |
| PG&E | WHITNY_6_SOLAR | 34673 | Q532 | 0.55 | 0.00 | 1 | Fresno | Coalinga, Panoche 115 kV | Energy Only | Solar |
| PG&E | WISHON_6_UNITS | 34658 | WISHON | 2.3 | 4.51 | 1 | Fresno | Borden | Aug NQC | Market |
| PG&E | WISHON_6_UNITS | 34658 | WISHON | 2.3 | 4.51 | 2 | Fresno | Borden | Aug NQC | Market |
| PG&E | WISHON_6_UNITS | 34658 | WISHON | 2.3 | 4.51 | 3 | Fresno | Borden | Aug NQC | Market |
| PG&E | WISHON_6_UNITS | 34658 | WISHON | 2.3 | 4.51 | 4 | Fresno | Borden | Aug NQC | Market |
| PG&E | WISHON_6_UNITS | 34658 | WISHON | 2.3 | 0.36 | SJ | Fresno | Borden | Aug NQC | Market |
| PG&E | WOODWR_1_HYDRO | | | | 0.00 | | Fresno | | Not modeled Energy Only | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | WRGHTP_7_AMENGY | 34207 | WRIGHT D | 12.47 | 0.53 | QF | Fresno | | Aug NQC | QF/Selfgen |
| PG&E | ZZ_BORDEN_2_QF | 34253 | BORDEN D | 12.47 | 1.30 | QF | Fresno | | No NQC - hist. data | Net Seller |
| PG&E | ZZ_BULLRD_7_SAGNES | 34213 | BULLD 12 | 12.47 | 0.06 | 1 | Fresno | Herndon | Aug NQC | QF/Selfgen |
| PG&E | ZZ_JRWOOD_1_UNIT 1 | 34332 | JRWCOGEN | 9.11 | 0.00 | 1 | Fresno | | | QF/Selfgen |
| PG&E | ZZ_KERKH1_7_UNIT 2 | 34343 | KERCK1-2 | 6.6 | 8.50 | 2 | Fresno | Herndon, Wilson 115 kV | No NQC - hist. data | Market |
| PG&E | ZZ_NA | 34485 | FRESNOWW | 12.5 | 0.10 | 2 | Fresno | | No NQC - hist. data | QF/Selfgen |
| PG&E | ZZ_NA | 34485 | FRESNOWW | 12.5 | 0.00 | 1 | Fresno | | No NQC - hist. data | QF/Selfgen |
| PG&E | ZZ_NA | 34485 | FRESNOWW | 12.5 | 0.00 | 3 | Fresno | | No NQC - hist. data | QF/Selfgen |
| PG&E | ZZ_New Unit | 34651 | JACALITO-LV | 0.55 | 1.22 | RN | Fresno | | No NQC - Pmax | Market |
| PG&E | ZZZ_New Unit | 365697 | Q1158B | 0.36 | 300.00 | 1 | Fresno | | No NQC - est. data | Battery |
| PG&E | ZZZ_New Unit | 365524 | Q1036SPV | 0.36 | 41.42 | 1 | Fresno | | No NQC - est. data | Solar |
| PG&E | ZZZ_New Unit | 34688 | Q272 | 0.36 | 33.21 | 1 | Fresno | | No NQC - est. data | Solar |
| PG&E | ZZZ_New Unit | 365675 | Q1128-5S | 0.36 | 13.50 | 1 | Fresno | Panoche 115 kV, Wilson 115 kV | No NQC - est. data | Solar |
| PG&E | ZZZ_New Unit | 365673 | Q1128-4S | 0.36 | 13.50 | 1 | Fresno | Panoche 115 kV, Wilson 115 kV | No NQC - est. data | Solar |
| PG&E | ZZZ_New Unit | 34335 | Q723 | 0.315 | 13.50 | 1 | Fresno | Borden | No NQC - est. data | Solar |
| PG&E | ZZZ_New Unit | 365604 | Q1028Q10 | 0.36 | 5.40 | 1 | Fresno | Panoche 115 kV, Wilson 115 kV | No NQC - est. data | Solar |
| PG&E | ZZZ_New Unit | 365663 | Q1127SPV | 0.36 | 5.40 | 1 | Fresno | Panoche 115 kV, Wilson 115 kV | No NQC - est. data | Solar |
| PG&E | ZZZ_New Unit | 365504 | Q632BSPV | 0.55 | 5.00 | 1 | Fresno | | No NQC - est. data | Solar |
| PG&E | ZZZ_New Unit | 34649 | Q965SPV | 0.36 | 3.65 | 1 | Fresno | Herndon | No NQC - est. data | Solar |
| PG&E | ZZZ_New Unit | 365694 | Q1158S | 0.36 | 0.00 | 1 | Fresno | | No NQC - est. data | Solar |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | ZZZ_New Unit | 34603 | JGBSWLT | 12.47 | 0.00 | ST | Fresno | Herndon | Energy Only | Market |
| PG&E | ZZZZZ_CAPMAD_1_UNIT 1 | 34179 | MADERA_G | 13.8 | 0.00 | RT | Fresno | | Retired | Market |
| PG&E | ZZZZZ_COLGA1_6_SHELLW | 34654 | COLNGAGN | 9.11 | 0.00 | 1 | Fresno | Coalinga | Retired | Net Seller |
| PG&E | ZZZZZ_GATES_6_PL1X2 | 34553 | WHD_GAT2 | 13.8 | 0.00 | RT | Fresno | Coalinga | Retired | Market |
| PG&E | ZZZZZ_INTTRB_6_UNIT | 34342 | INT.TURB | 9.11 | 0.00 | 1 | Fresno | | Aug NQC | Market |
| PG&E | ZZZZZ_MENBIO_6_UNIT | 34334 | BIO PWR | 9.11 | 0.00 | 1 | Fresno | Panoche 115 kV, Wilson 115 kV | Retired | QF/Selfgen |
| PG&E | BRDGVL_7_BAKER | | | | 0.00 | | Humboldt | | Not modeled Aug NQC | Net Seller |
| PG&E | FAIRHV_6_UNIT | 31150 | FAIRHAVN | 13.8 | 12.65 | 1 | Humboldt | | Aug NQC | Net Seller |
| PG&E | FTSWRD_6_TRFORK | | | | 0.15 | | Humboldt | | Not modeled Aug NQC | Market |
| PG&E | FTSWRD_7_QFUNTS | | | | 0.00 | | Humboldt | | Not modeled Aug NQC | QF/Selfgen |
| PG&E | GRSCRK_6_BGCKWW | | | | 0.00 | | Humboldt | | Not modeled Aug NQC | Market |
| PG&E | HUMBPP_1_UNITS3 | 31180 | HUMB_G1 | 13.8 | 16.69 | 3 | Humboldt | | | Market |
| PG&E | HUMBPP_1_UNITS3 | 31180 | HUMB_G1 | 13.8 | 16.32 | 1 | Humboldt | | | Market |
| PG&E | HUMBPP_1_UNITS3 | 31180 | HUMB_G1 | 13.8 | 16.22 | 4 | Humboldt | | | Market |
| PG&E | HUMBPP_1_UNITS3 | 31180 | HUMB_G1 | 13.8 | 15.85 | 2 | Humboldt | | | Market |
| PG&E | HUMBPP_6_UNITS | 31182 | HUMB_G3 | 13.8 | 16.62 | 8 | Humboldt | | | Market |
| PG&E | HUMBPP_6_UNITS | 31181 | HUMB_G2 | 13.8 | 16.33 | 6 | Humboldt | | | Market |
| PG&E | HUMBPP_6_UNITS | 31182 | HUMB_G3 | 13.8 | 16.33 | 9 | Humboldt | | | Market |
| PG&E | HUMBPP_6_UNITS | 31181 | HUMB_G2 | 13.8 | 16.24 | 7 | Humboldt | | | Market |
| PG&E | HUMBPP_6_UNITS | 31181 | HUMB_G2 | 13.8 | 16.14 | 5 | Humboldt | | | Market |
| PG&E | HUMBPP_6_UNITS | 31182 | HUMB_G3 | 13.8 | 15.95 | 10 | Humboldt | | | Market |
| PG&E | HUMBSB_1_QF | | | | 0.00 | | Humboldt | | Not modeled Aug NQC | QF/Selfgen |
| PG&E | KEKAWK_6_UNIT | 31166 | KEKAWAK | 9.1 | 0.00 | 1 | Humboldt | | Aug NQC | Net Seller |
| PG&E | LAPAC_6_UNIT | 31158 | LP SAMOA | 12.5 | 0.00 | 1 | Humboldt | | | Market |
| PG&E | LOWGAP_1_SUPHR | | | | 0.00 | | Humboldt | | Not modeled Aug NQC | Market |
| PG&E | PACLUM_6_UNIT | 31152 | PAC.LUMB | 13.8 | 5.82 | 1 | Humboldt | | Aug NQC | Net Seller |
| PG&E | PACLUM_6_UNIT | 31152 | PAC.LUMB | 13.8 | 5.82 | 2 | Humboldt | | Aug NQC | Net Seller |
| PG&E | PACLUM_6_UNIT | 31153 | PAC.LUMB | 2.4 | 3.49 | 3 | Humboldt | | Aug NQC | Net Seller |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | ZZZZZ_BLULKE_6_BLUELK | 31156 | BLUELKPP | 12.5 | 0.00 | 1 | Humboldt | | Retired | Market |
| PG&E | 7STDRD_1_SOLAR1 | 35065 | 7STNDRD_1 | 21 | 5.40 | FW | Kern | South Kern PP, Westpark, Kern Oil | Aug NQC | Solar |
| PG&E | ADOBEE_1_SOLAR | 35021 | Q622B | 34.5 | 5.40 | 1 | Kern | South Kern PP | Aug NQC | Solar |
| PG&E | BDGRCK_1_UNITS | 35029 | BADGERCK | 13.8 | 40.20 | 1 | Kern | South Kern PP | Aug NQC | Net Seller |
| PG&E | BEARMT_1_UNIT | 35066 | PSE-BEAR | 13.8 | 44.00 | 1 | Kern | South Kern PP, Westpark | Aug NQC | Net Seller |
| PG&E | BKRFLD_2_SOLAR1 | | | | 0.37 | | Kern | South Kern PP | Not modeled Aug NQC | Solar |
| PG&E | DEXZEL_1_UNIT | 35024 | DEXEL + | 13.8 | 17.78 | 1 | Kern | South Kern PP, Westpark, Kern Oil | Aug NQC | Net Seller |
| PG&E | DISCOV_1_CHEVRN | 35062 | DISCOVRY | 13.8 | 2.58 | 1 | Kern | South Kern PP, Westpark, Kern Oil | Aug NQC | QF/Selfgen |
| PG&E | DOUBLC_1_UNITS | 35023 | DOUBLE C | 13.8 | 49.50 | 1 | Kern | South Kern PP | Aug NQC | Net Seller |
| PG&E | KERNFT_1_UNITS | 35026 | KERNFRNT | 9.11 | 48.60 | 1 | Kern | South Kern PP | Aug NQC | Net Seller |
| PG&E | LAMONT_1_SOLAR1 | 35019 | REGULUS | 0.4 | 16.20 | 1 | Kern | South Kern PP, Kern PWR-Tevis | Aug NQC | Solar |
| PG&E | LAMONT_1_SOLAR2 | 35092 | Q744G4 | 0.38 | 5.40 | 1 | Kern | South Kern PP, Kern PWR-Tevis | Aug NQC | Solar |
| PG&E | LAMONT_1_SOLAR3 | 35087 | Q744G3 | 0.4 | 4.05 | 3 | Kern | South Kern PP, Kern PWR-Tevis | Aug NQC | Solar |
| PG&E | LAMONT_1_SOLAR4 | 35059 | Q744G2 | 0.4 | 21.38 | 2 | Kern | South Kern PP, Kern PWR-Tevis | Aug NQC | Solar |
| PG&E | LAMONT_1_SOLAR5 | 35054 | Q744G1 | 0.4 | 4.50 | 1 | Kern | South Kern PP, Kern PWR-Tevis | Aug NQC | Solar |
| PG&E | LIVOAK_1_UNIT 1 | 35058 | PSE-LVOK | 9.1 | 42.50 | 1 | Kern | South Kern PP, Westpark, Kern Oil | Aug NQC | Net Seller |
| PG&E | MAGUND_1_BKISR1 | | | | 0.27 | | Kern | South Kern PP, Westpark, Kern Oil | Not modeled Aug NQC | Solar |
| PG&E | MAGUND_1_BKSSR2 | | | | 1.42 | | Kern | South Kern PP, Westpark, Kern Oil | Not modeled Aug NQC | Solar |
| PG&E | MTNPOS_1_UNIT | 35036 | MT POSO | 13.8 | 34.35 | 1 | Kern | South Kern PP, Westpark, Kern Oil | Aug NQC | Net Seller |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | OLDRIV_6_BIOGAS | | | | 1.69 | | Kern | South Kern PP, Kern 70 kV | Not modeled Aug NQC | Market |
| PG&E | OLDRIV_6_CESDBM | | | | 0.90 | | Kern | South Kern PP, Kern 70 kV | Not modeled Aug NQC | Market |
| PG&E | OLDRIV_6_LKVBM1 | | | | 0.91 | | Kern | South Kern PP, Kern 70 kV | Not modeled Aug NQC | Market |
| PG&E | OLDRV1_6_SOLAR | 35091 | OLD_RVR1 | 12.5 | 5.40 | 1 | Kern | South Kern PP, Kern 70 kV | Aug NQC | Solar |
| PG&E | SIERRA_1_UNITS | 35027 | HISIERRA | 9.11 | 49.57 | 1 | Kern | South Kern PP | Aug NQC | Market |
| PG&E | SKERN_6_SOLAR1 | 35089 | S_KERN | 0.48 | 5.40 | 1 | Kern | South Kern PP, Kern 70 kV | Aug NQC | Solar |
| PG&E | SKERN_6_SOLAR2 | 36556 3 | Q885 | 0.36 | 2.70 | 1 | Kern | South Kern PP, Kern 70 kV | Aug NQC | Solar |
| PG&E | VEDDER_1_SEKERN | 35046 | SEKR | 9.11 | 2.19 | 1 | Kern | South Kern PP, Westpark, Kern Oil | Aug NQC | QF/Selfgen |
| PG&E | ZZZZZ_KRNCNY_6_UNIT | 35018 | KERNCNYN | 11 | 0.00 | 1 | Kern | South Kern PP, Kern 70 kV | Aug NQC | Market |
| PG&E | ZZZZZ_OILDAL_1_UNIT 1 | 35028 | OILDALE | 9.11 | 0.00 | RT | Kern | South Kern PP, Westpark, Kern Oil | Retired | Net Seller |
| PG&E | ZZZZZ_RIOBRV_6_UNIT 1 | 35020 | RIOBRAVO | 9.1 | 0.00 | 1 | Kern | South Kern PP, Kern 70 kV | Aug NQC | Market |
| PG&E | ZZZZZ_ULTOGL_1_POSO | 35035 | ULTR PWR | 9.11 | 0.00 | 1 | Kern | South Kern PP, Westpark, Kern Oil | Retired | QF/Selfgen |
| PG&E | ADLIN_1_UNITS | 31435 | GEO.ENGY | 9.1 | 8.00 | 1 | NCNB | Eagle Rock, Fulton | | Market |
| PG&E | ADLIN_1_UNITS | 31435 | GEO.ENGY | 9.1 | 8.00 | 2 | NCNB | Eagle Rock, Fulton | | Market |
| PG&E | CLOVDL_1_SOLAR | | | | 0.41 | | NCNB | Eagle Rock, Fulton | Not modeled Aug NQC | Solar |
| PG&E | CSTOGA_6_LNDFIL | | | | 0.00 | | NCNB | Fulton | Not modeled Energy Only | Market |
| PG&E | FULTON_1_QF | | | | 0.06 | | NCNB | Fulton | Not modeled Aug NQC | QF/Selfgen |
| PG&E | GEYS11_7_UNIT11 | 31412 | GEYSER11 | 13.8 | 68.00 | 1 | NCNB | Eagle Rock, Fulton | | Market |
| PG&E | GEYS12_7_UNIT12 | 31414 | GEYSER12 | 13.8 | 50.00 | 1 | NCNB | Fulton | | Market |
| PG&E | GEYS13_7_UNIT13 | 31416 | GEYSER13 | 13.8 | 56.00 | 1 | NCNB | | | Market |
| PG&E | GEYS14_7_UNIT14 | 31418 | GEYSER14 | 13.8 | 50.00 | 1 | NCNB | Fulton | | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | GEYS16_7_UNIT16 | 31420 | GEYSER16 | 13.8 | 49.00 | 1 | NCNB | Fulton | | Market |
| PG&E | GEYS17_2_BOTRCK | | | | 0.00 | 1 | NCNB | Fulton | | Market |
| PG&E | GEYS17_7_UNIT17 | 31422 | GEYSER17 | 13.8 | 56.00 | 1 | NCNB | Fulton | | Market |
| PG&E | GEYS18_7_UNIT18 | 31424 | GEYSER18 | 13.8 | 45.00 | 1 | NCNB | | | Market |
| PG&E | GEYS20_7_UNIT20 | 31426 | GEYSER20 | 13.8 | 40.00 | 1 | NCNB | | | Market |
| PG&E | GYS5X6_7_UNITS | 31406 | GEYSR5-6 | 13.8 | 42.50 | 1 | NCNB | Eagle Rock, Fulton | | Market |
| PG&E | GYS5X6_7_UNITS | 31406 | GEYSR5-6 | 13.8 | 42.50 | 2 | NCNB | Eagle Rock, Fulton | | Market |
| PG&E | GYS7X8_7_UNITS | 31408 | GEYSER78 | 13.8 | 38.00 | 1 | NCNB | Eagle Rock, Fulton | | Market |
| PG&E | GYS7X8_7_UNITS | 31408 | GEYSER78 | 13.8 | 38.00 | 2 | NCNB | Eagle Rock, Fulton | | Market |
| PG&E | GYSRVL_7_WSPRNG | | | | 1.48 | | NCNB | Fulton | Not modeled Aug NQC | QF/Selfgen |
| PG&E | HILAND_7_YOLOWD | | | | 0.00 | | NCNB | Eagle Rock, Fulton | Not Modeled. Energy Only | Market |
| PG&E | IGNACO_1_QF | | | | 0.01 | | NCNB | | Not modeled Aug NQC | QF/Selfgen |
| PG&E | INDVLY_1_UNITS | 31436 | INDIAN V | 9.1 | 0.79 | 1 | NCNB | Eagle Rock, Fulton | Aug NQC | Net Seller |
| PG&E | MONTPH_7_UNITS | 32700 | MONTICLO | 9.1 | 3.11 | 1 | NCNB | Fulton | Aug NQC | Market |
| PG&E | MONTPH_7_UNITS | 32700 | MONTICLO | 9.1 | 3.11 | 2 | NCNB | Fulton | Aug NQC | Market |
| PG&E | MONTPH_7_UNITS | 32700 | MONTICLO | 9.1 | 0.93 | 3 | NCNB | Fulton | Aug NQC | Market |
| PG&E | NCPA_7_GP1UN1 | 38106 | NCPA1GY1 | 13.8 | 31.00 | 1 | NCNB | | Aug NQC | MUNI |
| PG&E | NCPA_7_GP1UN2 | 38108 | NCPA1GY2 | 13.8 | 28.00 | 1 | NCNB | | Aug NQC | MUNI |
| PG&E | NCPA_7_GP2UN3 | 38110 | NCPA2GY1 | 13.8 | 0.00 | 1 | NCNB | Fulton | Aug NQC | MUNI |
| PG&E | NCPA_7_GP2UN4 | 38112 | NCPA2GY2 | 13.8 | 52.73 | 1 | NCNB | Fulton | Aug NQC | MUNI |
| PG&E | NOVATO_6_LNDFL | | | | 3.56 | | NCNB | | Not modeled Aug NQC | Market |
| PG&E | POTTER_6_UNITS | 31433 | POTTRVLY | 2.4 | 1.32 | 1 | NCNB | Eagle Rock, Fulton | Aug NQC | Market |
| PG&E | POTTER_6_UNITS | 31433 | POTTRVLY | 2.4 | 0.60 | 3 | NCNB | Eagle Rock, Fulton | Aug NQC | Market |
| PG&E | POTTER_6_UNITS | 31433 | POTTRVLY | 2.4 | 0.60 | 4 | NCNB | Eagle Rock, Fulton | Aug NQC | Market |
| PG&E | POTTER_7_VECINO | | | | 0.01 | | NCNB | Eagle Rock, Fulton | Not modeled Aug NQC | QF/Selfgen |
| PG&E | SANTFG_7_UNITS | 31400 | SANTA FE | 13.8 | 31.50 | 1 | NCNB | | | Market |
| PG&E | SANTFG_7_UNITS | 31400 | SANTA FE | 13.8 | 31.50 | 2 | NCNB | | | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | SMUDGO_7_UNIT 1 | 31430 | SMUDGEO1 | 13.8 | 47.00 | 1 | NCNB | | | Market |
| PG&E | SNMALF_6_UNITS | 31446 | SONMA LF | 9.1 | 3.12 | 1 | NCNB | Fulton | Aug NQC | QF/Selfgen |
| PG&E | UKIAH_7_LAKEMN | 38020 | CITY UKH | 115 | 1.21 | 2 | NCNB | Eagle Rock, Fulton | Aug NQC | MUNI |
| PG&E | UKIAH_7_LAKEMN | 38020 | CITY UKH | 115 | 0.49 | 1 | NCNB | Eagle Rock, Fulton | Aug NQC | MUNI |
| PG&E | ZZZZZ_BEARCN_2_UNITS | 31402 | BEAR CAN | 13.8 | 0.00 | 1 | NCNB | Fulton | Retired | Market |
| PG&E | ZZZZZ_BEARCN_2_UNITS | 31402 | BEAR CAN | 13.8 | 0.00 | 2 | NCNB | Fulton | Retired | Market |
| PG&E | ZZZZZ_WDFRDF_2_UNITS | 31404 | WEST FOR | 13.8 | 0.00 | 1 | NCNB | Fulton | | Market |
| PG&E | ZZZZZ_WDFRDF_2_UNITS | 31404 | WEST FOR | 13.8 | 0.00 | 2 | NCNB | Fulton | | Market |
| PG&E | ZZZZZZ_GEYS17_2_BOTRCK | 31421 | BOTTLERK | 13.8 | 0.00 | 1 | NCNB | Fulton | Retired | Market |
| PG&E | ALLGNY_6_HYDRO1 | | | | 0.03 | | Sierra | | Not modeled Aug NQC | Market |
| PG&E | APLHIL_1_SLABCK | | | | 0.00 | 1 | Sierra | South of Rio Oso, South of Palermo | Not modeled Energy Only | Market |
| PG&E | BANGOR_6_HYDRO | | | | 1.00 | | Sierra | | Not modeled Aug NQC | Market |
| PG&E | BELDEN_7_UNIT 1 | 31784 | BELDEN | 13.8 | 119.00 | 1 | Sierra | South of Palermo | Aug NQC | Market |
| PG&E | BIOMAS_1_UNIT 1 | 32156 | WOODLAND | 9.11 | 24.31 | 1 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | Net Seller |
| PG&E | BNNIEN_7_ALTAPH | 32376 | BONNIE N | 60 | 0.68 | | Sierra | Placer, Gold Hill-Drum, Drum-Rio Oso, South of Rio Oso, South of Palermo | Not modeled Aug NQC | Market |
| PG&E | BOGUE_1_UNITA1 | 32451 | FREC | 13.8 | 47.60 | 1 | Sierra | Bogue, Drum-Rio Oso | Aug NQC | Market |
| PG&E | BOWMN_6_HYDRO | 32480 | BOWMAN | 9.11 | 2.54 | 1 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | MUNI |
| PG&E | BUCKCK_2_HYDRO | | | | 0.04 | | Sierra | South of Palermo | Not modeled Aug NQC | Market |
| PG&E | BUCKCK_7_OAKFLT | | | | 1.30 | | Sierra | South of Palermo | Not modeled Aug NQC | Market |
| PG&E | BUCKCK_7_PL1X2 | 31820 | BCKS CRK | 11 | 30.63 | 1 | Sierra | South of Palermo | Aug NQC | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | BUCKCK_7_PL1X2 | 31820 | BCKS CRK | 11 | 26.62 | 2 | Sierra | South of Palermo | Aug NQC | Market |
| PG&E | CAMPFW_7_FARWST | 32470 | CMP.FARW | 9.11 | 2.90 | 1 | Sierra | | Aug NQC | MUNI |
| PG&E | CHICPK_7_UNIT 1 | 32462 | CHI.PARK | 11.5 | 42.00 | 1 | Sierra | Placer, Gold Hill-Drum, Drum-Rio Oso, South of Rio Oso, South of Palermo | Aug NQC | MUNI |
| PG&E | COLGAT_7_UNIT 1 | 32450 | COLGATE1 | 13.8 | 161.65 | 1 | Sierra | | Aug NQC | MUNI |
| PG&E | COLGAT_7_UNIT 2 | 32452 | COLGATE2 | 13.8 | 161.68 | 1 | Sierra | | Aug NQC | MUNI |
| PG&E | CRESTA_7_PL1X2 | 31812 | CRESTA | 11.5 | 35.54 | 2 | Sierra | South of Palermo | Aug NQC | Market |
| PG&E | CRESTA_7_PL1X2 | 31812 | CRESTA | 11.5 | 34.86 | 1 | Sierra | South of Palermo | Aug NQC | Market |
| PG&E | DAVIS_1_SOLAR1 | | | | 0.00 | | Sierra | Drum-Rio Oso, South of Palermo | Not modeled Aug NQC | Solar |
| PG&E | DAVIS_1_SOLAR2 | | | | 0.00 | | Sierra | Drum-Rio Oso, South of Palermo | Not modeled Aug NQC | Solar |
| PG&E | DAVIS_7_MNMETH | | | | 1.76 | | Sierra | Drum-Rio Oso, South of Palermo | Not modeled Aug NQC | Market |
| PG&E | DEADCK_1_UNIT | 31862 | DEADWOOD | 9.11 | 0.00 | 1 | Sierra | Drum-Rio Oso | Aug NQC | MUNI |
| PG&E | DEERCR_6_UNIT 1 | 32474 | DEER CRK | 9.11 | 2.98 | 1 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | DRUM_7_PL1X2 | 32504 | DRUM 1-2 | 6.6 | 13.00 | 1 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | DRUM_7_PL1X2 | 32504 | DRUM 1-2 | 6.6 | 13.00 | 2 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | DRUM_7_PL3X4 | 32506 | DRUM 3-4 | 6.6 | 15.64 | 2 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | DRUM_7_PL3X4 | 32506 | DRUM 3-4 | 6.6 | 13.26 | 1 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | DRUM_7_UNIT 5 | 32454 | DRUM 5 | 13.8 | 50.00 | 1 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | DUTCH1_7_UNIT 1 | 32464 | DTCHFLT1 | 11 | 22.00 | 1 | Sierra | Placer, Gold Hill-Drum, Drum-Rio Oso, South of Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | DUTCH2_7_UNIT 1 | 32502 | DTCHFLT2 | 6.9 | 26.00 | 1 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | MUNI |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | ELDORO_7_UNIT 1 | 32513 | ELDRADO1 | 21.6 | 11.00 | 1 | Sierra | Gold Hill-Drum, South of Rio Oso, South of Palermo | | Market |
| PG&E | ELDORO_7_UNIT 2 | 32514 | ELDRADO2 | 21.6 | 11.00 | 1 | Sierra | Gold Hill-Drum, South of Rio Oso, South of Palermo | | Market |
| PG&E | FMEADO_6_HELLHL | 32486 | HELLHOLE | 9.11 | 0.43 | 1 | Sierra | South of Rio Oso, South of Palermo | Aug NQC | MUNI |
| PG&E | FMEADO_7_UNIT | 32508 | FRNCH MD | 4.2 | 16.00 | 1 | Sierra | South of Rio Oso, South of Palermo | Aug NQC | MUNI |
| PG&E | FORBST_7_UNIT 1 | 31814 | FORBSTWN | 11.5 | 37.50 | 1 | Sierra | Drum-Rio Oso | Aug NQC | MUNI |
| PG&E | GRIDLY_6_SOLAR | 38054 | GRIDLEY | 60 | 0.00 | 1 | Sierra | Pease | Energy Only | Solar |
| PG&E | GRNLF2_1_UNIT | 32492 | GRNLEAF2 | 13.8 | 38.99 | 1 | Sierra | Pease, Drum-Rio Oso | Aug NQC | QF/Selfgen |
| PG&E | HALSEY_6_UNIT | 32478 | HALSEY F | 9.11 | 13.50 | 1 | Sierra | Placer, Gold Hill-Drum, Drum-Rio Oso, South of Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | HAYPRS_6_QFUNTS | 32488 | HAYPRES+ | 9.11 | 0.05 | 2 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | QF/Selfgen |
| PG&E | HAYPRS_6_QFUNTS | 32488 | HAYPRES+ | 9.11 | 0.04 | 1 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | QF/Selfgen |
| PG&E | HIGGNS_1_COMBIE | | | | 0.22 | | Sierra | Drum-Rio Oso, South of Rio Oso, South of Palermo | Not modeled Aug NQC | Market |
| PG&E | HIGGNS_7_QFUNTS | | | | 0.24 | | Sierra | Drum-Rio Oso, South of Rio Oso, South of Palermo | Not modeled Aug NQC | QF/Selfgen |
| PG&E | KELYRG_6_UNIT | 31834 | KELLYRDG | 9.11 | 11.00 | 1 | Sierra | Drum-Rio Oso | Aug NQC | MUNI |
| PG&E | LIVEOK_6_SOLAR | | | | 0.14 | | Sierra | Pease | Not modeled Aug NQC | Solar |
| PG&E | LODIEC_2_PL1X2 | 38123 | LODI CT1 | 18 | 199.03 | 1 | Sierra | South of Rio Oso, South of Palermo | | MUNI |
| PG&E | LODIEC_2_PL1X2 | 38124 | LODI ST1 | 18 | 103.55 | 1 | Sierra | South of Rio Oso, South of Palermo | | MUNI |
| PG&E | MDFKRL_2_PROJCT | 32458 | RALSTON | 13.8 | 82.13 | 1 | Sierra | South of Rio Oso, South of Palermo | Aug NQC | MUNI |
| PG&E | MDFKRL_2_PROJCT | 32456 | MIDLFORK | 13.8 | 63.94 | 1 | Sierra | South of Rio Oso, South of Palermo | Aug NQC | MUNI |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | MDFKRL_2_PROJCT | 32456 | MIDLFORK | 13.8 | 63.94 | 2 | Sierra | South of Rio Oso, South of Palermo | Aug NQC | MUNI |
| PG&E | NAROW1_2_UNIT | 32466 | NARROWS1 | 9.1 | 12.00 | 1 | Sierra | | Aug NQC | Market |
| PG&E | NAROW2_2_UNIT | 32468 | NARROWS2 | 9.1 | 28.51 | 1 | Sierra | | Aug NQC | MUNI |
| PG&E | NWCSTL_7_UNIT 1 | 32460 | NEWCSTLE | 13.2 | 0.51 | 1 | Sierra | Placer, Gold Hill-Drum, Drum-Rio Oso, South of Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | OROVIL_6_UNIT | 31888 | OROVLLE | 9.11 | 7.50 | 1 | Sierra | Drum-Rio Oso | Aug NQC | Market |
| PG&E | OXBOW_6_DRUM | 32484 | OXBOW F | 9.11 | 3.62 | 1 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | MUNI |
| PG&E | PLACVL_1_CHILIB | 32510 | CHILIBAR | 4.2 | 8.40 | 1 | Sierra | Gold Hill-Drum, South of Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | PLACVL_1_RCKCRE | | | | 1.20 | | Sierra | South of Rio Oso, South of Palermo | Not modeled Aug NQC | Market |
| PG&E | PLSNTG_7_LNCLND | 32408 | PLSNT GR | 60 | 3.09 | | Sierra | Drum-Rio Oso, South of Rio Oso, South of Palermo | Not modeled Aug NQC | Market |
| PG&E | POEPH_7_UNIT 1 | 31790 | POE 1 | 13.8 | 60.00 | 1 | Sierra | South of Palermo | Aug NQC | Market |
| PG&E | POEPH_7_UNIT 2 | 31792 | POE 2 | 13.8 | 60.00 | 1 | Sierra | South of Palermo | Aug NQC | Market |
| PG&E | RCKCRK_7_UNIT 1 | 31786 | ROCK CK1 | 13.8 | 57.00 | 1 | Sierra | South of Palermo | Aug NQC | Market |
| PG&E | RCKCRK_7_UNIT 2 | 31788 | ROCK CK2 | 13.8 | 56.90 | 1 | Sierra | South of Palermo | Aug NQC | Market |
| PG&E | RIOOSO_1_QF | | | | 1.15 | | Sierra | Drum-Rio Oso, South of Palermo | Not modeled Aug NQC | QF/Selfgen |
| PG&E | ROLLIN_6_UNIT | 32476 | ROLLINSF | 9.11 | 13.50 | 1 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | MUNI |
| PG&E | SLYCRK_1_UNIT 1 | 31832 | SLY.CR. | 9.11 | 13.00 | 1 | Sierra | Drum-Rio Oso | Aug NQC | MUNI |
| PG&E | SPAULD_6_UNIT 3 | 32472 | SPAULDG | 9.11 | 1.59 | 3 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | SPAULD_6_UNIT12 | 32472 | SPAULDG | 9.11 | 7.00 | 1 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | SPAULD_6_UNIT12 | 32472 | SPAULDG | 9.11 | 4.40 | 2 | Sierra | Drum-Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | SPI LI_2_UNIT 1 | 32498 | SPILINCF | 12.5 | 9.93 | 1 | Sierra | Drum-Rio Oso, South of Rio Oso, South of Palermo | Aug NQC | Net Seller |
| PG&E | STIGCT_2_LODI | 38114 | Stig CC | 13.8 | 49.50 | 1 | Sierra | South of Rio Oso, South of Palermo | | MUNI |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | ULTRCK_2_UNIT | 32500 | ULTR RCK | 9.11 | 22.83 | 1 | Sierra | Drum-Rio Oso, South of Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | WDLEAF_7_UNIT 1 | 31794 | WOODLEAF | 13.8 | 60.00 | 1 | Sierra | Drum-Rio Oso | Aug NQC | MUNI |
| PG&E | WHEATL_6_LNDFIL | 32350 | WHEATLND | 60 | 3.55 | | Sierra | | Not modeled Aug NQC | Market |
| PG&E | WISE_1_UNIT 1 | 32512 | WISE | 12 | 14.50 | 1 | Sierra | Placer, Gold Hill-Drum, Drum-Rio Oso, South of Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | WISE_1_UNIT 2 | 32512 | WISE | 12 | 3.20 | 1 | Sierra | Placer, Gold Hill-Drum, Drum-Rio Oso, South of Rio Oso, South of Palermo | Aug NQC | Market |
| PG&E | YUBACT_1_SUNSWT | 32494 | YUBA CTY | 9.11 | 49.97 | 1 | Sierra | Pease, Drum-Rio Oso | Aug NQC | Net Seller |
| PG&E | YUBACT_6_UNITA1 | 32496 | YCEC | 13.8 | 47.60 | 1 | Sierra | Pease, Drum-Rio Oso | | Market |
| PG&E | ZZ_NA | 32162 | RIV.DLTA | 9.11 | 0.00 | 1 | Sierra | Drum-Rio Oso, South of Palermo | No NQC - hist. data | QF/Selfgen |
| PG&E | ZZ_UCDAVS_1_UNIT | 32166 | UC DAVIS | 9.11 | 0.00 | RN | Sierra | Drum-Rio Oso, South of Palermo | No NQC - hist. data | QF/Selfgen |
| PG&E | ZZZ_New Unit | 365936 | Q653FSPV | 0.48 | 2.46 | 1 | Sierra | Drum-Rio Oso, South of Palermo | No NQC - est. data | Solar |
| PG&E | ZZZ_New Unit | 365940 | Q653FSPV | 0.48 | 2.46 | 2 | Sierra | Drum-Rio Oso, South of Palermo | No NQC - est. data | Solar |
| PG&E | ZZZ_New Unit | 365938 | Q653FC6B | 0.48 | 0.00 | 2 | Sierra | Drum-Rio Oso, South of Palermo | No NQC - est. data | Battery |
| PG&E | ZZZZZ_GOLDHL_1_QF | | | | 0.00 | | Sierra | South of Rio Oso, South of Palermo | Not modeled | QF/Selfgen |
| PG&E | ZZZZZ_GRNLF1_1_UNITS | 32490 | GRNLEAF1 | 13.8 | 0.00 | 1 | Sierra | Bogue, Drum-Rio Oso | Retired | Market |
| PG&E | ZZZZZ_GRNLF1_1_UNITS | 32491 | GRNLEAF1 | 13.8 | 0.00 | 2 | Sierra | Bogue, Drum-Rio Oso | Retired | Market |
| PG&E | ZZZZZ_KANAKA_1_UNIT | | | | 0.00 | | Sierra | Drum-Rio Oso | Retired | MUNI |
| PG&E | ZZZZZ_PACORO_6_UNIT | 31890 | PO POWER | 9.11 | 0.00 | 1 | Sierra | Drum-Rio Oso | Retired | QF/Selfgen |

