Dear Working Group Member:

Re: Meeting Agenda for Amortized Customer Contribution Option and Other Contribution Provisions Working Group

The first meeting of the Amortized Customer Contribution Option and Other Contribution Provisions Working Group for the AESO’s 2010 tariff application is scheduled as follows:

<table>
<thead>
<tr>
<th>Time</th>
<th>9:00 to 11:00 AM</th>
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</thead>
<tbody>
<tr>
<td>Date</td>
<td>Wednesday, June 10, 2009</td>
</tr>
<tr>
<td>Location</td>
<td>Meeting Room 2506, AESO Office, 330 – 5th Avenue SW, Calgary</td>
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<tr>
<td>Refreshments</td>
<td>Coffee, juice, and pastries</td>
</tr>
</tbody>
</table>

This working group includes the following members:
- AltaLink: Tony Demassi
- DUC: Dale Hildebrand
- FortisAlberta: John Holmes
- IPCAA: Vittoria Bellissimo
- NaturEner: Will Ingenthron
- TransCanada: Dan Levson or Vince Kostesky
- UCA: Ed de Palezieux
- AESO: John Martin, David Michaud, and Shaun Andrews

If you intend to participate in the meeting by conference call, are unable to attend the meeting, or will be represented by an alternate, please let me know as soon as possible.

The agenda for the meeting is proposed to include the following items:

1. **Introductions**
   - Please indicate which stakeholders you represent

2. **Review agenda**

3. **Review draft working groups terms of reference**
   - See enclosed document originally posted on April 22, 2009
   - The AESO proposes to revise section 3 of the draft terms of reference by updating the first bullet point and adding an additional bullet point, as follows:
Each Working Group will generally have a maximum of six to eight members (including AESO employees and consultants). No more than six stakeholder members will generally be on any one Working Group.

A company or association may have only one individual participating in any specific working group meeting, although that individual may be an alternate to the usual representative of that company or association.

• Identify any concerns with or additional revisions to the terms of reference
• Terms of reference will be finalized after initial meetings for all working groups are complete

4 Background for customer contributions

Please review the enclosed information before the meeting, if possible:

(a) Discussion of customer contribution policy in section 8.1 (pages 91-99) and of AESO standard facilities in section 8.2 (pages 100-105) of Decision 2007-106 on the AESO’s 2007 General Tariff Application, released on December 21, 2007

(b) Recommendation 2 on standard facilities (pages 3-6) and recommendation 7 on customer contribution payment options (pages 10-11) from the customer contribution policy recommendations delivered from the AltaLink stakeholder consultation process, dated November 21, 2008

• Is there other background that participants consider particularly relevant?

5 Amortized customer contribution payments

• An amortized payment approach could be an alternative to the existing tariff provisions which require the customer contribution to be paid before construction (Article 9.2)
• Are there considerations for whether this approach applies to:
  – DTS (load) services,
  – STS (generation) services, or
  – both types of services?
• Should the approach be:
  – mandatory for all services in accordance with approved criteria, or
  – an option available at the choice of the customer?
• How should the risk of default be assessed, mitigated, and monitored under an amortized payment approach?
• What costs should be included under an amortized payment approach?
  – capital costs (depreciation)
  – return on equity
  – interest on debt
  – income tax
  – operation and maintenance expense
  – other expenses
• How should the term (number of years) for an amortized payment approach be established? What happens at the end of the term?

6 Staged security requirements

• Security requirements prior to payment of contribution could be staged to match costs incurred by the TFO
• How could the staging of security requirements be determined?
• What milestones exist for monitoring and adjusting staged security requirements?
7  **Follow-up required for next meeting**  10:45 AM
   • Summarize what tasks need to be completed before next meeting and who will complete them

8  **Dates and times for next meeting(s)**  10:55 AM

9  **Adjourn**  11:00 AM

This agenda and all other printed information related to the Amortized Customer Contribution Option and Other Contribution Provisions Working Group is available on the AESO’s website at www.aeso.ca by following the path Tariff ▶ Current Consultations ▶ 2010 Tariff. The AESO appreciates stakeholders’ participation in this consultation.

If you have any comments or questions on this consultation process or the AESO’s tariff application, please contact me at 403-539-2465 or john.martin@aeso.ca, or David Michaud at 403-539-2471 or david.michaud@aeso.ca.

Sincerely,

*original signed by*

John Martin  
Director, Tariff Applications

enclosures

cc:  David Michaud, Manager, Regulatory, AESO
1 Purpose

The AESO 2010 Tariff Consultation Working Groups will be forums for stakeholders to provide perspective, advice, and expertise to the AESO on specific topics for the AESO’s 2010 tariff application. The Working Groups are intended to augment the internal capabilities of the AESO and support effective consultation by engaging stakeholders in the development of the tariff application.

2 Topics

Working Groups are proposed to examine the following topics for the AESO’s 2010 tariff application. Some issues are suggested for exploration within each topic, although each Working Group is expected to determine what issues should be examined for each topic.

(a) **POD Cost Function and Investment Level Update**
   - Substations included in POD cost data set
   - Inflation index to escalate POD cost data to 2010
   - Multiplier to determine investment level

(b) **TFO O&M Cost Causation Study**
   - Respond to AUC directions on analysis of TFO O&M costs
   - Determine if TFO O&M costs are energy-related
   - Determine if TFO O&M costs should be functionalized similarly to capital costs

(c) **DTS Operating Reserve Charge Design**
   - Methodology to analyze and assess design of operating reserve charge
   - Criteria for selection of appropriate design for operating reserve charge

(d) **Fort Nelson Rate FTS**
   - Rate design principles for Fort Nelson and similar services
   - Cost allocation approaches between BC and Alberta loads in the Rainbow Area
   - Contractual considerations for Fort Nelson and similar services

(e) **Export and Import Rates XTS and ITS**
   - Rate design principles for higher-priority export and import services
   - Similarities and differences between domestic and intertie services
   - Potential allocation of “deep system” costs to services over merchant interties

(f) **Deferral Account Riders B and C**
   - Rate design principles for deferral account riders
   - Practicality of improving allocation accuracy of deferral account riders
   - Possible integration of Riders B and C
(g) **Tariff Changes Related to Transition of Authoritative Documents (TOAD)**
- Provisions that could be moved from tariff to other authoritative documents (such as technical standards or ISO Rules)
- Common provisions that could be standardized and consolidated
- Dispersed information that could be consolidated

(h) **Amortized Customer Contribution Option and Other Contribution Provisions**
- Potential changes to AESO standard facilities definition
- Potential provisions for amortized customer contribution option
- Assessment of credit-worthiness and mitigation of risk of default

(i) **Tariff Provisions Related to Customer-Owned Substations**
- Principles for tariff provisions at customer-owned substations
- Assessment of Primary Service Credit and associated investment factor
- Application of substation fraction at customer-owned substations

### 3 Working Group Members

The Working Groups will consist of AESO stakeholders and AESO employees with interest, expertise, or both in the specific topic being examined in each Working Group.
- Each Working Group will have a maximum of four to six members (including AESO employees). No more than four stakeholder members will be on any one Working Group.
- Stakeholder involvement in a Working Group is voluntary. Membership will generally be on a first come, first served basis.
- Stakeholders may coordinate involvement in different Working Groups among themselves to avoid duplication and overlap of interest.
- The AESO may suggest changes to the composition of individual Working Groups to ensure diversity and balanced representation of views.

### 4 Duration

Each Working Group will be active from May 1, 2009 to no later than mid-July 2009.
- A Working Group may conclude activities earlier if no further review of the topic would be helpful to the AESO's 2010 tariff application.
- A Working Group may also continue activities for a longer period if an extension is required to effectively satisfy its purpose.

