

Preamble: The AESO states:

The Update recommends that high-voltage facilities in networked substations should be functionalized as local system rather than functionalized as POD as in the original Study. The Update also notes that sufficient data to complete such functionalization is not available nor expected to be available in the near future, and that the original functionalization as POD is generally consistent with the definition of customer-related facilities in the terms and conditions. In any event, aligning functional definitions in a cost study with facility definitions in a contribution policy may involve trade-offs in accuracy for one or the other purpose.

....

The Transmission Cost Causation Update also reviewed the functionalization of contributions in aid of construction (CIAC) in the original Study. The Update has improved the consistency of functionalization of CIAC amounts from all TFOs, and the impact on cost functionalization has been included in Tables 4.3.3 and 4.3.4 provided later in this section.

Finally, the Transmission Cost Causation Update included a review of dual-use substation costs, but concluded the functionalization of such costs could not be determined from analysis of the TFO cost data. The Update recognized that in Decision 2005-096 the EUB approved dual-use substation cost sharing based on the substation fraction approach. Substation fractions have therefore been used to apportion the cost of dual-use substations between demand (functionalized as POD) and supply (functionalized as bulk system) in the Update.

Reference: Section 4 – 2007 Rate Design, Page 7 of 53.

Request:

- (a) Please provide the details of the functionalization of contributions in aid of construction (CIAC) in the original Study, with all supporting documents.
- (b) Please explain how the substation fractions were used “to apportion the cost of dual-use substations between demand (functionalized as POD) and supply (functionalized as bulk system)” in the Update. In the response, include an explanation of why the supply portion was functionalized as bulk system. Also include an explanation of whether substation fractions were applied to the costs of individual PODs and if so, provide the details by individual POD. Include all working papers and supporting documents.
- (c) Please provide a list of all PODs that are wholly owned and those owned 95% or more by the STS customer. Consider “ownership” to include direct ownership or cases where the customer contribution from the STS customer equals the capital cost of the POD (for

the wholly owned case) or is at least 95% of the capital cost of the POD (for those owned 95% or more). Also include their capital cost (before and after customer contributions) and the capital cost of the remaining PODs (before and after customer contributions) not included in the previous two categories.

- (d) Please provide restated Tables 4.3.3 and 4.3.4 that separate the impact on cost functionalization of CIAC amounts and the cost of dual-use substations into separate columns so that the effect of these changes from the original to updated functions and classification can be identified.

Response:

Revisions to part (a-c) indicated in italics.

- (a) *Please see attached Schedule TCE.AESO-004 (a) for the functionalization of contributions in aid of construction (CIAC) in the original Transmission Cost Causation Study. Note that the original study included CIAC for ATCO Electric TFO only.*

The AESO considers details of customer contributions paid by specific customers to be confidential information.

- (b) The apportionment can be demonstrated with an example of a substation with a net book value of \$10,000,000, a DTS substation fraction of 25%, and an STS substation fraction of 75%. The POD portion of the substation is found by multiplying \$10,000,000 by 25% for a POD portion of \$2,500,000. The STS portion of the substation is found by multiplying the \$10,000,000 by 75% for STS portion of \$7,500,000.

All of the PODs that are not dual use are functionalized as 100% POD.

The functionalization of load-related and supply-related interconnections remains the same as in the original Transmission Cost Causation Study filed as Appendix B to the AESO's 2006 GTA on January 31, 2005. That Study included the following definition of the POD function:

Point of Delivery (POD): *The point of delivery includes all facilities that provide service at one point of delivery substation, including a radial transmission line used exclusively by the point of delivery substation. The point of delivery facilities normally provides service to one customer (a distribution utility, or a transmission connected industrial customer).*

Point of supply (POS) interconnections serving generators are not included in the POD function, since POS facilities are not constructed for service to load customers. The cost of such facilities must still be included in a fully-distributed cost study, however. Since POS interconnections relate to the overall supply of electricity and can be considered part of the infrastructure that delivers bulk electric energy in large volumes to a number of users, POS facilities were included in the bulk system function.

In practice the specific treatment of POS interconnections has little impact on the cost functionalization between bulk system, local system, and point of delivery. Supply customers contribute fully towards the cost of their POS interconnections, and those contributions offset the costs of POS facilities regardless of which function the facilities

are assigned to. Similarly, the Regulated Generating Unit (RGU) Connection Costs offset the costs associated with interconnections of previously-regulated generating units. The treatment of POS interconnections may become important over time, however, as capital maintenance and capital replacements occur at POS interconnections and RGU sites, without offsetting capital contributions from the generators. The AESO therefore considers it appropriate to assign POS costs and contributions to the bulk system function to ensure a sound basis for future updates of the cost study.

The substation fractions and net book value were applied on an individual basis. The customer-specific substation fractions and net book values are considered confidential information.

- (c) *For clarity, the AESO notes that a “point of delivery” (POD) represents the point at which electric energy is transferred from the transmission system to a customer’s load facilities, while a “point of supply” (POS) represents the point at which electric energy is transferred from a customer’s generator to the transmission system. There is exactly one load customer at each POD, and exactly one generation customer at each POS. More than one POD, more than one POS, or both one or more PODs and one or more POSs may exist at the same substation.*

The following substations are owned by parties other than a regulated transmission facility owner (TFO) (AltaLink, ATCO Electric, Enmax, EPCOR, City of Lethbridge, and City of Red Deer):

- 134S Taber Wind
- 139S Hillridge
- 162S Calpine CES1
- 226S Garden City
- 229S Glenwood
- 239S Castle River
- 240S McBride Lake
- 243S Soderglen
- 354S Summerview
- 383S Kettle’s Hill
- 679S Bear Creek
- 758S Botha
- 762S Conklin
- 847S Muskeg River
- 850S Rainbow Creek
- 889S Mahkeses
- 1200S Foster Creek
- 29EDD-1 Millenium
- Taylor Taylor

The AESO cannot determine cases where a customer owns “95% or more” of a substation, as the AESO does not have records of the cost of customer-owned facilities. The AESO notes that customer-related facilities for generator interconnections frequently include equipment at adjacent substations, and those adjacent substations would be owned by the TFO.

There are no substations owned by a regulated TFO where at least 95% of the capital cost of the project was funded through contribution from an STS customer. The AESO notes that a contribution is paid in respect of a total project, not just a substation, and the project typically includes a line component, a system component, and frequently facilities at an adjacent substation.

POD-specific cost information is considered confidential information.

- (d) *As stated on page 48 of the 2006 Transmission Cost Causation Update, the only change to CIAC treatment in the Update was that “AltaLink’s CIAC has been functionalized in this manner and the impact of this change is shown below.”*

Please see attached Schedule TCE.AESO-004 (d)-A for the functionalization of contributions in aid of construction (CIAC) in the Transmission Cost Causation Update and the impact on cost classification. Please see page 48 and Table 4 on page 52 of the Update for additional information.

Please see attached Schedule TCE.AESO-004 (d)-B for the functionalization including the refinement of dual-use substation treatment in the Transmission Cost Causation Update and the impact on cost classification. Please see pages 49-51 and Table 4 on page 52 of the Update for additional information.