Helping Utilities Make Smart Solar Decisions

Driving Distributed Energy Transactions

RPS Collaborative Summit
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About SEPA

Educational 501(c)3 non-profit

Membership

470+ Utilities
52% of electricity customers

440+ solar companies & stakeholders
94% of installed solar capacity

Utilities

Joint Action Agencies, G&Ts, RTOs, FPAs
Wholesale Marketers, IPPs
Affiliates
Manufacturers
Business & Professional Services
Project Developer/Installer/Distributors

Business Confidential
Helping Utilities Make Smart Solar Decisions
WHAT’S THE ISSUE?
## Ratemaking and NEM

<table>
<thead>
<tr>
<th>Types of Utility Charges</th>
<th>Allocation of Costs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Typical Residential</td>
<td>Typical Non-Residential</td>
</tr>
<tr>
<td>Fixed Charges ($/month)</td>
<td>• Metering</td>
<td>• Metering</td>
</tr>
<tr>
<td></td>
<td>• Billing</td>
<td>• Billing</td>
</tr>
<tr>
<td>Demand Charges ($/kW)</td>
<td>• N/A</td>
<td>• Generation, Transmission, and Distribution capital investments</td>
</tr>
<tr>
<td>Volumetric Energy Charges ($/kWh)</td>
<td>• Generation, Transmission, and Distribution capital investments</td>
<td>• Fuel costs</td>
</tr>
<tr>
<td></td>
<td>• Fuel costs</td>
<td>• Variable O&amp;M expenses</td>
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<td></td>
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<tr>
<td>Adjustor Clauses ($/kWh)</td>
<td>• Fuel adjustment clauses</td>
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</tr>
<tr>
<td></td>
<td>• Renewable program costs</td>
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</tr>
</tbody>
</table>

For more information, see SEPA’s “Ratemaking, Solar Value and Solar Net Energy Metering – a Primer” (July 2013)
Demand-based Rate Design (Typical Non-Residential)

- Demand Charge
- Fixed Charge
- Volumetric Energy Charge

Volumetric Rate Design (Typical Residential)

- Volumetric Energy Charge
- Fixed Charge
- NEM Transaction
WHAT ALTERNATIVES ARE EMERGING?
## Addressing Solar DG Transactions

<table>
<thead>
<tr>
<th>CAMP 1</th>
<th>CAMP 2</th>
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</thead>
<tbody>
<tr>
<td><strong>Continue NEM</strong></td>
<td><strong>Reforming the Solar Customer Transaction (NEM reform)</strong></td>
</tr>
<tr>
<td><strong>RATE CONSTRUCT</strong></td>
<td><strong>Single Transaction (Rate) Approach</strong></td>
</tr>
<tr>
<td><strong>Apply NEM</strong></td>
<td>Reform Existing Rates (all customers or solar only)</td>
</tr>
<tr>
<td><strong>MODEL</strong></td>
<td><strong>CURRENT RATES</strong></td>
</tr>
<tr>
<td><strong>ATTRIBUTES</strong></td>
<td>Increased Fixed Charge and/or Minimum Bill</td>
</tr>
<tr>
<td>• Currently applicable rates result in an acceptable transaction</td>
<td>• Add or increase basic service charge ($/month)</td>
</tr>
<tr>
<td>• Solar penetration does not warrant action</td>
<td>• Raise min bill requirements ($/month)</td>
</tr>
<tr>
<td></td>
<td>• Add or increase customer fee for demand ($/kW/month)</td>
</tr>
<tr>
<td></td>
<td>• Charge for stand-by capacity, based on DG system size ($/kW/month or ($/kW/yr)</td>
</tr>
</tbody>
</table>
HOW ABOUT "VALUE OF SOLAR"?
Let’s Talk “Value”

Does the retail rate actually equate to the “value of solar”?

Net Metered Value

Standard Value
Valuing Distributed Energy

Value categories are wide-ranging… some are not typically monetized and/or included in rates

- **Capacity**
  - Capacity Value
  - Avoided Generation Capacity
  - System Orientation

- **Security & Reliability**
  - Grid Security
  - Grid/Service Reliability

- **Grid Support Services**
  - Ancillary Services
  - System Integration Costs

- **Environmental**
  - Water Consumption
  - Environmental Compliance
  - Health Effects
  - Non-Compliance Environmental Effects

- **Avoided Costs / Financial Risk**
  - Capital
  - Fuel/Purchased Power & Fuel Hedging
  - Line Losses
  - T&D System Investment
  - RPS Compliance
  - Utility Administration
  - Market Price Mitigation
  - Fixed & Variable O&M
  - Power Plant Decommissioning

- **Social**
  - Economic Development & Jobs
  - Civic Engagement / Conservation Awareness
  - Ratepayer / Consumer Interest
  - Ratepayer Cross-Subsidization
  - Technology Synergies
  - Energy Subsidies (incentives, rebates, tax credits, etc.)
Value of Solar ≠ Growing Solar Market (does not need to equal)
Layer Program on Top

Value of Solar  +  Incentive Program  =  Growing Solar Market
Steps for Success

1. Set clear policy objectives
2. Decide what gets monetized through:
   – Rates
   – Incentive Program
3. Engage stakeholders to agree on valuation methodology
4. Determine VOS rate
5. Design transparent program to drive market & meet policy objectives
Don’t Try This
But Do Try This

CHANGE JUST AHEAD
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