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)

WOMEN'S ENERGY MATTERS OPENING COMMENTS ON ENERGY DIVISION'S STRAW PROPOSAL ON PLANNING ASSUMPTIONS

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WOMEN'S ENERGY MATTERS
OPENING COMMENTS ON ENERGY DIVISION'S
STRAW PROPOSAL ON PLANNING ASSUMPTIONS

Women's Energy Matters (WEM) appreciates this opportunity to comment on the Energy Division Straw Proposal on LTPP Planning Standards, presented May 10, 2012, pursuant to the schedule in the Scoping Ruling of May 17, 2012 and the template provided by Energy Division (ED). WEM participated in the May 17, 2012 Workshop on the Straw Proposal and repeats some of our comments here.

General

1. Guiding □ð Principl□ð

The Precautionary Principle should have precedence over the Market Gods.

The immediate retirement of nuclear power plants should be reflected in the Planning Assumptions. In view of the serious problems with the San Onofre reactors, the Commission should recognize that the "real-world reality" that this nuclear generating station has already been shut down. It might not (and certainly should not) reopen. Diablo Canyon nuclear plant should also be closed. We should be expeditiously planning replacement power for California reactors as well as Palo Verde in Arizona.

Nuclear power is a destabilizing influence on the grid, interferes with the development and deployment of preferred resources, and threatens to damage or destroy California's economy (as well as our homes, crops, animals, sea life and the viability of future generations).

The need to replace San Onofre in short order presents an opportunity to discover how quickly a Local Capacity Area can convert to preferred resources.

Scenarios should fully account for existing resources, before deciding we need "more." The Commission should track the location of all resources in order to better correlate them with demand, particularly in Local Capacity areas. Many existing resources (both supply and demand) are not being used— some have not even been counted as existing. Examples are nearly everything attached to distribution systems (energy efficiency, demand response, distributed generation, small renewables, CHP and potentially some storage). Clearly, many of these resources exist in Local Capacity Areas, and could be already greatly reducing the power needs there.

It's time for the loading order to become real. The system track in this proceeding needs to endorse the clarification adopted in the bundled plans decision this January: that utilities have an obligation to procure energy efficiency and other preferred resources prior to conventional generation, even after the targets set in other proceedings have been met. In addition, this proceeding needs to establish that the loading order applies to short, medium and long-term procurement plans and purchases.

Greater transparency is essential in all aspects of the distribution grid. Scenarios should be based on actual data to the extent possible, rather than relying on guesswork.

At least some of the Scenarios should assume that the new rules described below are in place and operating:

New rules, including better counting conventions, must be developed to enable demand side resources, distributed generation (DG), CHP, storage, and small renewables to be properly qualified as to whether and to what extent they can be substituted for supply side resources. Utilities and/or generators should be ordered to install and make use of telemetry options at appropriate points on their distribution grids.

Utilities should improve data processing so that all types of preferred resources can be better tracked and utilized in future. This year's scenarios should use estimates developed by ED, but these should be "trued up" with data that utilities should be ordered to provide by September at latest.

Scenarios should assume that future Evaluation, Measurement & Verification (EM&V) of Energy Efficiency will incorporate protocols ensuring grid-reliability of certain demand resources, such as the ISO New England *Manual for Measurement and Verification of Demand Reduction Value from Demand Resources,* which WEM has provided to the Commission in several proceedings including this one. Essential metrics include location data, and the resources must be evaluated on a timely basis, first to make them eligible, and then to determine that they are delivering as promised

New rules, and perhaps new venues, are needed to enable demand-side resources, DG, CHP and storage to compete against supply side resources and be targeted to meet specific needs, especially local needs. Utilities currently buy power in markets that are divided into different silos (gas power here, renewables here, demand side resources nowhere). This proceeding needs to cover all different types of solicitations, which are

not limited to RFOs. Few of them allow renewables to compete, and almost none of them include demand products — this leads procurement personnel to jump over preferred resources and go straight for the gas.

