

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

Rulemaking No.: 12-03-014
Exhibit No.: _____
Witness: Eric Gimon
Judge: David M. Gamson

**TRACK 1
PREPARED DIRECT TESTIMONY OF
ERIC GIMON ON BEHALF OF
THE VOTE SOLAR INITIATIVE**

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

June 25, 2012

1 **Q. What is your name and who do you represent?**

2 **A.** My name is Eric Gimon and I represent the Vote Solar Initiative, a non-profit organization
3 based in San Francisco which works at the state, federal and local level to implement programs
4 and policies that allow strong solar markets to grow — and pave the way for a transition to a
5 renewable energy economy.

6 **Q. What is your educational and professional background?**

7 **A.** I am a Technical Consultant for the Vote Solar Initiative, advising them on technical and
8 policy issues. Before that I was an AAAS Fellow acting as a scientific advisor with the Office of
9 Electricity Delivery and Energy Reliability (OE) at the US Department of Energy (DOE). In that
10 capacity, I advised staff at OE as they developed and implemented a Recovery Act effort to
11 enhance interconnection-wide planning in WECC, the Eastern Interconnection and Texas
12 (ERCOT). I interacted with ISO's and monitored other stakeholder groups. Relevant to
13 California, I monitored and reported on multiple meetings of WECC-wide groups such as the
14 Transmission Expansion Planning Policy Committee (TEPPC), the Scenario Planning Steering
15 Group (SPSG) and the Committee on Regional Electric Power Cooperation (CREPC). I was an
16 active observer and referee on a DOE financed study to model very high penetrations of
17 renewables (40-90%) in the continental US by 2050, with results just recently published by the
18 National Renewable Energy Laboratory (NREL) in their Renewable Energy Futures report this
19 June. My other function at the DOE was to act as an advisor to the Under-Secretary for Energy
20 on R&D investments for the national grid. I hold a double B.S. with honors in Mathematics and
21 Physics along with an M.S. in Mathematics from Stanford University. I also hold a Ph.D. in
22 physics from the University of California at Santa Barbara and spent more than ten years as a
23 professional research physicist with 25 published papers and over 1,600 citations.

24 **Q. What is your position on Local Capacity Requirements (LCR)?**

25 **A.** In my testimony today I will argue for three things:

26 (1) We agree that the local load pockets in Big Creek/Ventura, Los Angeles Basin and San
27 Diego show LCR needs in a high load forecast should every single OTC plant retire
28 without any repowering. While at the same time, due to the fundamental uncertainties

1 and the timing of OTC plant compliance, we believe that the Commission should take a
2 measured, prudent and modular approach. Such an approach only authorizes minimum
3 new capacity required in incremental time steps between now and 2020, allowing the
4 Commission to ratchet procurement up or down, as conditions evolve.

5 (2) The Commission should view the LCR process as an opportunity to manifest leadership
6 in implementing the preferred loading order, which places energy efficiency (EE),
7 demand response (DR) and distributed generation (especially PV) ahead of new fossil
8 capacity in managing local requirements for the grid. This means, at the very least,
9 allowing for as much time as possible for uncommitted EE, DR and distributed PV
10 installations to show their potential to reduce LCR needs by 2020 in line with the mid
11 net-load scenario.

12 (3) The Commission should take a lead in bringing new and innovative capacity solutions to
13 the fore by ensuring that 2020 LCR needs related to OTC policy shall be addressed by the
14 broadest means possible. This should be accomplished, at least in part, by directing that
15 other LCR-related Commission proceedings incorporate LCR components as needed.
16

17 **Q. As you see it, what is the problem statement for Track 1 of this LTPP proceeding?**

18 **A.** A key priority for the Commission, and for the Vote Solar Initiative as a stakeholder, is to
19 maintain a reliable and resilient California grid. Among other things this entails preventing
20 blackouts in load pockets which look vulnerable to significant contingencies identified by the
21 CAISO and the NERC. The CAISO has provided testimony that under multiple 1-in-10 high
22 load scenarios for 2021 the retirement of all OTC plants by the statutory 2020 deadline implies
23 unmet local capacity needs for the San Diego, Los Angeles Basin and Big Creek Ventura areas.
24 The Commission would like to authorize procurement by the end of 2012 to meet some or all of
25 these needs. The question is how much to authorize, what to authorize and when.

