

Docket: : A.13-10-020
Exhibit Number : _____
Commissioner : Liane Randolph
Admin. Law Judge : Hallie Yacknin
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OFFICE OF RATEPAYER ADVOCATES
CALIFORNIA PUBLIC UTILITIES COMMISSION

PREPARED TESTIMONY ON
THE APPLICATION OF SOUTHERN CALIFORNIA EDISON
COMPANY (SCE) FOR A CERTIFICATE OF PUBLIC
CONVENIENCE AND NECESSITY FOR THE WEST OF
DEVERS UPGRADE PROJECT AND FOR AN INTERIM
DECISION APPROVING THE PROPOSED TRANSACTION
BETWEEN SOUTHERN CALIFORNIA EDISON AND
MORONGO TRANSMISSION LLC

San Francisco, California

October 27, 2015

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EXECUTIVE SUMMARY

Pursuant to Rule 13.8 of the California Public Utilities Commission’s (“Commission”) Rules of Practice and Procedure (“Rules”) and the Assigned Commissioner’s Scoping Memo issued on September 24, 2015, the Office of Ratepayer Advocates (“ORA”) hereby submits this prepared testimony which analyzes and provides recommendations on Southern California Edison Company’s (“SCE”) Application for a Certificate of Public Convenience and Necessity (“CPCN”) for the West of Devers Upgrade Project (“WODUP” or “WOD Upgrade Project”) and for an Interim Decision Approving the Proposed Transaction between Southern California Edison and Morongo Transmission LLC¹ (“Application” or “A.13-10-020”).

On October 25, 2013, SCE submitted its Application requesting a CPCN to construct the WOD Upgrade Project, which includes:

- Upgrade substation equipment within SCE’s existing Devers, El Casco, Etiwanda, San Bernardino, and Vista substations in order to accommodate increased power transfer on the upgrade WOD 220 kV transmission lines. Upgrade SCE’s existing Timoteo and Tennessee 66/12 kV substations to accommodate 66 kV subtransmission line relocations.
- Remove and upgrade the following existing 220 kV transmission lines and structures with new transmission lines and structures utilizing double-bundled 1590 kcmil Aluminum Conductor Steel-Reinforced (2B-1590 ACSR) conductor:
 - Devers – El Casco (approximately 30 miles);
 - El Casco – San Bernardino (approximately 14 miles);
 - Devers – San Bernardino (approximately 43 miles);

¹ Morongo Transmission LLC (“Morongo Transmission”) is a venture between the Morongo Band of Mission Indians (“Morongo Tribe”) and Coachella Partners LLC, (“Coachella Partners”) a Delaware limited liability company formed for the purposes of the Proposed Transaction, for which the Morongo Tribe owns the majority interest.

- 1 ○ Devers – Vista No. 1 and No. 2 (approximately 45 miles
- 2 each);
- 3 ○ Etiwanda – San Bernardino (approximately 3.5 miles);
- 4 and
- 5 ○ San Bernardino – Vista (approximately 3.5 miles).
- 6 ● Remove and relocate approximately two miles of two existing 66 kV
- 7 subtransmission lines.
- 8 ● Remove and relocate approximately four miles of existing 12 kV
- 9 distribution lines.
- 10 ● Install telecommunication lines and equipment for the protection,
- 11 monitoring, and control of transmission lines and substation
- 12 equipment.²

13 The Application also requested an interim decision “for authority to lease

14 transfer capability rights in a portion of the WODUP upgrade and reconfigured

15 transmission lines to Morongo Transmission LLC (“Morongo Transmission”)

16 pursuant to Development and Coordination Agreement (“DCA”) by and between

17 SCE and Morongo Transmission that provides Morongo Transmission with an

18 option to invest up to \$400 million at the time of commercial operation in

19 exchange for 30-lease rights. (“Proposed Transaction”).³ In April, 2014, the

20 Administrative Law Judge’s (“ALJ”) issued the Ruling Giving Notice of

21 Anticipated Scope of Issues and Timing of Prehearing Conference and Confirming

22 Party Status of Palen Solar Holdings (“2014 Ruling”), which denied SCE’s request

23 for an interim decision and, instead, held that the Proposed Transaction should be

24 considered along with the CPCN request.⁴

25 On April 17, 2015, SCE filed its Direct Testimony on Need, Section

26 399.2.5, Maximum Cost, Field Management Plan, and Amended Direct Testimony

² Application, p. 6.

³ Application, pp. 1-2.

⁴ 2014 Ruling, pp. 5-6.

1 on the Proposed Transaction for the West of Devers Upgrade Project, in
2 accordance with the discussion held at the March 4, 2015 Prehearing Conference
3 (“PHC”) held at the Commission’s courtroom in San Francisco, California.

4 On August 7, 2015, the Commission’s Energy Division published its Draft
5 Environmental Impact Report (“DEIR”). The DEIR provide a number of
6 alternatives to the WOD Upgrade Project, including an environmentally superior
7 alternative titled the “Phase Build Alternative”). Comments on the DEIR were
8 submitted on September 22, 2015

1 **I. INTRODUCTION**

2 This Exhibit presents the Office of Ratepayer Advocates’ (“ORA”)
3 analyses and recommendations with respect to the Purpose and Need associated
4 with Southern California Edison Company’s (“SCE”) Application (A.13-10-020)
5 for a Certificate of Public Convenience and Necessity (“CPCN”) to construct the
6 West of Devers Upgrade Project (“WODUP” or “Proposed Project”). SCE
7 proposes to construct the WODUP to provide Full Capacity Deliverability Status
8 (“FCDS”) to potential new renewable generation projects. Such upgrades for
9 FCDS are not justified and are unnecessary to integrate renewable generation and
10 to meet California’s Renewables Portfolio Standard (“RPS”) goals.

11 **II. SUMMARY OF RECOMMENDATIONS**

12 1. The Commission should reject the Proposed Project because it is a costly,
13 unjustified transmission project and is not needed.

14 Contrary to SCE’s claims, the WODUP is not necessary to:

- 15 • Integrated Planned Generation Resources,
- 16 • Facilitate Progress Towards Achieving RPS Goals By Providing,
- 17 Transmission Upgrades to Deliver Renewable Generation in
- 18 Blythe and Desert Center Areas,
- 19 • Support Integration of Small Scale Generation,
- 20 • Support California’s Green House Gas (GHG) Reduction
- 21 Program,
- 22 • Support Goals of the California Energy Commission’s (CEC)
- 23 Integrated energy policy report,
- 24 • Support Desert Renewable Energy Conservation Plan.

25
26 Contrary to SCE’s claims, the WODUP is not justified to:

- 27 • Facilitate the FCDS of new electric Generation resources being
- 28 developed in the Blythe and Desert Center Areas
- 29 • Enable Distributed Generation (“DG”) in the Devers area to
- 30 achieve FCDS

- 1 • Comply with terms of Generator Interconnection Agreements
- 2 that SCE has entered into with various generators
- 3 • Accommodate increased flows from Path 42
- 4 • Support the power flow increase associated with the proposed
- 5 Delaney-Colorado River 500 kiloVolt (kV) project

- 6
- 7 2. The Commission should not add a Full Capacity Deliverability
- 8 Requirement to California’s RPS program by adopting said rationale to
- 9 justify WODUP.
- 10 3. The Commission should reaffirm that the only established standard for
- 11 determining whether a proposed transmission facility is necessary to
- 12 facilitate achievement of the State’s renewable power goals is the Three-
- 13 Prong Test developed in Decision (D.) 07-03-012 and SCE’s WODUP
- 14 fails the test.
- 15 4. The scope of any project approval should be limited to one that is
- 16 necessary to maintain the existing system capacity, including the West of
- 17 Devers Interim Upgrades.

18 **III. ORA’s ANALYSIS AND RECOMMENDATIONS**

19 **A. WODUP Is Not Necessary To Integrate Planned**

20 **Generation Resources**

21 The WODUP is not necessary for the integration of renewable generation
22 because such generation can connect and support RPS goals as Energy Only
23 resources. The California mandate for retail sellers to procure 33% of their total
24 retail sales from eligible renewable resources by 2020 is an energy-based
25 requirement.⁵ The recent passage of SB 350 that increases this requirement to
26 50% of retail sales by 2030 is also an energy-based requirement. As such, whether
27 the energy from a specific renewable generator has received FCDS does not

⁵ Section 399.11 of the Public Utilities Code.

1 impact how such renewable energy counts toward the retail sellers’ procurement
2 goals.

3 In implementing the RPS, the Commission established a least-cost, best-fit
4 methodology to consider total cost when developing a renewable resource
5 portfolio.⁶ These costs are to include the cost of electric transmission associated
6 with a renewable generation project as “a true least-cost analysis must consider
7 these costs as being triggered by the addition of particular renewable generators to
8 the grid.”⁷ Additionally “Regardless of whether an individual generator, all
9 potential generators, or some other entity pays the upfront cost of new network
10 facilities, "least cost" requires that less-expensive generation options be pursued
11 first. Incorporating new network facility costs in the rank-ordering of renewable
12 bids will tend to favor generation with existing transmission facilities available.”⁸

13 Under the CAISO’s deliverability study methodology, a generating
14 facility’s interconnection is studied with the CAISO Controlled Grid at peak load,
15 under a variety of severely stressed conditions.⁹ Such conditions are used to
16 assess the extent to which a generation facility’s capacity can count towards a
17 LSE’s RA requirements. The WODUP was identified in the CAISO’s
18 deliverability study for the Transition Cluster as a Delivery Network Upgrade
19 (“DNU”) needed for those generating facilities located in the Riverside East
20 Competitive Renewable Energy Zone (“CREZ”) to receive FCDS¹⁰ and thereby
21 qualify to be included in meeting a LSE’s RA requirement.

⁶ CPUC Decision 03-06-071.

⁷ *ibid.*

⁸ *ibid.*

⁹ CAISO “Generation Interconnection and Deliverability Study Methodology Technical Paper” July 2, 2013, p. 3.

¹⁰ CAISO “Transition Cluster Phase II Interconnection Study Report: Group Report in SCE’s Eastern Bulk System” July 8, 2010, p. 5.

1 In support of the WODUP, SCE focuses on the provision of FCDS to
2 support generator capacity counting.¹¹ FCDS is not needed to ensure that energy-
3 based RPS goals are met. As discussed in more detail in Section III.I below, in
4 order to perform a least-cost analysis, an assessment of potential transmission
5 system congestion is needed to understand how a specific transmission upgrade
6 supports integration of renewable generation for an energy-based goal. Such an
7 analysis would quantify whether and to what extent renewable energy would
8 otherwise be curtailed. Such an analysis also would inform whether transmission
9 congestion justifies the expansion of the transmission system or whether other
10 locations may allow for meeting the RPS goals at a lower cost without system
11 expansion. Additionally, as further described in Section III.E, the California
12 Public Utilities Commission (“CPUC”) Energy Division (“ED”) has developed the
13 RPS Calculator as a screening tool that facilitates understanding of whether
14 transmission expansion may be economically justified in meeting the RPS goals.

15 The WODUP application is deficient in that no comprehensive assessment
16 of how the Proposed Project aligns with a least cost, best fit renewable energy
17 plan, including an assessment of congestion, has been presented. In short, the
18 application lacks sufficient demonstration that the WODUP is justified.

19 **B. Compliance With Generator Interconnection**
20 **Agreements That Sce Has Entered Into With**
21 **Various Generators Does Not Necessitate An**
22 **Upgrade To The Transmission System**

23 When the developer of a proposed generation facility seeks connection to
24 the electric grid, the developer submits an interconnection application to the

¹¹ Southern California Edison Company’s Direct Testimony on Need, 399.2.5, Maximum Cost, Field Management Plan, and Amended Direct Testimony on the Proposed Transaction for the West of Devers Upgrade Project, dated April 17, 2015, pages 5-7.

1 CAISO.¹² In the process of initiating an interconnection request, the developer
2 selects between two types of interconnection status, Energy Only (“EO”)
3 Deliverability Status and FCDS that determines the nature of the transmission
4 study and potential transmission system improvements necessary to connect the
5 generation to the grid. Both types of interconnections allow for the reliable
6 connection of a new generator and allow the generator to be integrated into the
7 CAISO markets.

8 SCE has confirmed that the ability of generation projects in the Riverside
9 East CREZ (i.e. Blythe and Desert Center areas) to connect to the grid does not
10 depend on the WODUP.

11 “Generation projects identified in Table 1.1 of the PEA
12 under negotiation and study for Large Generation
13 Interconnection Agreements do not depend on the
14 WOD Upgrade Project because they could connect to
15 the system as energy only projects.”¹³

16 The selection of the interconnection point and choice of EO deliverability
17 status or FCDS by the generation developer drive the upgrades identified in the
18 Large Generator Interconnection Agreement (“LGIA”). While SCE and the
19 CAISO are parties to the LGIA, in the interconnection process there is no
20 assessment as to whether such transmission network upgrades are in ratepayers’
21 interest. If such network upgrades are constructed, most if not all, of the cost of
22 such improvements ultimately will be borne by ratepayers.¹⁴ Therefore, SCE
23 should not be allowed to justify WODUP on the basis of generator interconnection

¹² In the event the proposed interconnection is to a distribution facility, the application is submitted to the distribution system owner, who then coordinates the interconnection analysis with the CAISO.

¹³ SCE Response to Question PD-25.

¹⁴ The CAISO tariff allows for reimbursement of the cost of network upgrades to the generators over five years after the generator and the upgrade are operational. CAISO Tariff Appendix Y (Generation Interconnection Procedures) Section 12.3.2.

1 agreements SCE entered into without regard to the cost effectiveness or need of
2 such upgrades.

3 SCE identifies a number of generation projects in the Riverside East CREZ
4 for which it has executed LGIAs that have identified the WODUP as being needed
5 for the CAISO to grant FCDS status to the generator.¹⁵ The LGIA defines roles
6 and responsibilities among the signatory parties but the Commission must
7 independently determine if such upgrades are justified under a Certificate of
8 Public Convenience and Necessity (CPCN).

9 Therefore, simple identification of an upgrade in a LGIA is not sufficient to
10 determine that such upgrades are in ratepayers' interests.

