<table>
<thead>
<tr>
<th><strong>DOCKETED</strong></th>
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<tr>
<td><strong>Docket Number:</strong></td>
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<tr>
<td><strong>Project Title:</strong></td>
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<td><strong>TN #:</strong></td>
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<td><strong>Document Title:</strong></td>
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<td><strong>Description:</strong></td>
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<td><strong>Submitter Role:</strong></td>
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<td><strong>Submission Date:</strong></td>
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Tables and Instructions for POU
Integrated Resource Plan Filings

Staff Webinar on Tables and Instructions

May 31, 2017

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Supply Analysis Office
Energy Assessments Division
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Background/Authority

- SB350
  - PUC code section 9621 and 9622

- Standardized tables will help staff evaluate the IRP Filing

- Some information requested in tables is voluntary, more on this later..
Overview

- CRAT: Capacity Resource Accounting Table
- EBT: Energy Balance Table
- GEAT: Greenhouse Gas Emissions Accounting Table
- RPT: RPS Procurement Table
CRAT: Capacity Resource Accounting Table

- Annual peak capacity needs
- How POU meets those needs
- Resources include:
  - Existing and planned utility-owned generation and storage
  - Existing contracts
  - Generic additions
<table>
<thead>
<tr>
<th></th>
<th>Peak Load Calculations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Forecasted peak hour 1 – in – 2 demand</td>
</tr>
<tr>
<td>2.</td>
<td>Customer-side Solar: nameplate capacity</td>
</tr>
<tr>
<td>2a</td>
<td>Customer-side solar: peak hour output</td>
</tr>
<tr>
<td>3.</td>
<td>Peak load reduction from thermal energy storage, if any/measured</td>
</tr>
<tr>
<td>4.</td>
<td>LD PEV consumption in peak hour</td>
</tr>
<tr>
<td>5.</td>
<td>AAEE savings in peak hour</td>
</tr>
<tr>
<td>6.</td>
<td>Demand Response / Interruptible programs in peak hour</td>
</tr>
<tr>
<td>8.</td>
<td>Planning Reserve Margin</td>
</tr>
<tr>
<td>9.</td>
<td>Firm sales obligations, in peak hour</td>
</tr>
</tbody>
</table>
Capacity Supply Resources

Existing resources
11a: Utility Owned Generation (not RPS-eligible)
11h: Long-term Contracts (not RPS-eligible)
12a: Utility-owned RPS-eligible generation
12o: Long-term contracts (RPS-eligible)

Generic Additions
14a: Generic Non-RPS-eligible resources
15a: Generic RPS-eligible resources

21: Short-term and spot market purchases
EBT: Energy Balance Table

- Annual retail sales and net energy for load
  - With and without AAEE
- Energy supplied from each existing resource
- Projected energy from additions indicated by integrated resource planning
## Net energy for load calculations

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Retail sales to end-use customers</td>
</tr>
<tr>
<td>2</td>
<td>Other loads</td>
</tr>
<tr>
<td>3</td>
<td>Unmanaged net energy for load</td>
</tr>
<tr>
<td>4</td>
<td>Managed retail sales</td>
</tr>
<tr>
<td>5</td>
<td>Managed net energy for load</td>
</tr>
<tr>
<td>6</td>
<td>Firm Sales Obligations</td>
</tr>
<tr>
<td>7</td>
<td>Total net energy for load (5+6)</td>
</tr>
</tbody>
</table>
Other Demand Data

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>[Customer-side solar generation]</td>
</tr>
<tr>
<td>9</td>
<td>[Light duty PEV electricity consumption/procurement need]</td>
</tr>
<tr>
<td>10</td>
<td>[Other transportation electrification consumption / procurement need]</td>
</tr>
<tr>
<td>11</td>
<td>[Other electrification / fuel substitution ; consumption / procurement need]</td>
</tr>
</tbody>
</table>
## Energy Supply Resources