### 5 Scope and Duties

Working Groups will review and discuss options and alternatives for proposals being considered for inclusion in the AESO's 2010 tariff application. Working Groups are not decision-making bodies. Consultation within Working Groups will not replace general stakeholder consultation. The AESO will consider consultation within the Working Groups in the context of its broader stakeholder consultation.
(a) Working Groups will determine their own meeting dates and times. Meetings are expected to occur about every two weeks, for one to two hours. Meeting agendas will be prepared and communicated in advance as much as practical. Members may participate in meetings via conference call. A Working Group will generally be coordinated and chaired by an AESO employee. Meetings may be held at the office of the AESO or of other Working Group participants.

(b) Working Group members are expected to dedicate appropriate time to actively participate in Working Group meetings, to review material prior to meetings, and to address questions raised and issues identified following the meetings. Working Group members may assign work to others within their organizations with appropriate technical or regulatory expertise on the topic.

(c) Working Group members are expected to engage in informal open discussion on a “without prejudice” basis. Although discussion in Working Groups will not be presented as evidence in the AESO’s tariff application proceeding, the AESO and participants may refer in their respective evidence to any conclusions they reach as a result of Working Group discussion. A participant or representative on any Working Group will not be precluded from participating in the AESO’s tariff application proceeding before the AUC. Neither stakeholders nor the AESO will be limited in any way from expressing views that may differ from those expressed in the Working Group. However, all participants are expected to engage in meaningful and transparent dialogue in the Working Groups.

(d) The activities of the Working Groups and related written documents will be communicated to stakeholders through postings on the AESO website, as appropriate. However, minutes of discussion and transcripts of conversations will not generally be prepared. All material will be assumed to be non-confidential unless identified otherwise. All such material will be available on the AESO website at www.aeso.ca by following the path Tariff ➤ Current Consultations ➤ 2010 Tariff. All stakeholders will generally have opportunity to comment on the material posted, as part of comment processes in the AESO’s general stakeholder consultation.

(e) Working Group conclusions will be considered by the AESO in developing proposals for its 2010 tariff application. The AESO’s 2010 tariff application will reflect decisions consistent with legislation, policy, and the AESO’s mandate, considering the input and advice provided by the Working Groups. The rationale for the AESO’s proposals will be included in the tariff application.

6 Deliverables

The AESO 2010 Tariff Consultation Working Groups will provide the following.

(a) Advice and expert comments on specific topics being considered as part of the AESO’s 2010 tariff application.

(b) Suggestions to improve the studies, analysis, rates, and terms and conditions that will comprise the AESO’s 2010 tariff application.
Identification of legislation, policy, prior regulatory decisions, principles, precedent, and practices that are relevant to the topic being examined by the Working Group.

7 Principles

The activities of the AESO 2010 Tariff Consultation Working Groups will be consistent with the AESO’s mandate to prepare a tariff that is just and reasonable, and that is not unduly preferential, arbitrarily or unjustly discriminatory, or inconsistent with or in contravention of any applicable law.

Working Groups will consider topics in the context of an overall Alberta perspective that will improve the fairness, efficiency, clarity, and consistency of the AESO’s tariff.

8 Expenses

Working Group members are responsible for their own out-of-pocket expenses and time for participating in Working Group activities. The AESO will not reimburse participants for costs incurred due to involvement on a Working Group.

9 Recent AESO Tariff Decisions

Members of the Working Groups should, at a minimum, be familiar with discussion of the topic in recent AESO tariff decisions, which are listed below for convenience.

- EUB Decision 2005-132: AESO Review and Variation of Customer Related POD Charge (released on December 6, 2005)
Secondly, given that additional system costs incurred to accommodate service over a merchant intertie fall within section 27 of the 2007 Transmission Regulation, the Board finds that insufficient evidence was offered in this proceeding to allow the Board to determine whether the proposed MTS rate is in compliance with section 27. Accordingly, the Board is unable to approve this rate at this time.

The Board acknowledges that the TCE witness panel questioned the likelihood of customers entering contracts to induce additional firm capacity to or from an intertie since before an intertie is built, the benefits of firm import or export transactions cannot be used to offset the substantial cost of contracting for firm MTS service.\textsuperscript{310} However, the Board is concerned that the potential for customers to contract for firm MTS service to induce or advance additional deep system capacity may nevertheless exist. This potential is of sufficient concern that the Board is not prepared to approve the rate MTS at this time.

### 7.3.1.2 Merchant Opportunity Service Rates (MOS 1 Hour and MOS 1 Month)

The AESO proposed that its MOS 1 Hour and MOS 1 Month rates would generally reflect the cost allocation principles used by the AESO to develop its proposed XOS 1 Hour and XOS 1 Month rates. The main exception was that the AESO proposed that its MOS rates should not include an allocation of costs related to the existing interties, since the existing intertie facilities would not be used by exporters using a merchant line to access other markets.\textsuperscript{311}

For energy either generated or consumed in Alberta, the Board agrees that customers using a newly constructed merchant intertie would not require the use of the existing Alberta-British Columbia or Alberta-Saskatchewan interties. This indicates that the minimum charge component of the rate (based on the incremental variable cost associated with providing the service) would be equal to or lower than the corresponding XOS rate minimum charge. However, the Board finds that no evidence indicated that the value of the proposed merchant opportunity service (MOS) is less than the value of export opportunity service (XOS). Accordingly, the Board finds that the value of service based rate for MOS 1 Hour and MOS 1 Month is $3.98/MWh and $4.36/MWh respectively, consistent with the Boards findings in section 7.2.1.

### 8 TERMS AND CONDITIONS OF SERVICE

#### 8.1 Customer Contribution Policy

##### 8.1.1 Interconnection Project Cost Function

In Decision 2005-096, the AESO was directed to undertake further research to devise a more comprehensive investment function proposal which avoids the concerns expressed by the Board in that decision and which reflects the design principles described by the Board in that Decision.\textsuperscript{312} A proposal based on this research was to be presented in the AESO’s 2008 GTA.

In the Application, the AESO noted that following extensive debate during the 2005/2006 GTA, the Board in Decision 2005-096 amended the maximum local investment formula to provide a

\textsuperscript{310} Tr. Vol. 6, pp. 1209-1210
\textsuperscript{311} Ex. 005, Section 4 of the Application, p. 50 of 53, lines 13- 19
\textsuperscript{312} Decision 2005-96, pp. 57-58 (Direction 13A)
minimum investment allowance of $2.5 million plus an additional allowance of $100,000 per MW of project capacity.\textsuperscript{313}

As a result of feedback obtained during stakeholder consultations, the AESO undertook to revise the investment allowances under the contribution earlier than the 2008 GTA. It is apparent that the AESO encountered obstacles related to the limited amount of available POD cost data in its efforts to gather the data required to fulfill the Board’s direction to develop a cost based interconnection project cost function. The Board wishes to acknowledge the AESO’s diligence in complying with the Board’s direction. The Board confirms that the AESO has complied with the Board’s Direction 13A from Decision 2005-096.

The AESO used the same cost function both to determine a proposed investment function under the customer contribution policy and to design the POD charge component of Rate DTS. Accordingly, to the extent that parties made submissions related to determining a POD cost function for POD charge purposes, such submissions have also been taken into account by the Board, as appropriate, in its assessment of the appropriate POD cost function for customer contribution policy purposes.

As discussed in section 5.7.3 of this Decision, the Board has determined that it is appropriate that the same underlying average cost function be used for both POD charge determination and contribution policy investment allowance purposes.