26 **Q. How would you describe the CAISO proposal for addressing the problem above?**

27 **A.** The CAISO is proposing a minimum need for 3,137 MW of local resources, with some siting
28 location dependency. By local resources CAISO means: repowering old gas generation units,
29 switching them to closed-cycle/dry-cooling or building entirely new greenfield gas units.

1 Because of anticipated need for flexible generation in the CAISO's related renewable energy
2 integration models, the CAISO would like these new resources to have fast ramping capabilities
3 and a wide ranging operating capacity (i.e. low minimum burn rates).

4 **Q. What concerns do you have with the CAISO's proposed solution?**

5 A. I am very concerned with the CAISO's position that prudent planning for OTC retirement
6 can only be accomplished via new or repowered gas generation. For example, Robert Sparks'
7 supplemental testimony at page 4, lines 15-19, states that "[t]o the extent such uncommitted
8 resources ultimately develop, they can be helpful in reducing overall net-demand, but the ISO
9 does not believe it is prudent to rely on uncommitted resources for assessing future local system
10 needs and ensuring the reliability of the bulk power system." Mr. Sparks further states, at pages
11 6-7, lines 22-2, "[a]lthough the 1519 MW level of DG in the environmentally constrained
12 scenario may be an admirable goal, it is not a capacity amount that can be depended on for
13 ensuring the reliability of the bulk power system." If the Commission adopted these positions, I
14 believe this would amount to abdication of the Commission's leadership in implementing its own
15 preferred loading order position. Likewise, acceptance of the CAISO's positions regarding
16 "uncommitted" resources forgoes the potential 2021 benefits of energy efficiency, demand
17 response, and distributed generation programs already in the pipeline as of 2012 (the so-called
18 incremental amounts), as well as the potential 2021 benefits that might accrue from further
19 efforts that the Commission might undertake in this direction.

20

21 **Q. What other concerns do you have with the CAISO's analysis and recommendations?**

22 A. I have a variety of other concerns, listed below:

23 (1) Mark Rothleder's testimony makes clear that the CAISO sees additional capacity for
24 fulfilling LCR needs as a means to provide additional flexibility capacity to the bulk grid
25 system, and implicitly uses this to help justify a recommendation to build new capacity.
26 Yet, additional flexibility capacity is scoped as Track 2 in this proceeding and there has
27 not yet been a finding of need in this regard. At this time we cannot know the full cost of
28 these new assets, especially new CCGTs. The market price referent for unit electricity
29 price is based on a CCGT offering both capacity and energy services to repay capital

1 costs, yet all we need from new LCR units is capacity. Under these circumstances, rate
2 payers would end up paying down capital costs that go towards injecting extra energy
3 into the CA grid. That extra energy will most likely already be available from other
4 sources, resulting in stranded assets. Add on top of this the fact that land acquisition,
5 permitting and siting may likely be much more expensive or contentious for capacity in
6 dense urban areas like the western LA Basin.