The practice of using Gas peakers as a "proxy" should be discontinued. It would be a much more useful exercise to use a mix of preferred resources (including storage) as a "proxy" for gas plants. The Commission must begin to do the hard work of figuring out what combinations of other resources can substitute for gas plants. This would be a different mix for different LCAs because of what existing and potential resources are available in the area, what transmission exists, and what resources those transmission lines are likely to import from the surrounding region.

Eliminating gas peaker "proxies" would help us to rethink scale, and develop more understanding and appreciation of the diversity of preferred resources, including small and very small-scale resources. Whereas once upon a time a new gas plant would be built to cover a relatively tiny need, now there are abundant, affordable alternatives that could and should be used instead. These should be utilized in scenarios, as discussed further below.

We should properly value the fact that almost all preferred resources can be built more quickly than gas power plants. Currently, the longer lead-time needed to build gas plants is putting them at the front of the queue, ahead of preferred resources, when in fact this should be considered a major drawback vis-à-vis alternatives.

Although natural gas prices are at an all-time low, we should recognize that this situation could flip very quickly. Fracking could be greatly curtailed because of the extreme damage to water supplies; if it is allowed to continue, at least one fracking expert warns that the resource is likely to be tapped out in 10 to 20 years.

We should begin to phase out gas power, while better utilizing what we already have. Gas plants built in the next ten years are likely to become stranded assets within 20 years due to rising costs of gas, decreasing costs of renewables, and controls on CO2 and methane emissions. It is likely to cost ratepayers more to fund construction of new gas power plants at higher costs (plus excessive profits if utilities are involved), instead of paying to procure power from existing generation.

It follows that it would likely be more cost-effective and less environmentally harmful to retrofit OTC plants would than to build new ones. In the last LTPP, parties complained about existing gas power plants that don't have contracts. The Commission should find out which ones these are (which would reveal where they are) and why these resources are being underutilized.

The concepts of demand side or "behind the meter" have become counterproductive.

The concepts of baseload and peaking power are no longer useful and should be retired, according to leading European energy thinkers. We should begin thinking in terms of flexible and inflexible energy sources.[1] For example, nuclear power conflicts with utilization of wind power.

The Commission should review the utilities procurement operations and methodology as part of the planning process. Inadequate or inappropriate operations and management can derail planning.

The notion of unlimited growth on a finite planet is a recipe for disaster. Humans have already reached and surpassed our limits; we must begin to organize our energy and economic systems in ways that are more compatible with the realities of the planet.

2. Planning ☐ð area ☐ð and ☐ð planning ☐ð period ☐ð

Demand-side Assumptions

3. Economic ☐ð & ☐ð Demographic ☐ð assumptions

In-migration to California is currently balanced with out-migration, and this trend is likely to continue. The birth rate is falling in nearly all population sectors. The 2010 census counted 37 million people, 2 million less than expected, and forecasts through 2040 show 8 million less people per decade than previously forecasted. Only 0.8% population growth is expected through 2030.

The next twenty years will see significant increase in the aged population, as baby boomers enter their last decades.

4. Load ☐ð Forecast

[1] http://reneweconomy.com.au/2012/the-end-of-baseload-it-may-come-sooner-than-you-think-29425

The Straw Proposal's Load growth assumptions are inflated (unless the final 2012 CEC is greatly changed). **Actual load growth is more likely to be nearly flat or possibly negative.**

In addition to less growth in the population, electricity use per capita will likely continue to decrease, as buildings and appliances standards continue to reduce demand and we move towards "Net Zero" homes and businesses. Load growth will be reduced because there will be more older people, who tend to use less energy as they "downsize." Many older people are taking action on lifelong desires for solar.

Customer solar installations will continue to increase rapidly as the costs come down and strategies proliferate that reduce or eliminate upfront costs to the customer. The utilities are still trying to control the increase of net metering (at the same time that they have invested in the solar leasing programs). There is no justification for the net metering cap; there will likely be increased pressure that will succeed in removing it within the next few years.

