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As noted in the December 27, 2011 Scoping Ruling issued by the Assigned Commissioner and Administrative Law Judge in Rulemaking 11-10-023, Energy Division held two days of workshops on January 26th and 27th in order to discuss party proposals filed on January 13, 2012 and to also discuss Energy Division's proposal, on the following topics:

(1) Qualifying capacity rules for dynamically scheduled or pseudo tie resources
(2) Changes to the rounding convention adopted in Decision (D.) 07-06-029
(3) Revisions to the Maximum Cumulative Capacity bucket percentages and some policy changes to refine and clarify additional policies
(4) Petition to modify D.10-06-036 filed by Cogeneration Association of California regarding qualifying capacity rules for cogeneration resources

The Scoping Ruling directed parties to file proposals on topics in the scope of the proceeding on January 13, 2012. Energy Division created an agenda based on proposals that were received. Energy Division and/or parties summarized the presentations and discussion at the workshops for the record, which was transcribed by a court reporter. Energy Division was also directed to issue a workshop report. Presentations and proposals are part of the record as is the transcript of the summary at the end of each day of the workshop. The report is not duplicative of the presentations and the transcript.

The Energy Division will conduct a workshop on March 30th, 2012 to further discuss these proposals.

Parties should contact Megha Lakhchaura (megha.lakhchaura@cpuc.ca.gov) at 415-703-1183 or Donald Brooks (donald.brooks@cpuc.ca.gov) at 415-703-2626 regarding any questions about the workshops.

Energy Division Report

Resource Adequacy Workshop

January 26-27, 2012

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Introduction to the Workshop Report

The CPUC issued a scoping memo on December 27, 2011 to outline the scope of the 2013 Resource Adequacy proceeding in Rulemaking 11-10-023[1]. The scoping memo on January 13, 2012 directed the Energy Division staff to prepare and issue a staff proposal to improve implementation of the Resource Adequacy Program by revising the Maximum Cumulative Capacity (MCC) bucket percentages. The Energy Division staff presented a proposal at the January 26-27, 2012 Resource Adequacy workshop. The revised proposal herein incorporates many of the clarifications requested at the workshop, and responds to workshop comments, when appropriate. This proposal is augmented to include a revised definition of "dispatchability," elaborates on the methodology and analysis related to MCC percentages, and presents an initial classification of resources. In addition, an alternative to this proposal is included, where the current bucket definitions are retained but the MCC percentages are revised to reflect updated load shapes.

At the workshop the following Energy Division proposals were also discussed:

- Qualifying capacity rules for dynamically scheduled or pseudo tie resources.
- Changes to the rounding convention adopted in Decision (D.) 07-06-029.
- Cogeneration Association of California's petition to modify D.11-06-022, which seeks to modify the system peak demand definition to exclude production on weekends and holidays in the qualifying capacity calculation.

Energy Division does not believe additional clarification of the these topics in the January 13, 2012 proposal is required, beyond what is included in the Energy Division presentation and the summary noted by the court reporter that is included in the transcript of the January 26 and 27 workshops. Thus Energy Division only discusses the proposal regarding the MCC buckets in this workshop report. The report also contains sections summarizing the discussion on *CAISO's Flexible Capacity Procurement* and *Resource Adequacy for Distributed Generation.* The discussions that are not summarized here were covered adequately through the presentation slides and the transcript of the summary.

[1] http://docs.cpuc.ca.gov/EFILE/RULC/156371.htm

Maximum Cumulative Capacity Buckets

Background –

The policy framework of the CPUC's Resource Adequacy program guides resource procurement by requiring that Load Serving Entities (LSE)s procure capacity so that it is available to the CAISO when and where needed. During the development of the Resource Adequacy program in 2004 and 2005, concerns surfaced that LSEs would meet their Resource Adequacy obligations by procuring a large number of resources that were either contractually or operationally limited. This would have had an adverse impact on the reliability of grid operations by the CAISO. To ensure that LSEs restricted their dependence on limited availability contracts, the Energy Division staff, pursuant to the directives in D.05-10-042, created four resource categories, known as the Maximum Cumulative Capacity (MCC) buckets based on the hours of contractual availability. For example, Bucket 1 resources are available up to 87 hours each month during the five summer months, while Bucket 4 resources are available at all hours of the month. LSEs can procure all resources in Bucket 4, but are limited in procurement of resources from the other three buckets. Energy Division routinely checks the monthly Resource Adequacy filings to validate whether LSEs have secured contracts that conform to the prescribed MCC buckets.

The current MCC buckets were last evaluated in 2005, using data from 2003 through 2005. Load shapes have changed since then, necessitating a review of the percentages that have been used to determine the amount of resources that the LSEs could procure in each bucket. Additionally, the original MCC buckets were created in 2005 for then existing energy contracts, which have changed considerably over time. With the increase of renewable generation, these buckets might not be accurate indicators of actual contribution to grid reliability. The current methodology does not account for the dispatchability of resources. LSEs may enter into contracts with renewable resources that reflect unlimited hours of availability; however, the actual availability of these resources may be dictated by weather conditions at the particular hour. Therefore, classifying these intermittent resources in Bucket 4 (available at all hours) may be an inaccurate reflection of the resource's actual contribution to grid reliability. Finally the composition of the generating fleet will change due to demand side and smart grid alternatives, as well as newer types of generating and storage technology. Recent studies have indicated that reliability risk will soon be detached from peak load conditions and might occur more during off-peak months and during periods of ramping, such as when the wind ramps down in the morning at the same time as the load ramps up. For this reason, Energy Division proposes to start defining the resource buckets as inclusive of dispatchability, instead of defining them solely based on hours of operation over peak. The load data used

by Energy Division, from the CAISO OASIS system[2] is the hourly integrated load, which represents an average measure of the variability of load for each hour but is not representative of the intra-hour variability that would more likely be mitigated by regulation resources. While creating net load curves, Energy Division used hourly settlement quality meter data, which the CPUC received from CAISO pursuant to a subpoena from 2009.