11 **C. Facilitating Full Capacity Deliverability Status Is**
12 **Not Justified To Integrate New Electric Generation**
13 **Resources Being Developed In The Blythe And**
14 **Desert Center Areas**

15 SCE's assertion that WODUP would facilitate the FCDS of new electric
16 generation resources being developed in the Blythe and Desert Center areas is
17 incomplete and misleading because it seeks to justify WODUP with a level of
18 transmission capacity that is unnecessary to integrate and interconnect resources.

19 SCE misleadingly asserts, "Any additional generation beyond the serial
20 interconnection projects will result in violation of established North American
21 Electric Reliability Corporation ("NERC"), Western Electricity Coordination
22 Council ("WECC"), and CAISO reliability criteria." This is incorrect and is
23 contradicted by SCE's admission that the ability of generation projects to connect
24 to the grid does not depend on the WODUP¹⁶. When generators connect to the

¹⁵ Southern California Edison Company's Direct Testimony on Need, 399.2.5, Maximum Cost, Field Management Plan, and Amended Direct Testimony on the Proposed Transaction for the West of Devers Upgrade Project, dated April 17, 2015, Table 1 and Appendix B, CAISO Response to CPUC data request.

¹⁶ See Footnote 7, supra; SCE's Response to Question PD-25

1 electric system as EO facilities, the CAISO and Participating Transmission
2 Owners (“PTOs”) conduct transmission studies to identify those transmission
3 facilities necessary to safely and reliably connect to the grid. Those studies
4 identify Interconnection Facilities (“IFs”), Reliability Network Upgrades
5 (“RNUs”), and Distribution Upgrades (“DUs”) necessary for such a connection. If
6 FCDS has been requested, the technical studies may additionally identify Delivery
7 Network Upgrades (“DNU”) required to provide such additional status. If FCDS
8 is not available, generators still can safely connect without DNUs and would not
9 violate the applicable reliability criteria. The operational reliability of the
10 transmission system is managed by the CAISO, including the 500 kiloVolt (“kV”)
11 and 220 kV facilities west of Devers substation. The CAISO day-ahead and hour-
12 ahead markets consider system operating limits and model constraints to comply
13 with NERC, WECC and CAISO reliability criteria. In real-time, the CAISO
14 monitors electrical flows on the transmission system and takes appropriate actions
15 as necessary to maintain reliability. Together, the CAISO’s markets and operating
16 procedures allow generation projects in excess of the serial interconnection
17 projects to reliably be connected to the transmission system in the Riverside East
18 CREZ. In the event electrical flows on the system are forecasted to exceed the
19 system capability, including consideration of potential system contingencies, the
20 CAISO markets send price signals to clear forecasted congestion. If such signals
21 are insufficient, the CAISO has the authority to order specific changes in dispatch
22 or imports in order to maintain system reliability in compliance with the applicable
23 reliability criteria. Therefore, as a DNU the Proposed Project is not needed to
24 avoid violation of NERC, WECC or CAISO reliability criteria.

25 **1. FCDS Is Not Necessary for Renewable**
26 **Generation In The Riverside and Imperial**
27 **CREZs to Participate in Utility Procurement**
28 **Processes**

29 Obtaining FCDS in support of Resource Adequacy (“RA”) is an optional
30 attribute and is not necessary for renewable generation projects located in the

1 Riverside East CREZ to participate in the three major Load Serving Entity's
2 (LSE's) RPS solicitations.

3 PG&E notes in its 2014 RPS Request For Offers ("RFO"):¹⁷

4 "PG&E is accepting offers for fully deliverable,
5 partially deliverable, and energy-only projects."

6 Similarly SCE notes in its 2014 RPS RFO:¹⁸

7 "For the delivery of Bundled Energy Product, Seller
8 must bid an ERR [*Eligible Renewable Energy*
9 *Resource*] Generating Facility based on an
10 interconnection assuming either Energy Only
11 Deliverability Status ("EO"), or such proposals that
12 include the conferment by the CAISO of FCDS, Partial
13 Capacity Deliverability Status ("PCDS") or Interim
14 Deliverability Status ("IDS") (Collectively "Capacity
15 Deliverability Status"), and a CAISO NQC [Net
16 Qualifying Capacity] assignment."

17 In its 2014 RPS Solicitation, SDG&E sought only local resources to meet local
18 capacity needs, so full deliverability status was required. However, in its prior
19 2013 RPS Solicitation, SDG&E indicated:

20 "Long-term energy only or fully deliverable products
21 (term of 15 years or less, projects with CODs
22 [*Commercial Operation Dates*] as early as 2016 will
23 be accepted, but the initial PPA delivery date will be
24 January 2020 at the earliest, projects with CODs as
25 late as 2021 will also be considered)"

26 As shown by the LSEs' solicitations, the receipt of FCDS by renewable generators
27 located in the Riverside East CREZ, or received from the Imperial CREZ over

¹⁷ PG&E 2014 RPS RFO protocol, page 12.

http://www.pge.com/includes/docs/pdfs/b2b/wholesaleelectricssuppliersolicitation/RPS2014/RPS_Solicitation_Protocol_01052015.pdf

¹⁸ SCE 2014 Request for Proposals from Eligible Renewable Energy Resource Suppliers for Renewable Products, p. 14.

[https://scerps.accionpower.com/scerps_1401/documents.asp?strFolder=b.%20Procurement%20Protocol%20\(Instruction%20to%20Sellers\)/&filedown=&HideFiles=True](https://scerps.accionpower.com/scerps_1401/documents.asp?strFolder=b.%20Procurement%20Protocol%20(Instruction%20to%20Sellers)/&filedown=&HideFiles=True)

1 Path 42, is not a commercial requirement to compete for a Power Purchase
2 Agreement (“PPA”). As noted below in sections III.F and III.G of this testimony,
3 the surplus of system capacity and the diminishing value of wind and solar
4 resources in providing system capacity makes the value of any such optional
5 system resource capacity modest compared to the cost of WODUP. See Section
6 III.E.2.c of this testimony for a simplified cost-benefit analysis in support of this
7 observation.

8 **2. The WODUP is Not Needed to Support**
9 **Generation With Executed PPAs**

10 The SCE Direct Testimony does not claim that the WODUP Purpose and
11 Need includes supporting generation with executed PPAs. This is an important
12 change from the Proponent’s Environmental Assessment (“PEA”), in which SCE
13 identified a WODUP Project Need as supporting integration of generation
14 facilities with executed PPAs.¹⁹ As an initial point, SCE has not demonstrated that
15 increasing the existing deliverability capability of the West of Devers transmission
16 system to support executed PPAs is necessary or economically justified.
17 Furthermore, even if all existing PPAs included RA provisions that would require
18 FCDS, the existing system is capable of providing more than sufficient FCDS, as
19 we demonstrate below. Therefore, the WODUP is not necessary for generators
20 with existing PPAs in the area to meet a potential PPA FCDS requirement.

21 In the CAISO interconnection process, generator interconnection requests
22 are studied sequentially. Previously, the assessment of deliverability was made on
23 an individual generator basis through serial interconnection studies. In order to
24 make the process more efficient, the CAISO modified the interconnection process
25 to study generators in large groups called Clusters, where generation requests are
26 grouped together for study based on the timing of the generators’ initial

¹⁹ SCE PEA, Vol. 1, p. 1-17.

1 interconnection request. As part of this process, the CAISO performs
 2 deliverability studies to determine if the transmission system has enough capacity,
 3 under severe system conditions, to allocate FCDS to the generator and, if not, what
 4 transmission improvements are required to provide FCDS. The first Cluster was
 5 called the Transition Cluster. As shown in **Table 1**, there was sufficient
 6 deliverability available on the existing system to accommodate all the generation
 7 interconnection requests in this area prior to the Transition Cluster. However, the
 8 CAISO Transition Cluster deliverability study determined that there was
 9 insufficient deliverability remaining to accommodate the entire Transition Cluster
 10 without DNUs²⁰.

11 **Table 1: Studies of Riverside East CREZ FCDS**
 12 **in the CAISO Interconnection Process**

	Study Process	Description	CAISO's Riverside East CREZ FCDS Findings
1	Amendment 39	Pre-CAISO management	Not dependent on WODUP for FCDS
2	Serial	Each Generator interconnection request processed sequentially	
3	Transition Cluster	Beginning of interconnection requests being studied in large groups called a Cluster	Dependent on WODUP for FCDS (1050 MW of FCDS made available through WOD Interim Upgrades)
4	Clusters 1-8	Over time, additional interconnection application windows open and each is assigned to a new Cluster	Dependent on WODUP for FCDS

13
14

15 By reviewing generators that have received FCDS prior to the Transition
 16 Cluster **Table 2** below shows that 2,661 MW of Serial Cluster generation can be

²⁰ CAISO "Transition Cluster Phase II Interconnection Study Report: Group Report in SCE's Eastern Bulk System" July 8, 2010, p. 5
http://www.energy.ca.gov/sitingcases/blythe_solar/documents/others/2010-08-05_TCPI_Group_in_Report_SCE_TN-57896.pdf

1 accommodated with FCDS with the existing transmission. In addition to the
 2 FCDS assigned to the serial group generators, there is also 462 MW of Maximum
 3 Import Capability (“MIC”) over Path 42 from the Imperial CREZ and 1,050 MW
 4 of deliverability associated with the West of Devers Interim Upgrades. These
 5 allocations total **4,173 MW** of deliverability capability on the existing system to
 6 support FCDS allocation.

7

8 **Table 2: Calculation of FCDS Capacity on Existing Transmission**

Queue Position	Technology	Cluster	POI	Capacity (MW)
Q1	W	Serial	Devers-Garnet 115 kV line (Tap)	*
Q3	NG	Serial	Devers Substation 230 kV Bus	850
Q11A	NG	Serial	Julian Hinds Substation 230kV	520
Q17	NG	Serial	Colorado River Substation 500kV bus	520
Q49	W	Serial	Devers Substation	*
Q138	W	Serial	Devers-Vista 230kV #1	150
Q146	PV	Serial	Red Bluff Substation 230kV	150
Q147	PV	Serial	Red Bluff Substation 230kV	400
Q219	NG	Serial	Colorado River Substation 500kV bus	50
WDT263	PV	Serial	Chanslor 33 kV (Blythe 161 kV)	21
Subtotal of Serial Gen. Allocated FCDS				2661
Path 42 MIC**				462
WOD Interim Upgrades				1050
Existing FCDS Capacity				4173
Technology - W=Wind, NG=Natural Gas, PV=Solar Photovoltaic, ST=Solar Thermal				

* No longer in CAISO Queue, but not shown as being either completed nor withdrawn - total = 117 MW

9

** 462 MW is the current MIC from the IID over Path 42 into Devers

10

In **Table 3**, the PPA capacity associated with area projects is identified. ²¹

11

(See diagram in Appendix A for generation interconnection locations). The

12

target Path 42 MIC for imports from the Imperial Irrigation District (“IID”) is 662

²¹ Note the Net Qualifying Capacity of 2015 Q3 and Q11A is slightly higher (11 MW in total) than the PPA capacity identified in Table 2.

1 MW to accommodate generators within the Imperial CREZ that have PPAs with
 2 LSEs located within the CAISO.²²

3 **Table 3: Executed PPAs**²³

Queue Position	Technology	Cluster	POI	PPA Capacity (MW)
Q3	NG	Serial	Devers Substation 230 kV Bus	728
Q11A	NG	Serial	Julian Hinds Substation 230kV	490
Q146	PV	Serial	Red Bluff Substation 230kV	150
Q147	PV	Serial	Red Bluff Substation 230kV	400
Q193	ST	Transition	Colorado River Substation 500kV	500
Q294	ST	Transition	Colorado River Substation 500kV	360
Q365	ST	Transition	Red Bluff Substation 230kV	*
WDT263	PV	Serial	Chanslor 33 kv (Blythe 161 kv)	21
Subtotal of PPAs in CAISO Area				2649
Target 2020 Path 42 MIC**				662
PPA Contracted Capacity				3311
FCDS Capacity in excess of PPAs				862

Technology - W=Wind, NG=Natural Gas, PV=Solar Photovoltaic, ST=Solar Thermal

* PPA Terminated

4 ** 662 MW reflects the target MIC in 2020 as per the CAISO 2014-15 Transmission Plan

5 In comparing the totals in Tables 2 and 3, it can be seen that the existing
 6 system has over 850 MW more FCDS capability than necessary to accommodate
 7 the existing PPAs.

8 As the Serial Cluster generators in Table 3 have received FCDS allocations
 9 and generators Q193 and Q294 in Table 3 have allocated capacity on the West of
 10 Devers Interim Upgrades, all generation projects in this area of the CAISO with
 11 PPAs currently have sufficient allocated FCDS to accommodate their PPA
 12 capacity. Only the 462 MW of FCDS currently allocated to the IID Path 42
 13 imports is not sufficient to accommodate the CAISO target of 662 MW. However,

²² <http://www.caiso.com/Documents/Board-Approved2014-2015TransmissionPlan.pdf> p. 150

²³ PPA capacity amounts Q3 – Decision 11-04-007, Q11A – Decision 08-05-028, and the remaining PPA amounts are from the CPUC RPS Status Table except Q294, which is from SCE Data Response ORA-SCE-04 Q.02. Since the PEA was filed Q365’s PPA has been withdrawn by PG&E.

1 as is further described below, this is not due to a lack of FCDS capability on the
2 system, but rather due to how the existing FCDS is allocated.

3 **a) How FCDS is Allocated?**

4 Generation projects are allocated FCDS on a first-come, first-served basis.
5 As such, projects can receive FCDS without having secured a PPA. A generation
6 project can then retain that FCDS for potentially many years while the developer
7 seeks to commercialize and build the generation project. The developer may or
8 may not ultimately be successful in securing a PPA. For instance, in Table 2, Q17
9 has an allocation of 520 MW of FCDS. This fossil-fueled generation project has
10 been in the interconnection process for over 12 years²⁴, yet there is no evidence of
11 a PPA for this project. While its on-line date is identified in the CAISO Queue as
12 January 2, 2018, its status at the CEC is identified as “On Hold Before
13 Construction” with a construction start date “TBD.”²⁵ Therefore, the prospects for
14 this project are uncertain and yet it has been able to retain its FCDS for many
15 years. So, in addition to FCDS capacity, another consideration is the allocation of
16 existing FCDS to commercially viable generation projects seeking FCDS,
17 including projects seeking interconnection through the SCE Wholesale
18 Distribution Access Tariff (“WDAT”).