Attachment A - List of physical resources by PTO, local area and market ID

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | ZZZZZ_PACORO_6_UNIT | 31890 | PO POWER | 9.11 | 0.00 | 2 | Sierra | Drum-Rio Oso | Retired | QF/Selfgen |
| PG&E | BEARDS_7_UNIT 1 | 34074 | BEARDSLY | 6.9 | 8.36 | 1 | Stockton | Tesla-Bellota, Stanislaus | Aug NQC | MUNI |
| PG&E | CAMCHE_1_PL1X3 | 33850 | CAMANCHE | 4.2 | 0.92 | 1 | Stockton | Tesla-Bellota | Aug NQC | MUNI |
| PG&E | CAMCHE_1_PL1X3 | 33850 | CAMANCHE | 4.2 | 0.92 | 2 | Stockton | Tesla-Bellota | Aug NQC | MUNI |
| PG&E | CAMCHE_1_PL1X3 | 33850 | CAMANCHE | 4.2 | 0.92 | 3 | Stockton | Tesla-Bellota | Aug NQC | MUNI |
| PG&E | CRWCKS_1_SOLAR1 | 34051 | Q539 | 34.5 | 0.00 | 1 | Stockton | Tesla-Bellota | Energy Only | Solar |
| PG&E | DONNLS_7_UNIT | 34058 | DONNELLS | 13.8 | 72.00 | 1 | Stockton | Tesla-Bellota, Stanislaus | Aug NQC | MUNI |
| PG&E | FROGTN_1_UTICAA | | | | 1.40 | | Stockton | Tesla-Bellota, Stanislaus | Not Modeled Aug NQC | Market |
| PG&E | FROGTN_1_UTICAM | | | | 2.37 | | Stockton | Tesla-Bellota, Stanislaus | Not Modeled Aug NQC | Market |
| PG&E | LOCKFD_1_BEARCK | | | | 0.41 | | Stockton | Tesla-Bellota | Not Modeled Aug NQC | Solar |
| PG&E | LOCKFD_1_KSOLAR | | | | 0.27 | | Stockton | Tesla-Bellota | Not Modeled Aug NQC | Solar |
| PG&E | LODI25_2_UNIT 1 | 38120 | LODI25CT | 9.11 | 23.80 | 1 | Stockton | Lockeford | | MUNI |
| PG&E | MANTEC_1_ML1SR1 | | | | 0.00 | | Stockton | Tesla-Bellota | Not modeled Energy Only | Solar |
| PG&E | PEORIA_1_SOLAR | | | | 0.41 | | Stockton | Tesla-Bellota, Stanislaus | Not modeled Aug NQC | Solar |
| PG&E | PHOENX_1_UNIT | | | | 0.84 | | Stockton | Tesla-Bellota, Stanislaus | Not modeled Aug NQC | Market |
| PG&E | SCHLTE_1_PL1X3 | 33811 | GWFTRCY3 | 13.8 | 138.11 | 1 | Stockton | Tesla-Bellota | | Market |
| PG&E | SCHLTE_1_PL1X3 | 33805 | GWFTRCY1 | 13.8 | 85.70 | 1 | Stockton | Tesla-Bellota | | Market |
| PG&E | SCHLTE_1_PL1X3 | 33807 | GWFTRCY2 | 13.8 | 85.70 | 1 | Stockton | Tesla-Bellota | | Market |
| PG&E | SMPRIP_1_SMPSON | 33810 | SP CMPNY | 13.8 | 46.05 | 1 | Stockton | Tesla-Bellota | Aug NQC | Market |
| PG&E | SNDBAR_7_UNIT 1 | 34060 | SANDBAR | 13.8 | 12.88 | 1 | Stockton | Tesla-Bellota, Stanislaus | Aug NQC | MUNI |
| PG&E | SPIFBD_1_PL1X2 | 34055 | SPISONORA | 13.8 | 5.67 | 1 | Stockton | Tesla-Bellota, Stanislaus | Aug NQC | Market |
| PG&E | SPRGAP_1_UNIT 1 | 34078 | SPRNG GP | 6 | 0.01 | 1 | Stockton | Tesla-Bellota, Stanislaus | Aug NQC | Market |
| PG&E | STANIS_7_UNIT 1 | 34062 | STANISLS | 13.8 | 91.00 | 1 | Stockton | Tesla-Bellota, Stanislaus | Aug NQC | Market |
| PG&E | STNRES_1_UNIT | 34056 | STNSLSRP | 13.8 | 18.26 | 1 | Stockton | Tesla-Bellota | Aug NQC | Net Seller |
| PG&E | TULLCK_7_UNITS | 34076 | TULLOCH | 6.9 | 7.41 | 2 | Stockton | Tesla-Bellota | Aug NQC | MUNI |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PG&E | TULLCK_7_UNITS | 34076 | TULLOCH | 6.9 | 6.58 | 1 | Stockton | Tesla-Bellota | Aug NQC | MUNI |
| PG&E | TULLCK_7_UNITS | 34076 | TULLOCH | 6.9 | 4.86 | 3 | Stockton | Tesla-Bellota | Aug NQC | MUNI |
| PG&E | ULTPCH_1_UNIT 1 | 34050 | CH.STN. | 13.8 | 16.19 | 1 | Stockton | Tesla-Bellota, Stanislaus | Aug NQC | Market |
| PG&E | VLYHOM_7_SSJID | | | | 0.65 | | Stockton | Tesla-Bellota, Stanislaus | Not modeled Aug NQC | MUNI |
| PG&E | ZZZ_New Unit | 365684 | Q1103 | | 10.80 | 1 | Stockton | Tesla-Bellota | No NQC - est. data | Solar |
| PG&E | ZZZ_New Unit | 34053 | Q539 | | 0.00 | 1 | Stockton | Tesla-Bellota | Energy Only | Solar |
| PG&E | ZZZ_New Unit | 365556 | SAFEWAYB | | 0.00 | RN | Stockton | Tesla-Bellota | Energy Only | Market |
| PG&E | ZZZZZ_FROGTN_7_UTICA | | | | 0.00 | | Stockton | Tesla-Bellota, Stanislaus | Not modeled Energy Only | Market |
| PG&E | ZZZZZ_STOKCG_1_UNIT 1 | 33814 | INGREDION | 12.5 | 0.00 | RN | Stockton | Tesla-Bellota | Retired | QF/Selfgen |
| PG&E | ZZZZZZ_NA | 33830 | GEN.MILL | 9.11 | 0.00 | 1 | Stockton | Lockeford | Retired | QF/Selfgen |
| PG&E | ZZZZZZZ_SANJOA_1_UNIT 1 | 33808 | SJ COGEN | 13.8 | 0.00 | 1 | Stockton | Tesla-Bellota | Retired | QF/Selfgen |
| PG&E | ZZZZZZZ_THMENG_1_UNIT 1 | 33806 | TH.E.DV. | 13.8 | 0.00 | 1 | Stockton | Tesla-Bellota | Retired | Net Seller |
| SCE | ACACIA_6_SOLAR | 29878 | ACACIA_G | 0.48 | 5.40 | EQ | BC/Ventura | | Aug NQC | Solar |
| SCE | ALAMO_6_UNIT | 25653 | ALAMO SC | 13.8 | 11.36 | 1 | BC/Ventura | | Aug NQC | MUNI |
| SCE | BGSKYN_2_AS2SR1 | 29774 | ANTLOP2_G1 | 0.42 | 28.35 | EQ | BC/Ventura | | Aug NQC | Solar |
| SCE | BGSKYN_2_ASPSR2 | | | | 27.00 | | BC/Ventura | | Aug NQC | Solar |
| SCE | BGSKYN_2_BS3SR3 | | | | 5.40 | | BC/Ventura | | Aug NQC | Solar |
| SCE | BIGCRK_2_EXESWD | 24317 | MAMOTH1G | 13.8 | 92.02 | 1 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24318 | MAMOTH2G | 13.8 | 92.02 | 2 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24308 | B CRK2-1 | 13.8 | 51.18 | 2 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24308 | B CRK2-1 | 13.8 | 49.99 | 1 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24314 | B CRK 4 | 11.5 | 49.80 | 42 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24314 | B CRK 4 | 11.5 | 49.60 | 41 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24315 | B CRK 8 | 13.8 | 43.30 | 82 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24313 | B CRK3-3 | 13.8 | 35.92 | 5 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24312 | B CRK3-2 | 13.8 | 35.43 | 4 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24311 | B CRK3-1 | 13.8 | 34.44 | 1 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24312 | B CRK3-2 | 13.8 | 34.44 | 3 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24311 | B CRK3-1 | 13.8 | 33.46 | 2 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24307 | B CRK1-2 | 13.8 | 30.71 | 4 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24315 | B CRK 8 | 13.8 | 24.01 | 81 | BC/Ventura | Rector, Vestal | Aug NQC | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | BIGCRK_2_EXESWD | 24306 | B CRK1-1 | 7.2 | 21.26 | 2 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24307 | B CRK1-2 | 13.8 | 21.26 | 3 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24306 | B CRK1-1 | 7.2 | 19.58 | 1 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24309 | B CRK2-2 | 7.2 | 19.39 | 4 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24309 | B CRK2-2 | 7.2 | 18.40 | 3 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24310 | B CRK2-3 | 7.2 | 18.21 | 6 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24310 | B CRK2-3 | 7.2 | 16.73 | 5 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_2_EXESWD | 24323 | PORTAL | 4.8 | 9.45 | 1 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | BIGCRK_7_DAM7 | | | | 0.00 | | BC/Ventura | Rector, Vestal | Not modeled Energy Only | Market |
| SCE | BIGCRK_7_MAMRES | | | | 0.00 | | BC/Ventura | Rector, Vestal | Not modeled Energy Only | Market |
| SCE | BIGSKY_2_BSKSR6 | 29734 | BSKY G BC | 0.42 | 5.40 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | BIGSKY_2_BSKSR7 | 29737 | BSKY G WABS | 0.42 | 5.40 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | BIGSKY_2_BSKSR8 | 29740 | BSKY G ABSR | 0.38 | 5.40 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | BIGSKY_2_SOLAR1 | 29704 | BSKY G SMR | 0.42 | 5.40 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | BIGSKY_2_SOLAR2 | 29744 | BSKY_G_ESC | 0.42 | 34.41 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | BIGSKY_2_SOLAR3 | 29725 | BSKY_G_BD | 0.42 | 5.40 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | BIGSKY_2_SOLAR4 | 29701 | BSKY_G_BA | 0.42 | 17.26 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | BIGSKY_2_SOLAR5 | 29731 | BSKY_G_BB | 0.42 | 1.35 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | BIGSKY_2_SOLAR6 | 29728 | BSKY_G_SOLV | 0.42 | 22.95 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | BIGSKY_2_SOLAR7 | 29731 | BSKY_G_ADSR | 0.42 | 13.50 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | CEDUCR_2_SOLAR1 | 25049 | DUCOR1 | 0.385 | 0.00 | EQ | BC/Ventura | Vestal | Energy Only | Solar |
| SCE | CEDUCR_2_SOLAR2 | 25052 | DUCOR2 | 0.385 | 0.00 | EQ | BC/Ventura | Vestal | Energy Only | Solar |
| SCE | CEDUCR_2_SOLAR3 | 25055 | DUCOR3 | 0.385 | 0.00 | EQ | BC/Ventura | Vestal | Energy Only | Solar |
| SCE | CEDUCR_2_SOLAR4 | 25058 | DUCOR4 | 0.385 | 0.00 | EQ | BC/Ventura | Vestal | Energy Only | Solar |
| SCE | DELSUR_6_BSOLAR | 24411 | DELSUR_DIST | 66 | 0.81 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | DELSUR_6_CREST | 24411 | DELSUR_DIST | 66 | 0.00 | | BC/Ventura | | Not modeled Energy Only | Market |
| SCE | DELSUR_6_DRYFRB | 24411 | DELSUR_DIST | 66 | 1.35 | 1 | BC/Ventura | | Aug NQC | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | DELSUR_6_SOLAR1 | 24411 | DELSUR_DIST | 66 | 1.76 | 2 | BC/Ventura | | Aug NQC | Solar |
| SCE | DELSUR_6_SOLAR4 | 24411 | DELSUR_DIST | 66 | 0.00 | | BC/Ventura | | Not modeled Energy Only | Solar |
| SCE | DELSUR_6_SOLAR5 | 24411 | DELSUR_DIST | 66 | 0.00 | | BC/Ventura | | Not modeled Energy Only | Solar |
| SCE | EASTWD_7_UNIT | 24319 | EASTWOOD | 13.8 | 199.00 | 1 | BC/Ventura | Rector, Vestal | | Market |
| SCE | EDMONS_2_NSPIN | 25605 | EDMON1AP | 14.4 | 16.86 | 1 | BC/Ventura | | Pumps | MUNI |
| SCE | EDMONS_2_NSPIN | 25606 | EDMON2AP | 14.4 | 16.86 | 2 | BC/Ventura | | Pumps | MUNI |
| SCE | EDMONS_2_NSPIN | 25607 | EDMON3AP | 14.4 | 16.86 | 3 | BC/Ventura | | Pumps | MUNI |
| SCE | EDMONS_2_NSPIN | 25607 | EDMON3AP | 14.4 | 16.86 | 4 | BC/Ventura | | Pumps | MUNI |
| SCE | EDMONS_2_NSPIN | 25608 | EDMON4AP | 14.4 | 16.86 | 5 | BC/Ventura | | Pumps | MUNI |
| SCE | EDMONS_2_NSPIN | 25608 | EDMON4AP | 14.4 | 16.86 | 6 | BC/Ventura | | Pumps | MUNI |
| SCE | EDMONS_2_NSPIN | 25609 | EDMON5AP | 14.4 | 16.86 | 7 | BC/Ventura | | Pumps | MUNI |
| SCE | EDMONS_2_NSPIN | 25609 | EDMON5AP | 14.4 | 16.86 | 8 | BC/Ventura | | Pumps | MUNI |
| SCE | EDMONS_2_NSPIN | 25610 | EDMON6AP | 14.4 | 16.86 | 9 | BC/Ventura | | Pumps | MUNI |
| SCE | EDMONS_2_NSPIN | 25610 | EDMON6AP | 14.4 | 16.86 | 10 | BC/Ventura | | Pumps | MUNI |
| SCE | EDMONS_2_NSPIN | 25611 | EDMON7AP | 14.4 | 16.85 | 11 | BC/Ventura | | Pumps | MUNI |
| SCE | EDMONS_2_NSPIN | 25611 | EDMON7AP | 14.4 | 16.85 | 12 | BC/Ventura | | Pumps | MUNI |
| SCE | EDMONS_2_NSPIN | 25612 | EDMON8AP | 14.4 | 16.85 | 13 | BC/Ventura | | Pumps | MUNI |
| SCE | EDMONS_2_NSPIN | 25612 | EDMON8AP | 14.4 | 16.85 | 14 | BC/Ventura | | Pumps | MUNI |
| SCE | GLDFGR_6_SOLAR1 | 25079 | PRIDE B G | 0.64 | 5.40 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | GLDFGR_6_SOLAR2 | 25169 | PRIDE C G | 0.64 | 3.08 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | GLOW_6_SOLAR | 29896 | APPINV | 0.42 | 0.00 | EQ | BC/Ventura | | Energy Only | Solar |
| SCE | GOLETA_2_QF | 25335 | GOLETA_DIST | 66 | 0.04 | S1 | BC/Ventura | S.Clara, Moorpark, Goleta | Aug NQC | QF/Selfgen |
| SCE | GOLETA_6_ELLWOD | 29004 | ELLWOOD | 13.8 | 0.00 | 1 | BC/Ventura | S.Clara, Moorpark, Goleta | | Market |
| SCE | GOLETA_6_EXGEN | 24362 | EXGEN2 | 13.8 | 0.00 | G1 | BC/Ventura | S.Clara, Moorpark, Goleta | Aug NQC - Currently out of service | QF/Selfgen |
| SCE | GOLETA_6_EXGEN | 24326 | EXGEN1 | 13.8 | 0.00 | S1 | BC/Ventura | S.Clara, Moorpark, Goleta | Aug NQC - Currently out of service | QF/Selfgen |
| SCE | GOLETA_6_GAVOTA | 25335 | GOLETA_DIST | 66 | 0.00 | S1 | BC/Ventura | S.Clara, Moorpark, Goleta | Aug NQC | Market |

