SMUD’s Successful, Value-Based Feed-In Tariff

Tim Tutt
Sacramento Municipal Utility District
Sacramento Municipal Utility District

- Publicly Owned (Sixth Largest in U.S.)
- Fifth Largest California Utility
- 900 Square Mile Service Area
- Population Of 1.4 Million
- Over 578,000 Customers
- Peak Demand About 3000 MW
- 11,000 GWh Annual Sales
SMUD’s Adopted Sustainability Targets

- Renewable Portfolio Standard
  - 20% - 2010 (Plus 3% For Greenergy)
    - Goal Accomplished!
  - 33% - 2020 (Plus 4% For Greenergy)

- Energy Efficiency Programs
  - 15% Reduction In Forecast Load By 2018

- GHG Reductions
  - Reduce GHG For Retail Load To 10% of 1990 Emissions By 2020
SMUD’s Current Clean Energy Efforts

- **Solarhighways**
- **Community Renewable Energy Deployment**

- **Efficiency Programs**
- **Smart Grid Deployment**
- **EV Leadership**
- **Feed-In Tariff**

- **CSI/SolarSmart Homes**
- **Renewable Procurement**
- **Greenergy**
SMUD’s Feed-In Tariff

- SMUD Board Approved 100 MW FIT in October, 2009, With The Following Goals

  - **Support** SMUD’s Strategic Directives for Environmental Protection and Resource Planning

  - **Bridge** the gap between California Solar Initiative net metered incentive programs and our bilateral renewables procurements

  - **Encourage** local resources & develop distributed generation within SMUD’s service territory

  - **Objectively Value** the energy provided to SMUD ratepayers - based on avoided costs, with GHG and avoided gas risk adders
SMUD’s Feed-In Tariff Rates

Renewable FIT Rates – 2010 Vintage

<table>
<thead>
<tr>
<th>Time of Use Period</th>
<th>2010 Start Year</th>
<th>2011 Start Year</th>
<th>2012 Start Year</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>10-Year</td>
<td>15-Year</td>
<td>20-Year</td>
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<tr>
<td>WinterOffPeak</td>
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<td><strong>Annual Average</strong></td>
<td><strong>$0.0968</strong></td>
<td><strong>$0.1040</strong></td>
<td><strong>$0.1107</strong></td>
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- Are levelized for contract term (no escalation)
- PV Production-Weighted, non-tracking, south orientation, 20 year contract
  - 2010 – 13.9 ¢/kWh
  - 2011 – 14.4 ¢/kWh
  - 2012 – 14.8 ¢/kWh

Current Prices 15-20% lower
Feed-In Tariff Interconnection Map
SMUD’s Feed-In Tariff - Response

• Opened On January 4, 2010
  Received 28 Applications For 120 MW Of PV

• Some Vetting And Modifications Required, But...
  - Fully Booked In One Week!

• Why Such A Response?
  • Significant Reductions Have Occurred In PV Costs.
  • Value-Based Time Of Day Payments And Cost Adders Yielded Rates Sufficient For PV
  • Simple/Straightforward Low-Transaction Cost Process
Feed-In Tariff Progress To Date

- *Executed Contracts With 99.9 MW*

- *24 MW Have Been Approved By The Sacramento Planning Commission*

- *30 MW Of Projects Recently Purchased By Constellation Energy*

- *Expect 29.9 MW online in 2011 and 70 online in 2012*
Feed-In Tariff Lessons Learned

- Engage Local Jurisdictions Early To Minimize Permitting “Surprises.”
- Research and Understand What Is Appropriate Mitigation For Farmland
- Consider How To Accept Applications -- First Come, First Served Not Necessarily Most Egalitarian
- Consider Limits On Developers And Ownership To Spread Opportunities and Risks
- Consider Including Project Milestones – Permitting Or Interconnection – To Keep Progress Going
- Establish Preferences For Brownfields And Strategic Locations To Make Development Smoother
Conclusion And Next Steps

- **Value-Based Feed-In Tariff CAN Work With Today’s Solar Costs If Done Correctly**

- **SMUD Nearing Completion Of Strategic Integrated Resource Planning Process – Additional FIT Procurement Likely Part of Some Scenarios**

- **Governor Brown’s Proposed 12,000 MW Distributed Generation Goal May Be a Factor**
For More Information --

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