

# Storage Facilities

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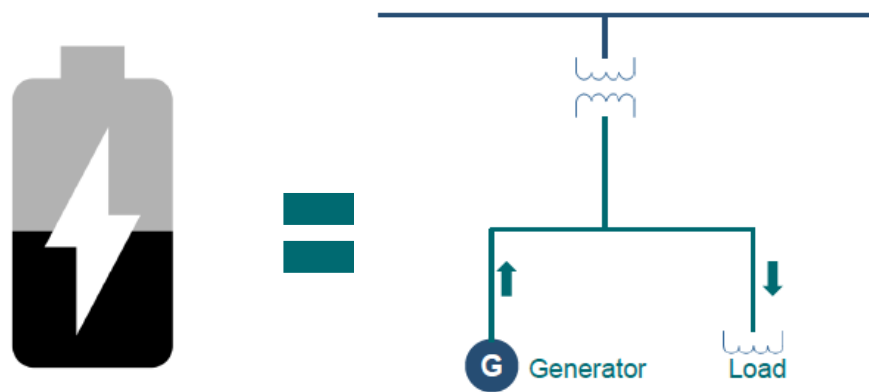
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# Storage Facilities

- A number of energy storage facilities are participating in the IAM. Registration of these facilities varies when compared to traditional resources.
- Storage facilities treated in the same manner as embedded generation under the uniform transmission rate order.
- Recent amendments to Regulation 429/04 includes 'electricity storage facilities'.

# Registering a Storage Facility in the IAM

- A storage facility that withdraws, stores and injects energy is represented as two separate resources in the IESO's system model.



- The load resource is either dispatchable or non-dispatchable; and
- The generator resource is either dispatchable or self-scheduling.

# Uniform Transmission Rate Order as applied to Storage Facilities

- Transmitter's interpretation of the UTR is that energy storage is treated in the same manner as an embedded generator, due to the fact that energy storage systems inject electricity.
- '*Gross load billing*' is applied similar to an embedded generator. An embedded energy storage facility, just like an embedded generator, could displace connection peak demand hence reducing connection revenue from those connection points and effectively pushing costs to all other connection points. '*Gross load billing*' allows transmitter to recover anticipated revenue and minimize cross-subsidization.

# Uniform Transmission Rate Order as applied to Storage Facilities

- Threshold for application of '*gross load billing*' to energy storage facilities is the same as the threshold for non-renewable generation – 1 MW.
- '*Gross load billing*' is applicable to the entire generation or storage facility if any single generating or storage unit at the facility is equal to or greater than 1 MW with **non-renewable generation or any type of energy storage**.
- Transmission customers with embedded generation or storage facilities will need to contact Transmitter to confirm '*gross load billing*' requirements.

# Amendments to Regulation 429/04

- Includes definition for *'electricity storage facilities'* and adjustment to treatment of Global Adjustment (GA) for Class B *'electricity storage facilities'* effective July 1, 2018

*As per subsection 5(1) of the amended Regulation, an 'electricity storage facility' means that:*

- a) is a Class B market participant or a Class B consumer*
- b) is only connected to the IESO-controlled grid or the distribution system of a licensed distributor*
- c) withdraws electricity from the IESO-controlled grid or the distribution system of a licensed distributor for the sole purpose of storing the electricity temporarily and then conveying that electricity or a portion of that electricity back into the IESO-controlled grid or a distribution system of a licensed distributor*

# Amendments to Regulation 429/04 (cont'd)

- Includes definition for '*electricity storage facilities*' and adjustment to treatment of Global Adjustment (GA) for Class B '*electricity storage facilities*'.

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# Amendments to Regulation 429/04 (cont'd)

- Regulatory amendments take effect July 1, 2018
- New treatment for the volume of electricity, if any, that is conveyed back into the IESO-controlled grid or the distribution system during the month by electricity storage facilities that are Class B market participants or Class B consumers
- New requirements for LDC submissions to the IESO via the Portal
  - Class A Load
  - Embedded Generation Offsetting Load
  - Class B Energy Storage Generation/Injection
  - Class B Energy Storage Load/Consumption
  - Total Embedded Generation
- Refer to IESO's Embedded Generation, Energy Storage and Class A Data Submission Requirements



