Contribution Policy Review

John Martin, Director, Tariff Applications
Lee Ann Kerr, Manager, Tariff Applications
March 1, 2012 – Calgary

Agenda

• Background
• Contribution policy principles and assessment of approaches to principles
• New and updated data set(s)
• Development of a cost function and inflation indices
• Factors contributing to the variability of connection projects
• Approaches to setting maximum investment levels
• Next steps
Background

• Alberta Utilities Commission established Proceeding ID No. 1162 to address transmission contribution policy

• Commission finalized scope in July 2011 including:
  – Review the rationale, history, and factors underlying today’s contribution policy
  – Document changes in contributions over time
  – Examine whether a contribution should be required between two utilities
  – Identify those factors which result in contributions
  – Investigate impacts contribution policies, investment and contribution levels on market participants

Background (cont’d)

– Develop recommendations

• AESO issued discussion paper and established a working group in September 2011
  – Working group has met five times to review and discussion contribution policy
  – Working group includes representatives from AltaLink, ATCO Electric, Enbridge, ENMAX, FortisAlberta, IPCAA, and UCA
What are connection costs?

- **Bulk and Local Transmission System**
- **POD = Point of Delivery**
- **Participant-Related Costs Only**

Why do we have contributions?

- Contributions are suitable in circumstances where service to a customer may affect costs paid by other customers.
- A policy should provide a suitable balance to an obligation to serve by imposing economic discipline on siting decisions.
- It balances the economic impact of connecting a new customer between a utility’s existing customers and the new customer.
- Contributions should relate only to the connection costs of the system extension.
- “Deep” system costs are properly the responsibility of all customers, form part of the utility’s revenue requirement, and should be recovered from all customers through rates.
What is a contribution?

Connection Costs $12.1 million
Less “investment” (paid over time) – $4.5 million
Construction contribution (“down payment”) = $7.6 million

What is investment?

- Investment determines what level of contribution is required to be paid by the demand customer to cover the capital costs that exceed a proposed threshold
- Investment is paid back in the form of DTS Rates
- High investment levels could place upward pressure on rates
- Low investment levels threaten intergenerational equity
- Based on contract capacity and term
What principles should a contribution policy satisfy?

• Principles provide a basis upon which to assess the effectiveness of a contribution policy

• To determine principles, the AESO primarily relied on:
  – discussion and directions in prior Commission decisions
  – the approaches to establishing maximum investment levels filed by FortisAlberta and ATCO Electric in their distribution tariff applications
  – recommendations from AltaLink’s industry consultation process during 2008

• Review identified two primary principles and six secondary principles

1. Provides effective price signals

The contribution policy must send price signals that influence market participants to select the best long-term economic and technical alternatives for connection projects while considering good electric industry practice. The price signals should ensure that market participants consider the costs of connections when requesting system access service. An effective price signal will result in a market participant requesting:

• only those transmission facilities needed to meet the individual service requirements of the market participant, and

• transmission facilities that optimize overall costs, including the impact of siting the market participant’s own plant and equipment as well as other factors.
1. Provides effective price signals (cont’d)

The contribution policy should not provide excessive investment or other incentives that would encourage market participants to request facilities beyond those needed to meet their individual service requirements.

2. Maintains intergenerational equity

The contribution policy must balance what a new market participant pays as a contribution compared to what all market participants pay through related rate components. In general and consistent with historical practice, new market participants should receive a fair and sufficient level of investment such that most do not pay a contribution or, alternatively, that most contributions represent a small proportion of connection project costs. As well, a new service should not unduly burden existing services and should not place undue upward pressure on rates.
Consistent with which historical practice?

3. Is based on local costs

The contribution policy should directly relate to the current local connection costs of system access service and should exclude system costs. The connection costs should reflect good electric industry practice for transmission facilities to meet the individual service requirements of the market participant.
4. Is robust and sustainable

The contribution policy must accommodate changes to the service characteristics, functionality, and standards that apply to system access service, as those characteristics, functionality, and standards change over time.

5. Is based on cost causation

Investment levels should be determined on the same cost causation basis as are the related rate components, to the extent practical and considering the expected life of a service. Since investment is recovered through rates, basing both on cost causation will ensure investment is appropriately recovered through rates over a broad range of market participant connections.
6. Treats all load market participants equitably

The contribution policy should apply equally to owners of distribution systems, owners of industrial systems, and direct-connected market participants who receive section 101 releases. In as much as all load market participants pay the same investment-related rate components, all should be subject to the same contribution policy.

7. Compensates utilities equitably

The contribution policy should provide a reasonable opportunity for transmission facility owners to invest in and be compensated for the facilities they own, operate, and maintain to provide system access service.
8. Is simple, consistent, and transparent

The contribution policy must be simple to administer and update. It must also be able to be applied consistently and transparently.

