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DER Policy Trends: A Snapback Challenge

E-lab Accelerator

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The DER Policy Space is Active

• Rate Design
• Interconnection Policy
• Grid Investment
• DG Tariff Design
• Wholesale Market Design
• Distribution System Platform Design
Which Policies Survive the “Snapback Challenge”?

We should be designing policies that anticipate the platform we are approaching rather than being limited by the “platform” of the past.
Design to win the future, not perpetuate the past_Courtesy of RMI
What Rate Designs Survive the Snapback Challenge?
Rate design should make the choices the customer makes to minimize their own bill consistent with the choices they would make to minimize system costs.
A Typical Rate for Large NR Customers Today

Customer Charge: $100/month
Demand Charge: $10/kW
Energy Charge: $0.10/kWh
What’s the problem?

Customer Charge: $100/month

Demand Charge: $10/kW

Not Linked to System Peak

Energy Charge: $0.10/kWh

Not Time-Differentiated
Technologies Affect What is Possible and Necessary

Smart Grid Makes Better Rate Design Possible

DERs Make Better Rate Designs Necessary:

- Wind and Solar
- Storage Technologies
- EVs
Snapback Reference Point: The Future Platform Will Enable Dynamic Pricing

1. Locational Marginal Prices (LMP) and Congestion Revenue Rights (CRR) will need to exist down to the feeder
2. Free entry and exit will exist on the distribution system
3. Aggregation of DERs will be enabled
4. The utility serving as the platform host will have the opportunity to be revenue adequate
5. Political tolerance for scarcity pricing exists
# Illustrative Future Non-Residential Rate Design

## Table ES-1. Proposed Illustrative Rate Design for Non-Residential Consumers

<table>
<thead>
<tr>
<th></th>
<th>Production</th>
<th>Transmission</th>
<th>Distribution</th>
<th>Total</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metering, Billing</td>
<td></td>
<td></td>
<td>$100.00</td>
<td>$100.00</td>
<td>Month</td>
</tr>
<tr>
<td>Site Infrastructure Charge</td>
<td></td>
<td></td>
<td>$2/kW</td>
<td>$2/kW</td>
<td>kW</td>
</tr>
<tr>
<td>Summer On-Peak</td>
<td>$0.140</td>
<td>$0.020</td>
<td>$0.040</td>
<td>$0.20</td>
<td>kWh</td>
</tr>
<tr>
<td>Summer/Winter Mid-Peak</td>
<td>$0.100</td>
<td>$0.015</td>
<td>$0.035</td>
<td>$0.15</td>
<td>kWh</td>
</tr>
<tr>
<td>Summer/Winter Off-Peak</td>
<td>$0.070</td>
<td>$0.010</td>
<td>$0.020</td>
<td>$0.10</td>
<td>kWh</td>
</tr>
<tr>
<td>Super Off-Peak</td>
<td>$0.030</td>
<td>$0.010</td>
<td>$0.010</td>
<td>$0.05</td>
<td>kWh</td>
</tr>
<tr>
<td>Critical Peak</td>
<td></td>
<td></td>
<td>Maximum 50 hours per year</td>
<td>$0.75</td>
<td>kWh</td>
</tr>
</tbody>
</table>
## Smart Rate => Workplace EV Charging

<table>
<thead>
<tr>
<th></th>
<th>Antiquated Rate</th>
<th>Coincident Peak Demand Charge</th>
<th>Smart Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand Charge</td>
<td>$10/kW</td>
<td>$10/kW</td>
<td>$2/kW</td>
</tr>
<tr>
<td>Demand Measurement</td>
<td>NCP</td>
<td>4 PM - 8 PM</td>
<td>Site Infrastructure</td>
</tr>
<tr>
<td>Energy</td>
<td>$0.12/kWh</td>
<td>$0.12/kWh</td>
<td>$.05 - $.75/kWh</td>
</tr>
<tr>
<td>Energy Measurement</td>
<td>No TOU</td>
<td>No TOU</td>
<td>TOU</td>
</tr>
</tbody>
</table>

### Electric Vehicle Charging Cost Per Month  6.6 kW  250 kWh

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NCP Demand</td>
<td>$ 66.00</td>
<td></td>
<td>$ 13.20</td>
</tr>
<tr>
<td>CP Demand</td>
<td>$</td>
<td>$</td>
<td>-</td>
</tr>
<tr>
<td>Energy</td>
<td>$ 30.00</td>
<td>$ 30.00</td>
<td>$ 12.50</td>
</tr>
<tr>
<td>Total</td>
<td>$ 96.00</td>
<td>$ 30.00</td>
<td>$ 25.70</td>
</tr>
<tr>
<td>Average $/kWh</td>
<td>$ 0.384</td>
<td>$ 0.120</td>
<td>$ 0.103</td>
</tr>
</tbody>
</table>
Which of these policies survive the Snapback Challenge?

- Advanced Metering Deployment
- IEEE 1547-2018 Implementation
- Net Energy Metering at Full Retail Rates
- Community Choice Aggregation
- Utility built EV infrastructure
- The CAISO Non-Generating Resource Model
Resources from RAP

- Smart Non-residential Rate Design
- Grid-connected DG: Compensation Mechanism Basics
- Smart Rate Design for a Smart Future
- Designing Distributed Generation Tariffs Well
- Next Generation Performance Regulation
- Time-Varying and Dynamic Rate Design
- Use Great Caution in the Design of Residential Demand Charges
About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at raponline.org