19 The allocation of FCDS is managed by the CAISO through the Generation
20 Interconnection Procedures (“GIP”)²⁶ and the Generator Interconnection Queue
21 Management Process. These processes are designed to steer the FCDS capacity to

²⁴ The CAISO Controlled Grid Interconnection Queue, September 25, 2015 indicates that the interconnection request for Q17 was received on March 18, 2003.

²⁵ CEC Status of All Projects, entry for the Sonoran Energy Project (Formerly Blythe Energy Project Phase II). http://www.energy.ca.gov/sitingcases/all_projects.html .

²⁶ The GIP is the interconnection process applicable to the Transition Cluster under which the WODUP was identified. The CAISO continues to improve the interconnection process with the implementation of the Generation Interconnection and Deliverability Allocation Procedures (GIDAP) starting with Cluster 5.

1 commercially viable projects requesting such service while respecting the rights of
2 generators with allocations. Because of the multiple interests that must be
3 considered, these CAISO processes take time to effect changes in FCDS
4 allocation. As such, the perceived unavailability of FCDS may be temporary as
5 these processes work to reallocate FCDS to commercially viable generation
6 projects.

7 **D. Increased Maximum Import Capacity Is Not**
8 **Necessary To Accommodate Increased Flows From**
9 **Path 42**

10 SCE's claim that WODUP is necessary to accommodate increased flows
11 from Path 42 is misleading because it assumes that any such increase in flows
12 must also be accompanied by an increase in MIC. The MIC is a CAISO tariff
13 concept defined as "A quantity in MW determined by the CAISO for each Intertie
14 into the CAISO Balancing Authority Area to be deliverable to the CAISO
15 Balancing Authority Area based on CAISO study criteria."²⁷ Similar to FCDS
16 discussed above, the CAISO uses MIC to assign deliverability to imports so that
17 such imports may count towards a LSE's RA requirements, but the MIC does not
18 change the CAISO's actual resource dispatch.

19 As described in the WODUP Proponent's Environmental Assessment
20 ("PEA"), SCE and the IID have an intertie between their transmission systems in
21 the Coachella Valley known as Path 42 (see diagram in Appendix A). Path 42 is
22 one of the two CAISO connections to the Imperial CREZ and is connected to
23 Devers Substation. This transmission path has a WECC approved Path Rating of
24 600 megawatts ("MW") east to west into the SCE system.

²⁷ CAISO Confirmed Tariff, dated November 19, 2014, Appendix A – Master Definition.

1 SCE asserts that the WODUP is needed to accommodate increased flows
2 on Path 42.²⁸ However, SCE has not demonstrated that an increase in the Path 42
3 MIC is necessary to accept additional energy from the IID system and, as shown
4 below, the opposite is true.

5 SCE and IID are in the process of upgrading the rating of Path 42 by 900
6 MW29 via the WECC Path Rating Process to establish a Path Rating of 1,500
7 MW. This WECC process is the forum whereby the transmission path owners
8 demonstrate that the proposed path transfers can be accommodated while meeting
9 the performance requirements in the NERC Reliability Standards and WECC
10 Criteria. As part of that process, the project proponents conduct sufficient studies
11 to demonstrate the proposed rating of the Path associated with the Project and
12 prepare a Comprehensive Progress Report documenting study results and
13 describing Project details including a preliminary Plan of Service.³⁰

14 SCE and IID prepared a Comprehensive Progress Report “Path 42 Rating
15 Increase to 1,500 MW” on December 21, 2011 that demonstrates the Path 42
16 rating increase is not dependent on the WODUP. In this report, the SCE scope of
17 work is to reconductor SCE’s Devers-Mirage 230 kV line and its portion of the
18 Ramon-Mirage 230 kV line.³¹ The Comprehensive Progress Report also includes
19 any assumptions made concerning future system improvements that may impact

²⁸ *Ibid.* p. 3.

²⁹ Southern California Edison Company’s Direct Testimony on Need, 399.2.5, Maximum Cost, Field Management Plan, and Amended Direct Testimony on the Proposed Transaction for the West of Devers Upgrade Project, dated April 17, 2015, p. 10.

³⁰ WECC Project Coordination, Path Rating and Progress Report Processes, June 6, 2014, p. 8 [https://www.wecc.biz/ layouts/15/WopiFrame.aspx?sourcedoc=/Corporate/Project_Coordination_Path_Rating_and_Progress_Report_Processes.pdf&action=default&DefaultItemOpen=1](https://www.wecc.biz/layouts/15/WopiFrame.aspx?sourcedoc=/Corporate/Project_Coordination_Path_Rating_and_Progress_Report_Processes.pdf&action=default&DefaultItemOpen=1).

³¹ Comprehensive Progress Report Southern California Edison (SCE) and Imperial Irrigation District (IID) Path 42 Rating Increase to 1,500 MW, December 21, 2011, p. 5. In its 2013 Annual Progress Report to WECC dated March 15, 2013, SCE notified WECC that this scope of work was amended to include the installation of relays at Devers in support of an IID Special Protection System.

1 the proposed path rating. The reason for including these assumptions is that the
2 achievement of the desired Path Rating then becomes dependent upon the
3 completion of the identified improvements. The Comprehensive Progress Report
4 identifies six assumed completed improvements associated with the Path 42 rating
5 increase:³²

6 Colorado River-Devers-Valley 500 kV line (DCR)

- 7 1. El Casco Substation connected to the Devers-San Bernardino 230 kV No. 2
8 line
- 9 2. Devers-Mirage 115 kV Subtransmission System Split Project
- 10 3. Devers-Coachella Valley 230 kV Loop-in Project
- 11 4. Addition of a 230/92 kV, 300 MVA transformer bank at Dixieland
12 substation and the Imperial Valley to Dixieland 230 kV line.
- 13 5. Addition of a second 161/92 kV, 225 MVA transformer bank at Ave. 58
14 substation.

15 Notably absent from the above list is the WODUP, making it clear that the
16 achievement of the increase in Path 42 rating is not dependent on the proposed
17 WODUP. The identified Path 42 energy transfers of 1,500 MW can be achieved
18 and additional renewable energy received from the Imperial CREZ without the
19 WODUP.

20 Therefore, similar to resources internal to the CAISO, the proposed benefits
21 associated with Path 42 to the Imperial CREZ are associated with the system
22 resource capacity counting and there has been no demonstration that the WODUP
23 is needed to support imports from the Imperial CREZ.

³²*Ibid.* p. 7

1 **E. Wodup Fails The D.07-03-012 Three Prong Test**
2 **For Determining Whether A Transmission Project**
3 **Would Facilitate Progress Towards Achieving The**
4 **State’s Rps Goals**

5 **1. Introduction**

6 WODUP must meet the standard for determining whether a transmission
7 project is needed under Public Utilities Code Section 399.2.5, as further developed
8 in D.07-03-012, before it can be justified on the basis that it facilitates a sundry
9 list³³ of other connection benefits. In the Commission’s Final Decision granting
10 the Certificate of Public Convenience and Necessity for the Eldorado-Ivanpah
11 Transmission Project (A. 09-05-027), the Commission validated the use of the
12 three-prong test to determine whether a proposed transmission facility is necessary
13 to facilitate achievement of the State’s renewable power goals.³⁴

14 SCE asserts that the WODUP meets the Commission’s three-prong test in
15 its updated testimony under the section for Eligibility For Backstop Rate Recovery
16 Under Public Utilities Code Section 399.2.5. In this Section, ORA describes how
17 the Proposed Project fails to meet the three-prong test. In particular, ORA
18 describes how an adequate amount of renewable generation can be brought to the
19 grid without WODUP. ORA also explains how the Project as proposed is meant
20 to access unneeded RA capacity from Variable Energy Resources that are less
21 effective in providing RA capacity which is expected to be in excess capacity in
22 the foreseeable future. ORA demonstrates that the Proposed Project does not play
23 a critical role in meeting the State’s RPS goals. In other words, the State’s RPS

³³ The Three Prong Test discussion here, equally responds to SCE’s claim that WOD upgrade Project is “needed” to: 1) Enable Distributed Generation (DG) in the Devers area to achieve FCDS, (2) Support Integration of Small Scale Generation; (3) Support California’s GHG Reduction Program; (4) Support Goals of the CEC integrated energy policy report; (4) Support Desert Renewable Energy Conservation Plan.

³⁴ See both the ALJ’s Proposed Decision and the Alternate Proposed Decision of Commissioner Peevey, November 15, 2010.

1 goals can be met at least cost and minimal environmental impact without
2 WODUP. In support of this argument, ORA provides evidence from the ED's
3 RPS Calculator that is used to develop renewable generation portfolios that are
4 used by the CAISO in its transmission planning process ("TPP") for identifying
5 and approving public policy driven transmission projects. ORA also explains how
6 the cost of the Proposed Project is not appropriately balanced against the certainty
7 of the Proposed Project's contribution to economically rational RPS compliance.
8 In support of this claim, ORA provides both qualitative and quantitative
9 arguments.

10 **2. The Three Prong Test**

11 To determine "need" under the Public Utilities code § 399.2.5, the CPUC
12 relies on the three-prong test, adopted in 2007 for determining which projects
13 would qualify as "necessary to facilitate" achievement of the state's renewable
14 power goals, and thereby qualify for the cost recovery provisions under the statute.
15 This test was first implemented in Decision (D.)07-03-012 (the decision approving
16 Segment 1 of the Tehachapi Renewable Transmission Project) and then
17 subsequently used in several CPCNs such as the Eldorado-Ivanpah Transmission
18 Project (Application 09-05-027). The three determining factors are:

- 19 (1) that a project would bring to the grid renewable generation that
20 would otherwise remain unavailable;
- 21 (2) that the area within the line's reach would play a critical role in
22 meeting the State's RPS goals; and
- 23 (3) that the cost of the line is appropriately balanced against the
24 certainty of the line's contribution to economically rational RPS
25 compliance.

26 Below, we discuss the Proposed Project's non-compliance with each of
27 these three prongs.

28

1 **b) First Prong: Whether and how the**
2 **Proposed Project Would Bring to the**
3 **Grid Renewable Generation that**
4 **Would Otherwise Remain**
5 **Unavailable**

6 The first prong requires that WODUP bring to the grid renewable
7 generation that would otherwise remain unavailable. The main purpose of the
8 WODUP is to bring yet-to-be constructed wind, solar thermal and solar
9 photovoltaic (“PV”) projects to the grid. SCE proposes the WODUP to increase
10 the power transfer capability of the WOD transmission facilities to enable full
11 delivery of electric power from generation resources located within the Blythe and
12 Desert Center areas. In this context, “full delivery” equates to the level of service
13 assessed through a deliverability study by the CAISO in order for a generator to
14 receive FCDS as defined in the CAISO Tariff. Though the renewable power
15 projects identified by SCE in the Updated Testimony Table II-1 have requested
16 FCDS, that does not mean that upgrading the electric transmission system to
17 provide such service is in California’s or the consumers’ interest.

18 The SCE’s PEA asserts that the WODUP would support integration of
19 generation facilities with executed PPAs. However, as demonstrated in Section
20 III.C, the existing system is capable of providing FCDS in excess of the FCDS
21 needed to support executed PPAs. This conclusion is also supported by the
22 CAISO’s input into the RPS Calculator developed by the CPUC’s ED staff. The
23 CAISO provides the transmission cost and availability for different transmission
24 areas into the RPS Calculator. As reflected in the RPS Calculator v6.1
25 (Active_Portfolio tab), the Riverside East electrical area or CREZ can
26 accommodate the existing and PPA FCDS renewable projects. As shown in Table
27 4, that renewable generation adds about 1,071MW to the system. Furthermore, the
28 RPS Calculator v6.1 (CREZ_Tx_Inputs tab) indicates that incremental to
29 1,071MW, another 350MW of FCDS resources can be accommodated on the
30 existing WOD transmission. The RPS Calculator allows for an increase of FCDS

1 in the Riverside East CREZ by 2,000 MW by adding the WODUP, but only if it is
 2 a cost effective way to meet the RPS goals.

3 **Table 4: Existing and PPA Renewable Generation Projects Accommodated**
 4 **on the Existing Transmission in the Riverside East Area (Source: CPUC RPS**
 5 **Calculator v6.1³⁵)**

Project Queue Position	Project Name	Technology	Type	Contract Capacity (MW)
Q146/147	Desert Center Solar Farm	Solar PV	New/Existing	300
Q193	Genesis Solar Energy Project	Solar Thermal	New/Existing	250
WDT357	NRG Solar Blythe LLC	Solar PV	New/Existing	21
Q146/147	Desert Sunlight 250, LLC	Solar PV	New/Existing	250
Q193	McCoy Solar, LLC	Solar PV	New/PPA	250
Total (MW)				1,071

6
 7 SCE’s updated testimony under the section for Eligibility For Backstop
 8 Rate Recovery Under Public Utilities Code Section 399.2.5, claims that the
 9 WODUP meets the first prong because many of the planned renewable generation
 10 projects in the Blythe and Desert Center areas and Coachella Valley would remain
 11 otherwise inaccessible without the WODUP. Based on the CAISO’s deliverability
 12 assessment, WODUP can accommodate only 2,000MW of resources in the

³⁵ The CPUC RPS Calculator v6.1 includes the actual project names as opposed to the project CAISO and SCE WDT Queue positions. We have mapped the project names to the project queue positions using the following SCE FERC filings of the LGIAs: Q146/147 - FERC Proceeding # ER10-2169, Q193 - FERC Proceeding # EL11-4358 and WDT357 - FERC Proceeding # ER09-1731.