However, in section 5.7.7 of this Decision, the Board has not approved the POD cost function proposed by the AESO. Accordingly, for greater certainty, the Board confirms that the approved POD cost function set out in section 5.7.7 of this Decision is to be used as the basis for the maximum investment function. The Board discusses the additional steps required to convert the approved POD cost function into the approved maximum investment allowance function.

\section*{8.1.2 Determination of Maximum Investment Function}

Article 9.6 of the AESO’s proposed T&Cs describes the determination of the customer contribution for a load interconnection project. Within Article 9.6, the major determinant of the customer contribution is the maximum local investment (maximum investment). In section 6.5.3 of the Application, the AESO discussed its efforts to comply with Directive 13 of Decision 2005-096.

The AESO considered that Directive 13A required the multiplier of its proposed interconnection project cost function to be consistent with a maximum investment function such that 80% of projects do not pay a contribution. Based on an analysis of sample POD cost data from its analysis of current projects sample, the AESO determined that applying a multiplier of 1.15149 to its proposed interconnection project cost function would result in 24 of 30, or 80%, of projects being fully covered by the resulting maximum investment function.

The AESO noted that the 80/20 criterion established by its predecessor was originally approved by the Board in Decision 2001-6. It further submitted that using this criterion assists in harmonizing the AESO’s contribution polices with those of the Discos and helps to preserve the

\textsuperscript{313} Exhibit 007, Section 6.3.2 of the Application
balance between the need of new customers for service and for service without subsidization from existing customers. Additionally, the AESO submitted that the 80/20 criterion supported the principles that most new customers would not see a different cost of system connection than existing customers, and existing customers should not bear any extraordinary costs of system expansion.

In argument, the AESO noted that while its proposed POD cost function had changed from the POD cost function it initially proposed in the Application, its proposed multiplier of 1.15149 did not change as a result of the revisions to the cost function since the multiplier still resulted in 80% the 30 greenfield projects being fully covered by the resulting maximum investment function.

The AESO further noted that its proposed application of the multiplier was not debated by any party during the hearing.

The Board considers that before ruling on the appropriate multiplier to be used to set maximum investment allowances under the customer contribution policy, it is first necessary to address the issue of whether a so called “80/20 Rule” should apply.

8.1.2.1 Application of “80/20 Rule”

As discussed in section 8.1.1 above, Direction 13A from Decision 2005-096 required the AESO to perform research leading to the development of a function describing the relationship between interconnection project capacity and average cost. Direction 13A also instructed the AESO to perform research into a multiplier of the AESO’s proposed average interconnection cost function that would provide a degree of tolerance above the average interconnection cost function. Consistent with the Board’s finding in section 8.1.1 above that the AESO’s interconnection project cost research complied with the requirements of Direction 13A, the Board considers that the AESO’s research into the development of an appropriate multiplier of the average interconnection project cost has complied with the Board’s direction.

It appears that Direction 13A has been interpreted by the AESO and some other parties as a general endorsement for the continuation of a so-called “80/20 Rule” previously applied to the AESO’s predecessor.314

However, the direction to devise a multiplier such that 80% of projects of the project fall under the resulting maximum investment function represented no more than a direction to conduct a one-time study. The mention of 80% in the direction should not have been interpreted as a general endorsement of an 80/20 rule as a guiding principle, nor did it require that the 80% threshold be used by the Board in determining an appropriate multiplier for the maximum investment function for the 2007 tariff.

The underlying principles intended to govern the design of AESO and utility contribution policies generally were discussed in some detail in sections 6.1.1 and 6.1.4 of Decision 2005-096. Included in the most important considerations set out in that decision are the following:

314 See Ex. 007, p. 18; Ex. 015, p. 26; AESO Argument, p. 43, p. 44, p. 79, p. 81, AESO Reply, p. 34; DUC Evidence (Ex. 229, p. 30); TCE Reply Argument, p. 11
• the underlying purpose of the contribution policy is to send economic signals to AESO customers when considering alternatives for siting their interconnecting loads;\textsuperscript{315}
• an excessive investment allowance could provide incentives for customers to pursue higher standards of interconnection facilities than required and justify doing so on the basis that the cost of the higher standard facilities would not exceed the permitted investment allowance;\textsuperscript{316}
• because the incremental revenue approach may place undue upward pressure on rates, maximum investment allowances should be at a level below a level representing the incremental revenues expected to arise from the interconnection of a new customer;\textsuperscript{317}
• investment allowances should be set with regard to the anticipated costs of establishing an interconnection reflecting acceptable standards of functionality and service established by the AESO;\textsuperscript{318}
• interconnection facility service characteristics and standards of functionality may change over time.\textsuperscript{319}

These considerations cannot be assumed to be automatically addressed solely by applying an 80/20 rule test to a proposed maximum investment function.

The Board considers the following passage from Decision 2005-096 to be instructive:

The Board considers that the underlying rationale for the consideration of revenues in the context of a contribution investment policy relates to the manner in which a new customer interconnection may benefit existing customers through a broader sharing of embedded system costs. In this context, the incremental transmission revenue generated by connecting the new customer is also the maximum level of the “willingness to pay” of existing customers. Furthermore, since the Board considers that a new customer may normally be presumed to be seeking an interconnection in order to obtain the benefits of electrical service rather than an investment allowance per se, the Board considers that the new customer should be provided the incentive to commit an investment as long as the costs of any required interconnection facilities are offset. Thus, there is the potential risk of creating a substantial difference between the respective willingness to pay of the new customers and that of existing customers. The difficulty in creating a utility investment policy is to determine how to design a maximum investment allowance function that will fall at a reasonable level within this range.\textsuperscript{320}

The key concept described in the above passage is that the level of investment allowance should be targeted to fall somewhere in a range between the bookends of: (1) making the connecting customers pay for the full cost of a new interconnection and (2) providing a full contribution credit to reflect the benefit of embedded system cost sharing new AESO customer can provide to existing customers.

\textsuperscript{315} Decision 2005-096, p. 43
\textsuperscript{316} Decision 2005-096, p. 44
\textsuperscript{317} Decision 2005-096, p. 44
\textsuperscript{318} Decision 2005-096, p. 44
\textsuperscript{319} Decision 2005-096, p. 44
\textsuperscript{320} Decision 2005-096, p. 56
Setting the appropriate level for the maximum investment allowance is a balancing act. On one hand, it is desirable that the level of required customer contributions not dissuade customers from connecting to the system. On the other hand, the level of the investment allowance offered should ideally not be higher than most customers need to be incented to connect. However, as a result of additional considerations presented during the proceeding, the Board is no longer persuaded that, in and of itself, an 80/20 rule achieves the proper balance.

One piece of new information arises from section 6.5.3 of the Application regarding the way in which customer contribution levels have changed over time. This section highlighted the differences between the required customer contribution level for similar projects under contribution polices in effect in the years between 1999 and 2005 as compared to the contribution level required under the contribution policy approved in Decision 2005-096.

If the message that was intended to be conveyed in section 6.5.3 of the Application was that the level of the maximum investment allowance should be raised (because the contribution policy approved in Decision 2005-096 required significantly higher customer contributions than did previously approved contribution policies), the Board does not agree with this conclusion. The interconnection project queue appears to have grown rather than declined under the contribution policy prescribed in Decision 2005-096. The Board finds this to be clear evidence that having a maximum investment allowance which provided that more than 20% of interconnection projects must pay some contribution has not dissuaded AESO customers from proposing a greater number of new interconnections than can be immediately accommodated by the AESO and the TFOs. The Board therefore concludes that the lower investment allowance permitted in Decision 2005-096 did not discourage investment.

