

TLRi vs ADQh Code Application for Export Curtailments for Adequacy

Inter-Jurisdictional Standing Committee
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A request was made of the IESO to provide the methodology used to determine the use of the TLRi vs ADQh code when curtailing exports for adequacy.

- TLRi
 - Used when adequacy issue is caused by internal constraints
 - removes transactions only from the constrained schedule
 - Transactions eligible for CMSC
- ADQh
 - Used for system wide adequacy issue, market schedule deficiency
 - removes transactions from both schedules
 - Transactions not eligible for CMSC

- In real time the Control Room makes an assessment of the number of MWs that are bottled
- Bottled MWs are considered to be the MWs that are available, but cannot be delivered due to a system constraints
- Another way to think about it is the MWs that are in the Market Schedule, but not in the Constrained schedule

- If the number of MWs bottled is greater than the number of exports curtailed the CRO will use the TLRi code
- Reasoning: the curtailment is necessitated by an internal limitation on the system
- If the number of MWs bottled is less than the number of exports curtailed the CRO will use TLRi for the most economic MWs up to the amount of MWs bottled, and will use ADQh for the remainder

- If TLRi was used, the export MWs will have remained in the Market Schedule
 - If the unconstrained price did not reach \$2000, this is a signal that the Market was adequate to support the exports and the adequacy issue was in the constrained schedule only
- If ADQh was used, the exports will have been removed from the Market Schedule
 - This would have a downward pressure on price in both schedules

- IESO re-evaluates the appropriate use of the code (TLRi vs ADQh)
- IESO uses the two methodologies to calculate the amount of MWs bottled at the time of the curtailment.
 - One which looks at the schedules from the DSO
 - One which looks at zonal demands and transmission limitations

Calculate bottled MWs as the sum of:

- the difference between all unconstrained schedules versus constrained schedules, including imports, this represents MWs that are available and economic but are limited due to internal system constraints; and
- any additional MWs offered that were not scheduled, but would not have been available due to system constraints

Calculate bottled MWs on a Zone by Zone Basis

- Calculate the MWs available to “export” from each zone by comparing the Generation Capacity available for dispatch in the area to the demand in the area.
- Look at any transmission limitations to “export” that energy to calculate the number bottled
- Plus any imports that were constrained off from entering that zone

Sum all Zones for the total bottled MW amount

As an example

If there is 600 MW of Generation Capacity in the NW, the Demand in the NW is 300MW and the East West East Limit is 100MW.

There would be $600 - 300 = 300$ MW available to “export” from the NW to the rest of Ontario. However, due to the EWE limit only 100 MW can be “exported”. Therefore $300 - 100 = 200$ MW is bottled in the NW.

- The calculated bottled numbers are compared against the number of exports curtailed.
- TLRi will be applied to the most economic exports equal to the amount of MWs bottled
- ADQh code will be applied to the remainder of the exports
- If necessary, the codes will be changed in the ex post timeframe