

Technical Meeting on Loss Factor Activities and Consultation on Additional Amendments to Rule

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- Introductions
- Findings from investigation of volume discrepancies in loss factor calculation results
- Status update on 2019 loss factor calculations
- Status update for Module C loss factor calculations
- Module C payment plan development
- Discussion of potential amendments to Loss Factor Rule
- Review of schedule for loss factor activities
- Reviews of questions and responses list
- Discussion

Please ask questions during presentation

Four implementation issues discussed at October meeting

1. Incorrect modelling of net-to-grid loads when on-site generation is offered on a gross basis
 - Resolution: Hold gross load (not net-to-grid load) constant when moving from two-year-prior data to forecast loss factor year
2. Incorrect approach to calculating hourly raw loss factors for imports
 - Resolution: Reduce only imports (not net flow) on intertie when calculating hourly raw loss factors for imports
3. Incorrect dispatch of exports within PSS/E simulation
 - Resolution: Dispatch scheduled exports whenever load and losses can be balanced without curtailing exports

Four implementation issues discussed at October meeting (cont'd)



4. Incorrect modelling of self-supply sites

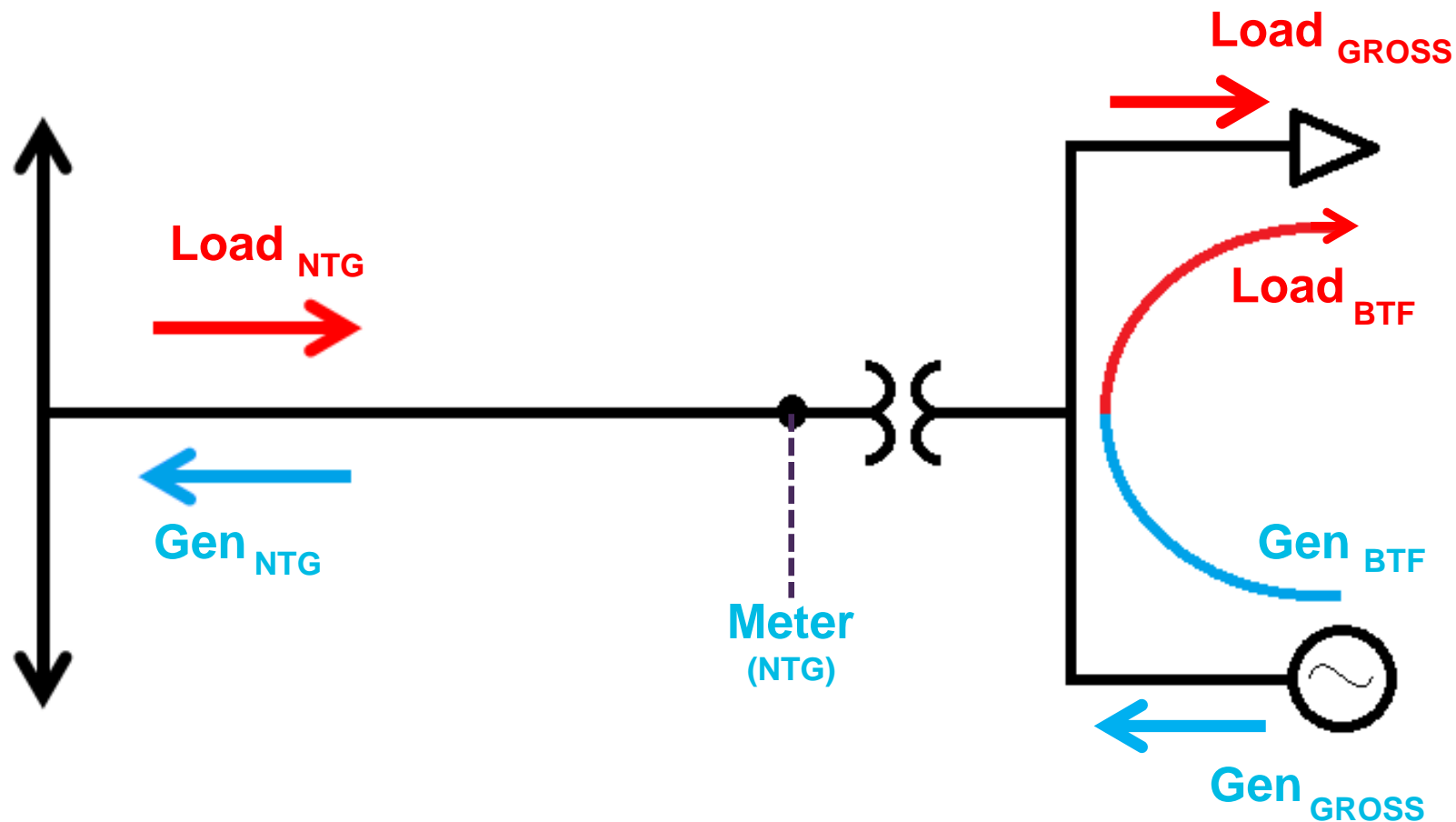
- Resolution: Correct modelling of five sites to reflect energy market merit order offers on a gross basis (rather than on a net-to-grid basis)
- Offer basis information will be added to Master Loss Factor Location List workbook posted on AESO website

