

Application No.: 18-05-007  
Exhibit No.: CAISO-  
Witness: Sushant Barave

In the Matter of the Application of  
SOUTHERN CALIFORNIA EDISON  
COMPANY (U 338-E) for a Certificate of  
Public Convenience and Necessity: Eldorado-  
Lugo-Mohave Series Capacitor Project

Application 18-05-007

**TESTIMONY OF SUSHANT BARAVE  
ON BEHALF OF  
THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

November 4, 2019

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

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1   **I.     INTRODUCTION**

2   **Q1.    What is your name and by whom are you employed?**

3   **A1.**   My name is Sushant Barave. I am employed by the California Independent System  
4       Operator Corporation (CAISO), 250 Outcropping Way, Folsom, California as a Regional  
5       Transmission Engineer Lead for Southern California.

7   **Q2.    Please describe your educational and professional background.**

8   **A2.**   I received an MBA (Master of Business Administration) from UC Berkeley – Haas  
9       School of Business in December 2018 with a focus on energy economics and energy  
10      project finance, an MSEE (Master of Science in Electrical Engineering) from University  
11      of Missouri – Rolla (now known as Missouri University of Science and Technology) in  
12      May 2006 and a B.E. (Bachelor of Electrical Engineering) from Mumbai University in  
13      India in December 2003.

14  
15      After graduating from University of Missouri in 2006, I worked for Ameren Corp in  
16      Saint Louis, MO as an Associate Operations Engineer from July 2006 to September  
17      2007. At Ameren, I worked in the transmission control center and performed  
18      transmission system reliability analyses for real-time and short-term operational horizon.  
19      I joined the CAISO in October 2007 in the Regional Transmission group as a Regional

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1 Transmission Engineer. I was responsible for performing engineering analyses to assess  
2 the impact of planned and forced outages on the transmission system. My job function  
3 also involved reliability market modeling and analyzing transmission congestion. In  
4 October 2010, I transferred to the position of Senior Regional Transmission Engineer in  
5 the Regional Transmission - South group.  
6

7 **Q3. What are your job responsibilities?**

8 **A3.** My job responsibilities include (1) performing complex engineering studies to anticipate,  
9 identify, and resolve problems, or potential problems, that affect the Southern California  
10 power grid; (2) conducting planning studies, overseeing and approving transmission  
11 projects proposed for the CAISO Controlled Grid; (3) performing interconnection studies  
12 for generation interconnection projects and; (4) leading and performing the policy-driven  
13 transmission assessment portion of the CAISO's transmission planning process (TPP). I  
14 have held the current position of Regional Transmission Engineer – Lead since July  
15 2016.  
16

17 **Q4. What is the purpose of your testimony?**

18 **A4.** My testimony provides detailed information regarding the need for the Eldorado–Lugo–  
19 Mohave Series Capacitor Upgrade Project (Proposed Project). Specifically, I provide  
20 testimony regarding:

21 (1) The ongoing need for the Proposed Project based on the policy-driven analysis  
22 conducted in the CAISO's transmission planning process and the CAISO's  
23 updated analysis prepared for this proceeding.

24 (2) The need for the Proposed Project based on an analysis of the feasibility of  
25 using entitlements on the Northern System of West of Colorado River (WOR)  
26 path (Northern West of River Path) as defined by the Western Electricity  
27 Coordinating Council (WECC) by the expected renewable generation build-out  
28 transmitted to the CAISO by the Commission as part of the base renewable

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1 portfolio for the use in the 2019-2020 TPP in order to meet the State's 2030  
2 renewable goals.

3 (3) The reliance on the Proposed Project by generation seeking interconnection  
4 through the CAISO's Generator Interconnection and Deliverability Allocation  
5 Procedures (GIDAP).

