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Power Your Drive: An Hourly Dynamic Rate Design

CEC Load Management Rulemaking Workshop
January 14, 2020

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The Utility System

**Generation/Commodity:**
- To serve customer energy needs (energy)
- To serve System Reliability needs (generation capacity)

**Transmission:**
- Safety, repair, relocation, communication, grid visibility and control
- Economic Efficiency
- Public Policy
- Reliability Requirements to meet System Peak
- Interconnect new generators

**Distribution Grid:**
- Safety, repair, relocation, communication, grid visibility and control
- Maintain the delivery of safe and reliable service at the local level

**Customer Set-up:**
- To ensure customers are ready to receive energy services
Comparison of System and Circuit Peaks

The timing of circuit peaks may not align with system peak.

4pm-9pm System On-peak period

Histogram showing percent of circuits ending at different clock times.
Rate Design Tools

Energy Rates
- More Conventional
- TOU
- RTP - Hourly
- Critical Peak Pricing

Demand Charges
- On-peak Demand Charges
- Maximum or Non-Coincident Demand Charges
- Daily Demand Charges

Other Alternatives
- Fixed Charge varies by Demand or Customer size

Fixed Charge

Price Signal and Cost Recovery

Cost Recovery

Price Signal

Fixed Charge

Demand Charges

Other Alternatives

Energy Rates

More Advanced
- Flat
- Tiered
- TOU/Hourly
Design of an Hourly Dynamic Rate

Advanced technologies partnered with more complex and granular rate design can create more opportunities for low cost hours.

CPP is an energy rate option that provides a "capacity" price signal.

Circuit-level CPP provides a locational price signal while preserving customer equity by still charging all customers the same price.

Flat base energy rate for the recovery of all other utility costs.

CPP Adder applied to the top 200 Circuit Load Hours for the recovery of distribution circuit peak capacity costs.

CAISO day-Ahead Hourly energy price to better approach real-time cost of electricity.

CPP Hourly Adders applied to the top 150 System Load Hours for the recovery of generation capacity costs to serve system peak load.