



February 16, 2006

Sent via e-mail

AESO Stakeholders

AESO 2005-2006 General Tariff Application

Dear Stakeholder:

Re: AESO 2007 Tariff — Stakeholder Comments on Study Terms of Reference

On January 27, 2006, the AESO distributed and invited stakeholders to comment on terms of reference for two studies to be completed for the AESO's 2007 tariff application:

- a *2006 Cost Causation Study* to further improve the DTS rate design, and
- an investment level study to refine and improve the DTS investment policy.

Attached are matrices of the comments received from stakeholders, including responses by the AESO. We will revise the terms of reference based on these comments in the near future, and will proceed with the studies based on the schedule proposed in our correspondence of January 12, 2007. The comments and the final terms of reference will be posted on the AESO's website shortly.

In addition to these two studies, the AESO is proceeding with development of other aspects of its 2007 tariff, as outlined in discussion papers on December 13, 2005 and response matrices on January 12, 2006.

The AESO appreciates the feedback received from stakeholders. Preliminary results from the studies are expected near the end of March, and will be provided to stakeholders when they become available. At that time, we will also give consideration to whether further discussion or a meeting or workshop in regards to the preliminary results or other matters would provide additional value.

If you have any questions on the 2007 tariff consultation, please contact John Martin at (403) 539-2465 or Ed Hucman at (403) 539-2469 or by e-mail to john.martin@aeso.ca or ed.hucman@aeso.ca. All information on the 2007 tariff consultation is available on the AESO's website at www.aeso.ca by following the paths:

- Tariff ► Current Consultations ► 2007 Rates, and
- Tariff ► Current Consultations ► 2007 Terms and Conditions.

Sincerely,

[original signed by]

Heidi Kirrmaier
Vice President, Regulatory

2500, 330 - 5th Ave SW Calgary, Alberta T2P 0L4
t (403) 539-2450 | f (403) 539-2949 | www.aeso.ca

**AESO Customer Contribution Study Terms of Reference
Stakeholder Comments and AESO Responses — February 22, 2006**

AESO Proposal	Stakeholder Comment	AESO Response
Project Deconstruction Detail		
<p>1. Project deconstruction will entail separating the facility project components and corresponding costs as follows:</p> <ul style="list-style-type: none"> • Transformer, transmission line, and other costs • Standard vs. optional facility costs, and • System vs. customer related costs 	<p>ATCO Electric – Support</p> <p>CNRL – Support There are many questions on any of the projects as to how the AESO determined the standard vs optional facilities split, how the AESO determined the contribution and how the AESO determined the POD vs Local Connection costs. Deconstructing the facility costs is the only method for capturing the data sources for reviewing the cost components. The TFO cost accounts are not split appropriately.</p> <p>EnCana – Support Support deconstruction of costs in this manner of detail. Other characteristic which may be helpful in understanding POD costs include (i) contract capacity vs. standard transformer sizing used by TFOs, (ii) equipment availability and standardization by TFOs, (iii) single POD customer vs. multi-POD customer connection (DISCOs) vs. multi-use connections (DTS+STS), (iv) totalization issues.</p> <p>FIRM – Support FIRM supports the deconstruction of project costs into the components identified to facilitate considerations of an investment function. Additionally the Study should ensure that details of original costs are provided before any escalation to current costs. Furthermore details of customer contributions with the basis for calculation of these contributions would be useful. Finally the details of contract quantities for supply and load should be provided to support the use of the Substation Fraction for each of the substations.</p> <p>IPCAA – Support Proposed approach would appear to address the potential sources of cost difference identified by interveners.</p> <p>Kinder Morgan – Position not indicated</p> <p>TransCanada – Support TransCanada supports the proposed deconstruction. However, for the deconstruction to be useful, it must also include a deconstruction of the customer contributions, if any, into these categories: (1) Customer contributions</p>	<p>Stakeholders generally agree that the study should deconstruct project costs as outlined in the discussion paper. Several stakeholders also recommended that the study should review other considerations when deconstructing the project information.</p> <p>As part of the project analysis for the customer contribution study, the AESO will review the following considerations:</p> <ul style="list-style-type: none"> • Voltage level of the customer's interconnection • Single-customer, multi-customer, or multi-use (DTS or STS) substation • Load factor at the substation • Transformer size (MVA capacity) <p>The study will also account for the following:</p> <ul style="list-style-type: none"> • Whether contribution was for optional facilities or in excess of maximum investment • Original project costs vs. escalated current day dollar project costs <p>The AESO will also identify any anomalies that may be uncovered in the data collected.</p>

