July 22, 2011

**VIA ELECTRONIC MAIL**

Mr. R. Thomas Beach
Crossborder Energy
2560 Ninth Street
Suite 213A
Berkeley, CA 94710

**Re: ISO Response to the California Wind Energy Association Data Request No. 1**

Dear Mr. Beach:

Enclosed please find the ISO response to the California Wind Energy Association Data Request No. 1 propounded in the Long Term Procurement Proceeding, CPUC Docket R.10-05-006.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Judith B. Sanders
Senior Counsel
California Independent System Operator

cc: Service List R.10-05-006

**BEFORE**
**THE PUBLIC UTILITIES COMMISSION**
**OF THE STATE OF CALIFORNIA**

| | | |
|---|---|---|
| **Order Instituting Rulemaking to Integrate** | **)** | |
| **And Refine Procurement Policies and** | **)** | **R.10-05-006** |
| **Consider Long-Term Procurement Plans** | **)** | |

**RESPONSE OF**
**THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**
**TO THE FIRST SET OF DATA REQUESTS OF**
**THE CALIFORNIA WIND ENERGY ASSOCIATION**

Below are responses by the California Independent System Operator Corporation (ISO) to the First Set of Data Requests of the California Wind Energy Association (CALWEA).

**Request No. 1:**

The following questions concern the planning reserve margin (PRM) results shown in Table 7, Figure 11, and Slide 7.

*a. Did the CAISO use the current counting rule for determining the resource adequacy (RA) qualifying capacity (QC) of wind & solar resources, and their contribution to the PRM?*

**ISO RESPONSE TO No. 1a:**

The NQC values were provided in the RPS Calculator by technology and CREZ. They can be found on the "a – ProForma" tab of the RPS Calculator, found at: http://www.cpuc.ca.gov/PUC/energy/Procurement/LTPP/LTPP2010/2010+LTPP+Tools+and+Spreadsheets.htm .

*b. Did this calculation include the CPUC's adopted adjustment for the aggregate capacity of intermittent resources?*

**ISO RESPONSE TO No. 1b:**

Please refer to the response to Data Request No. 1a. .

*c. Please provide the calculations and data used to calculate the RA QCs of the 2020 wind and solar resources used in the CAISO modeling, including the adjustment for the aggregate capacity of these intermittent resources, if that adjustment was used.*

*Also include the NREL site numbers and the 10-minute data from 2005 for each site, for the 43 NREL sites used to model new wind projects (see **Slide 60**).*

**ISO RESPONSE TO No. 1c:**

Please refer to the response to Data Request No. 1a. Exhibit 2 provides the NREL site number for the new wind projects.

**Request No. 2:**

What does the CAISO mean when it says that the PRM "is significantly reduced" in the All-Gas case? (**Page 44**). Table 7 shows that the PRM in the All-Gas case (39%) is 7% to 12% less than the PRMs in the 33% RPS scenarios (46% to 51%). Is that the significant reduction to which the CAISO refers?

**ISO RESPONSE TO No. 2:**

Yes, this reduction was significant in that the difference in PRM correlated to needs in the all-gas scenario versus no needs in the priority scenarios.

**Request No. 3:**

What is the difference in the amount of resources needed for integration (A/S, load following, and regulation) in the All-Gas and High Load-Trajectory cases versus the CPUC's four 33% RPS priority scenarios? In other words, all of these cases show resources substantially in excess of the PRM (see **Table 7, Figure 11, and Slide 7**). How much of the "excess" resources above the PRM are needed for integration in each of these cases? If the CAISO cannot determine the answer to this question based on its results to date, please confirm that.

**ISO RESPONSE TO No. 3:**

The ISO has not performed an analysis to identify how many resources above a 15-17% planning reserve margin are needed for integration

**Request No. 4:**

Pages 43-44 and Slide 11 show that the High Load – Trajectory case has an additional A/S and load following up requirement of 4,600 MW. The All-Gas case has an additional load following up requirement of 1,400 MW.

*a. In the High Load – Trajectory case, can the CAISO determine how much of the increased integration needs in this case are the result of the higher loads, and how*

*much are the result of the additional renewables needed to reach a 33% RPS at the higher loads?*

**RESPONSE TO REQUEST No. 4a:**

The ISO has not performed an analysis to determine how much of the 4600MW need is the result of higher load and how much is the result of integration of renewable resources.

*b. Why does the All-Gas scenario, which appears to be a 20% RPS scenario as no new renewable resources are added, require an additional 1,400 MW of capacity for integration, given that the CAISO has found no need for integration today at a 20% RPS?*

**RESPONSE TO REQUEST No. 4b:**

The All-Gas scenario described in the ISO testimony differs from the 20% RPS study in that OTC resources were assumed to be retired whereas the 20% study was a study of 2012 that still had OTC resources. In addition, load in the All Gas scenario reflects planning load levels for 2020 and not 2012.

*c. Please provide data on the number of hours of A/S and load following up violations that were experienced in the All-Gas and High Load –Trajectory cases.*

**RESPONSE TO REQUEST No. 4c:**

Need runs identified that the All-Gas scenario required 1,400 MW of additional capacity to meet upward ancillary service and load following-up requirements. The High Load – Trajectory scenario required 4,600 MW of additional capacity.

The need run process consists of two steps. First, a linear programming (LP) simulation (i.e., the same setup as the need run but without unit commitment decision) for the full year of 2020 is conducted to identify the months in which the highest shortages in ancillary service and load following may occur. The LP run, however, cannot accurately determine the magnitude of the shortage. Second, a need run (i.e., with unit commitment decision and monthly maximum regulation and load following requirements for each hour) is conducted only for the months identified in the LP run. The purpose of taking this approach is to avoid unnecessarily long simulation times.

In the need run, generic resources will be committed whenever necessary to cover the shortage in upward ancillary service and load following. The relevant results of the need run are the generation and upward ancillary service and load following

provided by the generic resources. The need for generic capacity is calculated based on these results.

The upward ancillary service and load following provided by the generic resources are not necessarily the same in magnitude as the violation of the requirements without the generic resources. Each generic resource has a 50 MW minimum capacity. When it is committed, its generation (from 50 MW up to 100 MW) will displace generation by other existing resources and may change upward ancillary service and load following provision by these existing resources. No need run without generic resource was done so the actual magnitude of upward ancillary service and load following shortage is unknown.

The LP run identified July as the month with the highest volume of upward ancillary service and load following provided by generic resources for the All Gas and High Load-Trajectory cases. The need run was done for July only. The capacity needed to meet the requirements of upward ancillary service and load following was then calculated based on the results of the need run. The data and calculation of capacity need for the All Gas case is set forth in the attached Excel file "CalWEA Data Request 1_Data Sheets.xlsx" under "Contribution by Generic Units", "All-Gas Capacity Need", and "Hi-Load Capacity Need" sheets.

*d. Please provide data on the distribution of the magnitude of the A/S and load following up violations that were experienced in the All-Gas and High Load – Trajectory cases.*

**RESPONSE TO REQUEST No. 4d:**

Please refer to the response to Data Request No. 4c.

*e. Please provide data that will allow CalWEA to understand the distribution across the months of the year and the hours of the day of the A/S and load following up violations that were experienced in the All-Gas and High Load – Trajectory cases.*

**RESPONSE TO REQUEST No. 4e:**

Please refer to the response to Data Request No. 4c.

**Request No. 5:**

The following questions concern the All-Gas Scenario:

*a. CalWEA would like to understand the exact assumptions for renewable in the All-Gas scenario. Please provide a table similar to Slide 5, showing the renewable portfolios for 2020 associated with the All-Gas scenario.*

**RESPONSE TO No. 5a:**

Slide 5 shows the incremental renewable capacity added to the five cases. In the All-Gas scenario no incremental renewable capacity is added. That is why the All-Gas scenario is not listed on Slide 5.

*b. Please list the types of generic gas-fired capacity additions in the All-Gas Scenario (CT or CCGT), the capacities of these additions, the years in which these resources are added, and the CAISO zone or local resource area in which they are sited.*

**RESPONSE TO No. 5b:**

The generic resources added in All-Gas case are all LMS100 CT, which has a maximum capacity of 100 MW. The simulation is for year 2020, so the generic resources are added in 2020. Two units are added in the SGD&E region, six units in the SCE, three units in PG&E-Valley, and three units in PG&E-Bay.