5. Disconnecting generators when undispached

- When initializing PSS/E, all generating facilities had been disconnected and only dispatched generators were re-connected during simulation process
 - Initialization has been corrected to leave all available generators connected
 - Exception: If generating facility offers in energy market merit order on gross basis and there are no offer blocks in merit order data for that generator, then assume generator is unavailable and disconnect it from system
- Loss factors will be impacted in many hours in a year
 - Impact is expected to be small
 - Affects loss factors calculated for both forecast and historical years

Terminology for self-supply sites

- $Gen_{NTG} = Gen_{GROSS} - Gen_{BTF}$
 - $Load_{NTG} = Load_{GROSS} - Load_{BTF}$
- } $Gen_{BTF} = Load_{BTF}$



- Available data: Gen_{NTG} or Gen_{GROSS} ; $Load_{NTG}$ or $Load_{GROSS}$

6. Assuming load was zero when net-to-grid offers not dispatched at self-supply sites

- Load assumed to be zero at self-supply sites when generator offered in energy market merit order on net-to-grid basis
 - Assumption has been corrected to use load data if net-to-grid generator is not dispatched

Net-to-Grid Offer Basis	Generator			Load		
	NTG	GROSS	BTF	NTG	GROSS	BTF
No dispatch	0	Unknown	Unknown	Load	Unknown	Unknown
Dispatch	Model	Unknown	Unknown	0	Unknown	Unknown

- Loss factors will be impacted in many hours in a year
 - Applies only to net-to-grid offers with net-to-grid load (affects 10 self-supply sites)
 - Affects loss factors calculated for both forecast and historical years

7. Dispatching net-to-grid offers when net-to-grid load exists at self-supply sites

- Generating facility that offers in energy market merit order on net-to-grid basis with net-to-grid load existing may be dispatched in simulation in either initial state or redispatched state
- Load exists prior to dispatch but must be removed to enable dispatch of net-to-grid offer
 - Applies only to net-to-grid offers with net-to-grid load (affects 10 self-supply sites)

7. Dispatching net-to-grid offers when net-to-grid load exists at self-supply sites (cont'd)



- When net-to-grid offer at self-supply site needs to be dispatched, net-to-grid load is first reduced to zero

Row	Offer Block (MW _{NTG})	Site Dispatch (MW _{NTG})	Site Load (MW _{NTG})	System Load (MW _{NTG})	Adjusted Load (MW _{NTG})	Comment
A	<i>other generators dispatched</i>			7,980	7,980	Model balanced
B	50	0	20	8,000	8,000	Dispatch required
C	50	0	10	8,000	7,990	Dispatch required
D	50	0	0	8,000	7,980	Model balanced
E	50	10	0	8,010	7,990	Model balanced
F	50	30	0	8,030	8,010	Model balanced
G	50	50	0	8,050	8,030	Model balanced
H	<i>other generators dispatched</i>			> 8,050	> 8,030	Model balanced

7. Dispatching net-to-grid offers when net-to-grid load exists at self-supply sites (cont'd)

- Loss factors will be impacted in many hours in a year
 - Applies only when net-to-grid offers are dispatched and net-to-grid load exists at site
 - Most likely in redispatched state but could also occur in initial state
 - Impacted expected to be small
 - Affects loss factors calculated for both forecast and historical years

Conclusion of investigation of volume discrepancies

- AESO believes all implementation issues have been identified
 - Some exception cases are being examined to ensure consistency
 - Resolution of implementation issues has been manually tested in sample hours but full-year simulation has not been completed
- AESO will post description of implementation issues and their resolution
- Software revision is on-going
- Provision of validation information is being considered

