
Policy Testimony of Gayatri M. Schilberg on Issues in the Peak Time Rebate Program

Prepared testimony of
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A.07-01-047 (SDG&E 2008 Rate Design)**

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I. Introduction

This testimony is presented by Gayatri M. Schilberg, Senior Economist with JBS Energy, Inc. on behalf of Utility Consumers' Action Network (UCAN). Ms. Schilberg has testified on numerous occasions before this Commission. Her qualifications are found in Attachment 1. She has testified in many of the major electric utility rate cases over the last decade on various issues related to utility revenue requirements and aspects of distribution and customer service operations. She has followed issues regarding residential response to critical peak pricing tariffs in the Statewide Pricing Pilot, as well as testifying on that topic in PG&E's application for an Advanced Metering Infrastructure (AMI) (A. 05-06-028). She testified on SDG&E's Peak Time Rebate (PTR) program in SDG&E's AMI application (A.05-03-015) and is participating in the Load Impact workshops in the demand response rulemaking, R.07-01-041.

This testimony presents UCAN's policy position on elements of SDG&E's proposed PTR program for residential customers, found in Exhibit SDG&E-13 in this case. We build on the testimony already presented by the Division of Ratepayer Advocates (DRA) chapters 6 and 7.

II. Free Riders

UCAN is extremely concerned at the levels of incentive payments which will flow to free riders (customers who effectively do not drop load, also known as structural beneficiaries) on event days. As shown by DRA (Table 6-3) under SDG&E's proposal \$12 million per year would be paid in incentives to customers who do not drop load, and only \$5 million to those who actually save roughly 14% of their on peak kWh. It is highly inefficient and wasteful to be paying more than twice as much to free riders.

Should the Commission see some virtue in this PTR program UCAN recommends choosing a method for the customer reference level (CRL) that minimizes these payments to free riders.

Data presented by SDG&E in DRA 10 Q 6 demonstrates that there is a CRL method that in several respects is better than that proposed by SDG&E, and that is the “5-day adjusted per customer” method. Under this method the consumption of the 5 previous similar days is adjusted by the difference between the usage in the “semi-peak” hours on the event day and the usage in the “semi-peak” hours on the 5 previous similar days. (The “semi-peak” hours are defined as the hour before and 2 hours after the event). As shown in the Table below, the “5-day adj per customer” method has a lower absolute value of Average error, Median error, Rebate paid for no demand response, and larger Percent able to earn rebate than the “high 3 of 5” method proposed by SDG&E in each of the three years analyzed.

Table 1: Comparison of Two CRL Methods

| Statistic | Year | 5-day adj per customer | High 3 of 5 |
|---------------------------------|------|------------------------|-------------|
| Average Error | 2004 | 2.0% | 2.4% |
| | 2005 | 3.4% | 5.8% |
| | 2006 | 0.7% | -1.1% |
| Median Error | 2004 | 0.1% | -1.5% |
| | 2005 | 0.3% | -0.9% |
| | 2006 | 0.1% | -1.0% |
| Total Rebate no DR (\$ million) | 2004 | -\$8.4 | -\$10.0 |
| | 2005 | -\$7.5 | -\$10.7 |
| | 2006 | -\$7.8 | -\$10.9 |
| Percent Able to Earn Rebate | 2004 | 81.60% | 80.78% |
| | 2005 | 77.81% | 76.55% |
| | 2006 | 84.19% | 81.79% |

Source: DRA 10 Q 6

Just in free rider rebates alone the “5-day adjusted per customer” method saves \$1.5-\$2 million per year over SDG&E’s proposed “High 3 of 5” method. UCAN considers this to be an important savings and worth pursuing this method. Indeed a 5-day reference level adjusted by event was the preferred type of method discussed by SDG&E in its AMI application. (See Exhibit 45, Rebuttal of Mark Gaines, p. MFG 18-19). In it’s AMI presentation SDG&E claimed \$5.2 million would be paid in incentives to these free riders or structural beneficiaries (*ibid.*, p. MFG 19). Now under its proposal the estimate is twice that.