New EE goals give a false picture; savings are likely to *increase,* not decrease

The Commission is finally beginning to move away from a utility monopoly over energy efficiency. If continued, this will accelerate demand reductions. Experience from California's four-year experiment with fully independent (non-utility) energy efficiency, as well as other states with independent administration, show that greater savings per dollar are achieved when programs are no longer designed and managed by utilities.

Energy efficiency "potential" studies over the past ten years have all been based on the same flawed study,[2] commissioned at a time when utilities controlled all studies. Parties commented on dozens of common EE measures that were excluded from that study (and were not added back). Major recent developments have also been excluded or minimized, including most of the BBEES assumptions (big bold energy efficiency strategies) — e.g. greater attention on HVAC, and Net Zero homes and businesses — as well as improved valuation of "Avoided Costs." Almost all financing potential was ignored, despite a variety of new financing options that draw on funds from the private sector as well as ratepayers.

[2] "The Secret Surplus" by Hewlett Packard.

Innovative EE design and delivery strategies by highly motivated administrators and implementers including third parties, non-profits and local governments, are likely to greatly increase savings. This is contrary to the pessimistic assumptions in the EE Goals in D1205015, which relied on the flawed Potential studies to assume that IOU EE savings will shrink to around half the current level (not counting bogus utility credit for "Codes & Standards" savings, which double-counts the C&S work of the Energy Commission).

Most importantly, if the Commission adopts WEM's recommendations to allow EE to compete with supplies (which were recently proposed also by FERC), and measurement protocols are adopted which allow EE to be targeted to meet specific demand — the need for supply side resources will fall even faster.

Electric vehicles will likely result in little increase in demand. Self-charging hybrid vehicles will continue to be most common. Daytime EV charging can be accomplished more cost-effectively with power directly from solar PV, instead of power from the grid. Nighttime charging can utilize some of the excess resources that are already available — including power stored in unused and underused EVs.

Economic recovery likely to *decrease* rather than *increase* demand

Contrary to traditional assumptions, economic recovery is likely to reduce growth even more, as ratepayers with more disposable income are choosing to spend more of it on solar and efficiency measures.

a. Is ☐ð the ☐ð most ☐ð recent ☐ð revised ☐ð demand ☐ð forecast ☐ð appropriate absence ☐ð of ☐ð a ☐ð recent ☐ð adopted ☐ð demand ☐ð ☐ð forecast?

NO.

5. Incremental ☐ð Energy ☐ð Efficiency ☐ð

Note: Some impacts of energy efficiency are embedded into the Energy Commission's IEPR forecast. The savings here are above and beyond those levels.

How "embedded" EE resources are currently determined

Senior CEC/CPUC staff explained in a draft paper that went beyond the Incremental EE report that EE inputs are cobbled together from a variety of different sources.[3] WEM

[3] *Draft Staff Paper: Efficiency Programs: Incorporating Historical Activities Into Energy Commission Demand Forecasts,* by Don Schultz and Chris Kavalec, May 2011, CEC-200-2011-005-SD

recommends that ED make available a comprehensive list of inputs to the CED for all "demand-side" resources that have been embedded in the forecast.

From then on, WEM recommends that we account for all resources on the "supply-side." This would still allow for consideration of the unique characteristics of "demand-side" resources.

No longer useful to view "demand side" and "supply side" separately

We are in a volatile and unfamiliar energy landscape — the transition from conventional to preferred resources. As described further here, the distinction between "demand-side" and "supply-side" resources adds unnecessary complexity and interferes with utilization of preferred resources.[4]

The distinction supposedly refers to serving onsite load vs. the grid. A distinction is also made that one is on the "customer side of the meter." However, all load attached to the grid is included in demand, and some resources, for example net-metered solar PV, serve both onsite load and the grid. For purposes of procurement in the era of preferred resources, it makes more sense to first consider all resources as "supplies," i.e. serving demand. Other features of particular resources can also be tracked, for other purposes.