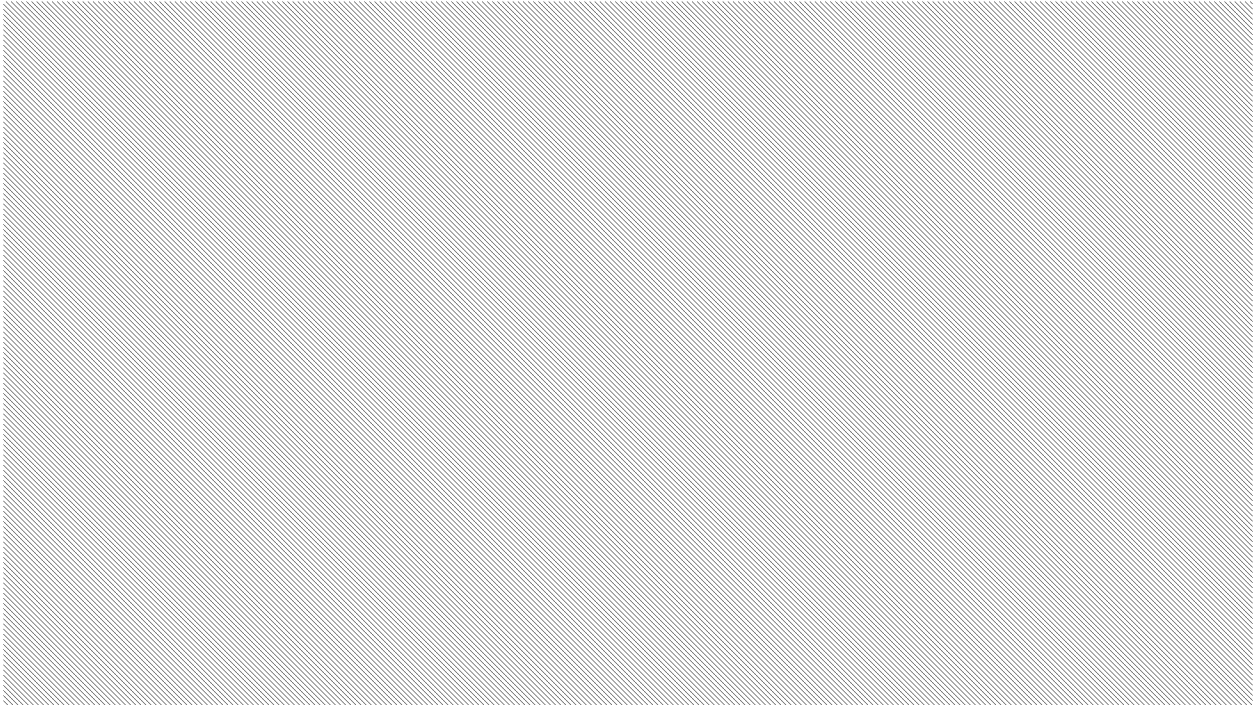
7 (2) As indicated by some of OTC units having been in service since the 1950's, clearly
8 building new LCR gas-fired capacity is a very long-term commitment. To ensure a
9 robust future for increased RPS and greenhouse gas reduction efforts, no additional
10 legacy fossil infrastructure should be added than is absolutely necessary.

11 (3) The process of determining LCR needs from OTC compliance is fraught with
12 uncertainties:

- 13 (i) When are OTC plants actually shutting down?
- 14 (ii) Which if any of the OTC plants will repower or switch to closed-cycle/dry
15 cooling?
- 16 (iii) If new plants want to operate at higher capacity factors than the units they replace,
17 will there be sufficient air pollution permits?
- 18 (iv) Taking into account continued supportive policy and that sharp cost reductions in
19 PV deployment have been accelerating, the use of a 2009 load forecast to model
20 PV deployment in 2021 appears outdated and inappropriate?
- 21 (v) Why should un-committed EE/DR programs be sharply discounted?
- 22 (vi) What will be the load growth between now and 2021?
- 23 (vii) How will tech costs change (storage, etc.)?
- 24 (viii) What will natural gas prices look like in 2020? How will this affect the
25 economics of the current and future gas fleet?

26 **Q. Do you think that the Commission authorizing 3,137 MW of local resources in the**
27 **immediate term is the most prudent approach for addressing 2021 LCR needs which will**
28 **arise from OTC retirements?**

1 A. No. In response to a data request from the Vote Solar Initiative about the construction time
2 for new capacity, the CAISO provided this chart for the timing on building new generation by
3 2020:



4
5 Looking at this chart, it seems clear that time is tight for building new capacity to address 2021
6 LCR needs, hence the urgency of coming to a Track 1 decision. Another way to look at this
7 chart, however, is that a couple years delay in actually building any of the new gas capacity
8 proposed by the CAISO for, for instance, the LA Basin, might leave that local area with a
9 significant capacity shortage for reliability. Hence it is not entirely prudent to depend on new
10 gas-fired capacity for addressing 2021 LCR needs; we are trying to draw in the sand with a very
11 long stick.

