

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.

Rulemaking 12-03-014
(Filed March 22, 2012)

**CALIFORNIA ENVIRONMENTAL JUSTICE ALLIANCE'S
COMMENTS ON THE ENERGY DIVISION STRAW PROPOSAL**

SHANA LAZEROW
Staff Attorney
Communities for a Better Environment
1904 Franklin Street, Suite 600
Oakland, CA 94612
Telephone: (510) 302-0430
Facsimile: (510) 302-0437
slazerow@cbeocal.org

DEBORAH BEHLES
SHANNA FOLEY
Environmental Law and Justice Clinic
Golden Gate University School of Law
536 Mission Street
San Francisco, CA 94105
Telephone: (415) 442-6647
Facsimile: (415) 896-2450
dbehles@ggu.edu, sfoley@ggu.edu

Dated: May 31, 2012

Attorneys for California Environmental
Justice Alliance

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.

Rulemaking 12-03-014
(Filed March 22, 2012)

**CALIFORNIA ENVIRONMENTAL JUSTICE ALLIANCE'S
COMMENTS ON THE ENERGY DIVISION STRAW PROPOSAL**

The California Environmental Justice Alliance (CEJA) submits these comments on the 2012 Energy Division Straw Proposal on LTPP Planning Standards (Straw Proposal), dated May 10, 2012. These comments are timely and served pursuant to the May 17, 2012 Scoping Memo and the Commission's Rules of Practice and Procedure.

In the Straw Proposal, the Energy Division outlined procedures for developing scenarios and modeling outcomes in the 2012 Long Term Procurement Plan (LTPP) proceeding. Although the Straw Proposal discusses many of the important aspects of designing a scenario, it fails to evaluate and consider three critical elements: first, the application of California's environmental and greenhouse gas (GHG) requirements; second, the use of energy storage resources; and third, how to comply with the loading order while minimizing stranded investments and risk to ratepayers and the environment. In these comments, CEJA discusses the need to consider the State's energy and environmental policies, and comments on the majority of the assumptions discussed in the Straw Proposal. These comments follow Energy Division's suggested format.

GENERAL

1. *Guiding Principles - The Planning Scenarios Need to Consider How California Can Comply with its Energy and Environmental Requirements and Policies.*

According to the Order Instituting Rulemaking, the planning in this proceeding "will be done in the context of the Energy Action Plan II (EAP II) and other state energy policies, such as

AB 32 greenhouse gas, and once-through cooling policies.”¹ Consistent with these considerations, the Commission has previously held that it would require “utilities not only conform to the energy and environmental policies in place, but aim for even higher levels of performance” in future LTPP proceedings.² Although the Straw Proposal does discuss consideration of once-through cooling policies, it does not mention some of the other important energy and environmental policies or consider how to assure that these policies are meaningfully evaluated in the planning work done in this proceeding.

a) AB 32 Greenhouse Gas Requirements and Emission Impacts

Commission decisions have an enormous impact on greenhouse gas and pollution levels in the State. These impacts need to be evaluated and considered in the LTPP planning process. In the Global Warming Solutions Act of 2006 (AB 32), California committed to reducing greenhouse gases to 1990 levels by 2020.³ The California Air Resources Board (CARB) detailed several key actions necessary to reach this goal, including: “[e]xpanding and strengthening existing energy efficiency programs as well as building and appliance standards” and “[a]chieving a statewide renewable energy mix of 33 percent.”⁴ Importantly, CARB estimates that a significant portion of the GHG reductions necessary to meet the 2020 goal will come from energy efficiency (EE) and renewable portfolio standards measures.⁵ CARB’s AB 32

¹ OIR at p.2.

² D.07-12-052 at pp. 3-4.

³ California Assembly Bill 32, the Global Warming Solutions Act of 2006, Chapter 488, 2006 (Nunez).

⁴ California Air Resources Board, AB 32 Scoping Plan at p. ES-3,
http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf.

⁵ California Air Resources Board, AB 32 Scoping Plan at p. 17,
http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. The Commission and the CPUC estimated the magnitude as: “ ARB’s Climate Change Draft Scoping Plan envisions that the electricity sector will contribute at least 40% of the total statewide GHG reductions, even though the sector currently creates just 25% of California’s GHG emissions.” See CPUC and CEC Final Opinion on Greenhouse Gas Regulatory Strategies, at p. 2, available at <http://www.energy.ca.gov/2008publications/CEC-100-2008-007/CEC-100-2008-007-F.PDF>.

Scoping Plan also estimates that EE and renewable portfolio standards will reduce harmful pollution to provide benefits to public health.⁶

To implement these goals, the Commission and the California Energy Commission (CEC) issued a final decision evaluating how to reduce greenhouse gas emissions in the energy sector. The GHG analysis, which was relied on in that decision, demonstrates that “different resource policy scenarios result in very different levels of GHG emissions in 2020.”⁷ The results of the GHG model also shows that “[e]nergy efficiency is extremely important for limiting the economic impacts of GHG reduction on consumers . . . [and] average utility bills would decline along with policies that reduce GHG emissions.”⁸ Although it relied on the GHG model in the decision, the Commission and CEC noted that there were uncertainties in that model.⁹ One of the processes recognized by the Commission and the CEC for further analyzing the GHG impacts resulting from these policies is the Long Term Procurement Proceeding.¹⁰

Recognizing the import of GHG and environmental considerations, the Scoping Memo in this proceeding provides that system planning should examine “[w]hat cost-effective resource strategies should be implemented to achieve greenhouse gas (GHG) goals.”¹¹ The Scoping Memo further states that GHG issues will be examined in the bundled plans to ensure “utilities

⁶ California Air Resources Board, AB 32 Scoping Plan at p. 87-89,

http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf

⁷ See CPUC and CEC Final Opinion on Greenhouse Gas Regulatory Strategies, at p. 34, available at <http://www.energy.ca.gov/2008publications/CEC-100-2008-007/CEC-100-2008-007-F.PDF>.

⁸ See CPUC and CEC Final Opinion on Greenhouse Gas Regulatory Strategies, at p. 39, available at <http://www.energy.ca.gov/2008publications/CEC-100-2008-007/CEC-100-2008-007-F.PDF>.

⁹ See CPUC and CEC Final Opinion on Greenhouse Gas Regulatory Strategies, at p. 87, available at <http://www.energy.ca.gov/2008publications/CEC-100-2008-007/CEC-100-2008-007-F.PDF>.

¹⁰ See CPUC and CEC Final Opinion on Greenhouse Gas Regulatory Strategies, at p. 88, available at <http://www.energy.ca.gov/2008publications/CEC-100-2008-007/CEC-100-2008-007-F.PDF>.

¹¹ May 17, 2012 Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judge, at p. 9.

reduce their need to procure GHG compliance instruments by pursuing cost-effective GHG emissions reductions on a portfolio-wide basis.”¹²

Despite the inclusion in the Scoping Memo of an evaluation of GHG implications, the Straw Proposal fails to identify it as a driver for planning considerations. Rather, the Straw Proposal’s “Problem Statement” highlights reliability and cost considerations as the drivers for planning scenarios.¹³ Although GHG considerations are related to reliability and cost considerations, GHG implications need to be separately examined to allow decision-makers to make well-informed resource decisions that move California towards its AB 32 goal.

