

On December 8, 2005, the AESO held a consultation meeting with stakeholders to identify, review, and prioritize rates issues to be addressed in the AESO's 2007 tariff application, followed by a discussion paper distributed on December 13, 2005. Stakeholders provided comments on the discussion paper, and in responding to those comments the AESO proposed to develop terms of reference for refinements to the *Alberta Transmission System Wires Only Cost Causation Study* provided in the AESO's 2005-2006 tariff application, to further improve the DTS rate design.

Information provided in the 2007 rates consultation and in the processes leading to approval of the AESO's 2006 tariff can be found on the AESO's website at www.aeso.ca, by following the paths:

- Tariff ► Current Consultations ► 2007 Rates
- Tariff ► Current Applications ► 2005-2006 Tariff Second Refiling
- Tariff ► Current Applications ► 2005-2006 Tariff Refiling
- Tariff ► Previous Applications ► 2006 Tariff Application

The original study, referred to as the *Transmission Cost Causation Study* or TCCS during the 2005-2006 GTA proceeding, was prepared in 2004 and provided as Appendix B of the AESO 2006 Tariff Application filed on January 31, 2005.

Background

The Alberta Energy and Utilities Board (EUB) provided the following direction in Decision 2001-32 on the ESBI Alberta Ltd. (EAL) 2001 General Tariff Application Phase II Matters:

21. *However, the Board considers that this study does not have a high priority. The Board considers that the process of categorizing new transmission additions will appropriately capture the growth component and provide insights towards the appropriate classification of the historical existing system.*

Accordingly, the Board directs EAL, in its 2003 GTA, to carry out a cost of service study of the Alberta transmission system to determine the appropriate classification of supply and load customer transmission costs to demand and energy and submit the results of the study and EAL's recommendations when filing its 2003 GTA. Further, the Board directs EAL to study the use of CP to recover all or a portion of energy costs and directs EAL, in its 2003 GTA, to recommend appropriate changes to the TA's tariff structure when filing its 2003 tariff.

In response to Direction 21, the AESO conducted a stakeholder consultation process and included an *Alberta Transmission System Wires Only Cost Causation Study* prepared by Arnie Reimer of PS Technologies Inc. in its 2005-2006 General Tariff Application filed with the EUB.



The *Transmission Cost Causation Study* investigated transmission wires costs, including analysis of net book value data by transmission facility from the four major transmission facility owners in Alberta, namely, AltaLink, ATCO Electric, Enmax, and EPCOR. The study assessed transmission wires costs to bulk system, local system, and point of delivery or POD (including radial lines exclusively used by a single POD) functions based on three approaches: voltage level, economics, and volume-distance. The study’s final recommendation was functionalization based on the average of the three methods.

The *Transmission Cost Causation Study* also classified the costs as demand-related, usage-related, or customer-related, based on zero intercept and minimum system approaches to determine the principle drivers of costs within each function. The results and implementation of the *Transmission Cost Causation Study* were debated extensively during the course of the AESO’s 2005-2006 GTA proceeding, resulting in the following wires cost functionalization and classification being approved in Order U2005-464 as the basis for the AESO’s 2006 DTS rate:

Table D6.2 Functionalized and Classified Transmission Wires Costs (“Directed”), % of Total

Function	Total	Classification			
		CP	NCP	Usage	Customer
Bulk System	41.0%	24.1%	–	16.9%	–
Local System	17.1%	–	14.0%	3.1%	–
POD	41.9%	–	17.9%	–	24.0%
Total	100.0%	24.1%	31.9%	20.0%	24.0%

Note: Totals may not add due to rounding

In its decisions on the AESO 2005-2006 GTA, the EUB noted there were limitations to the *Transmission Cost Causation Study* and concluded, “The Board acknowledges the difficulties faced by Mr. Reimer in preparing his analysis and in the circumstances the Board considers the TCCS to be a good first step and is willing to accept its recommendations in the Board’s approved rate design.” (Decision 2005-096, p. 24) The EUB also provided additional directions for refinements to the study in Decision 2005-096:

