

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

Order Instituting Rulemaking to Oversee the
Resource Adequacy Program, Consider
Program Refinements, and Establish Annual
Local and Flexible Procurement Obligations
for the 2019 and 2020 Compliance Years

Rulemaking 17-09-020
(Filed September 28, 2017)

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION
TRACK 2 TESTIMONY**

CHAPTER 1: INTRODUCTION AND BACKGROUND

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13 **I. Introduction**

14 In its June 25, 2018 Track 1 decision (D.18-06-030) in this proceeding, the Commission
15 requested that parties file testimony to support proposals in Track 2. Specifically, the
16 Commission requested testimony to support proposals for a multi-year local resource adequacy
17 requirement with a three-to-five-year duration, with implementation beginning in the 2020
18 resource adequacy compliance program year. The January 18, 2018 Scoping Memo and Ruling
19 of Assigned Commissioner and Administrative Law Judge (Scoping Memo), as modified,
20 established the procedural schedule for filing testimony and proposals. Consistent with that
21 schedule, the California Independent System Operator Corporation (CAISO) hereby submits
22 testimony for the following Track 2 proposals requesting the Commission to:

- 23 (1) Establish a rolling three-year procurement requirement for local, system, and
24 flexible resource adequacy capacity (testimony sponsors: Karl Meeusen, Senior
25 Advisor, Infrastructure and Regulatory Policy and John Goodin, Manager,
26 Infrastructure and Regulatory Policy);
- 27 (2) Revise the annual resource adequacy compliance timeline to better accommodate
28 resource adequacy processes and decision making (testimony sponsor: Karl
Meeusen, Senior Advisor, Infrastructure and Regulatory Policy);
- (3) Adopt a 1-in-5 year demand forecast during months with the highest peak demand
uncertainty (testimony sponsor: Robert Emmert, Manager, Interconnection
Resources);

1 (4) Fully adopt an effective load carrying capability methodology that accurately
2 reflects the reliability contribution of wind and solar resources (testimony
3 sponsor: Karl Meeusen, Senior Advisor, Infrastructure and Regulatory Policy);
4 and

5 (5) Recognize the impact of availability-limited resources and adopt the CAISO's
6 hourly load and resource analysis to determine availability needs in local capacity
7 areas (testimony sponsors: John Goodin, Manager, Infrastructure and Regulatory
8 Policy and Nebiyu Yimer, Regional Transmission Engineer Lead, Regional
9 Transmission South).

10 **II. Background**

11 The Commission's resource adequacy program has served a critical and useful purpose
12 for many years, securing resources in advance to be operationally available when and where
13 needed, and with the right attributes, to ensure the safe and reliable operation of the grid. As the
14 grid transforms and decarbonizes, the resource adequacy program must also transform. In this
15 context, the CAISO believes the current resource adequacy program must transform in three
16 primary ways:

17 **In structure** - from a single to a multi-year procurement paradigm for all capacity types
18 (system, local, and flexible) and a central buyer to ensure procurement of essential
19 reliability resources and facilitate efficient procurement of residual capacity needs;

20 **In substance** - moving to multi-year forecasting and needs assessments, addressing load
21 migration, and adjusting how certain resources are counted and qualified as resource
22 adequacy resources; and

23 **In process** - adjusting the resource adequacy timeline to ensure key information is
24 available, assessments are completed, and informed procurement and retirement
25 decisions can occur with sufficient time and notice.

26 As the Commission develops a multi-year, central buyer resource adequacy framework,
27 the CAISO believes an important first step is to identify appropriate enhancements to the current
28 resource adequacy program to better align procurement with the transforming operational needs

1 of the grid. To that end, the CAISO believes that the following issues must be addressed in
2 Track 2 of this proceeding:

- 3 • Creating a sustainable path forward to secure essential resources in a high load
4 migration environment – Greater load migration means the traditional, large
5 investor-owned utility (IOU) buyers have difficulty forecasting their capacity
6 obligations multiple years into the future. This leads IOUs to execute fewer long-
7 term resource adequacy contracts in order to reduce potential stranded costs.
8 Additionally, the proliferation of more and smaller load-serving entities (LSEs)
9 make it more challenging to fully procure large resources, leading to increased
10 transaction costs and uncertainty for resource owners that are financially
11 dependent on contracting their entire facility.
- 12 • Ensuring adequate capacity and energy is procured to meet operational challenges
13 that extend beyond the peak hour – The meaning of resource adequacy has
14 changed from having sufficient capacity secured to serve an annual coincident
15 peak load to having sufficient capacity and energy to meet the gross load peak
16 and the net load peak,¹ and the speed and energy needed to ramp from minimum
17 to maximum net load. In 2017, the most significant operational challenges the
18 CAISO faced occurred around sunset—during the net load peak—not during the
19 traditional coincident peak load hour.²
- 20 • Properly counting the reliability contribution of different resource types – The
21 planning reserve margin, which is designed to ensure that the system has
22 sufficient capacity to meet an annual peak demand forecast, is growing less
23 relevant as new capacity additions are increasingly use or availability limited or
24 intermittent. The Commission can no longer assume that securing sufficient
25

26 ¹ Gross load is defined as the load served by the CAISO system. Net load is defined as gross load minus wind and
27 solar production.