1 Riverside East CREZ as reflected in the RPS Calculator v6.1. Therefore, SCE’s
2 statement about WODUP increasing the transfer capability by 3,200MW and
3 potentially accommodating 2,460 MW of resources in the Blythe and Desert
4 Center area and another 2,044 MW of planned renewable generation in Coachella
5 Valley is misleading since WODUP’s capacity is 2000MW.³⁶ According to the
6 CAISO’s deliverability assessment, the WODUP simply does not have the
7 capability to accommodate all the currently queued FCDS generation. However,
8 that does not mean that some of this queued generation in the Blythe/Desert
9 Center area and Coachella Valley area will remain unavailable without WODUP.
10 In addition to the unused FCDS on the system, some portion of that generation can
11 potentially be accommodated as energy only (“EO”) as discussed in Section III.A.
12 In summary, the existing PPAs with FCDS and some PPAs with additional
13 FCDS capacity in the Riverside East and Imperial areas can be accommodated on
14 the existing transmission. Moreover, even more queued renewable generating
15 capacity can be accommodated on the existing transmission without WODUP as
16 EO deliveries. As such, relying on projects in the CAISO queue with no further
17 assurances that such projects will go on-line within a reasonably foreseeable
18 period of time, together with the resulting environmental damage from the
19 Proposed Project and consumer costs of approximately \$975.7 million, is not
20 sufficient to establish need under the Commission’s first prong of the § 399.2.5
21 test.

³⁶ Note that the net increase of FCDS provided by the WODUP is only 950 MW as construction of the WODUP requires removal of the WOD Interim Upgrades and the loss of the 1,050 MW of FCDS that they provide.

1 Generation (“DG”) or Out-of-State (“OOS”) resources that can also be
2 accommodated using the existing transmission.

3 **Table 5: Amount of New FCDS Renewable Capacity Accommodated in**
4 **Existing Transmission in Different Transmission Areas in California³⁷**

Transmission Area	Available Capacity (MW) Existing System
El Dorado	412
Greater Carrizo	40
Greater Imperial	800
Greater Kramer	250
Los Banos	130
Mountain Pass	370
Riverside East & Palm Springs	350
Round Mountain	28
Sacramento River	37
Solano	101
Tehachapi	3,774
Westlands	1,500
Total	7,792

5 Tables 5 and 6 demonstrate that there are several renewable development
6 areas within the State that can accommodate both FCDS and EO resources without
7 the WODUP and without any need for major network upgrades. For the reasons
8 discussed above, the preponderance of evidence fails to demonstrate that
9 incremental access to the area within the Proposed Project’s reach would play a
10 critical role in meeting the current and future RPS goals.

³⁷ *Ibid.*

1 Table 6 shows that 24,827MW of in-State EO resources can be
 2 accommodated using the existing transmission system without the WODUP.³⁸
 3 This estimate is based upon the CAISO-developed “rules of thumb” to limit total
 4 capacity of EO resources in various parts of the state that could be installed
 5 without incurring major congestion. This amount significantly exceeds the 15,000
 6 MW of incremental renewables needed in the CAISO balancing authority area to
 7 transition from 33% to a 50% RPS goal.³⁹ It is important to note that similar to
 8 the amounts reported in Table 5, the estimates shown in Table 6 also exclude DG
 9 and OOS renewables estimates.

10 Tables 5 and 6 demonstrate that there are several renewable development
 11 areas within the State that can accommodate both FCDS and EO resources without
 12 the WODUP and without any need for major network upgrades. For the reasons
 13 discussed above, the preponderance of evidence fails to demonstrate that
 14 incremental access to the area within the Proposed Project’s reach would play a
 15 critical role in meeting the current and future RPS goals.

16 **Table 6: Amount of New EO Renewable Capacity Accommodated in Existing**
 17 **Transmission in Different Transmission Areas in California⁴⁰**

Energy Only Zone	Available Capacity (MW) Existing System
Greater Carrizo	1,140
Central Valley North & Los Banos	2,000

³⁸ Based upon the CAISO Response to ORA Data Request No. 5.3.1, the existing capacity to accommodate new EO resources in the Riverside East CREZ without the WODUP should be reduced by 2,000MW to 2,917MW. With WODUP, the amount is 4,917MW leading to total in-State EO resources to 26,827MW as reported in the CPUC RPS Calculator v.6.1.

³⁹ **Source:** CPUC ED RPS Calculator Teleconference, E3 Presentation on Update on the 2015 Special Study, slide #3, June 29, 2015.

⁴⁰ **Source:** *CAISO_Tx_Inputs* tab of the CPUC RPS Calculator v.6.1.

Greater Imperial	2,633
Kramer & Inyokern	750
Mountain Pass & El Dorado	2,982
Northern California	3,404
Riverside East & Palm Springs	2,917
Solano	1,101
Tehachapi	5,000
Westlands	2,900
Total	24,827

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d) Third Prong: Is the Cost of the Proposed Project Appropriately Balanced Against the Certainty of the Line’s Contribution to Economically Rational RPS Compliance?

7

The third prong requires the Commission to find that the cost of the line is appropriately balanced against the certainty of the line’s contribution to economically rational RPS compliance. According to SCE, the total estimated cost of the project is approximately \$975.7 million in 2015 constant dollars including a contingency of 15%. These costs will be passed through to consumers, who have borne steadily increasing transmission costs in recent years. It is critical that the Commission authorize transmission projects that provide consumers with a value commensurate to the costs. Using the CAISO’s Transmission Access Charge (“TAC”) Estimating Model⁴¹, we calculate that the WODUP will add to the annual High Voltage (“HV”) Transmission Revenue

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⁴¹ The CAISO 2014-2015 transmission access charge model can be accessed at <http://www.caiso.com/planning/Pages/TransmissionPlanning/Default.aspx>.

1 Requirement (“TRR”) in the range of \$134-\$157 million. In other words, the
2 WODUP, by itself, is expected to add nearly \$0.65/MWh to the CAISO-wide HV
3 TAC.

4 Currently, the CAISO’s TPP uses the RPS portfolios produced by the
5 CPUC’s RPS Calculator model. Per the Memorandum of Understanding (“MoU”)
6 between the CPUC and the CAISO, the CAISO takes these RPS portfolios and
7 carries them forward into its annual TPP. The CAISO performs deliverability
8 analysis to identify the specific transmission upgrades that will make the entire
9 RPS portfolio deliverable. The CAISO does not undertake any analysis to confirm
10 that the identified transmission upgrades are the lowest cost option of meeting
11 LSEs’ 33% RPS requirement and LSEs’ 15% planning reserve requirement.
12 Additionally, as explained earlier, the WODUP falls within a class of transmission
13 upgrades for which the benefiting generators are not asked to make the initial
14 funding. As such, its cost would neither be reflected in the generator’s
15 interconnection documentation nor in bids into an LSE Request for Offer (“RFO”)
16 or constrained by market and competitive discipline. Therefore, the WODUP has
17 proceeded to date without regard to any analyses of the economic impacts of the
18 project, including the impacts of the Proposed Project’s estimated costs having
19 more than doubled.

20 Furthermore, as outlined in Section III.G, California is not in need of
21 additional system resource capacity that the WODUP would facilitate, and even if
22 there were such a need, the transition to an Effective Load Carrying Capability
23 (“ELCC”) method of capacity counting would diminish the value of solar
24 resources in fulfilling such a need.

25 Based upon the underlying data in the latest CPUC’s RPS calculator
26 (Version 6.1) as well as the resource portfolios used in the CAISO’s 2015-16 TPP,
27 we have performed an economic assessment comparing the annual RA value
28 associated with renewables in the Riverside East and Imperial CREZs and the
29 annualized transmission costs associated with the WODUP that is presumably

1 needed to obtain RA deliverability for those renewable resources. We have
 2 provided two ranges – High and Low - of FCDS resources that can be
 3 accommodated with WODUP in the Riverside East and Imperial areas. The High
 4 range is developed based upon the CPUC RPS Calculator Version 5 that was used
 5 to develop the CAISO 2015-16 TPP portfolios. The High range also assumes
 6 200MW of geothermal resources in the Imperial area with relatively high ELCC
 7 credit that can be accommodated with WODUP. The Low range is based upon the
 8 CPUC RPS Calculator Version 6.1 that was used to provide the > 33% RPS
 9 Special Study under the 2015-16 TPP. The Low range also assumes 200MW of
 10 solar PV resources in the Imperial area with low ELCC credit that can be
 11 accommodated with WODUP. We have assigned an estimate of \$33/kW-Yr
 12 system RA capacity price used in the CPUC RPS Calculator Version 6.1 to the
 13 renewable resources. Table 7 shows that the annualized transmission cost of
 14 WODUP of \$136 million is significantly higher (nearly 6 to 9 times) than the RA
 15 value associated with the FCDS renewable resources accommodated by WODUP,
 16 which is in the range of \$15-\$22 million per year. This exercise demonstrates that
 17 the Proposed Project is not a cost-effective mechanism to obtain RA from the
 18 underlying renewable resources.

19

20 **Table 7: A Comparison of RA Value and Corresponding Transmission**
 21 **Delivery Network Upgrade Cost**

Range of Deliverable Full Capacity Resources	Delivering Renewables from Zone*	Total (MW)*	NQC (MW)**	Annual RA Value (M\$)	Annualized Transmission Cost (M\$)***
High*	Riverside East	2,400	499	\$21.74	\$136.50
	Imperial	200	160		
Low*	Kramer	2,000	419	\$15.14	

	Imperial	200	40														
<p>* The High range is developed based upon the CPUC RPS Calculator Version 5 (<i>g - TxInputs</i> tab) used to develop the 2015-16 TPP portfolios. The renewable capacity (MW) in the Riverside East area is assumed to be as follows.</p> <table border="1"> <thead> <tr> <th>Resource Type</th> <th>High</th> <th>Low</th> </tr> </thead> <tbody> <tr> <td>Large Scale Solar PV</td> <td>2,274</td> <td>1,874</td> </tr> <tr> <td>Small Solar PV</td> <td>16</td> <td>16</td> </tr> <tr> <td>Solar Thermal</td> <td>110</td> <td>110</td> </tr> </tbody> </table>						Resource Type	High	Low	Large Scale Solar PV	2,274	1,874	Small Solar PV	16	16	Solar Thermal	110	110
Resource Type	High	Low															
Large Scale Solar PV	2,274	1,874															
Small Solar PV	16	16															
Solar Thermal	110	110															
<p>** Assuming ELCC values used in the CPUC RPS Calculator Version 6.1 (<i>ELCC_Interp</i> tab). The ELCC values in year 2024 assumed as a share of the nameplate capacity are</p> <table border="1"> <tbody> <tr> <td>Geothermal</td> <td>80%</td> </tr> <tr> <td>Large Scale Solar PV</td> <td>20%</td> </tr> <tr> <td>Small Solar PV</td> <td>14%</td> </tr> <tr> <td>Solar Thermal</td> <td>38%</td> </tr> </tbody> </table>						Geothermal	80%	Large Scale Solar PV	20%	Small Solar PV	14%	Solar Thermal	38%				
Geothermal	80%																
Large Scale Solar PV	20%																
Small Solar PV	14%																
Solar Thermal	38%																
<p>*** Assuming approx. 14% carrying rate consistent with the CAISO's Transmission Access Charge ("TAC") Estimating Model.</p>																	

1

2 Based on our analysis, ORA disagrees with SCE's contention that the
3 execution of PPAs following the bid ranking process is evidence of the Proposed
4 Project's economically rational RPS compliance for the following three reasons.
5 First, SCE has not provided any evidence that the cost of WODUP was taken into
6 account in the bid ranking process when the PPAs dependent on the WODUP for
7 their FCDS were executed. Second, as ORA demonstrated in Sections III.C and
8 III.E.2.a, the resources with existing PPAs can be accommodated on the existing
9 WOD capacity without the WODUP. Third, as we have explained earlier, the RA

1 value of the FCDS resources falls well short of the cost of the WODUP. Finally,
2 SCE has not provided evidence of any congestion and/or production cost benefits
3 associated with the Proposed Project. As discussed in detail, in Section III.I, such
4 a model is a better tool to assess whether increases in transmission capacity are
5 needed to support achievement of the State and Federal renewable energy goals in
6 an economically efficient manner.

7 The costs of the Proposed Project are significant. Transmission costs
8 passed through to ratepayers have steadily increased in recent years. It is critical
9 that the Commission authorize transmission projects that provide ratepayers with a
10 value commensurate to the costs. The preponderance of evidence fails to establish
11 that increased costs associated with the Proposed Project are justified. In the
12 absence of “certainty of the Proposed Projects contribution to economically
13 rational RPS compliance,” we believe the evidence presented by SCE thus far fails
14 to satisfy the third prong of the § 399.2.5 test.

15 **F. THE CPUC HAS NOT IDENTIFIED ANY NEED**
16 **FOR GENERAL SYSTEM RA**

17 In order to assess the need for the Proposed Project to meet the system
18 Resource Adequacy (“RA”) requirements, we must ask two questions: i) whether
19 the State is in need of System RA, and ii) whether the generating capacity
20 presumably accommodated by the Proposed Project are the best possible resources
21 to provide the needed RA. In this section, we address the first question. The next
22 section (III.G) deals with the second question.

23 The RA program is designed to ensure that CPUC-jurisdictional Load
24 Serving Entities (“LSE”) have sufficient capacity to meet their peak load with a
25 15% Planning Reserve Margin (“PRM”). The RA program began implementation
26 in 2006 and continues to provide the energy market with sufficient forward

1 capacity to meet peak demand. This capacity includes System RA⁴² and Local
2 RA, both of which are measured in MWs. The capacity resources in question in
3 the Riverside East CREZ or imported over Path 42 would not provide Local RA,
4 so only System RA benefits need be considered in this analysis.

