

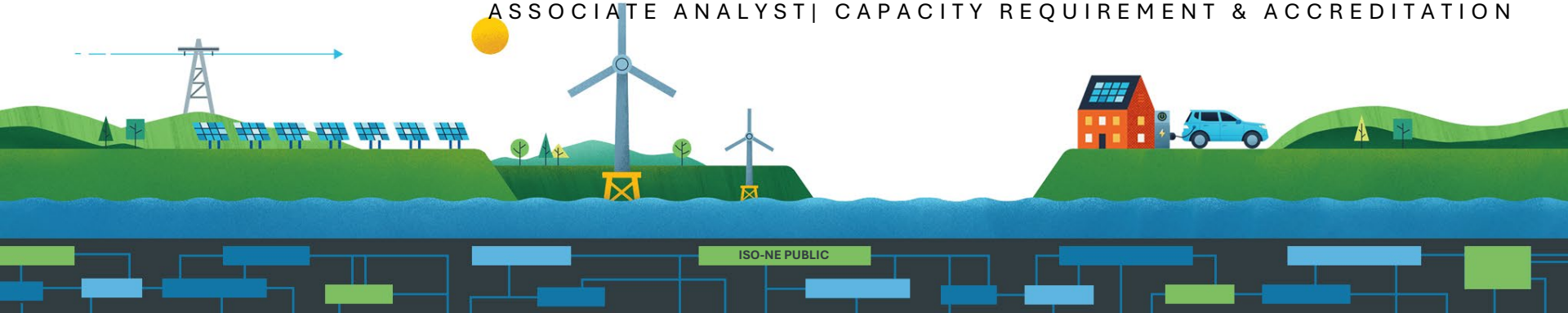
Tie Benefits Study Assumptions



*2026-2027 Capacity Commitment Period (CCP)
Third Annual Reconfiguration Auction (ARA 3)*

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Scope of Study

- To calculate tie benefits values from neighboring Control Areas to New England for ARA 3 for the 2026-2027 CCP through a probabilistic analysis, according to the methodology described in Section III.12.9 of the Tariff
- The calculations include:
 - Total tie benefits from all neighboring Control Areas (Québec, Maritimes [New Brunswick and Nova Scotia], and New York)
 - Tie benefits associated with each neighboring Control Area
 - Tie benefits associated with an individual interconnection or a group of interconnections of interest

Simulation Model and Assumptions

- The General Electric (GE) Multi-Area Reliability Simulation (MARS) model* is used
- Major study assumptions include:
 - Loads
 - Resources
 - Control Area modeling
 - Transmission interfaces and transfer capabilities
 - Other assumptions
 - Operating reserves
 - Relief from voltage reduction

* GE MARS is a “pipe-and-bubble” transportation model. Information on the GE MARS model may be found at:
<https://www.geenergyconsulting.com/practice-area/software-products/mars>

Loads Assumptions

New England

- The New England load assumptions are consistent with the assumptions to be used for the calculation of the ICR-Related Values* [for ARA 3 for the 2026-2027 CCP](#)

Neighboring Control Areas

- Based on their latest load models used in NPCC studies for the year 2024
- The tie benefits study for ARA 3 will continue to use the 2002 hourly load shape consistent with Forward Capacity Auction 17 (FCA 17) tie benefit study assumptions

* The Installed Capacity Requirement (ICR), Maximum Capacity Limit (MCL), the Marginal Reliability Impact (MRI) Demand Curves, and Hydro-Québec Interconnection Capacity Credits (HQICCs) are collectively referred to as the ICR-Related Values.

For details on ICR-Related Values development, see [ICR Reference Guide](#)

Resource Assumptions

New England Control Area

- All qualified existing capacity resources are modeled
- Assumptions for resource ratings, equivalent forced outage rate on demand (EFORd), and maintenance weeks are consistent with assumptions for [the 2026-2027 CCP ARA 3 ICR calculations](#)
- Existing Import Capacity Resources
 - Existing Import Capacity Resources are modeled at the value of their CSO based on ARA 1 results

Neighboring Control Areas

- Model resources based on
 - 2024 NPCC Long Range Adequacy Overview (LRAO) data (Québec, Maritimes, New York [NY], Ontario, and PJM)
 - Ontario and PJM are included for the purpose of modeling the impacts of capacity imports/exports with Québec and New York