Another significant concern that the Board has with an 80/20 rule is that the application of such an 80/20 rule may become circular or self fulfilling, in that higher cost projects may trigger increases in the multiplier. As a result, the Board is concerned that to perpetuate an 80/20 rule may undermine the principle that the level of the maximum investment function provides an economic signal to AESO customers. For example, in Decision 2005-096 the Board expressed a similar concern in the context of its proposed pre-paid O&M charge:

The Board is particularly concerned that, in applying the proposed DTS customer pre-paid O&M charge only to the deemed “optional facility costs” of a new interconnection, the AESO appears to be implicitly assuming that the combined amount of the pre-paid O&M costs associated with the “non-optional” local interconnection facilities and the cost of the non-optional facilities themselves will fall below the level permitted under the maximum investment allowance. However, the Board considers that this should not be presumed, particularly in light of the adjustments to the maximum investment function ordered by the Board in Section 6.1.4 above.  

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321 Ex. 007, pp. 28-29
322 The AESO’s response to undertaking 7 (Ex. H-023, p. 3 of 5) indicates that the load interconnection project queue had grown to 69 projects as May 18, 2007, which exceeds the total number of projects (59) reported in Attachment BR.AESO-016 (Ex. 092) over the period 1999-2005.
323 Decision 2005-096, pp 68-69
The AESO discussed the Board’s concern in that context:

The Board noted above that it was inappropriate for the AESO to presume that the combination of standard facility costs and the O&M charge would be covered by the investment level. The AESO acknowledges the Board’s position but suggests that such a principle only applies if the customer contribution policy has a set investment level. If the investment level was set at a specific value and was not based upon the number of projects that are not required to pay a contribution – which is not how the current and proposed investment policies are structured (i.e. 80% of projects are not to pay a contribution per Board Directive 13A in Decision 2005-056, and further described below) – the number of customers that would be required to pay a contribution would increase. But as noted the investment level is required to meet the criterion that 80% of projects do not pay a contribution. If the O&M charge was to continue to be applied to standard facilities, the cost function would increase but so would the investment level function so as to maintain the target of 80% of projects not having to pay a customer contribution. As such, the AESO is of the view that the benefit to economic siting and facility development originally intended by the Board by including the O&M charge is very limited. (Emphasis added).  

The Board considers that the concern discussed by the AESO in the emphasized portion of the passage above applies to all interconnection project costs. That is, if increasing interconnection project costs are, in the normal course, constantly updated within the maximum investment allowance to reflect an 80/20 rule, the ability of the maximum investment function to provide an economic signal may be significantly diminished over time.

Accordingly, while the Board has assessed how the 80% of projects threshold specified in Directive 13A impacts the multiplier and resulting maximum investment allowance, for the reasons discussed above, the Board’s statements in Decision 2005-096 do not constitute an endorsement by the Board of an 80/20 rule. Rather, the Board’s statements in that decision were intended simply to direct the AESO to conduct a study to determine a multiplier. A determination would then be made on whether or not use of that multiplier was warranted.

The Board provides its analysis and findings on the determination of an appropriate 2007 tariff investment function multiplier in the immediately following section.

8.1.2.2 Appropriate Multiplier for 2007 Tariff Maximum Investment Function

In determining the appropriate multiplier to apply to the approved POD cost function, the Board evaluated a rounded off version of the AESO proposed multiplier of 1.15149, namely 1.15, and developed cost functions in 0.05 multiplier increments until such time as 80% of the 48 point dataset projects would receive full investment. 80% of the 48 point TFO project cost data points received full investment using a multiplier of 1.35 applied to the Board approved cost function. A graph of the investment functions based on this data, including the AESO’s final proposed investment function, is shown below:

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324 Ex. 007, p. 14 of 47
In determining the impact that outlying data points have on the level of the multiplier required to satisfy an 80/20 rule, the Board analyzed the 48 point dataset to determine how many data points would receive at least 80% investment using the rounded version (1.15) of the AESO’s proposed multiplier of 1.15149.

A multiplier of 1.15 results in 27 data points receiving full investment, six data points receiving over 90% investment, and another five data points receiving at least 80% investment. As such, 38 out of 48 data points, or 79.2% of the data points receive at least 80% investment and the majority of these points receive full investment.

The above graph shows the raw data points that received at least 80% investment using the Board approved cost function and a 1.15 multiplier to determine the maximum investment function. These data points are marked with a + sign and noted in the graph legend.

The Board considers that using a 1.15 multiplier is more than adequate in providing a sufficient investment level of investment based on the 48 point sample dataset. This multiplier works just as well if a 30 point “greenfield” subset of the 48 point dataset is considered. Further, the 1.15 multiplier was also proposed by the AESO even after it modified its cost function in argument.

As the AESO obtains new TFO project cost information in the future, the 48 point dataset may be expanded and cost functions further analyzed. The key though is that any future changes to the investment function be based on actual project costs, without the potential circular bias that implementing and maintaining an 80/20 rule may impose. The Board observes that the 1.15 multiplier, when applied to the Board approved cost function, achieves a result that is not substantially different than the result that would be produced by application of an 80/20 rule. To
be clear, an 80/20 rule is not to be relied on in future when amending the maximum investment policy.

For all of the above reasons, the Board approves a multiplier of 1.15 to be applied to the cost function approved in section 5.7.7 of this Decision to determine the maximum investment function.

The resulting Board approved maximum investment function is as follows:

\[
Y = 1.028 \text{ million} + 0.578 \text{ million/MW for the first 7.5MW} + \\
0.200 \text{ million/MW for the next 9.5MW} + \\
0.118 \text{ million/MW for the next 23MW} + \\
0.062 \text{ million/MW for all MW above 40.0MW}
\]

The cost function approved in section 5.7.7 of this Decision entails rounding such that a pure application of the 1.15 multiplier may result in a difference in the third decimal in the above function. The function above has been determined by multiplying the unrounded Board approved cost function by 1.15, and then round the values to three decimals, and is the function to be implemented by the AESO.

8.1.3 Inflation Adjustments to Maximum Investment Function

TCE argued that although the AESO witness panel had confirmed that the investment levels set out in Article 9.6 were designed so that about 20% of DTS customers who attach to the system will make a contribution,\(^{325}\) it also confirmed that as the costs of projects rises overtime, on average more than 20% of customers would be required to make a contribution.\(^{326}\) In recognition of the effect of inflation, TCE submitted that the Board should direct the AESO to amend Article 9.6 of the T&Cs to include a project inflation factor such as the Consumer Price Index (CPI) or another widely recognized factor.

With respect to TCE’s proposal, the AESO noted that while it had agreed that a project inflation factor could be considered if an appropriate index could be used, the contribution policy in place at a given time should provide a price signal that reflects the current economic situation. The AESO submitted that the contribution policy should not be static, but should rather be revisited as more data becomes available.

DUC argued that the maximum investment allowance levels provided under the AESO’s contribution policy should be increased by 5% to reflect inflation over the period of late 2007, 2008, and 2009 that the AESO’s 2007 tariff may be in effect.

The AESO replied that the 5% increase proposed by DUC did not appear to be based on any trending analysis or inflationary economic reporting. The AESO further noted that an inflation rate based on Alberta CPI approved by the Board in other decisions was used to update POD cost data within the customer contribution study provided as Appendix F to the Application.\(^{327}\)

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\(^{325}\) Tr. Vol. 2, p. 501, referenced at p. 64 of TCE Argument  
\(^{326}\) Tr. Vol. 2, p. 502, referenced at p. 64 of TCE Argument  
\(^{327}\) Ex. 015, referenced at p. 34 of AESO Reply
As discussed in section 8.1.2.1 above, the Board has not endorsed the so-called 80/20 rule. Accordingly, the Board rejects TCE’s proposition that that Article 9.6 should be amended to include an inflation allowance to maintain adherence to an 80/20 criterion.