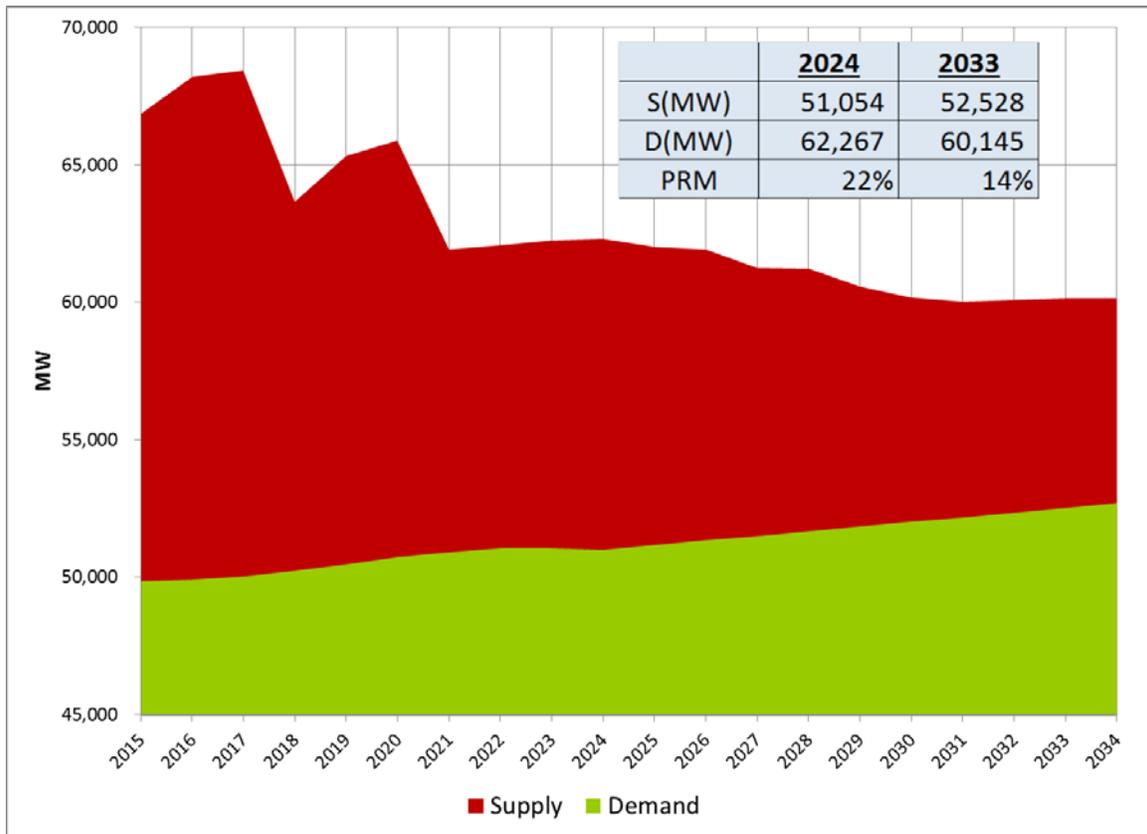
5 Currently, the market has more capacity than is needed to meet the System
6 RA requirements over the 10 year planning horizon. The most basic evidence of
7 excess system capacity is the 2014 Long Term Procurement Plan (“LTPP”) load
8 and resources balance analysis shown in

⁴² Each October, the RA program requires LSEs to make an annual System and Local compliance showing for the coming year. For the System showing, LSEs are required to demonstrate that they have procured 90% of their System RA obligation for the five summer months.

1 **Figure 1** below. The planning margin for system-wide reserves peaks in
2 2016 at 37% and then is about 22% in 2024.⁴³
3

⁴³ The CPUC has previously established that a 15% PRM is an appropriate level of reliability for system planning. The planning margin-constrained local areas are not considered in Figure 1, nor are additional resources authorized to meet local area needs.

1 **Figure 1: Forecast Supply and Demand 2015-2034**⁴⁴



2

3 As can be seen from Figure 1, the CPUC 2014 LTPP does not identify need
 4 for system capacity before 2033, which is the first year when the PRM drops
 5 below 15%. Therefore, the WODUP is not needed to meet California’s System
 6 RA obligations prior to 2033. By 2033, there almost certainly will be other
 7 System RA resources available that are not shown in Figure 1. In particular, these
 8 projected PRMs do not account for the fact that the state will be adding resources
 9 for local capacity and flexible capacity needs, both of which will increase the
 10 excess system RA capacity and increase the PRMs. There needs to be a

⁴⁴ **Source:** Planning Assumptions Update and Scenarios for use in the CPUC Rulemaking R.13-12-010 (The 2014 Long-Term Procurement Plan Proceeding), and the CAISO 2015-16 Transmission Planning Process. Also, see The Scenario Tool Excel Workbook version 4, dated Mar 4, 2015 and available on the Commission website at http://www.cpuc.ca.gov/PUC/energy/Procurement/LTPP/ltpg_history.htm.

1 comprehensive assessment of a system capacity need balanced against costs before
2 determining if the WODUP is needed to provide additional FCDS for generators
3 desiring to provide even more RA.

4 **G. Qualifying Capacity Delivery From Wind And**
5 **Solar Resources Will Be Significantly Reduced**
6 **Under New Law**

7 Notwithstanding the projected surplus of system capacity described in
8 Section III.F, the ability of solar generation to contribute RA capacity is expected
9 to significantly diminish when California transitions to the Effective Load
10 Carrying Capability (“ELCC”) methodology of resource counting in compliance
11 with Senate Bill (SB) 2 (1X)⁴⁵. SB 2 (1X) extended California’s RPS program
12 goal from 20% in 2010 to 33% in 2020. It also required the CPUC, by July 1,
13 2011, to determine the ELCC of wind and solar energy resources on the electrical
14 grid. Furthermore, it required the CPUC to use those values in establishing the
15 contribution of those resources toward meeting specified RA requirements.⁴⁶

16 Qualifying Capacity (“QC”) represents the maximum generating capacity
17 of a resource that is eligible to be counted for meeting the CPUC’s RA
18 Requirement prior to assessing the deliverability of the resource. In 2006, LSEs
19 were required to demonstrate they had contracts for, ownership control of, or
20 allocations of QC in order to satisfy the forward commitment obligations required
21 by the RA program. If an LSE had the rights to a resource’s QC, then it could use
22 the QC in its RA compliance filings.⁴⁷ The CPUC adopted the current QC
23 counting conventions, which are computed based on the applicable resource type,

⁴⁵ http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb_0001-0050/sbx1_2_bill_20110412_chaptered.pdf

⁴⁶ Senate Bill No. 2, Approved by Governor April 12, 2011, CHAPTER 1, Section 6, p. 97.

⁴⁷ If a resource is used as part of the RA filing, it is subject to specific offer obligations under both the RA program and the CAISO’s tariff. See 2006 Resource Adequacy Report, by CPUC Staff, March 16, 2007, Section 5.1, p. 31-32.

1 in D.10-06-036.⁴⁸ Currently, for wind, solar, and non-dispatchable resources, the
2 QC methodology is based on historical production coincident with peak demand.⁴⁹

3 ORA was one of the first entities to argue for considering ELCC in
4 calculating RPS program capacity payments.⁵⁰ ELCC is a percentage that
5 expresses how well a resource is able to meet reliability conditions and reduce
6 expected reliability problems or outage events (considering availability and use
7 limitations). In particular, ELCC is calculated based on a monthly Loss of Load
8 Expectation (“LOLE”) metric.⁵¹ For example, imagine there is 100 MW of fixed
9 tilt photovoltaic solar capacity in a given region, and modeling results show that
10 the system LOLE for June is 0.001. If this solar capacity is removed from
11 modeling, system reliability would decrease and the June LOLE would increase,
12 perhaps to 0.002. If 25 MW of perfect generation is required to bring the May
13 LOLE back down to 0.001, then the ELCC would be 25 MW / 100 MW = 25%.
14 In other words, in the month of June, fixed tilt photovoltaic solar capacity in the
15 region in question improves system reliability 25% as much as the same nameplate
16 capacity of perfect generation.⁵²

⁴⁸ http://docs.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/119856.htm (QC manual adopted as Appendix B).

⁴⁹ The CPUC executes a subpoena for settlement quality meter data from the CAISO and performs QC calculations for non-dispatchable resources annually.

⁵⁰ Order Initiating Implementation of the Senate Bill 1078 Renewable Portfolio Standard Program, Decision 03-06-071, p. 27-28, June 19, 2003. At that time, ORA had argued how “the ELCC more accurately reflects the value of the peaking component of an intermittent resource, which the utilities may undervalue due to intermittent resources’ non-dispatchability.”

⁵¹ For example, in a monthly LOLE calculation, if CAISO system load exceeds available generation for ten hours out of a total of 720 hours in the month, then the system LOLE for that month is equal to 10 hours ÷ 720 hours, or 0.014.

⁵² “It is calculated via probabilistic reliability modeling, and yields a single percentage value for a given facility or grouping of facilities. ELCC can be thought of as a derating factor that is applied to a facility’s maximum output (Pmax) in order to determine its QC. Because this derating factor is calculated considering both system reliability needs and facility performance, it will reflect not just the output capabilities of a facility but also the usefulness of this output in meeting overall

1 In support of this requirement, the CPUC’s Energy Division staff has
2 developed a calculation methodology for the CPUC’s determination of the ELCC
3 and QC of wind and solar resources.⁵³ The marginal ELCC of a specific
4 renewable resource technology declines as its penetration increases. This is most
5 apparent for solar PV, which has a high capacity credit at low penetrations, but
6 this rapidly decreases as additional capacity is added. See **Figure 2** below. To
7 place this effect in context, consider that a small level of solar generation can
8 reduce the net peak load at mid-day. However as more solar is added, the net peak
9 load begins to shift to the evening hours when solar is not available to offset load.
10 In such a situation, adding more solar generation does little to support system
11 capacity needed to serve the shifted peak load.

12

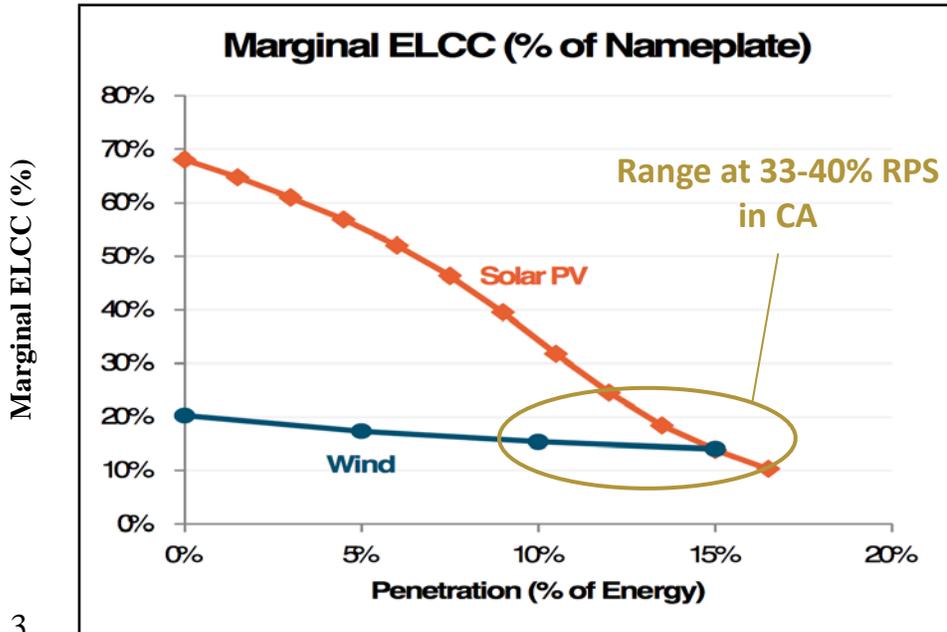
13

electricity system reliability needs.” **Source:** ED Staff Proposal, entitled, “Effective Load Carrying Capacity and Qualifying Capacity Calculation Methodology for Wind and Solar Resources,” Resource Adequacy Proceeding R.11-10-023, dated January 16, 2014.

⁵³ Currently, CPUC RPS Proceeding (R.15-02-020) is developing methodology for a multi-year marginal ELCC. See the ALJ Ruling seeking comment on developing methodology for a multi-year marginal ELCC, dated October 9, 2015. The Assigned Commissioner’s Scoping Memo in this proceeding, dated May 22, 2015, anticipates the Proposed Decision on 2016 RPS procurement plans in Q4 2016, which may include adoption of final ELCC values (see p.12).

1
2

Figure 2: Marginal ELCC of Solar Resource Drops Significantly with Increasing Penetration⁵⁴



3
4

5 Based on the CPUC’s ED staff analysis, they developed an ELCC metric where a
 6 large-scale (utility-scale) solar PV resource would have its QC value reduced from
 7 the existing approximately 74%⁵⁵ to about 20%⁵⁶ of its nameplate capacity in 2024
 8 as solar penetration increases which would be called the Net Qualifying Capacity
 9 (NQC). This means that a solar PV resource will have its QC counted as less than
 10 1/3rd of its current QC towards system RA in the future. Conceptually, the ELCC
 11 for a given technology category, region, and month is a comparison of the amount

⁵⁴ **Source:** CPUC ED RPS Calculator Teleconference, E3 Presentation on Update on the 2015 Special Study, slide #4, June 29, 2015.

⁵⁵ **Source:** Final Net Qualifying Capacity Report for Compliance Year 2015, See <https://www.caiso.com/planning/Pages/ReliabilityRequirements/Default.aspx>. Per the ED Draft Staff Paper, entitled, “Effective Load Carrying Capability of Wind and Solar Resources in the CAISO Balancing Authority,” dated July 15, 2015, the average ELCC for solar resources in 2016 equaled approximately 63%.

⁵⁶ **Source:** CPUC RPS Calculator Version 6.1 (*ELCC_Interp* tab) in Year 2024, See <http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/RPS+Calculator+Home.htm>.

1 of generation capacity of that category and in that region to the amount of perfect
2 generation required to yield the same monthly LOLE, if the capacity in question is
3 excluded from modeling.

4 There is no need for system capacity in California to justify a major
5 transmission expansion to increase the pool of capacity resources, and even if
6 there were such a need, the transition to an ELCC method of capacity counting
7 would diminish the value of solar resources in fulfilling such a need.

8 The Proposed Project is a costly transmission project to access capacity
9 resources that California does not need from resources that are inferior sources of
10 capacity.