Status of 2019 loss factor calculations

- System topologies have been prepared
- Merit order data for 2019 has been prepared
 - Profile of generating unit returned from mothball outage has been based on 2017 merit order data without adjustment
- Load data has been prepared
- 2019 loss factors are not expected to be available before December 31
 - Software revision, calculation, and validation process will result in loss factors being available in Q1 of 2019
 - AESO is working on more specific publication schedule

Status of Module C loss factor calculations

- System topologies complete back to 2012
- Merit order data complete back to 2009
- Load data complete back to 2012
- Loss factor calculations are waiting for completion of software revision

- AESO has been working with financial advisors to develop proposed structure, terms, and eligibility criteria for payment plan
- Initial proposal has been drafted
 - Loan would be repaid in equal monthly principal payments plus interest accrued on outstanding principal balance
 - Loan term would be 24 months
 - Outstanding principal balance may be prepaid at any time
 - Qualification for payment plan would require documented demonstration of financial hardship
 - Calculation of insufficient liquidity
 - Lack of available financing
 - Inability to obtain other financing

- AESO invites feedback from stakeholders on initial payment plan proposal
- Initial proposal will be subject to change through further development and review
- Development of payment plan structure, terms, and eligibility criteria will continue into January

Proposed additional amendments to Loss Factor Rule



- AESO posted responses to stakeholder comments on amendments to Loss Factor Rule on Nov 20, 2018
- In response to stakeholder comments, the AESO will propose an additional amendment to allow a market participant who owns a source asset that is returning from an extended outage to review and comment on the volumes developed for the source asset

Proposed additional amendments to Loss Factor Rule (cont'd)



- AESO will propose an additional amendment to subsection 3(1) requirement that the AESO publish loss factors by the fifth business day of November
 - Issues identified close to that deadline are typically unable to be addressed prior to year-end, suggesting an earlier date should be considered
 - Deadline should not be advanced too far to avoid requiring input data earlier than necessary, which could reduce robustness of project inclusion criteria
 - AESO suggests date should be advanced to first business day of October

Proposed additional amendments to Loss Factor Rule (cont'd)



- AESO will also propose that date be changed to a “best efforts” requirement
 - Suggested wording could be that “the AESO must make reasonable efforts to make final loss factors publicly available on the AESO website no later than the first business day of October prior to the calendar year in which the loss factors will apply, and in any event must make final loss factors publicly available on the AESO website no later than December 31 prior to the calendar year in which the loss factors will apply”
 - AESO would continue input data preparation, loss factor calculation, and consultation with stakeholders to achieve October deadline
 - Purpose of proposed wording is to minimize administrative process if issues result in October deadline being missed

Proposed additional amendments to Loss Factor Rule (cont'd)