- 4C. *Parties also questioned the use of CLMS [coincident load at maximum stress] to moderate the demand charge otherwise called for. With respect to this matter, the Board notes that the TCCS appears to have studied only two of many bulk lines in its analysis. IPCAA has argued that one of the two lines studied, the Edmonton-Calgary line, had significant loading caused by opportunity service at the time of CLMS. Indeed, the Board observes that Mr. Reimer, as referenced above, has acknowledged that CLMS may be expected to be more coincident with system peak. As such, the discount that Mr. Reimer proposes in demand related charges may not be fully justified. The Board expects that, in future studies, the AESO will*

conduct a more thorough review of all those lines comprising the bulk system. This should give a more accurate indication as to the exact portion of costs that are energy related. (p. 23)

- 4D. *However, the Board also considers that a reasonable portion of TFO costs are related to O&M and that a material percentage of these may be energy related. Unfortunately, the impact of this factor does not appear to have been researched in this current study and therefore the Board cannot draw a firm conclusion respecting its impacts on the demand charge. Nonetheless, based upon the percentage that O&M expenses comprise of a TFO's revenue requirement, the Board considers that such an analysis would support a reasonable classification of costs as energy related. The Board expects the AESO to address these issues in future cost of service studies. (p. 23)*

In Decision 2005-132, the EUB provided the following additional direction:

6. *The Board expects the AESO to conduct further analysis upon POD costs and to file such with its 2007 GTA. At a minimum the Board expects such analysis to contain:*
1. *information respecting the items comprising POD costs,*
 2. *the costs of PODs serving smaller loads vs. those serving larger loads,*
 3. *a discussion of whether a reasonable break point exists between such PODs, and*
 4. *what additional relief, if any, should be offered to customers who may have paid for the cost of their own transformation equipment. (p. 4)*

Refinements to the *Transmission Cost Causation Study* must therefore address these EUB directions from Decisions 2005-196 and 2005-132.

The AESO provided additional information in its December 13, 2005, discussion paper. The AESO essentially proposed that the structure and approach of the *Transmission Cost Causation Study* be continued, with further analysis of certain aspects of the study. Stakeholders responded with comments suggesting additional aspects that should be addressed in the *Transmission Cost Causation Study* refinements.

Terms of reference for the additional work were distributed to stakeholders on January 27, 2006, and stakeholders provided comments on February 8. The following information has been revised to reflect those comments, where appropriate.

Transmission Cost Causation Study Activities

Based on the EUB direction, stakeholder comments, and background information provided in the preceding section, the AESO proposes that the *2006 Cost Causation Study* include the following eight activities.

1. **Bulk System** — Study all of the major bulk paths (between 20 and 30 paths) to determine the relationship between the time of maximum stress and the time of peak system load. Review the functionalization of bulk system and local system to ensure continuing consistency with AESO planning. This study component would primarily use technical data from the 500 kV N-S Need Application as the basis, as well as additional data from more recent planning studies prepared by the AESO, if necessary.
2. **Interties** — Review the treatment of intertie facilities (the Alberta-BC and Alberta-Saskatchewan interconnections) in the *2006 Cost Causation Study*, including the context of this treatment under current legislation and regulation. If appropriate, study and recommend a means to separate the costs of intertie facilities from domestic facilities within Alberta. This study component would utilize the 2003 cost data used in the original study.
3. **Local System and POD** — Study and recommend a means to better differentiate between the Local System and POD functions. Ensure definitions align with usage elsewhere in the AESO tariff (specifically, within the terms and conditions of service). This study component would utilize the 2003 cost data used in the original study.
4. **POD** — Study POD costs in more detail, including more detailed analysis of POD cost components, how POD costs vary with load size, and whether such variation is linear or follows some other pattern. This study component would utilize the 2003 cost data used in the original study. As well, this study component would be coordinated with, and potentially use additional detailed data from, the investment level study being conducted as part of the AESO's 2007 terms and conditions consultation.
5. **Contributions** — Enhance the *2006 Cost Causation Study* by more precisely including the effect of contributions in aid of construction. Study the alignment of contributions with bulk system, local system, and POD functions, and develop a methodology to align and correlate contributions with facilities. This study component would primarily utilize the 2003 cost data used in the original study.
6. **Dual-Use Substations** — Review costs associated with transmission service at dual-use substations in the context of the AESO's 2006 rate structure (including the use of substation fractions), to ensure alignment between the POD charge in the DTS rate and the Primary Service Credit. For each of the 18 dual-use substations (excluding Fort Nelson) identified in section 4.10 of the AESO's 2006 GTA, assess the costs, revenues, ownership, contributions, contract levels (DTS and STS), and any other relevant factors