Control Areas Modeling

- Québec, Maritimes, New England, and New York are simulated using the MARS multi-area model reflecting inter-area and intra-area transmission interface transfer limits
- An equivalent model is used to reflect the impacts of the known capacity import/export between New England's directly interconnected neighboring Control Areas and their respective neighboring Control Areas (e.g., PJM and Ontario modeled for NY and Québec)

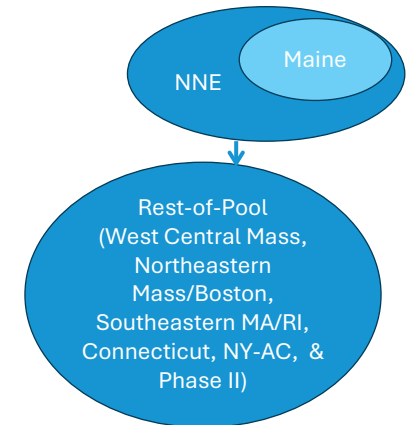
Subarea Modeling and Transmission Transfer Capability Assumptions

New England

- RSP subarea representation (please see Appendix II for details)
- Internal and external transmission interface transfer capabilities consistent with transmission transfer capabilities* for the 2026-2027 CCP reviewed at the April 29, 2025 Planning Advisory Committee
- Interfaces associated with FCA 17 Capacity Zones** are not modeled (relaxed)
 - Export-constrained Capacity Zones of Maine and Northern New England (“NNE” - Vermont, New Hampshire, & Maine)

Neighboring Control Areas

- Consistent with their latest model used in NPCC studies (please see Appendix II for details)



* Based on transmission transfer capability limits presented at the April 29, 2025 Planning Advisory Committee meeting. The presentation is available at: https://www.iso-ne.com/static-assets/documents/100022/a05_2025_04_29_pac_me_capacity_transfer_capability.pdf

** For more information on the development of FCA 17 Capacity Zones, please see: https://www.iso-ne.com/static-assets/documents/2022/06/a03_fca17_zone_formation.pptx

New England Internal Interface Transfer Capability Assumptions (MW)

Single-Value, Summer Peak, Non-Firm, Transmission Interface Limits for Use in Subarea Transportation Models ^a

Interface	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Orrington-South	1650	1650	1650	1650	1650	1650	1650	1650	1650	1650
Surowiec-South	1800	2200 ^b	2200	2200	2200	2200	2200	2200	2200	2200
Maine-New Hampshire	2000	2200 ^b	2200	2200	2200	2200	2200	2200	2200	2200
Northern New England-Scobie + 394	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
North-South	2725	2725	2725	2725	2725	2725	2725	2725	2725	2725
East-West	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400
West-East	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Boston Import (N-1)	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250
Boston Import (N-1-1)	4850	4850	4850	4850	4850	4850	4850	4850	4850	4850
SEMA/RI Export	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400
SEMA/RI Import (N-1)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
SEMA/RI Import (N-1-1)	800	800	800	800	800	800	800	800	800	800
Southeast New England Import (N-1)	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250
Southeast New England Import (N-1-1)	4850	4850	4850	4850	4850	4850	4850	4850	4850	4850
Connecticut Import (N-1)	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400
Connecticut Import (N-1-1)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
SW Connecticut Import (N-1)	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800
SW Connecticut Import (N-1-1)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900

Please see Appendix I for notes

New England External Interface Import Capability Assumptions (MW)

Single-Value, Summer Peak, Non-Firm, Transmission Interface Limits for Use in Subarea Transportation Models ¹

Interface	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
New Brunswick-New England (energy import capability) ²	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
New Brunswick-New England (capacity import capability) ²	980	1000	1000	1000	1000	1000	1000	1000	1000	1000
HQ-New England (Highgate) (energy import capability) ³	217	217	217	217	217	217	217	217	217	217
HQ-New England (Highgate) (capacity import capability)	200	200	200	200	200	200	200	200	200	200
HQ-New England (Phase II) (energy import capability) ⁴	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
HQ-New England (Phase II) (capacity import capability)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Cross-Sound Cable (CSC) (energy import capability) ⁵	330	330	330	330	330	330	330	330	330	330
Cross-Sound Cable (CSC) (capacity import capability)	0	0	0	0	0	0	0	0	0	0
New York-New England (energy import capability) ⁶	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
New York-New England (capacity import capability)	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400