*c. What is the percent of renewables in 2020 in the All-Gas scenario?*

**RESPONSE TO No. 5c:**

| | WECC (incl. CA) | CA (generated inside CA) |
|---|---|---|
| Trajectory | 17% | 26% |
| All-Gas | 11% | 12% |

Additional detail below:

Trajectory Case

| Region Category | WECC | |
|---|---|---|
| **Generation (GWh)** | | |
| **Unit Type** | **Total** | |
| CCGT | 188,958 | 19% |
| CHP | 35,623 | 4% |
| Coal | 226,509 | 22% |

| | | |
|---|---|---|
| DR | 27 | 0% |
| GT | 19,136 | 2% |
| Hydro | 254,781 | 25% |
| Nuclear | 74,611 | 7% |
| Oil | 2 | 0% |
| Pumped Storage | 7,642 | 1% |
| Renewable | 167,001 | 17% |
| ST | 34,113 | 3% |
| **Grand Total** | **1,008,401** | 100% |
| | | |
| Region Category | CA | |
| **Generation (GWh)** | | |
| **Unit Type** | **Total** | |
| CCGT | 80,511 | 31% |
| CHP | 35,623 | 13% |
| DR | 27 | 0% |
| GT | 4,943 | 2% |
| Hydro | 34,477 | 13% |
| Nuclear | 34,786 | 13% |
| Oil | 2 | 0% |
| Pumped Storage | 3,513 | 1% |
| Renewable | 69,536 | 26% |

| | | |
|---|---|---|
| ST | 504 | 0% |
| **Grand Total** | **263,921** | 100% |

All-Gas Case

| Region Category | WECC | |
|---|---|---|
| **Generation (GWh)** | | |
| **Unit Type** | **Total** | |
| CCGT | 217,031 | 22% |
| CHP | 35,675 | 4% |
| Coal | 240,528 | 24% |
| DR | 116 | 0% |
| GT | 22,476 | 2% |
| Hydro | 254,733 | 25% |
| Nuclear | 74,613 | 7% |
| Oil | 4 | 0% |
| Pumped Storage | 7,507 | 1% |
| Renewable | 112,303 | 11% |
| ST | 42,412 | 4% |
| **Grand Total** | **1,007,399** | 100% |
| | | |
| Region Category | CA | |

| **Generation (GWh)** | | |
|---|---|---|
| **Unit Type** | **Total** | |
| CCGT | 91,102 | 39% |
| CHP | 35,675 | 15% |
| DR | 100 | 0% |
| GT | 5,313 | 2% |
| Hydro | 34,477 | 15% |
| Nuclear | 34,786 | 15% |
| Oil | 4 | 0% |
| Pumped Storage | 3,378 | 1% |
| Renewable | 29,291 | 12% |
| ST | 515 | 0% |
| **Grand Total** | **234,642** | 100% |

*d. Why is the 2020 PRM of 39% in All-Gas scenario much higher than the minimum required planning reserve margin of 15% to 17%? (See page 45). Is the additional 22% reserve margin in the All-Gas case, above the PRM, entirely attributable to the integration needs in this scenario?*

**RESPONSE TO No. 5d:**

No, the reserve margins in the All-Gas scenario reflect reserve margins prior to adding any resources to resolve load following shortfalls. The RA QC capacity is accounting for 17,000MW of import capacity which represents the non-simultaneous import capability of the interties. The expected simultaneous import capability is between 12,000-14,000MW. This accounts for a 3,000-5,000MW difference.

*e. Does the 2020 PRM of 39% in the All-Gas case include the 1,400 MW of additional capacity needed for integration (see Page 43 and Slide 11)?*

**RESPONSE TO No. 5e:**

No.

**Request No. 6:**

Slide 20: in the lowest of these cases, the in-state fuel burn is shown at 1.32 billion MMBtu per year. This is 3.5 Bcf per day of natural gas, assuming a heat content of 1.03 MMBtu/Mcf. The California gas utilities (PG&E, SoCalGas, SDG&E) have forecasted a statewide 2020 natural gas demand for electric generation of 2.6 Bcf per day in the most recent California Gas Report (July 2010 – http://www.pge.com/pipeline/library/regulatory/cgr_index.shtml). 2010 natural gas use for electric generation in California was 2.5 Bcf/d according to the 2010 CGR. CalWEA does not understand this discrepancy, as the 2010 CGR also assumes a 33% RPS by 2020.

*a. Does the fuel burn shown in Slide 20 consist entirely of natural gas burned at power plants within California, or does it also include coal burned at power plants outside of California in coal plants whose capacity is dedicated to serving California?*

**RESPONSE TO No. 6a:**

It includes all fuels burned at power plants within California. See response to 6b below.

*b. If this data includes fuels other than natural gas consumed within California, please disaggregate all of the fuel burns shown in Slide 20 by fuel type (natural gas / coal / oil) and by whether the plant at which the fuel is burned is physically located inside or outside of California.*

**RESPONSE TO No. 6b:**

Below is the disaggregated fuel burned at power plants within California in the Trajectory scenario.

| Fuel Usage (million MMBtu) | Gas | Oil | Other | Uranium | Sum |
|---|---|---|---|---|---|
| Trajectory Case | 931 | 2 | 26 | 383 | 1,341 |

*c. If the fuel burns shown in Slide 20 include only natural gas burned at plants inside of California, please explain why the CAISO is projecting a 35% increase in natural gas use for electric generation compared to 2010. Explain how California can meet its GHG goals with such an increase in natural gas burns.*

**RESPONSE TO No. 6c:**

As shown above, natural gas burned inside California in the Trajectory case is 0.931 billion MMBtu. It is equivalent to 2.5 Bcf per day based on the heat content assumption in Question 6. The number is in line with the 2010 California Gas Report 2020 natural gas demand number.

**Request No. 7:**

Pages 36-39 / Slides 50-52 – CalWEA has the following questions on the revised natural gas price forecast. All prices and rates referenced below are expressed in $ per MMBtu; negative values are in parentheses.

*a. What is the source for gas basis adjustments in Slide 52?*

**RESPONSE TO No. 7a:**

The TEPPC PC0 dataset, a 2020 reference case, is the source of the gas basis adjustments on Slide 52. Information on the TEPPC PC0 dataset can be found at: http://www.wecc.biz/committees/BOD/TEPPC/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fcommittees%2fBOD%2fTEPPC%2fShared%20Documents%2fTEPPC%20Production%20Cost%20Model%20Data%2fPublic%20Data%20Format%20Cases%2f2020%20Datasets%2fTEPPC%202020%20Base%20Case%20PC0%20Dataset&FolderCTID=&View={3FECCB9E-172C-41C1-9880-A1CF02C537B7}

*b. What is the GDP deflator for the gas price forecast, as the gas forecast is in 2010 dollars, and forward prices are in nominal dollars?*

**RESPONSE TO No. 7b:**

The GDP deflator is taken from the EIA's Annual Energy Outlook and is shown in the table below from 2010 to 2020:

| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| GDP Deflator (2010 = 1.00) | 1.01 | 1.02 | 1.04 | 1.06 | 1.08 | 1.10 | 1.13 | 1.15 | 1.17 | 1.20 |

*c. What are the sources & details for the gas price forecast by California location, i.e. what are the assumed intrastate transport rates?*

**RESPONSE TO No. 7c:**

The California gas price forecast is derived from the Market Price Referent (MPR) methodology (as specified in the LTPP Scoping Memo Planning Standards). The interstate transportation charges were updated from those used in the 2009 MPR Model to the latest available gas delivery tariffs for the utilities' service areas. The delivery charges for generators in the PG&E service territory is based on PG&E Schedule G-EG: http://www.pge.com/tariffs/tm2/pdf/GAS_SCHEDS_G-EG.pdf. The delivery charge for generators in southern California is based on Socal Gas Schedule GT-F5. In addition to this delivery charges, both northern and southern California generators pay an additional municipal surcharge (0.9% and 1.5% of the commodity price, respectively), and generators in southern California also must pay the Receipt Point Access Tariff.