The Board agrees with the AESO that DUC’s proposal for a 5% inflation adjustment is not necessary in light of consideration of the inflation adjustments applied to POD cost data as part of the AESO’s customer contribution study. The Board considers that as the average POD cost function adopted by the Board in this Decision already reflects inflation adjusted POD cost data, no further adjustments are necessary to bring the data up to date. The Board also agrees with the AESO that little basis was provided by DUC to support the selection of 5% as an appropriate inflation adjustment.

The Board disagrees with DUC’s view that an additional inflation adjustment is necessary to reflect the anticipated continuation of the 2007 AESO tariff into 2008 and 2009. The maximum investment function set out in section 8.1.2.2 of this Decision is significantly above the maximum investment allowance set out in Decision 2005-096. The Board considers that the increase in the level of the maximum investment allowances, particularly for AESO customers with a large contract capacity, offsets the impact of inflation on the cost of new interconnections.

The Board agrees with the AESO that that the effects of inflation on POD costs may be relevant to the reconsideration of maximum investment levels in the future. Such consideration should occur, if necessary, in the context of a future GTA.

8.1.4 Applicable Tariff for Customer Contributions and Contract Capacity Increases

In section 6.5.1 of the Application, the AESO described its proposed changes to Articles 9.2, 9.7, and 9.9 of its T&Cs. The AESO noted that its practice has been to recalculate the customer contribution for an interconnection project on the basis of the tariff in effect at the time the original interconnection was constructed.

The AESO submitted that it was appropriate to revise the amounts of customer contributions based on the contribution policy in effect at the time of the original system access request because the events described in Article 9.9 and the sharing of facilities discussed in Article 9.10 of the T&Cs are largely outside the control of the customer and primarily affect the original facilities built to accommodate the original system access request. However, the AESO acknowledged that it had also encountered situations where a customer request for an increase in contract capacity required the construction of new transmission facilities to accommodate the contract capacity increase. The AESO noted that this situation was not currently explicitly addressed in the T&Cs, but that it was the AESO’s business practice to apply the approved tariff in effect at the time of project commitment to determine the customer contribution and contract term. In light of this practice, the AESO proposed updates to Article 9.2, 9.7, and 9.9 to reflect this treatment.

No parties took issue in argument or reply with these changes as proposed by the AESO. The Board has reviewed Article 9.2, Article 9.7 and Article 9.9 and approves these provisions as filed.
8.2 AESO Standard Facilities

8.2.1 Matters Raised in Evidence of ATCO Electric

In its evidence, AE expressed a concern about the AESO’s interpretation of “standard facilities” in the context of the application of the AESO’s customer contribution policy. AE noted that in Decision 2001-6, the Board had stated that the total Alberta electric system should be planned with the appropriate mix of transmission and distribution facilities and that the contribution policies of various entities should work together so as not to disturb proper planning. AE also noted that Decision 2005-096 indicated that the primary focus of efforts to harmonize customer contribution policy matters between Discos and the AESO should be on harmonizing the definitions of “standard facilities” and “optional facilities.”

AE indicated that it had expressed concern in discussions with the AESO regarding the commercial treatment of certain projects. AE submitted that the best way to uphold a principle that the AESO and Disco contribution policies not disturb proper planning is to ensure that the commercial determination of standard facilities supports the best overall planning solution. To illustrate its concerns, AE provided two examples of projects in which it considered that the AESO’s commercial determination of standard facilities had frustrated proper planning efforts.

AE submitted that as regulated entity it can and will take into account the greater public interest when making decisions regarding the evolution of the electric system (including consideration of the cost of losses, reliability, power quality, motor starting capability, and voltage support). However, AE submitted that as customers making decisions about transmission connection and distribution connection would not take such matters into account, the AESO’s definition of standard facilities must take into account the optimal solution for the integrated electric system, and not simply the solution that minimizes the currently forecast transmission costs.

The AESO submitted a supplemental filing to the Application on May 1, 2007 which, among other things, proposed revisions to Article 9.1 of the T&Cs (added words underlined):

In considering requests to provide service to a new POC, or to increase the capacity of or improve the service to an existing POC, the AESO will determine the appropriate means of delivering the requested service.

(a) If the Customer’s request primarily represents a shift of supply or demand from an existing POC, then the Customer will pay the full cost of the transmission upgrade or extension (“the project”)

(b) If the AESO determines that the viable and most economic option for providing service to a Customer includes a facility other than a transmission facility (such as a distribution-level extension or isolated generation), then:

(i) for the purposes of determining the Local Investment in Articles 9.3 to 9.6, the project costs referenced in Article 9.3 will include only the costs of the transmission facilities required in the most economic service option (if any);

(ii) and if the customer selects a transmission facility instead of the one determined by the AESO to be viable and the most economic, then the

328 Ex 223
329 Ex 223, pp. 3-11 (Updike 144 kV line and substation, and a potential connection of two oilsands developments)
330 Ex. 349
customer will pay the cost of the transmission facility less the Local Investment as calculated in accordance with part (i) above.

In its rebuttal evidence, the AESO noted that it was engaged in ongoing discussions with its customers (including AE) regarding its interpretation of AESO standard facilities as part of its compliance with the Board’s harmonization direction from Decision 2005-096. It also presented a revised proposal regarding the Updike project that had been raised by AE.

Given the AESO’s rebuttal evidence, AE indicated in argument that it and the AESO were able to reach a mutually acceptable commercial solution on the most pressing matter that AE had raised, and made considerable progress on the other matter. As such, AE stated that, the Board’s intervention was not required to appropriately address the matters raised in its evidence. However, AE requested that the Board consider confirming in its Decision that while the AESO should be afforded discretion in determining of what constitutes AESO standard facilities in specific instances, the AESO should apply its investment policy in a manner that ensures that the most appropriate facilities are built. AE submitted that the determination of the most appropriate facilities should uphold the principles of good transmission and distribution practice and should give due consideration to all aspects of electric system planning (including reliability, power quality, protection, distribution and transmission losses, maintenance practices, and operating criteria and standards).

It remained AE’s view that certain additional language (described in its response to BR.AE-003) should be inserted into the definition of AESO standard facilities and into Article 9.13 of the AESO T&Cs. In reply argument, the AESO indicated that it would not take issue with AE’s proposed changes to the AESO standard facilities definition and Article 9.13, if so directed by the Board.

In reply, IPPCA expressed concern that the AESO and AE appeared to have agreed that a larger transmission capital investment should be made to avoid losses on the distribution system, yet the higher transmission capital expenditures made no mention of a higher contribution by the Disco. IPPCA also expressed concern with the characterization of the issue as a commercial matter between parties. IPPCA submitted that the apparent understanding between the AESO and AE had the potential to cause significant transmission investment to offset distribution losses. As it did not appear that reduced losses would receive the same consideration with respect to sites of transmission connected industrial customers, IPCAA submitted that the AESO’s proposed arrangement would not provide equitable treatment between transmission connected and distribution connected loads.

Both the AESO and AE proposed certain changes to the AESO tariff T&Cs to address AESO standard facilities issues raised in AE’s evidence. The core proposition in AE’s evidence is that customer contributions arising from the determination of AESO standard facilities can, in some instances, disrupt optimal planning processes by influencing the mix of transmission and distribution facilities built for specific projects. The Board does not agree.

