ORA Comments on the
Draft Environment Impact Report/Environmental Impact Statement Issued in
Southern California Edison's
Application 13-10-020, West of Devers Upgrade Project

1. PROPOSED PROJECT

On October 25, 2013, Southern California Edison Company (SCE) filed Application (A.)13-10-020 seeking California Public Utilities Commission (Commission) approval for a Certificate of Public Convenience and Necessity (CPCN) to construct the West of Devers Upgrade Project (WODUP or Proposed Project). SCE proposes to replace or upgrade four 220 kilovolts (kV) circuits along approximately forty-five corridor-miles, approximately eight of which are across the Trust Lands of the Morongo. Such upgrades would increase the system transfer capacity from 1,600 MW to 4,800 MW.[1] SCE claims the proposed increase is needed to provide Full Capacity Delivery Service (FCDS) for renewable power projects that are new and proposed or planned to be located in the Blythe and Desert Center areas east of the Devers Substation.[2] SCE's estimates the Proposed Project would cost approximately $955 million in 2013 constant dollars, including 35% contingency.[3]

The Draft Environmental Impact Report (DEIR), dated August 7, 2015, identifies three CPUC and Bureau of Land Management (BLM) basic project objectives under California Environmental Quality Act (CEQA)[4] as follows:

- To upgrade the West of Devers (WOD) 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino Substations to increase system deliverability by at least 2,200 MW;
- To support achievement of State and Federal renewable energy goals; and
- To maximize the availability of remaining space in the corridor to the extent practicable, so future use of the corridor for additional transmission line upgrades is not precluded.

[1] DEIR at pp. A-2 to A-5.

[2] *Id.* at p. A-5.

[3] SCE's Appl. at 14.

[4] DEIR at pp. A-11 to A-12.

The DEIR evaluated fourteen alternatives[5] to the Proposed Project and selected three for further consideration. In addition, the DEIR identified three (3) No-Project alternatives (Options 1, 1B, and 2), each of which includes substantial new 500 kV and/or 220 kV facilities and rights-of-way.[6] Of these fourteen alternatives, the DEIR identified the Phased Build Alternative (PBA) as the environmentally superior overall.[7]

The PBA would install "795 Drake" Aluminum Conductor Composite Reinforced (ACCR) conductor on the identified circuits instead of the 2B-1590 Aluminum Conductor Steel Reinforced (ACSR) conductor identified in the Proposed Project, while maintaining the design across the Morongo land that would be similar to the Proposed Project.

ORA supports several aspects of the DEIR, as follows:

- Recognition that simply because generation projects are in the interconnection queue does not indicate that they will come to fruition.[8]
- Of the 1,179 interconnection requests submitted to the CAISO for study, only 8% have gone commercial.[9]
- The Proposed Project results in transmission capacity that exceeds the identified need by a wide margin.[10]
- The efforts of the DEIR to redefine the need for transmission to a lesser capacity.

On the other hand, ORA disagrees with the following aspects of the DEIR:

- Forecasted congestion on this portion of the transmission system is a more reasonable metric of project need than generator requests for deliverability.
- A security-constrained production cost simulation is a more reasonable tool for assessing potential congestion than a power flow model.
- The power flow study presented in the DEIR[11] overestimates the transmission capacity needed for renewable generation.

---

[5] Eleven (11) of the fourteen (14) alternatives were eliminated after a detailed evaluation process while three alternatives were fully analyzed in the EIR/EIS (DEIR at secs. C.3.1 and C.3.2).

[6] DEIR at sec. C.6.3.

[7] *Id.* at sec. G.5.

[8] *Id.*at p. A-6.

[9] *Id*. at append. 5, "Project Alternatives Assessment – A Power Flow Analysis (ZGlobal Study)," at 6.

[10] *Id.* at p. A-6.

- A Project alternative with a more reduced scope than the DEIR's alternatives should be considered.

2. DISCUSSION

2.1 Congestion is a more reasonable metric for transmission need than deliverability.

The focus on deliverability in both the SCE application and the DEIR is misplaced. Full Capacity Deliverability Service (FCDS) is a value added element for generators so that their capacity may potentially count towards the Load Serving Entities (LSE's) Resource Adequacy (RA) requirements. Though most of the renewable power projects that are new and proposed or planned to be located in the Blythe and Desert Center areas east of the Devers Substation request FCDS transmission service,[12] this does not justify WODUP as needed and reasonable or in California and the ratepayers' interest.