“Mechanisms”

Assessed different approaches to setting the investment level:

1. The “80/20 Rule” – 80% of all connection projects do not pay a contribution
2. A multiplier – a multiplier is applied to the cost function to determine investment levels
3. A revenue test – determining the incremental revenue an market participant would contribute through rates to capital costs
4. Line length – market participant pays for costs over and above a prescribed line length
“Mechanisms” (cont’d)

5. A % of costs covered for every connection – each market participant gets % of costs covered, every market participant pays a contribution

6. Zero contribution – the market participant does not pay a contribution for connection facilities

7. Zero investment – the market participant pays 100% of connection costs

Principles Matrix

<table>
<thead>
<tr>
<th>Mechanism / Criteria Matrix</th>
<th>Provides effective price signals</th>
<th>Maintains FG equity</th>
<th>Based on local costs</th>
<th>Robust and sustainable</th>
<th>Based on cost causation</th>
<th>Equitable treatment of all fixed MPs</th>
<th>Compensate utilities equitably</th>
<th>Simple, consistent and transparent</th>
</tr>
</thead>
<tbody>
<tr>
<td>80/20 rule</td>
<td>1/3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Multiplier</td>
<td>1/3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Revenue neutrality</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Line length</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1/3</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>% of costs for all projects</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Zero contribution</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Zero investment</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
</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
The POD Cost Function provides the basis for Rate DTS

How did we get to where we are today?

- In Decision 2005-096 it was established that “cost, not revenue, is the appropriate starting point for establishing the investment policy”
- The AESO was directed to compile a sufficient number and diversity of data points to consider costs of different project sizes (MWs)
- The AESO would also recommend an investment function representing the average cost per MW of capacity
- And, the AESO would determine a multiplier such that a specific % of projects fall within the tolerance
What project data did we gather?

- The original (2007) data set consisted of 30 greenfield projects – today the data set has 86 greenfield projects
- The AESO collected data on all greenfield DTS-only projects since its inception
  - STS and DTS/STS projects were not included
  - Industrial systems and customer-owned substations not included
- Included projects at PPS level up to final costs
- All costs were escalated to 2013
- Used “maximum” DTS capacity

68 Greenfield projects

![Connection Projects](chart.png)
68 Greenfield + 18 pre-AESO projects

Connection Projects

Connection Cost (000s)

DTS Capacity (MWs)

86 Projects and cost function

Connection Projects

Connection Cost (000s)

DTS Capacity (MWs)
Why the power curve?

- Contributes to stable and consistent rates
- Addresses need to consider small (<5MW) projects and large (>40MW) projects
- Best statistical and visual fit
What about inflation?

Cost functions by year subsets

- 1999 - 2004
- 2005 - 2009
- 2010 - 2013

How did we categorize the outliers?

Frequency of Project Cost Ranges

Escalated Cost as Percentage of Escalated Cost Function
What factors affect the outliers?

What factors contribute to higher connection costs?
1. Delays in regulatory approvals
2. AUC Rule 007, PIP and consultation adding to project timelines
3. Geographic location
4. Outsourcing the construction (as opposed to in-house build)
5. High distributed and indirect costs
6. Changes in functionality or reliability standards
7. Bulk system build

Can a customer influence factors that make a project an outlier?

• For example, a customer can choose:
  – An additional transformer or breaker
  – Whether the substation is located closer to a transmission line or close to the participant’s facilities
  – Where to site their own facilities

• A customer can’t usually choose:
  – Whether to connect at 138 kV or 240 kV
  – Whether or not to meet functionality and reliability standards
  – When new bulk system facilities will be available for connection
Setting the appropriate level for maximum investment allowance is a balancing act

- Process involves judgment to satisfy contribution policy principles
  - Most importantly, must provide effective price signals and maintain intergenerational equity to the extent practical
- 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

Existing investment levels cover 53% of costs and 14% of 29 projects
Setting investment levels to average cost covers 62% of costs and 17% of projects.

Setting investment levels to cover 80% of costs would cover 45% of projects.
Setting investment levels to cover 88% of costs would cover 69% of projects

Setting investment levels to cover 92% of costs would cover 79% of projects
Next steps for working group

- Review composite inflation index
- Consider differences between upgrade and greenfield projects
- Discuss the requirement of contributions between utilities

Schedule

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working Group meeting #6</td>
<td>March 5, 2012</td>
</tr>
<tr>
<td>Stakeholder comments on information session</td>
<td>March 19, 2012</td>
</tr>
<tr>
<td>Working Group meeting #7</td>
<td>March 26, 2012</td>
</tr>
<tr>
<td>General stakeholder information session ?</td>
<td>late April 2012 ?</td>
</tr>
<tr>
<td>Discussion paper and comment process ?</td>
<td>May 2012 ?</td>
</tr>
<tr>
<td>Application filing date</td>
<td>June 21, 2012</td>
</tr>
</tbody>
</table>
For more information

- John Martin  
  Director, Tariff Applications  
  403-539-2465 or john.martin@aeso.ca

- Lee Ann Kerr  
  Manager, Tariff Applications  
  403-539-2741 or leeann.kerr@aeso.ca

- Consultation documents on AESO web site at www.aeso.ca  
  Tariff ▶ Current Consultations ▶ Contribution Policy

Thank you