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331 Ex. 347
332 Decision 2005-096, p. 73
333 Ex. 292
The Board considers it important to look at the circumstances of both a direct-connect customer and a Disco that is deciding how to provide service to a new end-use customer or to accommodate load growth within its service territory. There is generally no need for a Disco to consult with the AESO when one of its prospective or existing end-use customers requires new or expanded interconnection facilities, unless and until the Disco determines that some additional DTS contract capacity and associated transmission facilities may be required to accommodate the requirements of the Disco’s end-use customer or growth within the Disco’s system. It is only at this point that the AESO becomes involved in assessing the requirements of the end-use customer (with the advice and assistance of the Disco) to determine the appropriate amount or increment of DTS capacity that the Disco would be required to contract for in respect of a new or expanded AESO POD. If it is subsequently determined that additional transmission facilities will be required, the Board understands that the Disco and the AESO collaborate to prepare an application pursuant to section 34 of the EUA. Pursuant to section 34 of the EUA, that application is prepared and submitted by the AESO.

In its response to AE.AEOSO-003, the AESO provided hyperlinks to eight separate process guidelines related to distribution point of delivery interconnection process guidelines. These documents were prepared by the AESO with assistance from Alberta Discos and TFOs. Furthermore, while the Board will not comment on the specific content of the documents, for the purposes of this proceeding, it is apparent that they are comprehensive and detailed and that they were prepared for the express purpose of determining the appropriate set of facilities to be used in the circumstances contemplated.

The following two paragraphs appear in each of the eight guidelines:

This guideline is intended solely for the purpose of supporting the AESO’s customer interconnection process to arrive at proposed interconnection concepts that are optimized on a technical and economic basis. It will not in any way address or determine the AESO’s facility cost allocation between system and customer, nor will it be used in any way as a guideline in applying the AESO approved tariffs and investment policy.

This guideline is intended to facilitate documentation of the project need and the evaluation done to support the need, in alignment with the interconnection process. The interconnection process has a requirement for AESO endorsement and AEUB approval of the project need. (Emphasis added)

The above paragraphs reflect that the decision making process respecting new POD interconnections is focused on achieving an optimal technical and economic solution, and that these considerations are to ultimately be reflected in need applications. Given this, the Board considers there is no basis on which to expect that the transmission facilities built following the approval of a section 34 application would not reflect the optimal combination of transmission and distribution facilities required to serve the end-use customer of the distribution system owner. Accordingly, it is not apparent to the Board that an AESO tariff proceeding is the appropriate forum in which to address the concerns identified in AE’s evidence.

334 Ex. 098
335 Ex. 098, AESO.AE-3, pp. 2-3, Tr 847
336 Ex. H-002, p. 1
337 Ex. H-002, p. 1
Nevertheless, within the context of the AESO’s tariff, the Board considers that an important principle is that Discos and AESO direct connect customers be afforded comparable treatment under the AESO’s customer contribution policy. Comparable treatment will generally be achieved if the cost of AESO standard facilities is determined in a manner that reflects the capacity of the actual transmission facilities built in accordance with the section 34 application (approved by the Board) and in a manner that is consistent, as between Discos and direct connect customers. Therefore, the Board considers that, all other things being equal, the general principle should be whether a DTS contract capacity increase is requested by direct connect customer of the AESO or by a Disco, the resulting facilities determined to be needed should be the same, reflecting the one line, one transformer AESO standard facilities definition. Given the Board’s affirmation of comparable treatment of direct connect customers and Discos, the concern raised by IPCAA regarding possible inequitable treatment as between transmission connected and distribution connected loads does not arise.

The Board considers that to the extent that AE’s issues are tariff related, the appropriate forum in which to address these concerns are in the Disco tariff proceedings, and not in the AESO’s tariff proceeding. The extent of the Disco’s ability to pass through optional facility costs (as determined by the AESO applying its tariff) depends on the Disco’s tariff and the contribution policy contained in that tariff. Thus, the Disco remains responsible for ensuring the reasonableness of all of its revenue requirement components. As such, the Disco may bear some risk that the full amount of a customer contribution assessed by the AESO may not be fully recoverable through the Disco’s tariff. This may for example arise if the Disco for some reason has not acted reasonably, such as by having requested AESO optional facilities on behalf of its end-use customer in the context of the section 34 application process, but then is subsequently unable to pass on to its customer the full amount of the costs of the facilities that exceed AESO standard facilities, for example if its own contribution and investment policies do not permit such costs to be passed on to its customer and the Board denies any proposed inclusion in the Disco’s revenue requirement.

For the purpose of this Decision, as long as a Disco has complied with the AESO’s interconnection guidelines, its own tariff, and has acted reasonably and prudently incurred the costs, the Board considers that there would be only minimal risk to the Disco of disallowance of contributions paid to the AESO. However, such risk on the Disco may arise if the Disco pursues transmission facilities inconsistent with the interconnection process guidelines either on its own initiative or at the request of its end-use customer. The reasonableness of Disco expenses is, of course, assessed in Disco tariff proceedings.

In light of these findings, the Board approves the AESO’s standard facilities definition and related T&Cs as initially proposed by the AESO in the Application but not the amendments subsequently proposed by the AESO in its supplemental filing. Furthermore, as the issues raised by AE in the current proceeding relate to EUA section 34 processes and not tariff matters, the Board is not prepared to comment on any arrangement or accommodation that may or may not have been reached between the AESO and AE in respect of issues raised by AE in this proceeding.
8.2.2 Transmission vs. Distribution Service and Required Use of Variable Frequency Drives

The PPGA expressed concern about the process followed by the AESO to determine whether “standard facilities” should encompass a transmission or a distribution connection.\textsuperscript{339} The PPGA considered the process to be unclear and unsystematic, and submitted that the Board should direct the AESO to clarify this process. The PPGA submitted that the AESO should standardize the flicker limit test used to determine “standard facilities” to be based upon 3 times in-rush, or a typical soft-start mechanism – as opposed to a VFD (unless the customer agrees to install a VFD). The PPGA considered that this would ensure that the test is fair and that customers are not directed to implement an AESO initiated VFD to accommodate motor starting.

The AESO argued that although it maintains a clear policy on flicker limits for the transmission system, flicker limits on the distribution system are set not by the AESO, but by the Discos, based on industry standards. The AESO submitted that the flicker limit standards of the Discos have been in place for some time, and have not changed in recent years. In its rebuttal evidence, the AESO stated that in some circumstances, local conditions on a distribution feeder may cause the Disco to apply more stringent measures. The AESO submitted that to direct either the AESO or Discos to follow any other methodology regarding flicker limits would be contrary to good industry practice.\textsuperscript{340}

The AESO also pointed out that the determination of standard facilities is used to assist the AESO with decisions on customer contribution levels; it does not limit the customer’s selection of a transmission or distribution option.

The AESO’s Distribution Point-of-Delivery Interconnection Process Guideline: Evaluation of Transmission versus Distribution Alternatives for Large Customers states that the Disco will ensure that the voltage fluctuation associated with motor starting by one customer does not create problems for other customers. This guideline states that voltage fluctuation during motor starting is not to exceed the Disco’s standards for fluctuation as specified in the AESO Interconnection Process Guide, Standards of Service. To determine the significance of an impact the motor starting will have on the distribution system, the Disco models the typical characteristics of the motor to determine what limit on inrush current is necessary to limit the voltage fluctuation to the Disco’s standard. The guideline goes on to state that when the voltage fluctuation is greater than the Disco’s standard, voltage reduction and inrush current limiting techniques are evaluated such as the use of an autotransformer or a VFD.