Please see Appendix I for notes

New England Transmission Interface Availability Assumptions

New England

- Internal transmission interfaces are modeled 100% available because the power can be delivered using multiple paths
- External transmission interface availability assumptions are based on values updated this year
- Please note that the GE MARS program only allows modeling the forced outage rate of a transmission interface. It is assumed that transmission maintenance needs will have minimum reliability impact because they are scheduled during periods when the system is reliable

External Ties	Forced Outage Rate (%)	Maintenance (Weeks)
New York Cross Sound Cable	0.8	10.7
HQ Highgate	0.2	2.2
HQ Phase II	2.3	2.7
New Brunswick Ties	3.0	2.6
New York AC Ties	0.9	3.2

Neighboring Control Areas

- Consistent with their latest model used in the latest NPCC studies

Other Assumptions: Operating Reserves and Relief from Voltage Reduction

New England

- Assume 2,125 MW of systemwide operating reserves
 - Allowed to deplete to a minimum of 700 MW as ISO-NE Operating Procedure 4 (OP-4) actions progress prior to firm load shedding
- Voltage reductions
 - Consistent with the ICR calculation

Neighboring Control Areas

- Consistent with their latest model in 2024 LRAO NPCC study

Import CSOs Used for Tie Benefits Adjustments

Interface	CSO (MW)
HQ Highgate	0.0
HQ Phase II	0.0
New Brunswick	177
NY AC Ties	387.1
NY Cross Sound Cable	0.0
Total	564.1

Questions



APPENDIX I

Notes Relating to Internal and External Interface Transfer Capability



Notes on Internal Interface Transfer Capabilities

- a) Limits are for the summer period, except where noted to be winter
 - The limits may not include possible simultaneous impacts, and should not be considered as “firm”
 - For the years within the FCM horizon (Capacity Commitment Period (CCP) 2028-2029 and earlier), only accepted certified transmission projects are included when identifying interface transfer limits
 - For the years beyond the FCM horizon (CCP 2029-2030 and later), proposed plan-approved transmission upgrades are included according to their expected in-service dates
- b) The interface transfer capability increase due to NECEC related Network Upgrades in-service, but NECEC offline.

Notes on External Interface Import Capability

1. Limits are for the summer period
 - The limits may not include possible simultaneous impacts, and should not be considered as “firm” (the bases for these limits are subject to more detailed review in the future)
2. The limit on scheduled energy transactions over the New Brunswick (NB)-New England (NE) interface is 1,000 MW, and updates to the transfer capabilities of interfaces in the ME Load Zone results in the ability to deliver 1000 MW of capacity to the New England Control Area (an increase of 20 MW to the previous 980 MW limit)
 - Additional information on the adjustment to the import capacity capability of this interface is provided later in this presentation
3. The capability for the Highgate facility is listed at the New England AC side of the Highgate terminal

Notes on External Interface Import Capability (cont'd)