Despite the better performance of the “5-day adjusted per customer” method SDG&E chose the “high 3 of 5” method after considering the ability of SDG&E’s billing system to calculate the CRL, and because SDG&E fears the “5-day adj per customer” CRL could be gamed by customers (DRA DR 10 Q 6). With regard to the billing system, in the AMI case SDG&E assured UCAN that the complex customer reference (baseline) methodology proposed could be accommodated by the billing system at no extra charge. (See Response to UCAN 8 Q 18 in the AMI case, available here in Attachment 2). Thus we are surprised at this point that this argument is now made to favor the “high 3 of 5” method over the more accurate “5-day adjustment per customer” method.

With regard to potential customer gaming, UCAN suspects this issue is not such a large problem. First, in order to significantly increase a household load prior to the event, and increase its reference level, the household would probably pre-cool the house or do laundry early, as well as wait until after the event to run the AC more or use other appliances. This is precisely the type of load shifting behavior that the PTR program seeks to reward. Admittedly the reward may be overly generous due to the reference level methodology, but at least the incentives are pointed in the right direction, which would encourage customers to continue this shifting behavior. Second, the gaming issue mainly arose in the context of the Anaheim pilot project, where the researcher studying the project claimed his findings of higher consumption on non-event days were due to customer gaming prior to the event.¹ SDG&E’s own witness, Dr. Steve George, provided a more reasonable explanation for the finding, which was due to a pre-treatment bias in the sample (UCAN 8 Q 8 in A.05-03-015). Thus we expect that the issue of customer gaming in the residential class is more in the realm of academic theory than an actual problem.

On the other hand the 5 day adjustment per customer method has an additional benefit. The worry goes away that customers who go on vacation and reduce usage will receive incentives (an obvious type of free rider), because the 5-day reference level would be adjusted downward to vacation-level consumption.

¹ Frank Wolak, “Residential Customer Response to Real-Time Pricing: The Anaheim Critical-Peak Pricing Experiment,” May 2006,

III. Other Issues

UCAN agrees with DRA that the “Program Administrator” cost effectiveness test is essential for program evaluation (DRA p. 6-8), along with other tests. At some point it might be more advisable to construct a power plant than to pay more for load reduction, and this test would be an important component of that decision.

UCAN supports in the testimony of Mr. William B. Marcus an avoided capacity cost of \$56/kW-year, somewhat higher than the \$52/kW-year identified in D.07-04-043. Based on our findings, then the justifiable PTR rebates in a two-level PTR program such as DRA recommends would be proportionately higher than the rates shown in DRA’s Table 6-6 in the column D.07-04-043, or \$0.39 /kWh for Level 1 and \$0.78/kWh for Level 2 .

We agree with the Commission in D.07-04-043 and DRA that a participation assumption of 70% is completely unrealistic for SDG&E’s PTR program. UCAN still supports a participation level which is significantly lower than the 50% adopted in D.07-04-043. The measurement and evaluation activities proposed by DRA (Chapter 7) will be essential in clarifying the appropriate customer awareness and participation levels going forward.

IV. Conclusion

UCAN strongly agrees with DRA that, if SDG&E’s PTR program is approved, it should only be on a trial basis during the AMI deployment (2008-2010). This program should continue to be analyzed on an annual basis, and other program designs should be presented in the next GRC (DRA p. 6-1 to 6-2). We also agree with DRA’s conclusions regarding measurement and evaluation (DRA p. 7-1 to 7-3).

Furthermore the alternate reference level methodology, “5 day adjusted per customer” has significant benefits in terms of higher accuracy and lower payments to free riders and it should be pursued.

Attachment 1 : Qualifications

Gayatri M. Schilberg, Senior Economist

Gayatri Schilberg is a Senior Economist and expert witness with over twenty-seven years of experience in economic and statistical research and business applications. She has concentrated on utility issues for the last twenty years.

Ms. Schilberg has three degrees in economics: a B.A. from Oberlin College (1968), an M.A. from the University of Wisconsin (1969), and an M.Phil. from Oxford University (1973).

