BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long Term Procurement Plans	R.10-05-006 (Filed May 6, 2010)

PREPARED REPLY TESTIMONY OF MICHAEL E. BOYD FOR CALIFORNIANS FOR RENEWABLE ENERGY, INC. (CARE)

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Direct Rebuttal Testimony of Michael E. Boyd

On behalf of CAlifornians for Renewable Energy, Inc. (CARE)

My name is Michael E. Boyd and I reside and maintain an office for CAlifornians for Renewable Energy, Inc. (CARE) at 5439 Soquel Drive, Soquel, California.

I am the President of the Board of Directors of Californians for Renewable Energy, Inc. (CARE), I have a Bachelors in Science in Physics from UCSB in 1985 and I have worked for over 20 years as an engineer and scientist in the energy, medical device, microelectronics, telecommunication, semi-conductor, and hard drive industries. I am also an inventor. I recently filed a Provisional Patent with the USPTO on an apparatus that produces energy from gravity induction produced by a spinning disk. A summary of my Patent Pending US 61/465,823 is shown at the link provided herein.[1]

I have attached a copy of my resume [attach 1] and a proof of patent pending [attach 2] on the mass spin valve a device that produces energy from the presence or absence of matter on a spinning disk.

The purpose is to rebut the direct testimony of Pacific Gas and Electric Company (PG&E), Southern California Edison Company ("SCE"), San Diego Gas and Electric Company ("SDG&E"), and support the direct testimony of DRA, Pacific Environment, Women's Energy Matters ("WEM"), Communities for a Better Environment ("CBE") that the IOU Plans Are Not Adequately Addressing the Loading Order and GHG Emissions Reductions.

[1] http://www.calfree.com/DescriptionMassSpinValvepatentsummary+figures.pdf

I. INTRODUCTION

As a general matter I agree with DRA, Pacific Environment, Women's Energy Matters ("WEM"), Communities for a Better Environment ("CBE") that the IOU Plans Are Not Adequately Addressing the Loading Order and GHG Emissions Reductions; while I agree with DRA that The IOU Hedging Plans Require Modifications I question the lawfulness and adequacy of this Commission's authority in this field; which is currently held by the Commodities Futures Trading Commission.

II. IOU PLANS ARE NOT ADEQUATELY ADDRESSING THE LOADING ORDER

In the last two rounds of procurement the Commissions directives to procure preferred resources have not been followed. The utilities all chose to fill their net short positions with natural gas fired generation. In this round of procurement it is essential that the Commissions polices favoring energy efficiency and renewable generation be enforced.

I agree with DRA, PE, WEM, and CBE that energy efficiency coupled with distributed generation ("DG") and demand response programs are first on the loading order but last on the list for long term procurement funding mechanisms. PE's witness Bill Powers PE correctly points to an example of where the focusing of long term procurement funding mechanisms on energy efficiency can achieve cost savings that benefit both customers and their incumbent utility. "PG&E estimates that approximately 1.6 million of its nearly 4.5 million residential customers are equipped with central air conditioning. Mature utility air conditioning cycling programs in other jurisdictions have achieved market penetration of up to 25 percent. This penetration rate results in approximately 300 MW of load reduction from an air conditioning cycling program in PG&E

territory.[2] *Air conditioner cycling is an important tool for reducing peak demand*, and should be maximized by integrating this cycling capability into new air conditioners as a standard feature." [Powers par. 2 p. 17] WEM's testimony likewise states "Examples of energy efficiency that can dramatically reduce peak load are *more efficient air conditioning*; "recommissioning" of HVAC, which ensures that air conditioners are properly charged and maintained; "shell" measures such as insulation that tighten up the outer "shell" of a building; white roofs that reflect the sun's heat rather than absorbing it; and planting shade trees to shield the south and west sides of buildings against the summer sun. All of these measures serve to reduce load from air conditioning, which is forty percent of peak load in California." [WEM par 3 p. 16] Oddly this is the very information PG&E seeks to strike?

WEM also raises two additional issues that appear to be highly relevant. The "tariff that sets metering and operating standards for self-generation facilities interconnected to the utility distribution system, Rule 21, issues must be incorporated in the long-term procurement plans" [WEM par 7 p. 13] to be consistent that energy efficiency coupled with distributed generation ("DG") and demand response programs are first on the loading order. Addressing Rule 21 therefore is clearly important to making these measures first [not last] on the list for long term procurement funding mechanisms. Importantly I agree with WEM "[i]t is incumbent on the Commission to begin preparing for a shutdown of Diablo Canyon and San Onofre nuclear reactors in either case. Both reactors sit on and near multiple faults capable of major earthquakes; both sit on oceanfront real estate where tsunamis are a possibility. The earth's tectonic plates can heave at any moment, without warning." [WEM par 4 p. 8] While I agree it is unlikely, the LTPP most analyze the possibility that these nuclear facilities will no longer be

[2] PG&E, *2006 Long-Term Procurement Plan, Order Instituting Rulemaking to Integrate Procurement Policies and Consider Long-Term Procurement Plans - Volume 1*, Public Version Redacted, December 11, 2006. p. IV-16.

allowed to continue operating due to a change in the regulatory and insurance risk constraints facing the nuclear power industry.