12 **Q. What then would be a more prudent and cost-effective way to address 2021 LCR needs**
13 **which will arise from OTC retirements?**

14 A. In attempting to answer this question, the Commission, CAISO and the State Water
15 Resources Control Board (“SWRCB”) are, seemingly, engaged in a carefully choreographed
16 dance involving interdependent decisions. Should a delay in constructing new or repowered gas-
17 fired plants happen, the most likely outcome is some kind of compliance extension from the
18 SWRCB. Quoting the March 2012 Statewide Advisory Committee on Cooling (SACCWIS)

1 report to the SWRCB: *“The Water Board should recognize that based on projected capacity*
2 *needs in the ISO balancing authority area it may be necessary to modify final compliance dates*
3 *for generating units.”* While the Commission should have every intention of making the 2020
4 compliance deadline (LADWP compliance dates already go beyond it), it makes sense to take
5 advantage of this type insurance much in the way the CAISO already has when it informed
6 SACCWIS that *“it may be necessary to return Huntington Beach units 3 and 4 to service for the*
7 *summer of 2012 in light of the current outage at SONGS.”*

8 **Q. How in practice would you propose to use this type of “Insurance” in order to obtain a**
9 **more prudent and cost-effective outcome?**

10 **A.** Taking the LA Basin, for example, I propose giving SCE authority to procure for some (e.g.
11 one 500MW CCGT unit and a few 100MW GT equivalents) of the LCR needs identified by the
12 CAISO, preferably in the most efficient locations possible (nearer to Huntington Beach and
13 Alamitos) while putting off upgrades like a repower for El Segundo unit 4 (similar to that of unit
14 3) that could be more quickly implemented but are less efficient at meeting LCR needs. The
15 Commission could then wait a few more years to see how load growth is evolving and look at
16 whether presently uncommitted and unspecified EE, DR, DG are on course to deliver as
17 promised, thereby avoiding the cost of new infrastructure. The Commission will also have
18 results from Track 2 of the 2012 LTTP on hand to help inform further procurement, should it
19 become necessary. In the meantime, the Commission would have time to put in place further
20 mitigation measures.

21 **Q. What do you mean by further mitigation measures?**

22 **A.** I believe an important outcome from Track 1 of this proceeding would be a finding from the
23 Commission that LCR needs for 2021 should be an important priority in other proceedings.
24 Subsequent to such a finding, directives in other proceedings could help address LCR needs. For
25 example, the Commission could modify existing or future programs to incentivize investment in
26 the most efficient locations for meetings LCR needs in proceedings that cover EE, DR, DG, and
27 storage, as well as renewable energy from household, commercial, industrial, government and
28 community rooftop PV. This approach to mitigation, in line with the preferred loading order, has
29 the additional advantage of modularity.

1 **Q. What do you mean by modularity? What advantage does it confer?**

2 **A.** By modularity, I am referring to the ability of small increments of resource to add up to a
3 significant whole, in a fashion that is continuous in time and at adjustable rates of deployment.

4 If any substantial amount of LCR needs is met by a package of measures including EE, DR, PV,
5 and smaller capacities of storage, the Commission can continuously monitor progress towards a
6 final capacity goal (and even set an over-committed goal) and opt to “step on or let off the
7 accelerator” at regular intervals as needed. By contrast, larger infrastructure projects have to be
8 individually commissioned; if there is any delay in permitting, siting, financing, contracting or
9 construction for any single project, a local area can easily find itself a hundred to a few hundred
10 megawatts short of its local capacity requirements.

11 **Q. Does this conclude your testimony?**

12 **A.** Yes, it does.