If voltage reduction techniques do not appear promising, then distribution system improvements are to be evaluated. In lieu of installing motor starting aids, certain alternatives are to be investigated. This guideline recognizes that each Disco has different voltage fluctuation guidelines.\textsuperscript{341}

\textsuperscript{339} Ex. 240, PPGA Transmission vs. Distribution evidence
\textsuperscript{340} AESO Reply Argument, pp. 35-36; Ex. 347 AESO Rebuttal Evidence pp. 11-15
\textsuperscript{341} Ex. H-002, AESO Distribution Point-of-Delivery Interconnection Process Guideline: Evaluation of Transmission versus Distribution Alternatives for Large Customers, Revision 0: Wednesday March 23, 2005, page 1, section 2.2.1 (“Motor Starting Study”), pages 4-5
The Distribution Point-of-Delivery Interconnection Process Guideline - Standards of Service simply summarize the standards that each Disco applies to its distribution system with respect to the allowable voltage fluctuations/flicker.\textsuperscript{342} The Board notes that the standards applied by the Discos are not uniformly consistent.

The Board understands that both of these guidelines were developed by the AESO with the involvement of Discos.\textsuperscript{343}

No evidence was submitted in this proceeding of an AESO requirement that a VFD would be required to accommodate motor starting on the distribution system. Based on the evidence in this proceeding, the Board agrees with the AESO, that flicker limits on the distribution system are within the purview of the Discos. The Board considers that the decision to provide transmission or distribution facilities in the circumstances of specific customers must be evaluated separately for customers of the AESO and customers of Discos. Accordingly, the Board will not direct the AESO to amend the interconnection process guidelines. In general, to the extent that PPGA, any specific member thereof, or an end use customer of a Disco, has concerns with technical standards established by a Disco, those concerns should be addressed directly with the Disco and if any irresolvable concerns remain they may be pursued in a relevant Board proceeding relating to the relevant Disco.

8.3 Prepaid O&M Charge

In the Application, the AESO described its proposed changes to Article 9.4 of its T&Cs.\textsuperscript{344} The AESO noted that although the Board had determined in Decision 2005-096 that a charge based on 12% of the cost of the both standard and optional facilities for a customer interconnection, the AESO proposed to amend the prepaid O&M charge to reflect only the cost of any optional facilities built for a new customer interconnection.

The AESO noted that a proposal in the AESO’s prior GTA to apply a prepaid O&M charge only on the optional portion of an interconnection project was rejected by the Board in Decision 2005-096. However, the AESO suggested that the Board’s prior decision should be reconsidered because the Board’s rationale for varying the AESO’s original proposal in Decision 2005-096 did not take into account the impact of the ongoing re-assessment of the maximum investment function caused by applying the “80/20” rule.\textsuperscript{345}

The AESO also expressed concerns that applying a prepaid O&M charge on standard facilities would require new procedures and processes to ensure O&M costs are being recovered correctly and are not recovered in other components of the TFOs revenue requirement. In addition, the AESO expressed concerns that applying a prepaid O&M charge to standard facilities could compromise harmonization efforts between the AESO and the Discos, since Discos include an O&M charge only on optional facilities. The AESO also submitted that its proposal would be beneficial because it would avoid intergenerational inequity, reduce tariff complexity and would

\textsuperscript{342} Ex. 098, AESO.AE-3, AESO Distribution Point-of-Delivery Interconnection Process Guideline - Standards of Service, section 4.3, pages 37-39

\textsuperscript{343} Ex. 098, AESO.AE-3, pages 2-3 of 4; Tr 847

\textsuperscript{344} Ex. 007, Application Section 6.5.2, pp. 13-15

\textsuperscript{345} Ex. 007, p. 14 of 47
customers to understand it and have confidence in it. This should reduce the amount of utility staff time required to explain it to customers and lower the number of customer complaints. This will also lead to lower requirement for AUC involvement.

It is the belief of the Working Group that common principles across TFOs, DFOs, and the AESO are beneficial to improving the Customer Contribution Policy and the Interconnection Process. The Working Group identifies that the “80/20 rule” is not a principle; it is simply one way of measuring, monitoring, or assessing if a particular contribution policy meets other principles of reasonableness, fairness, or intergenerational equity. The guiding principles are intended to identify that the current contribution policy does not establish an interconnection solution; it only established who pays for the solution when the payment is made. The Working Group believes that the adoption of the guiding principles will alleviate the concerns outlined.

2.0 Standard Facilities - Standards of Service

CONCERN

The current definition of “Standard Facilities” is “the least- cost interconnection facilities which meet good transmission practice including applicable reliability, protection, and operating criteria and standards, and generally consists of a single radial transmission circuit and a single transformer to supply an individual point where electric energy is transferred between the customer's facility and the Alberta Interconnected Electric System (“Point of Connection”).”

Interpretation of this definition, along with a number of other factors such as inflation, regulatory lag and the contribution formula design, has led to increased levels of customer contributions. In fact, other than small breaker addition projects, most customer interconnections have a customer contribution. In contrast, prior to 2005, customer contributions occurred on less than 20 % of transmission interconnections. The increase in customer contribution levels has resulted in dissatisfaction amongst TFO’s, DFO’s and interconnecting customers. In addition, the application of this definition focuses the planning effort on the least cost solution instead of the optimum long term solution.

RECOMMENDATION

1. Change the definition of Standard Facilities in the AESO tariff to “the most economical interconnection facilities which meet good utility practice including applicable reliability, protection, and operating criteria and standards”.

2. The AESO to lead a stakeholder process to establish Planning Principles and Standards of Service to guide application of the Contribution Policy.

The following draft Planning Principles and Standards of Service are a potential starting point for the Stakeholder Consultation. Utilities across Alberta may use different specific
standards due to evolution of their distribution/transmission network but the Planning Principles should be the same for each utility. These principles should help guide the development of the electric system as it evolves from minimum facilities supplying relatively small loads e.g.10 MVA, up to a major substation supplying loads over 100 MVA.

Planning Principles (draft)

2.1 Target Restoration Times: In the event of a contingency, power should be restored by the target restoration times as documented in Table 3.1-1 in the AESO’s “Distribution Point-of-Delivery Interconnection Process Guideline- Standards of Service”. If power cannot be restored by the targets, new facilities should be requested to allow the utility (i.e. TFO or DFO) to meet the target restoration times. Following are the target restoration times.

<table>
<thead>
<tr>
<th>Area</th>
<th>Guidelines for Target Restoration Times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban (population greater than 5000)</td>
<td>&lt; 1 hour</td>
</tr>
<tr>
<td>Rural (population less than 5000)</td>
<td>&lt; 4 hours</td>
</tr>
</tbody>
</table>

2.2 Long Term Planning: The following should be used to guide long term planning decisions:

   a. Most electric utility facilities have a life of 25 years or greater and should be planned to be in service for at least 25 years.

   b. A new facility should be added approximately 3 years before the capacity of an existing facility is expected to be exceeded to ensure facilities are in place before they are critical.

2.3 Substation Location: Substations should be located close to the load center to ensure appropriate levels of restoration and to minimize interruptions

2.4 T&D Losses: Facilities should be planned to minimize transmission and distribution losses.

2.5 Motor Starting: Electric facilities should be sized to ensure customer motors can start with up to three times inrush current. Customers should be able to start motors off the electric system and meet flicker limits with reasonable reduced voltage starting equipment up to 3 times inrush. If motor starting violates three times inrush, the customer is required to fund a cost effective solution such as a VFD.
2.6 **Reliability of Service**: When assessing the reliability of service to customers, the planner should consider:

c. Number of Customers affected,
d. Type of load (hospital, or oil and gas customers such as H2S safety concerns),
e. Density of load,
f. Social/economic/environmental impacts,
g. Time to repair, and
h. Time to restore service,

to ensure that the expected restoration times are less than the target restoration times as documented in Table 3.1-1 in the “AESO’s Distribution Point-of-Delivery Interconnection Process Guideline - Standards of Service”.