### Existing resources
- **12a**: Utility Owned Generation (not RPS-eligible)
- **12h**: Long-term Contracts (not RPS-eligible)
- **13a**: Utility-owned RPS-eligible generation
- **13i**: Long-term contracts (RPS-eligible)

### Generic Additions
- Generic Non-RPS-eligible resources
- Generic RPS-eligible resources

### Short-term and spot market purchases
GEAT:GHG Emissions Accounting Table

- Forecasted annual GHG emissions (MmT CO2e) by resource
- Includes only emissions from generation that serves utility load.
- Firm sales obligations and spot market sales excluded
- Emissions intensities (mt CO2e/MWh) for some resources provided; in other cases POUs use their own estimates
## GHG Emissions From Supply Resources

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing resources</strong></td>
<td></td>
</tr>
<tr>
<td>12a</td>
<td>Utility Owned Generation (not RPS-eligible)</td>
</tr>
<tr>
<td>12h</td>
<td>Long-term Contracts (not RPS-eligible)</td>
</tr>
<tr>
<td>13a</td>
<td>Utility-owned RPS-eligible generation</td>
</tr>
<tr>
<td>13i</td>
<td>Long-term contracts (RPS-eligible)</td>
</tr>
<tr>
<td><strong>Generic Additions</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Generic Non-RPS-eligible resources</td>
</tr>
<tr>
<td></td>
<td>Generic RPS-eligible resources</td>
</tr>
<tr>
<td><strong>Short-term and spot market purchases</strong></td>
<td></td>
</tr>
</tbody>
</table>
## GEAT: Voluntary Information

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>9</td>
<td>GHG emissions reduction due to gasoline vehicle displacement by LD PEVs</td>
</tr>
<tr>
<td>10</td>
<td>GHG emissions increase due to LD PEV electricity loads</td>
</tr>
<tr>
<td>11</td>
<td>GHG emissions reduction due to fuel displacement – other transportation electrification</td>
</tr>
<tr>
<td>12</td>
<td>GHG emissions increase due to increased electricity loads – other transportation electrification</td>
</tr>
</tbody>
</table>
RPT: RPS Procurement Table

- Renewable Energy
- Renewable Energy Credits (RECS)
- Procurement and retirement
  - For each compliance period over planning horizon
- Hydro procurement / green power programs
  - To reduce retail sales
- Historic carryover and surplus of RECs
RPS Energy Requirement Calculations

<table>
<thead>
<tr>
<th>RPS ENERGY REQUIREMENT CALCULATIONS</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
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<tbody>
<tr>
<td>Annual retail sales</td>
<td>340,000</td>
<td>344,000</td>
<td>347,000</td>
<td>346,000</td>
</tr>
<tr>
<td>Green pricing program exclusion</td>
<td></td>
<td></td>
<td>35,000</td>
<td>47,000</td>
</tr>
<tr>
<td>Soft target (%)</td>
<td>27.00%</td>
<td>29.00%</td>
<td>31.00%</td>
<td>33.00%</td>
</tr>
<tr>
<td>Required procurement for compliance period</td>
<td></td>
<td></td>
<td></td>
<td>386,950</td>
</tr>
</tbody>
</table>
## RPS Energy Requirement Calculations (RECs)

<table>
<thead>
<tr>
<th>Category 0, 1 and 2 RECs</th>
<th>Beginning balance at start of 2017</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excess balance/historic carryover at beginning/end of compliance period</td>
<td>50,000</td>
<td></td>
<td></td>
<td></td>
<td>47,000</td>
</tr>
<tr>
<td>Generation/net purchases</td>
<td></td>
<td>92,000</td>
<td>107,000</td>
<td>107,000</td>
<td>117,000</td>
</tr>
<tr>
<td>Applied/retired</td>
<td></td>
<td>95,000</td>
<td>107,000</td>
<td>107,000</td>
<td>117,000</td>
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</tbody>
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Questions ?