Redefining MCC Buckets–

The Energy Division staff proposes to redefine the MCC buckets to reflect the changing composition of the resource mix and introduce dispatchability as a component of the MCC buckets. The new MCC buckets would not be based solely on contractual hours of operation but would also be distinguished on operational dispatchability. This proposal specifically highlights that standard energy contracts no longer comprise the majority of the Resource Adequacy fleet, since most of the contracts have expired. The changing conditions in the CAISO balancing authority area make dispatchability more important for maintaining grid reliability. In addition to refined definitions and new percentages applied to each bucket, these buckets are no longer cumulative but are instead limits placed on individual buckets towards meeting Resource Adequacy requirements. One bucket no longer ties to another. LSEs must meet their Resource Adequacy obligations with prescribed levels of resources in each bucket individually. Thus the buckets are called Maximum Capacity (MC) Buckets. Energy Division will categorize units in one of the four MC bucket categories with consistency of production and flexibility of dispatch as the criteria for placement in each of the four buckets.

Dispatchability is defined based on contractual requirements for CAISO dispatch, minimum ramp rate, as well as ability of the resource to start and ramp to minimum load between the close of the day-ahead market and the start of the next day. For a resource to be considered dispatchable, it must satisfy the following three criteria:

- The resource should have a maximum ramp rate (MAX_RR_FF) in the latest CAISO master file, updated as of the Year Ahead NQC list, of greater than or equal to 4 MW/min.
- The resource should have a contractual obligation to be available for CAISO dispatch.
- The resource should have a registered startup time period of 10 hours or less or a minimum down-time not to exceed 24 hours.

[2] Link to OASIS here: http://oasis.caiso.com/mrtu-oasis/?doframe=true&serverurl=http%3a%2f%2farptp10%2eoa%2ecaiso%2ecom%3a8000&volume=OASIS

- Demand Response resources will be considered dispatchable even if they do not fit the above criteria strictly.

The new MCC buckets are distinguishable from each other by being dispatchable or non-dispatchable and operate for unlimited hours or restricted hours. Unlimited hours refer to the capability of a resource to run for predictable continuous hours and not strictly for every hour in the day.

1. *Bucket 1* would consist of resources that are non-dispatchable and limited in hours of consistent operation. They are able to operate and generate energy, but sometimes these resources become a problem for CAISO to manage. This would be the most restricted bucket and include resources such as non-dispatchable hydro, wind, and non-dispatchable Combined Heat and Power.
2. *Bucket 2* would consist of resources that are dispatchable but limited in hours of consistent operation. This bucket would include resources like peaker plants, dispatchable Demand Response, and energy storage used as a stand-alone.
3. *Bucket 3* would consist of resources that are non-dispatchable but are able to produce energy over longer period of hours. This would include resources like solar facilities, nuclear plants, and non-dispatchable geothermal facilities. Most of these resources produce consistent energy predictably, for example solar during the day or base load nuclear facilities during all hours. Solar resources are included in Bucket 3 because load shapes suggest that these resources can operate during continuous peak hours on a typical summer day.
4. *Bucket 4* would consist of resources that are dispatchable and are able to produce energy over long continuous hours. The type of resources that would fall in this bucket would typically be combined cycle gas turbine or pumped storage facilities. LSEs would be allowed to procure up to 100% of their resources from this bucket, as these resources are the most reliable options in the resource mix.

Currently, Demand Response resources that qualify for Resource Adequacy are treated as a credit that reduces an LSE's total Resource Adequacy obligations. The CPUC directed the creation of a new MCC bucket for Demand Response resources in D.11-10-003,[3] which requires all Demand Response resources,

[3] D.11-10-003, Ordering Paragraph 1

The Commission's Resource Adequacy program, as adopted in Decision 11-06-022, is modified as follows:

> Retail demand response resources are required to be dispatchable locally in order to receive local Resource Adequacy credits starting in the 2013 Resource Adequacy year, except for dynamic pricing programs.

except for dynamic pricing, to be locally dispatchable starting in the 2013 Resource Adequacy compliance year. While Demand Response resources are dispatchable either by CAISO (for wholesale Demand Response programs) or by the utilities for utility operated and funded Demand Response programs, they are limited in hours of operation. In this proposal we do not envision the need to create a separate MCC bucket for Demand Response because these resources would fulfill the criteria of Bucket 2.

The current bucket structure does not limit contracting with resources that have emissions limits resulting in constrained hours of operation or startups over the year. This proposal would specifically require an LSE to distinguish facilities with run limits in their Resource Adequacy filings. For instance if the Scheduling Coordinator for the facility foresees that a facility could realistically expend its limited contractual startups or run hours before the end of the year, then the Scheduling Coordinator would subsequently need to monitor run limits or startups. In this case the resource would go into Bucket 3, as hours of operation would be limited. However, if the resource has not expended its limited contractual startups or run hours before the end of the year, and the Scheduling Coordinator is confident that the resource is effectively unlimited, then the resource can go into Bucket 4. Energy Division currently has difficulty monitoring emissions limits or contractual start up limits on resources in the current MCC construct. Therefore, the Energy Division may require LSEs to inform Energy Division of the run limits in all contracts, and monitor when resources expend their hours or run up against their limitations.