As discussed above, different resource decisions can significantly impact the GHG and pollution implications of the portfolio. For example, if the Commission decides to authorize more fossil fuel peaking facilities to backup renewables, these peaking facilities will increase GHG emissions and harmful pollution in the State especially because startup and shutdown emissions are generally much higher than emissions from regular operation. In contrast, relying on demand response and energy storage to backup renewable resources will help minimize GHG and pollution impacts. These issues should be central to any decision made in the case.

b) Energy Action Plan II

The planning work done in the 2012 LTPP needs to consider the Commission’s recent clarification of the loading order and how to forecast needs so all types of resources can be considered for filling net shorts. In the 2010 LTPP, the Commission clarified that the “loading order applies to all utility procurement.”¹⁴ The Commission further noted “concerns regarding utility compliance with the loading order” as was also an issue in D.07-12-052, which found that the utilities were filling their net short positions with conventional resources, rather than

¹² May 17, 2012 Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judge, at p. 12.

¹³ See Straw Proposal at pp. vi-vii.

¹⁴ D.12-01-033 at p. 21.

preferred resources.¹⁵ Due to this concern, the Commission directed the utilities to “procure additional energy efficiency and demand response resources to the extent they are feasibly available and cost effective.”¹⁶ The Commission then held that “[t]his approach also continues for each step down the loading order, including renewable and distributed generation.”¹⁷

Consistent with this loading order requirement, demand response programs are now being integrated into the grid to compete with other resources. As the Commission recently summarized:

We are also taking steps to update our current Resource Adequacy program rules to conform to the CAISO’s wholesale market and place DR on equal footing with generation resources. – in D.11-10-003, we directed that beginning in 2013 retail non-dynamic pricing DR resources must be dispatchable locally in order to qualify for local Resource Adequacy credits.¹⁸

The planning standards must take into account what impact these types of actions will have on demand response and energy efficiency programs. It is likely that both of these resources will increase due to these actions. Failure to consider these recent developments would result in undercounting these resources.

In addition, when examining the mix of resources that will meet need, it is important to consider and evaluate how additional preferred resources could meet those needs. In past scenarios, preferred resources such as demand response have been fixed. There has been no thoughtful evaluation of how a preferred resource could be utilized to fill a net short. To do this, it is important that any potential net short is defined in terms of energy needs rather than capacity needs. It is also important that the Commission run sensitivities to meaningfully determine how it can meet its energy requirements while following the loading order. Historical reliance on

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ CPUC Decision 12-04-045 at p. 16.

only the peak MW need has not allowed for a thoughtful consideration of other types of resources such as demand response or energy storage.

c) *Once-Through Cooling Policies*

The Commission needs to thoughtfully consider the impacts of the once-through cooling policy and not over-estimate how many facilities will be retired. Slide 42 from the Straw Proposal workshop suggests that the retirement assumptions may be based solely on age. This, however, is not always a reliable measure since some facilities have barely operated and thus have a lot of life left in them. Using such generic assumptions, the Commission assumed that thousands of MW from aging and inefficient facilities would be retired by 2015 in the 2006 LTPP decision and that new MW would need to be procured to replace them.¹⁹ This assumption has since proven to be inaccurate. The majority of MW assumed to retire in the 2006 LTPP will not be retiring until years later, if at all.

To make a more reliable forecast of retirements, the Commission should consider the requirements of the Once Through Cooling (OTC) policy. OTC plants do not necessarily need to retire to comply with the policy's requirements. In addition to retiring, the policy provides two other ways facilities can comply with the new requirements, called Track I and Track II.²⁰ Track I requires the implementation of an acceptable cooling technology, such as closed cycle wet cooling system or closed cycle dry cooling (BAT), which results in a reduction of intake flow rate at each power-generating unit to a level that can be attained with a closed-cycle wet cooling system.²¹ A minimum of 93% reduction is required compared to the design intake flow rate.²²

¹⁹ D.07-12-052.

²⁰ See Statewide Water Quality Control Policy On The Use Of Coastal Water And Estuarine Waters For Power Plant Cooling, Section 2.A, at pp. 4-6, available at http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/policy100110.pdf.

²¹ *Id.* at p. 4.

²² *Id.*

Track II encompasses measures such as using operation or structural controls, or both, to reduce impingement mortality and entrainment of marine life for the facility on a unit-by-unit basis if Track I is not feasible.²³ Several facilities have submitted plans to comply with either Track I or Track II.²⁴ The Commission needs to consider this in its assumptions.

In addition, it is not clear that even if OTC plants are retired, that the same amount of MW will be needed to replace them. Many existing OTC facilities are currently running far below capacity. For instance, in 2007, most units ran less than 10 percent of the time.²⁵ Furthermore, a report found that several OTC facilities could retire by 2015 with no need for additional replacement capacity; the report concluded that a more than adequate reserve margin would still exist “with as little as \$135 million in in-state transmission upgrades.”²⁶ Replacing any peak generation lost from OTC retirements can be done with existing programs for solar power, peak demand programs, and energy efficiency, at a cost less than that of re-powering

²³ *Id.*

²⁴ See Implementation Plan Statewide Policy Use of Coastal and Estuarine Waters Power Plant Cooling, AEA Alamitos Generating Station (April 1, 2011) at p. 2 *available at* http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/powerplants/alamitos/docs/ags_revisedip2011.pdf (“AES-SL intends to comply with Compliance Alternative Track I of the OTC Policy by constructing either new simple-cycle or combined-cycle gas turbine generation facilities at ALGS to replace the six existing units, which total approximately 2,010 MW.”); California 316(b) Policy – Implementation Plan El Segundo Generating Station, El Segundo (March 30, 2011) at p. 2, *available at* http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/powerplants/el_segundo/docs/esgs_ip2011.pdf (“ESGS will comply with the requirements of the Policy under Track I.”); Implementation Plan for Compliance with California Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling, Encina Power Station (March, 2011) at p. 3 http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/powerplants/encina/docs/eps_ip2011.pdf (“Units 1-3 will comply with the requirements of the Policy under Track I . . . Units 4 and 5 . . . must comply with Track 2 or otherwise shutdown.”).

²⁵ See CEC, *Comments to State Water Resources Control Board Concerning Its Coastal Power Plant Preliminary Draft Policy and Related Scoping Document* (May 2008) at pp. 18-19, *available at* http://www.energy.ca.gov/siting/documents/2008-05-20_CHAIRMAN_SWRCB.PDF.

²⁶ *Id.* (quoting California Ocean Protection Council & State Water Resources Control Board, *Electric Grid Reliability Impacts from Regulation of Once-Through Cooling in California* (ICF Jones & Stokes, April 2008) at p. 3, *available at* http://www.swrcb.ca.gov/water_issues/programs/tmdl/docs/power_plant_cooling/reliability_study.pdf).

