



Portfolio Options Committee

Time of Use Rate Option

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Requirements

➤ **Electric industry restructuring law**

- ORS 757.603(2)(b) requires PGE and Pacific Power to offer residential and small nonresidential customers a “market-based rate.”
- The Commission determined that a time of use rate would serve as the market-based option. (2001 order)

➤ **Commission rules** (OAR 860-038-0220)

- The minimum term for customers enrolling in a market-based option is 12 months.
- The Portfolio Options Committee makes recommendations to the Commission by July 1st for the following year.

Rate Design

● Pacific Power Schedule 210

- Two time periods – On-peak and off-peak
 - Credit to standard energy rates for off-peak usage (for *residential* customers, 1.125¢ per kWh credit year-round)
 - Additional charge added to standard energy rates for on-peak usage (for *residential* customers, 3.316¢ per kWh in winter, 6.124¢ per kWh in summer)
 - Different rates for small business and irrigation customers
 - Fixed monthly Basic Charge, T&D charges unaffected
- Winter season (November-March): On-peak hours are 6 a.m. to 10 a.m. and 5 p.m. to 8 p.m., Monday through Friday
- Summer season (April-October): On-peak hours are 4 p.m. to 8 p.m., Monday through Friday
- All other hours and certain holidays are off-peak
- Monthly meter charge of \$1.50
- 1,525 customers enrolled as of March 2007

Rate Design (cont.)

- **PGE Schedules 7 (residential) and 32 (small nonresidential)**
 - Three time periods (on-, mid- and off-peak)
 - Residential energy rates:
 - On-peak hours - 9.489¢ per kWh
 - Mid-peak hours - 5.509¢ per kWh
 - Off-peak hours - 3.163¢ per kWh
 - Fixed monthly Basic Charge, T&D charges unaffected
 - Different rates for small nonresidential customers
 - Off-peak hours - 10 p.m. to 6 a.m. everyday, Sundays, holidays
 - On-peak hours
 - Winter season (November-April) - 6 a.m. to 10 a.m. and 5 p.m. to 8 p.m. Monday through Friday
 - Summer season (May-October) - 3 p.m. to 8 p.m. Mon.-Fri.
 - Rest of the hours are mid-peak
 - Monthly meter charge of \$1.00 (single phase)
 - 1,855 customers enrolled as of March 2007

Evaluation

➤ PGE's 2004 evaluation

- Benefit/cost ratio of 0.58* for the period 2002 through 2015, including development (sunk) costs and assuming avoided T&D costs based on Northwest Power and Conservation Council estimates
- Benefit/cost ratio of 0.74 on a going-forward basis from 2004 through 2018 (*excluding* sunk costs)
- Benefit/cost ratio of 0.58 on a going-forward basis (*excluding* sunk costs) if avoided T&D costs are *not included*
- Analysis allocated all installed meter costs to the time of use program through 2005, and most of the meter costs to the program through 2009. Beginning 2010, the analysis assumed completion of a network meter reading system, and therefore no meter costs were attributable to the time of use program from that point forward..

*A benefit-cost ratio of 1 or greater indicates a program is cost-effective.

Evaluation (cont.)

➤ PacifiCorp's 2005 evaluation

- Benefit/cost ratio of 0.23
- Estimated \$889,000 in subsidies from 2002 through 2004, after accounting for benefits. Assuming no new participants, attrition and continuing load research, the company estimated \$870,000 (2004\$) in subsidies would be required from 2002 to 2010.
- Estimated about 10,000 enrollments would be needed for the program to be cost-effective under current metering and data collection strategies

➤ Commission staff's perspective

- Programs are not cost-effective with one-off installation of special meters. Mass meter installation and automated data collection are needed to make time-varying pricing for small customers cost-effective.
- Cost-effectiveness of programs is highly dependent on participation rates

Evaluation (cont.)

➤ Peak load reductions for PGE

- Time of use residential loads on *average* were 0.27 kW (15%) lower than control group loads during the winter morning peak, and 0.13 kW (7%) lower during the evening peak.
- The *highest average* reduction in *hourly* loads was 0.32 kW (17% of average household load).
- The highest reduction during the utility's critical system peak — the 87 hours of the year when loads are highest — was twice that level at 0.64 kW (27% of average household load).
- Load impacts during the summer peak period were much smaller, averaging 0.03 kW, or about 2%.
- Residential participants saved \$28 per year, about 5%, compared to what they would have paid under standard rates.
- Participating households also used an estimated 292 kWh less energy per year on average, reflecting conservation impacts.

Evaluation (cont.)

➤ Peak load reductions for Pacific Power

- Time of use loads on average were 0.22 kW (9%) lower for residential participants and 0.37 kW (17%) lower for commercial participants than those of the control group during winter mornings.
- Load impacts during the summer peak period averaged 0.1 kW for residential customers (a relatively low percentage of households have air conditioning) and 0.23 kW for commercial customers.
- Average annual bill savings was about \$5 per year for households and \$10 for commercial customers (net of meter charges).
- Participating households also saved an estimated 336 kWh per year. Small businesses saved an estimated 516 kWh per year.
- Small sample sizes mean large margin for error. Results are indicative, not conclusive.

Program Costs

- Meters and installation
- Load research
- Communications and marketing
- Program administration
 - Program manager
 - Marketing staff

Recommendations for 2007

➤ **Adopted unanimously:**

- The Portfolio Options Committee recommends that the Commission require PGE and PacifiCorp to continue to offer a time of use rate option for residential and small nonresidential customers in 2007 to comply with ORS 757.603(2)(b). The utilities will minimize costs of the time of use program, including providing minimal information in general education materials on portfolio options, targeting any time of use education efforts to high-usage customers and keeping those efforts to a minimum.

➤ **Adopted with utilities voting against:**

- The Portfolio Options Committee recommends that the Commission require the utilities to continue the customer guarantee for the first 12 months of the customer's participation in the time of use rate option.

Context for 2008 Recommendations

➤ Federal activities

- Energy Policy Act of 2005 requires state Commissions to determine whether all customers should have a “smart meter” to record energy usage by time of day and a time-varying rate option (or rate credit for load reductions during peak hours)
- February 2006 USDOE report to Congress on demand response cites benefits (to participants, market-wide, better reliability, reduced market power) and recommends time-varying pricing plans that let customers take control of energy costs

➤ State activities

- Legislative intent (SB 1149) to give small customers a rate option tied to the market.
- Increasing demand response capability is among the Commission’s activities to meet energy needs at the lowest possible cost and risk. Oregon Commission will review EAct’s smart metering standards in Docket UM 1188.

Context (cont.)

➤ PGE's advanced metering filing

- PGE filed a tariff requesting cost recovery for advanced metering infrastructure (AMI) during the deployment period (Docket UE 189).
- AMI makes it inexpensive and easy to offer time-varying rates to all customers.
- Additional enabling technology (e.g., programmable communicating thermostats and appliance controls that receive price signals) are needed to increase participation and load reductions.
- PGE plans to file a Critical Peak Pricing (CPP) experimental tariff for residential customers in October 2007. The proposed design would discount basic rates during months (or days) CPP events are called (initially, day-ahead notice). The CPP price would be far higher than the basic rate.



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