

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA



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Order Instituting Rulemaking regarding policies and protocols for demand response load impact estimates, cost-effectiveness methodologies, megawatt goals and alignment with California Independent System Operator Market Design Protocols.

R.07-01-041
(Filed January 25, 2007)

**COMMENTS
OF THE DIVISION OF RATEPAYER ADVOCATES ON THE JOINT
INVESTOR-OWNED UTILITY STUDY OF PERMANENT LOAD SHIFTING**

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I. INTRODUCTION

Pursuant to Ordering Paragraph No.32 of Decision 09-08-027, Southern California Edison Company distributed, on behalf of itself, San Diego Gas and Electric Company, and Pacific Gas and Electric Company, a report on Permanent Load Shifting (PLS) activities for the purpose of examining ways of expanding the availability of permanent load shifting. As provided in the February 11, 2011 Administrative Law Judge (ALJ) Hecht's ruling (Ruling), the Division of Ratepayer Advocates (DRA) hereby submits these opening comments on the study.

II. DISCUSSION

The PLS study provides a comprehensive view of PLS activities. The report includes a cost effectiveness framework to evaluate PLS proposals. Based on this cost effectiveness framework and a 'best case' operational profile, the study estimates a life-cycle avoided cost benefits of PLS technologies in the range of \$500/peak kW to

2500/peak kW.¹ Even with the best case assumptions, the study states that while certain classes of larger mature thermal storage systems are likely to pass the Total Resource Cost (TRC) test, many of the “emerging” battery and small thermal storage systems are less likely to pass the TRC.²

The PLS study also provides a method for determining the level of incentives that can be paid to PLS participants without other ratepayers providing a “cross-subsidy.” The study concludes that only certain mature PLS technologies can be incentivized to participate if there is no cross-subsidy. The study presents ranges of incentives that could be provided to PLS customers without any cross-subsidy. According to the study, the amount of incentives that can be paid to PLS customers without a cross subsidy is a function of how much benefit PLS customer already receives by being on the existing TOU tariff schedule.³ Alternatively, the PLS study also provides an estimate of cross-subsidy that would be needed to encourage PLS installations bases on certain emerging technologies. Finally, the PLS study notes that most stakeholders argued for (1) a minimum of 3 to 5 year payback for their investments in PLS and (2) a stable utility tariff structure for a successful PLS program.⁴ The PLS study provides ranges of additional incentives needed for such accelerated payback.⁵ The incentives for accelerated paybacks are not cheap. The study notes that the incentive levels required to provide a three year payback period, for example, could be as high as 1,800/kW for thermal storage PLS and as high as \$5,000/kW for battery storage PLS systems.⁶

DRA generally agrees with the PLS Program design recommendations⁷ included in the study. i.e., (1) divide PLS Program into mature large scale PLS and emerging PLS; (2) program design should address feasibility, quality control, post-construction performance testing and persistence of PLS operation; (3) provide consistent and long-

¹ Statewide Joint IOU Study of Permanent Load Shifting, dated Nov. 29, 2010, Appendix A, p.7.

² *Id.*, p.9.

³ *Id.*, p.119, Table 19.

⁴ *Id.*, p.10.

⁵ *Id.*, p.11, Figure 2.

⁶ *Id.*, p.11.

⁷ *Id.*, pp.13-17.

term bill savings through stable off-peak rates; (4) provide performance-based incentives; and (5) require simplicity and transparency of performance metrics. The report also describes possible standard offers based on energy shifted, a standard offer based on capacity shifted, or a hybrid standard offer based on both the capacity and energy shifted.⁸ Other design options include a PLS Tariff, RFP-based program, and Retail Rate design.

Although DRA believes the study is very useful in outlining the broad design objectives and possibilities for a PLS Program, DRA is concerned about using any specific level of incentives or incentive ranges included in the study for designing a ratepayer funded PLS program. This is primarily because (1) the incentive ranges in the study are based on the ‘best case’ 365-days-a-year operational profiles of PLS systems that are not likely to be replicated in actual practice, (2) the study acknowledges that there could be a mismatch between when PLS system impacts occur and how generation capacity and T&D capacity value are allocated to individual hours,⁹ and (3) the sensitivities in the study are calculated based on the long-term value of avoided cost of generation equal to residual cost of a new combustion turbine (CT)¹⁰, which are far in excess of the short-term generation avoided costs.