Table 1-Summary Table of existing and proposed MC buckets-

	Current Bucket Structure			**Proposed Bucket Structure**		
Bucket Name	Monthly hours of operation	Maximum cumulative percentage of resources	Operational Characteristics	Hours of operation	Maximum percentage of resources	Operational Characteristics
Bucket 4	All hours	100%	None	All hours	100%	Dispatchable
Bucket 3	415	30.1%	None	All hours	69%	Non-dispatchable
Bucket 2	171	18.6%	None	Limited hours	45%	Dispatchable
Bucket 1	87	13.6%	None	Limited hours	5%	Non-dispatchable

The Energy Division staff wanted to ensure that the composition of buckets would ensure at least some level of dispatchable resources in the resource portfolio of an LSE. An LSE can choose to meet up to 69% of its Resource Adequacy obligation from Bucket 3 resources (all hours and non-dispatchable or

A new Maximum Cumulative Capacity bucket is created for demand response resources, subject to the parameters of the bucket to be determined by the Commission for the 2013 Resource Adequacy year.

mainly base load resources) which leaves it with a residual 25% procurement obligations from other buckets. If an LSE procured 5% of its Resource Adequacy obligations from Bucket 1(non-dispatchable and limited): it would still have to procure 20 % of its resources from either Bucket 2 (limited hours and dispatchable) or Bucket 4 (all hours and dispatchable). There is a tradeoff between dispatchable resources and Bucket 1 resources at the margin; however, the composition of the buckets will ensure that each LSE will have to meet at least 20% of its Resource Adequacy obligations through dispatchable resources.

Table 2- Suggested Classification of Resources and Net Qualifying Capacity (NQC) Values

Bucket Name	Resources in each bucket *	NQC of each bucket in the fleet (MW)	Percentage of total NQC of the fleet
Bucket 4	Combined Cycle Gas Turbines, Geothermal, Pumped Storage, Firm Imports	26,478	52%
Bucket 3	Nuclear Plants, Solar facilities, Combined Heat and Power, Steam Turbines	11,170	22%
Bucket 2	Combustion Turbines, Demand Response, Energy Storage, Dispatchable Hydro	13,368	26%
Bucket 1	Wind, Run-of-river Hydro	1,015	2%
Total	*August 2012 Net Qualifying Capacity List*	*51,079*	

- **These categories are indicative. We shall use the definition of dispatchability to categorize resources.**

In order to categorize the facilities for Table 2 above, Energy Division used the CAISO Master file data received pursuant to a subpoena. Energy Division categorized facilities based on maximum ramp rate (MAX_RR_FF field in Master File), registered cooling time (STRT_DOWN_TIME), and resource startup time (STRT_STARTUP_TIME) to determine whether they fit the definition of dispatchable. From the list of dispatchable resources, the Net Qualifying Capacity (NQC) of each bucket was deduced to ensure that each bucket had sufficient resources before procurement obligations were established.

Analysis and Determination of MC Percentages-

Energy Division's proposal relies on load and resource production data to determine maximum limits on percentages to apply to each resource bucket. The Energy Division attempted to normalize data in order to avoid setting procurement goals based on extreme and rare weather conditions. Daily load shapes were analyzed to predict the load shape of a "typical day." Then, the load shapes of a "typical day" were analyzed to determine the maximum base load capacity and peaking capacity required for reliable grid operation. "Typical" conditions were described using three different statistical representations of a 24-hour day in each month: hourly average load, hourly median load, and the 90th percentile hourly load. Three different "typical day" shapes were constructed for each month of 2009, another set of three were constructed with load data from 2010, and a final set of three were constructed

with a combined data set of 2009 and 2010 hourly load data. Thus, nine load shapes were produced for each month. Energy Division staff also examined the impact of wind on hourly load. Inter-hour changes in gross load shapes (for the entire load) and net load shapes (entire load less wind) were compared to determine the impact of wind generation. Five months were chosen as representative of peak and shoulder conditions. Gross load and net load amounts included in this analysis were from the summer months of April, May, July, August and October of 2009 and 2010. Energy Division studied years 2009 and 2010 due to availability of load data and corresponding wind performance data.

Analysis related to Bucket 1

Bucket 1 is the most restricted bucket composed of resources that are non-dispatchable and limited in hours of consistent operation. It includes resources like wind, which due to its unpredictability can potentially cause impediments to the reliable management of the grid. Wind ramps down in the morning but at the same time load ramps up. This might cause strain on grid reliability during off peak periods. Energy Division sought to examine the effect of wind on the hourly change in load and determine ramping requirements attributable to the variability in wind generation. Energy Division staff expected to find that hourly change in gross load would be smaller than the hourly change in net load (gross load less wind) as wind was expected to cause significant rises and drops in load every hour. Energy Division staff specifically expected to find a strong increase in hourly change of load, roughly corresponding to the amount of hourly generation of wind resources, in the morning and evening ramp hours.

To test this hypothesis, Energy Division staff created:

- Nine load shapes for gross load and nine load shapes for net load (load less wind production).
- Nine load shapes representing the change in gross load from one hour to the next and nine shapes representing the change in net load from one hour to the next. These load shapes represent the hourly variation in both load scenarios.
- Nine load shapes representing the difference in hourly variation between gross load and net load. Positive values indicate hourly change in net load is higher than hourly change in gross load, and negative values represent the opposite. Positive values show the times when the hourly change in wind generation causes difficulties operating the CAISO grid, but negative values show the times when wind generation decreases hourly change and is easier for CAISO to manage.

Included below are five graphs, one for each month, which show the difference in hourly variation between gross load and net load. Also included, for comparison, is total wind production for August 2009 and 2010, which is broadly representative of all months. As observed in Figure 1, wind generation which

ranges from about 400 MW to 1600 MW in a typical day will only result in changes in inter-hour variation between a positive 300 MW and a negative 100 MW (Figure 2). This indicates that at current penetration levels, wind resources are unlikely to cause greater ramping or load following requirements in the system. As stated earlier, this result is not indicative of regulation needs.

