Stakeholder Feedback and IESO Response

Transmission Losses – September 30, 2020 Webinar

Following the September 30, 2020 Transmission Losses engagement webinar, the Independent Electricity System Operator (IESO) invited stakeholders to provide feedback on the materials presented.

The IESO received feedback from:

Environmental Defence (ED)

Society of United Professionals (SUP)

This feedback has been posted on the engagement webpage.

Note on Feedback Summary and IESO Response

The IESO appreciates the feedback received from stakeholders. The table below outlines a summary of the feedback received and an IESO response in relation to that feedback.

Transmission Losses Processes and Guidelines

Feedback	IESO Response
ED indicated that it was too early for stakeholders to comment on loss practices because a report has not been prepared by the IESO and Hydro One that documents those practices. SUP indicated the importance of seeing IESO and Hydro One guidelines for considering and evaluating losses.	The IESO acknowledges that more detailed documentation of transmission losses practices will provide the basis for more meaningful discussion. In response to this stakeholder feedback, draft transmission losses guideline documents will be shared for comment from stakeholders in advance of future engagement sessions expected to take place in early 2021.

Transmission Losses in Conductor or Transformer Selection

Feedback	Hydro One Response
SUP had a question regarding why the example that was provided in slide 37-39 of the September 30 webinar presentation included losses that were calculated based on 2018 flows and hourly ontario energy prices (HOEP) and not a forecast of annual flows and HOEP.	The purpose of the loss analysis is to determine whether the consideration of losses will change the preferred alternative. In this example, the larger conductor with lower loss was the selected alternative in spite of the higher capital cost. The underlying assumption is that if future flows and HOEP are similar to 2018 flows/HOEP, the annual savings would also be similar and the larger size conductor would still be cost effective for this particular transmission line refurbishment project. This is a conservative assumption since if loads and HOEP increase in the future, the savings from losses will also increase, making the larger conductor alternative more cost effective. Hydro One uses published annual average HOEP as no forecast is available. While 2018 load values were used as the basis for the analysis, irrespective of the loading level or the forecast, the larger conductor would have the lowest losses. Hydro One would consider a longer term

Feedback	Hydro One Response
	forecast where significant changes to future flows were expected.

Comparison to Losses Practices Used in Other Jurisdictions

Feedback	IESO Response
SUP indicated that the comparisons to other jurisdictions do not outline opportunities to impact losses. SUP suggested that comparisons between practices used in other jurisdictions should be redone to focus on where those jurisdictions do things differently than Ontario. SUP requested information on the different incentives that were in place in National Grid UK's jurisdiction and other parts of Europe and how those might lead to reducing losses. ED noted practices used by Hydro Ottawa related to plans to cost-effectively reduce losses and encouraged the IESO and Hydro One to emulate their efforts in this matter	The IESO did not identify any new opportunities for impacting losses based on a review of the National Grid UK and Council of European Energy Regulators (CEER) reports. The processes outlined in these reports are consistent with the processes that Hydro One and the IESO follow. On slide 60, additional, specific feedback from stakeholders was requested on approaches used in other jurisdictions where stakeholders believe additional opportunities lie for the IESO or Hydro One to examine. On slides 63 and 64, opportunities for improvements to transmission losses practices were outlined. The IESO and Hydro One have not yet received stakeholder feedback on specific opportunities for improvement of existing processes in response to requests for feedback. Feedback was received in the session that: 1) There may be additional information or further work done by these jurisdictions that we should consider 2) That more detail is needed around how the IESO and Hydro One are aligning with the practices set out by other jurisdictions The IESO will endeavour to address these points ahead of subsequent engagement sessions in conjunction with the

Feedback	IESO Response
	development and release of draft guideline documents. The incentives in place that are discussed in the CEER report are regulatory incentives and the IESO views them as being outside of the scope of this engagement. In jurisdictions with these incentives in place, there were no notable differences in approach to loss consideration in planning. While there are important differences in both the magnitude and cost recovery of transmission and distribution losses, IESO is reviewing Hydro Ottawa's past and ongoing work to determine if there are practices being used by Hydro Ottawa that are inconsistent with IESO practices and offer potential benefit.

