SEPA Grid Evolution Summit: Rethinking Rate Design

Doug Benevento, Director of Energy Policy

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About Xcel Energy

Gas Customers: 2 Million
Electric Customers: 3.5 Million
Xcel Energy’s Rate Design Goals

- Align rates with true cost of service
- Enable customer savings and customer choice
- Provide time-differentiated pricing
- Reflect components of both energy and demand
- Give customers accurate price signals
- Avoid cross subsidization
Xcel Energy Rate Initiatives & Pilots

Advanced rate designs are an emerging issue for Xcel Energy:

- EV charging rate in Minnesota
- Minnesota stakeholder engagement on rate design
- Colorado rate design pilot and trial programs
- Residential Rate Plans

Find the plan that fits your needs and lifestyle.
Colorado Settlement

- Public Service Company of Colorado (PSCo) is pursuing and implementing a package of proposals and reforms called “Our Energy Future”.
- In August 2016, PSCo reached a settlement agreement with 22 parties on a set of Our Energy Future filings that relate to customer options and renewable energy.
- PSCo agreed to conduct two voluntary programs to test future rate designs: an energy time-of-use trial (RE-TOU) and a pilot program for time-differentiated demand rates (RD-TDR).
## Colorado Rate Design Programs

**Objective:** To measure changes in customers’ behavior and satisfaction after opting to enroll in time of use or peak demand pricing.

### RD – TDR Pilot: Energy & Demand Rates

<table>
<thead>
<tr>
<th>Component</th>
<th>Rate*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution Demand</td>
<td>$3.65/kW</td>
</tr>
<tr>
<td>Peak Generation &amp; Transmission Demand</td>
<td>$12.43/kW (Summer) $9.51/kW (Winter)</td>
</tr>
<tr>
<td>Energy</td>
<td>$0.04/kWh (On-peak) $0.03/kWh (Off-peak)</td>
</tr>
</tbody>
</table>

Peak G&T demand hours are from 2:00 PM to 6:00 PM on non-holiday weekdays. Distribution demand is measured at the highest point during the month regardless of peak hours.

### RE-TOU Trial: Energy Rates

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Rate* ($/kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Peak</td>
<td>$0.19 (Summer) $0.14 (Winter)</td>
</tr>
<tr>
<td>(2 PM – 6 PM, non-holiday weekdays)</td>
<td></td>
</tr>
<tr>
<td>Shoulder</td>
<td>$0.13 (Summer) $0.10 (Winter)</td>
</tr>
<tr>
<td>(All other hours)</td>
<td></td>
</tr>
<tr>
<td>Off-Peak</td>
<td>$0.08</td>
</tr>
<tr>
<td>(9 PM – 9 AM)</td>
<td></td>
</tr>
</tbody>
</table>

Summer rates are in effect from 6/1 – 9/30 in both programs, which is the same as Xcel Energy Colorado’s current summer rate tiers.

* Rates are inclusive of all riders and adjustment clauses.

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Xcel Energy’s goal is to enroll 18,000 customers in each program by 2019. Participation is limited to 30,000 in the RE-TOU Trial and 18,000 in the RD-TDR Pilot.
Residential Energy – Time of Use Rates

Current Rates
Tier 1 = 10 cents/kWh
Tier 2 = 14 cents/kWh
Winter = 10 cents/kWh

Lower Cost

Off-Peak  |  Shoulder  |  On-Peak  |  Shoulder  |  Off-Peak

Summer = 19 cents/kWh  
Winter = 14 cents/kWh

Summer = 14 cents/kWh  
Winter = 10 cents/kWh

Summer = 8 cents/kWh  
Winter = 8 cents/kWh
Residential Demand – Time Differentiated Rates

When is the demand period?
The demand period is in effect on weekdays from 2 – 6 p.m.
There is no demand period on weekends and holidays.

How is the monthly demand charge calculated?
The highest level of electricity demand during the demand period in a monthly billing cycle determines a customer’s demand charge for that month.

Daily electricity demand during month
In 2019, we will present the results of the RE-TOU trial to the Colorado Public Utilities Commission. If the analysis of the program shows that the program should be expanded, all residential customers will transition to time of use rates for energy beginning in 2020.

We believe that Time of Use and Demand rates will significantly change how our customers manage their energy use.

We have designed our programs to evaluate and understand how different groups of customers will react to these changes in price signals, including:

- Rooftop solar customers
- Customers with smart thermostats
- Electric vehicle owners
- Senior citizens
- Renters
- Low-income customers

What are we trying to learn?
Xcel Energy’s Rate Design Principles

1. Recover as close to the total revenue requirement as possible;
2. Stabilize utility revenue and minimize revenue leakage;
3. Prevent DER customers from bypassing system costs not avoided by DER;
4. Avoid abrupt changes in rate design;
5. Make the rates as easy for customers to understand and interpret as possible; and,
6. Minimize administrative burdens, understanding that complexity may increase;
7. Fairly allocate costs among customer classes and between DER and non-DER customers based on cost causation principles.
Utilities, regulators, and other stakeholders should not wait to begin discussions on rate design reforms. Changes in rate design must keep up with changes in how energy is consumed and the grid is used.

There is no one-size-fits-all solution – differences in rate design reflect different priorities among utilities, regulators, and stakeholders.

Costs and benefits should be quantifiable and equitably allocated.

Rate design shouldn’t act as a subsidy for any specific technology.

If policy makers decide to create a subsidy, it should be transparent, limited in time, and allow regulators to quickly respond to market changes.

Advanced metering and grid communication technologies are a basic requirement for implementing more complex rate designs.