Contribution Policy Review

AESO Tariff Applications
Monday March 26th, 2012
Agenda

- Contributions between utilities
- Upgrade outliers
- Consider a new upgrade concept
- Review inflation indices
- Finalize mechanism and investment level?
- What we’ll be addressing in the application
Action Items

- Collected recent upgrade project cost data (2010 to present)
- Analysis of upgrade outliers
- Ken and David were able to get the ISDs of the original greenfield project for the associated upgrade project
Contributions between utilities

**Principles Matrix**

<table>
<thead>
<tr>
<th></th>
<th>Provides effective price signals</th>
<th>Maintains I/G equity</th>
<th>Based on local costs</th>
<th>Based on cost causation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;80/20&quot; rule</td>
<td>1 / 3</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Multiplier</td>
<td>1 / 3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Revenue test</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Line length</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1 / 3</td>
</tr>
<tr>
<td>% of costs for all projects</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Zero contribution</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Zero investment</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
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</tbody>
</table>

1 = not meeting criteria
2 = partially meeting criteria
3 = fully meeting criteria
1 / 3 = individual projects would either fully meet or no meet criteria
Contributions between utilities

• A zero contribution policy meets fewer of our criteria/principles
  – Does poorly on 3 primary principles

• DFOs do respond to price signals

• Are the principles wrong? Or is the concept of no contributions between utilities wrong?
Variability in upgrade project costs (revised)

Total cost per additional MW, upgrade projects 2010 to present

Average Cost $ Million/MW

# of Projects
<table>
<thead>
<tr>
<th>#</th>
<th>Name/Sub</th>
<th>Sub #</th>
<th>Participant-related Costs</th>
<th>Pre upgrade DTS</th>
<th>Incr. DTS</th>
<th>Final DTS</th>
<th>ISD</th>
<th>GF ISD</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>712</td>
<td>Friedenstal Tx Add</td>
<td>800S</td>
<td>$4,505,000</td>
<td>7.50</td>
<td>1.00</td>
<td>8.50</td>
<td>2012</td>
<td>1980</td>
<td>Transformer add, 2 breakers, replace regulator</td>
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<td>734</td>
<td>Wainwright Tx Add</td>
<td>51S</td>
<td>$8,926,808</td>
<td>20.00</td>
<td>4.40</td>
<td>24.40</td>
<td>2012</td>
<td>1974</td>
<td>transformer add</td>
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<tr>
<td>824</td>
<td>Balzac Capacity Increase</td>
<td>391S</td>
<td>$5,820,000</td>
<td>26.60</td>
<td>3.80</td>
<td>30.40</td>
<td>2010</td>
<td>1982</td>
<td>replace 2 transformers</td>
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<tr>
<td>897</td>
<td>Fort Assiniboine Upgrade</td>
<td>234S</td>
<td>$5,359,627</td>
<td>14.80</td>
<td>3.00</td>
<td>17.80</td>
<td>2011</td>
<td>1996</td>
<td>transformer add</td>
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<tr>
<td>928</td>
<td>Cochrane Tx Upgrade</td>
<td>291S</td>
<td>$9,753,000</td>
<td>18.00</td>
<td>3.50</td>
<td>21.50</td>
<td>2011</td>
<td>1992</td>
<td>transformer add</td>
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<tr>
<td>1047</td>
<td>Swan River Sub Upgrade</td>
<td>735S</td>
<td>$4,839,000</td>
<td>10.00</td>
<td>5.00</td>
<td>15.00</td>
<td>2012</td>
<td>1965</td>
<td>transformer replace, relocate regulator</td>
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<tr>
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<td>Willesden Green Upgrade</td>
<td>68S</td>
<td>$4,755,000</td>
<td>7.53</td>
<td>4.17</td>
<td>11.70</td>
<td>2012</td>
<td>1981</td>
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<td>1202</td>
<td>Keystone Upgrade</td>
<td>384S</td>
<td>$8,095,000</td>
<td>19.40</td>
<td>1.60</td>
<td>21.00</td>
<td>2012</td>
<td>1989</td>
<td>transformer add, breaker add, breaker relocation</td>
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<tr>
<td>1203</td>
<td>Rimby Upgrade</td>
<td>297S</td>
<td>$10,646,000</td>
<td>20.50</td>
<td>4.10</td>
<td>24.60</td>
<td>2012</td>
<td>1981</td>
<td>transformer add, breaker add, breaker relocation</td>
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</table>
Upgrade investment

- All of the “outliers” had incremental investment of less than 5 MWs
- All transformer adds or replacements
- All 2010 – 2012 ISDs
- The “youngest” sub is 23 years, the oldest is 47 years
Discussion of treatment of upgrade projects

• Should “really old” subs get additional investment for upgrade projects?
• Should upgrade projects for subs with original ISDs of 10 to 30 or 20 to 40 years old get a portion of greenfield investment levels?
• Should we add certain stipulations, such as, the customer is eligible for greenfield investment levels if transformation is being added, if the substation is x many years old, and the customer contracts for at least x many MWs?
Issues with a separate upgrade investment policy

- Transmission line costs are included in the average greenfield cost function
  - Most upgrade projects do not have transmission line costs associated with them
- We need to find out ISDs of the original substations, the large majority of which precede the AESO
- Are older substations really more costly to upgrade?
- There is no incentive to plan ahead – if separate upgrade projects at the same sub are all covered by investment
Greenfield + upgrade cost function

\[ y = 1.8569x^{0.5924} \]

\[ R^2 = 0.4741 \]
Two cost functions

Comparison of Cost Function With and Without Upgrade Projects

Maximum DTS Contract Capacity, MW

Construction Cost, $ 000 000

- Greenfield Only
- Greenfield and Upgrade
Inflation Index

• Should we adopt the ENMAX index?

• ENMAX uses an index based on the EUCPI and monthly Alberta Average Hourly Earnings (AHE) – weighting of each is 50/50
Which “mechanism”?

- Should we propose a multiplier? Or a certain percentage of project costs covered? Certain percentage of projects?
- Multiplier of 1.2 covers 70% of dollars, 34% of projects (32% increase over 2011)
- Multiplier of 1.45 covers 80% of dollars, 45% of projects (51% increase over 2011)
- Multiplier of 1.75 covers 88% of dollars, 66% of projects (65% increase over 2011)
  - In Decision 2007-106 on the AESO’s 2007 tariff application, the Commission explained it did not provide “general endorsement of an 80/20 rule as a guiding principle”
  - The Commission assessed the investment level such that “79.2% of the data points receive at least 80% investment”
  - Resulting investment level covered 88% of costs and 56% of projects
So…what are we addressing in the application?

- Principles
- New and updated data set(s)
- Development of a cost function and inflation indices
- Factors contributing to cost variability for greenfield projects
- Consideration of upgrade project cost differences
- Contributions between utilities
What are we NOT addressing?

• We won’t be updating rates, but we will discuss the small long term impact on TFO revenue requirement
• Rider I, management fee
<table>
<thead>
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<th>Schedule</th>
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<tr>
<td>Outline / table of contents and data finalized</td>
<td>April 10, 2012</td>
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<td>First draft of application</td>
<td>May 10, 2012</td>
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<td>Stakeholder information session</td>
<td>May 17, 2012</td>
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<td>Internal review</td>
<td>May 10 – 24, 2012</td>
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<td>Pre-final draft distributed to WG for review</td>
<td>May 24, 2012</td>
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<td>Comments back from WG members</td>
<td>June 1, 2012</td>
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<tr>
<td>VP review of Application</td>
<td>June 14, 2012</td>
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<td>Application filing date</td>
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Thank you