6 (4) The increased optionality created by the Proposed Project to address the  
7 potential for electric system resource adequacy shortages beginning in 2021 as  
8 identified in the Commission's Revised Proposed Decision in Rulemaking (R.)  
9 16-02-007 requiring procurement for 2021 through 2023.<sup>1</sup>

10  
11 **II. NEED FOR THE PROPOSED PROJECT BASED ON THE CAISO POLICY-  
12 DRIVEN ASSESSMENT**

13 **Q5. Please explain how the CAISO identified the need for the Proposed Project.**

14 **A5.** The CAISO identified the need for the Proposed Project as a result of the policy-driven  
15 assessment of the Commission-developed Renewables Portfolio Standard (RPS)  
16 portfolios in the 2012-2013 and the 2013-2014 transmission planning processes. The  
17 CAISO evaluates the need for policy-driven transmission solutions to meet federal, state,  
18 and local policy requirements in Phase 2 of the CAISO's annual Transmission Planning  
19 Process.

20  
21 As Mr. Neil Millar explains in the CAISO's concurrently filed testimony, the CAISO  
22 relies on the RPS portfolios developed by the Commission and submitted to the CAISO  
23 for use in the CAISO's transmission planning process to identify policy-driven  
24 transmission upgrades. These Commission-developed RPS portfolios provide expected  
25 renewable buildouts by location and technology, which the CAISO uses in its 10-year  
26 forward transmission planning analysis. To identify the need for the Proposed Project,

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<sup>1</sup> <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M318/K169/318169119.PDF>

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1 the CAISO relied on the March 12, 2012 letter from the Commission and CEC<sup>2</sup> providing  
2 the recommended portfolios for use in the CAISO 2012-2013 transmission planning  
3 process<sup>3</sup> and a second letter issued February 7, 2013<sup>4</sup> providing the recommended  
4 portfolios for the 2013-2014 transmission planning process.<sup>5</sup>

5  
6 **Q6. Please describe the CAISO’s policy-driven planning assessments that identified the**  
7 **need for the Proposed Project.**

8 **A6.** In the CAISO’s 2012-2013 transmission planning process,<sup>6</sup> the CAISO used a  
9 deliverability assessment based on Commission-developed RPS portfolios to identify  
10 policy-driven transmission solutions. The deliverability assessment concluded that there  
11 was insufficient transmission capacity to support Full Capacity Deliverability Status for  
12 the resources identified in the Commission-developed RPS portfolios. The assessment  
13 identified thermal overloads on 500 kV facilities outside of the CAISO balancing  
14 authority on the Northern West of River Path under Category P0 conditions (*i.e.*, normal  
15 system conditions) and on Lugo–Victorville 500 kV transmission line under a common  
16 mode contingency of two adjacent circuits. The CAISO provides details regarding these  
17 identified thermal overloads in Table 1 below.

18  
19 **Table 1: Overloads identified in the base portfolio deliverability assessment in 2012-**  
20 **2013 TPP**  
21

| <b>Overloaded Facility</b>            | <b>Contingency</b>                          | <b>Flow</b> |
|---------------------------------------|---|-------------|
| Mccullough - Victorville 500 kV No. 1 | Base Case                                   | 101%        |
| Mccullough - Victorville 500 kV No. 2 | Base Case                                   | 100%        |
| Lugo - Victorville 500 kV             | Devers - Red Bluff 500 kV No. 1 & 2         | 106%        |
|                                       | Red Bluff - Colorado River 500 kV No. 1 & 2 | 102%        |

<sup>2</sup> <http://www.caiso.com/Documents/PortfolioSubmittalLetter.pdf>. This portfolio was later revised and resubmitted by the CPUC and CEC: [http://www.caiso.com/Documents/2012-2013-FinalRenewableGenerationPortfoliosRecommended\\_CPUC-CEC.pdf](http://www.caiso.com/Documents/2012-2013-FinalRenewableGenerationPortfoliosRecommended_CPUC-CEC.pdf)

<sup>3</sup> <http://www.caiso.com/Documents/BoardApproved2012-2013TransmissionPlan.pdf>

<sup>4</sup> [www.caiso.com/Documents/2013-2014RenewablePortfoliosTransmittalLetter.pdf](http://www.caiso.com/Documents/2013-2014RenewablePortfoliosTransmittalLetter.pdf)

<sup>5</sup> <http://www.caiso.com/Documents/Board-Approved2013-2014TransmissionPlan.pdf>

<sup>6</sup> <http://www.caiso.com/Documents/BoardApproved2012-2013TransmissionPlan.pdf>

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1 To reduce flow through the neighboring systems and mitigate the identified thermal  
2 overloads, the CAISO identified and approved the Lugo-Eldorado series capacitor and  
3 terminal equipment upgrade to increase series compensation level on the Lugo–Eldorado  
4 500 kV line from 35 percent to approximately 70 percent.

