Utility Ownership of Customer-Sited Solar: An Overview of Current Activities

Sean Ong; Erica Porras
THE BIG ISSUE: SOLAR PARITY

- Declining Revenue
- Cost Shifting

Source: U.S. DOE
### Recent Action on Net Metering and Rate Design Policies

<table>
<thead>
<tr>
<th>Description</th>
<th># of States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changes to Net Energy Metering Policies</td>
<td>23</td>
</tr>
<tr>
<td>Fixed Charge Increases</td>
<td>10</td>
</tr>
<tr>
<td>“Value of Solar” Studies or Tariff Changes</td>
<td>10</td>
</tr>
<tr>
<td>Fixed or Demand Charges for Solar Only</td>
<td>6</td>
</tr>
<tr>
<td>Creation of Utility-Owned PV Programs</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: DSIRE, 2015
"Who says that the utilities have no competition? They may be natural monopolies now, but tomorrow they may be natural deaths. To avoid this prospect, they too will have to develop fuel cells, solar energy, and other power sources. To survive, they themselves will have to plot the obsolescence of what now produces their livelihood.” — Theodore Levitt, 1960
UTILITY OWNERSHIP OF CUSTOMER-SITED SOLAR

- Utility owned
- Customer lets utility use roof
- Energy goes to utility, not customer

POLL!
What are the controversies around utility owned solar?
KEY CONTROVERSIES

THE UTILITY-OWNED SOLAR PROGRAM DEBATE

**IN FAVOR**
- Utilities can provide greater customer choice and reduce barriers to solar adoption
- Utilities can reduce soft costs, manage revenue loss better, and may earn a rate of return on solar

**OPPOSED**
- Utilities have been granted monopoly status and have unfair advantages
- Regulators may not consider rooftop solar to be the least cost option compared to other larger scale deployments
- Customers are best suited to manage and add value for grid support if compensated appropriately

**FAIRNESS**
- Reduce Soft Costs
- Not Cost-Effective

**VALUE**
- Utility Adds Grid Value
- Customer Adds Grid Value

**COST**
- Lower Customer Barriers
- Utility Monopoly

Source: EMI Consulting, 2015
• Current Controversies
• **Overview of Programs**
• Key Considerations
• Summary

Who is involved with utility-owned solar?
Examples of Utility-Owned PV

Municipal Utilities
- SMUD
- Los Angeles Department of Water & Power
- Southern California Edison
- Duke Energy
- Dominion
- APS
- Tucson Electric Power

Regulated Utilities
- nrg
- Edison International
- Georgia Power

Unregulated Utility Subsidiary
- Edison International
- Georgia Power

Unregulated Arm
- Only offering customer solar sales and installation.

Examples include:
- Municipal Utility: Customer paid to participate, but received no benefit. Funded in part by SMUD Public Good Fund.
- Municipal Utility: Customers hosted PV at no cost, but received no benefit. Funded by LAWP Public Benefit Fund.
- Regulated Utility: Customers receive rooftop lease payments. Funded by ratepayers.
- Regulated Utility: Customers receive lease payments (APS) or lock in fixed monthly bills (TEP). Funded by ratepayers.
- Unregulated Arm: Only offering customer solar sales and installation. Funded by customer.
The map illustrates the regulatory landscape for solar energy across the United States. Different states are color-coded to indicate various statuses:

- **Ownership Allowed**: Represented by blue areas.
- **Ownership Not Allowed**: Represented by orange areas.
- **Status Unknown/Unspecified**: Represented by grey areas.
- **Pending Legislation**: Represented by light blue areas.
- **TPO Allowed**: Represented by black areas with diagonal lines.
- **TPO not Allowed**: Represented by black areas with dots.

*Map refers to regulated utilities only. Public or municipal utilities with utility-owned customer-sited solar programs are not depicted.

Source: EMI Consulting, 2015
What should utilities consider when choosing their solar programs?
KEY CONSIDERATIONS

Customer Options

How can utility PV programs add customer value?

Business Model Options

Which model best meets regulatory and business goals?

Regulatory Landscape

How might regulation evolve with the changing grid?
UTILITY BUSINESS MODEL OPTIONS

- Community Solar
- Feed-in-Tariff (VOST)
- Financing (RECS)
- Incentives (RECs)
- Green Power Programs
- Rooftop Lease
<table>
<thead>
<tr>
<th>Side of the Meter</th>
<th>Customer Option</th>
<th>Potential Barriers</th>
<th>Customer Benefit</th>
<th>PV Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Cash</strong></td>
<td>Upfront cost; Own home</td>
<td>All benefits associated with PV: (RECS, energy, incentives)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Traditional Loans</strong></td>
<td>Credit score; Own home</td>
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<td></td>
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<tr>
<td></td>
<td><strong>PACE Loans</strong></td>
<td>Own home</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>PV Lease/PPA</strong></td>
<td>Credit score; Low-income</td>
<td>Lower bills; Price hedge</td>
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<tr>
<td><strong>Customer- Side</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Utility- Side</strong></td>
<td><strong>Community Solar</strong></td>
<td>Low credit allocated to customers</td>
<td>Share in benefits associated with PV</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>PV Hosting</strong></td>
<td>Own Home</td>
<td>Small bill credit</td>
<td></td>
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</tbody>
</table>
OUTLINE

• Current Controversies
• Overview of Programs
• Key Considerations
• Summary
SUMMARY

• What are the controversies around utility owned solar?
  – Arguments centered on fairness, cost and value.

• Who is involved with utility-owned customer-sited solar?
  – Municipal, regulated and unregulated utility subsidiaries.

• What are the policies and regulations around utility owned solar?
  – Varied, but generally allowed under certain circumstances.

• What should utilities consider when choosing their solar programs?
  – Utility ownership should be considered in the context of other business model options as well as customer options and regulatory trends.
    – We are interested in helping stakeholders navigate the changing energy landscape through technical, market, customer and business model expertise and research.
QUESTIONS

Thank You!

Ahlmahz

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Kerstin  Michael  Erica  Dave  Andrea  Sean  Jess

(206) 621-1160  info@emiconsulting.com  83 Columbia Street, Suite 400 Seattle, WA 98104  www.emiconsulting.com

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