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 12-03-015 (Filed March 22, 2012)

COMMENTS OF THE INTERSTATE RENEWABLE ENERGY COUNCIL, INC. ON 2012 ENERGY DIVISION STRAW PROPOSAL ON LTPP PLANNING STANDARDS

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Pursuant to the Scoping Memo, comments are due on May 31 and reply comments on June 11. Energy Division requests that parties provide comments in this template. Note that comments do not need to address all topics in this template.

To the extent possible, comments should indicate if: A) the assumption is appropriate; B) if not, what assumption is appropriate including providing data sources and methods; C) if the assumptions can be in any way consolidated (e.g. recommend only two assumptions for energy efficiency, rather than three) or if they need to be expanded. To the extent that an issue needs to be handled in another track or time of the proceeding, please indicate that briefly.

As a reminder, incremental programs are those above amounts embedded in the California Energy Demand forecast.

General

1. **Guiding Principles**

The manner in which California is planning for its long-term energy future needs to be fundamentally reformed in order for the State to achieve its aggressive Renewable Portfolio Standard (RPS) and greenhouse gas (GHG) goals in a cost-effective and rational manner.

In all other parts of the West, the utilities conduct Integrated Resource Planning. In California, by comparison, resource planning is not well integrated. Rather than the utilities developing an optimized suite of resource choices that will meet public policy goals in a manner that best serves the interests of ratepayers, most of California relies on an *ad hoc* approach under which the investor-owned utilities procure renewable resources based on the lowest cost bids submitted in an ostensibly "market-driven" competition. This process lacks any systematic consideration of: (1) how the resources procured under this competition will be interconnected to the grid; (2) the extent of the new or upgraded transmission resources needed to bring the energy from these resources to load; or, most importantly, (3) how the new renewable resources needed to move California toward its policy goals will be reliably integrated with the state's existing electric system in an environmentally superior manner that does not rely on the development of new fossil fuel-fired resources.

The problem, in a nutshell, is that generation planning and transmission planning in California are conducted in two separate and unrelated silos that have only the most tangential relationship to each other, and neither of these planning processes is well integrated with California's generator interconnection processes. Several years ago, the CPUC and the CAISO established a Memorandum of Understanding under which the CPUC would provide a set of Renewable Portfolio Scenarios, and the CAISO would rely on those portfolios in conducting its annual transmission planning process. However, this limited cooperation is no substitute for holistic and integrated resource planning, especially when such planning is focused on the development

of new renewable generation, which we all want to be provided to customers in the most cost-effective manner possible.

This bifurcation of the resource planning process has (perhaps unintentionally) created several anomalies that adversely impact the overall planning process and that, as a result, adversely impact ratepayers. One, the process at the CPUC for identification of the Renewable Portfolio Scenarios has been opaque, and has been conducted behind closed doors. We understand that CPUC staff is committed to conducting next year's scenario identification process in a more open and transparent manner, but, to date, key stakeholders have been left out of that process. Two, the CAISO's transmission planning process has no direct relationship to the utilities' procurement planning efforts at the CPUC. Three, neither the CPUC's LTPP process nor the CAISO's Transmission Planning Process (TPP) is looking at how the doubling of California's reliance on renewables will impact system reliability, and neither process is identifying the types of advanced ancillary services that will be needed to maintain system reliability when a much higher percentage of load will be met with variable generation resources. Four, the current process for ensuring Resource Adequacy goals are met is done in a case-by-case manner that gives only after-the-fact consideration to resources that will be an important part of California's energy mix in the future and thereby may result in unnecessary and costly deliverability upgrades. And five, given that the system will need to be enhanced with new flexible resources that can provide advanced ancillary services, there has been no conscious consideration in either the CPUC's LTPP or the CAISO's TPP of the key role that environmentally superior electricity storage technologies can play in providing such advanced ancillary services.

As an initial step in addressing and improving California's resource planning process, IREC recommends that the CPUC initiate a new integrated resource planning program whereby its three major jurisdictional utilities jointly hire an expert consultant to prepare a statewide 10-year and 20-year resource plan for the areas of the state served by CPUC-jurisdictional utilities. For the portions of the state served by PacifiCorp and NV Energy, the consultant would coordinate with the applicable Integrated Resource Plans of those utilities. This integrated plan should be developed in a manner that prefers the procurement of the most cost-effective renewable resources and relies on the most environmentally friendly ancillary technologies for effectively integrating those resources into the grid. A number of the key strategies to be used in this integrated planning approach would be as follows.

