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BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Develop an Electricity Integrated Resource Planning Framework and to Coordinate and Refine Long-Term Procurement Planning Requirements.

Rulemaking 16-02-007

**ASSIGNED COMMISSIONER AND ADMINISTRATIVE
LAW JUDGE'S RULING INITIATING PROCUREMENT TRACK AND SEEKING
COMMENT ON POTENTIAL RELIABILITY ISSUES**

This ruling formally initiates the “procurement track” of this proceeding, as outlined in Decision (D.) 19-04-040. The ruling generally describes the scope and content of the procurement track, and seeks comments from parties on its framing and structure.

Then, to address the first priority task of the procurement track identified herein, this ruling seeks comments on the potential for near-term reliability challenges, as analyzed by Commission staff and summarized in this ruling. The ruling also seeks comments on options for potential solutions, if parties agree that reliability challenges are possible or likely.

Comments are due no later than July 15, 2019, with reply comments by no later than July 25, 2019.

1. Procurement Track

In this section of the ruling, we generally describe the scope and priorities expected for the procurement track, along with a preliminary schedule.

1.1. Scope and Priorities

The idea of a “procurement track” emanates from D.19-04-040, wherein the Commission committed to initiate procurement activities within this integrated resource planning (IRP) proceeding. The decision divided activities into two broad categories. The first category was the development of a “backstop” or “backup” procurement mechanism. Such a mechanism would be designed to assume that individual load-serving entities (LSEs) intend to, but may fail to, procure necessary resources identified by themselves or by the Commission as necessary for the electricity system. In the event of gaps between identified needs and actual resources procured or planned, the Commission will need to develop a mechanism to ensure that necessary resources are available. The resources may be for resource adequacy requirements, renewables portfolio standard (RPS) requirements, or both.

The second category of procurement activities identified in D.19-04-040 involves those that may require collective action to bring to fruition -- resources that are unlikely to be procured by individual LSEs on their own -- such as large facilities, or entirely new resource types.

Another way to categorize the procurement activities potentially necessary in this proceeding is with respect to the type of resource to be procured. Generally, the table below summarizes the types of resources that could be addressed.

Resource Type/ Attribute	Renewables	Short-Medium- Term Renewable Integration/ Reliability	Long-Term Reliability
Example Resources	<ul style="list-style-type: none"> • In-state wind • In-state solar • Geothermal • Repowered wind • Out-of-state wind • Off-shore wind 	<ul style="list-style-type: none"> • Existing thermal • Existing imports • New thermal • New or repowered renewables • Battery storage • Hybrid generation/storage • Distributed Energy Resources (DERs) 	<ul style="list-style-type: none"> • Existing thermal • Existing imports • New or repowered renewables • Battery storage • Hybrid generation/storage • DERs • Long-duration storage
Potential Mechanisms	<ul style="list-style-type: none"> • Increased RPS requirements • Specific IRP-directed renewables procurement 	IRP procurement direction	IRP procurement direction
Cost responsibility	<p>Individual LSE or centralized, depending on specific resource?</p> <p>Or depending on specific threshold conditions?</p>	<p>Individual LSE or centralized, depending on specific resource?</p> <p>Or depending on specific threshold conditions?</p>	<p>Individual LSE or centralized, depending on specific resource?</p> <p>Or depending on specific threshold conditions?</p>
Immediate Level of Priority	Medium	High	Low

Generally, the categories above cover system-level resources, but it is also the case that there could be local area needs within each category. While the IRP proceeding and predecessor long-term procurement planning proceedings have historically addressed more system-level needs, we acknowledge that we still need to keep an eye on the local and flexible resource needs as we conduct system-level analyses. We also note that discussions about a central procurement entity are ongoing in the resource adequacy proceeding, and we do not intend to duplicate that discussion here.

As indicated in the table above, we view the near- and medium-term renewable integration and reliability resources as the type most in need of our immediate attention in this proceeding. Thus, we intend to prioritize development of a mechanism to identify and procure those types of resources first. Because of the urgent need, this resource category will become our first opportunity to design a mechanism to ensure that the appropriate and needed resources are procured, either by the individual LSEs procuring their share or by development and implementation of a backup mechanism.

Renewables to meet the 2030 needs identified in the Preferred System Plan adopted in D.19-04-040 are then the next higher priority, in our view. Once we have addressed those items, we can turn to the longer-term reliability needs for 2030, to accommodate the increasing renewables expected in that timeframe. The section below outlines our general expectation of schedule for the procurement track of the IRP proceeding.