5  
6 In the CAISO’s 2013-2014 transmission planning process,<sup>7</sup> the CAISO conducted a  
7 subsequent deliverability assessment based on the Commission-developed RPS  
8 portfolios. The deliverability assessment concluded that there was insufficient  
9 transmission capacity to support the requested Full Capacity Deliverability Status for the  
10 resources identified in the Commission-developed RPS portfolios. The assessment  
11 identified thermal overloads on Marketplace to Adelanto 500 kV facility under a common  
12 mode contingency of two adjacent circuits on the Northern West of River Path. The  
13 CAISO also identified thermal overloads on the Lugo–Victorville 500 kV facility under  
14 Category P1 conditions (*i.e.*, an N-1 outage) as detailed in Table 2 below.

15 **Table 2: Overloads identified in the base portfolio deliverability**  
16 **assessment in 2013-2014 TPP**  
17

| <b>Overloaded Facility</b>     | <b>Contingency</b>                       | <b>Flow</b> |
|--------------------------------|--|-------------|
| Marketplace - Adelanto 500kV   | Victorville - McCullough 500kV No. 1 & 2 | 102%        |
| Lugo - Victorville 500kV No. 1 | Lugo - Eldorado 500kV                    | 104%        |

18 To reduce the loop flow through the neighboring systems and mitigate the thermal  
19 overloads, the CAISO identified and approved the Lugo-Mohave series capacitor and  
20 terminal equipment upgrade to increase series compensation on the Lugo–Eldorado 500  
21 kV line from 35 percent to approximately 70 percent.

22  
23  

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<sup>7</sup> <http://www.caiso.com/Documents/Board-Approved2013-2014TransmissionPlan.pdf>

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1 **Q7. Please explain the concept of deliverability.**

2 **A7.** Deliverability from the perspective of individual generator resources, ensures that, under  
3 normal transmission system conditions, if capacity resources are available and called on,  
4 their ability to provide energy to the system during peak system stress conditions will not  
5 be limited by the dispatch of other capacity resources in the vicinity. The purpose is to  
6 demonstrate that the installed capacity in any electrical area can run simultaneously,  
7 during peak system stress conditions, and the excess energy above load in that electrical  
8 area can be exported to the remainder of the control area, subject to contingency testing.  
9 In short, the test ensures that bottleneck capacity conditions will not exist during peak  
10 system stress conditions, limiting the availability and usefulness of capacity resources for  
11 meeting resource adequacy requirements. The CAISO's deliverability study methodology  
12 for resource adequacy purposes was discussed extensively in the Commission's 2004  
13 Resource Adequacy Proceeding, and it was generally adopted in that proceeding. The  
14 Federal Energy Regulatory Commission (FERC) also accepted the CAISO's  
15 deliverability study methodology as a reasonable implementation of the large generator  
16 interconnection process during the FERC Order 2003 compliance filing process.

17

18 **Q8. Has the CAISO performed updated analysis of the need for the Proposed Project**  
19 **based on the latest Commission-developed RPS portfolios? If yes, please describe**  
20 **the findings in the context of the need for the Proposed Project.**

21 **A8.** Yes, the CAISO performed an updated analysis of the need for the Proposed Project  
22 using the Commission-developed Reliability and Policy-Driven Base Case<sup>8</sup> transmitted  
23 for the purpose of the 2019-2020 transmission planning process that is currently  
24 underway. As the comprehensive results are not yet available from the 2019-2020  
25 transmission planning process, the CAISO performed an expedited deliverability

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8

[https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/UtilitiesIndustries/Energy/EnergyPrograms/ElectPowerProcurementGeneration/irp/2018/IRP\\_TPP\\_ReliabilityAndPolicyBaseCase\\_ToBePosted.xlsx](https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/UtilitiesIndustries/Energy/EnergyPrograms/ElectPowerProcurementGeneration/irp/2018/IRP_TPP_ReliabilityAndPolicyBaseCase_ToBePosted.xlsx)



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1 assessment for the purpose of this proceeding to evaluate the need for the Proposed  
2 Project based on the latest RPS portfolios.