OTC units.²⁷ This takes into account the recent drop in price for solar photovoltaics (PV), as well as increasing capital costs for natural gas power plants.²⁸

This LTTP needs to assure that retirement assumptions are carefully evaluated so that retirements are not overestimated again. Overestimation can lead to overprocurement of unneeded fossil fuel facilities.

2. Planning Period

The Straw Proposal provides that:

The planning period should be no less than 20 years to encompass the major impacts of infrastructure decisions now under consideration. Detailed planning assumptions should be utilized in creating an annual assessment for the first ten years. More generic long-term planning assumptions should be utilized in the second ten years, reflective of increased uncertainties around future conditions.²⁹

The length of this planning period is of particular concern if the analysis is used as a basis to justify procurement. As this Commission is well-aware, projections and forecasts become more uncertain as the length of the projection increases. In other words, the farther out the projection, the more likely it is that it will not reflect reality. This is especially true when undertaking twenty year projections. As an illustration of this point, California's energy infrastructure looks very different now than it did twenty years ago. It would have been nearly impossible to predict the dramatic price reduction in solar PV, which now appears to be leading to its wide-scale penetration in California markets. Advances in technology and reduction in prices are likely impossible to accurately anticipate. Relying on projections using old technology could commit California to procurement of unneeded and inefficient resources and result in stranded assets. Thus, the Commission should endeavor to only allow procurement in the near term and not allow

²⁷ Freehling, Robert and Cox, Rory. "Renewables Cost Effective Replacement for Aging Natural Gas Plants." Natural Gas & Electricity, March 2010.

²⁸ *Id.*

²⁹ Straw Proposal at p. ix.

procurement for potential needs identified in the last half of this analysis. Indeed, given the ability of resources such as solar PV and DR to be procured and come on-line quickly, it is unclear why California is still relying on a ten-year process for authorizing procurement of new resources. The long term procurement cycle disadvantages resources that are likely to continue to improve in efficiency and price. A shorter process would allow a more refined analysis and potentially help prevent some of the overprocurement issues that California has recently experienced.

Although a longer planning period should not be used to authorize procurement of resources, it could be used to evaluate meeting California's long term GHG goals and provide a trajectory for meeting and exceeding California's energy and environmental policies. To this end, it is unclear why the long-term target is only 40% RPS.³⁰ Under California's RPS law, California is planning to increase its RPS from 20% in 2013 to 33% in 2020.³¹ If a 13% increase can be achieved in seven years, more than an additional 7% could be a target in the long-run. Not only should a higher target be feasible, but a higher target may be necessary to meet California's GHG goals.

DEMAND-SIDE ASSUMPTIONS

3. Economic & Demographic Assumptions

Past economic and demographic assumptions, chiefly assumptions on population growth, have historically tended to be too high, thus artificially inflating need. For instance, the CEC lowered its population growth rate projected for the years 2007-2016 from 1.7 percent per year to 1.3 percent per year for the 2010 to 2020 period.³² Similarly, the recent economic downturn has

³⁰ Straw Proposal Workshop Slides at Slide 42.

³¹ See SB1X2.

³² See CEC, California Energy Demand 2010-2020 Adopted Forecast (Dec. 2009), at p. 2.

also caused a dip in energy demand.³³ Thus, it would be appropriate to rely on conservative assumptions when estimating economic and demographic trends so as not to overestimate need.

4. Load Forecast

Due to the issues referenced above with economic and demographic assumptions, which are the main drivers of the load forecast increases, it would be appropriate for the Commission to rely on the lower end of the CEC forecast.

5. Incremental Energy Efficiency

Any EE assumptions should consider the California Long Term Energy Efficiency Strategic Plan. This Plan was updated jointly by the Commission in 2011,³⁴ and has been cited as one of the Commission's main methods of meeting its GHG goals.³⁵ In addition, other statewide policies are encouraging greater energy efficiency measures. In particular, Governor Brown's April 25, 2012 Executive Order B-18-12 calls for half of California state government commercial buildings to reach zero net energy.³⁶ Failure to consider these policies in setting the EE goals will not fairly value the contribution of EE to the grid and will essentially assume that California fails to meet its environmental and energy goals and policies.

In the last LTPP, the Commission's incremental EE assumptions were conservative. In particular, the Commission's assumption only included the results from the low case of the Big Bold Energy Efficiency Strategies (BBEES).³⁷ BBEES initiatives are directly targeted for

³³ See Bill Powers Track II Testimony in R.10-05-006, (May 4, 2011) at p. 5.

³⁴ California Energy Efficiency Strategic Plan, January 2011 Update, http://www.cpuc.ca.gov/NR/rdonlyres/A54B59C2-D571-440D-9477-3363726F573A/0/CAEnergyEfficiencyStrategicPlan_Jan2011.pdf.

³⁵ See CPUC and CEC Final Opinion on Greenhouse Gas Regulatory Strategies, *available at* <http://www.energy.ca.gov/2008publications/CEC-100-2008-007/CEC-100-2008-007-F.PDF>.

³⁶ See California Executive Order, B-18-12 (April 25, 2012), <http://gov.ca.gov/news.php?id=17508> ("State agencies shall also take measures toward achieving Zero Net Energy for 50% of the square footage of existing state-owned building area by 2025.")

³⁷ December 3, 2010 Scoping Memo in Rulemaking 10-05-006, Attachment 1, Standardized Planning Assumptions for System Resource Plans at p. 10. The BBEES refers to initiatives related to new construction and heating,

significant reductions in California's Energy Efficiency Strategic Plan. Goals of the plan include a 50 percent reduction in air conditioning loads by 2020 and all new residential construction will be zero net energy by 2020.³⁸ The Commission went through a stakeholder process to come up with these goals, and has presented them to CARB as a way to reduce GHG measures. Ignoring the significant impact of these goals is inconsistent with these policy measures and the basis of the decisions that make up the Strategic Plan.

In addition to not considering the full impact of BBEES, the EE projection that the Commission relied on in the 2010 LTPP did not include reductions from other types of EE such as industrial program savings.³⁹ Since the incremental EE numbers that the Commission plans to base its EE assumptions on have not yet been published by the CEC, it is not possible to do a detailed critique of the scenarios the CEC will eventually present. At the very least, the conservatism in the 2010 LTPP should be reevaluated in light of California's energy efficiency policies.

6. Non Event-Based Demand Response

See comments below on event based demand response (DR) describing current efforts to increase DR programs. Most of these advances will impact event-based DR, not non-event based DR, but to the extent that they impact non event-based DR, they should be considered.

7. Incremental Small Photovoltaics (demand-side)

The Straw Proposal's estimated incremental PV assumption is overly conservative and does not consider a number of renewable programs. The Straw Proposal assumes between 2,200

ventilation and air conditioning. *See* CEC, Incremental Impacts of Energy Efficiency Policy Initiatives relative to the 2009 Integrated Energy Policy Report Adopted Demand Forecast, at 32 (July 2010).

