EV Technical Conference – Panel 7

July 19, 2018
Panel 7: Demand Charges, Short-Term Bridges and Long-Term Rate Designs

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## Commission Rate Design Principles and Implications

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<th>Select REV Track Two Rate Design Principles*</th>
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<td><strong>Cost causation:</strong> Rates should reflect cost causation, including embedded costs as well as long-run marginal and future costs.</td>
<td>Delivery costs are driven primarily by customer demands and should be recovered primarily through demand charges.</td>
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<td><strong>Encourage outcomes:</strong> Rates should encourage desired market and policy outcomes in a technology neutral manner.</td>
<td>With proper rate design, there is no need for technology-specific rates.</td>
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<td><strong>Decision-making:</strong> Rates should encourage economically efficient and market-enabled decision-making, for both operations and new investments, in a technology neutral manner.</td>
<td>Price signals should encourage customers to make efficient use of the electric delivery system.</td>
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<td><strong>Fair value:</strong> Customers and the utility should both be paid the fair value for the grid services they provide.</td>
<td>One group of customers should not subsidize another group that isn’t paying its fair value of the service received.</td>
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<td><strong>Economic sustainability:</strong> Rate design should reflect a long-term approach to price signals and the ability to build markets independent of any particular technology or investment cycle.</td>
<td>Proper price signals are needed for the sustainability of the grid.</td>
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*REV Track 2 Order May 19, 2016, Appendix A, emphasis added.*
**Utility Cost Structure**

### Implications

- Utility delivery-related costs are based on serving demand.
- EV charging stations – like other commercial customers – are billed on rates designed to recover the cost of serving their demand.
- Demand charges provide appropriate price signals that encourage efficient customer and utility investments.
- Customers can mitigate peak demand with energy management techniques and technologies.

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**Delivery Costs Example**

Typical Non-residential Service Classification

- **16%** Customer (Fixed)
- **84%** Demand
- **0%** Volumetric

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**Cost**

- **0%**
- **16%**
- **84%**

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**Joint Utilities of New York**

- NYSEG
- National Grid
- Orange & Rockland
- Rockland Electric Company
- ConEdison
- Central Hudson
• Certain EV charging patterns will likely align with system and network peaks

• Demand charges align rates with costs and help to modify behavior

• TOU demand charges could be used to encourage off-peak charging

• Energy management tools and techniques, like co-located storage, can manage EV charging station peaks

Data: Central Hudson hourly system load; hourly load data for an individual fast charging host site within the Central Hudson territory.
Utility and Customer Actions

Utility Actions

• Term and MW limited demand rate discounts (e.g., business incentive rate) can help EV public charging stations overcome low utilization rates in early years.

• Time-of-use demand charges can encourage off-peak charging.

• Commission direction has been to better align rates with costs (e.g., VDER NEM successor rate development).

Customer Actions

• Technology solutions such as storage and energy management systems, as well as price structures for EV drivers, can help to manage customer demands.

• Staggered charging will also help to manage customer demands.

• EV drivers can plan their trips and home charging during off-peak hours as practicable to supplement EV public charging needs.

It is important to send appropriate price signals from the outset so EV charging stations are designed to incorporate demand management practices and technologies, as well as price structures for EV drivers, in order to use the grid in an efficient manner.