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	<p>arising from investment levels for standard facilities that exceed maximum investment levels (2) Customer contributions for optional facilities for transformers (or substations) (3) Customer contributions for optional facilities that are transmission lines (4) Customer contributions for optional facilities that relate to other costs. Without this additional information, the AESO will be unable to know what amount has been placed in rate base for the various cost categories.</p>	
Evaluation Criteria		
<p>2. The evaluation criteria provided on page 4 of the terms of reference are appropriate and in the correct order of importance.</p> <ol style="list-style-type: none"> 1. Actual project costs 2. Actual projects 3. Representative of future projects 4. Representative of AIES 5. Availability of supporting planning decisions outcome 6. Sample size 7. Varying load sizes 8. Costs updated to current dollars 9. Project can be deconstructed to meet defined rate term 	<p>ATCO Electric – Indifferent</p> <p>CNRL – Support There have been some odd ball substation installations recently, but a review of the actual costs and the actual projects with these evaluation criteria will eliminate the outliers.</p> <p>EnCana – Position not indicated EnCana agrees these are important considerations for the selection of a data set for review. Greatest importance should be assigned to #4.</p> <p>FIRM – Support FIRM considers that the information accuracy of using actual projects and actual project costs to be of paramount importance and agree with the proposed ranking of evaluation criteria.</p> <p>IPCAA – Support</p> <p>Kinder Morgan – Position not indicated</p> <p>TransCanada – Support TransCanada is generally supportive of this order of importance. Item three, Representative of future projects, could have been a lower priority than item 4, Representative of the AIES. It is somewhat unclear as to what is the purpose of the study. If the purpose is to determine what has been invested in the past (on average and therefore what is embedded in the tariffs) and to then use that as the basis for determining what is appropriate for the future (allowing for a potential increase), then a study that is representative of the AIES is more important as it will more accurately determine an average investment level. Information on what is representative of future projects is also useful, however, as it gives some insight into how much cost increases are creating a difference between new facility costs and embedded costs. Since the investment levels</p>	<p>Stakeholders generally accepted the criteria used in the determination of the data source for the study.</p> <p>The AESO agrees with TCE that further clarity regarding the purpose of the study is required. The AESO feels that the study should focus on future projects by reviewing typical costs of projects from recent history, and place less importance on historical investment policies. The AESO's investment policy is forward looking in nature as it is applied to projects that are going to be constructed in the near term future (next 1-5 years). Reviewing project data from the recent past (i.e. previous five or six years) should provide a suitable representation of projects that that will be constructed in the coming years.</p> <p>In some of the comments provided below, stakeholders suggest that focusing on recent project information may create intergenerational inequity. The AESO considers that continuing to apply the "80/20 rule" in determining the investment level will ensure intergenerational equity considerations are maintained.</p>