Economic Evaluation of Loss Reduction Measures

Feedback	IESO Response
ED requested clarity on why it is inappropriate to exclude Global Adjustment costs from the economic evaluation of loss reduction measures. ED requested a third party expert be hired to comment on an appropriate avoided cost methodology ED noted that including only HOEP costs differs from marginal cost and avoided cost calculations published in the interim Annual Planning Outlook. SUP noted that the September 30 webinar materials provided no indication of what a "material consideration" is in the quantification of losses and this suggests that losses are estimated during assessment of options in order to determine their materiality. During the September 30 webinar, Power Advisory made a recommendation to add another step after the market clearing price is determined which would involve summing the contractual costs from generators that	IESO believes it is inappropriate to add the global adjustment (GA) costs for transmission loss reduction measure evaluations as those include costs that are not directly an outcome of supplying electricity to meet demand. The GA component of electricity costs includes policy-related costs and other components not strictly related to the supply of electricity, for example the cost of electricity-related programs such as energy efficiency. Further, the generation supply mix of Ontario is underpinned by commercially confidential contracts that were driven by public policy objectives; thus, the proposal by Power Advisory to sum contract costs for generators would not be feasible to assess the value of future line loss measures. It is important to recognize

Feedback	IESO Response
were dispatched for that interval and adding it to the HOEP.	that line loss mitigation measures will not mitigate or eliminate the GA cost therefore it is not appropriate to include it in the calculation of the cost-benefit of a particular line loss measure. Transmission line losses are not charged any cost other than the energy value for electricity, which is consistent with the Ontario Energy Board-approved rate charged to transmission ratepayers for line losses. The economic evaluation of the line loss is thus consistent with the true cost that is avoided by Ontario transmission ratepayers. The IESO is of the view that for this engagement, the IESO, Hydro One and stakeholders have the necessary knowledge and expertise to review transmission losses and the avoided cost methodology. As stated previously, as the engagement concludes and stakeholder feedback is received on the transmission losses guidelines, the IESO will assess the need for third party consultation. Regarding determination of materiality, the IESO currently does not have concrete criteria for what is determined to be material in line loss option valuation. Typically, loss savings offered by evaluated options are negliable compared to the projected cost difference between options. In some cases, there may be some rationale for further examining the impact of loss reduction on the cost comparison, if it is not clear which option would offer the better loss performance (e.g. comparision of a 230 kV and 115 kV option). It should be noted, that as part of regular economic evaluation of options, an energy production cost analysis is often completed (e.g. to fully compare a transmission and generation alternative). This analysis inherently captures the effect

Feedback	IESO Response
	of loss reduction impacts on overall system energy costs between options. HOEP differs from marginal cost and the avoided cost calculation since the latter is based on variable costs, and is viewed as a proxy for HOEP as it does not include bidding strategies associated with the market. The avoided costs calculation represents a supply cost alternative to energy efficiency and reflects the cost of electricity that would otherwise be incurred, in the absence of the energy efficiency initiative being evaluated. The avoided costs consider direct electricity costs, such as cost of energy from generating sources, and are a function of the electricity demand and supply outlook. The avoided cost calculation assumes load at a specific point on the grid and calculates the avoided costs of a solution at that same point on the grid, therefore, there is no transmission of electricity and thus, no losses involved. This is different than an assessment of measures which involve transmission of electricity and their associated losses with the aim to minimize those losses. Further, using an avoided capacity value in economic evaluation of loss measures involves the assumption that peak losses occur at the system peak. This may not be appropriate if the maximum load of the displaced load of the loss measure is not occurring at the coincidental system peak. On November 4th, IESO staff held a conference call with Environmental Defence to discuss specific aspects of its stakeholder feedback relating to distribution system losses and avoided costs. IESO clarified the relationship between avoided costs and losses and the differences between

Feedback	IESO Response
	distribution and transmission systems with respect to transmission losses.