For the WODUP, SCE has chosen to fund the upgrades, instead of collecting initial funding from generators located in the Blythe and Desert Center areas east of the Devers Substation that are requesting FCDS.[13] Consequently, the generators receive no economic signal as to the cost of the WODUP upgrades and would likely request such services. Therefore, the generators' request for FCDS at no cost to them does not support the need for WODUP.

2.2 California is not in need of additional system resource capacity.

The Commission's 2014 LTPP does not have an identified need for system capacity before 2033.[14] Notwithstanding this projected surplus of capacity, the ability of solar generation to contribute capacity is expected to significantly diminish as California transitions to Effective Load Carrying Capability (ELCC) methodology of resource counting.[15] The Commission's RPS Calculator indicates

---

[11] *Id.* at append. 5.

[12] *Id.* at p. A-5.

[13] FERC EL11-10. Even if SCE had not decided to release the generators from this funding requirement for these Transition Cluster generators, under the CAISO Generation Interconnection and Deliverability Allocation Procedures (GIDAP) beginning with Cluster 5, the cost of Area Deliverability Network Upgrades (ADNUs) such as the WODUP are not allocated to the individual generators.

[14] CPUC Energy Division 2014 LTPP Scenario Tool for R.13-12-010 (Scenario tab row# 51), March 2015.

[15] The implementation of the ELCC methodology, as compared with the current exceedance-based methodology, would result in different dependable capacity (NQC) values for wind and

that based on the ELCC metric, a solar PV resource would have its NQC value reduced from 85%-90% to about 15%-30% of its nameplate capacity as solar penetration increases. [16]

If deliverability were considered at all, the focus should be narrowed to existing Power Purchase Agreements (PPAs). Because the Commission has reviewed and approved PPAs that have generators located in the Blythe and Desert Center areas east of the Devers Substation and has assumed the availability of FCDS on that basis, the need for deliverability in the Project area of the electric system should be restricted to those projects with approved PPAs.

The California mandate that retail sellers to procure 33% of their electric supply from eligible renewable resources by 2020 is an energy-based requirement.[17] As such, whether the energy from a specific renewable generator has received FCDS does not impact how such received energy counts toward the retail sellers' procurement goals. Also, whether a generator has received FCDS does not impact whether a generator is allowed to connect to the electric system in a safe and reliable manner. Generators located in the Blythe and Desert Center areas east of the Devers Substation can continue to connect to the grid irrespective of whether the WODUP is constructed.[18] Such generators have the option to connect as Energy-Only projects and still count toward State and Federal renewable energy goals without depending upon the WODUP.[19]

---

solar resources. In particular, the ELCC studies have shown significant decrease in the solar resources' NQC in the areas with higher solar penetration. This would lower the RA value associated with such resources.

[16] *See* CPUC RPS Calculator v6.1, *available at* http://www.cpuc.ca.gov/PUC/energy/Procurement/LTPP/2012+LTPP+Tools+and+Spreadsheets.htm.

[17] Senate Bill 2 (1X) (Simitian, Energy: renewable energy resources. Stats. 2011, ch.1), *available at* http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb_0001-0050/sbx1_2_bill_20110412_chaptered.pdf.

[18] SCE Data Response PD-25.

[19] The WODUP may even be detrimental to such projects as the proposed construction work would necessitate transmission circuits being taken out of service and reducing the transmission capacity serving this area.

2.2 A better metric to assess whether renewable energy can reach the system load and therefore count towards the State and Federal renewable energy goals is congestion.

Congestion on a path indicates that generation had to be reduced and therefore not delivered.[20] An economically and environmentally sensitively designed electric system will experience some level of congestion. It would be unreasonable and not in ratepayers' interests to build an electric system that includes excess capacity to accommodate all potential generation pattern options.

In the California Independent System Operator (CAISO) markets, congestion is managed through pricing signals, where generation on the congested side of a path is given a price signal to reduce its output. The response of each generator will depend on its sensitivity to the market prices. More price-sensitive generation – such as the conventional gas fired generation in this area as well as imports from Arizona that pass through this area – will be curtailed first to clear any congestion. Price insensitive generation, such as the renewable generation, would be the last to curtail production.