(1) The identification of, and systematic full development -- in a CPUC-approved sequence -- of the highest quality Renewable Energy Zones (CREZs) that were identified in the Energy Commission sponsored process several years ago. Under the current LTPP, utilities pick the lowest price bids from generators more or less irrespective of where they are located. By itself, this current limitation on the process will unnecessarily increase both interconnection costs and transmission costs. By contrast, the systematic development of the highest quality CREZs will achieve economies in terms of transmission development and interconnection studies in the most environmentally

suitable locations. This framework will directly facilitate California's ability to move beyond the current 33% RPS and, ultimately to achieve something close to a zero-carbon grid, which will be an essential element in the ultimate achievement of the State's GHG-reduction goals.

(2) A systematic identification of the highly flexible advanced technologies, especially advanced electricity storage technologies, which can provide the system flexibility that will be needed to allow for the ever growing deployment of the environmentally superior energy resources that California seeks to rely on.

(3) A deliberate consideration of storage technologies in distribution planning to maintain and enhance system performance and reliability and to allow an increasing deployment of distributed generation ("DG") at the distribution level in line with the Governor's 12 GW DG goal. Storage technologies can reduce the variability of intermittent generators, provide voltage and frequency support at the distribution level, and help offset the need for transmission and distribution upgrades .

(4) A conscious incorporation of the cost of carbon into the equation. Given California's aggressive RPS and GHG goals, policymakers are tying one arm behind their back if they do not explicitly include a proper price adder for all generation resources that rely on fossil fuels in the planning process. The reliance on such an adder will be especially important as the CPUC seeks to identify the proper set of advanced ancillary services that will be needed to integrate the increasing deployment of renewables. Building new gas turbines is simply not the answer, and the proper implementation of a carbon price adder will realistically demonstrate that the State should rely on advanced electricity storage and other non-greenhouse gas intensive solutions to provide the needed system flexibility.

(5) A careful evaluation of role that DG and advanced energy storage can play in meeting the state's resource adequacy needs. The current method relies on an outdated process for evaluating deliverability and assigning upgrades that prefers distant traditional generating resources over generation located closer to the load that needs to be served. Load could be met with DG resources balanced with a wise deployment of storage rather than upgrading the transmission system to deliver energy from distant generators.

Some may object that this planning-based approach could have the effect of picking winners and losers, rather than allowing the market to decide. However, California has sadly experienced the harm that an overreliance on market outcomes can impose upon electricity customers. Electricity is a unique commodity, and the electric grid is the single most central element of our advanced industrial economy. In the case of California's electricity infrastructure, which must be developed in a manner that fully accommodates a number of aggressive – and admirable --

policy goals, market considerations must be balanced with the need for a thoughtful and rational planned deployment of those resources that can move California most efficiently, and cost-effectively, toward the State's policy goals.

A sophisticated and organized planning approach is what California needs to meet its policy goals. IREC accordingly urges the CPUC to consider adopting in this LTPP cycle a set of fundamental reforms to the current long-term resource procurement process, including the ideas noted above, which will implement a more conscious and holistic resource planning paradigm than has existed since the restructuring of California's electricity system in the mid-1990s. Indeed, if California does not enact such key reforms in this year's LTPP cycle, it is doubtful whether the state will be able to achieve the 33% RPS or the aggressive GHG reduction goals of AB 32. One thing is certain, however, if California does not adopt such reforms, renewable energy will be more expensive than it needs to be, and the California environment will be dirtier than it should be.

2. **Planning area and planning period**

Demand-side Assumptions

3. **Economic & Demographic assumptions**
4. **Load Forecast**
    a. **Is the most recent revised demand forecast appropriate to use in the absence of a recent adopted demand forecast?**
5. **Incremental Energy Efficiency**
6. **Non Event-Based Demand Response**.
7. **Incremental small photovolatics (demand-side)**

The Governor has called for California to meet the goal of having 12,000 MW of its capacity needs met by DG by 2020. Consistent with this policy, the LTPP should identify nearly all (at least 90% - the rest being advanced combined heat and power facilities) of the new capacity needed to meet this goal as being incremental small PV resources. The justification for such an aggressive approach to promoting small PV is the continuing fall in the price of PV modules, and the large amount of cost-effective PV resources that is already under development in California. The availability of cost-effective, small-scale PV was demonstrated in recent Renewable Auction Mechanism results, in which the vast majority of selected bids were for PV projects. With the energy from new PV projects expected to cost in the range of 7-to-8 cents/kWh, smaller scale (20 MW and smaller) PV projects within load pockets can be expected to be priced at or below the marginal cost of new gas-fired projects, especially when an appropriate price for carbon is imputed to new gas-fired resources.