In response to this ruling, we seek input from parties on both the categorization of the types of resources and activities described above, as well as the relative prioritization of the resource types.

1.2. Preliminary Schedule

The table below offers a preliminary schedule and prioritization as described above. This schedule is extremely preliminary but should serve to give parties a general expectation of sequencing and timing for activities associated with the three categories of resource types identified.

Item	Schedule
Near-Medium-Term Reliability	
Party comments in response to this ruling	July 15, 2019
Reply comments in response to this ruling	July 25, 2019
Potential workshops	August 2019
Additional comments	Fall 2019
Proposed Decision issued for comment	Late Fall 2019
Procurement activities initiated	Late 2019 or early 2020
Renewables	
Initiate renewables portion of inquiry with workshop or ruling	Winter 2019-2020
Formal party comments/replies	Early 2020
Proposed Decision issued for comment	Spring 2020 (intended to coordinate with direction for 2020 RPS Procurement Plans, if possible)
Long-Term Reliability	
Initiate long-term reliability portion of inquiry with workshop or ruling	Summer 2020
Formal party comments/replies	Summer 2020
Proposed Decision issued for comment	Late 2020 or early 2021

2. Near-Medium-Term Reliability Issues

This section of the ruling addresses near-term reliability concerns, as analyzed by Commission staff observing trends in the resource adequacy

markets.¹ Staff have reviewed the near-term resource adequacy market in California using publicly available sources of information, in order to provide analysis of the conditions and obtain party input on those conditions. Following the summary of staff analysis, we propose several steps for the Commission to require specific procurement activities, and then pose questions to parties to address in comments.

2.1. Description of Near-Term Reliability Concerns

This section of the ruling describes several recent trends in the bilateral resource adequacy market, as observed by Commission staff. First, many market participants have informally observed a tightening of the bilateral market. In addition, according to Commission staff, there has been a decline in the robustness of competitive solicitations. Finally, a number of LSEs have not been able to comply with the system requirements for the 2019 resource adequacy compliance year.^{2 3}

Together, these signs pointed staff to a need to analyze the system supply stack in the near- to medium-term (between 2019 and 2024) to better understand the liquidity in the bilateral resource adequacy market and consider whether there are sufficient resources to meet peak system reliability needs. For the resources available in this time horizon, there will likely be a growing reliance on

¹ Southern California Edison (SCE) has also raised concerns in ex parte meetings. See, for example, SCE's *ex parte* notice:

<http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M289/K333/289333087.PDF>

² See <https://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442460915>.

³ See also

https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Safety/Utility_Enforcement/Citation_Programs/Energy%20Citation%20List%20for%20Webside-Updated%204-19.pdf.

import capacity, especially when once-thru cooling (OTC) units retire as expected at the end of 2020.

For the assessment staff conducted in preparation for this ruling, system resource adequacy needs are based on the 2018 Integrated Energy Policy Report (IEPR) 1-in-2 peak California Independent System Operator (CAISO) coincident forecast, which was adopted by the California Energy Commission in February 2019.⁴ In this forecast, the system peak occurs in September for the 2019-2028 time period. This forecast, which is updated annually, includes assumptions for behind-the-meter (BTM) resources such as incremental energy efficiency and photovoltaics (also referred to as additional achievable energy efficiency (AAEE) and photovoltaics (AAPV)).

Analysis of the supply stack begins with the CAISO Net Qualifying Capacity (NQC) list, which reflects the resources (in megawatts (MW)) currently available to the bilateral market.⁵ The CAISO produces this list annually, but updates it monthly to reflect new resources that have reached commercial operation, as well as existing resources that have increased their capacity. The NQC list, however, does not include new resources that are not yet online, nor does it reflect intra-year or future resource retirements.

To account for near- to medium-term retirements, the CAISO maintains a list of mothballed and retired resources,⁶ which includes resources that have

⁴ LSE and BA Tables Mid Baseline Mid AAEE AAPV
<https://efiling.energy.ca.gov/GetDocument.aspx?tn=226367&DocumentContentId=57142>
(tab 1.5b).

⁵ Located on CAISO's reliability requirements website-
<http://www.aiso.com/Documents/NetQualifyingCapacityList-2019.xlsx>.

⁶ Located on CAISO's reliability requirements website-
<http://www.aiso.com/Documents/AnnouncedRetirementAndMothballList.xlsx>.

retired or are expected to retire, as well as units that are in the process of mothballing or considering retirement. Staff suggests that resources that have already been retired (*e.g.*, Encina) not be included in the supply stack, while expected retirement dates should be included for those units expected to retire in the timeframe being analyzed. For resources that have been mothballed or are proposing to do so, staff suggests they should still be included in the supply stack, because they could still be returned to the market.