Therefore, congestion metric to determine whether the existing transmission capacity should be increased would look at both the amount of energy curtailed and generators that would experience the curtailment.

2.4 A security-constrained production cost simulation tool is a power-flow model for assessing potential congestion.

One of the Proposed Project's objectives listed in the DEIR is to increase the system deliverability and then assesses the alternative's ability to meet this objective by using a power-flow model.[21] Such a model is widely used in transmission system reliability assessments and used to determine a maximum transfer capability of a portion of the electric system. However, such a model only provides a snapshot of how the system would perform under an assumed single system condition. The system condition modeled is commonly selected so as to result in a high stress on the portion of the system under study. Therefore, it provides little insight into how frequently, if ever, such conditions might exist or the amount of energy that may be impacted by a transmission constraint.

[20] In this particular circumstance, the energy could be scheduled east towards Arizona rather than curtailed. However, such rescheduling would not support California's renewable energy goals.

[21] WODUP DEIR, append. 5, ZGlobal Study at 7.

A more effective industry tool for investigating congestion is a security-constrained production cost simulation model. Such a model looks at multiple hours in a time period (frequently one year), the spatial system loads, the capacity of the transmission system, and the production cost curve of each generator to simulate how the system would operate over the course of a year. Levels of congestion and changes in congestion associated with system improvements can then be assessed. Furthermore, it can be determined whether and to what extent renewable generators in an area may be curtailed

Therefore, ORA recommends a security-constrained production cost simulation model should be utilized, since it is a better tool to assess whether increases in transmission capacity are needed to support achievement of the State and Federal renewable energy goals.[22]

2.5 The power-flow study presented in the DEIR overestimates the transmission capacity needed for renewable generation.

In order to access the performance of alternatives to the WODUP, the DEIR includes a power system analysis using a power flow model.[23] This power system study investigates how the Proposed Project, the Phased Build alternative, and the No Project alternatives perform under two alternate renewable generation development portfolios: (i) the Cluster 7 Phase I resource portfolio; and (ii) the CAISO 2024 Summer Peak Reliability base case portfolio. The study also includes sensitivity studies within these portfolios of the impact of increased imports from the Imperial Irrigation District (IID).

The DEIR notes that the Cluster 7 Phase I base case was created by the CAISO which focused on the reliability and deliverability of *all* generation projects that had applied under Cluster 7, as well as higher-queued generation still active in the CAISO's interconnection queue, irrespective of whether it is a reasonable assumption that all of these generators would will be built.[24] As the DEIR notes, historically only 8% of the generation projects that have requested studies in the CAISO interconnection process have gone into commercial operation.[25] Therefore this case includes a highly speculative amount of generation which should be excluded from consideration. Even the CAISO does not consider such levels of

[22] In the event of congestion that could impact renewable generation, CPUC RPS Calculator is also a useful tool to understand whether there are locational alternatives for renewable generation so that the goals could be met without additional transmission capacity.

[23] WODUP DEIR, append. 5, ZGlobal Study at 7.

[24] *Id.*

[25] *Id.* at 6

generation as reasonable and does not use it in their interconnection process to determine whether there is a need for Area Delivery Network Upgrades, such as the WODUP.

The CAISO 2024 Summer Peak Reliability base case portfolio also includes speculative generation. The generation model shown in Table A4 of the DEIR Power System Study includes unspecified generation at both Colorado River (Pgen [26]= 329.4 MW) and Red Bluff (Pgen = 274.6 MW), as well as specific generators without PPAs. Consequently, this pattern is speculative and overstates the need for deliverability.

The California Energy Commission (CEC) and the Commission use the RPS Calculator[27] to develop renewable resource portfolios that are studied in the CAISO's annual Transmission Planning Process (TPP). The RPS Calculator (version 5) was used to develop the resource portfolios. The RPS calculator makes assessment of overall cost, including the cost of transmission upgrades triggered by the resources while selecting the lowest cost resources based on certain criteria.[28]

The renewable resource portfolio of 3,800 MW of renewable development in Riverside East used in the reference base case in the 2014-2015 TPP[29] is based on the assumption that the WODUP had been built to the full scale of the Proposed Project.[30] Because the RPS Calculator would have assumed the WODUP as a foregone conclusion and not subject to an economic test, it would tend to assume higher resource development in the Riverside East area.