*d. What are the forward market prices in each month of 2020 (in 2010 $/MMBtu), for the Henry Hub?*

**RESPONSE TO No. 7d:**

The Henry Hub gas price by month for 2020 in 2010 dollars is shown in the following table:

| | Jan-20 | Feb-20 | Mar-20 | Apr-20 | May-20 | Jun-20 | Jul-20 | Aug-20 | Sep-20 | Oct-20 | Nov-20 | Dec-20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Henry Hub price (2010$/MMBtu) | 5.934 | 5.901 | 5.735 | 5.333 | 5.307 | 5.363 | 5.432 | 5.473 | 5.489 | 5.561 | 5.778 | 6.028 |

*e. The forward market data on basis trades from the period 7/26/10 to 8/14/10 do not extend out to 2020. What forward data were used for 2020 basis trades for:*

*i. PG&E Citygate,*
*ii. SoCal border,*
*iii. Sumas,*
*iv. Permian,*
*v. San Juan, and*
*vi. Rockies.*

**RESPONSE TO No. 7e:**

For all years beyond 2013, it was assumed that the basis differentials would remain constant in real terms.

*f. How were Malin prices modeled? The (Malin - SoCal border) basis appears to be $0.25 per MMBtu in Nov-Mar, and ($0.03) in Apr-Oct? Is this a modeling assumption or based on market data? Why are Malin prices higher than PG&E Citygate prices in Nov-Mar, as gas is unlikely to flow from the PG&E Citygate to Malin in these months? Is Topock assumed to be on the margin during these months?*

**RESPONSE TO No. 7f:**

The Malin prices calculated as the average of the PG&E Citygate and Sumas prices. However, these prices were not associated with any generators and were not used in the LTPP analysis.

*g. Does the ($0.20) per MMBtu Henry Hub vs. SoCal border basis differential include any monthly variation? The average 7/26/20 to 8/24/10 SoCal border basis differential for 2014 was about ($0.22) per MMBtu; did E3 use a similar market value, adjusted for inflation?*

**RESPONSE TO No. 7g:**

Basis differentials were assumed to vary between two seasons: summer (April – October) and Winter (November – March). Within these periods, the differentials were assumed constant. For years in which NYMEX forward data was available (2011-2013), the differentials in each period were calculated as an average of the NYMEX differentials across the months in the season. For years beyond 2013, the differentials for each season were assumed to remain constant in real terms.

The ($0.20) per MMBtu differential from Henry Hub to Socal Border is an annual average, and this differential varies on a seasonal basis as described above. However, this seasonal difference is very small in the forward data; the summer and winter differentials are ($0.201) and ($0.197) per MMBtu, respectively.

*h. Is any impact of the new Ruby pipeline project assumed? Ruby is expected to enter service in 2011 from the Rocky Mountains to Malin. Or is that effect captured through forward market hub prices for the Rockies and the PG&E Citygate?*

**RESPONSE TO No. 7h:**

No explicit assumptions are made about the impact of the Ruby pipeline on regional natural gas prices. However, any impacts of this project on the expectations of regional gas prices are implicitly captured in the use of NYMEX public data.

*i. Are intrastate transportation (delivery) charges escalated over time? If they are, what is the escalation rate?*

**RESPONSE TO No. 7i:**

Delivery charges are assumed to escalate at the same rate as inflation over time.

*j. Why is SPP modeled as PG&E Citygate – $0.167 per MMBtu? Shouldn't SPP use Malin plus Tuscarora transport, or Rockies + Northwest & Paiute pipeline transport?*

**RESPONSE TO No. 7j:**

The use of the PG&E Citygate hub and the associated delivery charge of $0.167 per MMBtu applied to generators in the SPP basin is based on the natural gas pricing methodology used by TEPPC; the linking of natural gas hubs to regional generators and the associated delivery charges used by TEPPC are shown on pp.176-177 here: http://www.wecc.biz/committees/BOD/TEPPC/Shared%20Documents/TEPPC%20Annual%20Reports/2009/2009%20TEPPC%20Study%20Results%20Report.pdf. The logic for regional gas prices used by TEPPC was the main source used to develop regional gas prices outside of California for the LTPP analysis.

*k. Is TEP modeled as PG&E Citygate plus $0.303 per MMBtu, as shown in Table 5? Or should that table have indicated SoCal border plus $0.303 per MMBtu similar to how SRP is modeled?*

**RESPONSE TO No. 7k:**

This is an error in Table 5, which should have indicated that generators in TEP were modeled using the same gas prices as SRP and APS (Socal Border + $0.303 per MMBtu). The PLEXOS runs were conducted using the same gas prices for TEP, SRP, and APS.

*l. Why is the SDG&E transport rate ($0.438) higher than the SCE delivery charge ($0.359), when there is a common "Sempra-wide" electric generation transportation rate in southern California?*

**RESPONSE TO No. 7l:**

This is an error in Table 5, which should show a total delivery charge of $0.438 per MMBtu for all southern California bubbles (SCE, SDGE, IID, LDWP). The PLEXOS runs were conducted using this uniform delivery charge across all of southern California.

*m. Table 5 indicates several possible prices for PG&E "Valley" generation: SoCal border + $0.359, or PG&E City-gate plus $0.23 for local transmission (LT) or +$0.06 for backbone transportation (BB). Which of these prices is used and for modeling which generating plants?*

**RESPONSE TO No. 7m:**

Each generator modeled in PLEXOS is individually linked to a specific natural gas price point. Some generators in PG&E's service area were modeled as taking gas from the backbone system, while others were modeled as taking gas from the local system. The mapping of generators to the price points is part of the Plexos data input model available on ISO FTP site.

*n. SDG&E is also modeled as Baja + 0.00? Are LNG volumes assumed for this gas? What is the assumed LNG price delivered to Baja?*

**RESPONSE TO No. 7n:**

A subset of generators in the SDGE bubble were modeled as taking gas from Baja.

*o. The Arizona prices listed in Table 5 appear to equal the SoCal border price plus a sales tax of 5.6%? Is an Arizona delivery charge (of $0.303 per MMBtu) also included for plants in Arizona?*

**RESPONSE TO No. 7o:**

The $0.303 per MMBTu adder listed in Table 5 represents the average cost of the 5.6% gas tax for Arizona generators. It should not be added in addition to the gas tax.

*p. Idaho-Montana is modeled as Rockies plus $0.512 per MMBtu? Is a municipal surcharge included as well?*

**RESPONSE TO No. 7p:**

The gas prices for Idaho-Montana were calculated based on TEPPC's regional natural gas price mapping (as with other WECC regions). Pages 176-177 of the following document indicate the linkage between the Rockies hub and the Idaho region and

also provide the delivery charge used in the LTPP analysis (adjusted for inflation): http://www.wecc.biz/committees/BOD/TEPPC/Shared%20Documents/TEPPC%20Annual%20Reports/2009/2009%20TEPPC%20Study%20Results%20Report.pdf

**Request No. 8:**

At pages 44-45, the CAISO states as follows:

> … we cannot conclude from these results whether sufficient flexible capability would exist to meet the simultaneous energy, operating reserve, regulation and load following requirements if the available generation capacity was not in excess of the 15-17% PRM. For example, if the utilities contract for less import qualifying capacity, just meeting their PRM of 117%, the ISO may need to dispatch the capacity that is currently unloaded and providing flexibility services in these cases, and therefore may be short the needed flexible capacity. The four priority scenarios were not analyzed assuming the PRM would just be met but not exceeded.

CalWEA is struggling to understand this point, because it does not appear possible for the utilities to satisfy a 33% RPS and hit the minimum PRM of 17%. Please explain how the utilities could satisfy a 33% RPS yet only have a PRM of 17%. Would this be a case in which the system would have substantial gas-fired capacity that is not under contract to the utilities?

**RESPONSE TO No. 8:**

This may be possible if non-renewable capacity is not contracted for. This may include gas-fired resources but also may include imports. One thing to point out is that the RA QC capacity is accounting for approximately 17,000MW of import capacity which represents the non-simultaneous import capability of the interties. The expected simultaneous import capability is between 12,000-14,000MW. This accounts for a 3,000-5,000MW difference.

**Request No. 9:**

The IOUs have run a scenario that considers Day-Ahead (DA) forecast error. The CAISO recently released a proposal to move to a scheduling regime that includes a much greater emphasis on Day-Of (DO) scheduling and markets (see http://www.caiso.com/2bb3/2bb3e594394f0.pdf ). Does the CAISO agree that a move from DA to DO scheduling would reduce the significance of DA forecast error?