Attachment A - List of physical resources by PTO, local area and market ID

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | GOLETA_6_TAJIGS | 25335 | GOLETA_DIS T | 66 | 2.84 | S1 | BC/Ventura | S.Clara, Moorpark, Goleta | Aug NQC | Market |
| SCE | LEBECS_2_UNITS | 29053 | PSTRIAS1 | 18 | 173.8 6 | S1 | BC/Ventura | | Aug NQC | Market |
| SCE | LEBECS_2_UNITS | 29051 | PSTRIAG1 | 18 | 168.9 0 | G1 | BC/Ventura | | Aug NQC | Market |
| SCE | LEBECS_2_UNITS | 29052 | PSTRIAG2 | 18 | 168.9 0 | G2 | BC/Ventura | | Aug NQC | Market |
| SCE | LEBECS_2_UNITS | 29054 | PSTRIAG3 | 18 | 168.9 0 | G3 | BC/Ventura | | Aug NQC | Market |
| SCE | LEBECS_2_UNITS | 29055 | PSTRIAS2 | 18 | 84.45 | S2 | BC/Ventura | | Aug NQC | Market |
| SCE | LITLRK_6_GBCSR1 | 24419 | LTLRCK_DIST | 66 | 0.81 | AS | BC/Ventura | | Aug NQC | Solar |
| SCE | LITLRK_6_SEPV01 | 24419 | LTLRCK_DIST | 66 | 0.00 | AS | BC/Ventura | | Energy Only | Market |
| SCE | LITLRK_6_SOLAR1 | 24419 | LTLRCK_DIST | 66 | 1.35 | AS | BC/Ventura | | Aug NQC | Solar |
| SCE | LITLRK_6_SOLAR2 | 24419 | LTLRCK_DIST | 66 | 0.54 | AS | BC/Ventura | | Aug NQC | Solar |
| SCE | LITLRK_6_SOLAR3 | 24419 | LTLRCK_DIST | 66 | 0.54 | AS | BC/Ventura | | Aug NQC | Solar |
| SCE | LITLRK_6_SOLAR4 | 24419 | LTLRCK_DIST | 66 | 0.81 | AS | BC/Ventura | | Aug NQC | Solar |
| SCE | LNCSTR_6_CREST | | | | 0.00 | | BC/Ventura | | Not modeled Energy Only | Market |
| SCE | MNDALY_6_MCGRTH | 29306 | MCGPKGEN | 13.8 | 47.20 | 1 | BC/Ventura | S.Clara, Moorpark | | Market |
| SCE | MOORPK_2_CALABS | 25081 | WDT251 | 13.8 | 4.57 | EQ | BC/Ventura | Moorpark | Aug NQC | Market |
| SCE | MOORPK_6_QF | | | | 0.80 | | BC/Ventura | Moorpark | Not modeled Aug NQC | Market |
| SCE | NEENCH_6_SOLAR | 29900 | ALPINE_G | 0.48 | 17.82 | EQ | BC/Ventura | | Aug NQC | Solar |
| SCE | OASIS_6_CREST | | | | 0.00 | | BC/Ventura | | Not modeled Energy Only | Market |
| SCE | OASIS_6_GBDSR4 | 24421 | OASIS_DIST | 66 | 0.81 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | OASIS_6_SOLAR1 | 25095 | SOLARISG2 | 0.2 | 0.00 | EQ | BC/Ventura | | Energy Only | Solar |
| SCE | OASIS_6_SOLAR2 | 25075 | SOLARISG | 0.2 | 5.40 | EQ | BC/Ventura | | Aug NQC | Solar |
| SCE | OASIS_6_SOLAR3 | | | | 0.00 | | BC/Ventura | | Not modeled Energy Only | Solar |
| SCE | OMAR_2_UNIT 1 | 24102 | OMAR 1G | 13.8 | 70.30 | 1 | BC/Ventura | | | Net Seller |
| SCE | OMAR_2_UNIT 2 | 24103 | OMAR 2G | 13.8 | 71.24 | 2 | BC/Ventura | | | Net Seller |
| SCE | OMAR_2_UNIT 3 | 24104 | OMAR 3G | 13.8 | 74.03 | 3 | BC/Ventura | | | Net Seller |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | OMAR_2_UNIT 4 | 24105 | OMAR 4G | 13.8 | 81.44 | 4 | BC/Ventura | | | Net Seller |
| SCE | ORMOND_7_UNIT 1 | 24107 | ORMOND1G | 26 | 0.00 | 1 | BC/Ventura | Moorpark | Retired by 2025 | Market |
| SCE | ORMOND_7_UNIT 2 | 24108 | ORMOND2G | 26 | 0.00 | 2 | BC/Ventura | Moorpark | Retired by 2025 | Market |
| SCE | OSO_6_NSPIN | 25614 | OSO A P | 13.2 | 2.25 | 1 | BC/Ventura | | Pumps | MUNI |
| SCE | OSO_6_NSPIN | 25614 | OSO A P | 13.2 | 2.25 | 2 | BC/Ventura | | Pumps | MUNI |
| SCE | OSO_6_NSPIN | 25614 | OSO A P | 13.2 | 2.25 | 3 | BC/Ventura | | Pumps | MUNI |
| SCE | OSO_6_NSPIN | 25614 | OSO A P | 13.2 | 2.25 | 4 | BC/Ventura | | Pumps | MUNI |
| SCE | OSO_6_NSPIN | 25615 | OSO B P | 13.2 | 2.25 | 5 | BC/Ventura | | Pumps | MUNI |
| SCE | OSO_6_NSPIN | 25615 | OSO B P | 13.2 | 2.25 | 6 | BC/Ventura | | Pumps | MUNI |
| SCE | OSO_6_NSPIN | 25615 | OSO B P | 13.2 | 2.25 | 7 | BC/Ventura | | Pumps | MUNI |
| SCE | OSO_6_NSPIN | 25615 | OSO B P | 13.2 | 2.25 | 8 | BC/Ventura | | Pumps | MUNI |
| SCE | PLAINV_6_BSOLAR | 29917 | SSOLAR)GR WKS | 0.8 | 0.00 | 1 | BC/Ventura | | Energy Only | Solar |
| SCE | PLAINV_6_DSOLAR | 29914 | WADR_PV | 0.42 | 2.70 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | PLAINV_6_NLRSR1 | 29921 | NLR_INVTR | 0.42 | 0.00 | 1 | BC/Ventura | | Aug NQC | Solar |
| SCE | PLAINV_6_SOLAR3 | 25089 | CNTRL ANT G | 0.42 | 0.00 | 1 | BC/Ventura | | Energy Only | Solar |
| SCE | PLAINV_6_SOLARC | 25086 | SIRA SOLAR G | 0.8 | 0.00 | 1 | BC/Ventura | | Energy Only | Solar |
| SCE | PMDLET_6_SOLAR1 | | | | 2.70 | | BC/Ventura | | Not modeled Aug NQC | Solar |
| SCE | RECTOR_2_CREST | 25333 | RECTOR_DIST | 66 | 0.00 | S1 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | RECTOR_2_KAWEAH | 25333 | RECTOR_DIST | 66 | 1.74 | S2 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | RECTOR_2_KAWH 1 | 24370 | KAWGEN | 13.8 | 0.52 | 1 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | RECTOR_2_QF | 25333 | RECTOR_DIST | 66 | 3.94 | S1 | BC/Ventura | Rector, Vestal | Aug NQC | QF/Selfgen |
| SCE | RECTOR_2_TFDBM1 | | | | 0.00 | | BC/Ventura | Rector, Vestal | Energy Only | Market |
| SCE | RECTOR_7_TULARE | 25333 | RECTOR_DIST | 66 | 0.00 | S1 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | REDMAN_2_SOLAR | 24425 | REDMAN_DIST | 66 | 1.01 | AS | BC/Ventura | | Aug NQC | Solar |
| SCE | REDMAN_6_AVSSR1 | | | | 0.81 | | BC/Ventura | | Aug NQC | Solar |
| SCE | ROSMND_6_SOLAR | 24434 | ROSAMOND_DIS | 66 | 0.81 | AS | BC/Ventura | | Aug NQC | Solar |
| SCE | RSMSLR_6_SOLAR1 | 29984 | DAWNGEN | 0.8 | 5.40 | EQ | BC/Ventura | | Aug NQC | Solar |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | RSMSLR_6_SOLAR2 | 29888 | TWILGHTG | 0.8 | 5.40 | EQ | BC/Ventura | | Aug NQC | Solar |
| SCE | SAUGUS_6_CREST | | | | 0.00 | | BC/Ventura | | Energy Only | Market |
| SCE | SAUGUS_6_MWDFTH | 25336 | SAUGUS_MWD | 66 | 5.40 | S1 | BC/Ventura | | Aug NQC | MUNI |
| SCE | SAUGUS_6_QF | 24135 | SAUGUS | 66 | 0.70 | | BC/Ventura | | Not modeled Aug NQC | QF/Selfgen |
| SCE | SAUGUS_7_CHIQCN | 24135 | SAUGUS | 66 | 5.63 | | BC/Ventura | | Not modeled Aug NQC | Market |
| SCE | SAUGUS_7_LOPEZ | 24135 | SAUGUS | 66 | 5.34 | | BC/Ventura | | Not modeled Aug NQC | QF/Selfgen |
| SCE | SHUTLE_6_CREST | 24426 | SHUTTLE_DIST | 66 | 0.00 | AS | BC/Ventura | | Energy Only | Market |
| SCE | SNCLRA_2_HOWLNG | 25080 | SANTACLR_DIS | 13.8 | 8.72 | EQ | BC/Ventura | S.Clara, Moorpark | Aug NQC | Market |
| SCE | SNCLRA_2_SPRHYD | 25080 | SANTACLR_DIS | 13.8 | 0.18 | EQ | BC/Ventura | S.Clara, Moorpark | Aug NQC | Market |
| SCE | SNCLRA_2_UNIT | 29952 | CAMGEN | 13.8 | 27.50 | D1 | BC/Ventura | S.Clara, Moorpark | Aug NQC | Market |
| SCE | SNCLRA_2_UNIT1 | 24159 | WILLAMET | 3.8 | 15.63 | D1 | BC/Ventura | S.Clara, Moorpark | Aug NQC | Market |
| SCE | SNCLRA_6_OXGEN | 24110 | OXGEN | 13.8 | 35.38 | D1 | BC/Ventura | S.Clara, Moorpark | Aug NQC | QF/Selfgen |
| SCE | SNCLRA_6_PROCGN | 24119 | PROCGEN | 13.8 | 45.47 | D1 | BC/Ventura | S.Clara, Moorpark | Aug NQC | QF/Selfgen |
| SCE | SNCLRA_6_QF | 25080 | SANTACLR_DIS | 13.8 | 0.00 | EQ | BC/Ventura | S.Clara, Moorpark | Aug NQC | QF/Selfgen |
| SCE | SPRGVL_2_CREST | 25334 | SPRNGVL_DIST | 66 | 0.00 | S1 | BC/Ventura | Rector, Vestal | Energy Only | Market |
| SCE | SPRGVL_2_QF | 25334 | SPRNGVL_DIST | 66 | 0.18 | S1 | BC/Ventura | Rector, Vestal | Aug NQC | QF/Selfgen |
| SCE | SPRGVL_2_TULE | 25334 | SPRNGVL_DIST | 66 | 0.00 | S2 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | SPRGVL_2_TULESC | 25334 | SPRNGVL_DIST | 66 | 0.00 | S1 | BC/Ventura | Rector, Vestal | Aug NQC | Market |
| SCE | SUNSHN_2_LNDFL | 29954 | WDT273 | 13.66 | 3.17 | 1 | BC/Ventura | | Aug NQC | Market |
| SCE | SUNSHN_2_LNDFL | 29954 | WDT273 | 13.66 | 3.17 | 2 | BC/Ventura | | Aug NQC | Market |
| SCE | SUNSHN_2_LNDFL | 29954 | WDT273 | 13.66 | 3.17 | 3 | BC/Ventura | | Aug NQC | Market |
| SCE | SUNSHN_2_LNDFL | 29954 | WDT273 | 13.66 | 3.17 | 4 | BC/Ventura | | Aug NQC | Market |
| SCE | SUNSHN_2_LNDFL | 29954 | WDT273 | 13.66 | 3.17 | 5 | BC/Ventura | | Aug NQC | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | SYCAMR_2_UNIT 1 | 24143 | SYCCYN1G | 13.8 | 77.41 | 1 | BC/Ventura | | Aug NQC | Net Seller |
| SCE | SYCAMR_2_UNIT 2 | 24144 | SYCCYN2G | 13.8 | 80.00 | 2 | BC/Ventura | | Aug NQC | Net Seller |
| SCE | SYCAMR_2_UNIT 3 | 24145 | SYCCYN3G | 13.8 | 80.00 | 3 | BC/Ventura | | Aug NQC | Net Seller |
| SCE | SYCAMR_2_UNIT 4 | 24146 | SYCCYN4G | 13.8 | 80.00 | 4 | BC/Ventura | | Aug NQC | Net Seller |
| SCE | TENGEN_2_PL1X2 | 24148 | TENNGEN1 | 13.8 | 18.80 | D1 | BC/Ventura | | Aug NQC | Net Seller |
| SCE | TENGEN_2_PL1X2 | 24149 | TENNGEN2 | 13.8 | 18.80 | D2 | BC/Ventura | | Aug NQC | Net Seller |
| SCE | VESTAL_2_KERN | 24372 | KR 3-1 | 11 | 6.50 | 1 | BC/Ventura | Vestal | Aug NQC | QF/Selfgen |
| SCE | VESTAL_2_KERN | 24373 | KR 3-2 | 11 | 6.13 | 2 | BC/Ventura | Vestal | Aug NQC | QF/Selfgen |
| SCE | VESTAL_2_RTS042 | | | | 0.00 | | BC/Ventura | Vestal | Not modeled Energy Only | Market |
| SCE | VESTAL_2_SOLAR1 | 25064 | TULRESLR_1 | 0.39 | 5.40 | 1 | BC/Ventura | Vestal | Aug NQC | Solar |
| SCE | VESTAL_2_SOLAR2 | 25065 | TULRESLR_2 | 0.39 | 3.78 | 1 | BC/Ventura | Vestal | Aug NQC | Solar |
| SCE | VESTAL_2_UNIT1 | | | | 4.03 | | BC/Ventura | Vestal | Not modeled Aug NQC | Market |
| SCE | VESTAL_2_WELLHD | 24116 | WELLGEN | 13.8 | 49.00 | 1 | BC/Ventura | Vestal | | Market |
| SCE | VESTAL_6_QF | 29008 | LAKEGEN | 13.8 | 5.49 | 1 | BC/Ventura | Vestal | Aug NQC | QF/Selfgen |
| SCE | WARNE_2_UNIT | 25651 | WARNE1 | 13.8 | 20.79 | 1 | BC/Ventura | | Aug NQC | MUNI |
| SCE | WARNE_2_UNIT | 25652 | WARNE2 | 13.8 | 20.79 | 2 | BC/Ventura | | Aug NQC | MUNI |
| SCE | ZZ_NA | 24340 | CHARMIN | 13.8 | 2.80 | 1 | BC/Ventura | S.Clara, Moorpark | No NQC - hist. data | QF/Selfgen |
| SCE | ZZZ_New Unit | 29792 | ANTLP2_BE_ B1 | 0.48 | 208.8 0 | EQ | BC/Ventura | | No NQC - Pmax | Battery |
| SCE | ZZZ_New Unit | 29528 | TOT827_ES | 0.48 | 120.0 0 | 1 | BC/Ventura | | No NQC - Pmax | Battery |
| SCE | ZZZ_New Unit | 29824 | WDT1519_G | 0.48 | 100.0 0 | 1 | BC/Ventura | S.Clara, Moorpark | No NQC - Pmax | Battery |
| SCE | ZZZ_New Unit | 99739 | GOLETA-DIST | 66 | 30.00 | S2 | BC/Ventura | S.Clara, Moorpark, Goleta | No NQC - Pmax | Battery |
| SCE | ZZZ_New Unit | 29830 | WDT1454_G2 | 0.48 | 20.00 | 1 | BC/Ventura | S.Clara, Moorpark | No NQC - Pmax | Battery |
| SCE | ZZZ_New Unit | 29826 | WDT1454_G1 | 0.38 | 20.00 | 1 | BC/Ventura | S.Clara, Moorpark | No NQC - Pmax | Battery |
| SCE | ZZZ_New Unit | 29347 | WDT1517_G1 | 0.36 | 20.00 | 1 | BC/Ventura | | No NQC - Pmax | Battery |
| SCE | ZZZ_New Unit | 99740 | S.CLARA- DIST | 66 | 11.00 | S2 | BC/Ventura | S.Clara, Moorpark | No NQC - Pmax | Battery |
| SCE | ZZZZZ_APPGEN_6_UNIT 1 | 24009 | APPGEN1G | 13.8 | 0.00 | 1 | BC/Ventura | | Retired | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | ZZZZZ_APPGEN_6_UNIT 1 | 24010 | APPGEN2G | 13.8 | 0.00 | 2 | BC/Ventura | | Retired | Market |
| SCE | ZZZZZ_APPGEN_6_UNIT 1 | 24361 | APPGEN3G | 13.8 | 0.00 | 3 | BC/Ventura | | Retired | Market |
| SCE | ZZZZZ_MNDALY_7_UNIT 1 | 24089 | MANDLY1G | 13.8 | 0.00 | 1 | BC/Ventura | S.Clara, Moorpark | Retired | Market |
| SCE | ZZZZZ_MNDALY_7_UNIT 2 | 24090 | MANDLY2G | 13.8 | 0.00 | 2 | BC/Ventura | S.Clara, Moorpark | Retired | Market |
| SCE | ZZZZZ_MNDALY_7_UNIT 3 | 24222 | MANDLY3G | 16 | 0.00 | 3 | BC/Ventura | S.Clara, Moorpark | Retired | Market |
| SCE | ZZZZZ_MOORPK_7_UNIT A1 | 24098 | MOORPARK | 66 | 0.00 | | BC/Ventura | Moorpark | Retired | Market |
| SCE | ZZZZZ_PANDOL_6_UNIT | 24113 | PANDOL | 13.8 | 0.00 | 1 | BC/Ventura | Vestal | Retired | Market |
| SCE | ZZZZZ_PANDOL_6_UNIT | 24113 | PANDOL | 13.8 | 0.00 | 2 | BC/Ventura | Vestal | Retired | Market |
| SCE | ZZZZZ_SAUGUS_2_TOLAND | 24135 | SAUGUS | 66 | 0.00 | | BC/Ventura | | Retired | Market |
| SCE | ZZZZZ_SAUGUS_6_PTCHGN | 24118 | PITCHGEN | 13.8 | 0.00 | D1 | BC/Ventura | | Retired | MUNI |
| SCE | ZZZZZ_VESTAL_6_ULTRGN | 24150 | ULTRAGEN | 13.8 | 0.00 | 1 | BC/Ventura | Vestal | Retired | QF/Selfgen |
| SCE | ALAMIT_2_PL1X3 | 24577 | ALMT STG | 18 | 251.66 | S1 | LA Basin | Western | | Market |
| SCE | ALAMIT_2_PL1X3 | 24575 | ALMT CTG1 | 18 | 211.52 | G1 | LA Basin | Western | | Market |
| SCE | ALAMIT_2_PL1X3 | 24576 | ALMT CTG2 | 18 | 211.52 | G2 | LA Basin | Western | | Market |
| SCE | ALAMIT_7_UNIT 3 | 24003 | ALAMT3 G | 18 | 0.00 | 3 | LA Basin | Western | Retired by 2025 | Market |
| SCE | ALAMIT_7_UNIT 4 | 24004 | ALAMT4 G | 18 | 0.00 | 4 | LA Basin | Western | Retired by 2025 | Market |
| SCE | ALAMIT_7_UNIT 5 | 24005 | ALAMT5 G | 20 | 0.00 | 5 | LA Basin | Western | Retired by 2025 | Market |
| SCE | ALTWD_1_QF | 25635 | ALTWIND | 115 | 3.82 | Q1 | LA Basin | Eastern, Valley-Devers | Aug NQC | QF/Selfgen |
| SCE | ALTWD_1_QF | 25635 | ALTWIND | 115 | 3.82 | Q2 | LA Basin | Eastern, Valley-Devers | Aug NQC | QF/Selfgen |
| SCE | ANAHM_2_CANYN1 | 25211 | CanyonGT 1 | 13.8 | 49.40 | 1 | LA Basin | Western | | MUNI |
| SCE | ANAHM_2_CANYN2 | 25212 | CanyonGT 2 | 13.8 | 48.00 | 2 | LA Basin | Western | | MUNI |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | ANAHM_2_CANYN3 | 25213 | CanyonGT 3 | 13.8 | 48.00 | 3 | LA Basin | Western | | MUNI |