In the prior planning cycle (2013-14), only 964MW were modeled in the Riverside East area, because the RPS calculator used at that time assumed 964 MW could be accommodated on the existing system without WODUP.[31] The latest version of

---

[26] The term "Pgen" means the dispatched individual generation level in a power flow case.

[27] *See* RPS Calculator, *available at* http://www.cpuc.ca.gov/PUC/energy/Procurement/LTPP/2012+LTPP+Tools+and+Spreadsheets.htm.

[28] The tool ranks and sorts individual resources within 48 resource zones to meet local requirements and to fill existing transmission capacity. It develops bundles to be delivered over minor upgrades and new backbone transmission. It then selects resources and transmission bundles until the specified RPS standard is met.

[29] *See* 2014-2015 TPP, *available at* http://www.caiso.com/Documents/2014-2015RenewablePortfoliosTransmittalLetter.pdf.

[30] *Id.*

[31] *See* RPS Calculator, *available at* http://www.caiso.com/Documents/2013-2014RenewablePortfoliosTransmittalLetter.pdf.

the RPS Calculator (v6.1)[32] selects only 1,200 MW of resources in the Riverside East area, including only 124MW of new generic resource, all of which can be accommodated on the existing transmission. In other words, the RPS Calculator (v6.1) does not identify any need for WODUP. Moreover, under this RPS portfolio, there would be no additional transmission capacity needed elsewhere in the State to make up for a smaller amount of generation selected in the Riverside East area relative to the CAISO 2024 Summer Peak Reliability base case portfolio.

As noted previously, if the need for deliverability is to be considered in this assessment despite the current state surplus in generation capacity, the amount of generation modeled as needing deliverability should be restricted to those generation projects with PPAs. This would be substantially fewer generators than shown in Table A4 of the DEIR Power System Study.

Table 1 below shows an estimate of the existing deliverability available through the West of Devers corridor, as well as the PPA-contract capacity relying on this deliverability. The existing deliverability is estimated by summing the entire serial-group generator queue capacities that have received FCDS plus the Path 42 Maximum Import Capability (MIC) and the capacity added by the Interim Upgrades. Table 1 shows that there is approximately, 1,112MW of FCDS capacity currently available the WOD corridor in excess of the existing and PPA-projects seeking FCDS.

[32] *See* RPS Calculator (v6.1), *available at* http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/RPS+Calculator+Home.htm.

Table 1. Calculation of Existing System FCDS Capacity Not Utilized By Generation Projects PPAs

Queue Position	Technology	Cluster	POI	Capacity (MW)
1	W	Serial	Devers-Garnet 115 kV line (Tap)	*
3	NG	Serial	Devers Substation 230 kV Bus	850
11A	NG	Serial	Julian Hinds Substation 230kV	520
17	NG	Serial	Colorado River Substation 500kV bus	520
49	W	Serial	Devers Substation	*
138	W	Serial	Devers-Vista 230kV #1	150
146	PV	Serial	Red Bluff Substation 230kV	150
147	PV	Serial	Red Bluff Substation 230kV	400
219	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

Power Purchase Agreements

Queue Position	Technology	Cluster	POI	PPA Capacity (MW)
3	NG	Serial	Devers Substation 230 kV Bus	728
11A	NG	Serial	Julian Hinds Substation 230kV	490
146	PV	Serial	Red Bluff Substation 230kV	150
147	PV	Serial	Red Bluff Substation 230kV	400
193	ST	Transition	Colorado River Substation 500kV	500
294	ST	Transition	Colorado River Substation 500kV	110
365	ST	Transition	Red Bluff Substation 230kV	**
WDT263	PV	Serial	Chanslor 33 kv (Blythe 161 kV)	21
			Subtotal of PPAs in CAISO Area	2399
			Target 2020 Path 42 MIC***	662
			PPA Contracted Capacity	**3061**
			FCDS Capacity in excess of PPAs	**1112**