³⁸ California Long Term Energy Efficiency Strategic Plan, California Public Utilities Commission at pp. 57, 68 (Sept. 2008) <http://www.cpuc.ca.gov/NR/rdonlyres/D4321448-208C-48F9-9F62-1BBB14A8D717/0/EEStrategicPlan.pdf>

³⁹ CEC, Incremental Impacts of Energy Efficiency Policy Initiatives Relative to the 2009 Integrated Energy Policy Report Adopted Forecast, at p. 25 (July 2010); December 3, 2010 Scoping Memo in R.10-05-006.

MW to 3,000 MW of incremental small solar photovoltaic development. While the Straw Proposal states that this assumption “reflect[s] further expansion of behind the meter programs,” the Proposal does not quantify what programs specifically are being included, making it difficult to determine what is being counted and what is being left out.

Nevertheless, the Straw Proposal’s assumptions are significantly lower than the goals embodied in other renewable programs. For instance, it does not seem to consider Governor Brown’s goal of the development of 12,000 MW of solar DG by 2020,⁴⁰ the SB 32 feed-in tariff program, the Commission’s Renewable Auction Mechanism, and the goal laid out in the AB 32 Scoping Plan for one million solar roofs, or 3,000 MW of solar DG by 2017.⁴¹

This estimate also ignores the significant price drops that solar PV has experienced in recent years. Solar PV has dropped to a level in which it will continue to expand even without set incentives such as the CSI program. For example, PV panel prices have dropped 46 percent over the last year.⁴² Due to these low prices, it is highly likely that more PV will be installed than is currently allotted for under California’s programs. The Straw Proposals failure to recognize this paradigm will overstate a need for other resources.

8. Incremental Combined Heat and Power (demand-side)

Assumptions should accurately account for the complete reduction afforded by CHP facilities, including reductions on load as well as energy use at the facility. An appropriate capacity factor will account for both types of reductions. *See* the discussion related to CHP below on what programs and considerations need to be included in the assumptions.

⁴⁰ *See* Governor Jerry Brown, April 25, 2012 Support Letter for DRECP Process, at 2 (http://www.drecp.org/meetings/2012-04-25-26_meeting/presentations/04_Office_of_the_Governor_Paper.pdf) and Governor Jerry Brown, *Clean Energy Jobs Plan*, June 2010.

⁴¹ California Air Resources Board, *Climate Change Scoping Plan*, December 2008, pp. 41-53

⁴² For example, PV panel prices have dropped 46 percent over the last year. Bloomberg, *First Solar Latest Casualty in Renewable Energy Shakeout*, April 18, 2012. *See*: <http://www.bloomberg.com/news/2012-04-17/first-solar-latest-casualty-in-renewable-energy-shakeout.html>.

9. Traditionally, local area and other assessments utilizing a higher peak forecast have been based on a middle forecast for energy and peak. If this should be changed, please explain why.

CEJA urges the Commission to revise this practice to require utilities to rely on a 1-in-2 forecast consistent with prior Commission decisions. For example, in the 2004 LTPP decision, the Commission found that:

Existing resource planning uses average weather (1-in-2) and then adds a reserve margin which, in part, provides the cushion should hotter than average weather occur. This is the approach we adopted to implement our resource adequacy requirements and should also be applied here.⁴³

California's reserve margin of 15-17% is already higher than the 7% reserve margin required by WECC. Allowing utilities to plan using a 1-in-10 scenario inflates the reserve margin and can lead to procurement of resources that are unlikely to ever be needed.

10. Are there any significant demand -side assumptions that have been missed? If so please identify, provide sources, and the MW and GWh magnitude and likelihood.

It is not clear that some demand side assumptions related to solar water heaters have been considered. Although solar water heaters are partially considered in the energy efficiency assumptions, California has authorized a ten -year incentive program for solar water heaters, and solar water heaters have been shown to be very cost effective.⁴⁴ California can be expected to surpass the incentive program's goals of 200,000 installations.

In addition, as described further below, energy storage has not been considered even though energy storage systems are being constructed and put on -line in California . Some of these energy storage systems, such as the 54 MW Ice Energy project in Southern California , may fit on the demand side. Regardless of what side the energy storage resources fit on, it all needs to be considered in the analysis.

⁴³ D.04-12-048 at FOF # 11.

⁴⁴ See California Solar Water Heater and Efficiency Act of 2007 (promoting installation of 200,000 systems in California by 2017).

11. Other comments on demand-side assumptions.

It is important to include all demand-side resources to prevent procurement of unnecessary resources.

SUPPLY-SIDE ASSUMPTIONS

12. Use of NQC or Forecast NQC

As more information becomes available about renewable energy and energy storage resources, the NQC is being evaluated. It is likely that the NQC of resources such as small solar PV will continue to increase as more data shows their high availability during peak hours. These increases need to be considered to best estimate the resources that are available to meet load.

13. Data Source for Variable Resources' Production Profiles

When looking at the resource profiles for variable resources, it is important to consider the aggregate impact of the resources on the grid. Studies have shown that geographical variability reduced the need for ancillary services.⁴⁵ This consideration needs to be included when compiling data sets. In addition, the Commission should rely on the most recent data available. CEJA has cited numerous reports and other documents throughout its comments and testimony before this Commission that provide information on various resources profiles that can be relied upon by the Commission in formulating its planning assumptions.

14. Consideration of Transmission Capacity

To consider potential transmission upgrades, the Straw Proposal provides that: “two types of upgrades should be assumed: 1) minor upgrades, and 2) transmission projects that have been approved by both the California ISO and CPUC and are expected to be online within the

⁴⁵ See, e.g., A. Mills & R. Wiser, Implications of Wide-Area Geographic Diversity for Short-Term Variability of Solar Power, Lawrence Berkley National Laboratories, Sept.. 2010, *available at* <http://eetd.lbl.gov/ea/emp/reports/lbnl-3884e.pdf>

planning period.”⁴⁶ This planning assumption problematically may not include several transmission upgrades that are likely to occur because the California ISO (CAISO) does not evaluate all possible upgrades to mitigate potential long-term transmission issues.

For example, when examining the potential need and proposed transmission upgrades for the San Diego area, CAISO evaluated potential overloads of transmission for different time periods and deferred the analysis of potential transmission fixes.⁴⁷ In particular, when examining a potential reconfiguration of a transmission line, CAISO deferred its analysis, reasoning that “[s]ince the overload shows up in 2021 in the reliability assessment, the need for this configuration will be evaluated in the next planning cycle.”⁴⁸ CAISO deferred its evaluation of ten potential transmission projects for the SDG&E area until the next planning cycle based primarily on its reasoning that the issue did not occur until ten years in the future.⁴⁹ This type of deferral should not be a reason to disregard potential transmission upgrades that utilities have proposed for long-term mitigation measures. Ignoring all of these projects could lead to an analysis that shows new resources are needed when they actually are not.