**RESPONSE TO No. 9:**

While the day-of market would provide an opportunity scheduling adjustment, the day-of market was not intending to replace the day-ahead market. Therefore, the ISO expects the need for a day-ahead market to still exist. However, there will be mechanisms that adjust and commit resources prior to real-time to account for supply and load changes after the day-ahead forecast. In addition, the ISO proposal is part of the renewable integration market product review stakeholder initiative that is in the beginning stages and is therefore a preliminary proposal subject to change.

**Request No. 10:**

On Page 46, describing the WECC production cost results, should the words "California" in lines 15-16 be replaced with "WECC"?

**RESPONSE TO No. 10:**

Yes, page 46 lines 15-18 should read as follows:

> The production costs to meet to ~~California~~ WECC load in the All Gas scenario were $20.79 billion. The production costs to meet ~~California~~ WECC load in the Trajectory High Load scenario were $19.63 billion. This information can be found on Slide 14 of Exhibit 1.

# ATTACHMENT A

| Case | Generic Unit | Year | Month | Day | Hour | Property | Value |
|---|---|---|---|---|---|---|---|
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 13 | Generation | 150 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 13 | NonSpin Reserve | 173.19 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 13 | Units Generating | 3 |
| AllGas | SCE Generic LMS100 | 2020 | 7 | 22 | 14 | Generation | 192.934 |
| AllGas | SCE Generic LMS100 | 2020 | 7 | 22 | 14 | NonSpin Reserve | 113.56 |
| AllGas | SCE Generic LMS100 | 2020 | 7 | 22 | 14 | Spining Reserve | 7.07 |
| AllGas | SCE Generic LMS100 | 2020 | 7 | 22 | 14 | Units Generating | 2 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 14 | Generation | 500 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 14 | Spining Reserve | 500.00 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 14 | Units Generating | 10 |
| AllGas | SCE Generic LMS100 | 2020 | 7 | 22 | 15 | Generation | 200 |
| AllGas | SCE Generic LMS100 | 2020 | 7 | 22 | 15 | NonSpin Reserve | 46.96 |
| AllGas | SCE Generic LMS100 | 2020 | 7 | 22 | 15 | Units Generating | 2 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 15 | Generation | 500 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 15 | Spining Reserve | 500.00 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 15 | Units Generating | 10 |
| AllGas | SCE Generic LMS100 | 2020 | 7 | 22 | 16 | Generation | 200 |
| AllGas | SCE Generic LMS100 | 2020 | 7 | 22 | 16 | NonSpin Reserve | 112.83 |
| AllGas | SCE Generic LMS100 | 2020 | 7 | 22 | 16 | Units Generating | 2 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 16 | Generation | 500 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 16 | Spining Reserve | 500.00 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 16 | Units Generating | 10 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 17 | Generation | 100 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 17 | NonSpin Reserve | 120.00 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 17 | Spining Reserve | 12.94 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 22 | 17 | Units Generating | 2 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 27 | 16 | Generation | 50 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 27 | 16 | NonSpin Reserve | 60.00 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 27 | 16 | Spining Reserve | 31.54 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 27 | 16 | Units Generating | 1 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 28 | 16 | Generation | 100 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 28 | 16 | Spining Reserve | 80.95 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 28 | 16 | Units Generating | 2 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 29 | 16 | Generation | 50 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 29 | 16 | NonSpin Reserve | 22.33 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 29 | 16 | Units Generating | 1 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 30 | 14 | Generation | 50 |
| AllGas | SDGE Generic LMS100 | 2020 | 7 | 30 | 14 | Units Generating | 1 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 13 | 16 | Generation | 50 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 13 | 16 | LoadFollowingUp | 3.24 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 13 | 16 | Units Generating | 1 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 13 | 17 | Generation | 205.501 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 13 | 17 | Units Generating | 3 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 14 | 15 | Generation | 162.806 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 14 | 15 | Units Generating | 2 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 14 | 16 | Generation | 70.9844 |

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|---|---|---|---|---|---|---|---|
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 14 | 16 | Units Generating | 1 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 14 | 17 | Generation | 50 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 14 | 17 | NonSpin Reserve | 0.24 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 14 | 17 | Spining Reserve | 5.24 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 14 | 17 | Units Generating | 1 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 15 | 16 | Generation | 109.652 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 15 | 16 | Units Generating | 2 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 15 | 17 | Generation | 274.976 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 15 | 17 | Units Generating | 3 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 16 | 14 | Generation | 50 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 16 | 14 | Units Generating | 1 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 16 | 15 | Generation | 309.379 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 16 | 15 | Units Generating | 4 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 16 | 16 | Generation | 319.986 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 16 | 16 | Units Generating | 4 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 16 | 17 | Generation | 437.32 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 16 | 17 | Units Generating | 5 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 17 | 13 | Generation | 189.104 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 17 | 13 | Units Generating | 2 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 17 | 14 | Generation | 414.697 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 17 | 14 | Units Generating | 5 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 17 | 15 | Generation | 576.351 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 17 | 15 | Units Generating | 6 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 17 | 16 | Generation | 116.913 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 17 | 16 | Units Generating | 2 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 17 | 16 | Generation | 250 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 17 | 16 | NonSpin Reserve | 300.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 17 | 16 | Spining Reserve | 250.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 17 | 16 | Units Generating | 5 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 17 | 17 | Generation | 520.702 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 17 | 17 | Units Generating | 6 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 17 | 17 | Generation | 50 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 17 | 17 | LoadFollowingUp | 50.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 17 | 17 | NonSpin Reserve | 56.67 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 17 | 17 | Units Generating | 1 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 20 | 17 | Generation | 50 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 20 | 17 | NonSpin Reserve | 60.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 20 | 17 | Spining Reserve | 48.61 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 20 | 17 | Units Generating | 1 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 20 | 18 | Generation | 50 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 20 | 18 | Spining Reserve | 19.20 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 20 | 18 | Units Generating | 1 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 20 | 19 | Generation | 250 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 20 | 19 | NonSpin Reserve | 300.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 20 | 19 | Spining Reserve | 215.91 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 20 | 19 | Units Generating | 5 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 20 | 20 | Generation | 200 |

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| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 20 | 20 | NonSpin Reserve | 240.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 20 | 20 | Spining Reserve | 69.22 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 20 | 20 | Units Generating | 4 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 21 | 13 | Generation | 89.3119 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 21 | 13 | Units Generating | 1 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 14 | Generation | 250 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 14 | NonSpin Reserve | 268.89 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 14 | Spining Reserve | 155.24 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 14 | Units Generating | 5 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 21 | 15 | Generation | 370.605 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 21 | 15 | Units Generating | 4 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 15 | Generation | 250 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 15 | NonSpin Reserve | 300.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 15 | Spining Reserve | 250.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 15 | Units Generating | 5 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 21 | 16 | Generation | 150 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 21 | 16 | NonSpin Reserve | 180.00 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 21 | 16 | Spining Reserve | 138.37 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 21 | 16 | Units Generating | 3 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 21 | 16 | Generation | 1000 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 21 | 16 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 16 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 16 | Spining Reserve | 500.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 16 | Units Generating | 10 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 21 | 17 | Generation | 283.713 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 21 | 17 | Units Generating | 3 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 17 | Generation | 250 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 17 | NonSpin Reserve | 300.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 17 | Spining Reserve | 250.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 17 | Units Generating | 5 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 18 | Generation | 50 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 18 | LoadFollowingUp | 44.37 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 18 | NonSpin Reserve | 60.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 21 | 18 | Units Generating | 1 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 13 | Generation | 50 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 13 | Spining Reserve | 13.04 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 13 | Units Generating | 1 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 22 | 13 | Generation | 835.578 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 22 | 13 | LoadFollowingUp | 164.42 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 22 | 13 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 13 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 13 | RegulationUp | 216.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 13 | Spining Reserve | 284.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 13 | Units Generating | 10 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 14 | Generation | 950 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 14 | NonSpin Reserve | 179.02 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 14 | Spining Reserve | 820.75 |

