Putting the Customer First: How States Can Keep Driving the Energy Transition

Roundtable Webinar
Our Experts

David Littell
Nancy Seidman
John Shenot
Jessica Shipley

Moderator: Richard Sedano
Questions?

Please send questions through the Q&A pane
How States Can Put Customers At the Center

Proactive – Transparent – Equitable and inclusive

- PBR
- Distribution planning
- Rate design
- Electrification
- Equity in the regulatory process
Bonus Time: Federal Action
Performance-Based Regulation
PBR Metrics: Varying Approaches

- **MN**: Affordability, disconnection/arrearages, service quality by geography/income
- **RI**: Debt, LMI discount enrollment, EV charger access
- **HI**: Energy burden (based on average income), EE delivery
Rate Design
TOU Rates: Weekday Peak Impacts

Weekday Peak Impacts by Group and Year

<table>
<thead>
<tr>
<th>BGE (N = 631)</th>
<th>LMI (N = 458)</th>
<th>DPL (N = 310)</th>
<th>BGE (N = 663)</th>
<th>PEPCO (N = 563)</th>
<th>DPL (N = 197)</th>
<th>BGE (N = 1,294)</th>
<th>PEPCO (N = 1,021)</th>
<th>DPL (N = 507)</th>
</tr>
</thead>
<tbody>
<tr>
<td>YEAR 1</td>
<td>YEAR 2</td>
<td>YEAR 1</td>
<td>YEAR 2</td>
<td>YEAR 1</td>
<td>YEAR 2</td>
<td>YEAR 1</td>
<td>YEAR 2</td>
<td>YEAR 1</td>
</tr>
<tr>
<td>-8.6%</td>
<td>-6.5%</td>
<td>-9.8%</td>
<td>-13.5%</td>
<td>-11.7%</td>
<td>-10.0%</td>
<td>-16.2%</td>
<td>-12.9%</td>
<td>-16.6%</td>
</tr>
<tr>
<td>-16.2%</td>
<td>-12.9%</td>
<td>-16.5%</td>
<td>-11.2%</td>
<td>-16.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: These results consider the same set of pilot customers across all three summers – those who have usable load data for the summers of 2018, 2019, and 2020. The error bar indicates the 95% confidence interval of the regression coefficient. Grey bars indicate statistical insignificance at the 5% level.

Source: Brattle Group
Year 2 vs Year 1: Comparison

Weekday Peak Impacts by Group and Year

Notes: These results consider the same set of pilot customers across all three summers – those who have usable load data for the summers of 2018, 2019, and 2020. The error bar indicates the 95% confidence interval of the regression coefficient. Grey bars indicate statistical insignificance at the 5% level.

Source: Brattle Group
US Customers on Time-Varying Rates

Source: 2014-2020 based on Form 861 Annual Data submitted by utilities to US Energy Information Administration
2021-2023 estimated by RAP based on EIA data and PUC orders

11% of US residential customers
Fort Collins Utilities
Residential TOU Rates - Mandatory

First year impacts:
• 7.5% drop in peak demand
• 65% of customers benefited
• 67% of low-income customers benefited
Distribution Planning
States with Distribution System Plan Requirements for Electric Utilities
Anonymized Data vs Aggregated Data

<table>
<thead>
<tr>
<th>Customer</th>
<th>Address</th>
<th>January 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen</td>
<td>10 Main St</td>
<td>1,388 kWh</td>
</tr>
<tr>
<td>Brown</td>
<td>555 Elm St</td>
<td>790 kWh</td>
</tr>
<tr>
<td>Cabrera</td>
<td>21 Park Ave</td>
<td>533 kWh</td>
</tr>
<tr>
<td>Davis</td>
<td>49 City Dr, Apt 1</td>
<td>475 kWh</td>
</tr>
<tr>
<td>Edwards</td>
<td>49 City Dr, Apt 2</td>
<td>404 kWh</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer</th>
<th>January 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,388 kWh</td>
</tr>
<tr>
<td>2</td>
<td>790 kWh</td>
</tr>
<tr>
<td>3</td>
<td>533 kWh</td>
</tr>
<tr>
<td>4</td>
<td>475 kWh</td>
</tr>
<tr>
<td>5</td>
<td>404 kWh</td>
</tr>
</tbody>
</table>

5 Customers: 3,590 kWh
Electrification
End Uses Can Be Flexible
Price Signals and Flexibility

A Difference in Rates Can Influence When Customers Charge Vehicles

Sources of U.S. Greenhouse Gas Emissions in 2019

- Agriculture: 10%
- Commercial & Residential: 13%
- Transportation: 29%
- Industry: 23%
- Electricity: 25%

Source: U.S. EPA
# Houston Vehicle Electrification

<table>
<thead>
<tr>
<th>Vehicle type</th>
<th># of Vehicles in Operation in 2017</th>
<th>Electrification numbers needed to achieve 25% reduction in NOx</th>
<th>% of all vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium- and Heavy-duty vehicles</td>
<td>155,000</td>
<td>62,000 (40%)</td>
<td>1% of all vehicles</td>
</tr>
<tr>
<td>Light duty-vehicles</td>
<td>5,300,000</td>
<td>3,800,000 (40%)</td>
<td>70% of all vehicles</td>
</tr>
<tr>
<td>Total</td>
<td>5,455,000</td>
<td></td>
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</table>
Equity
Bonus Time: Federal Action
Questions?

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Federal and State Electrical Transmission Initiatives

DOE: Building a Better Grid

FERC: Transmission ANOPR

NY PSC & NJ BPU: Offshore wind transmission
About RAP

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Learn more about our work at raponline.org