3  
4 The updated deliverability assessment demonstrates that the existing transmission  
5 capacity is inadequate to support the requested Full Capacity Deliverability Status for the  
6 resources identified in the latest Commission-developed RPS portfolio. The assessment  
7 identified overloads on the Marketplace–Adelanto 500 kV line under a common mode  
8 contingency of two adjacent circuits along the Northern West of River Path and on the  
9 Lugo–Victorville 500 kV facility under a common mode contingency of two adjacent  
10 circuits of the Devers–Red Bluff 500 kV transmission lines as detailed in Table 3 below.

11  
12 **Table 3: Overloads identified in the ongoing base portfolio deliverability**  
13 **assessment in 2019-2020 TPP**  
14

| <b>Overloaded Facility</b>   | <b>Contingency</b>                       | <b>Flow</b> |
|------------------------------|--|-------------|
| Marketplace - Adelanto 500kV | Victorville - McCullough 500kV No. 1 & 2 | 107%        |
| Lugo - Victorville 500kV     | Devers – Red Bluff 500 kV No. 1 and 2    | 112%        |

15 The CAISO approved upgrades to the Lugo–Victorville 500 kV line in the 2016-2017  
16 transmission planning process (Lugo-Victorville Project). This is a joint project requiring  
17 the participation of both Southern California Edison Company (SCE) and the Los  
18 Angeles Department of Water and Power (LADWP), as upgrades are required to both the  
19 SCE-owned facilities and the LADWP-owned facilities in order to achieve a capacity  
20 increase. The Lugo-Victorville Project consists of upgrading transmission towers and  
21 replacing terminal equipment at Lugo substation, and includes a thermal rating increase  
22 to the portion of the Lugo-Victorville 500 kV line owned by LADWP.

23  
24 The CAISO’s results in Table 3 assume that the Lugo–Victorville Project is not built,  
25 because LADWP is unlikely to move forward with the Lugo-Victorville Project if the  
26 Proposed Project is not constructed. LADWP has agreed to implement the Lugo–  
27 Victorville Project with the expectation that the Proposed Project will reduce the loop

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1 flow through the LADWP system caused by the renewable resource buildout in the  
2 Commission-developed RPS portfolios. Without the Proposed Project, there is no  
3 motivation for LADWP to facilitate an increase in loop flows on its system by increasing  
4 the rating on Lugo–Victorville 500 kV line.

5  
6 As a result, the CAISO’s deliverability assessment confirms the need for the Proposed  
7 Project to reduce the loop flow through neighboring systems and to make the most recent  
8 Commission-developed RPS portfolio deliverable.

9  
10 Disrupting the Lugo-Victorville upgrade project carries other consequences as well.  
11 Material congestion costs in the CAISO’s day-ahead market due to the existing capacity  
12 limitations on this line were cited in both the 2015-2016 Transmission Plan and 2016-  
13 2017 Transmission Plan in supporting the need for the upgrade. The Lugo–Victorville  
14 500 kV transmission constraint has resulted in approximately \$63 million in congestion  
15 costs in the CAISO’s day-ahead market from January 2017 through June 2019. Without  
16 the Lugo-Victorville Project, the CAISO market will likely continue to experience  
17 significant congestion on this transmission constraint.

18  
19 **Q9. Please describe any relevant material changes in transmission and resource**  
20 **assumptions that have taken place since the original approval of the Proposed**  
21 **Project.**

22 **A9.** In addition to the Lugo-Victorville Project described above and the new Commission-  
23 developed RPS portfolio used in the CAISO’s updated needs analysis there have been  
24 several material changes to the CAISO transmission system since the CAISO initially  
25 approved the Proposed Project. One material change is that the CAISO balancing  
26 authority area now includes the Valley Electric Association/GridLiance West (VEA-  
27 GridLiance) transmission system in Southern Nevada. The latest Commission-developed  
28 portfolio identified 3,006 MW of resources in the Southern Nevada area to meet the  
29 statewide greenhouse-gas targets. All the queued interconnection projects in this VEA-

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1 GridLiance resource area depend on the Proposed Project in order to achieve Full  
2 Capacity Deliverability Status.