2.7 **Transmission vs. Combined Transmission/Distribution Service**: When the cost between two technically feasible interconnection alternatives is close (within plus or minus 10%), customers should be able to choose which of the two alternatives is the Standard Facility for contribution purposes.

2.8 **Cost, economics and schedule should be considered for any interconnection solution**

The following draft Standards of Service are proposed. A detailed explanation of these proposed standards is contained in *Appendix A.1 – Standards of Service. These standards are a guide only, recognizing that different TFO’s have different standards that have evolved over time and different operating practices.*

**Standards of Service (draft)**

<table>
<thead>
<tr>
<th>Load</th>
<th>Rural</th>
<th>Rural Area with Multiple Customers</th>
<th>Urban</th>
<th>Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 15 MVA</td>
<td>One 138 KV line</td>
<td>N/A</td>
<td>Two 138 kV lines</td>
<td>One 138 KV line</td>
</tr>
<tr>
<td></td>
<td>One 15/20/25 MVA transformer</td>
<td></td>
<td>One 15/20/25 MVA transformer</td>
<td>One 15/20/25 MVA transformer</td>
</tr>
<tr>
<td>15 – 25 MVA</td>
<td>One 138 KV line</td>
<td>N/A</td>
<td>Two 138 kV lines</td>
<td>One 138 KV line</td>
</tr>
<tr>
<td></td>
<td>Two 15/20/25 MVA transformers</td>
<td></td>
<td>Two 15/20/25 MVA transformers</td>
<td>Two 15/20/25 MVA transformers</td>
</tr>
<tr>
<td>25 – 42 MVA</td>
<td>Two 138 KV lines</td>
<td>N/A</td>
<td>Two 138 kV line</td>
<td>Two 138 kV lines</td>
</tr>
<tr>
<td></td>
<td>Two 25/33/42 MVA transformers</td>
<td></td>
<td>Two 25/33/42 MVA transformers</td>
<td>Two 25/33/42 MVA transformers</td>
</tr>
<tr>
<td>42 – 83 MVA</td>
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<td>Two 138 kV lines</td>
</tr>
<tr>
<td></td>
<td>Two 50/67/83 MVA transformers</td>
<td></td>
<td>Two 50/67/83 MVA transformers</td>
<td>Two 50/67/83 MVA transformers</td>
</tr>
<tr>
<td>MVA</td>
<td>Transformer Type</td>
<td>MVA</td>
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<td>-----</td>
<td>------------------</td>
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<td>------------------</td>
<td>-----</td>
</tr>
<tr>
<td>83 – 167</td>
<td>Two 240 kV lines</td>
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</tr>
<tr>
<td></td>
<td>Two 100/138/167 MVA transformers</td>
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<td>Two 100/138/167 MVA transformers</td>
<td></td>
</tr>
<tr>
<td>240 kV /25 kV</td>
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<td>2 transformers</td>
<td>2 transformers</td>
<td>2 transformers</td>
</tr>
<tr>
<td>Motor Starting</td>
<td>3 x Inrush</td>
<td>3 x Inrush</td>
<td>3 x Inrush</td>
<td>3 x Inrush</td>
</tr>
</tbody>
</table>

**KEY BENEFITS & IMPACTS**

Adoption of the recommended definition change, Planning Principles and Standards of Service are expected to provide the following benefits:

- Provides a clear and transparent approach to application of the contribution policy.
- Assists the AESO with planning for the long term rather than one interconnection at a time.
- Facilitates better decisions when planning for an area (rural or urban) that includes a combination of distribution and transmission.
- Provides DFOs, TFOs and industrials with substations that meet pre-defined levels of reliability.
- Minimizes debate between the AESO and customers regarding application of the contribution policy.
- Increases customer satisfaction.
- Eliminates rework at existing substations because long term planning implications will have been considered.

### 3.0 Early System Rebuilds

The AESO should consider the following principles when finalizing the rebuild and salvage policy:

#### 3.1 The allocation of capital costs to the account of customer or system will be fair to existing and new customers.
6.1 Define reasonable book-end key activities within a project wherein either a former approved or a current approved Customer Contribution Policy would apply to a project. If there is a change in the approved Customer Contribution Policies between the point at time at which the customer receives their first proposal from the AESO for service, and the point in time at which the customer executes their final contract for service (which typically occurs a month or two prior to energization), then the customer is given a choice which Customer Contribution Policy should apply.

6.2 Include a procedure for updating “standard facilities” estimates to accurately reflect the conditions that are impacting the actual project, and would impact the standard facilities project if it were being constructed. A pro-rata adjustment based on the amount that the actual project costs have increased, or decreased from the estimate would be appropriate.

The working group believes that the movement from a hard date to a window for migration from one policy to another should eliminate pressure on AESO and TFO processes to get to a particular point in a project by a particular timeline in order to accommodate a shift in policy. This transition provides customers with some degree of certainty that a proposal that they are reviewing and accepting in relation to a project is the worst-case from a Customer Contribution Policy perspective. It provides assurance that the costs on which a customer’s commercial terms are based on are being adjusted to reflect current market conditions and provides fairness and certainty. Finally, putting an adjustment process in place would ensure consistency of application across all projects.

7.0 Customer Contribution Payment Options

A concern regarding customer contribution payment options was identified by the Working Group. Through this period of rapid and large scale expansion of the Alberta transmission system, the majority of direct connect projects are requiring very large up front customer contributions for facilities the customers don’t own and operate. This also results in the TFO owning and operating facilities being used to provide service that they are not earning a return on, while still incurring operational, ownership, integration and prudence risk, the same as any other asset.

In these situations, resulting in large customer contributions, customers are financing utility owned/operated assets, for which they have no control or management of, nor do they assume any risk.

The Working Group recommends that the AESO Investment Policy should include an option for the contribution to be set up as an AESO tariff payment determined by the TFO cost of service method including income tax, applied over the DTS/STS contract term. The contribution structured as an AESO tariff payment would be made available to any creditworthy customer. The attractiveness of the AESO Tariff Option to the customer will depend on the customers IRR and other factors including the customer’s election for treatment of the transaction on their balance sheet. The customer/POD
specific AESO tariff Payment Option, or what has been referred to as a Facilities Charge Agreement, is not a new concept and has been applied successfully to specific PODs in the past. The adoption of the aforementioned eliminates the need for customer to deploy large amounts of capital for facilities they will not own and operate.

8.0 Load First Contribution Policy

The Working Group identified a concern that investment for dual use-customers is reduced by the customer’s substation ratio\(^5\) with a corresponding reduction in the DTS tariff. The Working Group believes that some customers may want a higher investment amount, and be willing to pay the standard tariff rates over time.

The Working Group recommends that for a new or expanded POD a customer can elect to be “load first” and have the full DTS contract capacity increase applied to the DTS rate, the Primary Service Credit and the investment policy, regardless if there is a corresponding increase in STS contract capacity. In this case the “deemed” substation ratio will be 100%, and will not be the same as the DTS/(STS+DTS) contract capacity ratio (the “real” substation ratio).

The benefits of adoption of this recommendation include greater customer choice to determine an appropriate level of system investment. This may dissuade some customers from building customer owned substations, and this would allow for the optimization of a comprehensive and more readily integrated system.

Conclusion

The Working Group recognizes that the downward pressure on customer contributions causes upward pressure on the rates. In summary, the Working Group believes that the recommendations maintain the postage stamp philosophy, while promoting equitable treatment among customers, DFOs, and TFOs. In addition, the recommendations will help align long term transmission planning with good utility practices, improve flexibility for customers, and improve cycle times through improved clarity, transparency, and consistency.

\(^5\) DTS contract capacity/ (DTS+STS contract capacity)