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| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 14 | Units Generating | 19 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 22 | 14 | Generation | 1000 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 22 | 14 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 14 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 14 | LoadFollowingUp | 11.25 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 14 | RegulationUp | 216.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 14 | Spining Reserve | 272.75 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 14 | Units Generating | 10 |
| HiLoad | PG&E_BAY Generic LMS100 | 2020 | 7 | 22 | 15 | Generation | 150 |
| HiLoad | PG&E_BAY Generic LMS100 | 2020 | 7 | 22 | 15 | NonSpin Reserve | 219.70 |
| HiLoad | PG&E_BAY Generic LMS100 | 2020 | 7 | 22 | 15 | Spining Reserve | 65.64 |
| HiLoad | PG&E_BAY Generic LMS100 | 2020 | 7 | 22 | 15 | Units Generating | 3 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 15 | Generation | 1000 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 15 | NonSpin Reserve | 233.74 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 15 | RegulationUp | 338.95 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 15 | Spining Reserve | 427.31 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 15 | Units Generating | 20 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 22 | 15 | Generation | 1000 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 22 | 15 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 15 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 15 | LoadFollowingUp | 224.23 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 15 | Spining Reserve | 275.77 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 15 | Units Generating | 10 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 16 | Generation | 1000 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 16 | NonSpin Reserve | 3.53 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 16 | Spining Reserve | 993.07 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 16 | Units Generating | 20 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 22 | 16 | Generation | 1000 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 22 | 16 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 16 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 16 | LoadFollowingUp | 21.56 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 16 | NonSpin Reserve | 478.44 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 16 | Units Generating | 10 |
| HiLoad | PG&E_BAY Generic LMS100 | 2020 | 7 | 22 | 17 | Generation | 50 |
| HiLoad | PG&E_BAY Generic LMS100 | 2020 | 7 | 22 | 17 | Units Generating | 1 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 17 | Generation | 1000 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 17 | NonSpin Reserve | 305.75 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 17 | RegulationUp | 216.00 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 17 | Spining Reserve | 446.36 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 22 | 17 | Units Generating | 20 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 22 | 17 | Generation | 916.698 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 22 | 17 | LoadFollowingUp | 83.30 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 22 | 17 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 17 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 17 | LoadFollowingUp | 104.35 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 17 | Spining Reserve | 395.65 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 17 | Units Generating | 10 |

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| HiLoad | SCE Generic LMS100 | 2020 | 7 | 22 | 18 | Generation | 100 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 22 | 18 | NonSpin Reserve | 34.66 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 22 | 18 | Units Generating | 1 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 18 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 18 | Spining Reserve | 500.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 18 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 19 | Generation | 400 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 19 | NonSpin Reserve | 120.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 19 | Spining Reserve | 373.27 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 19 | Units Generating | 8 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 20 | Generation | 300 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 20 | NonSpin Reserve | 240.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 20 | Spining Reserve | 270.74 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 22 | 20 | Units Generating | 6 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 23 | 15 | Generation | 50.3001 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 23 | 15 | Units Generating | 1 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 24 | 13 | Generation | 632.682 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 24 | 13 | Units Generating | 7 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 24 | 14 | Generation | 823.398 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 24 | 14 | Units Generating | 9 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 24 | 15 | Generation | 975.692 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 24 | 15 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 24 | 15 | Generation | 50 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 24 | 15 | LoadFollowingUp | 50.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 24 | 15 | NonSpin Reserve | 48.02 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 24 | 15 | Units Generating | 1 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 24 | 16 | Generation | 993.785 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 24 | 16 | Units Generating | 10 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 24 | 17 | Generation | 935.362 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 24 | 17 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 24 | 17 | Generation | 100 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 24 | 17 | LoadFollowingUp | 100.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 24 | 17 | NonSpin Reserve | 120.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 24 | 17 | Units Generating | 2 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 24 | 18 | Generation | 511.718 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 24 | 18 | Units Generating | 6 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 27 | 13 | Generation | 396.891 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 27 | 13 | Units Generating | 4 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 27 | 14 | Generation | 200 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 27 | 14 | NonSpin Reserve | 0.19 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 27 | 14 | Units Generating | 2 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 14 | Generation | 250 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 14 | NonSpin Reserve | 300.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 14 | Spining Reserve | 250.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 14 | Units Generating | 5 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 27 | 15 | Generation | 881.264 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 27 | 15 | Units Generating | 9 |

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| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 15 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 15 | Spining Reserve | 500.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 15 | Units Generating | 10 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 27 | 16 | Generation | 766.398 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 27 | 16 | Units Generating | 8 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 16 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 16 | NonSpin Reserve | 126.13 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 16 | Spining Reserve | 373.87 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 16 | Units Generating | 10 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 27 | 17 | Generation | 474.111 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 27 | 17 | Units Generating | 5 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 17 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 17 | NonSpin Reserve | 18.25 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 17 | RegulationUp | 81.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 17 | Spining Reserve | 400.75 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 17 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 18 | Generation | 50 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 27 | 18 | Units Generating | 1 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 14 | Generation | 310.849 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 14 | Units Generating | 4 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 14 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 14 | RegulationUp | 83.05 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 14 | Spining Reserve | 416.95 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 14 | Units Generating | 10 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 28 | 15 | Generation | 50 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 28 | 15 | NonSpin Reserve | 35.16 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 28 | 15 | Units Generating | 1 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 15 | Generation | 838.873 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 15 | Spining Reserve | 161.13 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 15 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 15 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 15 | LoadFollowingUp | 36.79 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 15 | Spining Reserve | 463.21 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 15 | Units Generating | 10 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 16 | Generation | 500 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 16 | NonSpin Reserve | 280.89 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 16 | Units Generating | 5 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 16 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 16 | LoadFollowingUp | 11.67 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 16 | Spining Reserve | 488.33 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 16 | Units Generating | 10 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 17 | Generation | 500 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 17 | NonSpin Reserve | 149.93 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 17 | Spining Reserve | 346.25 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 17 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 17 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 17 | Spining Reserve | 500.00 |

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| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 17 | Units Generating | 10 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 18 | Generation | 100 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 18 | Spining Reserve | 93.21 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 18 | Units Generating | 2 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 18 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 18 | Spining Reserve | 500.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 18 | Units Generating | 10 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 19 | Generation | 350 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 19 | NonSpin Reserve | 180.00 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 19 | Spining Reserve | 346.58 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 19 | Units Generating | 7 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 19 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 19 | Spining Reserve | 500.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 19 | Units Generating | 10 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 20 | Generation | 250 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 20 | NonSpin Reserve | 300.00 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 20 | Spining Reserve | 132.84 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 28 | 20 | Units Generating | 5 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 20 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 20 | Spining Reserve | 500.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 28 | 20 | Units Generating | 10 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 29 | 14 | Generation | 400 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 29 | 14 | NonSpin Reserve | 10.99 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 29 | 14 | Units Generating | 4 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 14 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 14 | NonSpin Reserve | 137.98 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 14 | Spining Reserve | 362.02 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 14 | Units Generating | 10 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 15 | Generation | 450 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 15 | NonSpin Reserve | 540.00 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 15 | Spining Reserve | 334.46 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 15 | Units Generating | 9 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 29 | 15 | Generation | 983.13 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 29 | 15 | LoadFollowingUp | 16.87 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 29 | 15 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 15 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 15 | Spining Reserve | 500.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 15 | Units Generating | 10 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 16 | Generation | 500 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 16 | NonSpin Reserve | 514.65 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 16 | Spining Reserve | 382.61 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 16 | Units Generating | 10 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 29 | 16 | Generation | 1000 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 29 | 16 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 16 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 16 | Spining Reserve | 500.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 16 | Units Generating | 10 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 17 | Generation | 450 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 17 | NonSpin Reserve | 540.00 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 17 | Spining Reserve | 396.77 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 17 | Units Generating | 9 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 29 | 17 | Generation | 759.53 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 29 | 17 | Spining Reserve | 240.47 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 29 | 17 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 17 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 17 | LoadFollowingUp | 365.09 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 17 | Spining Reserve | 134.91 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 17 | Units Generating | 10 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 18 | Generation | 50 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 18 | NonSpin Reserve | 60.00 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 18 | Spining Reserve | 22.84 |
| HiLoad | PG&E_VLY Generic LMS100 | 2020 | 7 | 29 | 18 | Units Generating | 1 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 29 | 18 | Generation | 500 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 29 | 18 | Spining Reserve | 500.00 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 29 | 18 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 18 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 18 | LoadFollowingUp | 185.39 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 18 | Spining Reserve | 314.61 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 18 | Units Generating | 10 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 19 | Generation | 300 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 19 | NonSpin Reserve | 240.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 19 | Spining Reserve | 280.62 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 19 | Units Generating | 6 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 20 | Generation | 150 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 20 | NonSpin Reserve | 180.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 20 | Spining Reserve | 84.27 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 29 | 20 | Units Generating | 3 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 30 | 11 | Generation | 186.382 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 30 | 11 | Units Generating | 2 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 30 | 13 | Generation | 67.5155 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 30 | 13 | Units Generating | 1 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 30 | 14 | Generation | 350.657 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 30 | 14 | Units Generating | 4 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 30 | 15 | Generation | 416.098 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 30 | 15 | Units Generating | 5 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 30 | 15 | Generation | 350 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 30 | 15 | NonSpin Reserve | 180.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 30 | 15 | RegulationUp | 162.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 30 | 15 | Spining Reserve | 188.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 30 | 15 | Units Generating | 7 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 30 | 16 | Generation | 307.101 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 30 | 16 | Units Generating | 4 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 30 | 16 | Generation | 200 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 30 | 16 | NonSpin Reserve | 240.00 |