3  
4 **III. CONFIRMATION OF NEED BASED ON THE ASSESSMENT OF**  
5 **SCHEDULING LIMITATIONS ON THE WEST OF COLORADO RIVER (WOR)**  
6 **PATH**

7 **Q10. Please explain the project need based on the assessment of scheduling limitations on**  
8 **the West of Colorado River path.**

9 **A10.** Because the flows from CAISO-connected generation in areas—including the Southern  
10 Nevada, Eldorado and Mountain Pass areas—tends to be distributed on the parallel  
11 neighboring systems and flows from neighboring system’s resources are similarly  
12 distributed over CAISO facilities, the CAISO has to consider transmission system  
13 adequacy in two ways: (1) based on the flow based deliverability study discussed above,  
14 and (2) by considering scheduling rights and entitlements on transmission lines. The  
15 Proposed Project is needed to address the latter concern as well as the deliverability  
16 concern.

17  
18 The scheduling rights and entitlement approach recognizes that CAISO’s generation  
19 flows on LADWP transmission lines, on which, LADWP has entitlements. LADWP  
20 relies on those entitlements to deliver its resources to its load. The CAISO must respect  
21 LADWP’s entitlements on these lines. Based on the WECC 2019 Path Rating Catalog,  
22 CAISO load serving entities maintain 3,579 MW of entitlements on the Northern West of  
23 River Path, which is used to deliver renewable resources from Eldorado, Mountain Pass,  
24 and Southern Nevada. If more than 3,579 MW of CAISO generation develops in these  
25 areas, LADWP’s system will experience loop flows leaving it inadequate for LADWP’s  
26 own resources that are supposed to be delivered on these lines.

27  
28 Existing and contracted renewable generation uses approximately 1,262 MW of  
29 entitlements on the Northern West of River Path. The latest Commission-developed base

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1 portfolio identified 3,006 MW of renewable build-out in Southern Nevada region. As a  
2 result, 4,268 MW<sup>9</sup> of existing and planned resources will rely on the Northern West of  
3 River Path to deliver renewable energy to CAISO load. The 4,268 MW exceeds the  
4 existing entitlements maintained by CAISO load serving entities.

5  
6 Without the Proposed Project, a significant portion of the 4,268 MW would be implicitly  
7 planned to flow on on LADWP's system. With the CAISO effectively utilizing  
8 LADWP's transmission system, LADWP would be expected to enforce operational  
9 limitations on the loop flow to protect its entitlements and deliver its own renewable  
10 generation to LADWP load. Limiting the loop flow on LADWP's system would prevent  
11 the CAISO resources identified in the Commission-developed base portfolio from being  
12 delivered to the aggregate of CAISO load.

13  
14 The Proposed Project addresses these concerns by allowing an increase in the path rating  
15 of the West of River Path, which will be shared by LADWP and SCE. SCE's portion of  
16 the path rating increase will meet the transmission capacity requirements for the  
17 renewable generation portfolios. In accordance with the WECC Project Coordination and  
18 Path Rating Processes guidelines, SCE and LADWP are jointly seeking approval for a  
19 950 MW increase to the West of Colorado River Path. The Proposed Project together  
20 with the Lugo–Victorville Project are the key drivers for the expected 950 MW path  
21 rating increase.

22  
23 **IV. RELIANCE ON THE PROPOSED PROJECT BY GENERATION IN THE CAISO**  
24 **GENERATION INTERCONNECTION QUEUE**

25 **Q11. Please provide the data to show the amount of renewable resources that depend on**  
26 **the Proposed Project for successful completion.**

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<sup>9</sup> The existing or contracted resources (1,262 MW) plus planned resources in the Southern Nevada region (3,006 MW).

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**A11.** Table 4 provides the current generation projects in the CAISO interconnection queue that rely on the Proposed Project to achieve Full Capacity Deliverability Status. This generation list is current as of October 14, 2019. There are currently proposed projects with a total nameplate capacity of approximately 10,900 MW in the CAISO’s interconnection queue that depend on the Proposed Project for achieving Full Capacity Deliverability Status. The proposed points of interconnection (POI) for these projects span across facilities owned by SCE, SDG&E, VEA, GLW and DCRT.