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	<p>have not historically been adjusted regularly for inflation in capital costs, the costs of new facilities can increase significantly from embedded costs. If the gap becomes too large, intergenerational inequities arise, particularly between customers who are not routinely adding Points of Delivery (“PODs”) on the system compared to customers who are regularly adding PODs. Furthermore, the gap provides some justification to increase the investment levels over time. If this does not occur, newer customers will face increasingly larger customer contributions as a proportion of the total costs of a project. If the purpose of the study is to determine typical costs of new projects and to ignore historical investment levels, then costs Representative of future projects would be a higher priority. TransCanada is of the view that the former objective is more appropriate given that the tariff bundles old customers with new customers in the same tariff. If the AESO agrees that the purpose is first to accurately establish the historical investment levels on an embedded cost basis, then the sample size is important and probably deserves a higher priority as well. If the AESO consultant is able to successfully address all nine terms of reference, then TransCanada has less concerns on this matter.</p>	<p>As stated above the investment policy is a shorter term forward looking mechanism, while the AESO's rates continue to manage both historical and current transmission system cost recovery. As long as there is general alignment between the investment policy structure and rates, the various principles associated with an investment policy such as cost recovery, economic signaling, etc. are maintained.</p>
Selected Data Source: Review of project between 2000-2006		
<p>3. The Study will entail a detailed review of all the substations that went into service from 2000 through 2006. Although the sample size may not be large, the information accuracy is of primary importance.</p>	<p>ATCO Electric – Support</p> <p>ATCO Electric has some concerns with the potential for bias to be incorporated into the study by limiting the study to consideration of projects completed in the last six years. In terms of transmission system evolution six years is a fairly limited period of time. The scope of interconnections that took place in this time period may not encompass a full range of projects (with a variety of line lengths for example), may have been influenced in some way by the investment policies already in place during the time frame, may reflect recent biases with respect to acceptable substation configurations (e.g. whether or not breakers are included on a tap or transformer), or may be biased in some way related to the kind of load growth and expansion occurring based on where in the economic cycle the snap shot is taken.</p> <p>While we agree that it certainly makes sense to make use of the most recent cost information available based on recently completed projects, we think that a hybrid approach that combines the best features of the Review of Recent Projects approach and the Random Sampling approach might yield a better, less biased result.</p> <p>We suggest that a comparison of the characteristics of the facilities associated with the actual projects for 2000-2006 to a random sample from the facilities that currently exist in Alberta would provide an indication whether an adjustment to the 2000-2006 data is required.</p> <p>Our preference would tend toward an approach that deals in some way with the bias concern created by basing the study exclusively on information</p>	<p>As outlined above the AESO feels that a review of recent projects would present a suitable representation of projects being constructed in Alberta in the next several years in which the policy will be applied. The AESO's investment policy is applied to projects that no longer fall under the vertically-integrated utility regime that existed before 1995. As such reviewing and basing a forward looking policy on historical projects that were developed under that regime would be an inappropriate foundation for the contribution policy.</p> <p>The AESO intends to compare and test the data collected with projects that are expected to be constructed in the near future to further check that the projects are appropriately representative..</p>

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	<p>obtained by reviewing recent projects.</p> <p>CNRL – Support This is a prospective review with reasonable data. The AESO should have good project estimates and actual costs available from the TFOs. Missing data can be filled in by the TFOs from recent records.</p> <p>EnCana – Position not indicated EnCana acknowledges that these projects (interconnections during the 2000 to 2006 period) will afford the greatest detail in terms of the connection decisions, POD design, and hence POD costs. However, EnCana is concerned that limiting the study to these projects alone will be inadequate. Noting that on p.57 of Decision 2005-096, the Board comments that the appropriate investment allowance (using so-called ‘average-cost plus’) should reflect the extent to which interconnection costs of “a comparable capacity may be expected to exceed the average for that size or project”. To make this assessment requires a sufficient sample at various capacity sizes. If the 2000-to-2006 data set does not provide an adequate sampling at each level of capacity, then the resulting cost function will be distorted and inappropriate. This is particularly a concern for large capacities as these are less frequently interconnected. EnCana therefore suggests a supplemental data set whenever the sample size at a capacity level is less than 10. This supplemental data could be developed using a combination of approach I and III (as these are discussed on p.4 of the ToR). Namely, obtain a random sample of PODs from the AIES that are consistent with the capacity level, use the configuration of the random sample to establish a design requirement and finally use current transmission planning and costing methods to determine the cost of the POD. (The difference between this and approach III is to use the random sample to set the “generic configuration”.) In terms of segmenting costs according to capacity levels, EnCana suggests that it would be more fruitful to segment according to MVA capacity rather than MW capacity. As shown in Figure 1 below, these tend to be a natural clustering of around MVA sizes (i.e. standard transformer sizes) whereas even small MW contracts can be served by larger MVA transformers. Explaining the relationship will be an important element of the cost study.</p> <p>FIRM – Support FIRM considers information accuracy to be important. It is assumed that the use of a data base from 2000 – 2006 will provide sufficient diversity of data points to develop reasonable substation component costs per increments of</p>	<p>Please see comments provided above. The AESO feels even though the sample size may not be extensive, it is a strong representation of projects that should be constructed in the province in the near future. The 2000-2006 sample data should also provide more accurate information. The AESO feels the information from 2000-2006 would present more accurate information rather than relying on pre-deregulation practices and policies.</p> <p>As outlined above the AESO will test the results with future projects.</p> <p>As outlined above the AESO will review transformer size as component of the study.</p> <p>The AESO agrees with CNRL and FIRM that information accuracy is important. Reviewing recent project information will provide the best</p>

