

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

Order Instituting Rulemaking to Integrate and Refine
Procurement Policies and Consider Long-Term Procurement
Plans

R.12-03-014

(Filed March 22, 2012)

**CALIFORNIA ENVIRONMENTAL JUSTICE ALLIANCE'S TECHNICAL RESPONSE
TO THE ENERGY DIVISION'S PROPOSED SCENARIOS**

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CALIFORNIA ENVIRONMENTAL JUSTICE ALLIANCE'S TECHNICAL RESPONSE TO THE ENERGY DIVISION'S PROPOSED SCENARIOS

The California Environmental Justice Alliance (CEJA) respectfully submits this response to the questions raised in the Energy Division (ED) staff requests dated August 29, 2012. CEJA plans to also submit comments discussing policy on October 1, 2012.

Question 1: Technical Errors - The Energy Division's proposed scenarios fail to capture resources that have been funded or are planned to be on-line in 2022. CEJA provides the following chart on resources or programs that appear to not be captured in the proposed scenarios.

Resource That Appears To Not Be Included	Value of Resource	Source	Reason To Include
Permanent Load Shifting Programs from 2006 Funding	8 MW for PG&E, 11 MW for SCE, 1 MW for SDG&E	D.12-04-045 at p. 146 (funding approved in D.06-11-049).	Funding already approved
Permanent Load Shifting Programs 2012 Funding	At least 27 MW for PG&E, at least 19 MW for SCE, and at least 3.6 MW for SDG&E	D.12-04-045 at pp. 146-153 (granting over the IOU budget request).	Funding already approved
OTC Units Planning Track II Compliance	650 MW (Morro Bay), 602 MW (Encina 4 & 5), 1,509 MW ¹ (Moss Landing), 403 MW (Mandalay Bay 1 & 2), 1,502 MW (Ormond Beach)	Implementation Plans filed with the State Water <i>available at</i> http://www.swrcb.ca.gov/water_issues/programs/ocean/cwa316/powerplants/	Consistency with Plans of Owners
Increase in Net Metering	Over 2 GW (estimates are as high as a 2.8 GW increase in solar PV)	D.12-05-036 (clarifying the cap). The cost of PV has also significantly declined, and can be expected to decline further in upcoming years.	Although a low estimate of a 1,370 MW increase was estimated in one scenario, this decision should be accounted for in the other scenarios.
Zero Net Energy Reductions ²	Estimated 1,450 MW by 2016	D.07-10-032 at p. 37 (mandates reductions in residential construction by 2020 and commercial construction by 2030).	Commission decisions mandate that codes and standards are changed to require zero net energy construction.
Currently Planned Energy Storage Resources ³	At least many MW	PG&E's large-scale sodium sulfur battery energy storage project; SCE's Tehachapi	Energy storage, aside from pumped hydro storage, is not included. ED should at the

¹ See Dynegey's Proposal, *available at*

http://www.swrcb.ca.gov/water_issues/programs/ocean/cwa316/powerplants/moss_landing/docs/ml_ip2011.pdf

² CEJA submitted comments on the incremental EE values, which it believes should be considered.

³ State specific policies also call for the increase in energy storage. See Governor Edmund G. Brown Jr., *Clean Energy Jobs Plan* (June 2010), http://gov.ca.gov/docs/Clean_Energy_Plan.pdf

		Energy Storage Project (8 MW), ⁴ SCE's Home Battery Pilot Project, ⁵ the Irvine Smart Grid Demonstration project, ⁶ and SCE/Brightsource storage projects. The IOU's also include the accommodation of all cost-effective energy storage storage as a major aspect of their Smart Grid Deployment Plans.	very least consider currently funded energy storage systems. Because all three IOUs have included energy storage as a major component of their Smart Grid plans, ED quantify the planned incorporation of energy storage into the grid.
12,000 MW of Distributed Generation	12,000 MW of Renewable DG	Governor Brown's Clean Energy Jobs Plan. The 2011 IEPR established regional targets in meeting this goal.	None of the proposed scenarios appear to include the Governor's goal of constructing 12,000 MW of renewable DG by 2020.
AB 32 Requirements ⁷	By 2020, CARB's AB 32 Scoping Plan (at p. 44) requires specific numerical values including 32,000 GWh of reduced demand through energy efficiency.	Cal. Health & Safety Code § 38550 (reduce GHGs to 1990 levels by 2020); Executive Order S-3-05 (requires 80 percent reduction below 1990 levels by 2050); CARB AB 32 Scoping Plan.	None of the proposed scenarios include the specific numerical values that are described in the AB 32 Scoping Plan.