485 MW of generation projects are already online and awaiting the completion of the Proposed Project to achieve Full Capacity Deliverability Status. 3,715 MW of active projects in the queue that depend on the Proposed Project to achieve Full Capacity Deliverability Status have executed a Generation Interconnection Agreement (GIA) with the CAISO and have maintained the GIA in good standing. All generation interconnection requests that connected after the initial identification of the Proposed Project in 2012-2013 and 2013-2014 transmission planning process require the Proposed Project to achieve Full Capacity Deliverability Status.

**Table 4: CAISO Active Interconnection Requests dependent on the Proposed Project for Full Capacity Deliverability Status**

| Queue | Cluster | POI                                       | MW     | Type            | Project Status | Current Online Date |
|-------|---------|---|--------|-----------------|----------------|---------------------|
| 643AE | C03     | Red Bluff Sub 230kV Bus                   | 150    | Solar + Storage | GIA executed   | 12/1/2020           |
| 643T  | C03     | 500 kV common bus @ Haasayampa switchyard | 165    | Solar           | Online         | 1/1/2014            |
| 838   | C04     | Imperial Valley Substation 230kV          | 100    | Solar           | GIA executed   | 12/1/2021           |
| 855   | C04     | Merchant Substation 230kV bus             | 92     | Solar           | Online         | 12/2/2016           |
| 952   | C06     | 500 kV common bus @ Haasayampa switchyard | 100.81 | Solar + Storage | Online         | 10/12/2017          |
| 993   | C06     | Valley Substation 138kV (VEA)             | 50     | Solar           | GIA executed   | 1/1/2020            |

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| Queue | Cluster | POI                                       | MW    | Type             | Project Status      | Current Online Date |
|-------|---------|---|-------|------------------|---------------------|---------------------|
| 994   | C06     | Valley Substation 138kV (VEA)             | 50    | Solar            | GIA executed        | 1/1/2020            |
| 1040  | C07     | Hassayampa Substation 500 kV              | 127   | Solar            | Online              | 1/3/2014            |
| 1053  | C07     | Hassayampa Switchyard 500kV               | 370   | Solar            | GIA executed        | 11/30/2019          |
| 1064  | C07     | Gamebird Switchyard 230kV                 | 44    | Gravity via Rail | GIA executed        | 6/19/2020           |
| 1166  | C08     | Imperial Valley substation                | 200   | Solar            | GIA executed        | 3/31/2022           |
| 1171  | C08     | Hoodoo Wash Switchyard 500 kV             | 500   | Solar            | GIA in progress     | 6/1/2021            |
| 1189  | C08     | 500 kV common bus @ Hassayampa Switchyard | 150   | Solar            | GIA in progress     | 1/31/2020           |
| 1192  | C08     | Colorado River Substation 230kV           | 350   | Solar + Storage  | GIA executed        | 9/30/2021           |
| 1196  | C08     | Colorado River Substation 230kV           | 409.9 | Solar            | GIA executed        | 7/1/2023            |
| 1198  | C08     | Colorado River Substation 220kV           | 150   | Solar            | GIA executed        | 4/28/2022           |
| 1200  | C08     | Red Bluff Substation 230kV                | 200   | Solar            | GIA executed        | 4/30/2022           |
| 1291  | C09     | Hassayampa 500kV                          | 300   | Solar + Storage  | GIA executed        | 4/28/2023           |
| 1336  | C09     | Mohave Substation 500kV                   | 375   | Solar            | GIA in progress     | 4/26/2023           |
| 1339  | C09     | SCE owned Eldorado Bus 230kV              | 300   | Solar            | GIA executed        | 3/13/2021           |
| 1341  | C09     | Crazy Eyes Substation 230kV               | 250   | Solar            | GIA executed        | 5/15/2021           |
| 1347  | C09     | Bob Switching Station 230kV               | 303   | Wind             | GIA executed        | 11/30/2021          |
| 1402  | C10     | Delaney-Colorado River 500kV              | 3200  | Solar + Storage  | GIA not in progress | 12/31/2023          |
| 1403  | C10     | Colorado River-Delaney 500kV              | 450   | Solar + Storage  | GIA not in progress | 12/16/2022          |
| 1405  | C10     | Red Bluff Substation 230kV                | 450   | Solar + Storage  | GIA executed        | 12/31/2020          |
| 1406  | C10     | Colorado River Substation 230kV           | 675   | Solar + Storage  | GIA in progress     | 1/15/2022           |
| 1407  | C10     | San Bernardino 230kV                      | 38    | Natural Gas      | GIA executed        | 5/1/2019            |
| 1410  | C10     | Devers-Vista #1 230kV                     | 150   | Wind             | GIA not in progress | 10/15/2023          |
| 1427  | C10     | Hassayampa Switchyard 500kV               | 125   | Solar + Storage  | GIA not in progress | 4/30/2024           |
| 1429  | C10     | Suncrest-Ocotillo 500 kV Line             | 400   | Wind             | GIA not in progress | 6/1/2020            |