I would like to point our however that CARE has an outstanding Motion to Dismiss[3] PG&E's Diablo Canyon Re-licensing Application 10-01-022.[4]

III. IOU Plans Are Not Adequately Addressing GHG Emissions Reductions

Assembly Bill (AB) 57, enacted in 2002 and codified at Public Utilities Code section 454.5 (as later amended), the Energy Action Plan II issued in 2005 (EAP II), and AB 32 , the Global Warming Solutions Act of 2006, are at the core of California's energy policy to transition to a more sustainable, clean energy future. AB 57 established California's Renewable Portfolio Standard (among other important provisions governing electric procurement by the IOUs). In 2005, section 454.5 was amended to prioritize energy efficiency and demand response, as well as renewable energy resources in long-term procurement planning.

Consistent with these requirements, the EAP II reinforced a "loading order" for the state's energy sector to follow in implementing energy procurement in accordance with California's environmental policies. AB 32 directed the California Air Resources Board (CARB) to develop a Scoping Plan for how the state will achieve the GHG reductions required to reach 1990 levels by 2020. The Scoping Plan calls upon the energy sector to contribute a significant portion of the State targeted GHG emissions reductions.

I agree with DRA that "The programs and initiatives that have been established to meet the state mandates and Commission directives for renewable and other preferred resource procurement are documented in each IOU's bundled procurement plan. However, it is not completely clear or apparent that once the state mandates are met, the IOUs are giving appropriate consideration to resources in the loading order to fill their net short positions. It is also not apparent that the

[3] http://docs.cpuc.ca.gov/EFILE/MOTION/133659.htm
[4] http://docs.cpuc.ca.gov/published/proceedings/A1001022.htm

IOUs are transparently demonstrating how each procurement decision complies with the State's GHG reduction goals and how each application for fossil generation comports with the loading order and GHG reduction goals." [DRA lines 9 to 17 p. 14]

As PG&E correctly states in its testimony "[i]n 2006, the California Legislature enacted legislation intended to reduce California greenhouse gas ("GHG") emissions commonly referred to as "Assembly Bill 32" or "AB 32." A significant portion of the targeted GHG emissions reductions will likely come from the energy sector of the California economy." [PG&E Exh. 2 p. 10]

PG&E's testimony is erroneous tht "Energy Policy, Planning & Analysis, The EPPA department strives to meet the EP organization objectives through electric and gas resource planning that integrates demand-side and supply-side resource alternatives, and transmission and generation alternatives. EPPA analyzes regional supply-demand balances, the composition of potential PG&E portfolios, and the value of incremental resources to PG&E customers and regional supply. EPPA performs these analyses using financial, economic, and engineering methodologies and tools. EPPA analyzes current and potential market structures and policy initiatives, such as the EAP Loading Order, *cap-and-trade for GHG emission reductions*, and considers how these developments impact PG&E's procurement."[PG&E Exh. 2 p. 12] Since on March 17, 2011 the San Francisco Superior Court issued its Decision[5] in Case No. CPF-09-509562; the Court's Decision is attached as a separate Attachment A. A San Francisco Superior Court judge ruled that the California Air Resources Board failed to properly evaluate alternatives to the so-called *cap-and-trade program*, which would allow industries to purchase pollution allowances rather than cut their own carbon emissions.

[5] http://cdn.law.ucla.edu/SiteCollectionDocuments/Environmental%20Law/Court%27s%20Final%20Order%203%2017%2011.pdf

> ARB attempts to avoid CEQA's mandates by referring to the process under which a decision is actually made as "adoption" rather than "approval." This is an empty distinction given that the implementation has commenced. ARB was unable to make an informed decision at the time it adopted Resolution 08-47 because it had not yet reviewed and responded to public comments. Accordingly, any efforts to approve the Scoping Plan and implement its proposed measures prior to completing the environmental review process were violations of both CEQA and ARB's own certified regulatory program.

The court said that measures such as a carbon tax or direct regulation of greenhouse gases were not given enough consideration and therefore,

> Continued rulemaking and implementation of cap and trade will render consideration of alternatives a nullity as a mature cap and trade program would be in place well advanced from the premature implementation which has already taken place. In order to ensure that ARB adequately considers alternatives to the Scoping Plan and exposes its analysis to public scrutiny prior to implementing the measures contained therein, the Court must enjoin any further rulemaking until ARB amends the FED in accordance with this decision.