Question 5: Conversion Rate for PV - A 19 percent conversion from nameplate small PV capacity to peak production is too low. Information shows that solar PV capacity factors are likely higher than 19 percent. For instance, a NREL report used a 27% capacity factor to estimate PV output in Western states including California.⁸ When breaking down capacity factors for certain regions, the report also found a 22 to 28 percent capacity factor for the Los Angeles area.⁹ A study of renewable resources in Northern California similarly found a capacity factor of 23% for solar PV.¹⁰ This is consistent with the U.S. average of 25% for solar PV.¹¹ Capacity factors also are likely to improve with technology. Capacity

⁴ Southern California Edison, Smart Grid Deployment Plan at p. 15 (July 1, 2011) <http://docs.cpuc.ca.gov/efile/A/138423.pdf>

⁵ Southern California Edison, *Home Battery Pilot Technical Requirements* at p. 5 (Nov. 3, 2009) <http://asset.sce.com/Documents/Environment%20-%20Smart%20Grid/HomeBatteryPilotTechnicalRequirements.pdf>

⁶ Southern California Edison, *Panel Discussion: The Economics of Distributed Energy Storage* at p. 12 (Sept. 7, 2011) <http://eosenergystorage.com/documents/SCEPresentation-The-Economics-of-Distributed-Storage.pptx>

⁷ This will be discussed further in CEJA's policy comments.

⁸ *Id.* at p. 54; *see also* Cost and Performance Assumptions for Modeling Electricity Generation Technologies, NREL Report at p. 10 (Nov. 2010) <http://www.nrel.gov/docs/fy11osti/48595.pdf> (Finds a capacity factor for solar PV of between 21-26% for 2010).

⁹ 2010 Solar Technologies Market Report at p. 56.

¹⁰ Renewable Electricity Production I Update California: Present and Future Resource Use and Its Economic Impact, Center for Economic Development at p. 11 (March 6, 2009) http://eauc.org/pdfs/Green%20Energy%20Report%20Don%20Krysakowski%20-%20California%205_09.pdf

¹¹ Annual Energy Outlook 2012: Levelized Cost of New Generation Resources in the Annual Energy Outlook 2012, Energy Information Administration, Table 1 at p. 4 (July 12, 2012) http://www.eia.gov/forecasts/aeo/pdf/electricity_generation.pdf

factors will also increase as more PV systems are combined with energy storage systems.¹² At the very least, using a 19 percent capacity factor does not reflect conditions in 2020 and beyond as solar PV technology will continue to improve. ED should rely on these reports cited herein, and other publicly available information, in raising the capacity factor.

Question 6: Ranking Scenarios

Priority	Scenario(s)	Reason
High	Scenarios Evaluating State Energy and Environmental Policy Requirements (i.e., High DG Scenario)	Important to evaluate programs such as the 12,000 MW goal and the implementation of AB 32 Scoping Plan
Low	Both 1B and 1C	There should be one sensitivity focused on the nuclear issues, not two. Splitting it into two is confusing.
Low	No DSM, Replicating TPP	Assumes all current EE and DR programs fail despite requirements to implement programs and funding. Not a realistic projection of the future.

¹² See 2010 Solar Technologies Market Report, NREL Report at p. 56 (Nov. 2011) <http://www.nrel.gov/docs/fy12osti/51847.pdf> (“As of August 2010, plants without storage have capacity factors within the 20%–28% range, while plants with 6–7.5 hours of storage have a 40%–50% capacity factor.”)

September 6, 2012

Respectfully submitted,

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