15. Should All “Known” and “Planned” (non-RPS) Resources Be Used in All Supply-Side Scenarios

Yes, all known and planned resources should be accounted for. Such resources should include non-traditional energy resources such as demand response. Accurately accounting for all resources available will help to accurately depict California’s energy needs and not procure any unneeded new facilities.

16. Deliverability

⁴⁶ Straw Proposal at p. viii.

⁴⁷ See CAISO 2011/2012 Transmission Plan at p. 200.

⁴⁸ CAISO 2011/2012 Transmission Plan at p. 200.

⁴⁹ CAISO 2011/2012 Transmission Plan at pp. 200-207 (showing several examples of CAISO deferring its analysis of potential transmission upgrades to a later cycle).

The Straw Proposal provides that resources will only be assumed “deliverable” if they fit on existing, CPUC approved transmission, baseload, or are flexible resources.⁵⁰ These “deliverability” criteria on their face appear either to ignore or to drastically discount the valuable contribution of distributed resources in a way that is inconsistent with the recent renewable law and the valuable impacts these distributed resources have on the grid. On April 12, 2011, Governor Brown signed SBX1 2 into law, which increases California’s current 20 percent Renewables Portfolio Standard (RPS) target in 2010 to a 33 percent RPS by December 31, 2020.⁵¹ The law removed the prior deliverability language and provided that “[t]he physical generating capacity of an electric generation facility shall count toward the electrical corporation’s resource adequacy requirement.”⁵² SBX1 2 adds the Commission’s obligation to include capacity values of distributed generation in determining RA needs and furthering the state’s RPS requirements:

*In order to maintain electric service reliability and to minimize the construction of fossil fuel electrical generation capacity to support the integration of intermittent renewable electrical generation into the electrical grid, by July 1, 2011, the commission shall determine the effective load carrying capacity of wind and solar energy resources on the California electrical grid. The commission shall use those effective load carrying capacity values in establishing the contribution of wind and solar energy resources toward meeting the resource adequacy requirements established pursuant to Section 380.*⁵³

Rather than focusing on the “deliverability” of distributed generation, the new statute trains on the “effective load carrying capacity” of resources. The National Renewable Energy Laboratory defines effective load carrying capability (ELCC) as “an often-used metric to assess

⁵⁰ Straw Proposal at p. xvi.

⁵¹ See “Governor Brown Signs Legislation to Boost Renewable Energy,” <http://gov.ca.gov/news.php?id=16974> (April 12, 2011); Cal. Pub. Util. Code Section 399.15.

⁵² Cal. Pub. Util. Code Section 399.20(i).

⁵³ Cal. Pub. Util. Code Section 399.26(d) (emphasis added).

*capacity credit, not only for wind plants, but for any power plant.*⁵⁴ Importantly, the ELCC metric has been used as an “estimate of the expected reduction in . . . load due to the production of power by an onsite PV system.”⁵⁵ The Legislature has therefore acknowledged the need to include all generating resources, including smaller distributed PV and wind sources, in RA calculations and resource needs determinations.⁵⁶ Because distributed generation such as PV is now to be implicitly included in RA determinations, and distributed generation also meets the 399.20(b) criteria for electric generating facilities,⁵⁷ every eligible kilowatt hour of energy purchased from eligible distributed generation should be evaluated in the modeling exercises.⁵⁸ It is therefore no longer prudent for the Commission to simply rely on “deliverability” to the transmission grid to determine whether new resources will help eliminate renewable integration need. Distributed generation, which is connected to the distribution grid, can effectively reduce and minimize load requirements. These important properties need to be considered.

17. Additional Information Needed for Resource Locations

The Straw Proposal presentation states that all resources should be “[i]dentified as system or by local area/ subarea.”⁵⁹ This type of differentiation, although desirable, can create several different issues that the team developing the scenarios should work to prevent. These issues are caused primarily because some resources fit squarely within a particular definition of either local

⁵⁴ M. Milligan & K. Porter, NREL, *Determining the Capacity Value of Wind: An Updated Survey of Methods and Implementation*, at p. 2, <http://amherstislandwindinfo.com/milligan-nrel-wind-capacity-value.pdf> (June 2008).

⁵⁵ A. Wiser et al., Lawrence Berkeley National Laboratory, *The Impact of Retail Rate Structures on the Economics of Commercial Photovoltaic Systems in California*, at p. 6, <http://eetd.lbl.gov/ea/emp/reports/63019.pdf> (July 2007).

⁵⁶ Cal. Pub. Util. Code Section 399.26(d); *id.*, at Sections 399.20(h) and (i).

⁵⁷ See Cal. Pub. Util. Code Section 399.20(b) (“As used in this section, ‘electric generation facility’ means an electric generation facility located within the service territory of, and developed to sell electricity to, an electrical corporation that meets all of the following criteria: (1) Has an effective capacity of not more than three megawatts. (2) Is interconnected and operates in parallel with the electrical transmission and distribution grid. (3) Is strategically located and interconnected to the electrical transmission and distribution grid in a manner that optimizes the deliverability of electricity generated at the facility to load centers. (4) Is an eligible renewable energy resource.”)

⁵⁸ See Cal. Pub. Util. Code Section 399.26(d).

⁵⁹ Straw Proposal Workshop Slide 26.

area or system resource while others do not fit within this paradigm. These problems broadly affect CAISO's analysis, and if not addressed, may infect the Commission's conclusions. Specifically, because some resources have not been defined to fit squarely into particular local areas yet, CAISO did not consider those resources in its most recent transmission analysis. Further, as the Straw Proposal recognizes, incremental energy efficiency traditionally has not been considered in CASIO's transmission analyses. Demand response and energy storage have also historically been left out of CAISO's transmission analysis.

There are also issues with renewable resources projected to go on-line due to feed-in tariffs. It is unclear what busbars renewable resources procured through a new program will be connected to. Thus, it is important to recognize the inherent limitations of such an analysis to assure that failure to account for all available resources does not generate a projection showing a higher local need than actually exists.

18. Event-Based Demand Response

The Straw Proposal states that the assumption for event-based DR be based on the most recent load impact reports filed with the Commission, which are expected to be filed in June. This assumption does not reflect the increases that are expected in the DR market.

The DR market is increasing along with rapid advances in DR technology. By relying on only the most recent load impact reports, the Commission will be underestimating the availability of DR. Full consideration of Demand Response resources is particularly important given that DR can help to integrate renewables.⁶⁰

⁶⁰ See Decision 12-04-045 at p. 76-77 (“we also expect that DR will likely be called upon to meet new needs beyond its historic role as an emergency resource and peak shaving tool. DR is ideally suited to support grid integration of renewable generation, much of which will be intermittent or variable.”).