Figure 1

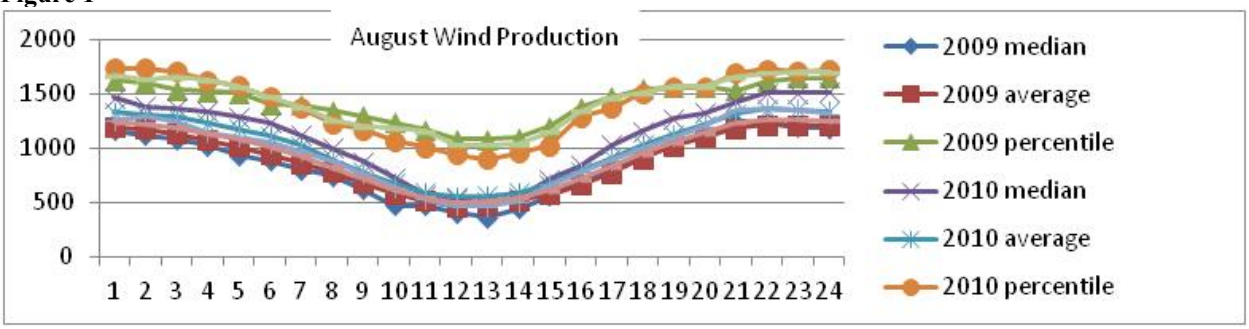


Figure 2

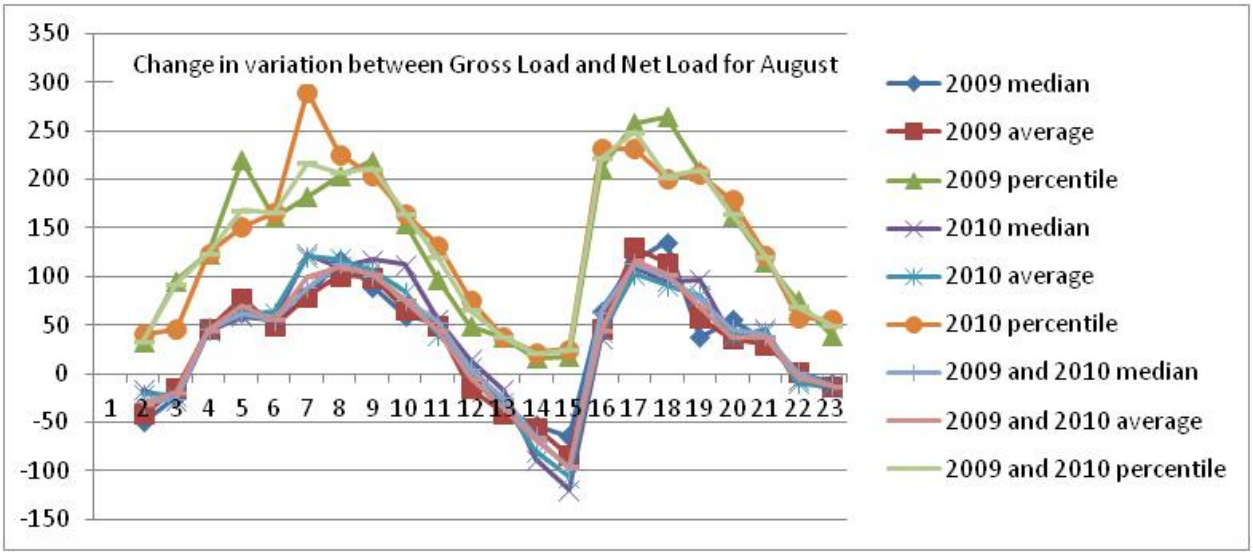
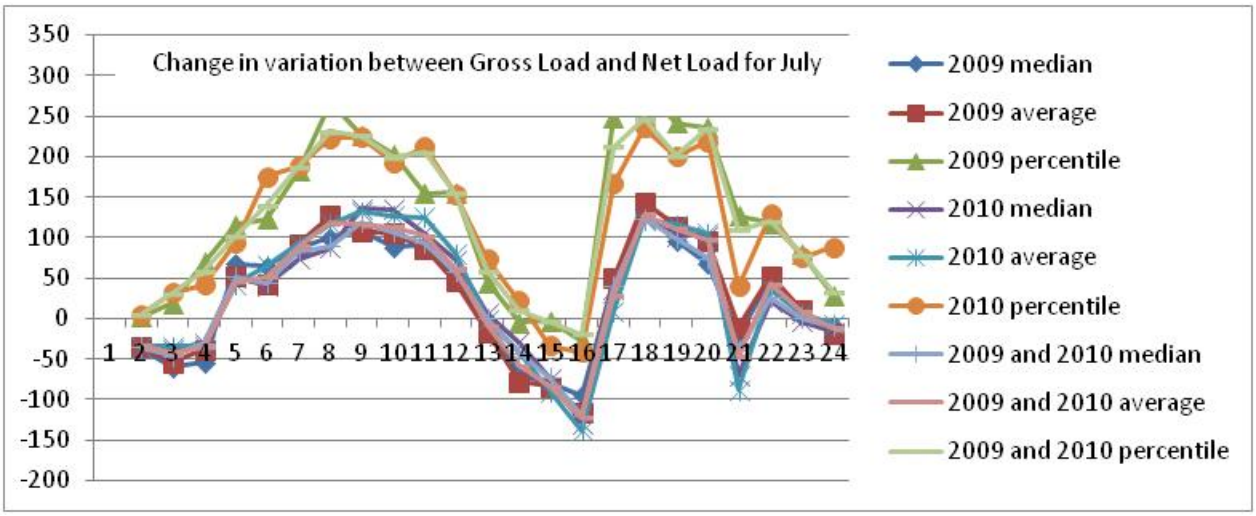
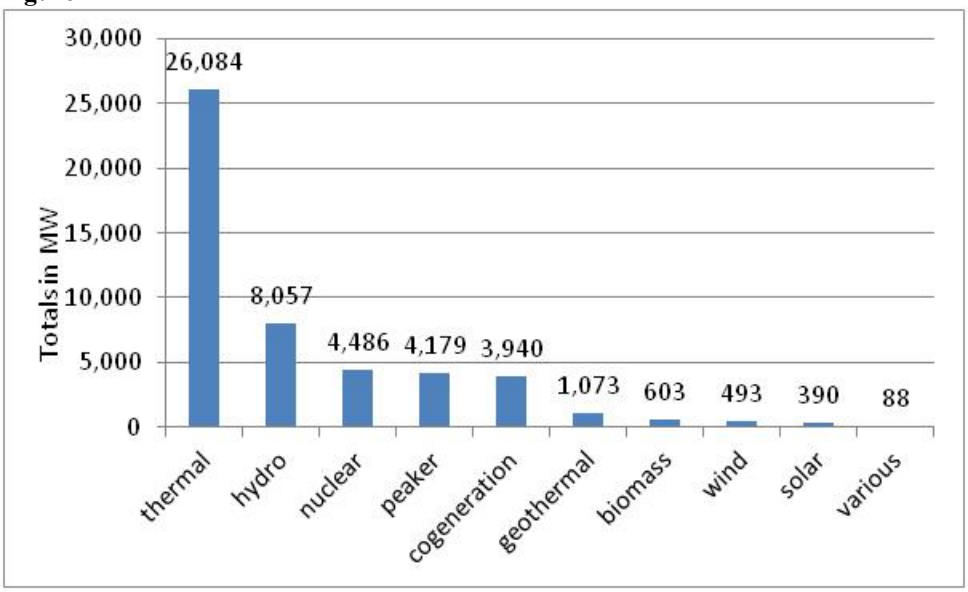