To understand the supply stack in terms of fuel type, the NQC list can be cross-referenced with the master control area generator capability list.⁷ This allows estimating the impact of revised effective load carrying capability (ELCC) factors, currently reflected in a proposed decision pending in the resource adequacy rulemaking,⁸ on the supply stack. The proposed ELCC factors would reduce the August value for solar PV and solar thermal from 41% to 29% and would reduce the August value for wind from 26.5% to 21%. The proposed ELCC factors would reduce the September solar values from 33.4% to 14% and the wind values from 26.5% to 15%. These declining values will impact the overall supply available to LSEs to count toward their resource adequacy requirements.

Also included in the supply stack is additional generation currently under development and expected to be online by 2024, including new generation authorized by the Commission in D.13-02-015 and D.14-03-004, to address the local reliability needs in the areas affected by the retirements of OTC resources in San Diego, Western Los Angeles (LA) Basin, and Moorpark local areas. In these

⁷ Located on CAISO's OASIS website- <http://oasis.caiso.com/mrioasis/logon.do>.

⁸ See <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M294/K810/294810123.PDF> , at Appendix A-2.

decisions, the Commission authorized SCE to procure between 1,900 and 2,500 MW and San Diego Gas & Electric (SDG&E) to procure between 800 and 1,000 MW.

In D.15-11-041, the Commission approved SCE's Western LA Basin procurement, including 1,813 MW of capacity (1,382 MW of gas-fired generation, 264 MW of storage, including BTM, 124 MW of energy efficiency, and 5 MW of demand response). In D.14-02-016, the Commission authorized a 300 MW new generation power purchase agreement (PPA) with Pio Pico Energy Center. In D.15-05-051, the Commission approved a new generation PPA for 500 MW at the Carlsbad Energy Center, and in D.18-05-024, the Commission approved five energy storage contracts and one demand response contract totaling 88 MW. Most, but not all, of SDG&E's new generation procurement is online and currently reflected on the CAISO NQC list, but most of SCE's new generation is not yet online and not expected to come online until the Summer of 2020.

In addition, SCE has recently filed Application 19-04-016 and Advice Letter 4002-E requesting approval of a total of 195 MW of new generation to meet the local reliability requirements in the Moorpark sub-local area, as well as the Aliso Canyon gas reliability needs (pursuant to Resolution E-4397 and Senate Bill 801). This procurement is still pending Commission consideration.

In addition to the new generation discussed above, there are renewable and storage resource projects that will come online in the near-to-medium term that will be reflected in the new 2019-2020 IRP baseline assumptions to be used for development of the next Reference System Plan. Commission staff will post those detailed assumptions to the Commission IRP web page⁹ no later than the

⁹ <https://www.cpuc.ca.gov/General.aspx?id=6442459770>.

end of June, so that parties may use that information to inform comments on this ruling.

For example, the IRP baseline assumptions include the 1,325 MW of storage procurement assumed to come online in increments between 2018 and 2024; however, other procurement approvals (local capacity, Aliso Canyon procurement and procurement associated with Resolution E-4949) have accelerated some of the storage procurement activities, resulting in storage procurement that may be online earlier than was previously assumed.

Central to this analysis is the growing reliance on imported resource adequacy resources to meet forecasted peak system resource adequacy needs. The current resource adequacy program assumes that the annually established maximum import capability (MIC) may be available and used to meet peak system reliability needs.

On an annual basis, the CAISO establishes the MIC amounts for each intertie for a one-year term using its MIC calculation methodology. The methodology uses historic imports, scheduled into the CAISO balancing authority area (BAA) over the last two years during the peak system load hours, to determine the highest imports simultaneously obtained during these hours. Once these values are calculated, the capacity is allocated to scheduling coordinators for LSEs in the CAISO's BAA for resource adequacy purposes, using a 13-step process.¹⁰ The CAISO has posted the total allocated MIC for 2019

¹⁰ The process is detailed in CAISO Tariff Section 40.4.6.2.1, "Available Import Capability Assignment Process."

on its web site.¹¹ The CAISO also posts advisory estimates of future resource adequacy import capability, which can be used to estimate MIC values in the near to medium term.¹²