As the study notes, the short-term value of generation capacity is only about \$28/kW-Yr, and the long-term value of avoided cost of approximately \$100/kW-Yr assumed in the report may not be realized at least until 2015.¹¹ The study correctly notes that the current reserve margins compared to expected loads on the CAISO system are in the range of 30% to 40% as against the Commission’s required reserve margins of 15% to 17%.¹² In the near-term, California’s ratepayers are facing a very weak economy and high unemployment rates. The ratepayers are already required to pay above-market costs in a variety of resource acquisitions ranging from Demand Response contracts to various

⁸ *Id.*, pp.112-113.

⁹ *Id.*, p. 37.

¹⁰ *Id.*, p. 39.

¹¹ *Id.*, pp.34 and 38.

¹² *Id.*, p. 34.

renewable resource contracts (solar, wind etc.). Most of the revenue impacts of the renewable acquisitions have not yet been reflected in retail rates. Any additional cross-subsidy resulting from PLS programs could aggravate this situation even further. In an environment of surplus capacity, it would be unwise to provide large subsidies to PLS systems. Even worse would be if the cross-subsidy is based on the most optimistic yet unrealistic assumptions about the costs that would be avoided by installing PLS systems.

DRA therefore proposes that in the near term the Commission consider only those PLS systems that fall within the following much narrower guidelines.

1. PLS systems that can be deployed based on ratepayer neutral incentive levels
 - Based on realistic assumptions of operational profiles (not the “best case” forecast);
 - Based on the lower short-term avoided capacity value;
 - Systems that could work well with special TOU rates (including super off-peak rates) to minimize ratepayer incentives.
2. Initially, establish program caps and expenditure limits (megawatt and dollar limits) for PLS. This is necessary to encourage competition among providers and to minimize ratepayer exposure from over-payment if the underlying assumptions about the value of avoided costs from PLS systems are overstated.
3. If any ratepayer cross-subsidy is to be provided, ensure reimbursement is for the actual verified cost of enabling installment of the PLS system.
4. PLS systems must pass both the Total Resource Cost (TRC) test and the Program Administrator (PAC) test (the “dual-test” criteria). This is to ensure that ratepayer cross-subsidy is not excessive. In the TRC test incentives are not considered as a cost (but simply as a transfer payment) but in the PAC test they are.¹³
4. Standard Offers could be of variety of flavors (e.g., PLS Tariff, energy shifted, capacity shifted, hybrid, retail rate design etc) to accommodate customer needs and preferences as long as they fall within these guidelines. These standard offers are described in detail in the PLS study. Alternatively, IOUs can issue RFPs within these guidelines.

¹³ *Id.*, p. 32, Table 5.

5. In all cases, include strong Evaluation, Measurement and Verification (EM&V) to ensure performance.

DRA understands that because of the relatively low near-term generation avoided costs, PLS systems based on emerging technologies and/or investors looking for a shorter (3 to 5 year) payback period may not be able to participate initially. However, incentives could be increased over time to attract more participants using emerging technologies as California's economy gets better and generation avoided costs start reflecting the long-term value of capacity. Although PLS systems could play an important role in diversifying California' energy needs, now is not the time to provide large amounts of ratepayer subsidy to obtain additional capacity when California already has a capacity surplus.

DRA appreciates the opportunity to comment on the joint IOU study of PLS.

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March 7, 2010

CERTIFICATE OF SERVICE

I hereby certify that I have this day *served* a copy of **COMMENTS OF THE DIVISION OF RATEPAYER ADVOCATES ON THE JOINT INVESTOR-OWNED UTILITY STUDY OF PERMANENT LOAD SHIFTING** to the official service list in **R.07-01-041** by using the following service:

E-Mail Service: sending the entire document as an attachment to all known parties of record who provided electronic mail addresses.

U.S. Mail Service: mailing by first-class mail with postage prepaid to all known parties of record who did not provide electronic mail addresses.

Executed on **March 7, 2011** at San Francisco, California.

/s/ JAIME VADO

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