Figure 3



During the peak months, wind NQC, peaks at 33% of maximum generation[4] in June and dips to below 5% in December. Currently, with non-dispatchable hydro, Bucket 1 resources equal 2-4 % of Resource Adequacy obligations each month. Based on this analysis, Energy Division recommends limiting Bucket 1 resources to 5% of a particular LSE's Resource Adequacy obligation

Figure 4



Analysis related to Buckets 2 and 3

To determine limits for Bucket 2 (peaking resources) and Bucket 3 (base load resources), Energy Division staff looked at the percentage differences between required peaking energy and required

[4] In computing wind and solar factors for new generation, percentages are computed of maximum generation levels, not nameplate. As a replacement for nameplate to designate capacity of the units, the calculation uses highest MWh value seen in actual generation data.

base load energy for the months, April, May, July, August, and October of 2009 and 2010. Load values were characterized by assembling a median, average, and 90th percentile exceedence level for 2009, 2010, then 2009 and 2010 as one data set. The Charts (Figures 5-10) are from the 2009 and 2010 combined data set. For these charts, Energy Division created a data set made up of actual hourly MWh loads for each hour of each month. These loads were sorted by hour in the day, and a 90th percentile value computed for each hour of each day. These values are divided by the 10th percentile of all hours in the month, which indicates the minimum generation amount in a month, and one value is generated for each month. This value represents the difference between typical maximum load for each hour as percentage of the minimum load for the month and helps determine a reasonable limit for peaking dispatchable resources and base load non-dispatchable resources (Buckets 2 and 3 respectively). From the following charts, illustrating conditions in the months of April, May, July, August, and October, it is observed that the percentage limits vary somewhat.

Energy Division recommends that the limits for Buckets 2 and Bucket 3 be 45% and 69 % respectively. These values account for considerable variability, and are the maximum values observed in 2009 and 2010. The smallest difference between base load value and peak load is in April (Figure 5), when base load is about 69% of peak load. The largest difference between base load and peak load is in August (Figure 7) when base load percentages equal only 55% of peak load, meaning peak load percentages are maximized at 45% of peak load. Thus to account for variability in the months of the summer, Bucket 2 limit is based on the maximum levels observed, or 45% of Resource Adequacy obligations (Figure 6 for July), and Bucket 3 limits is based to the maximum base load proportion observed , or 69% (Figure 5 for August).