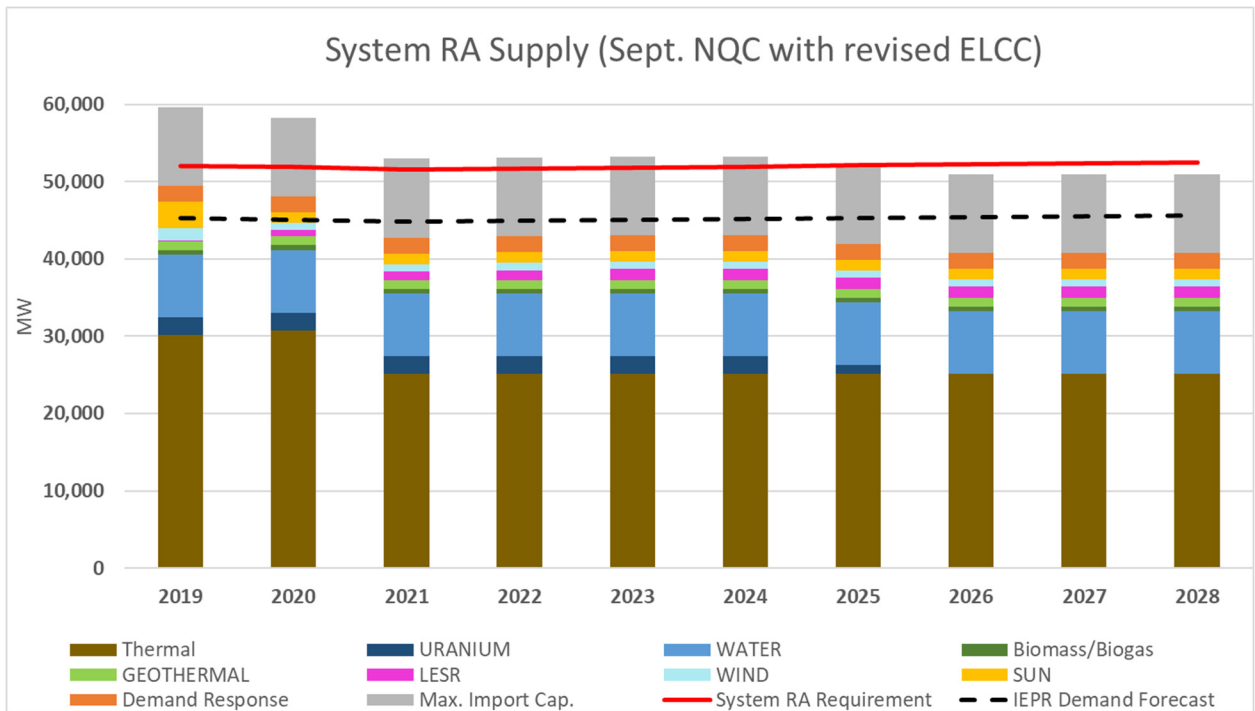
The graphic below was produced, using the steps above, to provide a visual depiction of our growing concern. It should be noted that resource additions were developed based on the 2017-2018 baseline assumptions in IRP. However, the storage assumption was augmented to provide earlier online dates to reflect Commission-approved storage procurement, as noted above.

In addition, all solar and wind values have been modified for 2020 and beyond to reflect the revised ELCC factors currently reflected in a proposed decision in the resource adequacy rulemaking, as described earlier. We recognize that some resources currently under development may not be included because of our lack of visibility into their contract status. We hope that LSEs will provide additional information about resources in response to the data request due August 16, 2019, as required in D.19-04-040.

In addition, hydro values change from year to year and using the 2019 values may not be the best way to reflect hydro conditions and accurate NQC value for near- to medium-term supply. However, we encourage parties to utilize forthcoming updated baseline assumptions for the 2019-2020 IRP cycle, as well as their own analyses, when providing responses to this ruling.

¹¹ See <http://www.aiso.com/Documents/Step6-2019AssignedandUnassignedRAImportCapabilityonBranchGroups.pdf>, listed under Step 6, "Total Import Capacity to be Shared."

¹² See <http://www.aiso.com/Pages/documentsbygroup.aspx?GroupID=CE04081C-3DF5-4226-9377-3A314B7E1FD9>



The above graphic shows that in 2021, the bilateral resource adequacy market could be relying on approximately 8,800 MW of MIC to meet the system peak. Recent analysis of historical use of resource imports to meet peak system conditions, documented by the CAISO in its recent Resource Adequacy Enhancement Initiative, suggests that California’s bilateral resource adequacy market is increasingly relying on MIC to meet peak system resource adequacy requirements. The CAISO’s straw proposal for Resource Adequacy Enhancement Initiative Part 1, states:

Import RA resources were used to meet an average of around 3,600 MW (or around 7 percent) of system RA requirements during the peak summer hours of 2017. In the summer of 2018, this increased to an average of around 4,000 MW (or around 8 percent) of system resource adequacy requirements.