11 **H. The WECC Is Considering Changes To The**
12 **Planning Standards That Would Render The**
13 **Current Critical Contingency For WODUP**
14 **Noncredible**

15 When assessing the reliability performance of the electric transmission
16 system, power system studies consider both system normal conditions (all
17 transmission elements in service) as well as selected system contingency events
18 (one or more elements out of service). The NERC planning and operating
19 standards govern the contingencies selected and the required performance under
20 such contingencies. These standards reflect an economic balance between the
21 desire for a reliable, robust electric system and the cost and environmental impact
22 of increased transmission system performance. Contingencies that fall within the
23 Planning Standards are commonly referred to as “credible” contingencies while
24 those more unlikely contingencies that are beyond the Planning Standards are
25 referred to as “noncredible” contingencies.⁵⁷

⁵⁷ Peak Reliability defines Credible as meaning plausible (i.e., believable) with a sufficiently high degree of likelihood of occurrence.
<https://www.peakrc.com/SOLDocs/Peak%20RC%20SOL%20Methodology%20for%20the%20Operations%20Horizon%20v7.0.pdf>

1

2 When assessing the availability of FCDS, the CAISO’s deliverability study
3 methodology considers selected contingencies from the NERC Reliability
4 Standards.⁵⁸ Among the large number of potential contingencies that could occur,
5 SCE has identified the critical contingency on the existing system that limits the
6 power transfer west of Devers to be the simultaneous loss of Devers-Valley No. 1
7 and 2 500 kV transmission lines.⁵⁹ These two 500 kV lines are on separate
8 structures, but because of their physical proximity, they are considered Adjacent
9 Transmission Circuits.⁶⁰

10 Under the NERC Reliability Standards, the loss of Adjacent Transmission
11 Circuits is noncredible, and thereby not among the contingencies for which the
12 transmission system must be planned to withstand. However, the NERC
13 Reliability Standards include WECC Regional Differences (“RDs”) that are
14 applicable only to entities within the WECC. Among these differences is a
15 requirement that when establishing System Operating Limits (“SOLs”), the
16 evaluation include the occurrence of a “non-three phase Fault with Normal
17 Clearing on common mode Contingency of two adjacent circuits on separate
18 towers unless the event frequency is determined to be less than one in thirty
19 years.”⁶¹ Therefore in the WECC only, loss of Adjacent Transmission Circuits is
20 studied as a credible outage. WECC, however, is now considering aligning itself

⁵⁸ <http://www.caiso.com/Documents/TechnicalPaper-GeneratorInterconnection-DeliverabilityStudyMethodology.pdf> p. 6. For multiple contingencies, the CAISO deliverability study methodology only considers multiple contingencies associated with a single initiating event (common mode and bus outages).

⁵⁹ SCE Response to ED-SCE-07 ALT-11

⁶⁰ The WECC Glossary for Terms and Naming Conventions identifies Adjacent Transmission Circuits as two transmission circuits with separation between their center lines less than 250 feet at the point of separation with no Bulk Electric System circuit between them.

⁶¹ NERC Planning Standards FAC-010-2.1 and FAC-011-3.

1 with the rest of North America and removing this requirement. After lengthy
2 consideration in subcommittee, WECC has initiated a Standards Authorization
3 Request (“SAR”) to retire the two RDs in the NERC Standards that include this
4 contingency.⁶² As part of the WECC Standards Process, WECC has formed a
5 Drafting Team and initial White Papers have been reviewed by WECC
6 membership for comment.

7 If this SAR proceeds as initially proposed, the WECC Regional Variances
8 would be removed from the NERC Standards such that the simultaneous outage of
9 two circuits on separate structures would no longer require mitigation plans.⁶³

10 While there is no specific schedule associated with changes in the NERC
11 Standards, this process may be completed in 2016. As the CAISO Deliverability
12 Methodology points to the NERC Standards as its basis for contingency selection,
13 if the WECC does remove the RDs, CAISO would have no need to include
14 contingencies of this type in its Deliverability Methodology.

15 Notwithstanding the above arguments that the WODUP is not needed, it
16 would be untimely to proceed with such a large, expensive project while the
17 WECC is considering removing the deliverability limitation being used to justify
18 the Proposed Project from the NERC Planning Standards.

⁶² <https://www.wecc.biz/Standards/Pages/WECC-0113.aspx>

⁶³ In order to provide for an orderly transition, language has been added to the WECC proposal to postpone its application on rated transmission paths until the WECC Path Rating Process can be amended. However the west of Devers transmission is not part of a WECC Rated Path and would not be impacted by this proposed delay.

1 **I. A Comprehensive Assessment Of The Ability Of**
2 **The Transmission System To Integrate**
3 **Renewables, Including An Assessment Of Potential**
4 **Congestion, Is Necessary**

5 Though SCE asserts that the WODUP is needed to integrate planned
6 generation resources and accommodate increased flows from Path 42,⁶⁴ SCE fails
7 to prove that the existing system is inadequate to economically provide such
8 integration.

9 SCE’s statement concerning the Purpose and Need for the WODUP to
10 integrate planned resources and increased flows on Path 42 inappropriately links
11 integration of resources to the provision of FCDS to generators⁶⁵ and increased
12 MIC on Path 42.⁶⁶ As described previously, FCDS and MIC are transmission
13 related products associated with Resource Adequacy and generation capacity
14 counting rather than integrating renewable resources.

15 The power system analysis used to determine the availability of these RA
16 counting related services relies narrowly on an analysis of severely stressed
17 system conditions. Such a narrow analysis provides little insight on the ability of
18 the existing system to transfer the renewable energy to load centers.

19 As identified in Section III.A, the California mandate for retail sellers to
20 procure 33% of their electric supply from eligible renewable resources by 2020 is
21 an energy-based requirement. As such, whether the energy from a specific
22 renewable generator has received FCDS does not impact how such renewable
23 energy counts toward the retail sellers’ procurement goals.

⁶⁴ Southern California Edison Company’s Direct Testimony on Need, 399.2.5, Maximum Cost, Field Management Plan, and Amended Direct Testimony on the Proposed Transaction for the West of Devers Upgrade Project, dated April 17, 2015, p. 10.

⁶⁵ *Ibid.* p. 3.

⁶⁶ *Ibid.* p. 10.

1 The potential for congestion is a better metric to assess whether renewable
2 energy can reach the system load and therefore count towards renewable energy
3 goals. Congestion on a path indicates that generation has to be reduced to
4 maintain the power transfers within reliability limits, and therefore not be
5 delivered to customers on the other side of the path. An economically and
6 environmentally sensitively designed electric system will experience some level of
7 congestion, as it is not in California’s interest to build an electric system of such
8 excess transmission capacity that all potential generation dispatch patterns could
9 be accommodated.

10 Analysis of the transmission facilities presented to date in both the CAISO
11 interconnection studies and the WODUP Draft Environmental Impact Report,⁶⁷
12 use a power flow model. Such a model is widely used in transmission system
13 reliability assessments and used to determine a maximum transfer capability of a
14 portion of the electric system. However, such a model only provides a snapshot of
15 how the system would perform under an assumed single system condition. The
16 system condition modeled is commonly selected so as to result in a high stress on
17 the portion of the system under study even though its probability of occurrence
18 may be very small. Therefore, it provides little insight as to how frequently, if
19 ever, such conditions might exist or the amount of energy that may be impacted by
20 a transmission constraint.

21 A superior industry tool for investigating congestion is a security-
22 constrained production cost simulation model similar to the model the CAISO
23 uses for dispatching and pricing resources in its markets. Such a model evaluates

⁶⁷ CAISO “Transition Cluster Phase II Interconnection Study Report: Group Report in SCE’s Eastern Bulk System” July 8, 2010, p. 5, http://www.energy.ca.gov/sitingcases/blythe_solar/documents/others/2010-08-05_TCPI_Group_in_Report_SCE_TN-57896.pdf, and WODUP Draft EIR, Appendix 5

1 multiple hours in a time period, frequently one year, the spatial distribution of
2 system loads and resources, the capacity of the transmission system and the
3 production cost curve of each generator to develop a simulation of how the system
4 would operate over the time period of study. Levels of congestion and changes in
5 congestion associated with system improvements can then be assessed. The model
6 produces a cost penalty arising from any identified congestion that can be used to
7 determine the value of relieving the congestion compared to the system upgrade
8 costs.⁶⁸ This analytic tool can also be used to determine whether and to what
9 extent, renewable generators in an area may be curtailed.

10 In the CAISO markets, congestion is managed through pricing signals,
11 where generation on the congested side of a path is given a price signal to reduce
12 its output. The response of each generator will depend on its sensitivity to the
13 market prices with more price sensitive resources being the first to curtail to clear
14 any congestion. For this area, this would typically be natural gas-fired resources
15 such as Q3 and Q11A as well as opportunistic fossil based energy imported from
16 Arizona. Only if these resources were insufficiently responsive to the congestion
17 price signals would price insensitive resources such as renewable generation
18 potentially be curtailed.⁶⁹ Therefore, even if hypothetically there were some
19 forecasted congestion, delivery of renewable energy may not be impacted.

20 In summary, a security-constrained production cost simulation model is a
21 better tool to assess whether increases in transmission capacity are needed to

⁶⁸ The CAISO prepares such congestion analyses on selected portions of the transmission system during each planning cycle and maintains an extensive database required for such a technical study.

⁶⁹ Renewable generators PPAs may contain provisions whereby the buyer may curtail the generation for economic reasons. Therefore the renewable generator may indirectly receive a congestion signal. However these buyer curtailment options are of limited duration and incorporated into the commercial terms of the PPA.

1 support achievement of the State and Federal renewable energy goals.
2 Unfortunately, there is nothing in the record forecasting energy congestion on the
3 transmission system associated with alternative renewable energy development
4 scenarios, including the west of Devers transmission, for either the existing system
5 or any potential system upgrades. Therefore, there is no comprehensive analysis
6 as to whether the WODUP is beneficial in meeting the state and federal energy
7 goals or if there are less costly alternatives means to achieve these goals.⁷⁰
8 Notwithstanding this deficiency and the need to conduct such a study, the CAISO
9 estimate of the amount of EO resources that can be accommodated on the existing
10 transmission system based upon “rules of thumb” presented in Table 6 suggests
11 significant latitude in meeting the State’s goals without needing further major
12 transmission upgrades.

13 Given that a comprehensive system assessment, including a congestion
14 analysis, has not been provided,⁷¹ the WODUP has not been shown to be needed
15 to integrate additional renewable generation into the CAISO system.

16 **J. As An Economic Project, the Delaney-Colorado**
17 **River 500 Kv Project Must Stand On Its Own**
18 **Merits**

19 The Delaney-Colorado River 500 kV (“DCR”) project is a proposed new
20 110 mile 500 kV transmission line between Delaney substation in Arizona, located
21 near Palo Verde, to the Colorado River substation located in Riverside County.
22 The project would allow for increased energy transfers between Arizona and
23 California. As this project transfers power to the Colorado River Substation, the

⁷⁰ Table 5 discussed later in this testimony suggests that there is wide latitude in meeting these goals without additional major transmission upgrades in the form of Area Delivery Network Upgrades (ADNUs).

⁷¹ SCE Response to ORA-SCE-04 SCE states, “SCE has not made any specific projections of the potential congestion in the area served by the WOD upgrade Project.”

1 resultant change in power flows may potentially increase the power flows West of
2 Devers if the increased transfers from Arizona were coincident with period of high
3 generation in the Riverside East CREZ. But, as noted previously, the CAISO
4 would maintain operational power flows within system reliability limits. The
5 CAISO approved the project to be included in the CAISO Transmission Plan as
6 part of the 2013-14 Transmission Planning Process as an economically driven
7 project.

8 In assessing the potential benefits of the DCR project, the CAISO
9 performed a congestion analysis as described above to determine the DCR
10 project's economic benefits.⁷² In addition to congestion benefits and
11 notwithstanding the lack of need for system capacity described above, the CAISO
12 also attributed system capacity benefits to the DCR project. With an estimated
13 project of \$338 million⁷³, the CAISO calculated a benefit-cost ratio range of 0.87
14 to 1.17.⁷⁴

15 Both the CAISO⁷⁵ and SCE⁷⁶ have identified that the WODUP was
16 assumed to be operational in this economic analysis and that the economic benefits
17 identified for the project would not accrue until the WODUP is completed. This
18 dependency should not influence the Commission's determination as to whether

⁷² CAISO 2013-14 Transmission Plan, July 16, 2014, pages 253-268.
<http://www.caiso.com/planning/Pages/TransmissionPlanning/2013-2014TransmissionPlanningProcess.aspx>

⁷³ *Ibid.* p. 12.

⁷⁴ *Ibid.* p267.

⁷⁵ ISO Response to the First Set of Data Requests Related to SCE's West of Devers Upgrade, available at:
http://www.cpuc.ca.gov/environment/info/aspen/westofdevers/drs/caiso_rsp1/DR1.pdf.

⁷⁶ Southern California Edison Company's Direct Testimony on Need, 399.2.5, Maximum Cost, Field Management Plan, and Amended Direct Testimony on the Proposed Transaction for the West of Devers Upgrade Project, dated April 17, 2015, p. 17.

1 the WODUP is in the public interest. As an economic project, the WODUP must
2 stand on its own merits.⁷⁷ If the Commission finds that the WODUP is not
3 justified based upon the record presented in this proceeding, then the CAISO will
4 need to reevaluate the DCR’s justification to access whether it can produce enough
5 economic benefits.

6 **K. Technology Alternatives Such As Energy Storage**
7 **Should Be Considered**

8 While no congestion analysis has been presented in support of the
9 WODUP, in the event such an analysis does identify the potential for congestion,
10 alternative technologies such as energy storage should be considered.

11 Many of the actual and potential generation projects located in the
12 Riverside East CREZ are solar projects.⁷⁸ Solar generation projects have a typical
13 capacity factor of approximately 28%⁷⁹, which means for the majority of the time
14 they produce much less than their maximum output and are off-line for much of the
15 diurnal cycle. As a result, electric transmission expansion built to accommodate
16 solar resources would be expected to be underutilized much of the time.

17 Energy storage is one of the potential solutions to provide flexible
18 resources to help manage the green grid of the future. In addition to helping
19 manage the future challenges of the “duck curve,”⁸⁰ energy storage located in the
20 Riverside East CREZ could reduce the need for transmission infrastructure. Mid-
21 day periods of forecasted system-wide over generation would coincide with high
22 solar generation output in the Riverside East CREZ. Storing this excess energy

⁷⁷ CAISO Tariff Section 24.3.4.

⁷⁸ SCE response to ORA Data Request ORA-SCE-Q4 Q02.

⁷⁹ US Energy Information Administration - Capacity Factors for Utility Scale Generators Not Primarily Using Fossil Fuels
http://www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_6_07_b

⁸⁰ https://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf

1 locally during these periods would reduce the electric flows west of Devers being
2 driven by solar generation. Generation from energy storage could then “fill in the
3 gaps” when local solar generation is not operating. Therefore, energy storage
4 would not only help meet a system level need to integrate green resources, but if
5 located in areas with large solar generation penetration such as the Riverside East
6 CREZ could also reduce the need for transmission upgrades, such as the WODUP,
7 being proposed to accommodate new solar generation.