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|---|---|---|---|---|---|---|---|
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 30 | 16 | Spining Reserve | 200.00 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 30 | 16 | Units Generating | 4 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 30 | 17 | Generation | 443.314 |
| HiLoad | SCE Generic LMS100 | 2020 | 7 | 30 | 17 | Units Generating | 5 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 30 | 17 | Generation | 500 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 30 | 17 | Spining Reserve | 495.77 |
| HiLoad | SDGE Generic LMS100 | 2020 | 7 | 30 | 17 | Units Generating | 10 |

Case HiLoad
Month 7

| Day | Hour | Generic Unit | Units Committed | Generation | RegulationUp | Spining Reserve | LoadFollowingUp | NonSpin Reserve | OnLineAS - NSpn | OnlineNspn | OfflineNspn | Unit Need | Capacity Need |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **13** | 16 | SDGE Generic LMS100 | 1 | 50 | 0 | 0 | 3.2 | 0 | 3.2 | 0 | 0 | 1 | 100 |
| | **16 Total** | | **1** | **50** | **0** | **0** | **3.2** | **0** | **3.2** | **0** | **0** | **1** | **100** |
| | 17 | SCE Generic LMS100 | 3 | 206 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 300 |
| | **17 Total** | | **3** | **206** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **3** | **300** |
| **14** | 15 | SCE Generic LMS100 | 2 | 163 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 200 |
| | **15 Total** | | **2** | **163** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **200** |
| | 16 | SCE Generic LMS100 | 1 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 100 |
| | **16 Total** | | **1** | **71** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **100** |
| | 17 | SDGE Generic LMS100 | 1 | 50 | 0 | 5.2 | 0 | 0.2 | 5.2 | 0.2 | 0 | 1 | 100 |
| | **17 Total** | | **1** | **50** | **0** | **5.2** | **0** | **0.2** | **5.2** | **0.2** | **0** | **1** | **100** |
| **17** | 13 | SCE Generic LMS100 | 2 | 189 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 200 |
| | **13 Total** | | **2** | **189** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **200** |
| | 14 | SCE Generic LMS100 | 5 | 415 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 500 |
| | **14 Total** | | **5** | **415** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **5** | **500** |
| | 15 | SCE Generic LMS100 | 6 | 576 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 600 |
| | **15 Total** | | **6** | **576** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **6** | **600** |
| | 16 | SCE Generic LMS100 | 2 | 117 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 200 |
| | | SDGE Generic LMS100 | 5 | 250 | 0 | 250.0 | 0 | 300.0 | 250.0 | 0 | 300.0 | 10 | 1,000 |
| | **16 Total** | | **7** | **367** | **0** | **250.0** | **0** | **300.0** | **250.0** | **0** | **300.0** | **12.0** | **1,200** |
| | 17 | SCE Generic LMS100 | 6 | 521 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 600 |
| | | SDGE Generic LMS100 | 1 | 50 | 0 | 0 | 50.0 | 56.7 | 50.0 | 0 | 56.7 | 2 | 200 |
| | **17 Total** | | **7** | **571** | **0** | **0** | **50.0** | **56.7** | **50.0** | **0** | **56.7** | **8** | **800** |
| **20** | 17 | SDGE Generic LMS100 | 1 | 50 | 0 | 48.6 | 0 | 60.0 | 48.6 | 1.4 | 58.6 | 2 | 200 |
| | **17 Total** | | **1** | **50** | **0** | **48.6** | **0** | **60.0** | **48.6** | **1.4** | **58.6** | **2** | **200** |
| | 18 | SDGE Generic LMS100 | 1 | 50 | 0 | 19.2 | 0 | 0 | 19.2 | 0 | 0 | 1 | 100 |
| | **18 Total** | | **1** | **50** | **0** | **19.2** | **0** | **0** | **19.2** | **0** | **0** | **1** | **100** |
| | 19 | SDGE Generic LMS100 | 5 | 250 | 0 | 215.9 | 0 | 300.0 | 215.9 | 34.1 | 265.9 | 10 | 1,000 |
| | **19 Total** | | **5** | **250** | **0** | **215.9** | **0** | **300.0** | **215.9** | **34.1** | **265.9** | **10** | **1,000** |
| | 20 | SDGE Generic LMS100 | 4 | 200 | 0 | 69.2 | 0 | 240.0 | 69.2 | 130.8 | 109.2 | 6 | 600 |
| | **20 Total** | | **4** | **200** | **0** | **69.2** | **0** | **240.0** | **69.2** | **130.8** | **109.2** | **6** | **600** |
| **21** | 13 | SCE Generic LMS100 | 1 | 89 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 100 |
| | **13 Total** | | **1** | **89** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **100** |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 14 | SDGE Generic LMS100 | 5 | 250 | 0 | 155.2 | 0 | 268.9 | 155.2 | 94.8 | 174.1 | 8 | 800 |
| | **14 Total** | | **5** | **250** | **0** | **155.2** | **0** | **268.9** | **155.2** | **94.8** | **174.1** | **8** | **800** |
| | 15 | SCE Generic LMS100 | 4 | 371 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 400 |
| | | SDGE Generic LMS100 | 5 | 250 | 0 | 250.0 | 0 | 300.0 | 250.0 | 0 | 300.0 | 10 | 1,000 |
| | **15 Total** | | **9** | **621** | **0** | **250.0** | **0** | **300.0** | **250.0** | **0** | **300.0** | **14** | **1,400** |
| | 16 | PG&E_VLY Generic LMS | 3 | 150 | 0 | 138.4 | 0 | 180.0 | 138.4 | 11.6 | 168.4 | 6 | 600 |
| | | SCE Generic LMS100 | 10 | 1,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 500.0 | 0 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **16 Total** | | **23** | **1,650** | **0** | **638.4** | **0** | **180.0** | **638.4** | **11.6** | **168.4** | **26** | **2,600** |
| | 17 | SCE Generic LMS100 | 3 | 284 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 300 |
| | | SDGE Generic LMS100 | 5 | 250 | 0 | 250.0 | 0 | 300.0 | 250.0 | 0 | 300.0 | 10 | 1,000 |
| | **17 Total** | | **8** | **534** | **0** | **250.0** | **0** | **300.0** | **250.0** | **0** | **300.0** | **13** | **1,300** |
| | 18 | SDGE Generic LMS100 | 1 | 50 | 0 | 0 | 44.4 | 60.0 | 44.4 | 5.6 | 54.4 | 2 | 200 |
| | **18 Total** | | **1** | **50** | **0** | **0** | **44.4** | **60.0** | **44.4** | **5.6** | **54.4** | **2** | **200** |
| **22** | 13 | PG&E_VLY Generic LMS | 1 | 50 | 0 | 13.0 | 0 | 0 | 13.0 | 0 | 0 | 1 | 100 |
| | | SCE Generic LMS100 | 10 | 836 | 0 | 0 | 164.4 | 0 | 164.4 | 0 | 0 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 10 | 500 | 216.0 | 284.0 | 0 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **13 Total** | | **21** | **1,386** | **216.0** | **297.0** | **164.4** | **0** | **677.5** | **0** | **0** | **21** | **2,100** |
| | 14 | PG&E_VLY Generic LMS | 19 | 950 | 0 | 820.7 | 0 | 179.0 | 820.7 | 129.3 | 49.8 | 20 | 2,000 |
| | | SCE Generic LMS100 | 10 | 1,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 10 | 500 | 216.0 | 272.8 | 11.2 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **14 Total** | | **39** | **2,450** | **216.0** | **1,093.5** | **11.2** | **179.0** | **1,320.7** | **129.3** | **49.8** | **40** | **4,000** |
| | 15 | PG&E_BAY Generic LMS | 3 | 150 | 0 | 65.6 | 0 | 219.7 | 65.6 | 84.4 | 135.3 | 6 | 600 |
| | | PG&E_VLY Generic LMS | 20 | 1,000 | 339.0 | 427.3 | 0 | 233.7 | 766.3 | 233.7 | 0 | 20 | 2,000 |
| | | SCE Generic LMS100 | 10 | 1,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 275.8 | 224.2 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **15 Total** | | **43** | **2,650** | **339.0** | **768.7** | **224.2** | **453.4** | **1,331.9** | **318.1** | **135.3** | **46** | **4,600** |
| | 16 | PG&E_VLY Generic LMS | 20 | 1,000 | 0 | 993.1 | 0 | 3.5 | 993.1 | 3.5 | 0 | 20 | 2,000 |
| | | SCE Generic LMS100 | 10 | 1,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 0 | 21.6 | 478.4 | 21.6 | 478.4 | 0 | 10 | 1,000 |
| | **16 Total** | | **40** | **2,500** | **0** | **993.1** | **21.6** | **482.0** | **1,014.6** | **482.0** | **0** | **40** | **4,000** |
| | 17 | PG&E_BAY Generic LMS | 1 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 100 |
| | | PG&E_VLY Generic LMS | 20 | 1,000 | 216.0 | 446.4 | 0 | 305.7 | 662.4 | 305.7 | 0 | 20 | 2,000 |
| | | SCE Generic LMS100 | 10 | 917 | 0 | 0 | 83.3 | 0 | 83.3 | 0 | 0 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 395.7 | 104.3 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **17 Total** | | **41** | **2,467** | **216.0** | **842.0** | **187.6** | **305.7** | **1,245.7** | **305.7** | **0** | **41** | **4,100** |
| | 18 | SCE Generic LMS100 | 1 | 100 | 0 | 0 | 0 | 34.7 | 0 | 0 | 34.7 | 2 | 200 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 500.0 | 0 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **18 Total** | | **11** | **600** | **0** | **500.0** | **0** | **34.7** | **500.0** | **0** | **34.7** | **12** | **1,200** |
| | 19 | SDGE Generic LMS100 | 8 | 400 | 0 | 373.3 | 0 | 120.0 | 373.3 | 26.7 | 93.3 | 10 | 1,000 |
| | **19 Total** | | **8** | **400** | **0** | **373.3** | **0** | **120.0** | **373.3** | **26.7** | **93.3** | **10** | **1,000** |
| | 20 | SDGE Generic LMS100 | 6 | 300 | 0 | 270.7 | 0 | 240.0 | 270.7 | 29.3 | 210.7 | 10 | 1,000 |
| | **20 Total** | | **6** | **300** | **0** | **270.7** | **0** | **240.0** | **270.7** | **29.3** | **210.7** | **10** | **1,000** |
| **24** | 13 | SCE Generic LMS100 | 7 | 633 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 700 |
| | **13 Total** | | **7** | **633** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **7** | **700** |
| | 14 | SCE Generic LMS100 | 9 | 823 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 900 |
