Where do FiTs (Feed-in Tariffs) Fit?

A perspective from the nation’s largest renewable energy buyer

October 1, 2010

Stuart Hemphill
Senior Vice President, Power Procurement
Southern California Edison
Typical Feed-in Tariff Attributes

- Long-term contracts with fixed prices
- Identified buyer for output
- Guaranteed or streamlined transmission access
- Pre-defined contract terms
- Cost recovery through general taxes or from all customers in a defined area

Feed-in Tariffs are best suited for vertically integrated utilities outside of Regional Transmission Organizations.
Marketplace and Regulatory Complications for Feed-in Tariffs

- Open Access Tariffs yield multiple potential buyers rather than a single buyer

- Retail choice creates opportunities for unequal contributions and subsidies among retailers

- Jurisdictional challenges
  - Renewables programs are State run
  - Transmission access and wholesale prices are federally controlled

- Grid access can be log-jammed with interconnection requests

Some market and regulatory environments are not well suited for typical feed-in tariffs
# Options for Pricing Feed-in Tariffs

<table>
<thead>
<tr>
<th></th>
<th><strong>Within Public Utility Regulatory Policies Act (PURPA) Purchase Obligation</strong></th>
<th><strong>Outside PURPA Purchase Obligation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Avoided Cost</strong></td>
<td>• State-set pricing is limited to “avoided cost” under PURPA</td>
<td>• Projects &lt; 20 MW retain rebuttable presumption in favor of purchase obligation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Project &gt; 20 MW have burden to prove purchase obligation should remain</td>
</tr>
<tr>
<td><strong>Competitive Prices</strong></td>
<td>• Can be used to set avoided cost for all projects</td>
<td>• Competitive market must govern, as states do not have pricing authority</td>
</tr>
</tbody>
</table>
# Comparison of Renewable Contracting Options

<table>
<thead>
<tr>
<th></th>
<th>Contract Terms</th>
<th>Prices</th>
<th>Program Quantity</th>
<th>Benefits</th>
<th>Drawbacks</th>
</tr>
</thead>
</table>
| **SCE’s Renewables Portfolio Standard** | Negotiable     | Negotiable              | Fixed (\% of sales) | • Flexible contracts  
• Balanced risks                    | • Lengthy negotiations  
• Not suited for small projects  
• Potential for uncompetitive prices |
| **SCE’s Voluntary Feed-in Tariffs** | Fixed (updated between solicitations) | As-bid | Fixed (over multiple years) | • Creates market  
• Developer prices risk  
• Easy to update terms | • Not suited for large projects  
• Less flexible than RPS  
• Potential for uncompetitive prices |
| **Typical Feed-in Tariffs** | Fixed (defined in regulatory arena) | Fixed (administratively determined) | Variable | • Simple administration | • Lengthy regulatory processes  
• Inflexible terms  
• Over/under subscription based on price |
SCE’s Experience With Procurement of Renewables

Contracted Capacity, MW

<table>
<thead>
<tr>
<th></th>
<th>Renewables Portfolio Standard</th>
<th>Voluntary Feed-in Tariffs</th>
<th>Mandated Feed-in Tariffs</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Contracts</td>
<td>36</td>
<td>46</td>
<td>1</td>
</tr>
<tr>
<td>Capacity Per Contract</td>
<td>247</td>
<td>5.7</td>
<td>1.1</td>
</tr>
<tr>
<td>Capacity, MW</td>
<td>8,900</td>
<td>260</td>
<td>1.1</td>
</tr>
</tbody>
</table>
Best Approaches for Procurement of Renewables

• Large-scale solicitations for large-scale volumes
  - Flexible, negotiable terms to account for major uncertainties
  - Well suited for projects > 20 MW
  - May not work under PURPA

• Standard contract solicitations for smaller projects
  - < 20 MW can still fall under PURPA
  - No negotiation of terms, pre-defined performance standards
  - Limited timeframe for Commercial Online Dates
  - Ability to adapt contract terms between solicitations

• Competitive pricing for all programs
  - Superior approach to administratively determined prices
  - No published price cap (creates incentives to game)
  - Ability to weigh price/quantity tradeoffs

• Multi-year goals
  - Provides ability to improve competition in subsequent solicitations