8 **L. A Project Alternative With A Much Reduced Scope**
9 **— Phased Build Alternative 2**

10 The Proposed Project, and to a lesser extent the Phased Build Project⁸¹, are
11 costly, unjustified transmission projects to access resource *capacity* that California
12 does not need from resources that are poor sources of capacity at a time when the
13 critical contingency being used to justify the Proposed Project is under review for
14 possible elimination from the Planning Standards. Though purported to be
15 necessary for the integration of renewable generation, the application is deficient
16 and lacks sufficient demonstration that the WODUP is needed for this purpose.

17 Given the lack of demonstration for the need for additional FCDS capacity
18 over and above the capability of the existing system, a Project Alternative that
19 maintains the existing transmission capacity, including the WOD Interim
20 Upgrades, should be considered. This could be a “Phased Build Alternative 2”
21 that is limited to the upgrades through the Morongo lands as described in the
22 WODUP. Like the Phased Build alternative identified in the DEIR, this Phased
23 Build Alternative 2 would also preserve the option for future upgrades on the
24 transmission corridor, if needed. Phased Build Alternative 2 work would be

⁸¹ CPUC Draft Environmental Impact Report (“DEIR”), p. C-25
<http://www.cpuc.ca.gov/environment/info/aspen/westofdevers/toc-deir.htm>

1 limited to Segment 5 of the WODUP as identified in the SCE PEA.⁸² As Segment
2 5 represents 9 corridor miles of the total of 47.5 corridor miles for all six identified
3 segments, both a reduced environmental impact and substantial cost savings are
4 expected with a limited Phased Build Alternative 2.

5 **IV. ORA’s ANALYSIS AND RECOMMENDATIONS ON THE**
6 **PROPOSED TRANSACTION BY AND BETWEEN SCE AND**
7 **THE MORONGO BAND OF MISSION INDIANS**

8
9 The California Public Utilities Commission (“Commission”) should find
10 that the agreement by and between SCE and Morongo Transmission⁸³ “that
11 provides Morongo Transmission with an option to invest up to \$400 million at the
12 time of commercial operation in exchange for 30-year lease rights”⁸⁴ (“Proposed
13 Transaction”), as currently outlined in SCE Application, Appendix J, is adverse to
14 the public interest and should be rejected for the following reasons:

15 **A. SCE’s Proposed Transaction With The Morongo**
16 **Band Of Mission Indians Makes The WOD**
17 **Upgrade Project Legally Infeasible**

18 The Proposed Transaction seeks to unreasonably limit the Commission
19 from denying elements of the WOD Upgrade Project based on a review of the
20 evidence in this proceeding, and may preclude any implementation of an
21 environmentally superior alternative through the California Environmental Quality

⁸² PEA Section 3.1.2.1

⁸³ Exhibit SCE-01, Testimony Supporting Southern California Edison’s Request for an Interim Decision Approving the Proposed Transaction, fn. 1 states: “Morongo Transmission LLC (“Morongo Transmission”) is a venture between the Morongo Band Mission Indians (“Morongo Tribe”) and Coachella Partners LLC, (“Coachella Partners”) a Delaware limited liability company formed for the purposes of the Proposed Transaction, for which the Morongo Tribe owns the majority interest.”

⁸⁴ SCE Application, p. 2.

1 Act (“CEQA”) review. This outcome is neither reasonable nor in the public
2 interest.

3 As discussed below, the Proposed Transaction is conditioned upon two
4 main documents: (1) the Agreement Related to Grant Easement and Rights-of-
5 Way for Electric Transmission Lines and Appurtenant Fiber-Optic
6 Telecommunications Lines and Access Roads on and Across Lands of the
7 Morongo Indian Reservation (“ROW Agreement”); and (2) the Development and
8 Coordination Agreement (“DCA”). The DCA sets forth the scope of the WOD
9 Upgrade Project and “provides Morongo Transmission with the option to invest up
10 to \$400 million at the time of commercial operation in exchange for a 30-year
11 lease rights to a pro rata portion of the Subject Facilities.”⁸⁵ The ROW Agreement
12 permits the WOD Upgrade Project to be built across only 3 miles of the
13 Reservation.⁸⁶ SCE states that the DCA investment option was a key factor in the
14 negotiation of the ROW Agreement.⁸⁷ Although the DCA may have been a key
15 factor in negotiating the ROW Agreement, based on the terms cited below, it also
16 binds SCE’s ability to construct a portion of the WOD Upgrade Project across the
17 Reservation to the authorization of a significant share of the WOD Upgrade
18 Project. The key provisions of the DCA and ROW Agreement for the purposes of
19 the testimony are:

20 SCE Application, Appendix J-1, ROW Agreement, Section V.D., p. 10
21 states:

22 **D. Additional Morongo Termination Right.** In addition
23 to the right contained in Section V.C above, the Morongo
24 Band shall have a one-time right to terminate this

⁸⁵ Exhibit SCE-01, p. 1.

⁸⁶ Exhibit SCE-01, p. 1.

⁸⁷ Exhibit SCE-01, p. 1.

1 Agreement and seek the termination of the Federal Grant
2 upon two years' notice if as of January 1, 2017: (a) SCE has
3 not received all the "Required SCE Regulatory Approvals"
4 (as defined in the [Development and Coordination
5 Agreement] DCA), or (b) Morongo Transmission has
6 submitted and pursued with diligence applications for
7 "Required Investor Regulatory Approvals" (as defined in the
8 DCA) but has not received all such approvals. Should this
9 Agreement and the easements be terminated in accordance
10 with this Section V.D and the effective termination date is
11 not on the first day of the calendar year, SCE shall only be
12 obligated to pay to the Morongo Band an apportioned
13 amount of the Annual Fee due that partial year, allocated on
14 a pro-rata basis.⁸⁸

15 Pursuant to the DCA, Article I., Definitions; Rules of Interpretation,
16 "Required SCE Regulatory Approvals" is defined:

17 1. "Required SCE Regulatory Approvals" means approvals from
18 each Governmental Authority with authority over the Project, including
19 the CPUC and FERC, necessary for SCE to consummate the
20 transaction contemplated hereunder, or to develop, design, engineer,
21 procure, construct, commission, own, operate, maintain and finance the
22 Project, other than (a) those approvals that are not subject to the
23 discretionary action of the applicable agency, and otherwise can be
24 obtained in the ordinary course of business, and (b) those approvals that
25 would not have a material adverse effect on the development, design,
26 engineering, procurement, construction, commissioning, ownership,
27 operation, maintenance or financing of the Project if not obtained.⁸⁹

28 Pursuant to the DCA, Article 1, "Project" is defined:

29 "Project" has the meaning set forth in Exhibit A hereto.⁹⁰

30 Pursuant to the DCA, Exhibit A, the Project is defined:

⁸⁸ SCE Application, Appendix J-1, p. 10 [Emphasis Added].

⁸⁹ SCE Application, Appendix J-3, p. 6 [Emphasis Added].

⁹⁰ SCE Application, Appendix J-3, p. 5.

1 1. “Project” means the West of Devers Upgrade, which consists of
2 the tear down and rebuild of four existing 220 kV transmission lines,
3 covering approximately 48 corridor miles, with new 220 kV
4 transmission lines between the existing Devers Substation (located near
5 Palm Springs) and El Casco Substation (located in Western Riverside
6 County), Vista Substation (located in Grand Terrace), and San
7 Bernardino Substation (located in San Bernardino), which transmission
8 lines will replace existing 220 kV transmission lines that cross the
9 Reservation. The Project includes upgrades to equipment in the
10 Devers, El Casco, Vista, and San Bernardino substation, as well as
11 installation of telecommunication facilities. Portions of the new
12 transmission lines may consist of double circuit 220 kV transmission
13 lines, as portions may consist of four single-circuit 220 kV
14 transmission lines.²¹

15 Indeed, the DCA states SCE must obtain authorization from the CPUC to
16 construct and operate the WOD Upgrade Project as described in Exhibit A of the
17 DCA. Exhibit A of the DCA broadly defines the WOD Upgrade Project as the
18 replacement of four existing 220 kilovolt (kV) transmission lines, covering
19 approximately 48 corridor miles with new 220 kV transmission lines, or more
20 generally a significant share of the WOD Upgrade as also described in SCE’s
21 Application.²² The decision of whether the portion of the WOD Upgrade Project
22 as stated in Exhibit A of the DCA is needed, cost-effective and should be
23 approved is the jurisdiction and authority of the Commission. However, making
24 the WOD Upgrade Project dependent on approval of the DCA without
25 consideration of the elements of the negotiation or the value of the investment to
26 ratepayers²³, would amount to delegating Commission discretion to a contract
27 negotiated outside of public discourse.

²¹ SCE Application, Appendix J-3, Exhibit A, p. 1.

²² SCE Application, p. 1.

²³ There is no record of how SCE and the Morongo Band arrived at the value of \$400 million dollars for a 3 mile right of way or the basis for a cost-benefit analysis of the reasonableness of the transaction.

1 Nevertheless, SCE admits that the Proposed Transaction may legally
2 prohibit any deviation from the scope as described in Exhibit A of the DCA.
3 Specifically, in SCE’s September 22, 2015 Comments on the Draft Environmental
4 Impact Report/Environmental Impact Statement for the West of Devers Upgrade
5 Project, SCE states, “the Phased Build Alternative would be legally infeasible if
6 the Morongo Band of the Mission Indians were to determine that by failing to
7 obtain a Certificate on Public Convenience and Necessity (CPCN) for the
8 Proposed Project, SCE has not met its contractual and legal obligation under the
9 Proposed Transactions.”⁹⁴

10 Therefore, the Proposed Transaction between SCE and the Morongo Band
11 of Mission Indians (“Morongo Band”) is legally infeasible because it limits the
12 Commission’s discretion to consider every aspect of the project on its merits. The
13 Proposed Transaction’s conditional restrictions on the Commission’s authority
14 over approval of the WOD Upgrade Project in full, or in part, are unreasonable
15 and should be denied.

16 **B. The Proposed Transaction Is Inconsistent With The**
17 **California Environmental Quality Act (Ceqa)**
18 **Guidelines**⁹⁵

19 As stated above, the Proposed Transaction by and between SCE and
20 Morongo Transmission inappropriately includes a contractual stipulation that SCE
21 shall receive regulatory authorization to fund and construct the WOD Upgrade
22 Project as described in Exhibit A of the DCA or the Morongo Band may exercise

⁹⁴ Southern California Edison’s Comments to the Draft Environmental Impact Report/Environmental Impact Statement for the West of Devers Upgrade Project, p. 2 (submitted on September 22, 2015). *See*; http://www.cpuc.ca.gov/environment/info/aspen/westofdevers/cmts/F001_sce.pdf

⁹⁵ ORA is addressing the Proposed Transaction’s reasonableness pursuant to the scope outlined in the Assigned Commissioner’s (“AC”) August 24, 2015 Scoping Memo, Issues to be Determined, p. 4. Specifically, issue No. 6 “Are the environmentally superior alternatives and/or mitigation measures infeasible?”

1 the right to terminate the ROW Agreement. Thus, in order for a portion of the
2 WOD Upgrade Project to cross the Reservation, the Commission must approve the
3 Proposed Transaction which dictates that the Commission must also approve at
4 least 48 corridor miles of new 220 kV transmission lines and structures or the
5 Morongo Band may withdraw from the ROW Agreement. It is not in the public
6 interest for a SCE to enter into a contract that so severely constrains the
7 Commission’s ability to determine reasonableness.

8 Further, entering into a contract that prohibits the Commission from
9 reasonably considering alternatives to the WOP Upgrade Project is inconsistent
10 with the CEQA Guidelines. The lead CEQA agency is required to consider a
11 range of alternatives to a proposed project to ensure that a superior project is not
12 available. Indeed, pursuant to CEQA Guidelines, Section 15126.6(a), the lead
13 CEQA agency must provide an Environmental Impact Report (“EIR”) that “shall
14 describe a range of reasonable alternatives to the project, or to the location of the
15 project, which would feasibly attain most of the basic objectives of the project but
16 would avoid or substantially lessen any of the significant effects of the project, and
17 evaluate the comparative merits of the alternatives.” This is especially relevant to
18 this proceeding because the Commission already identified an environmentally
19 superior alternative to the WOD Upgrade Project.

20 On August 7, 2015, the Commission released its WOD Upgrade Project
21 Draft Environmental Impact Report (“DEIR”). In the DEIR, the Commission
22 stated:

23 The CPUC has identified the Environmentally Superior
24 Alternative, as required by CEQA Guidelines Sections
25 15126.6(d) and (e)(2). The Environmentally Superior
26 Alternative would be the Phased Build Alternative (which
27 incorporates the transmission structure locations defined in
28 the Tower Relocation Alternative). The Environmentally
29 Superior Alternative is illustrated in Figure ES-5, presented
30 at the end of this section. The second preferred alternative
31 would be the combination of the Tower Relocation

1 Alternative, the Iowa Street 66 kV Underground Alternative,
2 and the Proposed Project, for the segments unaffected by
3 these two alternatives. The least environmentally preferred
4 would be the Proposed Project with no modifications.⁹⁶

5 Thus, pursuant to its obligations, the Commission has provided the public
6 with an environmentally superior alternative for review and comment. Following
7 its review of public comment and all appropriate information needed in
8 completing its assessment, the Commission has the duty and authority to weigh
9 the evidence, and make an independent judgment in accordance with its statutory
10 duties and in the public interest.

