Retail Pricing Task Force

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On behalf of the task force

ESIG
ENERGY SYSTEMS INTEGRATION GROUP

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Aligning Retail Pricing with Grid Needs

Background

- 100 million customers in the US have smart meters, but until the recent default TOU rates in CA, only about 5% of customers were on time-varying rates
- We may need more than TOU rates to extract dynamic flexibility from demand

The time is now

- Increasing renewables will make resource adequacy and system balancing more challenging.
- There are enabling technologies for control & communications available at relatively low cost.
- New electrification loads will increase demand and make it more variable, which will stress both the distribution and bulk power system. These resources can also support grid needs.

Aligning Retail Pricing with Grid Needs Task Force 2022

- Participants from bulk power system, distribution system, wholesale markets, rate design, regulatory, state policymakers, DER providers and advocates, large consumer, and customer advocate perspectives met all year
- Consider a framework for designing retail rates and programs to meet grid needs, along with alternative proposals by task force members.

Seven whitepapers are being finalized

- *Why is the smart grid so dumb?* Travis Kavulla of NRG on regulatory changes so that load-serving entities are incentivized to reduce costs of supply and so customers can be exposed to prices that reflect cost causation
- *Bid-in Demand.* Dick O'Neill of DOE on the existing market construct for customers to bid costs associated with their willingness to consume, pay for what they use, and be exposed to prices to incent flexibility.
- *Aligning Retail Price Incentives with the Principal Value of Flexible Loads.* Mike Hogan of RAP on embedding demand curves in long-term investment instruments and planning
- *Maximizing the Grid Value of Distributed Energy Resources with Dynamic Retail Rate Design* Arne Olson and the E3 team on the future need for multi-part rates potentially including income-dependent fixed charges
- *Improving Transportation Electrification Impacts with Tighter Links between Bulk Power System Needs* Jennie Chen of WRI on siting EV charging for both transportation needs as well as good electricity prices
- *Heat Pump Friendly Retail Rate Designs* Sanem Sergici and the Brattle team on rate design that can encourage rather than discourage electrification, using heat pumps as a case study
- *APS Customer-centric approach to achieve 100% clean energy* Tom Hines and the Tierra Resource Consultants/APS team on APS' experience orchestrating demand through pricing plus DER programs

Some key points from whitepapers

- If we want demand flexibility, we need to expose customers/retailers/load serving entities to price signals that better reflect cost causation and grid needs
- Price signals include energy but also transmission, distribution and capacity.
- Time-varying rates moving to default (opt-out) for all customers
- There is an intersection between pricing and DER/EE/DR programs. Careful orchestration can yield cost and emissions savings.
- Price response is not just about the rate design and the enabling technology but also about the end-use capabilities, eg energy efficient homes provide more load shifting capability.
- Bidding in demand solves a lot of problems. Large C&I customers may be the best starting point for this.
- Alternative cost-based rates can help customers electrify without increasing overall bills and without subsidies
- One option for the future is three-part rates with income-dependent fixed charges. Seasonal TOU or demand-based rates can also help with some types of electrification such as heat pumps.
- Siting of large-scale EV charging should consider not only transportation needs but also grid prices and grid locations.