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	<p>capacity. The availability of historical cost data on a separate component basis (ie. Transformers, transmission lines, other interconnection costs) should allow consideration of investment functions on the basis of these components.</p> <p>IPCAA – Support It is logical for the analysis to be undertaken for the projects for which the AESO has the most complete information.</p> <p>Kinder Morgan – Position not indicated</p> <p>TransCanada – Support TransCanada agrees that obtaining accurate information from 2000 to 2006 is easier for the AESO since such records are likely accessible from the AESO's own files. However, TransCanada would also request that the AESO conduct at least a random sample of existing substations as a secondary confirmation of their study. See comments in the next section.</p>	<p>information versus the challenges associated with deconstructing utility accounting records.</p>
Rejected Alternate Data Source		
<p>4. Produce a random sample of all the substations that currently exist in Alberta (as provided in Exhibit 030-016 of the AESO's 2005-2006 GTA) and deconstruct the substation information as per the principles outlined in the terms of reference.</p>	<p>ATCO Electric – Support</p> <p>CNRL – Support Agreed, attempting to perform forensic accounting on existing older facilities will be a major challenge. There are a number of different investment policies that have been applied over the years, there have been equipment additions, equipment change outs and upgrades, and the design requirements today are not comparable to the requirements of 10 to 40 years ago. There will be missing information; attempting to recover the information from project estimates and cost details for projects that are 10 to 20 years old will be very difficult. Attempting to compare cost components of a 20 year old, transmission fused non-SCADA substation to a recent breaker protected SCADA substation is an exercise in futility.</p> <p>EnCana – Position not indicated</p> <p>FIRM – Oppose FIRM opposes this approach as actual substation costs will not be considered with the use of cost estimates only. It is important to have a good base of actual costs in considering investment policy options.</p> <p>IPCAA – Oppose This approach would appear to ignore relative changes in the cost of</p>	<p>Please see comments provided above.</p>

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	<p>components over time. At current (relative) prices the substation may have been designed/configured differently.</p> <p>Kinder Morgan – Position not indicated</p> <p>TransCanada – Support TransCanada requests that the AESO conduct at least a random sample of existing substations as a secondary confirmation of their study in the previous section. TransCanada is of the view that as a result of TransCanada’s exploration of this issue in the AESO 2006 GTA, much of this information is already accessible and should not be ignored in a study of investment levels. Furthermore, if the problem is lack of notice with the TFOs and Discos, as we understood was an issue in the last proceeding, the extension of this study into the April timeframe should provide adequate time for a significant amount of records to be retrieved and included in the study. If this information is simply not available, then the AEUB needs to conduct an investigation into TFO and Disco records because without this information, it is not be possible to properly retire substation and transmission plant from rate base, to refund customer contributions when appropriate and to estimate net salvage.</p>	<p>As outlined above, the AESO considers the review of projects from 2000-2006 should provide a strong representation of projects that should be constructed in the province in the near future. This sample will provide the more accurate information. The AESO feels this information would present more accurate information rather than relying on pre-deregulation practices and policies.</p>
<p>5. Develop a number of generic substation configurations at varying load sizes and apply current transmission infrastructure cost estimates to the projects to determine the various components of the substation costs.</p>	<p>ATCO Electric – Indifferent</p> <p>CNRL – Support The Transmission Facility Owners have standard transmission design configurations; these standards would be a good basis to start with. The standards have also been used for years allowing some comparability from present to older substations. However, every substation is unique, driven by location, available transmission connections, available transmission voltage, and customer load and customer choices. The generic design choices for a 15 MW load can be 25 kV distribution to radial 240 kV transmission. This would be one more step removed from the reality of what has been recently built in Alberta to supply customer DTS loads.</p> <p>EnCana – Position not indicated</p> <p>FIRM – Oppose This option does not consider actual substation projects and actual costs and only relies on cost estimates to develop substation configurations. This option suffers from the perspective of information accuracy.</p> <p>IPCAA – Oppose This approach would appear to be too open ended – everything is notional.</p>	<p>The AESO agrees with CNRL and FIRM.</p>