DR programs can especially be expected to rapidly increase given that Advanced Metering Infrastructure (AMI) has been established.⁶¹ AMI is a key component of the Commission's goal of increasing DR "as a means of reducing electricity demand during peak periods."⁶² In a recent settlement between DRA and SCE over SCE's AMI plan, the parties agreed that SCE's AMI program could be "expected to generate \$1,174 million in operational benefits and \$816 million in energy conservation, load control, and demand response related benefits."⁶³ In addition to numerous Commission demand response programs, FERC has required integration of demand response into the grid. CAISO is thus working on increasing the dispatch capability of DR. Similarly, the Commission has directed that beginning in 2013 non-dynamic pricing DR resources must be locally dispatchable in order to qualify for local Resource Adequacy credits.⁶⁴ These advances and new programs need to be taken into account to better reflect reality.

19. Incremental Combined Heat and Power (Supply-Side)

The Incremental CHP assumption is overly conservative. The Straw Proposal uses an incremental Combined Heat and Power (CHP) assumption of between 0 MW (for the low-assumption) and 1,968 MW (high-assumption) by 2030, with a mid-assumption of 1,672 MW. These assumptions are low compared to other forecasts for CHP development in California. For instance, the *AB 32 Scoping Plan* CHP target is 4,000 MW of new CHP in California by 2020.⁶⁵

The Straw Proposal purports to rely on a 2012 ICF International study. However, numbers used in the study differ from numbers in the Straw Proposal. For instance, the ICF

⁶¹ See D.08-09-039 (Approving settlement allowing \$1.63 billion in ratepayer funding for SCE's proposed AMI project); CPUC Approves Advanced Metering Infrastructure for SoCalGas (April 8, 2010) http://docs.cpuc.ca.gov/word_pdf/NEWS_RELEASE/116085.pdf; Smart Grid Implementation at the Sacramento Municipal Utility District, CPUC Smart Grid Workshop (March 18, 2010) (SMUD received a \$127 Smart Grid Investment Grant from DOE to implement \$308 M worth of projects," including AMI and demand response).

⁶² D.08-09-039 at pp. 2-3.

⁶³ D.08-09-039 at p. 16.

⁶⁴ CPUC Decision 12-04-045 at 16.

⁶⁵ California Air Resources Board, *AB 32 Climate Change Scoping Plan*, December 2008, p. 44. See <http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>

report projected a “base case” for 1,888 MW of new CHP by 2030, a figure only slightly lower than the Straw Proposal’s high scenario. The “Medium” and “High” case used in the ICF report are 3,629 MW and 6,108 MW by 2030, respectively.⁶⁶ Both of these figures are substantially higher than what is used in the Straw Proposal. Further, these higher numbers comport with previous ICF International studies; for instance, the April 2010 report found an economic potential for new CHP in California of 6,500 MW by 2030.⁶⁷ Further, Governor Brown has called for the addition of 6,500 MW of CHP in California by 2030 in his *Clean Energy Jobs Plan*.⁶⁸

In addition, the Straw Proposal fails to comport to the recent CHP Settlement, which established MW targets of 2,949 MW during the Initial CHP Program Period, and a total of 3,000 MW for the entire CHP Program.⁶⁹ The Straw Proposal needs to reevaluate its estimates for incremental CHP and assume numbers that better reflect current policies and forecasts.

20. Renewable Resources

CEJA supports the use of the “High DG” portfolio. Distributed Generation in California can be expected to grow at a rapid pace. This is particularly true given technological advances and the dropping prices of renewable technology. For example, PV panel prices have dropped 46 percent over the last year.⁷⁰ Further, DG is being supported by a number of programs in the State, including Governor Brown’s goal of 12,000 MW of DG by 2020, and the goal laid out in

⁶⁶ Combined Heat and Power (CHP) Market Assessment Update (Feb. 16, 2011) at p. 28
http://www.energy.ca.gov/2012_energypolicy/documents/2012-02-16_workshop/presentations/02_Darrow-Hedman-Wong-Hampson_ICF_International.pdf

⁶⁷ CEC PIER, *Combined Heat and Power Assessment – Final Consultant Report*, prepared by ICF International, April 2010, p. C-9.

⁶⁸ Clean Energy Jobs Plan, http://gov.ca.gov/docs/Clean_Energy_Plan.pdf

⁶⁹ D.10-12-035, at p. 16.

⁷⁰ Bloomberg, *First Solar Latest Casualty in Renewable Energy Shakeout*, April 18, 2012. See: <http://www.bloomberg.com/news/2012-04-17/first-solar-latest-casualty-in-renewable-energy-shakeout.html>.

the AB 32 Scoping Plan to achieve one million solar roofs, or 3,000 MW, by 2017.⁷¹ In sum, the “High DG” scenario is an accurate reflection of the growth that can be expected in DG in California.

The RPS proceeding has a different purpose than the LTPP. In formulating the RPS supply, the Commission should use the most recent data available, and choose a portfolio that accounts for all known and planned resources including the significant increases in DG that should be expected to be developed.

21. Retirements

As discussed above, it is important to evaluate the relevant policies such as the OTC policy to see whether it is reasonable to assume retirements. Past LTPPs have overestimated the number of retirements.

22. Significant Supply-Side Assumptions Missed

The questions raised by the Energy Division do not raise the issue of imports even though imports do appear to be considered in the Straw Proposal. The Straw Proposal does not appear to consider Energy Storage.

a. Imports

To determine the appropriate level of imports in the CAISO system, the Straw Proposal states that “[i]mports should be based on the maximum import capability of transmission into the California ISO, as used in the Resource Adequacy program, including expansions identified in the TPP.”⁷² This assumption may not realistically reflect all of the transmission projects that are likely to occur in the next ten years. The Resource Adequacy program generally reviews projects either on a year-ahead basis, or at the most, on a five year basis. As discussed above,

⁷¹ California Air Resources Board, *Climate Change Scoping Plan*, December 2008, pp. 41-53

⁷² Straw Proposal at p. xv.

CAISO defers review of transmission projects until those projects are closer to being possibly needed. Deferred projects need to be examined to determine whether they should be considered in resource planning. Import limits are often based on transmission, not resource constraints. These transmission constraints can potentially be alleviated by increasing reactive support. Resource assumptions should include the extent that these import limits may change due to likely reactive support projects.

The Straw Proposal also provides that: “[f]or resources outside of the California ISO, the publicly available Transmission Expansion Policy Planning Committee (TEPPC) data should be utilized, specifically the 2022 Common Case generation table.”⁷³ Based on this information, it is unclear what transmission assumptions the Straw Proposal is relying on. As part of the 2022 TEPPC study process, several potential transmission projects were evaluated. The transmission assumptions need to be clear so that parties can opine on whether the assumptions reliably forecast the likely WECC transmission infrastructure. In addition, it is important to note that not all of the available resources were included in WECC’s assumptions. For example, the TEPPC 2012 Study Program report noted that:

Requests for heavy renewable resource penetrations were also received in 2012 TEPPC Open Season. TEPPC has had limited experience studying cases with large quantities of renewables, but even this limited experience has indicated a strong need for the review and consideration of integration needs associated with these kinds of study cases. TEPPC currently does not have the tools to assess integration requirements. Until TEPPC can determine integration needs associated with a 33 percent WECC-wide RPS scenario, or 12,000 MW of wind located in Montana or Wyoming under Common Case loads, study cases requesting such inputs have been given a low priority in the 2012 Study Program.⁷⁴

⁷³ Straw Proposal at p. xv.