There are significant on-going efforts to reduce balance-of-system costs of smaller PV installations, such that the cost for residential PV installations should become increasingly attractive as the years progress. However, as noted under 1. above, in considering the increasing

role for small-scale PV in meeting the State's energy needs, deliberate consideration must be given to the role that small-scale electricity storage (in particular, advanced batteries) can play in facilitating an increasing deployment of PV at the distribution level. Storage technologies can reduce the variability of intermittent generators, provide voltage and frequency support, and offset the need for transmission and distribution upgrades. A deliberate consideration of storage technologies in distribution planning can help maintain and enhance system performance and reliability as well as allow an increasing deployment of DG at the distribution level in line with the Governor's 12,000 MW DG goal.

8. **Incremental combined heat and power (demand-side)**
    a. **What capacity factor is appropriate to use?**
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.**
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.**
11. **Other comments on demand-side assumptions.**

The Straw Proposal's silence on energy storage technologies is inconsistent with California's energy policies and introduces investor uncertainty. Taken on its face, CAISO's May 23 testimony reveals a large need for flexible resources to provide ancillary services to integrate variable generators. The Straw Proposal's silence on storage implies that California will rely on gas resources to meet these needs. Better options exist for facilitating renewable integration. California is the country's leader in clean energy because it has not relied on easy answers that sacrifice the state's environmental values and energy policy goals. The Straw Proposal's oversight in including energy storage in the planning assumptions is inconsistent with the Energy Action Plan's clear preference for clean technologies to provide the ancillary services required for renewables integration.

IREC understands that no procurement target has been established for energy storage, and, therefore, the inclusion of an arbitrary assumption about the number of MWs of storage developed over the planning period may be inappropriate for assumptions meant to reflect *"a realistic view of expected policy-driven resource achievements*."[1] Nonetheless, the Straw Proposal's silence on storage is inconsistent with the Scoping Memo's repeated mention of storage. IREC accordingly recommends the inclusion of the paragraph at the end of this section in the final Proposal to assure the numerous stakeholders in this proceeding who support the important role that storage must play in California's energy future that it will not be overlooked in this LTPP cycle.

[1] Straw Proposal at viii (emphasis removed).

For the purposes of this LTPP, storage capacity should be treated as a demand-side reduction in load until such time as the Commission finalizes a qualifying capacity counting methodology for storage. At the May 23 Workshop, Commission Staff revealed some uncertainty as to how to treat storage resources. This uncertainty is not surprising given that other agencies, including this Commission,[2] have wrestled with the same issue. The advanced ancillary services provided by storage capacity can be categorized as either reductions in load (when charging) or sources of supply (when discharging). The Federal Energy Regulatory Commission has treated storage as a supply-side resource.[3] The Texas Public Utilities Commission recently concluded that load used to charge storage facilities is a component of wholesale supply rather than end-use load.[4]

We would note that certain large-scale solar resources (in particular, certain concentrated solar power (CSP) facilities) have the ability to store surplus solar energy in molten salt or as superheated steam. Such facilities could provide firm load-following energy during certain portions of the day and during most times of the year. We are also aware that in Japan there are large wind generation facilities currently in operation that have been co-located with large-scale sodium-sulfur batteries so as to provide firm, load-following wind energy. Given the many wind facilities that seek to be interconnected to the California grid, and given that wind profiles in California do not match up well with peak energy demand, wind plus storage facilities are a realistic option for optimizing the ability of wind to effectively meet California's energy needs. Thus, to the extent the LTPP identifies a given renewable resource, which will be coupled with storage so as to provide firm, load-following capacity over a period of hours during the day, the LTPP must treat that resource as a supply-side resource with a net qualifying capacity (NQC) commensurate with its ability to provide firm, load-following energy.

The lack, to date, of a qualifying capacity counting methodology for storage in California argues, as a default position, for its treatment in this proceeding as a demand-side reduction in load. The LTPP's reliance on NQC to value supply-side facilities ignores resources that currently cannot establish an NQC. Since there is currently no counting methodology to establish an NQC for storage resources, storage capacity will be ignored in this proceeding unless it is treated as a demand-side resource. Such treatment dictates that the following paragraph be inserted into the Demand Side Assumptions as opposed to the Supply-Side Assumptions.

