2011 Contribution Policy

AESO Tariff Applications
November 17th, 2011
Agenda

- Meeting # 1 Summary
- Reviewing the data
- Application of mechanisms to the data
- Do the mechanisms satisfy the criteria?
- Identify and discuss the outliers
Action Items

• Miles, Mike and Ken to determine (based on the availability of data) the “multiplier” applied to average costs to come up with investment levels for DFOs. The multiplier for the DFO would be the MIL divided by the average project cost.

• All working group members to consider if there are any other mechanisms that should be included in the list.

• The AESO committed to have historical contribution data available in advance of the next working group meeting.

• The AESO committed to providing current contribution data, and the working group members will provide suggestions for additional information/fields to be included in the new database, to enable the AESO in compiling the data.

• Tony to compare cost data on a project and escalate to today’s costs to see how the AESO’s inflation index compares (added)
The Data

• Greenfield and upgrade projects
• Only included those projects where information was available to categorize the costs
• Final cost data and PPS level cost estimate data
• Excluded those projects where the contribution had not been recalculated using correct tariff year (the project has been granted P&L since last CCD was generated...a recalculation needs to be done)
## The Data

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong># Greenfield Projects</strong></td>
<td>4</td>
<td>6</td>
<td>21</td>
<td>4</td>
<td>16</td>
<td>10</td>
<td>10</td>
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<tr>
<td><strong># Upgrade Projects</strong></td>
<td>2</td>
<td>5</td>
<td>29</td>
<td>30</td>
<td>19</td>
<td>5</td>
<td>1</td>
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<tr>
<td><strong>Total # of Projects</strong></td>
<td>6</td>
<td>11</td>
<td>50</td>
<td>34</td>
<td>36</td>
<td>15</td>
<td>11</td>
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<tr>
<td><strong>$ Greenfield Costs</strong></td>
<td>$ 16,824,297</td>
<td>$ 27,093,601</td>
<td>$ 160,096,757</td>
<td>$ 40,935,060</td>
<td>$ 181,496,016</td>
<td>$ 161,607,232</td>
<td>$ 237,373,595</td>
</tr>
<tr>
<td><strong>$ Investment Greenfield</strong></td>
<td>$ 16,127,603</td>
<td>$ 21,887,017</td>
<td>$ 134,638,001</td>
<td>$ 19,489,366</td>
<td>$ 105,317,435</td>
<td>$ 86,455,644</td>
<td>$ 92,852,982</td>
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<tr>
<td><strong>% Investment Greenfield</strong></td>
<td>95.9%</td>
<td>80.8%</td>
<td>84.1%</td>
<td>47.6%</td>
<td>56.0%</td>
<td>52.9%</td>
<td>39.1%</td>
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<tr>
<td><strong>$ Contributions Greenfield</strong></td>
<td>$ 695,694</td>
<td>$ 5,206,584</td>
<td>$ 25,468,758</td>
<td>$ 24,238,175</td>
<td>$ 71,752,515</td>
<td>$ 76,151,568</td>
<td>$ 144,520,613</td>
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<tr>
<td><strong>% Contributions Greenfield</strong></td>
<td>4.1%</td>
<td>19.2%</td>
<td>15.9%</td>
<td>52.4%</td>
<td>42.0%</td>
<td>47.1%</td>
<td>60.9%</td>
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<td><strong># Greenfield no Contributions</strong></td>
<td>3</td>
<td>3</td>
<td>11</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>0</td>
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<tr>
<td><strong>% Greenfield no Contributions</strong></td>
<td>75.0%</td>
<td>50.0%</td>
<td>52.4%</td>
<td>25.0%</td>
<td>25.0%</td>
<td>10.0%</td>
<td>0.0%</td>
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<tr>
<td><strong>$ Upgrade Costs</strong></td>
<td>$ 851,040</td>
<td>$ 11,597,926</td>
<td>$ 45,619,440</td>
<td>$ 56,072,487</td>
<td>$ 59,819,318</td>
<td>$ 38,730,267</td>
<td>$ 8,926,808</td>
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<tr>
<td><strong>$ Investment Upgrade</strong></td>
<td>$ 851,040</td>
<td>$ 11,597,926</td>
<td>$ 25,469,672</td>
<td>$ 24,071,875</td>
<td>$ 33,356,101</td>
<td>$ 8,895,610</td>
<td>$ 668,800</td>
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<tr>
<td><strong>% Investment Upgrade</strong></td>
<td>100.0%</td>
<td>100.0%</td>
<td>55.8%</td>
<td>42.9%</td>
<td>55.8%</td>
<td>23.0%</td>
<td>7.5%</td>
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<tr>
<td><strong>$ Contributions Upgrade</strong></td>
<td>$ -</td>
<td>$ -</td>
<td>$ 20,149,698</td>
<td>$ 37,167,952</td>
<td>$ 28,505,909</td>
<td>$ 29,654,657</td>
<td>$ 8,258,008</td>
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<tr>
<td><strong>% Contributions Upgrade</strong></td>
<td>0.0%</td>
<td>0.0%</td>
<td>44.2%</td>
<td>57.1%</td>
<td>44.2%</td>
<td>77.0%</td>
<td>92.5%</td>
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<tr>
<td><strong># Upgrade no Contributions</strong></td>
<td>2</td>
<td>5</td>
<td>16</td>
<td>11</td>
<td>3</td>
<td>0</td>
<td>0</td>
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<tr>
<td><strong>% Upgrade no Contributions</strong></td>
<td>100.0%</td>
<td>100.0%</td>
<td>55.2%</td>
<td>36.7%</td>
<td>15.8%</td>
<td>0.0%</td>
<td>0.0%</td>
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<tr>
<td><strong>Total Costs</strong></td>
<td>$ 17,675,337</td>
<td>$ 38,691,527</td>
<td>$ 205,716,197</td>
<td>$ 97,007,547</td>
<td>$ 241,315,334</td>
<td>$ 200,337,499</td>
<td>$ 246,300,403</td>
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<tr>
<td><strong>Total $ Investment</strong></td>
<td>$ 16,978,643</td>
<td>$ 33,484,943</td>
<td>$ 160,107,673</td>
<td>$ 43,561,241</td>
<td>$ 138,673,536</td>
<td>$ 94,351,254</td>
<td>$ 93,521,782</td>
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<tr>
<td><strong>Total $ Contributions</strong></td>
<td>$ 695,694</td>
<td>$ 5,206,584</td>
<td>$ 45,608,456</td>
<td>$ 61,406,127</td>
<td>$ 100,258,424</td>
<td>$ 105,806,245</td>
<td>$ 152,778,621</td>
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# The Data