| | **14 Total** | | **9** | **823** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **9** | **900** |
| | 15 | SCE Generic LMS100 | 10 | 976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 1 | 50 | 0 | 0 | 50.0 | 48.0 | 50.0 | 0 | 48.0 | 2 | 200 |
| | **15 Total** | | **11** | **1,026** | **0** | **0** | **50.0** | **48.0** | **50.0** | **0** | **48.0** | **12** | **1,200** |
| | 16 | SCE Generic LMS100 | 10 | 994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1,000 |
| | **16 Total** | | **10** | **994** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **10** | **1,000** |
| | 17 | SCE Generic LMS100 | 10 | 935 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 2 | 100 | 0 | 0 | 100.0 | 120.0 | 100.0 | 0 | 120.0 | 4 | 400 |
| | **17 Total** | | **12** | **1,035** | **0** | **0** | **100.0** | **120.0** | **100.0** | **0** | **120.0** | **14** | **1,400** |
| | 18 | SCE Generic LMS100 | 6 | 512 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 600 |
| | **18 Total** | | **6** | **512** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **6** | **600** |
| **27** | 13 | SCE Generic LMS100 | 4 | 397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 400 |
| | **13 Total** | | **4** | **397** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **4** | **400** |
| | 14 | SCE Generic LMS100 | 2 | 200 | 0 | 0 | 0 | 0.2 | 0 | 0 | 0.2 | 3 | 300 |
| | | SDGE Generic LMS100 | 5 | 250 | 0 | 250.0 | 0 | 300.0 | 250.0 | 0 | 300.0 | 10 | 1,000 |
| | **14 Total** | | **7** | **450** | **0** | **250.0** | **0** | **300.2** | **250.0** | **0** | **300.2** | **13** | **1,300** |
| | 15 | SCE Generic LMS100 | 9 | 881 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 900 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 500.0 | 0 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **15 Total** | | **19** | **1,381** | **0** | **500.0** | **0** | **0** | **500.0** | **0** | **0** | **19** | **1,900** |
| | 16 | SCE Generic LMS100 | 8 | 766 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 800 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 373.9 | 0 | 126.1 | 373.9 | 126.1 | 0 | 10 | 1,000 |
| | **16 Total** | | **18** | **1,266** | **0** | **373.9** | **0** | **126.1** | **373.9** | **126.1** | **0** | **18** | **1,800** |
| | 17 | SCE Generic LMS100 | 5 | 474 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 500 |
| | | SDGE Generic LMS100 | 10 | 500 | 81.0 | 400.8 | 0 | 18.2 | 481.8 | 18.2 | 0 | 10 | 1,000 |
| | **17 Total** | | **15** | **974** | **81.0** | **400.8** | **0** | **18.2** | **481.8** | **18.2** | **0** | **15** | **1,500** |
| | 18 | SDGE Generic LMS100 | 1 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 100 |
| | **18 Total** | | **1** | **50** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **100** |
| **28** | 14 | SCE Generic LMS100 | 4 | 311 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 400 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SDGE Generic LMS100 | 10 | 500 | 83.0 | 417.0 | 0 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **14 Total** | | **14** | **811** | **83.0** | **417.0** | **0** | **0** | **500.0** | **0** | **0** | **14** | **1,400** |
| | 15 | PG&E_VLY Generic LMS | 1 | 50 | 0 | 0 | 0 | 35.2 | 0 | 35.2 | 0 | 1 | 100 |
| | | SCE Generic LMS100 | 10 | 839 | 0 | 161.1 | 0 | 0 | 161.1 | 0 | 0 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 463.2 | 36.8 | 0 | 500.0 | 0.0 | 0.0 | 11 | 1,100 |
| | **15 Total** | | **21** | **1,389** | **0** | **624.3** | **36.8** | **35.2** | **661.1** | **35.2** | **0.0** | **22** | **2,200** |
| | 16 | SCE Generic LMS100 | 5 | 500 | 0 | 0 | 0 | 280.9 | 0 | 0 | 280.9 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 488.3 | 11.7 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **16 Total** | | **15** | **1,000** | **0** | **488.3** | **11.7** | **280.9** | **500.0** | **0** | **280.9** | **20** | **2,000** |
| | 17 | SCE Generic LMS100 | 10 | 500 | 0 | 346.2 | 0 | 149.9 | 346.2 | 149.9 | 0 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 500.0 | 0 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **17 Total** | | **20** | **1,000** | **0** | **846.2** | **0** | **149.9** | **846.2** | **149.9** | **0** | **20** | **2,000** |
| | 18 | SCE Generic LMS100 | 2 | 100 | 0 | 93.2 | 0 | 0 | 93.2 | 0 | 0 | 2 | 200 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 500.0 | 0 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **18 Total** | | **12** | **600** | **0** | **593.2** | **0** | **0** | **593.2** | **0** | **0** | **12** | **1,200** |
| | 19 | SCE Generic LMS100 | 7 | 350 | 0 | 346.6 | 0 | 180.0 | 346.6 | 3.4 | 176.6 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 500.0 | 0 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **19 Total** | | **17** | **850** | **0** | **846.6** | **0** | **180.0** | **846.6** | **3.4** | **176.6** | **20** | **2,000** |
| | 20 | SCE Generic LMS100 | 5 | 250 | 0 | 132.8 | 0 | 300.0 | 132.8 | 117.2 | 182.8 | 9 | 900 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 500.0 | 0 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **20 Total** | | **15** | **750** | **0** | **632.8** | **0** | **300.0** | **632.8** | **117.2** | **182.8** | **19** | **1,900** |
| **29** | 14 | SCE Generic LMS100 | 4 | 400 | 0 | 0 | 0 | 11.0 | 0 | 0 | 11.0 | 5 | 500 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 362.0 | 0 | 138.0 | 362.0 | 138.0 | 0 | 10 | 1,000 |
| | **14 Total** | | **14** | **900** | **0** | **362.0** | **0** | **149.0** | **362.0** | **138.0** | **11.0** | **15** | **1,500** |
| | 15 | PG&E_VLY Generic LMS | 9 | 450 | 0 | 334.5 | 0 | 540.0 | 334.5 | 115.5 | 424.5 | 17 | 1,700 |
| | | SCE Generic LMS100 | 10 | 983 | 0 | 0 | 16.9 | 0 | 16.9 | 0 | 0 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 500.0 | 0 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **15 Total** | | **29** | **1,933** | **0** | **834.5** | **16.9** | **540.0** | **851.3** | **115.5** | **424.5** | **37** | **3,700** |
| | 16 | PG&E_VLY Generic LMS | 10 | 500 | 0 | 382.6 | 0 | 514.7 | 382.6 | 117.4 | 397.3 | 17 | 1,700 |
| | | SCE Generic LMS100 | 10 | 1,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 500.0 | 0 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **16 Total** | | **30** | **2,000** | **0** | **882.6** | **0** | **514.7** | **882.6** | **117.4** | **397.3** | **37** | **3,700** |
| | 17 | PG&E_VLY Generic LMS | 9 | 450 | 0 | 396.8 | 0 | 540.0 | 396.8 | 53.2 | 486.8 | 18 | 1,800 |
| | | SCE Generic LMS100 | 10 | 760 | 0 | 240.5 | 0 | 0 | 240.5 | 0 | 0 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 134.9 | 365.1 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **17 Total** | | **29** | **1,710** | **0** | **772.2** | **365.1** | **540.0** | **1,137.2** | **53.2** | **486.8** | **38** | **3,800** |
| | 18 | PG&E_VLY Generic LMS | 1 | 50 | 0 | 22.8 | 0 | 60.0 | 22.8 | 27.2 | 32.8 | 2 | 200 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SCE Generic LMS100 | 10 | 500 | 0 | 500.0 | 0 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 314.6 | 185.4 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **18 Total** | | **21** | **1,050** | **0** | **837.4** | **185.4** | **60.0** | **1,022.8** | **27.2** | **32.8** | **22** | **2,200** |
| | 19 | SDGE Generic LMS100 | 6 | 300 | 0 | 280.6 | 0 | 240.0 | 280.6 | 19.4 | 220.6 | 10 | 1,000 |
| | **19 Total** | | **6** | **300** | **0** | **280.6** | **0** | **240.0** | **280.6** | **19.4** | **220.6** | **10** | **1,000** |
| | 20 | SDGE Generic LMS100 | 3 | 150 | 0 | 84.3 | 0 | 180.0 | 84.3 | 65.7 | 114.3 | 5 | 500 |
| | **20 Total** | | **3** | **150** | **0** | **84.3** | **0** | **180.0** | **84.3** | **65.7** | **114.3** | **5** | **500** |
| **30** | 13 | SCE Generic LMS100 | 1 | 68 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 100 |
| | **13 Total** | | **1** | **68** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **100** |
| | 14 | SCE Generic LMS100 | 4 | 351 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 400 |
| | **14 Total** | | **4** | **351** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **4** | **400** |
| | 15 | SCE Generic LMS100 | 5 | 416 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 500 |
| | | SDGE Generic LMS100 | 7 | 350 | 162.0 | 188.0 | 0 | 180.0 | 350.0 | 0 | 180.0 | 10 | 1,000 |
| | **15 Total** | | **12** | **766** | **162.0** | **188.0** | **0** | **180.0** | **350.0** | **0** | **180.0** | **15** | **1,500** |
| | 16 | SCE Generic LMS100 | 4 | 307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 400 |
| | | SDGE Generic LMS100 | 4 | 200 | 0 | 200.0 | 0 | 240.0 | 200.0 | 0 | 240.0 | 8 | 800 |
| | **16 Total** | | **8** | **507** | **0** | **200.0** | **0** | **240.0** | **200.0** | **0** | **240.0** | **12** | **1,200** |
| | 17 | SCE Generic LMS100 | 5 | 443 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 500 |
| | | SDGE Generic LMS100 | 10 | 500 | 0 | 495.8 | 0 | 0 | 495.8 | 0 | 0 | 10 | 1,000 |
| | **17 Total** | | **15** | **943** | **0** | **495.8** | **0** | **0** | **495.8** | **0** | **0** | **15** | **1,500** |