WEM recommends that CPUC make available a comprehensive list of inputs to the CED for all "demand-side" resources embedded in the forecast we use in this LTPP.

WEM recognizes that CEC determines the demand forecast, and we are not proposing to relitigate that in the LTPP.[5]

Major problems with "embedding" resources in the demand forecast is the lack of transparency. It is difficult to impossible to test different assumptions because of the non-transparency, and because if different assumptions were used, demand would have to be recalculated (according to a devilishly complex nontransparent formula, as we explain below).

Further confusion is caused by the fact that the embedded resource numbers continuously change. As soon as future programs are funded and new goals are set (on a

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[4] WEM discussed these problems in several filings in the last LTPP, in particular WEM Reply Brief Track 1, pp. 9-16.

[5] WEM has made these recommendations also to CEC. It makes no more sense to estimateand "embed" demand than to estimate and embed supply — especially as some of the same resources now appear on both sides!

sporadic and unpredictable schedule), resources become "embedded" that only yesterday were counted as available to reduce supplies.

All of this makes it harder for additional demand resources to be considered, which would conflict with the direction in D1201033 that ordered utilities to procure preferred resources, specifically including EE, even if targets set in other proceedings had been met.[6]

We should be going in the opposite direction, as *WEM recommends making grid-reliable EE and other "demand resources" eligible to bid to fill procurement needs, particularly in LCAs.*

Additional, grid-reliable EE could be considered separately from EE programs. If the Commission and utilities persist in using EM&V primarily to calculate utility profits rather than ensure the grid-reliability of EE, the Commission may need to establish a second category for EE that is qualified through specific measurement protocols to make it eligible to compete against supplies (as in ISO-New England territory). It should also provide a guarantee that it will deliver, or pay a penalty, similar to supply side resources. In the previous LTPP, WEM recommended calling these "Demand Reduction Products."

At least some, and preferably all scenarios should include substantial quantities of such resources. It would be reasonable to include at least 200 MW a year of grid-reliable, throughout IOU territories. The first "Forward Capacity Auction" by ISO New England (in 2009) awarded 1000 MW to EE bidders.

Non Event-Based Demand Response

See #5. At the workshop, an ED staff person mentioned the challenge of splitting DR programs into supply-side and demand side. This in another reason why this practice should be discontinued and all resources should be considered "supplies" for the purposes of procurement.

[6] There was disagreement at the workshop whether this direction applies to system resources or only bundled procurement; WEM recommends that it should apply to all procurement; otherwise the "loading order" is simply lip-service.

Note: Most Demand Response is accounted for on the supply-side via Event-Based programs.

6. **Incremental □ð small □ð photovoltaic □ð distributed □ð**

See #5. Solar suffers from barriers of demand vs. supply, distribution vs. transmission, the 5% cap on net-metering, and RPS v. non-RPS distinctions. Solar DG in the neighborhood, on rooftops or parking lots, is counted differently — and is less valued — than "solar DG" or solar PV in the middle of nowhere. Some of these resources are ignored by utilities and CAISO when it comes to meeting the Local Capacity Requirements. Some are ineligible to meet the Governor's goal of 12,000 MW.

These arbitrary barriers need to be removed, and the Scenarios should assume that they have been removed.

7. **Incremental □ð combined □ð heat □ð and □ð power □ð (demand**

Note: CHP is split between demand-side and supply-side. See supply-side values for incremental CHP assumed exporting to the grid.

   a. **What □ð capacity □ð factor □ð is □ð appropriate □ð to □ð use?**

8. **Traditionally, □ð local □ð area □ð and □ð other □ð assessments □ð utilizing □ð a □ð forecast □ð have □ð been □ð based □ð on □ð a □ð middle □ð forecast □ð for □ð ene should □ð be □ð changed, □ð please □ð explain □ð why.**

Altered assumptions about low or high demand; must alter the mid-point too

At the workshop, ED suggested that they might alter assumptions about "low" and "high" demand – increasing [or decreasing] both, while the "middle" remains the same. *Instead, the mid point should also move in whichever direction necessary to remain in the middle.* The midpoint has more weight and is most likely to be used in calculations.