The judge's decision criticized the air board for giving short shrift to a carbon fee or tax, devoting a "scant two paragraphs to this important alternative" to a market-based trading system in its December 2008 plan calling cap and trade and it said the board had failed to consider public comments on its broad greenhouse gas plan before its adoption.

It is my testimony therefore that because the California Environmental Quality Act ("CEQA") Environmental Impact Report ("EIR") carried out by the California Air Resources Board (CARB) on the state's Scoping Plan for implementation of California's greenhouse gas statute AB 32 adopted on the December 11, 2008 lacks any lawful basis to authorize the IOU's RPS Procurement Plans, and based on the fact that the Court has "enjoined" the state from "further rulemaking" in this regard

IV. The IOU Hedging Plans Require Modifications

I question the lawfulness and adequacy of this Commission's authority in this field; which is currently held by the Commodities Futures Trading Commission ("CFTC"). It is my testimony that the broad purposes and intent of the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank")[6]are served by applying the new regulatory paradigm to hedging transactions of the investor owned utilities ("IOUs").

Prior to the enactment of Dodd-Frank, energy commodity derivatives were broadly exempt from regulation by the Commission under the Commodity Exchange Act ("CEA").[7] For IOUs, the regulatory paradigm for hedging programs prior to Dodd-Frank consisted of the review and oversight of such programs by our state and federal prudential regulators, the CPUC and the FERC. There are many indications that the use of swaps to hedge or mitigate commercial risks by IOUs was related to the types of systemic risk that caused the financial crisis.

It is my testimony that a "bottomless pit" of unsecured debt opened up worldwide when the Congress allowed unregulated banks to be created in 2000 in the Enron loophole. The "Enron loophole" exempted most over-the-counter energy trades and trading on electronic energy commodity markets from government regulation.[8] The "loophole" is so-called as it was drafted by Enron Corporation lobbyists working with U.S. Senator Phil Gramm (R-TX) to create a deregulated market for their experimental "Enron On-line" initiative.[9] The "loophole" was enacted in sections § 2(h)(3) and (g) of the Commodity Exchange Act, 7 U.S.C. as a result of the Commodity Futures Modernization Act of 2000, signed by U.S. president Bill Clinton on December 21, 2000. It allowed for the creation, for U.S. exchanges, of a new kind of derivative security, the single-stock future, which had

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[6] 75 Fed. Reg. 80174 (Dec. 21, 2010).

[7] *See* CFTC's Policy Statement Concerning Swap Transactions, 54 Fed. Reg. 30694 (July 21, 1989); Exemption for Certain Contracts Involving Energy Products (58 Fed. Reg. 21286 (April 20, 1993); Exemption for Bilateral Transactions, 17 C.F.R. Part 35.

[8] Jickling, Mark (2008-07-07). "The Enron Loophole". Congressional Research Service. http://assets.opencrs.com/rpts/RS22912_20080707.pdf

[9] Mother Jones, http://www.motherjones.com/politics/2008/05/foreclosure-phil

been prohibited since 1982 under the Shad-Johnson Accord, a jurisdictional pact between John S. R. Shad, then chairman of the U.S. Securities and Exchange Commission, and Phil Johnson, then chairman of the Commodity Futures Trading Commission. On June 22, 2008, then U.S. Senator Barack Obama proposed the repeal of the "Enron loophole" as a means to curb speculation on skyrocketing oil prices.[10] In the first half of 2008 the notional amounts outstanding of over-the-counter (OTC) derivatives continued to expand. Notional amounts of all types of OTC contracts stood at $683.7 trillion at the end of June 2008.[11]

As indicated in both of the NOPR referenced above, the 111th United States Congress enacted Dodd-Frank explicitly to: (i) reduce systemic risk, (ii) increase transparency, and (iii) promote market integrity.[12] It is my testimony as described below, that the broad purposes of Congress in enacting Dodd-Frank, would be served by requiring IOUs and other utilities to comply with the new regulatory paradigm enacted as part of Dodd-Frank in addition to the current state and federal regulation and supervision by the CPUC and the FERC. Indeed, there are public interest considerations supporting the CFTC's exercise of its broad powers in favor of IOU customers and customers of similarly situated regulated public utilities.

Where swap transactions are required or approved (or both) by our prudential regulators, IOU should be subject to CFTC's oversight and should have to rely on the definitions of "swap," "swap dealer," and "major swap participant." Furthermore, IOUs shouldn't be permitted to be exempt from any reporting requirements under Dodd-Frank[13] by submitting copies of the reports that were prepared and submitted to the CPUC and the FERC.

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[10] "Obama vows crackdown on energy speculators: McCain fires back after Democrat tries to tie rival to 'Enron loophole" Associated Press 2008-06-22. http://www.msnbc.msn.com/id/25318274/

[11] See http://www.bis.org/publ/otc_hy0811.pdf?noframes=1 at page 5.