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| Queue | Cluster | POI                                 | MW  | Type               | Project Status      | Current Online Date |
|-------|---------|-------------------------------------|-----|--------------------|---------------------|---------------------|
| 1432  | C10     | Boulevard Substation<br>69kV        | 20  | Solar              | GIA not in progress | 12/15/2022          |
| 1435  | C10     | Hoodoo Wash Substation<br>500kV     | 250 | Solar +<br>Storage | GIA not in progress | 12/23/2022          |
| 1437  | C10     | Imperial Valley Substation<br>230kV | 425 | Solar +<br>Storage | GIA not in progress | 12/31/2021          |

1 **V. THE INCREASED OPTIONALITY CREATED BY THE PROPOSED PROJECT**  
2 **FOR ADDRESSING THE POTENTIAL FOR ELECTRICITY SYSTEM**  
3 **RESOURCE ADEQUACY SHORTAGES IDENTIFIED IN THE COMMISSION’S**  
4 **REVISED PROPOSED DECISION IN RULEMAKING (R.) 16-02-007.**

5 **Q12. Please address the potential impact of the Commission’s Revised Proposed Decision**  
6 **in R.16-02-007 (Revised Proposed Decision) on the present proceeding.**

7 **A12.** Commission’s Revised Proposed Decision in R.16-02-007 requires load serving entities  
8 to procure 4,000 MW of incremental system resource adequacy capacity. The Revised  
9 Proposed Decision requires 60 percent of incremental resources to come online by  
10 August 1, 2021; 80 percent by August 1, 2022; and 100 percent by August 1, 2023.

11  
12 The incremental procurement required by the Commission is for system-level resource  
13 adequacy capacity. Resources must achieve Full Capacity Deliverability Status to be  
14 eligible to be counted toward system resource adequacy capacity requirements. Table 4  
15 lists the amounts and status of resources that depend on the Proposed Project for  
16 achieving Full Capacity Deliverability Status. Projects totaling 3,715 MW in nameplate  
17 capacity have executed GIAs and are likely to be eligible for the incremental system-  
18 level procurement if the Proposed Project is built. The Commission’s Revised Proposed  
19 Decision requires all of the procured resources to come online by August 1, 2023. As  
20 shown in Table 4, all 3,715 MW of generation have a Commercial Operation Date earlier  
21 than August 1, 2023.

22

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1 The Proposed Project enables the projects listed in Table 4 to achieve Full Capacity  
2 Deliverability Status and will increase the available options for system-level resource  
3 procurement required by the Revised Proposed Decision and will result in increased  
4 competition which will benefit the ratepayers.

5  
6 **VI. CONCLUSION**

7 **Q13. Please summarize your conclusions.**

8 **A13.** The CAISO approved the Proposed Project as part of its policy-driven assessment  
9 framework in the transmission planning process to ensure that resources in the  
10 commission-developed RPS portfolios can be delivered to the aggregate of the CAISO  
11 load. The CAISO confirmed the continuing policy-driven need for the Proposed Project  
12 based on the most recent Commission-developed portfolios. The CAISO has confirmed  
13 the need for the Proposed Project based on the assessment of CAISO scheduling  
14 limitations on the Northern West of River Path.

15  
16 **Q14. Does this conclude your testimony?**

17 **A14.** Yes.  
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