Financials Overview

1. Generating Resources & MicroFin
2. Financial Sponsors
3. Levelized Cost of Energy Examples and Sensitivities
4. Questions ?
Supply Side Cost Estimation

1. Generating Resources/GRAC – provides estimates of capital cost and operating characteristics for new resources

2. MicroFin – used to produce estimates for the cost of capital for these resources
Generating Resources/GRAC

1) Cost estimates
   - Capital Cost $/kW
   - Fixed O&M $/kW-yr
   - Cost escalation (or de-escalation)

2) Estimates for Operating Characteristics
   - Capacity MW
   - Heat Rate btu/kWh (thermal unit)
   - Capacity Factor (variable resource)
   - Economic life
   - Development Schedule

Fuel Price Forecast

1) Fixed fuel price $/kW-yr
2) Variable price $/mmbtu

Micro Fin Levelized Cost Calculator

1) Fixed Levelized Cost - $/kW-yr
2) Full LCOE - $/MWh (with energy production and variable costs)

Regional Portfolio Model
MicroFin

Revenue requirements financial model
1. Calculates annual cash flows over the plant lifetime that satisfy revenue requirements
2. Annual cash flows are compressed into a single year dollar value – Net Present Value (NPV)
3. NPV is converted into an even, annualized payment (like a mortgage payment) – Levelized Cost. When divided by annual energy production – it becomes the Levelized Cost of Energy $/MWh

Three financial sponsor options
1. Muni/PUD
2. IOU
3. IPP

Key assumption differences among the sponsor types
1. Tax rates
2. Debt rates and service periods
3. Equity return rates and service periods
## MicroFin Financials

### Key Assumptions

<table>
<thead>
<tr>
<th></th>
<th>Municipal/PUD</th>
<th>Investor Owned Utility</th>
<th>Indep. Power Producer</th>
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<tbody>
<tr>
<td>Federal Tax - %</td>
<td>0</td>
<td>35</td>
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<tr>
<td>State Tax - %</td>
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<td>Fed Tax Inv Credit - %</td>
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<td>30/10¹</td>
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<td>Property Tax - %</td>
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<td>Insurance - %</td>
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<td>Debt Fraction - %</td>
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<td>Debt Interest Rate (not tax adjusted)</td>
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<td>Debt payment Period</td>
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<td>Return on Equity</td>
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¹Solar only – Fed ITC 30% thru 2016, 10% following
²Gas 30/30/15
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**Input**
- Capacity 425 MW
- Capital Cost $1,217/kW
- Capacity factor 0.6

**Output**
- NPV $3.1 billion
- Level. Cost of Energy $71/MWh