[12] 75 Fed Reg. 80174 and 75 Fed. Reg. 80747 ("The Dodd-Frank Act was enacted to reduce risk, increase transparency, and promote market integrity within the financial system . . .").

[13] *See* Dodd-Frank §§ 727 and 729 as well as the NOPRs published by the Commission at 75 Fed. Reg. 78892 (Dec. 17, 2010) and 75 Fed Reg. 76573 (Dec. 8, 2010).

V. General testimony on related LTPP RFO process

A. Project Location

CARE encourages the Commission to consider that any RFO submitted pursuant to Commission authorization should identify the load area where the generation is desired. The LTPP should coordinate with CAL-ISO and the CEC and determine where local resource adequacy is needed. The LTPP should consider the location of where resources are needed to back up intermittent renewables. PG&E's last RFO requested approval of 1,512 MW all located within the Bay Area Load Center. All of the projects claim to support intermittent renewables but there is not even close to 1,512 MW of renewable resources that are operating or proposed in the Bay Area Load Center. This results in over procurement in one load center and resultant idle capacity and line loss.

B. Project Selection

CARE recommends that the Commission not allow the utilities to select the projects from the LTRFO. This leads to distorted results and behavior which is not consistent with the Commissions directives and policies. For example in the proposed decision in A. 09-09-021 states:

> *We therefore, conclude that PG&E's criteria weighing was not balanced so as to reflect the priorities we established in D.07-12-052. In light of the conclusions above, we find that while PG&E properly solicited offers and generally acted in a manner consistent with our guidelines and expectations for the LTRFO process, at key junctions PG&E appears to have acted to give its interests disproportionate weight and exercise unilateral control over the selection process.*[14]

[14] A. 09-09-021 Proposed decision of ALJ Farrar Page 20

The utilities have too many opportunities and to many financial incentives to properly select the projects in the RFO. This is particularly true when utility owned generation is being proposed. The selection process needs to far more transparent. Having hidden evaluation criteria defeats the open and honest competition and decision making that is needed to protect the ratepayer's interest.

C. Operational Flexibility

In D. 07-12-052 the Commission recommended that the utilities acquire fast ramping flexible resources to support intermittent renewables. In this proceeding CARE recommends the Commission provide a solid definition of the operational characteristics that actually support intermittent renewables. Projects with 4 hour start times and projects with a limited number of starts per year provide questionable support for intermittent renewables. PG&E's 2008 All Source Long –Term Request for Offers requested:

> *Resources that are capable of being committed to production a high number of times per year and those capable of multiple starts and stops per day are preferred. For example, flexible resources should be capable of being "cycled" on and off at least 300 times per year.*
>
> *PG&E prefers resources that have a relatively short startup time to full operation. For example, PG&E prefers resources that have start times of 30 minutes or less, or, in the case of resources offering daily cycling, start times of 60 minutes or less. Resources with longer start up times to full load, such as 4 hours or more, are less valuable.*[15]

While the attributes that PG&E requests in its 2008 LTRFO would provide backup to intermittent renewables the offers PG&E selected did not meet these

[15] PG&E 2008 LTRFO Page 5
http://www.pge.com/includes/docs/word_xls/b2b/wholesaleelectricsuppliersolicitation/LTRFO040108.doc

criteria. For example the Marsh Landing Project only provides for 167 starts per year.[16] All of the projects had start limits which allowed the projects to start less than once a day. These types of operational limitations do not provided the flexibility needed for intermittent renewable resources which could ramp up and down several times a day. Some of the projects had start times up to 4 hours. The Commission needs to better define the operating characteristics of the projects to eliminate projects which do not meet the Commissions Policies and goals.

D. PPA v. PSA

The Commission has already recognized that there are substantial difficulties when comparing utility owned generation to merchant owned generation. These problems are exacerbated when the utilities themselves evaluate and select the projects. There is a large incentive for the utilities to select their own projects over superior projects proposed by merchant generators. Using vague or confidential protocols damages the process and discourages merchant generators from participating.

To level the playing field the Utility owned generation must not be allowed to come back to the Commission after it has submitted its bid and raise the price of the offer after the selection process has concluded. This allows an unfair comparison of bids and can result in the best offers not being selected.

E. Asset Concentration

The Commissions should discourage the location of multiple facilities in a small geographic area. In the last RFO PG&E's winning bids included 1,305 MW of generation out of a possible 1,512 MW within one mile of each other in Contra Costa. This occurred even though PG&E had just begun operation of the Gateway Project which is next to the Marsh Landing Project. This makes it difficult to site

[16] http://www.energy.ca.gov/sitingcases/marshlanding/documents/applicant/2009-09-15_Applicants_Amendment_to_the_Application_for_Certification_TN-53293.PDF page 3-11

and construct projects when the community is already overburdened by industrial pollution.