

Methodologies for Transmission Capacity

a. Total Transfer Capability (TTC) Methodology

The TTC Methodology is described in the ISO-NE [TTC Methodology document](#).

VEC's Schedule 21-VEC provides for local transmission deliveries are over non-Pool Transmission Facilities (Non-PTF). Some of these facilities are interconnected exclusively with the ISO-NE system, through the Vermont Transco, LLC system (VT Transco or VELCO), either directly or indirectly through the transmission of others. Other portions of VEC's transmission can be electrically configured to accepted deliveries directly from the Hydro Quebec system, which is asynchronous with the ISO-NE system. To accept these Hydro Quebec deliveries, VEC transfers portions of its system (electrical loads) from ISO-NE to Hydro Quebec. The transfer of these radial loads to Hydro Quebec is commonly referred to as "Block Loading".

VEC uses system models that it deems appropriate for study of the application for Firm Point-to-Point Transmission Service. Additional system models and operating conditions, including assumptions specific to a particular analysis, may be developed for conditions not available in the library of load flow cases. The system models may be modified, if necessary, to include additional system information on load, transfers, internal limitations, and configuration, as it becomes available. Such information may include Block Load Availability Constraints, which are constraints upon the transferability of capacity or energy that arise because, in connection with the Block Loading of VEC's system, there is insufficient load available to receive or deliver all of the capacity or energy scheduled for delivery by the Transmission Customer from the Hydro Quebec source. The Hydro Quebec Block Loading point to point transmission TTC's planning horizon analysis of the [hourly loads available for Block Loading](#) are posted on VEC's website.

b. Transmission Reserve Margin (TRM) Methodology

The TRM Methodology is described in the ISO-NE [ATC Methodology document](#).

TRM is the portion of TTC that cannot be used for reservation of firm transmission service because of uncertainties in system operation. It is used only for interfaces under the physical reservation system. Some transmission systems require that a portion of the TTC be reserved to cover certain uncertainties including loop flows. VEC's transmission system is operated radially and as such is not capable of looped flows. Furthermore, VEC's transmission is used exclusively for local service and does not interconnect regional control areas. Because of the nature and operation of its transmission VEC does not reserve TRM for its transmission facilities

c. Capacity Benefit Margin (CBM) Methodology

The CBM Methodology is described in the ISO-NE [ATC Methodology document](#).

VEC provides transmission service over their non-PTF facilities that are connected only to the ISO-NE system, or radially to the Hydro Quebec system which are limited to the availability of load for Block Loading. Therefore, the Company does not reserve Capacity Benefit Margin for these lines

d. Existing Transmission Commitments (ETC) Methodology

ETC's are those confirmed non-firm, firm, and grandfathered transmission service obligations, together with any associated rollover rights, for which VEC has obligations to serve and inclusive of its native loads. All of VEC's Schedule 21-VEC transmission facilities are Non-PTF and used to serve its native loads and the connected loads of its Transmission Customers.

VEC has obligations to serve its native loads and the connected loads of its non-OATT Transmission Customers under Vermont Public Service Board jurisdictional transmission agreements. One of these non-OATT agreements is the Block Loading Facilities Transmission Agreement (BLFTA). BLFTA obligations will affect the contract path determination of ETC's. The availability of load for Block Loading limits the transferability of energy from Hydro Quebec. VEC also has a long-term firm OATT Schedule 21-VEC reservation to provide local point to point transmission for generation which is located within the block loading area.

For paths affected by block load transmission pursuant to the BLFTA, VEC prioritizes ETC components such that ETC cannot exceed the TTC. The prioritization order is as follows:

1. Generation located within the block load path that utilizes Firm Long-Term Schedule 21-VEC service. (Currently, the only such customer is Great Bay Hydro Corporation, which has a 4 MW reservation.)
2. Third-party schedules submitted pursuant to the BLFTA. (Currently, the maximum contract reservation among the four parties that have BLFTA rights is 22.676 MW.)
3. VEC Native Load, which is a Firm Point-to-Point reservation made and confirmed on VEC's OASIS.
4. Scheduled Firm Schedule 21-VEC deliveries.
5. Scheduled Non-Firm Schedule 21-VEC deliveries.