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

**PPA Terminated

***462 MW is the current MIC from the IID over Path 42 into Devers and 662 MW reflects the target MIC in 2020 as per the CAISO 2014-15 Transmission Plan

The contingencies selected for consideration in the power system study were excessive, thereby understating the capacity of the system and overstating the need for additional capacity. The ZGlobal Study states that the assessment of the transmission system performance included about 70 single contingencies and

2,300 double contingencies.[33] From the information presented in power-flow analysis contingency tables located in the DEIR, these 2,300 double contingencies included overlapping outages (commonly referred to as *N-1-1* contingencies). When planning for *N-1-1* contingencies, the normal practice is to assume that there is an opportunity to redispatch the system following the initial contingency to avoid system performance violation following the second contingency. This is the approach used in the CAISO's Generator Interconnection and Deliverability Study Methodology Technical Paper which states that the CAISO deliverability methodology only considers multiple contingencies associated with a single initiating event (common mode and bus outages).[34]

Therefore, many of the double contingencies studied in the DEIR should be excluded from the power system study since the system can be redispatched between events for overlapping outages. Excluding such contingencies is expected to show greater transmission transfer capability and less need for new transmission capacity.

2.6 ORA recommends that the Commission adopt and approve a project alternative that is more limited in scope than any of DEIR's stated alternatives.

Based on the foregoing, ORA disagrees with the DEIR's Basic Objective 1 to upgrade the transmission lines to increase system deliverability by at least 2,200 MW. There has been no forecast of congestion presented that would support a need to the Project to facilitate access to renewable energy in the Riverside East area. Furthermore, there is no need for system capacity in California to justify a major transmission expansion to increase the pool of capacity resources. Even if there were such a need, transition to an ELCC method of capacity counting would diminish the value of solar resources in fulfilling such a need.

If despite this lack of need for capacity, the need for transmission capacity to support the existing PPAs were considered, the existing system capacity with the interim WOD upgrades is sufficient. SCE's Proponent's Environmental Assessment (PEA) lists in Table 1-1 the interconnection requests in the CAISO queue that may benefit from the Project, including the PPA status of each. Since

[33] WODUP DEIR, append. 5, ZGlobal Study at 9.

[34] *See* CAISO's Generator Interconnection and Deliverability Study Methodology Technical Paper at 6, *available at* http://www.caiso.com/Documents/TechnicalPaper-GeneratorInterconnection-DeliverabilityStudyMethodology.pdf.

the SCE application, Q365has lost its PPA.[35] Therefore only 500 MW of interconnection requests remain, which is well within the capacity of the interim upgrades. [36] Furthermore, when considering pre-Transition Cluster projects that have been allocated deliverability but do not have a PPA, even more system margin becomes apparent.

3. CONCLUSION

A Project Alternative that maintains the existing transmission capacity, including the interim upgrades, should be considered the initial phase in a Phased Build approach. This would likely include only the upgrades through the Morongo lands as described in the Proposed Project. Such an alternative would meet a refined Basic Objective 1 and well as Basic Objectives 2 and 3. Such a reduced scope would also have a lesser environmental impact than either the Proposed Project of the Phased Build Alternative

ORA supports the DEIR's acknowledgement that the interconnection queue is not measure of what generation projects may materialize. ORA also supports the DEIR in considering alternatives that have reduced environmental impact while still meeting California's needs. However, there has not been sufficient demonstration that a transmission capacity increase is needed or why a project of reduced scope that simply maintains the current transmission capacity is not only adequate but also provides margins for future uses.

Therefore, ORA recommends: (1) a congestion analysis be used in the power system studies to determine the value of upgrading the transmission system west of the Devers substation; and (2) an evaluation of an additional project alternative that maintains the existing system capability by restricting the WODUP scope of work to that portion of the transmission system which transverses the Morongo lands.

[35] Queue 365 is identified as a 500 MWW solar thermal project. The CAISO queue identifies the Proposed Project as connecting to Red Bluff substation. Because solar thermal projects of this size are permitted by the CEC, the Palen project is the only project that meets these parameters.

[36] *See* CPUC RPS Monthly Project Status Tbl (updated Aug. 20, 2015), *available at* http://www.cpuc.ca.gov/PUC/energy/Renewables/.