

March 31, 2014

Dear Loss Factor Stakeholders:

Re: **Summary of 2018 Loss Factor Estimates**

The AESO is pleased to present a summary of 2018 non-binding Loss Factor Estimates. Fifth year non-binding loss factor estimates provide a 'what-if' scenario for loss factors.

The AESO understands that stakeholders would like to understand the potential effects on Loss Factors with HVDC power order direction. In order to better facilitate this understanding the AESO is providing 2 scenarios for this year's fifth year Loss Factors.

The first scenario has generation and inertia assumptions that would result in North to South HVDC power order flow. The second key scenario had the generation and inertia assumptions that would result in South to North HVDC power order flow. The HVDC power order schedule in each of the cases was established using planned system operation where the HVDC is being operated to maximize efficiency.

Attached is a summary of the loss factor estimates for 2018 regarding the Alberta Interconnected Electric System. New generation (as per the ISO Rule Section 501.10) and the 2018 Load Forecast are included in the calculation of the 2018 loss factor estimates. Any generation units/facilities that are assumed to be retired by 2018 have been removed.

As has been the practice in previous years, base cases will not be provided for the fifth year. The Generic Stacking Order (GSO) for 2018 was used as the basis for dispatching generation.

The following assumptions were used in the original base cases to develop the loss factor estimates for 2018:

- All Critical Transmission Infrastructure projects are included in the base cases as per the best information available.
- Major transmission upgrades (240 kV) were included.
- The 500 kV HVDC lines from the Wabamun area to the Calgary area and the Fort Saskatchewan area to the Brooks area has been included.
- All loss factor assessments are made on raw loss factor evaluations and then normalized and compressed as necessary based on the current ISO loss factor rules.
- Wind Generation additions are consistent with the AESO Long-term Generation Scenarios.

### ***Conditions and Details***

Please note the information used to calculate these non-binding loss factor estimates will likely change over the next five years, specifically:

- The 2012 LTO Update load forecast was used in the 2018 base case development.

- All topology in the 2018 cases is as per the best information available from the AESO's project list and connection queue.
- All existing 2014 generation has been included in the 2018 cases, with the exception of any known retired generation.
- Proposed generation in the 2018 GSO may not have been approved by the Alberta Utilities Commission (AUC). Generators used in the analysis are entered as having completed gate 1 in the AESO's connection process. The AESO Long-term Generation Scenarios are used as an input to determine the wind capacity cut off for the 2018 base cases.
- Some major transmission enhancements in the cases following 2014, which are expected to be in-service by 2018, may not have been approved by the AUC. As a result, the transmission system topology is subject to change.

Please note individual loss factors will not be presented due to confidentiality.

A background map of Alberta along with area loss factor ranges (Figure 1) is attached for your reference. In the 2018 Loss Factor Estimate Map, the MATL area has been merged into the Southeast area. The DOS area has been removed because the current DOS contracts are expired in 2018.

If you have any questions contact the AESO at [lossfactor@aeso.ca](mailto:lossfactor@aeso.ca).

Yours truly,

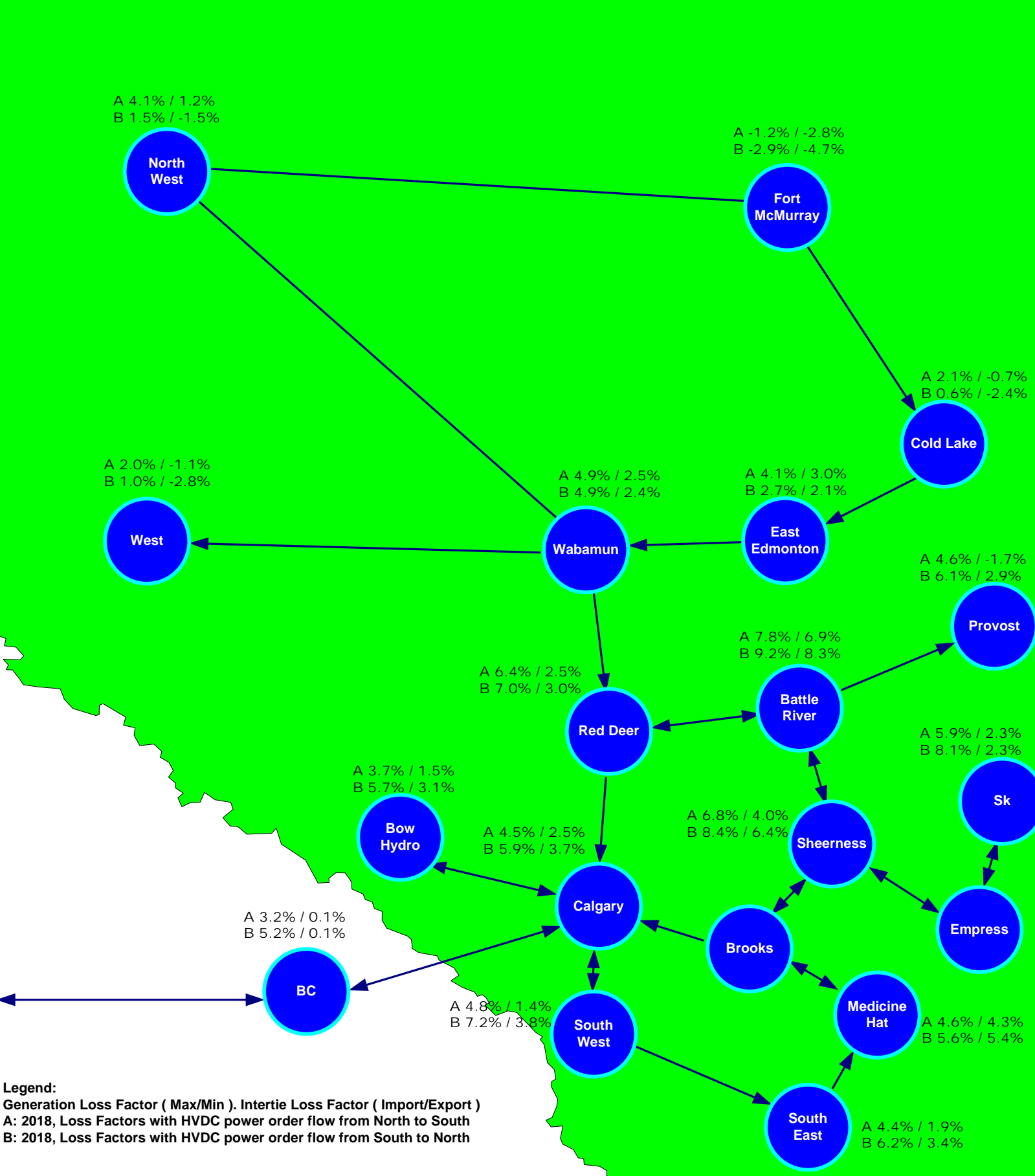
*Original signed by*

John Kehler,  
Director, System Performance

# Figure 1: 2018 Loss Factor Estimate Map

Version 1

March 31, 2014



**Legend:**  
 Generation Loss Factor ( Max/Min ). Intertie Loss Factor ( Import/Export )  
 A: 2018, Loss Factors with HVDC power order flow from North to South  
 B: 2018, Loss Factors with HVDC power order flow from South to North