[2] *See* Energy Storage Framework Staff Proposal in R. 10-12-007 (outlining barriers to energy storage development) (Dec. 14, 2011).

[3] *See Norton Energy Storage, LLC,* 95 FERC ¶ 61,746 (2001).

[4] *Texas Public Utilities Commission Order Adopting Amendments to §25.192 and §25.501* (Mar. 7, 2012) (available here: http://interchange.puc.state.tx.us/WebApp/Interchange/application/dbapps/filings/pgSearch_Results.asp?TXT_CNTR_NO=39917&TXT_ITEM_NO=41)

Energy Storage Resources

Staff recognizes that the development of a robust fleet of energy storage facilities is one of the Commission's resource policy goals. However, the lack of an anticipated procurement level for such resources makes it difficult to determine a realistic assumption of the number of MWs of storage that will be developed over the planning period. The absence of estimated energy storage procurement numbers from these Planning Standards should not be interpreted as a statement regarding the future make-up of California's resource fleet. Further, as a default, energy storage will be considered a demand side resource in this proceeding because the Commission has not yet developed a methodology to determine the NQC for storage facilities. However, to the extent the LTPP identifies a given renewable resource, which will be coupled with storage so as to provide firm load-following capacity over a period of hours during the day, that resource will be treated as a supply-side resource with an NQC commensurate with its ability to provide firm, load-following energy.

Supply-side Assumptions

12. **Should all resources be accounted for by their NQC or a forecast of NQC?**
13. **What year and data source should be used for variable resources' production profiles?**

We would note that certain large-scale solar resources (in particular, certain CSP facilities) have the ability to store surplus solar energy in molten salt or as superheated steam. Such facilities could provide firm load-following energy during certain portions of the day and during most times of the year. As mentioned above, we are also aware that in Japan there are large wind generation facilities currently in operation that have been co-located with large-scale sodium-sulfur batteries so as to provide firm, load-following wind energy. Given the many wind facilities that seek to be interconnected to the California grid, and given that wind profiles in California do not match up well with peak energy demand, wind plus storage facilities are a realistic option for optimizing the ability of wind to effectively meet California's energy needs. Thus, to the extent that the LTPP identifies a given renewable resource, which will be coupled with storage so as to provide firm load-following capacity over a period of hours during the day, the production profile for that resource needs to reflect the ability of that resource to provide such firm, load-following capacity for the period of hours over the course of a day when the resource can be relied on to produce a specified level of production.

14. **How should transmission capacity be considered?**
15. **Should all "known" and "planned" (non-RPS) resources be used in all supply-side scenarios?**
    a. **Are the definitions of "known" and "planned" clear?**
16. **Deliverability**

   a. **Are any changes to the definition of future resources considered deliverable warranted?**
   b. **How should information from other sources, such as distribution resource deliverability be incorporated?**
17. **What additional information is needed for resource locations?**
18. **Event-Based Demand Response**
19. **Incremental combined heat and power (supply-side)**
   a. **What capacity factor is appropriate to use?**
20. **Renewable Resources**
   a. **Establishing the 33% RPS infrastructure target via the LTPP, understanding that other requirements may also need a similar calculation within the RPS proceeding.**
   b. **Establishing the RPS supply (i.e. the "highly likely resources") in the RPS proceeding.**
   c. **Base Portfolio**
   d. **High DG Portfolio**
   e. **Sensitivities**
   f. **Long-term Target**
21. **Retirements**
   a. **How many retirement assumption combinations are needed? If more than one, please list the top two most important retirement assumptions to consider sensitivities on.**
22. **Are there any significant supply-side assumptions that have been missed? If so please identify, provide sources, and the MW and GWh (if appropriate) magnitude and likelihood.**
23. **What is a reasonable number of overall scenarios for supply-side assumptions? What is the purpose behind having that number of scenarios?**
24. **Other comments on supply-side assumptions.**

Allocation Methodologies

25. **Energy Efficiency**
26. **Demand Response**
27. **Other methodologies for assigning resources to busbars.**

Other

28. **What is a reasonable number of total scenarios + sensitivities to consider?**
   a. **Briefly describe the scenarios and sensitivities that are most important to consider. Please refer to the assumptions discussed above to describe and explain this recommendation.**
29. **Any other comments.**

IREC appreciates the opportunity to make these comments and thanks Commission Staff for their dogged efforts in this and previous LTPP proceedings.

Respectfully submitted,

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