In July, 1987, Ms. Schilberg joined JBS Energy as a Senior Economist, where she is an expert on utility customer service, utility tree trimming and distribution maintenance, environmental topics, cost of service, and quantification and modeling of energy issues.

Ms. Schilberg has testified at the California Public Utilities Commission (CPUC) on customer service and reliability issues in Performance-Based Ratemaking regarding several electric and gas utilities, in several general rate cases, in the SoCal Gas-SDG&E merger, and under the New Regulatory Framework for telecommunications companies. She also testified at the CPUC on emergency response and emergency standards; tree trimming, deferred pole maintenance and other distribution expenses; costs of PG&E's customer information system; medical baseline; meter reading practices; and erroneous late payment charges.

She presented testimony before the Public Utilities Commission of Nevada on a service quality mechanism after two utilities merged. Ms. Schilberg testified before the Alberta Energy and Utilities Board on service quality as well as customer harm from sale of the retail utility functions. She testified at the Nevada County (California) Municipal Court on PG&E's spending on tree trimming. She has also testified at the California Energy Commission (CEC), the Nevada Public Service Commission (PSC) and the Ontario Energy Board on valuation of environmental externalities; at the CEC on demand forecasts and in a siting case. She has also filed testimony at the Maryland PSC on service quality issues. Ms. Schilberg conducted a nationwide survey on utility customer service standards, and has served on a CPUC task force to create inspection, maintenance, and reliability standards for electric utilities. She has served as a member of a committee on transmission planning standards for the California Independent System Operator (ISO).

Relating to environmental issues, Ms. Schilberg estimated the energy impacts of the South Coast Air Quality Management District's 1994 Air Quality Management Plan and its Rule 1135 on powerplant emissions. She prepared a major report on valuation of environmental externalities for Environment Canada, and supervised the preparation of major reports for the Photovoltaic Education Program of the National Association of State Utility Consumer Advocates. In the area of quantitative analysis, she is participating in workshops quantifying the demand response of customers to price signals, reviewed CEC demand forecasts in three Electricity Reports, and also modeled generation systems of three Hawaiian utilities.

Earlier Ms. Schilberg worked for the United Nations Conference on Trade and Development in Geneva, Switzerland.

Attachment 2 UCAN 8 Question 18 in A.05-03-015 AMI:

Q. SDG&E states “it is not anticipated that any significant CIS changes would be required to support AMI based tariffs or functionality” (p. DW-9 lines 18-19). Does SDG&E already have the capability to calculate and store the residential PTR baseline, based on the prior 5 non-event weekdays (p. MG-13), for each CPP day or more frequently as needed?

a) If so:

- i) Identify the information system in Figure DW-1 that would handle this task.**
- ii) Identify any extra cost to handle the additional data and processing that calculating the PTR baseline would require.**
- iii) Identify where in the application this cost is requested.**

b) If not:

- iv) What software upgrades would be needed to calculate the PTR baseline?**
- v) Identify any extra cost to provide this calculation for each CPP day.**
- vi) Identify where in the application this cost is requested.**

SDG&E Response 18:

SDG&E’s statement, “it is not anticipated that any significant CIS changes would be required to support AMI based tariffs or functionality” (p. DW-9 lines 18-19), was meant to clearly state that SDG&E has looked at the AMI requirements thoroughly and we are comfortable that SDG&E will not require **significant** CIS upgrades. Several parties inside and outside of SDG&E had asked why SDG&E did not require a significant upgrade to our CIS as was the case for another California IOU.

b)

- i) The calculation of the PTR baseline will occur in the Meter Data Mgmt System (MDMS) which will be configured to SDG&E specifications at the time of implementation of our AMI systems.**
- ii) No additional costs (not already identified in our business case) will be required to make the calculation.**
- iii) The costs can be found in table DW 10-1 and specifically in the rows labeled “Total Enhance Legacy Systems and Integrate with MDMS Capital Costs” and “Total Implement New MDMS System” for years 2007 and 2008. The MDMS will create the baseline and determine whether the customer qualifies for the rebate. The CIS will receive the total units from the MDMS and make the calculation and display it on the bill.**