28 ² For example, on September 1, 2017, the CAISO reached a near record system peak. This gross peak of 50,116
MW occurred at 15:58. However, at approximately 19:30 the net load peaked at 47,168 MW, with the solar
production at nearly zero. This net load peak would have exceeded the peak gross load in 16 out of the past 20 years
the CAISO has served as the balancing authority.

1 resource adequacy capacity to serve the gross peak load will provide sufficient
2 energy to serve the system's needs during all hours of the year and during all local
3 contingencies. The resource adequacy program must properly count resources
4 relative to their contribution to reliability, especially in local capacity areas, where
5 the energy needs of the local capacity area depend on the availability and
6 capability of the resources within that local area.

- 7 • Creating a path to orderly retirement – The current one year resource adequacy
8 program does not provide a clear signal to resources as to whether they will be
9 needed in subsequent years. This can potentially result in resources that are
10 essential to reliability providing notice of their intent to retire before suitable
11 replacements are developed and available. This issue is exacerbated by the
12 Commission assuming resources will continue to operate in its Integrated
13 Resource Planning (IRP) studies even if those resources do not have a forward
14 contract. Their inclusion in its IRP studies implies resources will remain
15 available in future years, even though the existing resource adequacy program has
16 no mechanism to ensure resources needed for reliability in subsequent years are in
17 fact under contract. With the addition of new resources to meet RPS, storage, and
18 other procurement mandates and requirements, and with the growth of distributed
19 energy resources, many essential reliability resources may be at-risk of retirement
20 given their cost and the limited opportunities to secure long-term contracts. The
21 Commission must create a clear path to secure essential reliability resources until
22 suitable alternatives are developed.

- 23 • Procuring resources where the need exists – Currently, LSEs can meet local
24 capacity requirements by procuring resources broadly within any local capacity
25 area in their Transmission Access Charge (TAC) area. However, the CAISO
26 establishes local capacity needs based on transmission constraints into specific
27 local capacity areas, which are geographically smaller than the TAC areas. This
28 misaligned procurement relative to operational needs can result in LSEs meeting

1 procurement requirements “on paper,” but because the right resources in the right
2 places where not procured, deficiencies remain in local capacity areas, leading to
3 potential backstop procurement by the CAISO to cure the deficiency. To avoid
4 collective deficiencies and mitigate the need for the CAISO’s backstop
5 procurement, the Commission must require LSEs to procure adequate local
6 resource adequacy for each individual local capacity area.

7 Given the need for changes in the structure, process, and substance of the existing
8 resource adequacy program to address current and expected conditions, the CAISO has prepared
9 five distinct proposals aimed at collectively addressing the issues discussed above. The
10 following five chapters include testimony supporting the CAISO proposals. A brief summary of
11 the CAISO’s proposals is included below.

- 12 • CAISO Proposal No. 1 (Chapter 2): The Commission should establish a rolling
13 three-year procurement requirement for local, system, and flexible capacity.
- 14 • CAISO Proposal No. 2 (Chapter 3): The Commission should revise the annual
15 resource adequacy compliance timeline to better accommodate resource adequacy
16 processes and decision making.
- 17 • CAISO Proposal No. 3 (Chapter 4): The Commission should adopt a 1-in-5 year
18 demand forecast during months with the highest peak demand uncertainty.
- 19 • CAISO Proposal No. 4 (Chapter 5): The Commission should fully adopt a
20 comprehensive effective load carrying capability methodology that accurately
21 reflects the reliability contribution of wind and solar resources.
- 22 • CAISO Proposal No. 5 (Chapter 6): The Commission should recognize the
23 impact of availability-limited resources and adopt the CAISO’s hourly load and
24 resource analysis to determine availability needs in local capacity areas.

25 The CAISO understands that these proposals will require additional inputs from the CAISO to
26 facilitate these proposals. Specifically, if the CAISO’s proposals are adopted, the CAISO will
27 (1) perform local and flexible capacity needs assessments over the multi-year resource adequacy
28 procurement horizon, including information on resource availability needs in local capacity

1 areas; (2) identify any Essential Reliability Resources in local capacity areas or sub-areas that
2 must be procured over the multi-year resource adequacy procurement horizon; and (3) revise its
3 tariff and backstop procurement provisions, as necessary, to accommodate and support a multi-
4 year forward procurement framework.

5 In Chapters 2-6, the CAISO describes its proposals in detail and explains why the
6 Commission should adopt the proposals to ensure the long-term success of the resource
7 adequacy program.