11 However, in accordance with the Proposed Transaction, the Morongo Band
12 already indicated that it may not permit any environmentally superior alternative
13 to be considered. Indeed, the Morongo Band Comments on the DEIR for the SCE
14 WOD Upgrade Project, submitted on September 22, 2015, confirms that the DCA
15 by and between SCE and Morongo Transmission is not necessarily limited to
16 portions of the SCE WOD Upgrade Project that crosses the Reservation, but rather
17 may be contingent upon the approval of the 48 corridor miles of new 220 kV
18 transmission lines and structures. In response to the DEIR's finding of an
19 environmentally superior alternative, the Morongo Band states:

20 The Phased Build Alternative is materially different than the
21 Project as presented by SCE to and accepted by the
22 Morongo Band. Therefore, the Morongo Band could
23 conclude that approval of the Phased Build Alternative,
24 rather than the Project as described in Exhibit A to the DCA,
25 does not satisfy SCE's obligation under the Agreement and
26 the federal grants of easement and rights of way to obtain
27 the required regulatory approvals by January 1, 2017, and
28 the Morongo Band could exercise its right to direct the
29 Department of Interior to terminate the ROW, which would

⁹⁶ Commission WOD Upgrade DEIR, Executive Summary, p. ES-1 (released August 7, 2015).

1 affect not only SCE’s proposed Project, but also the
2 continued presence on the Morongo Reservation of SCE’s
3 existing 220 kV and 115 kV transmission facilities.⁹⁷

4 Indeed, it is inappropriate and unreasonable for SCE and/or the Morongo
5 Band to prevent the Commission and public from considering an environmentally
6 superior alternative. Such a restriction contravenes the public interest and should
7 be denied.

8 **C. The Proposed Transaction Is Too Speculative And**
9 **Cannot Be Evaluated On Its Own Merits At This**
10 **Time**

11 The proposed transaction creates an “option [for the Morongo Band] to
12 invest up to \$400 million at the time of commercial operation in exchange for 30-
13 year lease rights”. However, neither SCE nor the Morongo Band explains how the
14 Commission may evaluate the reasonableness of the transaction, except to say that
15 the value of the entire WOD Upgrade Project depends on the Commission
16 approval of the Proposed Transaction.

17 ORA maintains that the Proposed Transaction is too speculative at this time
18 to be approved by the Commission because there is not used and useful asset that
19 forms the basis of the transaction. If the only known value that ratepayer would
20 get from the proposed transaction is that it keeps the Morongo Band from
21 terminating SCE’s 3 mile right-of-way across the tribal-trust lands of the Morongo
22 Tribe (“Reservation”), then the Proposed Transaction as presented in the record of
23 this proceeding is not in the public interest.

⁹⁷ Morongo Band of Mission Indians Comments of the Draft Environmental Impact Report for the SCE West of Devers Upgrade Project, pp. 1-2 (submitted via email to westofdevers@aspeng.com on September 22, 2015). See, http://www.cpuc.ca.gov/environment/info/aspeng/westofdevers/cmts/C001_morongo_band_of_mission_indians.pdf

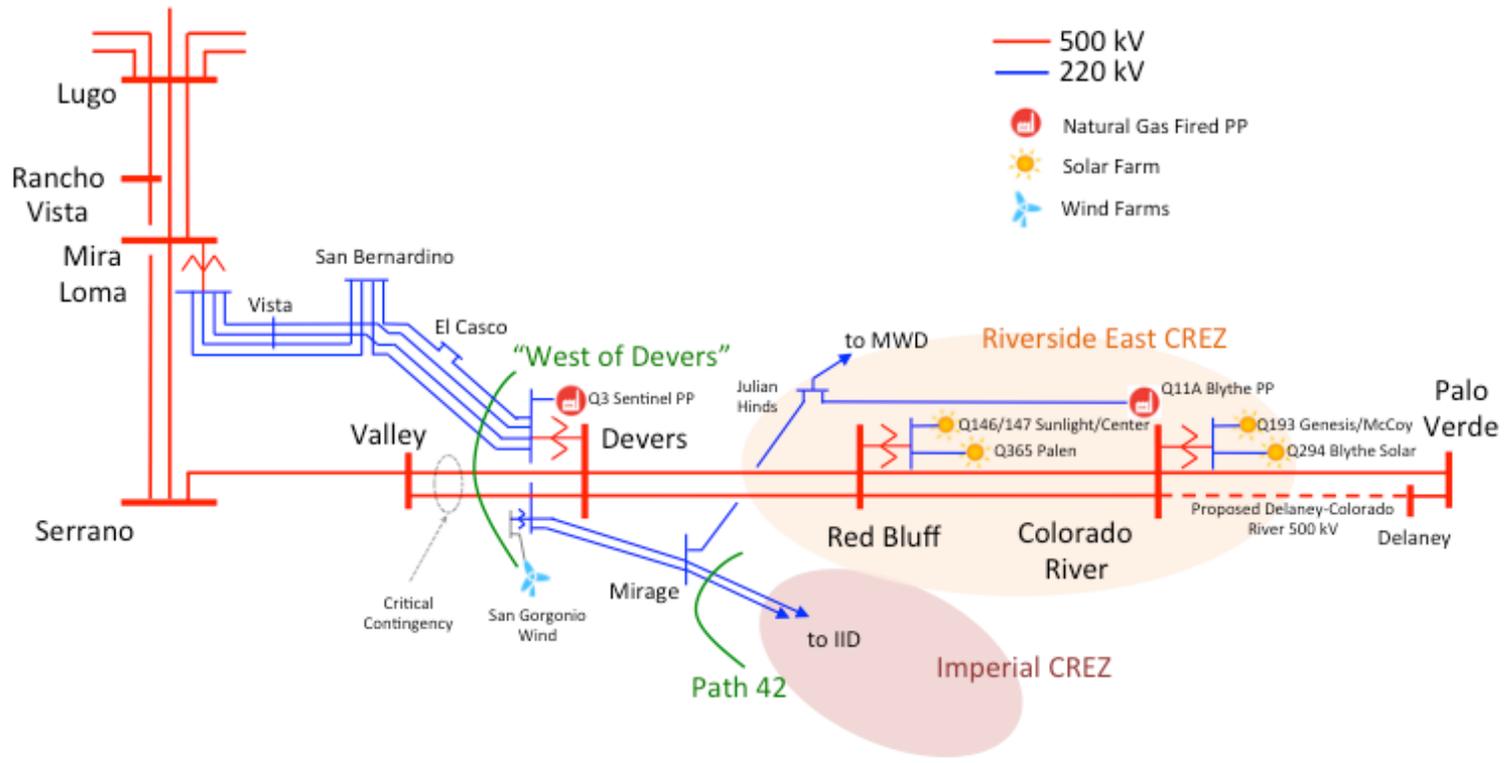
1 Further, by allowing the Morongo Band to exercise an option to terminate
2 SCE's 3 mile ROW across the Reservation if the WOD Upgrade Project is not
3 approved in the manner described in SCE Application, the Proposed Transaction
4 makes it impossible for the Commission to evaluate its reasonableness on its own
5 merit, independent of the WOD Upgrade Project.

6

7

APPENDIX A. SIMPLIFIED TRANSMISSION DIAGRAM

Simplified Transmission Diagram



1 **APPENDIX B. WITNESS QUALIFICATIONS**

2
3 **QUALIFICATIONS AND PREPARED TESTIMONY OF**
4 **ROBERT T. JENKINS**
5

6 Q.1. Please state your name and business address.

7 A.1. My name is Robert Jenkins. My business address is 5440 Edgeview Drive,
8 Discovery Bay, California, 94505.

9 Q.2. By whom are you employed and in what capacity?

10 A.2. I am employed by Flynn Resource Consultants Inc. (Flynn RCI) as a
11 Managing Consultant.

12 Q.3. Briefly describe your relevant educational background and work
13 experience.

14 A.3. I received a Bachelor of Science in Electrical Engineering degree at North
15 Carolina State University and a Masters of Engineering in Electric Power
16 from Rensselaer Polytechnic Institute. I am a registered professional
17 engineer in the State of California.

18 I have been employed in the industry for over 34 years. For 20 years I
19 served in various engineering and management positions in Pacific Gas and
20 Electric Company's transmission planning department responsible for
21 preparing and overseeing analysis and recommendations for improvement
22 of PG&E's electric transmission system including providing testimony at
23 state and federal proceedings. For twelve years I specialized in generation
24 interconnection issues though management of generation interconnection
25 activities at Mirant, Pacific Gas and Electric and First Solar. I also
26 managed the transmission evaluation for Pacific Gas and Electric's long-
27 term energy procurement activities. I am currently a consultant providing
28 expert support on transmission planning and generation interconnection
29 matters.

1 Q.4. What is the purpose of your testimony?

2 A.4. I am responsible for the sections addressing integration of planned generation
3 resources (Section III.A), compliance with LGIAs SCE has entered into (Section
4 III.B), how FCDS is not justified to integrate new electric generation resources
5 being developed in the Blythe and Desert center areas (Section III.C), how
6 increased maximum import capacity is not necessary to accommodate increased
7 flows from Path 42 (Section III.D), WECC's consideration of changes to the
8 planning standards would render the current critical contingency for west of
9 Devers noncredible (Section III.H), how and why the assessment of the ability of
10 the transmission system to integrate renewables requires a more comprehensive
11 assessment, including an assessment of potential congestion (Section III.I), how
12 as an economic project, the Delaney-Colorado river 500 kV project must stand on
13 its own merits (Section III.J), why technology alternatives such as energy storage
14 should be considered (Section III.K) and how only a project alternative with a
15 much reduced scope is justified (Section III.L).

16 Q.5. Does that complete your prepared testimony?

17 A.5. Yes, it does.

18

19

1
2
3 **QUALIFICATIONS AND PREPARED TESTIMONY OF**
4 **PUSHKAR G. WAGLE**

5 Q.1. Please state your name and business address.

6 A.1. My name is Pushkar Wagle. My business address is 5440 Edgeview Drive,
7 Discovery Bay, California.

8 Q.2. By whom are you employed and in what capacity?

9 A.2. I am employed by Flynn Resource Consultants Inc. (Flynn RCI), as a
10 Senior Consultant.

11 Q.3. Briefly describe your relevant educational background and work
12 experience.

13 A.3. I have a Bachelor of Science in Mathematics and a Masters in Economics
14 from the University of Bombay, India and a Ph.D. in Economics from the
15 Stony Brook University, New York.

16 I have been employed in the industry for over fifteen (15) years. I have
17 worked in the areas of electric transmission planning, economic valuation
18 of electricity transmission projects, production cost simulations modeling,
19 electricity market design, electricity market price forecasting, electricity
20 generating asset valuations, optimization of energy resource portfolio and
21 risk management. I have published in the areas of electricity generation and
22 transmission adequacy, transmission investment alternatives, ancillary
23 service markets and market-based valuation of coal technologies. My prior
24 engagements includes a Senior Economist position with LCG consulting,
25 Los Altos, California, a lecturer of economics at the State University of
26 New York at Stony Brook and an intern at Resources for the Future,
27 Washington, DC. I am currently a consultant providing expert support on
28 transmission planning, economic assessment of generation and transmission
29 and market design matters.

30 Q.4. What is the purpose of your testimony?

1 A.4. I am responsible for the sections addressing whether WODUP would
2 facilitate progress towards achieving RPS goals by providing transmission
3 upgrades to deliver renewables in Blythe and Desert center areas should be
4 assessed using D. 07-03-012 Three Prong test (Section III.E), how the
5 CPUC has not identified any need for general system RA (Section III.F),
6 and how full capacity delivery from wind and solar resources will be
7 significantly reduced under new law (Section III.G).

8 Q.5. Does that complete your prepared testimony?

9 A.5. Yes, it does.

APPENDIX C. GLOSSARY OF ACRONYMS

CAISO	California Independent System Operator
CEC	California Energy Commission
COD	Commercial Operation Date
CPCN	Certificate of Public Convenience and Necessity
CPUC	California Public Utilities Commission
CREZ	Competitive Renewable Energy Zone
DCR	Delaney-Colorado River 500 kV
DG	Distributed Generation
DNU	Delivery Network Upgrade
DU	Distribution Upgrade
ED	Energy Division
EO	Energy Only
ELCC	Effective Load Carrying Capability
ERR	Eligible Renewable Energy Resource
FCDS	Full Capacity Deliverability Status
FERC	Federal Energy regulatory Commission
GIP	Generation Interconnection Procedures
GIDAP	Generation Interconnection and Deliverability Allocation Procedures
HV	High Voltage
IDS	Interim Deliverability Status
IF	Interconnection Facility
IID	Imperial Irrigation District
kV	kilovolt
LGIA	Large Generator Interconnection Agreement
LSE	Load Serving Entity
LTPP	Long-Term Procurement Plan
MVA	Mega-volt ampere
MW	Megawatt

MWh	Megawatt-hour
MIC	Maximum Import Capability
MoU	Memorandum of Understanding
NERC	North American Electric Reliability Corporation
NQC	Net Qualifying Capacity
OOS	Out of State
ORA	Office of Ratepayer Advocates
PCDS	Partial Capacity Deliverability Status
PEA	Proponent's Environmental Assessment
PG&E	Pacific Gas and Electric Company
PPA	Power Purchase Agreement
PRM	Planning Reserve Margin
PV	Photovoltaic
QC	Qualifying Capacity
RA	Resource Adequacy
RD	Regional Difference
RFO	Request For Offers
RNU	Reliability Network Upgrade
RPS	Renewables Portfolio Standard
SAR	Standards Authorization Request
SB	Senate Bill
SCE	Southern California Edison Company
SDG&E	San Diego Gas and Electric Company
SOL	System Operating Limit
TAC	Transmission Access Charge
TPP	Transmission Planning Process
TRR	Transmission Revenue Requirement
WDAT	Wholesale Distribution Access Tariff
WECC	Western Electricity Coordination Council
WOD	West of Devers
WODUP	West of Devers Upgrade Project

CERTIFICATE OF SERVICE

I hereby certify that I have on this date served a copy of **THE OFFICE OF RATEPAYER ADVOCATES PREPARED TESTIMONY ON THE APPLICATION OF SOUTHERN CALIFORNIA EDISON COMPANY (SCE) FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE WEST OF DEVERS UPGRADE PROJECT AND FOR AN INTERIM DECISION APPROVING THE PROPOSED TRANSACTION BETWEEN SOUTHERN CALIFORNIA EDISON AND MORONGO TRANSMISSION LLC** to all known parties by either United States mail or electronic mail, to each party named on the official attached service list in **A.13-10-020**.

I hand-delivered a hard copy to the assigned Administrative Law Judge's mail slot.

Executed on **October 27, 2015** at San Francisco, California.

/s/ IMELDA EUSEBIO
IMELDA EUSEBIO



[CPUC Home](#)

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