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<thead>
<tr>
<th>Years</th>
<th>Tariff</th>
<th>Maximum Investment</th>
<th>Example Investment</th>
<th>Composite</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Capacity: $xx,xxx/MW/year</td>
<td>Amount: $xx,xxx/year</td>
<td>Increase</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Average: $xx,xxx/year</td>
<td></td>
<td>Index: 1.2x</td>
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</tbody>
</table>

### 1996-2000
- **1996 Tariff**
  - Effective: Jan 1, 1996
  - Approved: Order U97-157
  - Maximum Investment: $115,000/MW/year for a 5-year term
  - Example Investment: 7.5 MW, $2,325,000

### 2001-2003
- **2001 Tariff**
  - Effective: Jan 1, 2001
  - Approved: Decision 2000-57
  - Maximum Investment: $2,000,000 for every five-year commitment term plus three times levelized annual revenue
  - Example Investment: 7.5 MW, $5,873,165 (196%)

### 2003-2006
- **2003 Tariff**
  - Effective: Dec 1, 2003
  - Approved: Decision 2003-077
  - Maximum Investment: $400,000/year for first five years, plus three times levelized annual revenue
  - Example Investment: 7.5 MW, $5,873,165 (0)

### 2006-2008
- **2006 Tariff**
  - Effective: Jan 1, 2006
  - Approved: Order U2006-464
  - Maximum Investment: $125,000/year, plus
  - Example Investment: 7.5 MW, $3,250,000 (53%)

### 2006-2009
- **2007 Tariff**
  - Effective: Aug 1, 2008
  - Approved: Order U2008-217 and Decision 2009-165
  - Maximum Investment: $51,400/year × SF, plus $25,900/MW/year for first 7.5 × SF MW
  - Example Investment: 7.5 MW, $5,362,000 (65%)

### 2010-2011
- **2010 Tariff**
  - Effective: Jan 1, 2010
  - Approved: Decision 2010-606
  - Maximum Investment: $51,050/year × SF, plus $34,650/MW/year for first 7.5 × SF MW
  - Example Investment: 7.5 MW, $6,216,500 (15%)

### 2011
- **2011 Tariff**
  - Effective: Jul 1, 2011
  - Approved for: Feb 6, 2011
  - Maximum Investment: $50,050/year × SF, plus $34,000/MW/year for first 7.5 × SF MW
  - Example Investment: 7.5 MW, $6,101,000 (-2%)

### Cumulative, 1996 to 2011
- Example Investment: $33%
- Composite Increase: 51%
The Data

Raw Interconnection Project Cost

Current Raw Cost Function from 2010 Study:

\[ y = 2.131x^{0.5044} \]

\[ R^2 = 0.2835 \]

Raw Cost Function Based On Participant Related Cost:

\[ y = 2.4657x^{0.4046} \]

\[ R^2 = 0.4357 \]
Mechanisms

• The “80/20 Rule” – 80% of all connection projects do not pay a contribution

• The “multiplier” – a multiplier is applied to the cost function to determine investment levels

• A revenue “test” – determining the incremental revenues an MP would contribute to AESO fixed costs

• Line length – MP pays for costs over and above a prescribed line length

• A % of costs covered for every MP – each MP gets % of costs covered, every MP pays a contribution
Added Mechanisms

• Zero contribution – the MP does not pay a contribution for connection facilities

• Zero investment – the MP pays 100% of connection costs
Criteria
“A contribution policy…”

• Is based on local costs
• Sends economic price signals
• Maintains intergenerational equity
• Is robust and sustainable over time
• Aligns rates and investment structure
• Provides equitable treatment of all MPs (DFOs, industrials, section 101s)
• Ensures utilities receive equitable compensation
• Is simple, consistent and transparent
Next Steps

• Further analysis of the data
• Determining an appropriate inflation index
• Criteria / mechanisms matrix
• Examine whether a contribution should be required between utilities
• Examine capital costs and factors that contribute to variability
• Consider differences between upgrade and greenfield projects
• Wordsmith the criteria to come up with principles
<table>
<thead>
<tr>
<th>Working Group meeting #3</th>
<th>December 12 2011</th>
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<tr>
<td>Working Group meeting #4</td>
<td>January 5 2012</td>
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<td>Working Group meeting #5</td>
<td>January 30 2012</td>
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<tr>
<td>Working Group meeting #6</td>
<td>February 20 2012</td>
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<td>Working Group meeting #7</td>
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Thank you