⁷⁴ 2012 TEPPC Study Program, Transmission Expansion Planning Policy Committee, Western Electricity Coordinating Council, at p. 11 (May 1, 2012) *available at* https://www.wecc.biz/committees/BOD/TEPPC/External/TEPPC_StudyProgram_2012_Report.docx.

When reviewing the WECC studies, it is important to realize that the purpose of those studies is to assess possible binding transmission constraints. The studies are not formulated to determine the most likely level of imports into California. The level of imports is constantly changing and will likely continue to change as balancing authorities work together to integrate renewable resources onto the grid. Innovation in grid management is likely to generate new imports available to California. A report by Pacific Northwest National Laboratory found that:

Operating separately and locally, individual BAs would have to purchase more expensive balancing reserves to accommodate the variability and uncertainty from high penetration of VG in the future. Cooperation and consolidation between BA's has been identified as one of the most important strategies to facilitate high-level VG [variable generation] penetration while limiting requirement for generation reserves.⁷⁵

The report continues to identify a number of different cooperation approaches that could be used to integrate variable generation.⁷⁶ The likely improvements in grid management need to be considered when determining import levels. Along the same lines, CAISO needs to work with LADWP and SMUD to determine ways to better manage the grids.

b. Energy Storage Resources

The Straw Proposal does not explicitly discuss whether energy storage systems will be considered for planning purposes. Rather, it appears to categorize all resources as “generation” resources, rather than including the possibility of energy storage.⁷⁷ Consideration of energy storage systems is essential in this LTPP because the development of large scale energy storage systems is already a reality in California. There are several energy storage projects being

⁷⁵ Pacific Northwest National Laboratory, *Analysis Methodology for Balancing Authority Cooperation in High Penetration of Variable Generation* at p. v (February, 2010) available at http://www.pnl.gov/main/publications/external/technical_reports/PNNL-19229.pdf

⁷⁶ See generally *id.*

⁷⁷ See Straw Proposal at p. xvi.

constructed throughout the state.⁷⁸ For example, the Southern California Public Power Authority signed an agreement with Ice Energy in January 2010 to install 53 MW of load-shifting storage capacity this year.⁷⁹ SDG&E is “installing energy storage to more efficiently use generating resources as well as other technology to promote energy efficiency.”⁸⁰ Energy storage is a major aspect of the IOU’s Smart Grid plans. For instance, SDG&E seeks the addition of “[d]istributed generation, energy storage, and demand response [] being managed for use as virtual power plants,” by 2020.⁸¹ SDG&E will “strive to accommodate all cost-effective generation and energy storage options, achieved through “implementing new Smart Grid technology which will address voltage regulation, power quality issues and other impacts caused by new variable energy resources.”⁸² PG&E’s Smart Grid plan similarly seeks to put resources such as energy storage “on an ‘equal footing’ with traditional generation sources.”⁸³ SCE also seeks to integrate renewable resources through storage technologies, among other new resources.⁸⁴

⁷⁸ See CESA ESA Presentation at p. 39, available at

http://storagealliance.org/presentations/StrateGen_CESA_ESA_Presentation_2010-05-06.pdf

⁷⁹ SCPPA/Ice Energy Joint Press Release, *Southern California Public Power Authority to Undertake Industry’s Largest Utility-Scale Distributed Energy Storage Project*, January 27, 2010.

⁸⁰ SDG&E Smart Grid Deployment Plan, 2011-2020 at p. 219, <http://sdge.com/sites/default/files/documents/smartgriddeploymentplan.pdf>

⁸¹ SDG&E Smart Grid Deployment Plan, 2011-2020 at p. 41, <http://sdge.com/sites/default/files/documents/smartgriddeploymentplan.pdf>; see also *id.* at p. 103 (A major goal of SDG&E’s Smart Grid Deployment Plan is to “enable and support the sale of demand response, energy efficiency, distributed generation and storage into wholesale energy markets as a resource, on equal footing with traditional generation resources.”).

⁸² SDG&E Smart Grid Deployment Plan, 2011-2020 at p. 42, <http://sdge.com/sites/default/files/documents/smartgriddeploymentplan.pdf>; see also *id.* at p. 232 (“SDG&E is planning distributed energy storage systems on circuits with high penetration of customer PV systems. Additionally, energy storage systems will be strategically located in substations to mitigate the impact of multiple circuits with PV.”).

⁸³ PG&E’s Smart Grid Deployment Plan, Appendix A at p. 12 (June, 2011) http://www.pge.com/includes/docs/pdfs/shared/edusafety/electric/SmartGridDeploymentPlan2011_06-30-11.pdf

⁸⁴ Southern California Edison Smart Grid Strategy & Roadmap, at p. 7 (2010) http://asset.sce.com/Documents/Environment%20-%20Smart%20Grid/100712_SCE_SmartGridStrategyandRoadmap.pdf; see also *id.* at p. 14 (“SCE, like many industry stakeholders, recognizes the potential for various energy storage technologies to help better integrate intermittent resources. . . SCE has a twenty-year technology evaluation and testing legacy with battery storage technologies that creates unique opportunities to actively support product development that is occurring at battery technology suppliers.”).

The development of energy storage systems is likely to continue. To support further development of energy storage systems, the Federal Energy Regulatory Commission recently approved incentive rates for Western Grid Development’s utility-scale battery storage projects in California.⁸⁵ These projects are built to address specific transmission reliability issues identified by CAISO.⁸⁶ Importantly, the CEC’s 2009 *Integrated Energy Policy Report* acknowledges the role of storage technology in planning for the integration of intermittent renewable generation: “looking forward, some of the firming services provided by gas-fired generation will need to come from existing and emerging energy storage technologies that allow generators and transmission operators to fill the gap between the time of generation (off-peak) and the time of need (on-peak) for intermittent renewable energy.”⁸⁷ That report similarly concluded that storage “technologies can . . . reduce the number of natural gas-fired power plants that would otherwise be needed to provide the characteristics the system needs to operate reliably.”⁸⁸ The CEC has also found that “[b]attery energy storage technology has improved over time to the point where there are several emerging battery technologies that can provide utility-scale energy storage.”⁸⁹ The Commission needs to consider the energy storage resources that have been developed and will continue to be developed.

//

//

//

⁸⁵ FERC News Release, FERC Approves Transmission Incentives for Battery Storage Devices, January 21, 2010, available at <http://www.ferc.gov/news/news-releases/2010/2010-1/01-21-10-E-6.asp>.

⁸⁶ *See id.*

⁸⁷ 2009 IEPR at p. 192; *see also id.* at p. 86 (“Other solutions [aside from natural-gas plants] such as energy storage and hybrid renewable plants, are also possible and could be preferable in the longer term as more aggressive climate mitigation targets are addressed.”)

⁸⁸ *See* 2009 IEPR at pp. 6, 192; *see also id.* at p. 86 (“[b]attery energy storage technology has improved over time to the point where there are several emerging battery technologies that can provide utility-scale energy storage.”)