| SCE | ANAHM_2_CANYN4 | 25214 | CanyonGT 4 | 13.8 | 49.40 | 4 | LA Basin | Western | | MUNI |
| SCE | ANAHM_7_CT | 25208 | DowlingCTG | 13.8 | 40.64 | 1 | LA Basin | Western | Aug NQC | MUNI |
| SCE | ARCOGN_2_UNITS | 24011 | ARCO 1G | 13.8 | 51.98 | 1 | LA Basin | Western | Aug NQC | Net Seller |
| SCE | ARCOGN_2_UNITS | 24012 | ARCO 2G | 13.8 | 51.98 | 2 | LA Basin | Western | Aug NQC | Net Seller |
| SCE | ARCOGN_2_UNITS | 24013 | ARCO 3G | 13.8 | 51.98 | 3 | LA Basin | Western | Aug NQC | Net Seller |
| SCE | ARCOGN_2_UNITS | 24014 | ARCO 4G | 13.8 | 51.98 | 4 | LA Basin | Western | Aug NQC | Net Seller |
| SCE | ARCOGN_2_UNITS | 24163 | ARCO 5G | 13.8 | 25.99 | 5 | LA Basin | Western | Aug NQC | Net Seller |
| SCE | ARCOGN_2_UNITS | 24164 | ARCO 6G | 13.8 | 25.99 | 6 | LA Basin | Western | Aug NQC | Net Seller |
| SCE | BARRE_2_QF | 24016 | BARRE | 230 | 0.00 | | LA Basin | Western | Not modeled | QF/Selfgen |
| SCE | BARRE_6_PEAKER | 29309 | BARPKGEN | 13.8 | 47.00 | 1 | LA Basin | Western | | Market |
| SCE | BLAST_1_WIND | 24839 | BLAST | 115 | 10.29 | 1 | LA Basin | Eastern, Valley-Devers | Aug NQC | Wind |
| SCE | BUCKWD_1_NPALM1 | 25634 | BUCKWIND | 115 | 0.65 | | LA Basin | Eastern, Valley-Devers | Not modeled Aug NQC | Wind |
| SCE | BUCKWD_1_QF | 25634 | BUCKWIND | 115 | 3.47 | QF | LA Basin | Eastern, Valley-Devers | Aug NQC | QF/Selfgen |
| SCE | BUCKWD_7_WINTCV | 25634 | BUCKWIND | 115 | 0.28 | W5 | LA Basin | Eastern, Valley-Devers | Aug NQC | Wind |
| SCE | CABZON_1_WINDA1 | 29290 | CABAZON | 33 | 8.61 | 1 | LA Basin | Eastern, Valley-Devers | Aug NQC | Wind |
| SCE | CAPWD_1_QF | 25633 | CAPWIND | 115 | 4.11 | QF | LA Basin | Eastern, Valley-Devers | Aug NQC | QF/Selfgen |
| SCE | CENTER_2_RHONDO | 24203 | CENTER S | 66 | 1.91 | | LA Basin | Western | Not modeled | QF/Selfgen |
| SCE | CENTER_2_SOLAR1 | | | | 0.00 | | LA Basin | Western | Not modeled Energy Only | Solar |
| SCE | CENTER_2_TECNG1 | | | | 0.00 | | LA Basin | Western | Not modeled Energy Only | Market |
| SCE | CENTER_6_PEAKER | 29308 | CTRPKGEN | 13.8 | 47.11 | 1 | LA Basin | Western | | Market |
| SCE | CENTRY_6_PL1X4 | 25302 | CLTNCTRY | 13.8 | 36.00 | 1 | LA Basin | Eastern | Aug NQC | MUNI |
| SCE | CHEVMN_2_UNITS | 24022 | CHEVGEN1 | 13.8 | 3.77 | 1 | LA Basin | Western, El Nido | Aug NQC | Net Seller |
| SCE | CHEVMN_2_UNITS | 24023 | CHEVGEN2 | 13.8 | 3.77 | 2 | LA Basin | Western, El Nido | Aug NQC | Net Seller |
| SCE | CHINO_2_APEBT1 | 25180 | WDT1250BESS_ | 0.48 | 20.00 | 1 | LA Basin | Eastern | Aug NQC | Battery |
| SCE | CHINO_2_JURUPA | | | | 0.00 | | LA Basin | Eastern | Not modeled Energy Only | Market |
| SCE | CHINO_2_QF | | | | 0.00 | | LA Basin | Eastern | Not modeled Aug NQC | QF/Selfgen |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | CHINO_2_SASOLR | | | | 0.00 | | LA Basin | Eastern | Not modeled Energy Only | Solar |
| SCE | CHINO_2_SOLAR | | | | 0.27 | | LA Basin | Eastern | Not modeled | Solar |
| SCE | CHINO_2_SOLAR2 | | | | 0.00 | | LA Basin | Eastern | Not modeled Energy Only | Solar |
| SCE | CHINO_6_CIMGEN | 24026 | CIMGEN | 13.8 | 26.00 | D1 | LA Basin | Eastern | Aug NQC | QF/Selfgen |
| SCE | CHINO_7_MILIKN | 24024 | CHINO | 66 | 1.19 | | LA Basin | Eastern | Not modeled Aug NQC | Market |
| SCE | COLTON_6_AGUAM1 | 25303 | CLTNAGUA | 13.8 | 43.00 | 1 | LA Basin | Eastern | Aug NQC | MUNI |
| SCE | CORONS_2_SOLAR | | | | 0.00 | | LA Basin | Eastern | Not modeled Energy Only | Solar |
| SCE | CORONS_6_CLRWTR | 29338 | CLRWTRCT | 13.8 | 20.72 | G1 | LA Basin | Eastern | | MUNI |
| SCE | CORONS_6_CLRWTR | 29340 | CLRWTRST | 13.8 | 7.28 | S1 | LA Basin | Eastern | | MUNI |
| SCE | DELAMO_2_SOLAR1 | | | | 0.41 | | LA Basin | Western | Not modeled Aug NQC | Solar |
| SCE | DELAMO_2_SOLAR2 | | | | 0.47 | | LA Basin | Western | Not modeled Aug NQC | Solar |
| SCE | DELAMO_2_SOLAR3 | | | | 0.34 | | LA Basin | Western | Not modeled Aug NQC | Solar |
| SCE | DELAMO_2_SOLAR4 | | | | 0.35 | | LA Basin | Western | Not modeled Aug NQC | Solar |
| SCE | DELAMO_2_SOLAR5 | | | | 0.27 | | LA Basin | Western | Not modeled Aug NQC | Solar |
| SCE | DELAMO_2_SOLAR6 | | | | 0.54 | | LA Basin | Western | Not modeled Aug NQC | Solar |
| SCE | DELAMO_2_SOLRC1 | | | | 0.00 | | LA Basin | Western | Not modeled Energy Only | Solar |
| SCE | DELAMO_2_SOLRD | | | | 0.00 | | LA Basin | Western | Not modeled Energy Only | Solar |
| SCE | DEVERS_1_QF | 25639 | SEAWIND | 115 | 0.92 | QF | LA Basin | Eastern, Valley-Devers | Aug NQC | QF/Selfgen |
| SCE | DEVERS_1_QF | 25632 | TERAWND | 115 | 0.76 | QF | LA Basin | Eastern, Valley-Devers | Aug NQC | QF/Selfgen |
| SCE | DEVERS_1_SEPV05 | | | | 0.00 | | LA Basin | Eastern, Valley-Devers | Not modeled Energy Only | Market |
| SCE | DEVERS_1_SOLAR | | | | 0.00 | | LA Basin | Eastern, Valley-Devers | Not modeled Energy Only | Solar |
| SCE | DEVERS_1_SOLAR1 | | | | 0.00 | | LA Basin | Eastern, Valley-Devers | Not modeled Energy Only | Solar |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | DEVERS_1_SOLAR2 | | | | 0.00 | | LA Basin | Eastern, Valley-Devers | Not modeled Energy Only | Solar |
| SCE | DEVERS_2_CS2SR4 | | | | 0.00 | | LA Basin | Eastern, Valley-Devers | Not modeled Energy Only | Solar |
| SCE | DEVERS_2_DHSPG2 | | | | 0.00 | | LA Basin | Eastern, Valley-Devers | Not modeled Energy Only | Market |
| SCE | DMDVLY_1_UNITS | 25425 | ESRP P2 | 6.9 | 3.00 | 8 | LA Basin | Eastern | Aug NQC | QF/Selfgen |
| SCE | DREWS_6_PL1X4 | 25301 | CLTNDREW | 13.8 | 36.00 | 1 | LA Basin | Eastern | Aug NQC | MUNI |
| SCE | DVLCYN_1_UNITS | 25603 | DVLCYN3G | 13.8 | 36.95 | 3 | LA Basin | Eastern | Aug NQC | MUNI |
| SCE | DVLCYN_1_UNITS | 25604 | DVLCYN4G | 13.8 | 36.95 | 4 | LA Basin | Eastern | Aug NQC | MUNI |
| SCE | DVLCYN_1_UNITS | 25648 | DVLCYN1G | 13.8 | 27.72 | 1 | LA Basin | Eastern | Aug NQC | MUNI |
| SCE | DVLCYN_1_UNITS | 25649 | DVLCYN2G | 13.8 | 27.72 | 2 | LA Basin | Eastern | Aug NQC | MUNI |
| SCE | ELLIS_2_QF | 24325 | ORCOGEN | 13.8 | 0.06 | 1 | LA Basin | Western | Aug NQC | QF/Selfgen |
| SCE | ELSEGN_2_UN1011 | 29904 | ELSEG5GT | 16.5 | 131.50 | 5 | LA Basin | Western, El Nido | Aug NQC | Market |
| SCE | ELSEGN_2_UN1011 | 29903 | ELSEG6ST | 13.8 | 131.50 | 6 | LA Basin | Western, El Nido | Aug NQC | Market |
| SCE | ELSEGN_2_UN2021 | 29902 | ELSEG7GT | 16.5 | 131.84 | 7 | LA Basin | Western, El Nido | Aug NQC | Market |
| SCE | ELSEGN_2_UN2021 | 29901 | ELSEG8ST | 13.8 | 131.84 | 8 | LA Basin | Western, El Nido | Aug NQC | Market |
| SCE | ETIWND_2_CHMPNE | | | | 0.00 | | LA Basin | Eastern | Not modeled Energy Only | Market |
| SCE | ETIWND_2_FONTNA | 24055 | ETIWANDA | 66 | 0.21 | | LA Basin | Eastern | Not modeled Aug NQC | QF/Selfgen |
| SCE | ETIWND_2_RTS010 | 24055 | ETIWANDA | 66 | 0.41 | | LA Basin | Eastern | Not modeled Aug NQC | Market |
| SCE | ETIWND_2_RTS015 | 24055 | ETIWANDA | 66 | 0.81 | | LA Basin | Eastern | Not modeled Aug NQC | Market |
| SCE | ETIWND_2_RTS017 | 24055 | ETIWANDA | 66 | 0.95 | | LA Basin | Eastern | Not modeled Aug NQC | Market |
| SCE | ETIWND_2_RTS018 | 24055 | ETIWANDA | 66 | 0.41 | | LA Basin | Eastern | Not modeled Aug NQC | Market |
| SCE | ETIWND_2_RTS023 | 24055 | ETIWANDA | 66 | 0.68 | | LA Basin | Eastern | Not modeled Aug NQC | Market |
| SCE | ETIWND_2_RTS026 | 24055 | ETIWANDA | 66 | 1.62 | | LA Basin | Eastern | Not modeled Aug NQC | Market |
| SCE | ETIWND_2_RTS027 | 24055 | ETIWANDA | 66 | 0.54 | | LA Basin | Eastern | Not modeled Aug NQC | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | ETIWND_2_SOLAR1 | | | | 0.00 | | LA Basin | Eastern | Not modeled Energy Only | Solar |
| SCE | ETIWND_2_SOLAR2 | | | | 0.00 | | LA Basin | Eastern | Not modeled Energy Only | Solar |
| SCE | ETIWND_2_SOLAR5 | | | | 0.00 | | LA Basin | Eastern | Not modeled Energy Only | Solar |
| SCE | ETIWND_2_UNIT1 | 24071 | INLAND | 13.8 | 10.34 | 1 | LA Basin | Eastern | Aug NQC | QF/Selfgen |
| SCE | ETIWND_6_GRPLND | 29305 | ETWPKGEN | 13.8 | 47.39 | 1 | LA Basin | Eastern | | Market |
| SCE | ETIWND_6_MWDETI | 25422 | ETI MWDG | 13.8 | 16.70 | 1 | LA Basin | Eastern | Aug NQC | Market |
| SCE | GARNET_1_SOLAR | 24815 | GARNET | 115 | 0.00 | | LA Basin | Eastern, Valley-Devers | Not modeled Energy Only | Solar |
| SCE | GARNET_1_SOLAR2 | 24815 | GARNET | 115 | 1.08 | | LA Basin | Eastern, Valley-Devers | Not modeled Aug NQC | Solar |
| SCE | GARNET_1_UNITS | 24815 | GARNET | 115 | 1.63 | G1 | LA Basin | Eastern, Valley-Devers | Aug NQC | Market |
| SCE | GARNET_1_UNITS | 24815 | GARNET | 115 | 1.28 | G3 | LA Basin | Eastern, Valley-Devers | Aug NQC | Market |
| SCE | GARNET_1_UNITS | 24815 | GARNET | 115 | 0.56 | G2 | LA Basin | Eastern, Valley-Devers | Aug NQC | Market |
| SCE | GARNET_1_WIND | 24815 | GARNET | 115 | 1.37 | | LA Basin | Eastern, Valley-Devers | Not modeled Aug NQC | Wind |
| SCE | GARNET_1_WINDS | 24815 | GARNET | 115 | 4.73 | W2 | LA Basin | Eastern, Valley-Devers | Aug NQC | Wind |
| SCE | GARNET_1_WT3WND | 24815 | GARNET | 115 | 0.00 | W3 | LA Basin | Eastern, Valley-Devers | Aug NQC | Market |
| SCE | GARNET_2_DIFWD1 | 24815 | GARNET | 115 | 1.65 | | LA Basin | Eastern, Valley-Devers | Aug NQC | Market |
| SCE | GARNET_2_HYDRO | 24815 | GARNET | 115 | 0.76 | QF | LA Basin | Eastern, Valley-Devers | Aug NQC | Market |
| SCE | GARNET_2_WIND1 | 24815 | GARNET | 115 | 2.35 | | LA Basin | Eastern, Valley-Devers | Not modeled Aug NQC | Wind |
| SCE | GARNET_2_WIND2 | 24815 | GARNET | 115 | 2.46 | | LA Basin | Eastern, Valley-Devers | Not modeled Aug NQC | Wind |
| SCE | GARNET_2_WIND3 | 24815 | GARNET | 115 | 2.65 | | LA Basin | Eastern, Valley-Devers | Not modeled Aug NQC | Wind |
| SCE | GARNET_2_WIND4 | 24815 | GARNET | 115 | 2.06 | | LA Basin | Eastern, Valley-Devers | Not modeled Aug NQC | Wind |
| SCE | GARNET_2_WIND5 | 24815 | GARNET | 115 | 0.63 | | LA Basin | Eastern, Valley-Devers | Not modeled Aug NQC | Wind |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | GARNET_2_WPMWD6 | 24815 | GARNET | 115 | 1.25 | | LA Basin | Eastern, Valley-Devers | Not modeled Aug NQC | Wind |
| SCE | GLNARM_2_UNIT 5 | 29013 | GLENARM5_CT | 13.8 | 50.00 | CT | LA Basin | Western | | MUNI |
| SCE | GLNARM_2_UNIT 5 | 29014 | GLENARM5_ST | 13.8 | 15.00 | ST | LA Basin | Western | | MUNI |
| SCE | GLNARM_7_UNIT 1 | 29005 | PASADNA1 | 13.8 | 22.07 | 1 | LA Basin | Western | | MUNI |
| SCE | GLNARM_7_UNIT 2 | 29006 | PASADNA2 | 13.8 | 22.30 | 1 | LA Basin | Western | | MUNI |
| SCE | GLNARM_7_UNIT 3 | 25042 | PASADNA3 | 13.8 | 44.83 | 1 | LA Basin | Western | | MUNI |
| SCE | GLNARM_7_UNIT 4 | 25043 | PASADNA4 | 13.8 | 42.42 | 1 | LA Basin | Western | | MUNI |
| SCE | HARBGN_7_UNITS | 24062 | HARBOR G | 13.8 | 76.27 | 1 | LA Basin | Western | | Market |
| SCE | HARBGN_7_UNITS | 24062 | HARBOR G | 13.8 | 11.86 | HP | LA Basin | Western | | Market |
| SCE | HARBGN_7_UNITS | 25510 | HARBORG4 | 4.16 | 11.86 | LP | LA Basin | Western | | Market |
| SCE | HINSON_6_CARBGN | 24020 | CARBGEN1 | 13.8 | 14.43 | 1 | LA Basin | Western | Aug NQC | Market |
| SCE | HINSON_6_CARBGN | 24328 | CARBGEN2 | 13.8 | 14.43 | 1 | LA Basin | Western | Aug NQC | Market |
| SCE | HINSON_6_LBECH1 | 24170 | LBEACH12 | 13.8 | 65.00 | 1 | LA Basin | Western | | Market |
| SCE | HINSON_6_LBECH2 | 24170 | LBEACH12 | 13.8 | 65.00 | 2 | LA Basin | Western | | Market |
| SCE | HINSON_6_LBECH3 | 24171 | LBEACH34 | 13.8 | 65.00 | 3 | LA Basin | Western | | Market |
| SCE | HINSON_6_LBECH4 | 24171 | LBEACH34 | 13.8 | 65.00 | 4 | LA Basin | Western | | Market |
| SCE | HINSON_6_SERRGN | 24139 | SERRFGEN | 13.8 | 34.00 | D1 | LA Basin | Western | Aug NQC | Market |
| SCE | HNTGBH_2_PL1X3 | 24581 | HUNTBCH CTG2 | 18 | 211,23 | G2 | LA Basin | Western | | Market |
| SCE | HNTGBH_2_PL1X3 | 24582 | HUNTBCH STG | 18 | 251.34 | S1 | LA Basin | Western | | Market |
| SCE | HNTGBH_2_PL1X3 | 24580 | HUNTBCH CTG1 | 18 | 211.23 | G1 | LA Basin | Western | | Market |
| SCE | HNTGBH_7_UNIT 2 | 24067 | HUNT2 G | 13.8 | 0.00 | 2 | LA Basin | Western | Retired by 2025 | Market |
| SCE | INDIGO_1_UNIT 1 | 29190 | WINTECX2 | 13.8 | 42.00 | 1 | LA Basin | Eastern, Valley-Devers | | Market |
| SCE | INDIGO_1_UNIT 2 | 29191 | WINTECX1 | 13.8 | 42.00 | 1 | LA Basin | Eastern, Valley-Devers | | Market |
| SCE | INDIGO_1_UNIT 3 | 29180 | WINTEC8 | 13.8 | 42.00 | 1 | LA Basin | Eastern, Valley-Devers | | Market |
| SCE | LACIEN_2_VENICE | 24337 | VENICE | 13.8 | 3.00 | 1 | LA Basin | Western, El Nido | Aug NQC | MUNI |
| SCE | LAGBEL_6_QF | 29951 | REFUSE | 13.8 | 0.35 | D1 | LA Basin | Western | Aug NQC | QF/Selfgen |
| SCE | LGHTHP_6_ICEGEN | 24070 | ICEGEN | 13.8 | 48.00 | 1 | LA Basin | Western | Aug NQC | QF/Selfgen |