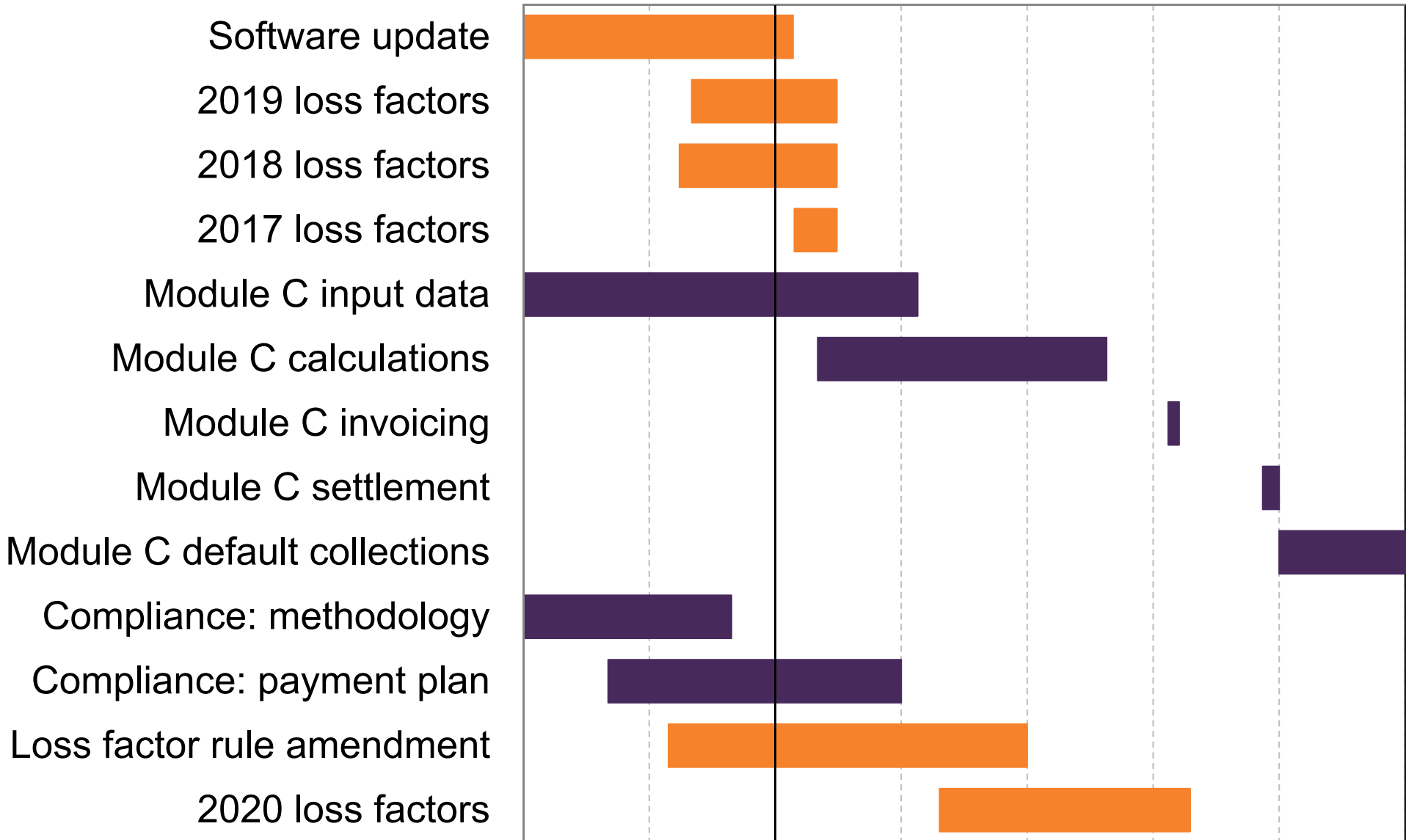


- AESO expects to consult on proposed additional amendments in January 2019
- AESO is seeking initial reaction from stakeholders before formally initiating consultation process

Schedule of activities



Jul 18 Oct 18 Jan 19 Apr 19 Jul 19 Oct 19 Jan 20 Apr 20



Questions and responses list

- Questions and responses were posted on AESO website on Nov 30
 - List included 19 questions back to July 2018
 - Additional questions will be added to list

Questions and Responses Related to Loss Factor Activities

Current as of 30-Nov-2018

Includes all stakeholder questions identified from 1-Jul-2018 to the Technical Meeting on 17-Oct-2018

No.	Proj	Question	Asked by	Asked on	Answer	Provided	Impact
1810.11	LF17 LF18	Can the AESO provide similar details of original and recalculated charges for loss charge adjustments resulting from any recalculation of 2017 and 2018 loss factors?	Medicine Hat	17-Oct-2018	The AESO will consider request	Open	Settlement
1810.10	MODC	As requested by some parties in their Module C submissions, will the AESO provide details of original and recalculated charges for loss charge adjustments in Module C to enable easy reconciliation by market participants?	Medicine Hat	17-Oct-2018	As explained in its Module C Methodology Compliance Filing Reply Submission (Exhibit 790-X3524), the AESO is currently determining how to provide the loss charges information on an annual and cumulative basis to address matters raised by stakeholders.	17-Sep-2018	Settlement
1810.09	LF17 LF18	How is the AESO going to address compliance of loss factor calculations to the loss factor rule that was effective in 2017 and 2018?	Milner Power	17-Oct-2018	The AESO has requested forbearance from the MSA with respect to non-compliance to the Loss Factor Rule in 2017 and 2018.	16-Nov-2016	Rule

- Questions will be summarized in question list on AESO website

For more information

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- Loss factors, stakeholder consultation information, and related documents are posted on AESO website
 - [Grid](#) ▶ [Loss factors](#) ▶ [2018 loss factors](#)
 - [Grid](#) ▶ [Loss factors](#) ▶ [Stakeholder engagement](#)
 - [Grid](#) ▶ [Loss factors](#) ▶ [Loss factors recalculation for 2006-2016](#)

Thank you