Thus, the quantities are not insignificant and have an impact on the RA program and ability to ensure reliability.¹³

CAISO's Department of Market Monitoring also published this data in its special report titled "Import Resource Adequacy, September 2018."¹⁴ These values are significantly lower than the 2017 and 2018 MIC allocation for these same periods (in 2017, 11,310 MW of MIC was allocated¹⁵ and in 2018, 10,340 MW of MIC was allocated¹⁶).

When adding up the supply stack in 2021, Commission staff conclude that it is possible that all of the MIC could be needed just to meet the system resource adequacy requirement, which is more than double the historical usage of imports for system purposes.

Given historical data on imported resource adequacy used to meet system peak requirements, the proposed adoption of the revised ELCC factors, and the IEPR peak load forecast shifting from an August peak to a September peak, we are growing increasingly concerned with the ability of the bilateral markets to transact and meet 2021 resource adequacy requirements, given such limited in-state supply. There is also the possibility that additional units may mothball and/or retire, exacerbating the tightness of in-state supply.

¹³ See <http://www.aiso.com/Documents/StrawProposalPart1-ResourceAdequacyEnhancements.pdf>, at 7.

¹⁴ See <http://www.aiso.com/Documents/ImportResourceAdequacySpecialReport-Sept102018.pdf>, at 1.

¹⁵ <http://www.aiso.com/Documents/Step6-2017AssignedandUnassignedRAImportCapabilityonBranchGroups.pdf>.

¹⁶ <http://www.aiso.com/Documents/Step6-2018AssignedandUnassignedRAImportCapabilityonBranchGroups.pdf>.

2.2. Potential Solutions

Assuming there is a need for additional system resource adequacy as early as 2021, as described above, there may be several options to reduce tightness in the market. All of the ideas presented in this section are intended for short-term application only, and not as long-term and permanent structures for procurement.

First, many parties will likely point out that additional renewables will be coming online as part of the RPS requirements. An additional approximately 1,900 MW of solar and 300 MW of wind are planned to come online during 2020 and 2021. However, assuming the new ELCC counting conventions are adopted by the Commission, this would increase available system resource adequacy during the peak period by only about 300 MW. Even an additional 5,000 MW of renewables would only increase available system resource adequacy during the peak period by approximately 750 MW.

Still, one option would be for the Commission to order procurement of additional renewables. Other options include:

- Requiring additional procurement of new storage and/or demand response resources.
- Extending deadlines for some portion of planned OTC retirements until new procurement is authorized or online.
- Authorizing procurement of existing resources that have been mothballed or have threatened to leave the market in some way.

Based on the staff analysis, we recommend proceeding on all of these fronts, as described further below. Again, these are intended as short-term options, and not necessarily the model for long-term structures.

First, we propose requiring that each LSE procure, on an all-source basis, its proportional share of a total 2,000 MW new peak capacity statewide, to come

online by August 1, 2021. The Commission would make this requirement in a decision issued in this proceeding in 2019, after which procurement activities would commence. Proportional load share obligations would be based on the IEPR forecasts adopted in February 2019. The resources could be renewables, storage, demand response, energy efficiency, other DERs, firm imports (with capacity discounted by 1/3 to account for the risk associated with increasing imports), or conventional thermal resources. Each LSE would also be required to address how it had or would ensure delivery of its proportional share by the required timeframe in its individual IRP filing due in May 2020. Each LSE would be required to document the development status of the new resources by providing the date that the developer received site control, the date that the environmental review application of the project was “deemed complete” by the appropriate agency, the date that a Phase 1 interconnection study was completed at the CAISO.

Any procurement by LSEs that is not already reflected in the 2019-2020 IRP baseline assumptions would be counted toward the LSE’s proportion of the above requirement.

This proposal assumes that all LSEs will procure their proportional share of the obligation; if that does not occur, a backup mechanism may be needed, but we do not yet propose one at this time. That mechanism will likely be addressed at a later stage of this proceeding.