That said, we disagree that local areas should utilize a higher peak. That would make it more likely for the Commission to approve new gas power plants. (This has been the result regardless of the cover story in the past that gas plants were only used as a "proxy" for any resource.)

As noted above, WEM believes that demand is already being seriously inflated. It should not be increased any more.

9. **Are □ð there □ð any □ð significant □ð assumptions □ð that □ð have □ð been □ð miss so □ð please □ð identify, □ð provide □ð sources, □ð and □ð the □ð MW □ð and □ð C likelihood. □ð □ð**

Need for timely reporting on all resources attached to distribution systems

WEM has recommended for a year that the Commission should order utilities to provide a complete report (by substation) on the location and procurement-related characteristics of existing resources, whether supply or demand — all the way down to individual EE installations. The Commission should impose ongoing reporting requirements for utilities to provide timely information for CAISO and parties about all resources attached to their distribution grids, which tends to include most resources that are currently considered "demand-side."

At the workshop, ED staff spoke about their data requests to utilities, attempting to determine the customer sector of substation loads. It appears that one reason for this was to be able to sort demand response into demand vs. supply categories. While WEM recommends treating all resources as supplies, we believe that it could be useful to know the percent of different customer categories at the substation busbar.[7] This would assist in determining resource "load shapes."

10. Other ☐ð comments ☐ð on ☐ð side ☐ð demand ☐ð assumptions ☐ð

See #5. CPUC assumptions for reducing GHG emissions (through the use of preferred resources) should begin to match up with CARB assumptions for emissions reductions. Currently CPUC falls short.

Supply-side Assumptions

11. Should ☐ð all ☐ð resources ☐ð be ☐ð accounted ☐ð for ☐ð by ☐ð their ☐ð NQC ☐ð or

Resources currently designated "demand-side" as well as some supply-side resources are not yet covered by NQC determinations. As we are in a transition phase, not yet fully utilizing all available preferred resources, NQC is less helpful because it would primarily serve to disqualify resources that may sooner or later be designated NQC once the rules are revised to remove unnecessary barriers and the necessary changes are made in the RA proceeding as well as the LTPP and possibly other resource proceedings.

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[7] It's puzzling why utilities found it so difficult to produce this data. It should be easy to compile by analysis of billing data, since different rates apply to each customer sector. The utilities unwillingness or inability to access and/or process data is evident in their dealings with Marin Energy Authority (a Community Choice Aggregator) as well as the San Bruno accident, energy efficiency and the smart grid. It should not be tolerated. If this continues to be a problem, the Commission should order utilities to hire outside services to design workable computer systems and provide billing and data processing services.

12. **What year and data sources should be used for production variable profiles?**
13. **How should transmission capacity be considered?**

Transmission and distribution capacity should be considered together. Currently there is an arbitrary distinction between them, which serves as a serious barrier to the use of preferred resources.[8] CAISO needs visibility of what's on the distribution grid.

14. **Should all "known" and "planned" resources be used in all side scenarios?**
    a. **Are the definitions of "known" and "planned" clear?**

Note: At the workshop, "planned" having a contract in place was clarified to mean "approved contract by the appropriate entity" (e.g. Muni approved or CPUC approved). Do you support this clarification?