Figure 5

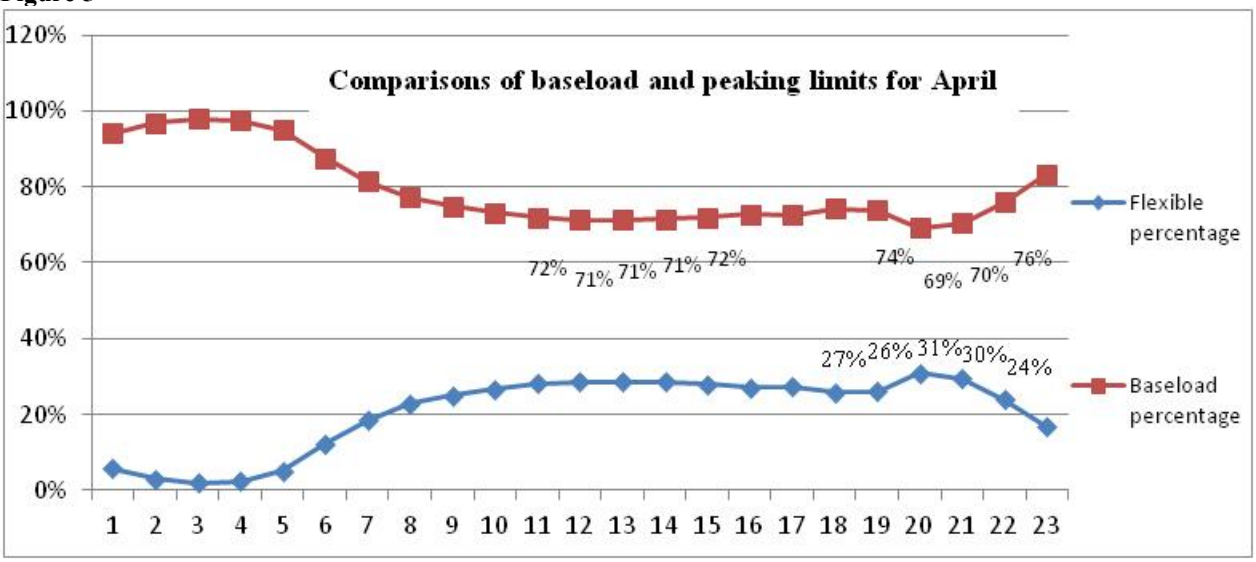


Figure 6

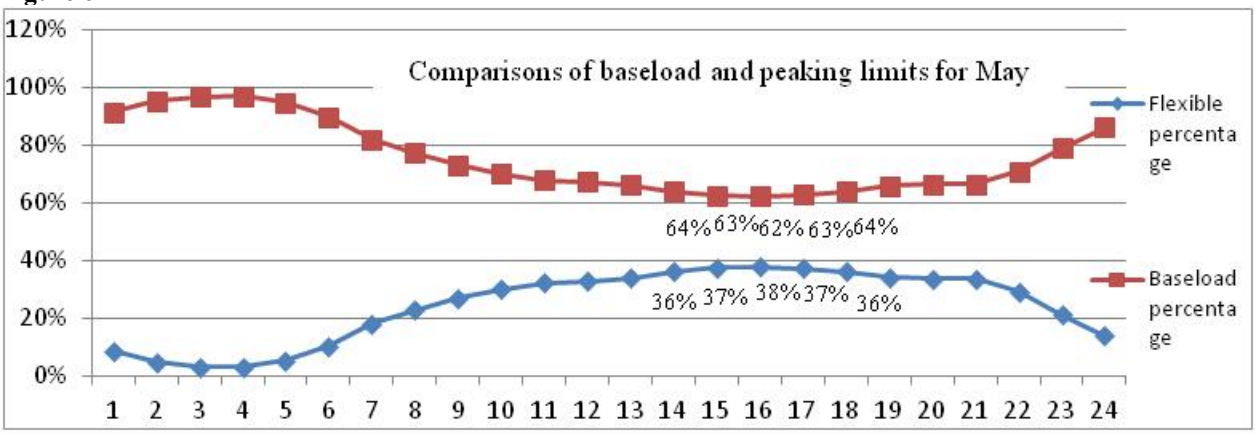


Figure 7

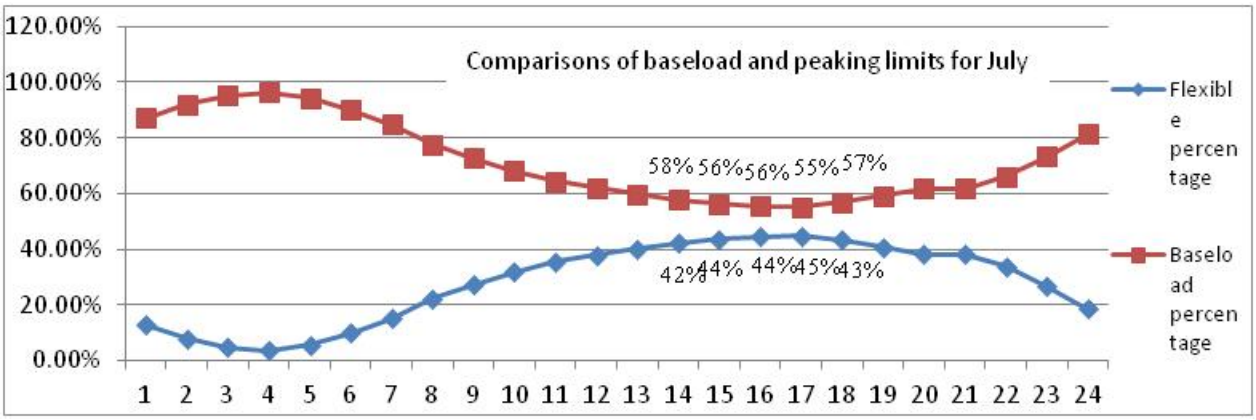


Figure 8

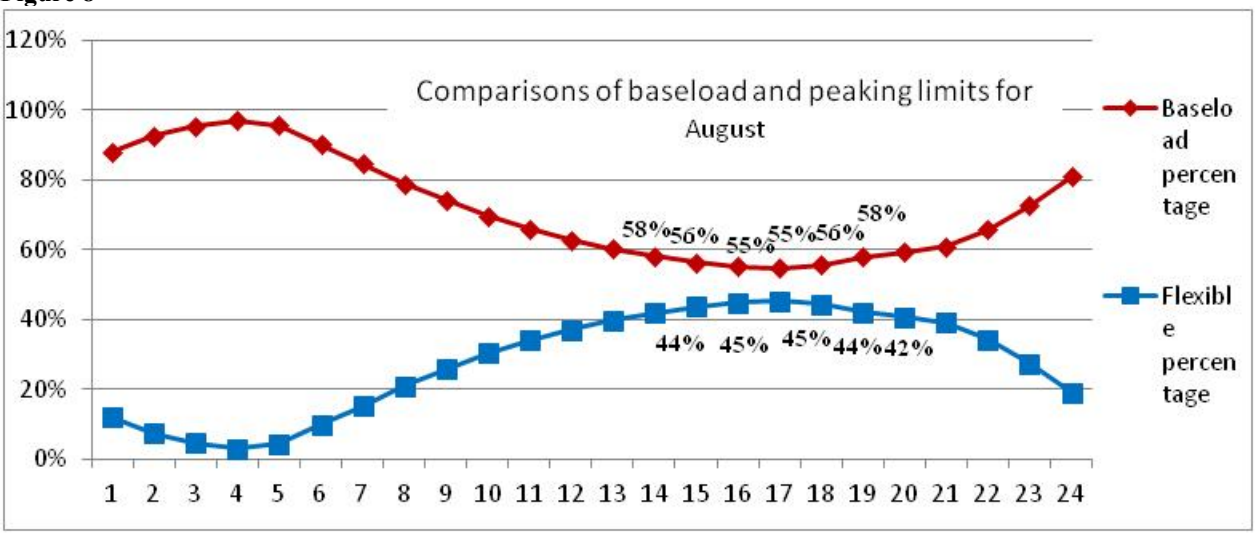
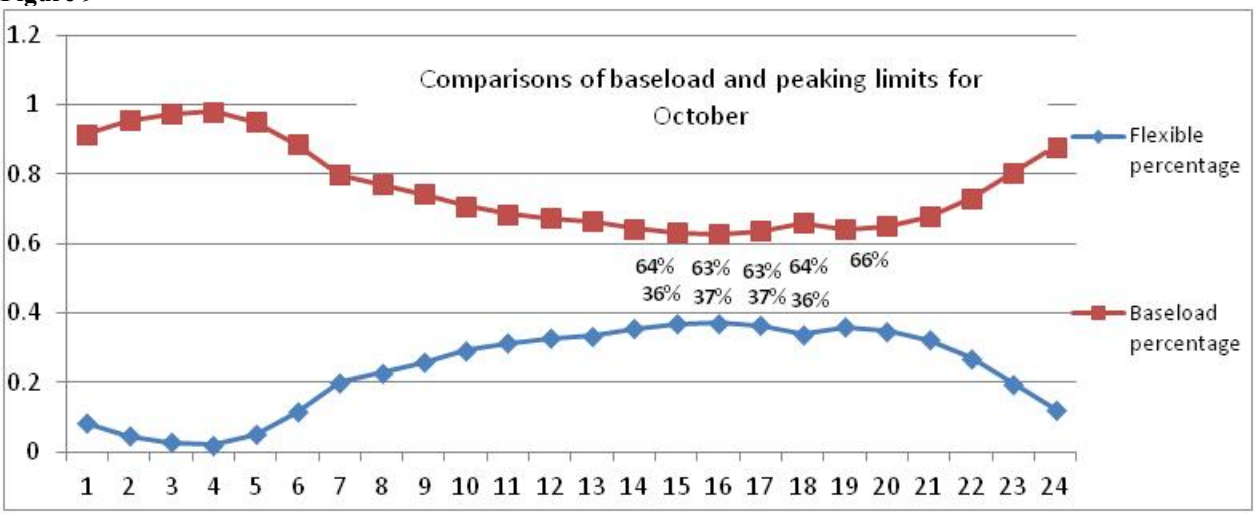


Figure 9



Implementation details -

Party comments in the workshops highlighted the difficulty in categorizing resources as "limited" or "dispatchable." Energy Division staff examined the classification process used in determining Qualifying Capacity. In that process, Energy Division staff along with the CAISO, publish a preliminary list where each resource is classified as dispatchable or non-dispatchable to determine whether dependable capacity or settlement data will be used to calculate the qualifying capacity of a resource. After the preliminary list is published, resource owners are given time to comment or seek clarification regarding classification of particular resources. Energy Division and CAISO staff responds to the individual party, and may reclassify the resource according to the information provided by the resource owner. Energy Division staff propose a similar process, where the preliminary Qualifying Capacity list classifies each resource in a specific bucket, and resource owners are given time to dispute or seek clarification.

Default revisions to current methodology in the event Commission does not approve Energy Division Proposal –

Energy Division staff analyzed load data from 2009, 2010, and 2011 for May through September. Monthly load data was ranked from highest to lowest MW value, to create a load duration curve for each month and each year, and the load duration curves were averaged to create a composite average curve. Energy Division staff updated the load duration shapes that were used to determine the buckets