February 24, 2021

Rate Design Theory and Practice

Electric Costs and Rates in California – En Banc Hearing

Mark LeBel  
Associate  
Regulatory Assistance Project (RAP)®

50 State Street, Suite 3  
Montpelier, Vermont 05602  
USA

802-498-0732  
mlebel@raponline.org  
raponline.org
Why and How Do We Regulate Utilities?

- Public policy goals
  - Efficient competition and control of monopoly pricing
  - Environmental and public health requirements
  - Societal equity (e.g., universal access and affordability)
- Principles for setting utility prices
  - Effective recovery of the revenue requirement
  - Revenue and bill stability
  - Customer understanding and acceptance
  - Equitable allocation of costs
  - Efficient forward-looking price signals
Algorithm for Socially Efficient Price Signals

1. Start with short-run marginal costs where you can
2. Layer in long-run marginal costs
3. Add any unpriced externalities
4. End by allocating and pricing “residual” costs that must be recovered through rates
NY Value of Distributed Energy Resources Export Credit Structure

- Hourly wholesale energy pricing
- Generation capacity credit
- Delivery credits
  - DRV – Utility system-wide value
  - LSRV – Locational adder
- Environmental value credit
We pay for other “grids” in volumetric prices
## Advanced Residential Rate Design

<table>
<thead>
<tr>
<th>Cost Recovery Only</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Charge ($/mo.)</td>
<td>$10</td>
</tr>
<tr>
<td>Site Infrastructure ($/individual NCP kW)</td>
<td>$1</td>
</tr>
<tr>
<td>Bidirectional Distribution Network Charge (Cents/kWh on imports and exports)</td>
<td>5 cents</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symmetric Charges and Credits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Off-peak (cents/kWh)</td>
<td>5 cents</td>
</tr>
<tr>
<td>Mid-peak (cents/kWh)</td>
<td>12 cents</td>
</tr>
<tr>
<td>On-peak (cents/kWh)</td>
<td>28 cents</td>
</tr>
<tr>
<td>Critical peak (cents/kWh)</td>
<td>75 cents</td>
</tr>
</tbody>
</table>
Problems with Ramsey Pricing

*Ramsey pricing rule - place residual costs on the least elastic pricing element*

- Elasticity estimates are not always obvious and can change
- Ramsey model underplays dynamic efficiency, information asymmetry, and competition across markets
- Distributional impacts can be challenging
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