In addition to the above procurement requirement, we suggest that the appropriate individuals within staff of the Commission begin discussions through appropriate channels with the Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS) to the State Water Resources Control Board (Water Board), under whose jurisdiction the OTC retirement

requirements are set. If SACCWIS and the Water Board agree, potentially the retirement of one or more OTC units could be postponed by a year or two in order to accommodate the schedule for new resources to come online to meet system reliability needs.

Finally, we propose to require SCE to solicit 500 MW of capacity from existing resources that are without a contract past 2021, to be procured as part of a medium-term contract (2-5 years). The cost of the contract would be allocated utilizing the cost-allocation mechanism (CAM), with a modification such that the costs would be spread to all LSEs with resource adequacy obligations, and not just those operating with the SCE geographic territory.

Together, these measures would keep the reliance on import capacity similar to historical limits, instead of increasing that reliance to almost the maximum potential level of imports. We also hope this would reduce the potential for exercise of market power, while providing for a transition to increasing reliance on renewables coming online over the next 2-5 years, in preparation for the 2030 goals.

Should the Commission order the procurement steps identified above, we propose that those LSEs who require Commission approval for their contracts file a Tier 3 advice letter seeking that approval. The advice letter would be required to show the project status milestones indicated above (date of site control, environmental application “deemed complete” or data adequate, and CAISO interconnection study completed). LSEs who do not require Commission contract approval would provide the same information in their individual IRPs due in 2020.

3. Questions for Parties

To assist the Commission in evaluating the staff analysis and proposed solutions identified above, we invite parties to comment on the following questions related to near-term reliability:

1. Do you believe that there could be reliability challenges as soon as 2021? Why or why not? Include comments on any concerns you have about the staff analysis presented in Section 2.1 of this ruling, and cite to publicly-available data to support your analysis.
2. Are you concerned about increasing reliance on imported capacity for meeting resource adequacy requirements? Why or why not?
3. Should the Commission be concerned about specific local and/or flexible resource adequacy needs, or only the system needs identified herein? Explain.
4. If a need for system reliability resources in the near-term is identified within this proceeding, will there be sufficient time to bring new resources online to meet the need? If not, should the Commission pursue delays to the OTC retirement schedules to bridge this short-term gap? Why or why not? If the Commission pursues OTC retirement date delays, or which plants and for how long should we request the delays?
5. Comment on the proposed requirements in Section 2.2 of this ruling for 2,000 MW of new resource adequacy capacity procured and online by August 1, 2021, procured on a proportional and all-source basis by all jurisdictional LSEs. Parties may also propose an alternative requirement.
6. Is the requirement for commercial online date of August 1, 2021 sufficiently clear or are other requirements needed? Explain.
7. Comment on how demand-side resources included in this new resource procurement should be counted (*e.g.*, as part of a reduction in the system resource adequacy requirement as part of the IEPR, etc.).

8. Comment on the proposed requirement in Section 2.2 of this ruling that SCE contract for 500 MW of existing resource adequacy capacity from a resource or resources that do not have contracts extending past 2021, for 2-5 years, with cost allocation addressed through a modified CAM mechanism. Parties may also propose an alternative approach.
9. Should any procurement from existing resources be focused on resources that have formally notified the CAISO and the Commission of an intention to retire? Why or why not?
10. If individual LSEs are unable to procure their responsible share of the authorized procurement, should an interim backup mechanism and role be established to ensure the procurement needs are met and that all LSEs pay their fair share? Could this interim backup mechanism be developed and implemented in time to get resources procured and online by August 1, 2021? If yes, describe implementable solutions.
11. If the Commission is unable to develop and implement an interim backup mechanism in time to meet peak system resource adequacy needs in 2021, what type of compliance mechanism will be needed to ensure that LSEs comply with their share of the procurement responsibility? Provide implementable solutions.
12. Is a Tier 3 advice letter the appropriate mechanism to secure Commission approval for contracts associated with the proposals in this ruling, for LSEs who require such approval? Why or why not? Provide an alternative proposal, if desired.
13. Provide any other comments you think the Commission would find relevant to its consideration of system resource adequacy issues and potential procurement by 2021.

IT IS RULED that:

1. Parties may file and serve comments addressing the scope and priorities for the Procurement Track in this proceeding, as well as the questions outlined in Section 2.3 of this ruling, by no later than July 15, 2019.

2. Parties may file and serve reply comments in response to this ruling and the questions in Section 2.3 by no later than July 25, 2019.

Dated June 20, 2019, at San Francisco, California.

/s/ LIANE M. RANDOLPH

Liane M. Randolph
Assigned Commissioner

/s/ JULIE A. FITCH

Julie A. Fitch
Administrative Law Judge