# All-Gas Capacity Need

Case AllGas
Month 7

| Day | Hour | Generic Unit | Units Committed | Generation | Spining Reserve | NonSpin Reserve | OnLineAS - NSpn | OnlineNspn | OfflineNspn | Unit Need | Capacity Need |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **22** | 13 | SDGE Generic LMS100 | 3 | 150 | 0 | 173.2 | 0 | 150.0 | 23.2 | 4 | 400 |
| | **13 Total** | | **3** | **150** | **0** | **173.2** | **0** | **150.0** | **23.2** | **4** | **400** |
| | 14 | SCE Generic LMS100 | 2 | 193 | 7.1 | 113.6 | 7.1 | 0 | 113.6 | 4 | 400 |
| | | SDGE Generic LMS100 | 10 | 500 | 500.0 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **14 Total** | | **12** | **693** | **507.1** | **113.6** | **507.1** | **0** | **113.6** | **14** | **1,400** |
| | 15 | SCE Generic LMS100 | 2 | 200 | 0 | 47.0 | 0 | 0 | 47.0 | 3 | 300 |
| | | SDGE Generic LMS100 | 10 | 500 | 500.0 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **15 Total** | | **12** | **700** | **500.0** | **47.0** | **500.0** | **0** | **47.0** | **13** | **1,300** |
| | 16 | SCE Generic LMS100 | 2 | 200 | 0 | 112.8 | 0 | 0 | 112.8 | 4 | 400 |
| | | SDGE Generic LMS100 | 10 | 500 | 500.0 | 0 | 500.0 | 0 | 0 | 10 | 1,000 |
| | **16 Total** | | **12** | **700** | **500.0** | **112.8** | **500.0** | **0** | **112.8** | **14** | **1,400** |
| | 17 | SDGE Generic LMS100 | 2 | 100 | 12.9 | 120.0 | 12.9 | 87.1 | 32.9 | 3 | 300 |
| | **17 Total** | | **2** | **100** | **12.9** | **120.0** | **12.9** | **87.1** | **32.9** | **3** | **300** |
| **27** | 16 | SDGE Generic LMS100 | 1 | 50 | 31.5 | 60.0 | 31.5 | 18.5 | 41.5 | 2 | 200 |
| | **16 Total** | | **1** | **50** | **31.5** | **60.0** | **31.5** | **18.5** | **41.5** | **2** | **200** |
| **28** | 16 | SDGE Generic LMS100 | 2 | 100 | 81.0 | 0 | 81.0 | 0 | 0 | 2 | 200 |
| | **16 Total** | | **2** | **100** | **81.0** | **0** | **81.0** | **0** | **0** | **2** | **200** |
| **29** | 16 | SDGE Generic LMS100 | 1 | 50 | 0 | 22.3 | 0 | 22.3 | 0 | 1 | 100 |
| | **16 Total** | | **1** | **50** | **0** | **22.3** | **0** | **22.3** | **0** | **1** | **100** |
| **30** | 14 | SDGE Generic LMS100 | 1 | 50 | 0 | 0 | 0 | 0 | 0 | 1 | 100 |
| | **14 Total** | | **1** | **50** | **0** | **0** | **0** | **0** | **0** | **1** | **100** |