If the prioritization results in committed uses that reach or exceed TTC for the path, ETC will equal TTC, and as a result, no ATC will be available for the path. Or, as expressed in a mathematic algorithm:

**ETC = the Lesser of:
(Path TTC) or (Sum of the Commitments set out in Items 1 through 5, above)**

For the Hydro Quebec Block Loading point to point transmission, VEC posts [projections of ETC's](#) on its website.

e. Available Transfer Capacity (ATC) Methodology

The ATC Methodology is described in the ISO-NE [ATC Methodology document](#).

For transmission providers that use TRM and CBM the typical algorithm to calculate ATC is:

TTC less TRM less CBM less ETC

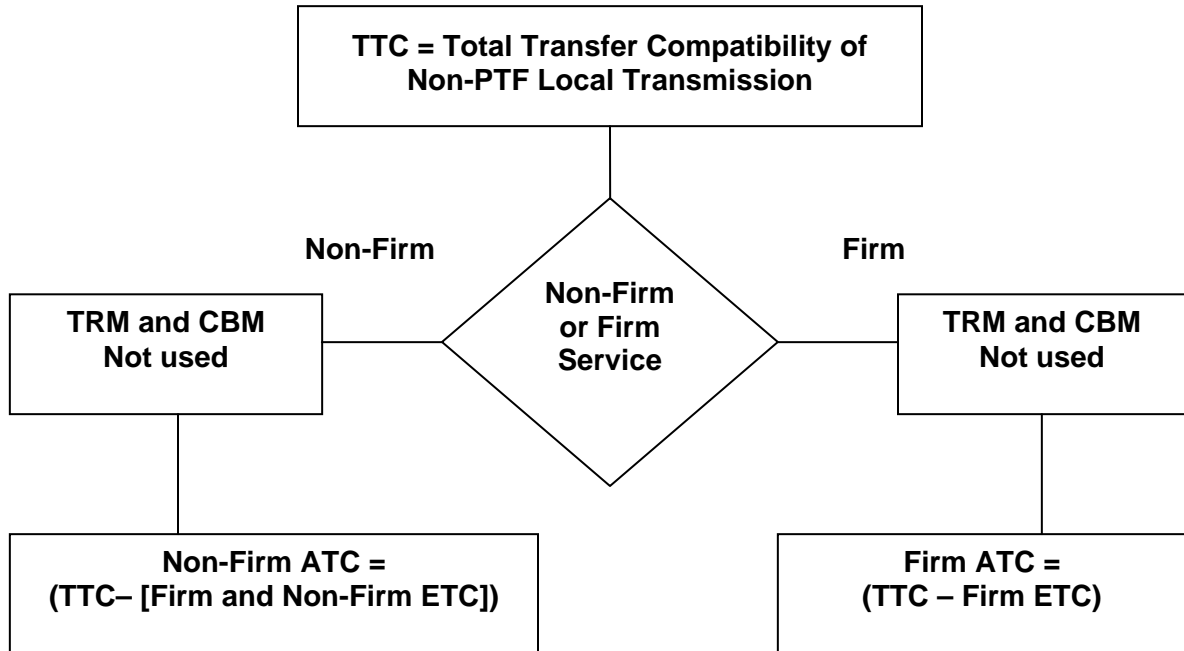
For VEC since both TRM and CBM are not used the simplified algorithm to calculate ATC is TTC less ETC. The following are VEC's mathematical algorithms for the calculating ATC:

$$\text{Firm ATC} = (\text{TTC} - \text{Firm ETC})$$

$$\text{Non-Firm ATC} = (\text{TTC} - [\text{Firm and Non-Firm ETC}])$$

Non-PTF Transmission Path ATC Process Flow Diagram

This process flow diagram illustrates the steps through which ATC is calculated both on an operating and planning horizon.



For Non-Block Load facilities VEC posts on the OASIS the ATC as 9999. The actual ATC on these paths varies depending on the time of day. However, it is posted with an ATC of "9999" to reflect the fact that there are no restrictions on these paths for commercial transactions.

For the Hydro Quebec Block Loading point to point transmission, VEC posts projections of [Block Loading Firm ATC's](#) (TTC - Firm ETC) on its website. The Hydro Quebec Block Loading ATC's posted on the OASIS are calculated using the ATC Methodology.