in 2005 and updated the percentages in the chart below. Existing categories distinguished by hour limits were retained, with the addition of a new bucket for Demand Response resources as a fifth bucket. The Demand Response bucket was based on 12 hours of availability in a month. Table 3 shows the updated percentages for each bucket as well as the old bucket percentages for comparison.

Table 3 – Revised MCC buckets based on load data from 2009-2011

MCC Limits by Category	Hours per month by Category	Load Shapes from 2003-2005	Load shapes from 2009-2011
Category DR	12 hrs	N/A	5.7%
Category #1 (sum of DR and Category 1)	5x4 = 87 hrs	13.3%	16.2%
Category #2 (Sum of DR, 1, 2)	5x8 = 171 hrs	18.6%	21.7%
Category #3 (Sum of DR, 1, 2, 3)	6x16 = 415 hrs	30.1%	33.8%
Category #4 (Sum of DR, 1,2,3,4)	7x24 = 744 hrs	100%	100.0%

CAISO Flexible Capacity Proposal –

CAISO submitted a proposal related to flexible capacity procurement at the Resource Adequacy workshop, with a revised version on March 2, 2012, and although the objective of both proposals are similar; there are significant differences in the approach adopted by CAISO and the Energy Division. For instance the Energy Division categorizes eligible units based on operational characteristics (ramp rate, startup time etc.) whereas CAISO uses the nature of the resource (base load, intermittent etc.) to define eligibility. The Energy Division relies on the NQC values to account for compliance purposes whereas CAISO uses the *Maximum Continuous Ramping*, which varies every month, and *Load Following*. The Energy Division Staff is evaluating and analyzing the CAISO proposal and is looking forward to reading comments from parties. These proposals are not meant to be competitive and will be analyzed individually in the Resource Adequacy proceeding.