| SCE | MESAS_2_QF | 24209 | MESA CAL | 66 | 0.00 | | LA Basin | Western | Not modeled Aug NQC | QF/Selfgen |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | MIRLOM_2_CORONA | | | | 0.00 | | LA Basin | Eastern | Not modeled Aug NQC | QF/Selfgen |
| SCE | MIRLOM_2_LNDFL | | | | 0.81 | | LA Basin | Eastern | Not modeled Aug NQC | Market |
| SCE | MIRLOM_2_MLBBTA | 25185 | WDT1425_G1 | 0.48 | 10.00 | 1 | LA Basin | Eastern | Aug NQC | Battery |
| SCE | MIRLOM_2_MLBBTB | 25186 | WDT1426_G2 | 0.48 | 10.00 | 1 | LA Basin | Eastern | Aug NQC | Battery |
| SCE | MIRLOM_2_ONTARO | | | | 1.49 | | LA Basin | Eastern | Not modeled Aug NQC | Market |
| SCE | MIRLOM_2_RTS032 | | | | 0.41 | | LA Basin | Eastern | Not modeled Aug NQC | Market |
| SCE | MIRLOM_2_RTS033 | | | | 0.27 | | LA Basin | Eastern | Not modeled Aug NQC | Market |
| SCE | MIRLOM_2_TEMESC | | | | 0.00 | | LA Basin | Eastern | Not modeled Aug NQC | QF/Selfgen |
| SCE | MIRLOM_6_PEAKER | 29307 | MRLPKGEN | 13.8 | 46.00 | 1 | LA Basin | Eastern | | Market |
| SCE | MIRLOM_7_MWDLKM | 24210 | MIRALOMA | 66 | 1.80 | | LA Basin | Eastern | Not modeled Aug NQC | MUNI |
| SCE | MOJAVE_1_SIPHON | 25657 | MJVSPHN1 | 13.8 | 3.20 | 1 | LA Basin | Eastern | Aug NQC | Market |
| SCE | MOJAVE_1_SIPHON | 25658 | MJVSPHN1 | 13.8 | 3.20 | 2 | LA Basin | Eastern | Aug NQC | Market |
| SCE | MOJAVE_1_SIPHON | 25659 | MJVSPHN1 | 13.8 | 3.20 | 3 | LA Basin | Eastern | Aug NQC | Market |
| SCE | MTWIND_1_UNIT 1 | 29060 | MOUNTWND | 115 | 9.32 | S1 | LA Basin | Eastern, Valley-Devers | Aug NQC | Wind |
| SCE | MTWIND_1_UNIT 2 | 29060 | MOUNTWND | 115 | 4.66 | S2 | LA Basin | Eastern, Valley-Devers | Aug NQC | Wind |
| SCE | MTWIND_1_UNIT 3 | 29060 | MOUNTWND | 115 | 4.71 | S3 | LA Basin | Eastern, Valley-Devers | Aug NQC | Wind |
| SCE | OLINDA_2_COYCRK | 24211 | OLINDA | 66 | 3.13 | | LA Basin | Western | Not modeled | QF/Selfgen |
| SCE | OLINDA_2_LNDFL2 | 29011 | BREAPWR2 | 13.8 | 7.16 | S1 | LA Basin | Western | Aug NQC | Market |
| SCE | OLINDA_2_LNDFL2 | 29011 | BREAPWR2 | 13.8 | 4.00 | C1 | LA Basin | Western | Aug NQC | Market |
| SCE | OLINDA_2_LNDFL2 | 29011 | BREAPWR2 | 13.8 | 4.00 | C2 | LA Basin | Western | Aug NQC | Market |
| SCE | OLINDA_2_LNDFL2 | 29011 | BREAPWR2 | 13.8 | 4.00 | C3 | LA Basin | Western | Aug NQC | Market |
| SCE | OLINDA_2_LNDFL2 | 29011 | BREAPWR2 | 13.8 | 4.00 | C4 | LA Basin | Western | Aug NQC | Market |
| SCE | OLINDA_2_QF | 24211 | OLINDA | 66 | 0.00 | | LA Basin | Western | Not modeled Aug NQC | QF/Selfgen |
| SCE | OLINDA_7_BLKSND | 24211 | OLINDA | 66 | 0.36 | | LA Basin | Western | Not modeled Aug NQC | Market |
| SCE | OLINDA_7_LNDFIL | 24211 | OLINDA | 66 | 0.00 | | LA Basin | Western | Not modeled Aug NQC | QF/Selfgen |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | PADUA_2_ONTARO | 24111 | PADUA | 66 | 0.35 | | LA Basin | Eastern | Not modeled Aug NQC | QF/Selfgen |
| SCE | PADUA_2_SOLAR1 | 24111 | PADUA | 66 | 0.00 | | LA Basin | Eastern | Not modeled Energy Only | Solar |
| SCE | PADUA_6_MWDSDM | 24111 | PADUA | 66 | 2.60 | | LA Basin | Eastern | Not modeled Aug NQC | MUNI |
| SCE | PADUA_6_QF | 24111 | PADUA | 66 | 0.39 | | LA Basin | Eastern | Not modeled Aug NQC | QF/Selfgen |
| SCE | PADUA_7_SDIMAS | 24111 | PADUA | 66 | 1.05 | | LA Basin | Eastern | Not modeled Aug NQC | Market |
| SCE | PANSEA_1_PANARO | 25640 | PANAERO | 115 | 6.30 | QF | LA Basin | Eastern, Valley-Devers | Aug NQC | Wind |
| SCE | PWEST_1_UNIT | 24815 | GARNET | 115 | 0.44 | PC | LA Basin | Western | Aug NQC | Market |
| SCE | REDOND_7_UNIT 5 | 24121 | REDON5 G | 18 | 0.00 | 5 | LA Basin | Western | Retired by 2025 | Market |
| SCE | REDOND_7_UNIT 6 | 24122 | REDON6 G | 18 | 0.00 | 6 | LA Basin | Western | Retired by 2025 | Market |
| SCE | REDOND_7_UNIT 8 | 24124 | REDON8 G | 20 | 0.00 | 8 | LA Basin | Western | Retired by 2025 | Market |
| SCE | RENWD_1_QF | 25636 | RENWIND | 115 | 1.33 | Q1 | LA Basin | Eastern, Valley-Devers | Aug NQC | QF/Selfgen |
| SCE | RENWD_1_QF | 25636 | RENWIND | 115 | 1.32 | Q2 | LA Basin | Eastern, Valley-Devers | Aug NQC | QF/Selfgen |
| SCE | RVSIDE_2_RERCU3 | 24299 | RERC2G3 | 13.8 | 49.00 | 1 | LA Basin | Eastern | | MUNI |
| SCE | RVSIDE_2_RERCU4 | 24300 | RERC2G4 | 13.8 | 49.00 | 1 | LA Basin | Eastern | | MUNI |
| SCE | RVSIDE_6_RERCU1 | 24242 | RERC1G | 13.8 | 48.35 | 1 | LA Basin | Eastern | | MUNI |
| SCE | RVSIDE_6_RERCU2 | 24243 | RERC2G | 13.8 | 48.50 | 1 | LA Basin | Eastern | | MUNI |
| SCE | RVSIDE_6_SOLAR1 | 24244 | SPRINGEN | 13.8 | 2.03 | | LA Basin | Eastern | Not modeled Aug NQC | Solar |
| SCE | RVSIDE_6_SPRING | 24244 | SPRINGEN | 13.8 | 36.00 | 1 | LA Basin | Eastern | | Market |
| SCE | SANITR_6_UNITS | 24324 | SANIGEN | 13.8 | 0.84 | D1 | LA Basin | Eastern | Aug NQC | QF/Selfgen |
| SCE | SANTGO_2_LNDFL1 | 24341 | COYGEN | 13.8 | 18.65 | 1 | LA Basin | Western | Aug NQC | Market |
| SCE | SANTGO_2_MABBT1 | 25192 | WDT1406_G | 0.48 | 2.00 | 1 | LA Basin | Western | Aug NQC | Battery |
| SCE | SANWD_1_QF | 25646 | SANWIND | 115 | 3.26 | Q1 | LA Basin | Eastern, Valley-Devers | Aug NQC | Wind |
| SCE | SANWD_1_QF | 25646 | SANWIND | 115 | 3.26 | Q2 | LA Basin | Eastern, Valley-Devers | Aug NQC | Wind |
| SCE | SBERDO_2_PSP3 | 24923 | MNTV-ST1 | 18 | 257.82 | 1 | LA Basin | Eastern, West of Devers | | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | SBERDO_2_PSP3 | 24921 | MNTV-CT1 | 18 | 148.59 | 1 | LA Basin | Eastern, West of Devers | | Market |
| SCE | SBERDO_2_PSP3 | 24922 | MNTV-CT2 | 18 | 148.59 | 1 | LA Basin | Eastern, West of Devers | | Market |
| SCE | SBERDO_2_PSP4 | 24926 | MNTV-ST2 | 18 | 257.82 | 1 | LA Basin | Eastern, West of Devers | | Market |
| SCE | SBERDO_2_PSP4 | 24924 | MNTV-CT3 | 18 | 148.59 | 1 | LA Basin | Eastern, West of Devers | | Market |
| SCE | SBERDO_2_PSP4 | 24925 | MNTV-CT4 | 18 | 148.59 | 1 | LA Basin | Eastern, West of Devers | | Market |
| SCE | SBERDO_2_QF | 24214 | SANBRDNO | 66 | 0.14 | | LA Basin | Eastern, West of Devers | Not modeled Aug NQC | QF/Selfgen |
| SCE | SBERDO_2_REDLND | 24214 | SANBRDNO | 66 | 0.54 | | LA Basin | Eastern, West of Devers | Not modeled Aug NQC | Market |
| SCE | SBERDO_2_RTS005 | 24214 | SANBRDNO | 66 | 0.68 | | LA Basin | Eastern, West of Devers | Not modeled Aug NQC | Market |
| SCE | SBERDO_2_RTS007 | 24214 | SANBRDNO | 66 | 0.68 | | LA Basin | Eastern, West of Devers | Not modeled Aug NQC | Market |
| SCE | SBERDO_2_RTS011 | 24214 | SANBRDNO | 66 | 0.95 | | LA Basin | Eastern, West of Devers | Not modeled Aug NQC | Market |
| SCE | SBERDO_2_RTS013 | 24214 | SANBRDNO | 66 | 0.95 | | LA Basin | Eastern, West of Devers | Not modeled Aug NQC | Market |
| SCE | SBERDO_2_RTS016 | 24214 | SANBRDNO | 66 | 0.41 | | LA Basin | Eastern, West of Devers | Not modeled Aug NQC | Market |
| SCE | SBERDO_2_RTS048 | 24214 | SANBRDNO | 66 | 0.00 | | LA Basin | Eastern, West of Devers | Not modeled Energy Only | Market |
| SCE | SBERDO_2_SNTANA | 24214 | SANBRDNO | 66 | 0.30 | | LA Basin | Eastern, West of Devers | Not modeled Aug NQC | QF/Selfgen |
| SCE | SBERDO_6_MILLCK | 24214 | SANBRDNO | 66 | 1.09 | | LA Basin | Eastern, West of Devers | Not modeled Aug NQC | QF/Selfgen |
| SCE | SENTNL_2_CTG1 | 29101 | SENTINEL_G1 | 13.8 | 103.76 | 1 | LA Basin | Eastern, Valley-Devers | | Market |
| SCE | SENTNL_2_CTG2 | 29102 | SENTINEL_G2 | 13.8 | 95.34 | 1 | LA Basin | Eastern, Valley-Devers | | Market |
| SCE | SENTNL_2_CTG3 | 29103 | SENTINEL_G3 | 13.8 | 96.85 | 1 | LA Basin | Eastern, Valley-Devers | | Market |
| SCE | SENTNL_2_CTG4 | 29104 | SENTINEL_G4 | 13.8 | 102.47 | 1 | LA Basin | Eastern, Valley-Devers | | Market |
| SCE | SENTNL_2_CTG5 | 29105 | SENTINEL_G5 | 13.8 | 103.81 | 1 | LA Basin | Eastern, Valley-Devers | | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | SENTNL_2_CTG6 | 29106 | SENTINEL_G6 | 13.8 | 100.99 | 1 | LA Basin | Eastern, Valley-Devers | | Market |
| SCE | SENTNL_2_CTG7 | 29107 | SENTINEL_G7 | 13.8 | 97.06 | 1 | LA Basin | Eastern, Valley-Devers | | Market |
| SCE | SENTNL_2_CTG8 | 29108 | SENTINEL_G8 | 13.8 | 101.80 | 1 | LA Basin | Eastern, Valley-Devers | | Market |
| SCE | TIFFNY_1_DILLON | 29021 | WINTEC6 | 115 | 9.45 | 1 | LA Basin | Eastern, Valley-Devers | Aug NQC | Wind |
| SCE | TRNSWD_1_QF | 25637 | TRANWIND | 115 | 8.18 | QF | LA Basin | Eastern, Valley-Devers | Aug NQC | Wind |
| SCE | TULEWD_1_TULWD1 | | | | 26.80 | | LA Basin | Eastern, Valley-Devers | Not modeled Aug NQC | Wind |
| SCE | VALLEY_5_PERRIS | 24160 | VALLEYSC | 115 | 7.94 | | LA Basin | Eastern, Valley, Valley-Devers | Not modeled Aug NQC | QF/Selfgen |
| SCE | VALLEY_5_REDMTN | 24160 | VALLEYSC | 115 | 3.80 | | LA Basin | Eastern, Valley, Valley-Devers | Not modeled Aug NQC | QF/Selfgen |
| SCE | VALLEY_5_RTS044 | 24160 | VALLEYSC | 115 | 2.16 | | LA Basin | Eastern, Valley, Valley-Devers | Not modeled Aug NQC | Market |
| SCE | VALLEY_5_SOLAR1 | 24160 | VALLEYSC | 115 | 0.00 | | LA Basin | Eastern, Valley, Valley-Devers | Not modeled Energy Only | Solar |
| SCE | VALLEY_5_SOLAR2 | 25082 | WDT786 | 34.5 | 5.40 | EQ | LA Basin | Eastern, Valley, Valley-Devers | Aug NQC | Solar |
| SCE | VENWD_1_WIND1 | 25645 | VENWIND | 115 | 1.98 | Q1 | LA Basin | Eastern, Valley-Devers | Aug NQC | QF/Selfgen |
| SCE | VENWD_1_WIND2 | 25645 | VENWIND | 115 | 3.37 | Q2 | LA Basin | Eastern, Valley-Devers | Aug NQC | QF/Selfgen |
| SCE | VENWD_1_WIND3 | 25645 | VENWIND | 115 | 4.00 | EU | LA Basin | Eastern, Valley-Devers | Aug NQC | QF/Selfgen |
| SCE | VERNON_6_GONZL1 | 24342 | FEDGEN | 13.8 | 5.75 | 1 | LA Basin | Western | | MUNI |
| SCE | VERNON_6_GONZL2 | 24342 | FEDGEN | 13.8 | 5.75 | 1 | LA Basin | Western | | MUNI |
| SCE | VERNON_6_MALBRG | 24241 | MALBRG3G | 13.8 | 49.26 | S3 | LA Basin | Western | | MUNI |
| SCE | VERNON_6_MALBRG | 24239 | MALBRG1G | 13.8 | 42.37 | C1 | LA Basin | Western | | MUNI |
| SCE | VERNON_6_MALBRG | 24240 | MALBRG2G | 13.8 | 42.37 | C2 | LA Basin | Western | | MUNI |
| SCE | VILLPK_2_VALLYV | 24216 | VILLA PK | 66 | 4.10 | DG | LA Basin | Western | Aug NQC | QF/Selfgen |
| SCE | VILLPK_6_MWDYOR | 24216 | VILLA PK | 66 | 3.60 | | LA Basin | Western | Not modeled Aug NQC | MUNI |
| SCE | VISTA_2_RIALTO | 24901 | VSTA | 230 | 0.27 | | LA Basin | Eastern | Not modeled | Market |
| SCE | VISTA_2_RTS028 | 24901 | VSTA | 230 | 0.95 | | LA Basin | Eastern | Not modeled Aug NQC | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | VISTA_6_QF | 24902 | VSTA | 66 | 0.10 | | LA Basin | Eastern | Not modeled Aug NQC | QF/Selfgen |
| SCE | WALCRK_2_CTG1 | 29201 | WALCRKG1 | 13.8 | 96.43 | 1 | LA Basin | Western | | Market |
| SCE | WALCRK_2_CTG2 | 29202 | WALCRKG2 | 13.8 | 96.91 | 1 | LA Basin | Western | | Market |
| SCE | WALCRK_2_CTG3 | 29203 | WALCRKG3 | 13.8 | 96.65 | 1 | LA Basin | Western | | Market |
| SCE | WALCRK_2_CTG4 | 29204 | WALCRKG4 | 13.8 | 96.49 | 1 | LA Basin | Western | | Market |
| SCE | WALCRK_2_CTG5 | 29205 | WALCRKG5 | 13.8 | 96.65 | 1 | LA Basin | Western | | Market |
| SCE | WALNUT_2_SOLAR | | | | 0.00 | | LA Basin | Western | Not modeled Energy Only | Solar |
| SCE | WALNUT_6_HILLGEN | 24063 | HILLGEN | 13.8 | 32.97 | D1 | LA Basin | Western | Aug NQC | Net Seller |
| SCE | WALNUT_7_WCOVST | 24157 | WALNUT | 66 | 5.37 | | LA Basin | Western | Not modeled Aug NQC | Market |
| SCE | WHTWTR_1_WINDA1 | 29061 | WHITEWTR | 33 | 12.92 | 1 | LA Basin | Eastern, Valley-Devers | Aug NQC | Wind |
| SCE | ZZ_ARCOGN_2_UNITS | 24018 | BRIGEN | 13.8 | 0.00 | 1 | LA Basin | Western | No NQC - hist. data | Net Seller |
| SCE | ZZ_HINSON_6_QF | 24064 | HINSON | 66 | 0.00 | 1 | LA Basin | Western | No NQC - hist. data | QF/Selfgen |
| SCE | ZZ_LAFRES_6_QF | 24332 | PALOGEN | 13.8 | 0.00 | D1 | LA Basin | Western, El Nido | No NQC - hist. data | QF/Selfgen |
| SCE | ZZ_MOBGEN_6_UNIT 1 | 24094 | MOBGEN | 13.8 | 0.00 | 1 | LA Basin | Western, El Nido | No NQC - hist. data | QF/Selfgen |
| SCE | ZZ_NA | 24327 | THUMSGEN | 13.8 | 0.00 | 1 | LA Basin | Western | No NQC - hist. data | QF/Selfgen |
| SCE | ZZ_NA | 24329 | MOBGEN2 | 13.8 | 0.00 | 1 | LA Basin | Western, El Nido | No NQC - hist. data | QF/Selfgen |
| SCE | ZZ_NA | 24330 | OUTFALL1 | 13.8 | 0.00 | 1 | LA Basin | Western, El Nido | No NQC - hist. data | QF/Selfgen |
| SCE | ZZ_NA | 24331 | OUTFALL2 | 13.8 | 0.00 | 1 | LA Basin | Western, El Nido | No NQC - hist. data | QF/Selfgen |
| SCE | ZZ_NA | 29260 | ALTAMSA4 | 115 | 0.00 | 1 | LA Basin | Eastern, Valley-Devers | No NQC - hist. data | Wind |
| SCE | ZZZ_New | 698082 | ALMITOS B1A | 0.42 | 50.00 | 1 | LA Basin | Western | No NQC - Pmax | Market |
| SCE | ZZZ_New | 698083 | ALMITOS B12 | 0.42 | 50.00 | 1 | LA Basin | Western | No NQC - Pmax | Market |
| SCE | ZZZ_New | 97624 | WH_STN_1 | 13.8 | 49.00 | 1 | LA Basin | Western | No NQC - Pmax | Market |
| SCE | ZZZ_New | 97625 | WH_STN_2 | 13.8 | 49.00 | 1 | LA Basin | Western | No NQC - Pmax | Market |