15. **Deliverability**

Note: The previous assumption of deliverability assumed all resources were deliverable unless otherwise noted.

    a. **Are any changes to the definition of future resource deliverable warranted?**

Overly rigid definitions of "Deliverability" (or "dispatchability") are being used to disqualify resources based on semantics. The term is detrimental, for example, when considering the capability of more efficient air conditioning (or insulation, white roofs, or tree-planting) to shave off peak load. These resources need not be *delivered* anywhere to address peak load. Air conditioning literally *IS* peak load (30% of it), and efficiency measures that address air conditioning *erase* a portion of that peak load.

    b. **How should information from other sources, such as resource deliverability be incorporated?**

16. **What additional information is needed for resource locations?**
17. **Event-Based Demand Response**
18. **Incremental combined heat and (supply**

Note: CHP is split between demand-side and supply-side. See demand-side values for incremental CHP assumed behind the meter.

    a. **What capacity factor is appropriate to use?**

[8] It would help to have separate management of distribution in the sameway that CAISO provides separate management of transmission, although this might require legislation. In the meantime, it would help greatly for the Commission to open a new rulemaking to handle issues common to all utility distribution systems. Consideration of distribution grid issues in each utility's General Rate Case is highly unsatisfactory; this methodology lacks transparency and consistency and results in spectacular failures, such as the Smart Meter debacle.

19. **Renewable Resources**
    a. **Establishing the 33% RPS infrastructure target via the understanding that other requirements may also need a calculation within the RPS proceeding.**
    b. **Establishing the RPS supply (i.e., the resources") in the RPS proceeding**
    c. **Base Portfolio**
    d. **High DG Portfolio**
    e. **Sensitivities**
    f. **Long-term GHG Target**
20. **Retirements**
    a. **How many retirement assumption combinations are needed than one, please list the top two most important assumptions to consider sensitivities on.**

Immediate retirement of nuclear power should be assumed, rather than retirement in 2015 or at relicensing.

We should assume that most if not all Once-Through Cooling gas plants would be retrofitted (as peakers), rather than retired.

21. **Are there any supply side assumptions that have been missed so please identify, provide sources, and appropriate MW and C magnitude and likelihood.**

Recent storage legislation left it to CPUC to determine the amount of storage needed. When he was Attorney General, the Governor recommended 5% of peak demand to consist of storage. Various types of storage should be considered, including batteries, pumped storage, electric vehicles, and other technologies.

Storage is worth double its capacity, because it both sops up excess and fills in gaps. If properly valued, storage is more cost-effective than gas peaker plants.

Solar PV with built in storage is entering the market and likely to catch on quickly. Intermittency problems should all be solved by 2030.

California has great, cost-effective potential for additional hydropower /pumped storage. Most dams are currently used only for water storage and could be retrofitted to produce power as well. The Commission should work with local and state water agencies to catalog this potential.

22. **What is a reasonable number of supply side scenarios for assumptions? What is the purpose behind having that**

Scenarios should be run for different local capacity areas, each using a different mix of preferred resources depending on what is available in the area. Territory-wide scenarios could also be run for PG&E and SCE (SDG&E is all LCA).

23. Other ☐ð comments ☐ð on ☐ð [illegible] ☐ð assumptions ☐ð

Allocation Methodologies

If another allocation methodology is appropriate, parties are encouraged to provide it. It is also appropriate to suggest alternative methodologies to be used in a subsequent LTPP if they may require significant development.

24. Energy ☐ð Efficiency ☐ð

25. Demand ☐ð [illegible] ☐ð

26. Other ☐ð methodologies ☐ð for ☐ð assigning ☐ð resources ☐ð to ☐ð busbars.

See #10.

Other

27. What ☐ð is ☐ð a ☐ð reasonable ☐ð number ☐ð of ☐ð total ☐ð scenarios ☐ð + ☐ð se

a. Briefly ☐ð describe ☐ð the ☐ð scenarios ☐ð and ☐ð sensitivities ☐ð that ☐ð are to ☐ð consider. ☐ð ☐ð Please ☐ð refer ☐ð to ☐ð the ☐ð assumptions ☐ð discus describe ☐ð and ☐ð explain ☐ð this ☐ð recommendation. ☐ð ☐ð

Any other comments.

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Respectfully Submitted,

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