affecting the incurring and recovery of costs by the AESO. Propose a mechanism to fairly recover costs at dual-use substations.

7. **Operations, Maintenance, and Administration** — Enhance the *2006 Cost Causation Study* by studying operations, maintenance, and administration costs and causation relationships to determine if these costs should be functionalized and classified in the same manner as TFO capital-related costs. If appropriate, use the results of the study to revise the functionalization and classification of such TFO costs. This study component would primarily use additional information from TFO tariff applications.
8. **Recommended Additional Activities** — Include recommendations for future enhancements of the *2006 Cost Causation Study*, based on review of the comments made by stakeholders in the AESO's 2005-2006 GTA proceeding, on input from stakeholders during the 2007 rate consultation, and on results of the activities listed above. Future enhancements may include:
 - assessing whether customers were responding to the price signals given by the DTS rate, and, if so, how and in what manner those responses were affecting transmission system planning, and
 - differentiating depreciation and return by vintage of assets (also referred to as “normalizing” data for vintage).Assess whether it is worthwhile and appropriate to complete these enhancements and, if so, propose a schedule for addressing them in a future study or tariff application.

The AESO expects that the *2006 Cost Causation Study* will primarily rely on the 2003 cost data utilized for the original *Transmission Cost Causation Study*. The AESO notes that the analysis in the study results in percentages of property by function and classification, and such percentages would not be expected to vary materially over a one or two year period.

The AESO also notes that separate consultation is being conducted on 2007 terms and conditions, import and export tariffs, and merchant interconnection tariffs. Although the rates to be included in the AESO's 2007 tariff application must align with and complement those other components of the tariff, the *2006 Cost Causation Study* refinements will focus solely on rates matters.

The *2006 Cost Causation Study* activities will be conducted from February to April of 2006. A status report included preliminary results (where available) will be provided at the end of March, and final results at the end of April. Stakeholders will be invited to comment on the preliminary and final results, and responses to stakeholder comments will be incorporated into the final report for the study, where appropriate.

Next Steps

The AESO is proceeding with the *2006 Cost Causation Study* in accordance with these revised terms of reference. Preliminary results are expected near the end of March, and will be provided



**Alberta Electric System Operator
AESO 2007 Rates Consultation
2006 Cost Causation Study Terms of Reference**

Revised February 16, 2006
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to stakeholders when available. At that time the AESO will assess whether a meeting or workshop would provide further value.

If you have questions on the *2006 Cost Causation Study* terms of reference discussed in this paper or on the 2007 rates consultation in general, please contact John Martin at (403) 539-2465 or Ed Hucman at (403) 539-2469 (both in Calgary) or by e-mail to john.martin@aeso.ca or ed.hucman@aeso.ca.

The AESO expects to file its 2007 tariff application in May or June 2006, for rates to be effective on April 1, 2007.

All information on the 2007 rates consultation is available on the AESO's website by following the path **Tariff ► Current Consultations ► 2007 Rates**.