⁸⁹ *Id.* at p. 86.

23. Number of Scenarios

The Commission should run enough scenarios to ensure that the policies discussed above are considered in the scenarios, including the AB 32 GHG requirements, the Energy Efficiency Strategic Plan and the Energy Action Plan.

24. Other Comments

ALLOCATION METHODOLOGIES

25. Energy Efficiency

When allocating energy efficiency to the busbar level, it is important to ensure that all the energy efficiency is accounted for.

26. Demand Response

When allocating demand response, the impact of metering systems should not be discounted. Statements made by utilities related to smart meter benefits should be taken into account when making a projection. Metering systems should allow for more targeted demand response measures, which are better able to respond to increases in load.

27. Other Methodologies For Assigning Resources to Busbars

It is not clear how other demand side resources such as small-scale solar PV and solar water heaters are included in the analysis.

OTHER

28. Reasonable Number of Scenarios and Sensitivities

29. Any Other Comment

a. Considerations for Determining Flexibility

When examining flexibility needs, the Commission needs to be cautious to not overestimate flexibility requirements by overcounting flexibility needs and undercounting

flexible resources. Importantly, the flexibility needs necessary to effectively integrate solar and wind resources on the grid are decreasing as forecasting tools and technologies improve. Solar forecast errors have decreased in the last few years and these improvements are likely to continue. Other factors also decrease flexibility needs such as geographical diversity. Solar resources that have greater geographical diversity have less flexibility backup needs. These types of factors need to be reflected in the model.

To better estimate the potential flexibility need, the modeling assumptions should be refined to most closely reflect the full capability of the system that is likely to exist in 2022. This will involve changes to the input assumptions that were used in the 2010 LTPP. The following should be changed and refined in the input assumptions:

Storage Assumptions – California currently has energy storage systems on-line and in development that are not included in the assumptions. At the very least, the assumptions should consider all energy storage systems that are either constructed, in development, or in the CEC/CPUC approval process.

Import Assumptions –The scenarios need to refine its import assumptions to include consideration of imports of ancillary services from other systems. In particular, the model needs to consider the potential of publicly owned utilities or Munis being able to supply ancillary services to the system. By not considering this, the model will not reflect the best estimate of the energy situation in 2022.

Existing Facilities –For many of the facilities, the 2010 LTPP modeling relied on generic assumptions that could be refined to reflect the true potential of the current fleet.

Solar and Wind Forecast Errors – Forecast errors will most likely continue to be lowered due in the future to the predicted improvement in technologies and methodologies for forecasting solar and wind availability.

Demand Response – Demand response is likely to increase due to its integration into the grid and the increased usage of AMI. Automated Demand Response (Auto-DR), pre-programmed DR technology, fully automates customer response.⁹⁰ Auto-DR does not rely on the actions of the end-user,⁹¹ and has been shown to result in a higher amount of load shed than manual DR.⁹² Because Auto-DR can automatically work to backup sudden losses in generation, it can be fully integrated into the system as an ancillary service. Because DR has been readily identified as a viable means for managing renewable integration issues,⁹³ an accurate and functional Renewable Integration Study requires a comprehensive consideration of Demand Response potential.

The Commission should also examine increasing flexibility of current facilities rather than building new facilities. For many currently existing facilities, software upgrades such as OpFlex are currently being used to allow for faster startup and increased ramping capability.⁹⁴ Facilities have seen substantial benefits by employing OpFlex⁹⁵ and Fast Cycle technology,⁹⁶ and

⁹⁰ Lawrence Berkeley National Laboratory, *OpenADR and AutoDR Program History and Implementation*, at Slide 13 (Sept. 16, 2010), http://www.energy.ca.gov/electricity_analysis/notices/2010-09-16_drmecc_workshop/presentations/Kiliccote-Piette-OpenADR-EvalPresentation_Version2-091510.pdf.

⁹¹ Global Energy Partners Project Manager, *Auto-DR: Smart Integration of Supply and Demand for Rapid Grid Response*, at p. 8 (March 2010), http://www.gepllc.com/AutoDR_GridResponse.pdf.

⁹² *Id.* at p. 9.

⁹³ Lawrence Berkeley National Laboratory, *Mass Market Demand Response and Variable Generation Integration Issues: A Scoping Study*, Cappers, P., A. Mills, C. Goldman, R. Wisner, J. Eto, at Slide 4 (October 2011), eetd.lbl.gov/ea/ems/reports/lbnl-5063e-ppt.pdf.

⁹⁴ See GE Ecomagination: OpFlex Turndown Technology, <http://ge.ecomagination.com/products/opflexturndown.html>; see also Siemens, *Integrated Technologies that Enhance Power Plant Operating Flexibility*, http://www.energy.siemens.com/hq/pool/hq/energy-topics/pdfs/en/combined-cycle-powerplants/PowerGen2007PaperFinal_.pdf.

⁹⁵ See *Best Practices Awards*, COMBINED CYCLE JOURNAL, at pp. 14-16 (2008), <http://www.combinedcyclejournal.com/1Q2008/1Q2008-1/108Award-p.3-27.pdf>.

⁹⁶ Siemens, *Integrated Technologies that Enhance Power Plant Operating Flexibility*, at p. 2, http://www.energy.siemens.com/hq/pool/hq/energy-topics/pdfs/en/combined-cycle-powerplants/PowerGen2007PaperFinal_.pdf; Siemens AG, *Improvement of Operational Efficiency Based on Fast*

the CEC has recommended fast-start technologies for facilities coming on-line. This technology can be installed through relatively minor modifications, making upgrades more cost-effective than building a new facility.⁹⁷

CONCLUSION

CEJA appreciates the opportunity to submit these comments related to the Straw Proposal and hopes that the assumptions ultimately used in the proceeding do not overestimate the need for potential resources.

Respectfully submitted,

May 31, 2012

/s/ SHANA LAZEROW
DEBORAH BEHLES
SHANNA FOLEY
Environmental Law and Justice Clinic
Golden Gate University School of Law
536 Mission Street
San Francisco, CA 94105-2968
(415) 442-6647 (Telephone)
dbehles@ggu.edu, sfoley@ggu.edu

SHANA LAZEROW
Communities for a Better Environment
1904 Franklin Street, Suite 600
Oakland, CA 94612
(510) 302-0430 (Telephone)
slazerow@cbeal.org

Attorneys for
CALIFORNIA ENVIRONMENTAL JUSTICE
ALLIANCE

Startup Plant Concepts, at p. 4 (Sept. 12-16, 2010)

<http://www.worldenergy.org/documents/congresspapers/455.pdf>.

⁹⁷ See Letter from Paul C. Richins, Jr., Environmental Protection Office Manager, California Energy Commission, to Jack P. Broadbent, Bay Area Air Quality Management District, at p. 2 (May 29, 2007), http://www.energy.ca.gov/sitingcases/russellcity_amendment/documents/2007-05-31_LTR_BROADBENT.PDF.