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	<p>Kinder Morgan – Position not indicated</p> <p>TransCanada – Indifferent TransCanada is somewhat indifferent on using cost estimates from generic substation configurations. On the positive side, these estimates can provide an assessment of future costs, better reflecting the significant increases in transmission design and construction occurring in recent years and expected to continue under Alberta's current economic conditions. However, the weakness of this approach is the arbitrary nature of the assumptions on what constitutes a generic substation configuration and typical transmission costs. The latter can be significantly affected by the terrain involved and availability of construction forces. Also, TransCanada expects that the estimates will only be accurate to within plus or minus 30% (typical of this type of analysis). Such order-of-magnitude estimates have limited accuracy and, while indicative of future trends, should not be solely relied upon. If the AESO were to find sufficient resources to conduct this analysis in addition to those above, TransCanada believes such information could also contribute to determining an appropriate investment policy.</p>	<p>As outlined above the AESO intends to compare and test the data collected with projects that are representative of those expected to be constructed in the near future.</p>
Additional Comments		
	<p>ATCO Electric – ATCO Electric supports the AESO's proposal to perform a more detailed Customer Contribution Study before filing of the 2007 GTA. In ATCO Electric's view, the customer contribution issue is a very significant issue that must be addressed in the 2007 GTA.</p> <p>CNRL – Back to Facts and Data, the review of the customer contributions and the AESO investment policy should be based on real substations, real costs, and real contributions; fabricating generic models and analyzing suspect data does not improve the process. Enough of the terms and conditions are based on just so stories and how people wish things to be, not on what is. Even a thin data set of real substation cost components is better than poor data on every substation in Alberta.</p> <p>EnCana – 80/20 Guideline – EnCana remains concerned over the application of the 80/20 guideline. EnCana acknowledges the Board's intention that "80% of the projects" fall within the tolerance range and would not make a contribution. However, EnCana notes that the Board omitted a reference to a "population" that comprises the 100% of projects which are then divided into the 80% which do not pay a contribution and the 20% that do. Equally, the AESO's ToR lacks any reference to the population of projects used for the 80/20 rule. Without a proper definition of the population of projects, the 80/20 guideline could lead to</p>	<p>As outlined above the AESO will review the impact of the multiplier to achieve the 80/20 level on both for the 2000-2006 projects along with projects expected to be constructed in the near future.</p>

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	<p>unacceptable volatility in the investment allowance as a result of trying to fit the investment allowance to a short-term sample of new interconnections.</p> <p>Instead, EnCana submits that if the 80/20 guide is to have a role, it should be assessed over a 5-year horizon and on a go-forward basis. In other words, the AESO should not be focused on how a proposed investment allowance impacts the immediate group of interconnection candidates but should consider how it fairs under a representative sample of interconnection projects expected in the next five years.</p> <p><u>Process</u> – Following the posting of the AESO’s response matrix (Feb 15), the AESO should set a meeting to discuss the AESO’s final approach including more discussion of the specifics on the scope of work to be done. This will ensure there is a better understanding by all participants of the work being undertaken. This discussion should occur no later than the end of February. A workshop to discuss the preliminary results should be held at the end of March. This would provide stakeholders the opportunity to provide additional input and feedback prior to the conclusion of the study.</p> <p>Kinder Morgan – Kinder Morgan Canada Inc. and Enbridge Inc. endorse the capital contribution study proposed by the AESO and encourage a high level of detail to allow for a more complete analysis. This will result in less analysis work being required of intervening parties. We anticipate that the new data will provide a clear description of methodology and meaningful statistical analysis. Our primary concerns are that the revised methodology be equitable to all different sizes of loads, that it be based on a statistically relevant data sample, and that the methodology adopted be consistent with the new POD methodology. A one-page summary of the step by step method for determining the new contribution policy would be helpful.</p> <p>TransCanada – The study should track all costs and customer contributions on the basis of whether it is a single-user or multi-user POD in the event that the AESO decides to create separate DTS tariffs in the future for single-user and multi-user PODs.</p>	<p>The AESO considers this written comment process has provided adequate opportunity for stakeholder input on the study terms of reference, and that the AESO has received sufficient feedback to proceed. However, stakeholders may provide additional comments at any time.</p> <p>When the preliminary results of the study are provided, the AESO will also provide a summary of process and methodology used during the collection and analysis of the data, and will assess whether a meeting or workshop would provide further value.</p>