Attachment A - List of physical resources by PTO, local area and market ID

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SCE | ZZZZZ_ALAMIT_7_UNIT 1 | 24001 | ALAMT1 G | 18 | 0.00 | 1 | LA Basin | Western | Retired | Market |
| SCE | ZZZZZ_ALAMIT_7_UNIT 2 | 24002 | ALAMT2 G | 18 | 0.00 | 2 | LA Basin | Western | Retired | Market |
| SCE | ZZZZZ_ALAMIT_7_UNIT 6 | 24161 | ALAMT6 G | 20 | 0.00 | 6 | LA Basin | Western | Retired | Market |
| SCE | ZZZZZ_BRDWAY_7_UNIT 3 | 29007 | BRODWYSC | 13.8 | 0.00 | | LA Basin | Western | Retired | MUNI |
| SCE | ZZZZZ_CENTER_2_QF | 29953 | SIGGEN | 13.8 | 0.00 | D1 | LA Basin | Western | Retired | QF/Selfgen |
| SCE | ZZZZZ_CHINO_6_SMPPAP | 24140 | SIMPSON | 13.8 | 0.00 | D1 | LA Basin | Eastern | Retired | QF/Selfgen |
| SCE | ZZZZZ_ETIWND_7_MIDVLY | 24055 | ETIWANDA | 66 | 0.00 | | LA Basin | Eastern | Retired | QF/Selfgen |
| SCE | ZZZZZ_ETIWND_7_UNIT 3 | 24052 | MTNVIST3 | 18 | 0.00 | 3 | LA Basin | Eastern | Retired | Market |
| SCE | ZZZZZ_ETIWND_7_UNIT 4 | 24053 | MTNVIST4 | 18 | 0.00 | 4 | LA Basin | Eastern | Retired | Market |
| SCE | ZZZZZ_HNTGBH_7_UNIT 1 | 24066 | HUNT1 G | 13.8 | 0.00 | 1 | LA Basin | Western | Retired | Market |
| SCE | ZZZZZ_INLDEM_5_UNIT 1 | 29041 | IEEC-G1 | 19.5 | 0.00 | 1 | LA Basin | Eastern, Valley, Valley-Devers | Retired | Market |
| SCE | ZZZZZ_INLDEM_5_UNIT 2 | 29042 | IEEC-G2 | 19.5 | 0.00 | 1 | LA Basin | Eastern, Valley, Valley-Devers | Retired | Market |
| SCE | ZZZZZ_LAGBEL_2_STG1 | | | | 0.00 | | LA Basin | Western | Retired | Market |
| SCE | ZZZZZ_MIRLOM_6_DELGEN | 29339 | DELGEN | 13.8 | 0.00 | 1 | LA Basin | Eastern | Retired | QF/Selfgen |
| SCE | ZZZZZ_REDOND_7_UNIT 7 | 24123 | REDON7 G | 20 | 0.00 | 7 | LA Basin | Western | Retired | Market |
| SCE | ZZZZZ_RHONDO_2_QF | 24213 | RIOHONDO | 66 | 0.00 | DG | LA Basin | Western | Retired | QF/Selfgen |
| SCE | ZZZZZ_RHONDO_6_PUENTE | 24213 | RIOHONDO | 66 | 0.00 | | LA Basin | Western | Retired | Net Seller |
| SCE | ZZZZZ_VALLEY_7_BADLND | 24160 | VALLEYSC | 115 | 0.00 | | LA Basin | Eastern, Valley, Valley-Devers | Retired | Market |
| SCE | ZZZZZ_VALLEY_7_UNITA1 | 24160 | VALLEYSC | 115 | 0.00 | | LA Basin | Eastern, Valley, Valley-Devers | Retired | Market |
| SCE | ZZZZZ_WALNUT_7_WCOVCT | 24157 | WALNUT | 66 | 0.00 | | LA Basin | Western | Retired | Market |
| SCE | ZZZZZZ_ELSEGN_7_UNIT 4 | 24048 | ELSEG4 G | 18 | 0.00 | 4 | LA Basin | Western, El Nido | Retired | Market |

Attachment A - List of physical resources by PTO, local area and market ID

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SDG&E | BORDER_6_UNITA1 | 22149 | CALPK_BD | 13.8 | 51.25 | 1 | SD-IV | San Diego, Border | | Market |
| SDG&E | BREGGO_6_DEGRSL | 22085 | BORREGO | 12.5 | 1.70 | DG | SD-IV | San Diego | Aug NQC | Solar |
| SDG&E | BREGGO_6_SOLAR | 22082 | BR GEN1 | 0.21 | 7.02 | 1 | SD-IV | San Diego | Aug NQC | Solar |
| SDG&E | CARLS1_2_CARCT1 | 22783 | EA5 REPOWER1 | 13.8 | 105.50 | 1 | SD-IV | San Diego | Aug NQC | Market |
| SDG&E | CARLS1_2_CARCT1 | 22784 | EA5 REPOWER2 | 13.8 | 105.50 | 1 | SD-IV | San Diego | Aug NQC | Market |
| SDG&E | CARLS1_2_CARCT1 | 22786 | EA5 REPOWER4 | 13.8 | 105.50 | 1 | SD-IV | San Diego | Aug NQC | Market |
| SDG&E | CARLS1_2_CARCT1 | 22788 | EA5 REPOWER3 | 13.8 | 105.50 | 1 | SD-IV | San Diego | Aug NQC | Market |
| SDG&E | CARLS2_1_CARCT1 | 22787 | EA5 REPOWER5 | 13.8 | 105.50 | 1 | SD-IV | San Diego | Aug NQC | Market |
| SDG&E | CCRITA_7_RPPCHF | 22124 | CHCARITA | 138 | 3.60 | 1 | SD-IV | San Diego | Aug NQC | Market |
| SDG&E | CHILLS_1_SYCENG | 22120 | CARLTNHS | 138 | 0.62 | 1 | SD-IV | San Diego | Aug NQC | QF/Selfgen |
| SDG&E | CHILLS_7_UNITA1 | 22120 | CARLTNHS | 138 | 1.52 | 2 | SD-IV | San Diego | Aug NQC | QF/Selfgen |
| SDG&E | CNTNLA_2_SOLAR1 | 23463 | DW GEN3&4 | 0.33 | 33.75 | 1 | SD-IV | | Aug NQC | Solar |
| SDG&E | CNTNLA_2_SOLAR2 | 23463 | DW GEN3&4 | 0.33 | 0.00 | 2 | SD-IV | | Energy Only | Solar |
| SDG&E | CPSTNO_7_PRMADS | 22112 | CAPSTRNO | 138 | 5.71 | 1 | SD-IV | San Diego | Aug NQC | Market |
| SDG&E | CPVERD_2_SOLAR | 23309 | IV GEN3 G1 | 0.31 | 20.85 | G1 | SD-IV | | Aug NQC | Solar |
| SDG&E | CPVERD_2_SOLAR | 23301 | IV GEN3 G2 | 0.31 | 16.68 | G2 | SD-IV | | Aug NQC | Solar |
| SDG&E | CRELMN_6_RAMON1 | 22152 | CREELMAN | 69 | 0.54 | DG | SD-IV | San Diego | Aug NQC | Solar |
| SDG&E | CRELMN_6_RAMON2 | 22152 | CREELMAN | 69 | 1.35 | DG | SD-IV | San Diego | Aug NQC | Solar |
| SDG&E | CRELMN_6_RAMSR3 | | | | 0.93 | | SD-IV | San Diego | Not modeled Aug NQC | Solar |
| SDG&E | CRSTWD_6_KUMYAY | 22915 | KUMEYAAY | 0.69 | 10.50 | 1 | SD-IV | San Diego | Aug NQC | Wind |
| SDG&E | CSLR4S_2_SOLAR | 23298 | DW GEN1 G1 | 0.315 | 17.55 | G1 | SD-IV | | Aug NQC | Solar |
| SDG&E | CSLR4S_2_SOLAR | 23299 | DW GEN1 G2 | 0.315 | 17.55 | G2 | SD-IV | | Aug NQC | Solar |
| SDG&E | ELCAJN_6_EB1BT1 | 22208 | EL CAJON | 69 | 7.50 | 1 | SD-IV | San Diego, El Cajon | | Battery |
| SDG&E | ELCAJN_6_LM6K | 23320 | EC GEN2 | 13.8 | 48.10 | 1 | SD-IV | San Diego, El Cajon | | Market |
| SDG&E | ELCAJN_6_UNITA1 | 22150 | EC GEN1 | 13.8 | 45.42 | 1 | SD-IV | San Diego, El Cajon | | Market |
| SDG&E | ENERSJ_2_WIND | 23100 | ECO GEN1 G1 | 0.69 | 32.57 | G1 | SD-IV | | Aug NQC | Wind |
| SDG&E | ESCNDO_6_EB1BT1 | 22256 | ESCNDIDO | 69 | 10.00 | 1 | SD-IV | San Diego | | Battery |
| SDG&E | ESCNDO_6_EB2BT2 | 22256 | ESCNDIDO | 69 | 10.00 | 1 | SD-IV | San Diego | | Battery |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SDG&E | ESCNDO_6_EB3BT3 | 22256 | ESCNDIDO | 69 | 10.00 | 1 | SD-IV | San Diego | | Battery |
| SDG&E | ESCNDO_6_PL1X2 | 22257 | ESGEN | 13.8 | 48.71 | 1 | SD-IV | San Diego | | Market |
| SDG&E | ESCNDO_6_UNITB1 | 22153 | CALPK_ES | 13.8 | 48.04 | 1 | SD-IV | San Diego | | Market |
| SDG&E | ESCO_6_GLMQF | 22332 | GOALLINE | 69 | 36.41 | 1 | SD-IV | San Diego | Aug NQC | Net Seller |
| SDG&E | IVSLRP_2_SOLAR1 | 23440 | DW GEN2 G1 | 0.36 | 54.00 | 1 | SD-IV | | Aug NQC | Solar |
| SDG&E | IVWEST_2_SOLAR1 | 23155 | DU GEN1 G1 | 0.2 | 21.91 | G1 | SD-IV | | Aug NQC | Solar |
| SDG&E | IVWEST_2_SOLAR1 | 23156 | DU GEN1 G2 | 0.2 | 18.59 | G2 | SD-IV | | Aug NQC | Solar |
| SDG&E | JACMSR_1_JACSR1 | 23352 | ECO GEN2 | 0.55 | 5.40 | 1 | SD-IV | | Aug NQC | Solar |
| SDG&E | LAKHDG_6_UNIT 1 | 22625 | LKHODG1 | 13.8 | 20.00 | 1 | SD-IV | San Diego | | Market |
| SDG&E | LAKHDG_6_UNIT 2 | 22626 | LKHODG2 | 13.8 | 20.00 | 2 | SD-IV | San Diego | | Market |
| SDG&E | LARKSP_6_UNIT 1 | 22074 | LRKSPBD1 | 13.8 | 46.00 | 1 | SD-IV | San Diego, Border | | Market |
| SDG&E | LARKSP_6_UNIT 2 | 22075 | LRKSPBD2 | 13.8 | 46.00 | 1 | SD-IV | San Diego, Border | | Market |
| SDG&E | LAROA1_2_UNITA1 | 20187 | LRP-U1 | 16 | 0.00 | 1 | SD-IV | | Connect to CENACE/CFE grid for the summer – not available for ISO BAA RA purpose | Market |
| SDG&E | LAROA2_2_UNITA1 | 22997 | INTBCT | 16 | 176.81 | 1 | SD-IV | | | Market |
| SDG&E | LAROA2_2_UNITA1 | 22996 | INTBST | 18 | 145.19 | 1 | SD-IV | | | Market |
| SDG&E | LILIAC_6_SOLAR | 22404 | LILIAC | 69 | 0.81 | DG | SD-IV | San Diego | | Solar |
| SDG&E | MRGT_6_MEF2 | 22487 | MEF_MR2 | 13.8 | 44.00 | 1 | SD-IV | San Diego | | Market |
| SDG&E | MRGT_6_MMAREF | 22486 | MEF_MR1 | 13.8 | 45.00 | 1 | SD-IV | San Diego | | Market |
| SDG&E | MSHGTS_6_MMARLF | 22448 | MESAHGTS | 69 | 4.03 | 1 | SD-IV | San Diego | Aug NQC | Market |
| SDG&E | MSSION_2_QF | 22496 | MISSION | 69 | 0.70 | 1 | SD-IV | San Diego | Aug NQC | Market |
| SDG&E | MURRAY_6_UNIT | 22532 | MURRAY | 69 | 0.00 | | SD-IV | San Diego | Not modeled Energy Only | Market |
| SDG&E | OCTILO_5_WIND | 23314 | OCO GEN G1 | 0.69 | 27.83 | G1 | SD-IV | | Aug NQC | Wind |
| SDG&E | OCTILO_5_WIND | 23318 | OCO GEN G2 | 0.69 | 27.83 | G2 | SD-IV | | Aug NQC | Wind |
| SDG&E | OGROVE_6_PL1X2 | 22628 | PA GEN1 | 13.8 | 48.00 | 1 | SD-IV | San Diego | | Market |
| SDG&E | OGROVE_6_PL1X2 | 22629 | PA GEN2 | 13.8 | 48.00 | 1 | SD-IV | San Diego | | Market |
| SDG&E | OTAY_6_PL1X2 | 22617 | OYGEN | 13.8 | 35.50 | 1 | SD-IV | San Diego | | Market |
| SDG&E | OTMESA_2_PL1X3 | 22607 | OTAYMST1 | 16 | 272.27 | 1 | SD-IV | San Diego | | Market |
| SDG&E | OTMESA_2_PL1X3 | 22606 | OTAYMGT2 | 18 | 166.17 | 1 | SD-IV | San Diego | | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SDG&E | OTMESA_2_PL1X3 | 22605 | OTAYMGT1 | 18 | 165.16 | 1 | SD-IV | San Diego | | Market |
| SDG&E | PALOMR_2_PL1X3 | 22265 | PEN_ST | 18 | 225.24 | 1 | SD-IV | San Diego | | Market |
| SDG&E | PALOMR_2_PL1X3 | 22262 | PEN_CT1 | 18 | 170.18 | 1 | SD-IV | San Diego | | Market |
| SDG&E | PALOMR_2_PL1X3 | 22263 | PEN_CT2 | 18 | 170.18 | 1 | SD-IV | San Diego | | Market |
| SDG&E | PIOPIC_2_CTG1 | 23162 | PIO PICO CT1 | 13.8 | 111.30 | 1 | SD-IV | San Diego | No NQC - Pmax | Market |
| SDG&E | PIOPIC_2_CTG2 | 23163 | PIO PICO CT2 | 13.8 | 112.70 | 1 | SD-IV | San Diego | No NQC - Pmax | Market |
| SDG&E | PIOPIC_2_CTG3 | 23164 | PIO PICO CT3 | 13.8 | 112.00 | 1 | SD-IV | San Diego | No NQC - Pmax | Market |
| SDG&E | PRCTVY_1_MIGBT1 | | | | 0.00 | | SD-IV | San Diego | Aug NQC | Battery |
| SDG&E | SAMPSN_6_KELCO1 | 22704 | SAMPSON | 12.5 | 0.85 | 1 | SD-IV | San Diego | Aug NQC | Net Seller |
| SDG&E | SLRMS3_2_SRMSR1 | 23442 | DW GEN2 G3A | 0.6 | 40.50 | 1 | SD-IV | | Aug NQC | Solar |
| SDG&E | SLRMS3_2_SRMSR1 | 23443 | DW GEN2 G3B | 0.6 | 27.00 | 1 | SD-IV | | Aug NQC | Solar |
| SDG&E | SMRCOS_6_LNDFIL | 22724 | SANMRCOS | 69 | 1.50 | 1 | SD-IV | San Diego | Aug NQC | Market |
| SDG&E | TERMEX_2_PL1X3 | 22981 | TDM STG | 21 | 280.13 | 1 | SD-IV | | | Market |
| SDG&E | TERMEX_2_PL1X3 | 22982 | TDM CTG2 | 18 | 156.44 | 1 | SD-IV | | | Market |
| SDG&E | TERMEX_2_PL1X3 | 22983 | TDM CTG3 | 18 | 156.44 | 1 | SD-IV | | | Market |
| SDG&E | VLCNTR_6_VCSLR | 22870 | VALCNTR | 69 | 0.63 | DG | SD-IV | San Diego | Aug NQC | Solar |
| SDG&E | VLCNTR_6_VCSLR1 | 22870 | VALCNTR | 69 | 0.68 | DG | SD-IV | San Diego | Aug NQC | Solar |
| SDG&E | VLCNTR_6_VCSLR2 | 22870 | VALCNTR | 69 | 1.35 | DG | SD-IV | San Diego | Aug NQC | Solar |
| SDG&E | VSTAES_6_VESBT1 | 23541 | ME GEN 1_BS1 | 0.64 | 5.50 | 1 | SD-IV | San Diego | No NQC - est. data | Battery |
| SDG&E | VSTAES_6_VESBT1 | 23216 | ME GEN 1_BS2 | 0.48 | 5.50 | 1 | SD-IV | San Diego | No NQC - est. data | Battery |
| SDG&E | WISTRA_2_WRSSR1 | 23287 | Q429_G1 | 0.31 | 27.00 | 1 | SD-IV | | Aug NQC | Solar |
| SDG&E | ZZ_NA | 22916 | PFC-AVC | 0.6 | 0.00 | 1 | SD-IV | San Diego | No NQC - hist. data | QF/Selfgen |
| SDG&E | ZZZ_New Unit | 23710 | Q1170_BESS | 0.48 | 62.50 | 1 | SD-IV | San Diego | No NQC - Pmax | Battery |
| SDG&E | ZZZ_New Unit | 23441 | DW GEN6 | 0.42 | 40.58 | 1 | SD-IV | | No NQC - est. data | Solar |