Summary of Flexible Capacity Requirement (CAISO)

CAISO proposes adding "flexible" capacity requirements to the existing Resource Adequacy program requirements. These categories – referred to as "maximum ramping" (to meet maximum expected continuous ramp needs), "load following" (to meet dispatch needs), and "regulation" (to ensure sufficient regulation capacity) -- were developed based on system needs from the Renewable Integration Studies and would be applied to the entire Resource Adequacy fleet of resources. For 2013, CAISO plans to use the 2012 studies. For 2014, more analysis will be needed as more variable renewable resources come online. Should the CAISO determine that an LSE does not have a sufficient amount of flexible capacity in each category; the LSE would have an opportunity to cure the deficiency before CAISO exercises its backstop procurement authority to cure the deficiency. CAISO explained that the exact mechanism would need to be developed during a future CAISO stakeholder process.

CAISO noted that other changes to the Resource Adequacy program would need to be made in order to implement the flexible capacity procurement proposal. These would be major changes to the current program: an assessment of flexible capacity amounts on a monthly basis would be conducted, and implementation would involve a monthly procurement obligation imposed on LSEs. CAISO proposal also required increasing the year-ahead to a full twelve-month Resource Adequacy showing, as opposed to the current five month summer showing. CAISO mentioned that threat to system reliability would shift from peak summer to the shoulder (non-summer) months and that these changes were required to address these needs and other changes would be needed in the future, such as instituting a multi-year Resource Adequacy program and extending these requirement to Local Resource Adequacy as well. Unanswered questions of the flexible capacity procurement mechanism included-

- Interaction with Standard Capacity Product
- Need determination
- Methodology clarification

Use limited resources and Hydro resources need further study in the context of flexible capacity; CAISO believes that these resources should be excluded for 2013. PG&E's observations on the proposal were that there was a need for more forward procurement and that CAISO should determine multi-year flexible Resource Adequacy requirements. SCE suggested that the next step in the proposed process must not adversely affect parties' procurement process and that both CAISO and CPUC should take incremental steps instead of adopting sweeping changes towards the procurement of flexible capacity. Some parties believed that the CAISO proposal and the Energy Division's proposal to redefine MCC buckets were competing proposals. These parties believe we would only need "one or the other. CAISO believes that the Energy Division's MCC proposal does not address the required ramping capabilities and has no provision for regulation needs. Parties proposed to have another workshop, or to extend the current process, to further refine CAISO's proposal.

Resource Adequacy for Distributed Generation.

Energy Division staff discussed CAISO's straw proposal for an annual assessment methodology for allocating Resource Adequacy for distributed generation resources. Specifically, the CAISO proposal would create an annual process similar to the annual Local Capacity Requirement assessment process. Resource Adequacy for distributed generation, calculated after assessing deliverability at the nodes, could be allocated either to Local Regulatory Authorities (LRA)s or to LSEs directly[5]. A main challenge is to

[5] The CAISO proposal has since then changed so that deliverability is allocated to LRAs.

determine how to optimize between various distributed generation programs that the CPUC currently administers.

Vote Solar raised a concern regarding the potential need for significant distribution and/or transmission-level upgrades due to incremental distributed generation resource deployment. Such need for upgrades might trigger complex interconnection requirements. Vote Solar believe that this outcome is inconsistent with the primary purpose of distributed generation, which is the better utilization of existing assets without additional infrastructure. Vote Solar believes that the CPUC should coordinate across programs, and prioritize distributed generation at locations where existing assets are operating above minimum load to capture the "low hanging fruit" of adding more renewable resources online, without expensive and time-consuming upgrades.

SCE questions the implication of a site specific or project specific deliverability assessment. SCE believes that the purpose of the workshop discussion is to move away from the case-by-case paradigm of conducting deliverability assessments. Specifically, SCE supports the broad concept of CAISO's proposal to conduct an annual deliverability assessment; however, SCE believes that deliverability may be better allocated to LSEs directly rather than to LRAs which is similar to import allocation for out-of-state resources. SCE suggests that the more efficient way address deliverability for distributed generation is to finalize CAISO's straw proposal first, then address how to prioritize between various distributed distribution level programs at the CPUC. In response to SCE, CPUC staff raised a number of clarifying questions. For example, if the annual deliverability allocation is done by the CAISO, the allocation may or may not reflect policy priorities. The CPUC has statutory directives to prioritize preferred resources, and CAISO is not necessarily legally allowed to discriminate between different resources based on police reasons. SCE, in response to CPUC staff inquiry, believes that the loading order could still be applicable and maintained if CAISO allocates deliverability to the LSEs. SCE believes that each LSE is able to assess projects based on merit and compatibility with a LSE's generation portfolio given grid congestion management concerns. SCE questions whether CPUC truly has the ability to pick winners and losers, and believes that LSEs are capable of performing the allocation based on objective criteria.

CAISO explained that under the current straw proposal, CAISO expects the CPUC to provide the portfolio with designated network nodes and associated target quantity for each of those nodes. Those quantities will be incorporated into CAISO's study, and CAISO will assess deliverability without driving additional transmission upgrade. For nodes that are not studied, there will be no determined deliverability to allocate. Various parties, in response to CAISO's explanation, inquired how there could be opportunities for stakeholders to provide input on the choice of nodes to study. Another concern was

regarding when the CAISO could first determine the amount of deliverability available for allocation. Lastly, CPUC staff explained that the resource portfolios would not determine which projects and nodes are studied for deliverability assessment. The projects are picked based on utility solicitations and the ensuing evaluation process.

(END OF ATTACHMENT)