Attachment A - List of physical resources by PTO, local area and market ID

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SDG&E | ZZZ_New Unit | 22020 | AVOCADO | 69 | 40.00 | S2 | SD-IV | San Diego | No NQC - Pmax | Battery |
| SDG&E | ZZZ_New Unit | 23544 | Q1169_BESS1 | 0.4 | 35.00 | C8 | SD-IV | San Diego | No NQC - Pmax | Battery |
| SDG&E | ZZZ_New Unit | 23519 | Q1169_BESS2 | 0.4 | 35.00 | C8 | SD-IV | San Diego | No NQC - Pmax | Battery |
| SDG&E | ZZZ_New Unit | 23412 | Q1434_G | 0.64 | 30.00 | 1 | SD-IV | San Diego | No NQC - Pmax | Battery |
| SDG&E | ZZZ_New Unit | 22942 | BUE GEN 1_G1 | 0.69 | 11.60 | G1 | SD-IV | | No NQC - est. data | Wind |
| SDG&E | ZZZ_New Unit | 22945 | BUE GEN 1_G2 | 0.69 | 11.60 | G2 | SD-IV | | No NQC - est. data | Wind |
| SDG&E | ZZZ_New Unit | 22947 | BUE GEN 1_G3 | 0.69 | 11.60 | G3 | SD-IV | | No NQC - est. data | Wind |
| SDG&E | ZZZ_New Unit | 22256 | ESCNDIDO | 69 | 6.50 | S2 | SD-IV | San Diego | No NQC - Pmax | Battery |
| SDG&E | ZZZ_New Unit | 22112 | CAPSTRNO | 138 | 5.90 | 1 | SD-IV | San Diego | No NQC - Pmax | Battery |
| SDG&E | ZZZ_New Unit | 22112 | CAPSTRNO | 138 | 4.00 | S2 | SD-IV | San Diego | No NQC - Pmax | Battery |
| SDG&E | ZZZ_New Unit | 23597 | Q1175_BESS | 0.48 | 0.00 | 1 | SD-IV | | Energy Only | Battery |
| SDG&E | ZZZ_New Unit | 22404 | LILAC | 69 | 0.00 | S2 | SD-IV | San Diego | Energy Only | Battery |
| SDG&E | ZZZ_New Unit | 22512 | MONSRATE | 69 | 0.00 | S2 | SD-IV | San Diego | Energy Only | Battery |
| SDG&E | ZZZZ_New Unit | 23421 | Q1531_BESS1 | 0.55 | 116.50 | 11 | SD-IV | | No NQC - Pmax | Battery |
| SDG&E | ZZZZ_New Unit | 23425 | Q1531_BESS2 | 0.55 | 116.50 | 11 | SD-IV | | No NQC - Pmax | Battery |
| SDG&E | ZZZZ_New Unit | 23429 | Q1531_BESS3 | 0.55 | 116.50 | 11 | SD-IV | | No NQC - Pmax | Battery |
| SDG&E | ZZZZ_New Unit | 23398 | Q1166_G | 0.41 | 55.68 | 1 | SD-IV | | No NQC - 87%Pmax | Battery |
| SDG&E | ZZZZ_New Unit | 22484 | MIRAMAR1 | 69 | 30.00 | S2 | SD-IV | San Diego | No NQC - Pmax | Battery |
| SDG&E | ZZZZ_New Unit | 23231 | Q1432_G | 0.39 | 8.10 | 1 | SD-IV | San Diego | No NQC - est. data | Solar |
| SDG&E | ZZZZ_New Unit | 22970 | Q1532_GEN | 0.6 | 5.40 | 1 | SD-IV | San Diego | No NQC - est. data | Solar |
| SDG&E | ZZZZ_New Unit | 23585 | Q838_G1 | 0.6 | 4.32 | 1 | SD-IV | | No NQC - est. data | Solar |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SDG&E | ZZZZ_New Unit | 23586 | Q838_G2 | 0.6 | 4.32 | 1 | SD-IV | | No NQC - est. data | Solar |
| SDG&E | ZZZZ_New Unit | 22949 | BUE GEN 1_G4 | 0.69 | 0.00 | 1 | SD-IV | | Energy Only | Wind |
| SDG&E | ZZZZZ_CBRLLO_6_PLSTP1 | 22092 | CABRILLO | 69 | 0.00 | 1 | SD-IV | San Diego | Aug NQC | Market |
| SDG&E | ZZZZZ_DIVSON_6_NSQF | 22172 | DIVISION | 69 | 0.00 | 1 | SD-IV | San Diego | Retired | QF/Selfgen |
| SDG&E | ZZZZZ_ELCAJN_7_GT1 | 22212 | ELCAJNGT | 12.5 | 0.00 | 1 | SD-IV | San Diego, El Cajon | Retired | Market |
| SDG&E | ZZZZZ_ENCINA_7_EA1 | 22233 | ENCINA 1 | 14.4 | 0.00 | 1 | SD-IV | San Diego | Retired | Market |
| SDG&E | ZZZZZ_ENCINA_7_EA2 | 22234 | ENCINA 2 | 14.4 | 0.00 | 1 | SD-IV | San Diego | Retired by 2019 | Market |
| SDG&E | ZZZZZ_ENCINA_7_EA3 | 22236 | ENCINA 3 | 14.4 | 0.00 | 1 | SD-IV | San Diego | Retired by 2019 | Market |
| SDG&E | ZZZZZ_ENCINA_7_EA4 | 22240 | ENCINA 4 | 22 | 0.00 | 1 | SD-IV | San Diego | Retired by 2019 | Market |
| SDG&E | ZZZZZ_ENCINA_7_EA5 | 22244 | ENCINA 5 | 24 | 0.00 | 1 | SD-IV | San Diego | Retired by 2019 | Market |
| SDG&E | ZZZZZ_ENCINA_7_GT1 | 22248 | ENCINAGT | 12.5 | 0.00 | 1 | SD-IV | San Diego | Retired by 2019 | Market |
| SDG&E | ZZZZZ_KEARNY_7_KY2 | 22373 | KEARN2AB | 12.5 | 0.00 | 1 | SD-IV | San Diego | Retired | Market |
| SDG&E | ZZZZZ_KEARNY_7_KY2 | 22374 | KEARN2CD | 12.5 | 0.00 | 1 | SD-IV | San Diego | Retired | Market |
| SDG&E | ZZZZZ_KEARNY_7_KY2 | 22373 | KEARN2AB | 12.5 | 0.00 | 2 | SD-IV | San Diego | Retired | Market |
| SDG&E | ZZZZZ_KEARNY_7_KY2 | 22374 | KEARN2CD | 12.5 | 0.00 | 2 | SD-IV | San Diego | Retired | Market |
| SDG&E | ZZZZZ_KEARNY_7_KY3 | 22375 | KEARN3AB | 12.5 | 0.00 | 1 | SD-IV | San Diego | Retired | Market |
| SDG&E | ZZZZZ_KEARNY_7_KY3 | 22376 | KEARN3CD | 12.5 | 0.00 | 1 | SD-IV | San Diego | Retired | Market |
| SDG&E | ZZZZZ_KEARNY_7_KY3 | 22375 | KEARN3AB | 12.5 | 0.00 | 2 | SD-IV | San Diego | Retired | Market |
| SDG&E | ZZZZZ_KEARNY_7_KY3 | 22376 | KEARN3CD | 12.5 | 0.00 | 2 | SD-IV | San Diego | Retired | Market |
| SDG&E | ZZZZZ_MRGT_7_UNITS | 22488 | MIRAMRGT | 12.5 | 0.00 | 1 | SD-IV | San Diego | Retired | Market |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SDG&E | ZZZZZ_MRGT_7_UNITS | 22488 | MIRAMRGT | 12.5 | 0.00 | 2 | SD-IV | San Diego | Retired | Market |
| SDG&E | ZZZZZ_NIMTG_6_NIQF | 22576 | NOISLMTR | 69 | 0.00 | 1 | SD-IV | San Diego | Retired | QF/Selfgen |
| SDG&E | ZZZZZ_OTAY_6_LNDFL5 | 22604 | OTAY | 69 | 0.00 | | SD-IV | San Diego | Retired | Market |
| SDG&E | ZZZZZ_OTAY_6_LNDFL6 | 22604 | OTAY | 69 | 0.00 | | SD-IV | San Diego | Retired | Market |
| SDG&E | ZZZZZ_OTAY_6_UNITB1 | 22604 | OTAY | 69 | 0.00 | 1 | SD-IV | San Diego | Retired | Market |
| SDG&E | ZZZZZ_OTAY_7_UNITC1 | 22604 | OTAY | 69 | 0.00 | 3 | SD-IV | San Diego | Aug NQC | QF/Selfgen |
| SDG&E | ZZZZZ_PTLOMA_6_NTCCGN | 22660 | POINTLMA | 69 | 0.00 | 2 | SD-IV | San Diego | Retired | QF/Selfgen |
| SDG&E | ZZZZZ_PTLOMA_6_NTCQF | 22660 | POINTLMA | 69 | 0.00 | 1 | SD-IV | San Diego | Retired | QF/Selfgen |

o

# Attachment B – Effectiveness factors for procurement guidance

**Table - Eagle Rock.**

Effectiveness factors to the Eagle Rock-Cortina 115 kV line:

| Gen Bus | Gen Name | Gen ID | Eff Fctr (%) |
|---|---|---|---|
| 31406 | GEYSR5-6 | 1 | 36 |
| 31406 | GEYSR5-6 | 2 | 36 |
| 31408 | GEYSER78 | 1 | 36 |
| 31408 | GEYSER78 | 2 | 36 |
| 31412 | GEYSER11 | 1 | 37 |
| 31435 | GEO.ENGY | 1 | 35 |
| 31435 | GEO.ENGY | 2 | 35 |
| 31433 | POTTRVLY | 1 | 34 |
| 31433 | POTTRVLY | 3 | 34 |
| 31433 | POTTRVLY | 4 | 34 |
| 38020 | CITY UKH | 1 | 32 |
| 38020 | CITY UKH | 2 | 32 |

**Table - Fulton**

Effectiveness factors to the Lakeville-Petaluma-Cotati 60 kV line:

| Gen Bus | Gen Name | Gen ID | Eff Fctr (%) |
|---|---|---|---|
| 31466 | SONMA LF | 1 | 52 |
| 31422 | GEYSER17 | 1 | 12 |
| 31404 | WEST FOR | 1 | 12 |
| 31404 | WEST FOR | 2 | 12 |
| 31414 | GEYSER12 | 1 | 12 |
| 31418 | GEYSER14 | 1 | 12 |
| 31420 | GEYSER16 | 1 | 12 |
| 31402 | BEAR CAN | 1 | 12 |
| 31402 | BEAR CAN | 2 | 12 |

| Gen Bus | Gen Name | Gen ID | Eff Fctr (%) |
|---|---|---|---|
| 38110 | NCPA2GY1 | 1 | 12 |
| 38112 | NCPA2GY2 | 1 | 12 |
| 32700 | MONTICLO | 1 | 10 |
| 32700 | MONTICLO | 2 | 10 |
| 32700 | MONTICLO | 3 | 10 |
| 31435 | GEO.ENGY | 1 | 6 |
| 31435 | GEO.ENGY | 2 | 6 |
| 31408 | GEYSER78 | 1 | 6 |
| 31408 | GEYSER78 | 2 | 6 |
| 31412 | GEYSER11 | 1 | 6 |
| 31406 | GEYSR5-6 | 1 | 6 |
| 31406 | GEYSR5-6 | 2 | 6 |

**Table - Lakeville**

Effectiveness factors to the Vaca Dixon-Lakeville 230 kV line:

| Gen Bus | Gen Name | Gen ID | Eff Fctr (%) |
|---|---|---|---|
| 31400 | SANTA FE | 2 | 38 |
| 31430 | SMUDGEO1 | 1 | 38 |
| 31400 | SANTA FE | 1 | 38 |
| 31416 | GEYSER13 | 1 | 38 |
| 31424 | GEYSER18 | 1 | 38 |
| 31426 | GEYSER20 | 1 | 38 |
| 38106 | NCPA1GY1 | 1 | 38 |
| 38108 | NCPA1GY2 | 1 | 38 |
| 31421 | BOTTLERK | 1 | 36 |
| 31404 | WEST FOR | 2 | 36 |
| 31402 | BEAR CAN | 1 | 36 |
| 31402 | BEAR CAN | 2 | 36 |
| 31404 | WEST FOR | 1 | 36 |
| 31414 | GEYSER12 | 1 | 36 |
| 31418 | GEYSER14 | 1 | 36 |
| 31420 | GEYSER16 | 1 | 36 |

| Gen Bus | Gen Name | Gen ID | Eff Fctr (%) |
|---|---|---|---|
| 31422 | GEYSER17 | 1 | 36 |
| 38110 | NCPA2GY1 | 1 | 36 |
| 38112 | NCPA2GY2 | 1 | 36 |
| 31446 | SONMA LF | 1 | 36 |
| 32700 | MONTICLO | 1 | 31 |
| 32700 | MONTICLO | 2 | 31 |
| 32700 | MONTICLO | 3 | 31 |
| 31406 | GEYSR5-6 | 1 | 18 |
| 31406 | GEYSR5-6 | 2 | 18 |
| 31405 | RPSP1014 | 1 | 18 |
| 31408 | GEYSER78 | 1 | 18 |
| 31408 | GEYSER78 | 2 | 18 |
| 31412 | GEYSER11 | 1 | 18 |
| 31435 | GEO.ENGY | 1 | 18 |
| 31435 | GEO.ENGY | 2 | 18 |
| 31433 | POTTRVLY | 1 | 15 |
| 31433 | POTTRVLY | 2 | 15 |
| 31433 | POTTRVLY | 3 | 15 |
| 38020 | CITY UKH | 1 | 15 |
| 38020 | CITY UKH | 2 | 15 |

**Table – Rio Oso**

Effectiveness factors to the Rio Oso-Atlantic 230 kV line:

| Gen Bus | Gen Name | Gen ID | Eff Fctr. (%) |
|---|---|---|---|
| 32498 | SPILINCF | 1 | 49 |
| 32500 | ULTR RCK | 1 | 49 |
| 32456 | MIDLFORK | 1 | 33 |
| 32456 | MIDLFORK | 2 | 33 |
| 32458 | RALSTON | 1 | 33 |

| | | | |
|---|---|---|---|
| 32513 | ELDRADO1 | 1 | 32 |
| 32514 | ELDRADO2 | 1 | 32 |
| 32510 | CHILIBAR | 1 | 32 |
| 32486 | HELLHOLE | 1 | 31 |
| 32508 | FRNCH MD | 1 | 30 |
| 32460 | NEWCSTLE | 1 | 26 |
| 32478 | HALSEY F | 1 | 24 |
| 32512 | WISE | 1 | 24 |
| 38114 | Stig CC | 1 | 14 |
| 38123 | Q267CT | 1 | 14 |
| 38124 | Q267ST | 1 | 14 |
| 32462 | CHI.PARK | 1 | 8 |
| 32464 | DTCHFLT1 | 1 | 4 |

**Table – South of Table Mountain**

Effectiveness factors to the Caribou-Palermo 115 kV line:

| Gen Bus | Gen Name | Gen ID | Eff Fctr. (%) |
|---|---|---|---|
| 31814 | FORBSTWN | 1 | 7 |
| 31794 | WOODLEAF | 1 | 7 |
| 31832 | SLY.CR. | 1 | 7 |
| 31862 | DEADWOOD | 1 | 7 |
| 31890 | PO POWER | 1 | 6 |
| 31890 | PO POWER | 2 | 6 |
| 31888 | OROVLLE | 1 | 6 |
| 31834 | KELLYRDG | 1 | 6 |
| 32450 | COLGATE1 | 1 | 4 |

Attachment B - Effectiveness factors for procurement guidance

| Gen Bus | Gen Name | Gen ID | Eff Fctr. (%) |
|---|---|---|---|
| 32466 | NARROWS1 | 1 | 4 |
| 32468 | NARROWS2 | 1 | 4 |
| 32452 | COLGATE2 | 1 | 4 |
| 32470 | CMP.FARW | 1 | 4 |
| 32451 | FREC | 1 | 4 |
| 32490 | GRNLEAF1 | 1 | 4 |
| 32490 | GRNLEAF1 | 2 | 4 |
| 32496 | YCEC | 1 | 4 |
| 32494 | YUBA CTY | 1 | 4 |
| 32492 | GRNLEAF2 | 1 | 4 |
| 32498 | SPILINCF | 1 | 2 |
| 31788 | ROCK CK2 | 1 | 2 |
| 31812 | CRESTA | 1 | 2 |
| 31812 | CRESTA | 2 | 2 |
| 31820 | BCKS CRK | 1 | 2 |
| 31820 | BCKS CRK | 2 | 2 |
| 31786 | ROCK CK1 | 1 | 2 |
| 31790 | POE 1 | 1 | 2 |
| 31792 | POE 2 | 1 | 2 |
| 31784 | BELDEN | 1 | 2 |
| 32500 | ULTR RCK | 1 | 2 |
| 32156 | WOODLAND | 1 | 2 |
| 32510 | CHILIBAR | 1 | 2 |
| 32513 | ELDRADO1 | 1 | 2 |
| 32514 | ELDRADO2 | 1 | 2 |
| 32478 | HALSEY F | 1 | 2 |
| 32460 | NEWCSTLE | 1 | 1 |

Attachment B - Effectiveness factors for procurement guidance

| Gen Bus | Gen Name | Gen ID | Eff Fctr. (%) |
|---|---|---|---|
| 32458 | RALSTON | 1 | 1 |
| 32512 | WISE | 1 | 1 |
| 32456 | MIDLFORK | 1 | 1 |
| 32456 | MIDLFORK | 2 | 1 |
| 32486 | HELLHOLE | 1 | 1 |
| 32508 | FRNCH MD | 1 | 1 |
| 32162 | RIV.DLTA | 1 | 1 |
| 32502 | DTCHFLT2 | 1 | 1 |
| 32462 | CHI.PARK | 1 | 1 |
| 32464 | DTCHFLT1 | 1 | 1 |
| 32454 | DRUM 5 | 1 | 1 |
| 32476 | ROLLINSF | 1 | 1 |
| 32484 | OXBOW F | 1 | 1 |
| 32474 | DEER CRK | 1 | 1 |
| 32504 | DRUM 1-2 | 1 | 1 |
| 32504 | DRUM 1-2 | 2 | 1 |
| 32506 | DRUM 3-4 | 1 | 1 |
| 32506 | DRUM 3-4 | 2 | 1 |
| 32166 | UC DAVIS | 1 | 1 |
| 32472 | SPAULDG | 1 | 1 |
| 32472 | SPAULDG | 2 | 1 |
| 32472 | SPAULDG | 3 | 1 |
| 32480 | BOWMAN | 1 | 1 |
| 32488 | HAYPRES+ | 1 | 1 |
| 32488 | HAYPRES+ | 2 | 1 |
| 38124 | LODI ST1 | 1 | 1 |
| 38123 | LODI CT1 | 1 | 1 |

| Gen Bus | Gen Name | Gen ID | Eff Fctr. (%) |
|---|---|---|---|
| 38114 | STIG CC | 1 | 1 |

**Table – San Jose**

Effectiveness factors to the Newark-NRS 115 kV line:

| Gen Bus | Gen Name | Gen ID | Eff Fctr (%) |
|---|---|---|---|
| 36895 | Gia200 | 1 | 25 |
| 36858 | Gia100 | 1 | 25 |
| 36859 | Laf300 | 2 | 23 |
| 36859 | Laf300 | 1 | 23 |
| 36863 | DVRaGT1 | 1 | 23 |
| 36864 | DVRbGt2 | 1 | 23 |
| 36865 | DVRaST3 | 1 | 23 |
| 35854 | LECEFGT1 | 1 | 19 |
| 35855 | LECEFGT2 | 1 | 19 |
| 35856 | LECEFGT3 | 1 | 19 |
| 35857 | LECEFGT4 | 1 | 19 |
| 35858 | LECEFST1 | 1 | 19 |
| 35860 | OLS-AGNE | 1 | 19 |
| 35863 | CATALYST | 1 | 12 |

**Table – South Bay-Moss Landing**

Effectiveness factors to the Moss Landing-Las Aguillas 230 kV line:

| Gen Bus | Gen Name | Gen ID | Eff Fctr. (%) |
|---|---|---|---|
| 36209 | SLD ENRG | 1 | 20 |
| 36221 | DUKMOSS1 | 1 | 20 |
| 36222 | DUKMOSS2 | 1 | 20 |
| 36223 | DUKMOSS3 | 1 | 20 |
| 36224 | DUKMOSS4 | 1 | 20 |

| | | | |
|---|---|---|---|
| 36225 | DUKMOSS5 | 1 | 20 |
| 36226 | DUKMOSS6 | 1 | 20 |
| 36405 | MOSSLND6 | 1 | 17 |
| 36406 | MOSSLND7 | 1 | 17 |
| 35881 | MEC CTG1 | 1 | 13 |
| 35882 | MEC CTG2 | 1 | 13 |
| 35883 | MEC STG1 | 1 | 13 |
| 35850 | GLRY COG | 1 | 12 |
| 35850 | GLRY COG | 2 | 12 |
| 35851 | GROYPKR1 | 1 | 12 |
| 35852 | GROYPKR2 | 1 | 12 |
| 35853 | GROYPKR3 | 1 | 12 |
| 35623 | SWIFT | BT | 10 |
| 35863 | CATALYST | 1 | 10 |
| 36863 | DVRaGT1 | 1 | 8 |
| 36864 | DVRbGt2 | 1 | 8 |
| 36865 | DVRaST3 | 1 | 8 |
| 36859 | Laf300 | 2 | 8 |
| 36859 | Laf300 | 1 | 8 |
| 36858 | Gia100 | 1 | 7 |
| 36895 | Gia200 | 1 | 7 |
| 35854 | LECEFGT1 | 1 | 7 |
| 35855 | LECEFGT2 | 1 | 7 |
| 35856 | LECEFGT3 | 1 | 7 |
| 35857 | LECEFGT4 | 1 | 7 |

| | | | |
|---|---|---|---|
| 35858 | LECEFST1 | 1 | 7 |
| 35860 | OLS-AGNE | 1 | 7 |

**Table – Ames/Pittsburg/Oakland**

Effectiveness factors to the Ames-Ravenswood #1 115 kV line:

| Gen Bus | Gen Name | Gen ID | Eff Fctr. (%) |
|---|---|---|---|
| 35304 | RUSELCT1 | 1 | 10 |
| 35305 | RUSELCT2 | 2 | 10 |
| 35306 | RUSELST1 | 3 | 10 |
| 33469 | OX_MTN | 1 | 10 |
| 33469 | OX_MTN | 2 | 10 |
| 33469 | OX_MTN | 3 | 10 |
| 33469 | OX_MTN | 4 | 10 |
| 33469 | OX_MTN | 5 | 10 |
| 33469 | OX_MTN | 6 | 10 |
| 33469 | OX_MTN | 7 | 10 |
| 33107 | DEC STG1 | 1 | 3 |
| 33108 | DEC CTG1 | 1 | 3 |
| 33109 | DEC CTG2 | 1 | 3 |
| 33110 | DEC CTG3 | 1 | 3 |
| 33102 | COLUMBIA | 1 | 3 |
| 33111 | LMECCT2 | 1 | 3 |
| 33112 | LMECCT1 | 1 | 3 |
| 33113 | LMECST1 | 1 | 3 |
| 33151 | FOSTER W | 1 | 2 |

| | | | |
|---|---|---|---|
| 33151 | FOSTER W | 2 | 2 |
| 33151 | FOSTER W | 3 | 2 |
| 33136 | CCCSD | 1 | 2 |
| 33141 | SHELL 1 | 1 | 2 |
| 33142 | SHELL 2 | 1 | 2 |
| 33143 | SHELL 3 | 1 | 2 |
| 32900 | CRCKTCOG | 1 | 2 |
| 32910 | UNOCAL | 1 | 2 |
| 32910 | UNOCAL | 2 | 2 |
| 32910 | UNOCAL | 3 | 2 |
| 32920 | UNION CH | 1 | 2 |
| 32921 | ChevGen1 | 1 | 2 |
| 32922 | ChevGen2 | 1 | 2 |
| 32923 | ChevGen3 | 3 | 2 |
| 32741 | HILLSIDE_12 | 1 | 2 |
| 32901 | OAKLND 1 | 1 | 1 |
| 32902 | OAKLND 2 | 2 | 1 |
| 32903 | OAKLND 3 | 3 | 1 |
| 38118 | ALMDACT1 | 1 | 1 |
| 38119 | ALMDACT2 | 1 | 1 |

Effectiveness factors to the Moraga-Claremont #2 115 kV line:

| Gen Bus | Gen Name | Gen ID | Eff Fctr. (%) |
|---|---|---|---|
| 32741 | HILLSIDE_12 | 1 | 15 |
| 32921 | ChevGen1 | 1 | 15 |

| | | | |
|---|---|---|---|
| 32922 | ChevGen2 | 1 | 15 |
| 32923 | ChevGen3 | 3 | 15 |
| 32920 | UNION CH | 1 | 14 |
| 32910 | UNOCAL | 1 | 13 |
| 32910 | UNOCAL | 2 | 13 |
| 32910 | UNOCAL | 3 | 13 |
| 32901 | OAKLND 1 | 1 | 10 |
| 32902 | OAKLND 2 | 2 | 10 |
| 32903 | OAKLND 3 | 3 | 10 |
| 38118 | ALMDACT1 | 1 | 10 |
| 38119 | ALMDACT2 | 1 | 10 |
| 33141 | SHELL 1 | 1 | 9 |
| 33142 | SHELL 2 | 1 | 9 |
| 33143 | SHELL 3 | 1 | 9 |
| 33136 | CCCSD | 1 | 8 |
| 32900 | CRCKTCOG | 1 | 7 |
| 33151 | FOSTER W | 1 | 6 |
| 33151 | FOSTER W | 2 | 6 |
| 33151 | FOSTER W | 3 | 6 |
| 33102 | COLUMBIA | 1 | 3 |
| 33111 | LMECCT2 | 1 | 3 |
| 33112 | LMECCT1 | 1 | 3 |
| 33113 | LMECST1 | 1 | 3 |
| 33107 | DEC STG1 | 1 | 3 |
| 33108 | DEC CTG1 | 1 | 3 |

| | | | |
|---|---|---|---|
| 33109 | DEC CTG2 | 1 | 3 |
| 33110 | DEC CTG3 | 1 | 3 |

**Table – Herndon**

Effectiveness factors to the Herndon-Manchester 115 kV line:

| Gen Bus | Gen Name | Gen ID | Eff Fctr. (%) |
|---|---|---|---|
| 34624 | BALCH 1 | 1 | 22 |
| 34616 | KINGSRIV | 1 | 21 |
| 34648 | DINUBA E | 1 | 20 |
| 34671 | KRCDPCT1 | 1 | 19 |
| 34672 | KRCDPCT2 | 1 | 19 |
| 34308 | KERCKHOF | 1 | 17 |
| 34343 | KERCK1-2 | 2 | 17 |
| 34344 | KERCK1-1 | 1 | 17 |
| 34345 | KERCK1-3 | 3 | 17 |
| 34603 | JGBSWLT | ST | 15 |
| 34677 | Q558 | 1 | 15 |
| 34690 | CORCORAN_3 | FW | 15 |
| 34692 | CORCORAN_4 | FW | 15 |
| 34696 | CORCORANPV_S | 1 | 15 |
| 34699 | Q529 | 1 | 15 |
| 34610 | HAAS | 1 | 13 |
| 34610 | HAAS | 2 | 13 |
| 34612 | BLCH 2-2 | 1 | 13 |
| 34614 | BLCH 2-3 | 1 | 13 |

| | | | |
|---|---|---|---|
| 34431 | GWF_HEP1 | 1 | 8 |
| 34433 | GWF_HEP2 | 1 | 8 |
| 34617 | Q581 | 1 | 5 |
| 34649 | Q965 | 1 | 5 |
| 34680 | KANSAS | 1 | 5 |
| 34467 | GIFFEN_DIST | 1 | 4 |
| 34563 | STROUD_DIST | 2 | 4 |
| 34563 | STROUD_DIST | 1 | 4 |
| 34608 | AGRICO | 2 | 4 |
| 34608 | AGRICO | 3 | 4 |
| 34608 | AGRICO | 4 | 4 |
| 34644 | Q679 | 1 | 4 |
| 36550 | Q632BC1 | 1 | 4 |

**Table – LA Basin**

Effectiveness factors to the Mesa – Laguna Bell #1 230 kV line:

| Gen Bus | Gen Name | Gen ID | Eff Fctr. (%) |
|---|---|---|---|
| 29951 | REFUSE | D1 | 35 |
| 24239 | MALBRG1G | C1 | 34 |
| 24240 | MALBRG1G | C2 | 34 |
| 24241 | MALBRG1G | S3 | 34 |
| 29903 | ELSEG6ST | 6 | 27 |
| 29904 | ELSEG5GT | 5 | 27 |
| 29902 | ELSEG7ST | 7 | 27 |
| 29901 | ELSEG8GT | 8 | 27 |

| | | | |
|---|---|---|---|
| 24337 | VENICE | 1 | 26 |
| 24094 | MOBGEN1 | 1 | 26 |
| 24329 | MOBGEN2 | 1 | 26 |
| 24332 | PALOGEN | D1 | 26 |
| 24011 | ARCO 1G | 1 | 23 |
| 24012 | ARCO 2G | 2 | 23 |
| 24013 | ARCO 3G | 3 | 23 |
| 24014 | ARCO 4G | 4 | 23 |
| 24163 | ARCO 5G | 5 | 23 |
| 24164 | ARCO 6G | 6 | 23 |
| 24062 | HARBOR G | 1 | 23 |
| 24062 | HARBOR G | HP | 23 |
| 25510 | HARBORG4 | LP | 23 |
| 24327 | THUMSGEN | 1 | 23 |
| 24020 | CARBGEN1 | 1 | 23 |
| 24328 | CARBGEN2 | 1 | 23 |
| 24139 | SERRFGEN | D1 | 23 |
| 24070 | ICEGEN | 1 | 22 |
| 24001 | ALAMT1 G | l | 18 |
| 24002 | ALAMT2 G | 2 | 18 |
| 24003 | ALAMT3 G | 3 | 18 |
| 24004 | ALAMT4 G | 4 | 18 |
| 24005 | ALAMT5 G | 5 | 18 |
| 24161 | ALAMT6 G | 6 | 18 |
| 90000 | ALMT-GT1 | X1 | 18 |

| | | | |
|---|---|---|---|
| 90001 | ALMT-GT2 | X2 | 18 |
| 90002 | ALMT-ST1 | X3 | 18 |
| 29308 | CTRPKGEN | 1 | 18 |
| 29953 | SIGGEN | D1 | 18 |
| 29309 | BARPKGEN | 1 | 13 |
| 29201 | WALCRKG1 | 1 | 12 |
| 29202 | WALCRKG2 | 1 | 12 |
| 29203 | WALCRKG3 | 1 | 12 |
| 29204 | WALCRKG4 | 1 | 12 |
| 29205 | WALCRKG5 | 1 | 12 |
| 29011 | BREAPWR2 | C1 | 12 |
| 29011 | BREAPWR2 | C2 | 12 |
| 29011 | BREAPWR2 | C3 | 12 |
| 29011 | BREAPWR2 | C4 | 12 |
| 29011 | BREAPWR2 | S1 | 12 |
| 24325 | ORCOGEN | l | 12 |
| 24341 | COYGEN | l | 11 |
| 25192 | WDT1406_G | l | 11 |
| 25208 | DowlingCTG | 1 | 10 |
| 25211 | CanyonGT 1 | 1 | 10 |
| 25212 | CanyonGT 2 | 2 | 10 |
| 25213 | CanyonGT 3 | 3 | 10 |
| 25214 | CanyonGT 4 | 4 | 10 |
| 24216 | VILLA PK | DG | 9 |

**Table – Rector**

Effectiveness factors to the Rector-Vestal 230 kV line:

| Gen Bus | Gen Name | Gen ID | MW Eff Fctr (%) |
|---|---|---|---|
| 24370 | KAWGEN | 1 | 51 |
| 24306 | B CRK1-1 | 1 | 45 |
| 24306 | B CRK1-1 | 2 | 45 |
| 24307 | B CRK1-2 | 3 | 45 |
| 24307 | B CRK1-2 | 4 | 45 |
| 24319 | EASTWOOD | 1 | 45 |
| 24323 | PORTAL | 1 | 45 |
| 24308 | B CRK2-1 | 1 | 45 |
| 24308 | B CRK2-1 | 2 | 45 |
| 24309 | B CRK2-2 | 3 | 45 |
| 24309 | B CRK2-2 | 4 | 45 |
| 24310 | B CRK2-3 | 5 | 45 |
| 24310 | B CRK2-3 | 6 | 45 |
| 24315 | B CRK 8 | 81 | 45 |
| 24315 | B CRK 8 | 82 | 45 |
| 24311 | B CRK3-1 | 1 | 45 |
| 24311 | B CRK3-1 | 2 | 45 |
| 24312 | B CRK3-2 | 3 | 45 |
| 24312 | B CRK3-2 | 4 | 45 |
| 24313 | B CRK3-3 | 5 | 45 |
| 24317 | MAMOTH1G | 1 | 45 |
| 24318 | MAMOTH2G | 2 | 45 |
| 24314 | B CRK 4 | 41 | 43 |
| 24314 | B CRK 4 | 42 | 43 |

**Table – San Diego**

Effectiveness factors to the Imperial Valley – El Centro 230 kV line (i.e., the "S" line):

| Gen Bus | Gen Name | Gen ID | Eff Fctr. (%) |
|---|---|---|---|
| 22982 | TDM CTG2 | 1 | 25 |
| 22983 | TDM CTG3 | 1 | 25 |
| 22981 | TDM STG | 1 | 25 |
| 22997 | INTBCT | 1 | 25 |
| 22996 | INTBST | 1 | 25 |
| 23440 | DW GEN2 G1 | 1 | 25 |
| 23298 | DW GEN1 G1 | G1 | 25 |
| 23156 | DU GEN1 G2 | G2 | 25 |
| 23299 | DW GEN1 G2 | G2 | 25 |
| 23155 | DU GEN1 G1 | G1 | 25 |
| 23441 | DW GEN2 G2 | 1 | 25 |
| 23442 | DW GEN2 G3A | 1 | 25 |
| 23443 | DW GEN2 G3B | 1 | 25 |
| 23314 | OCO GEN G1 | G1 | 23 |
| 23318 | OCO GEN G2 | G2 | 23 |
| 23100 | ECO GEN1 G | G1 | 22 |
| 23352 | ECO GEN2 G | 1 | 21 |
| 22605 | OTAYMGT1 | 1 | 18 |
| 22606 | OTAYMGT2 | 1 | 18 |
| 22607 | OTAYMST1 | 1 | 18 |
| 23162 | PIO PICO CT1 | 1 | 18 |
| 23163 | PIO PICO CT2 | 1 | 18 |

| | | | |
|---|---|---|---|
| 23164 | PIO PICO CT3 | 1 | 18 |
| 22915 | KUMEYAAY | 1 | 17 |
| 23320 | EC GEN2 | 1 | 17 |
| 22150 | EC GEN1 | 1 | 17 |
| 22617 | OY GEN | 1 | 17 |
| 22604 | OTAY | 1 | 17 |
| 22604 | OTAY | 3 | 17 |
| 22172 | DIVISION | 1 | 17 |
| 22576 | NOISLMTR | 1 | 17 |
| 22704 | SAMPSON | 1 | 17 |
| 22092 | CABRILLO | 1 | 17 |
| 22074 | LRKSPBD1 | 1 | 17 |
| 22075 | LRKSPBD2 | 1 | 17 |
| 22660 | POINTLMA | 1 | 17 |
| 22660 | POINTLMA | 2 | 17 |
| 22149 | CALPK_BD | 1 | 17 |
| 22448 | MESAHGTS | 1 | 16 |
| 22120 | CARLTNHS | 1 | 16 |
| 22120 | CARLTNHS | 2 | 16 |
| 22496 | MISSION | 1 | 16 |
| 22486 | MEF MR1 | 1 | 16 |
| 22124 | CHCARITA | 1 | 16 |
| 22487 | MEF MR2 | 1 | 16 |
| 22625 | LkHodG1 | 1 | 16 |
| 22626 | LkHodG2 | 2 | 16 |

| | | | |
|---|---|---|---|
| 22332 | GOALLINE | 1 | 15 |
| 22262 | PEN_CT1 | 1 | 15 |
| 22153 | CALPK_ES | 1 | 15 |
| 22786 | EA GEN1 U6 | 1 | 15 |
| 22787 | EA GEN1 U7 | 1 | 15 |
| 22783 | EA GEN1 U8 | 1 | 15 |
| 22784 | EA GEN1 U9 | 1 | 15 |
| 22789 | EA GEN1 U10 | 1 | 15 |
| 22257 | ES GEN | 1 | 15 |
| 22263 | PEN_CT2 | 1 | 15 |
| 22265 | PEN_ST | 1 | 15 |
| 22724 | SANMRCOS | 1 | 15 |
| 22628 | PA GEN1 | 1 | 14 |
| 22629 | PA GEN2 | 1 | 14 |
| 22082 | BR GEN1 | 1 | 14 |
| 22112 | CAPSTRNO | 1 | 12 |