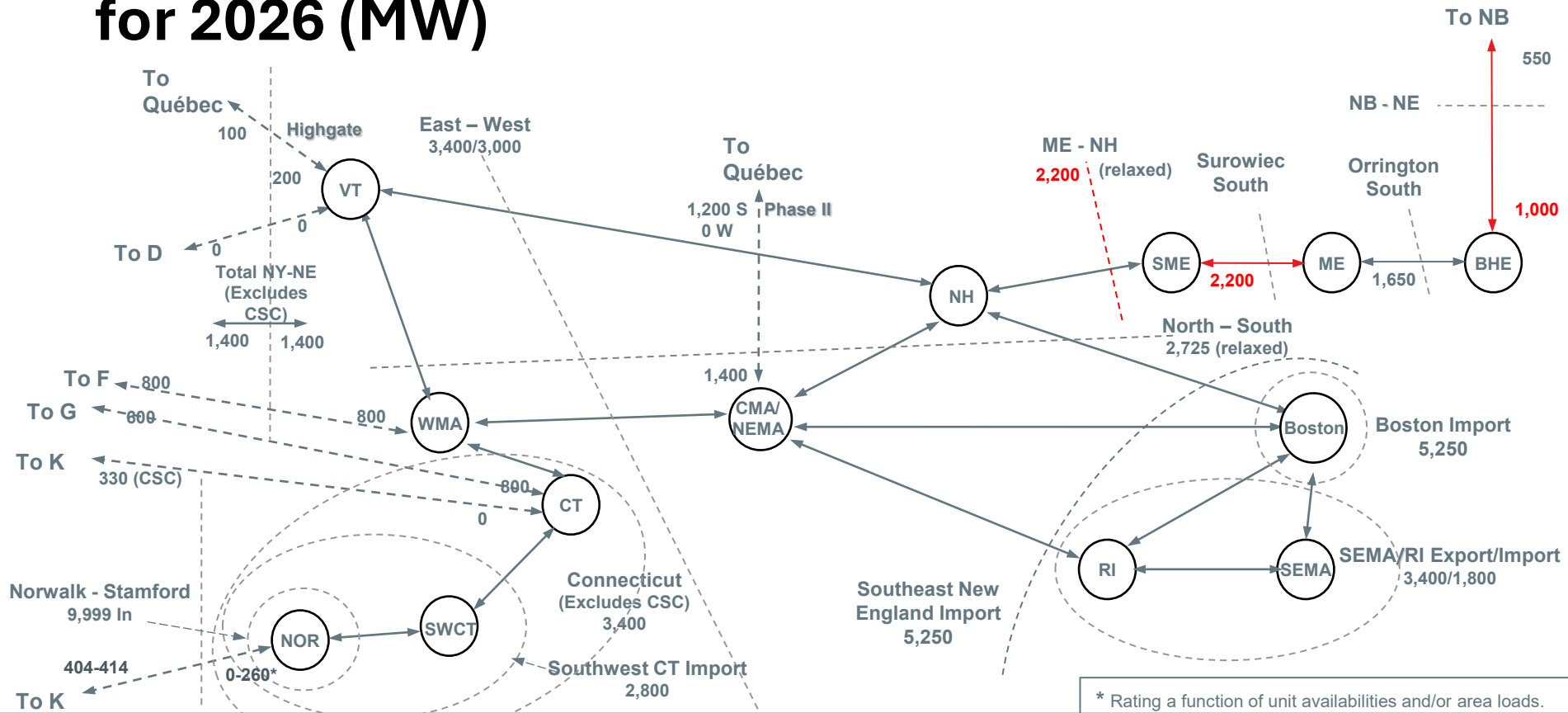
4. The Hydro-Quebec Phase II interconnection is a DC tie with equipment ratings of 2,000 MW. Due to the need to protect for the loss of this line at full import level in the PJM and New York (NY) Control Areas' systems, ISO-NE has assumed its transfer capability for capacity and reliability calculation purposes to be 1,400 MW
 - This assumption is based on the results of loss-of-source analyses conducted by PJM and NYISO
5. Import capability on the Cross Sound Cable (CSC) is dependent on the level of local generation
6. NY interface limits
 - These are without CSC and with the Northport Norwalk Cable at 0 MW flow
 - Simultaneously importing

APPENDIX II

Pipe and Bubble System diagrams



New England System Representation for 2026 (MW)



* Rating a function of unit availabilities and/or area loads.

Abbreviations of Subareas in Diagrams

Maritimes

NB	'NEW BRUNSWICK'
NS	'NOVA SCOTIA'
PEI	'PRINCE EDWARD ISLAND'
NM	'NORTHERN MAINE ISA'

Québec

JB	'JAMES BAY'
Chur	'CHURCHILL'
MAN	'NORTH COAST/MANIC'
Que Cent.	'CENTRE (Que.)'
Mtl	'SOUTHWEST/MTL'
ND	'NICOLET-DESCANTONS'
CEDARS	'for cedar sale'

New York

A	'AREA_A'
B	'AREA_B'
C	'AREA_C'
D	'AREA_D'
E	'AREA_E'
F	'AREA_F'
G	'AREA_G'
CPVVEC	'AREA FOR CPV VEC'
H	'AREA_H'
I	'AREA_I'
J	'AREA_J'
J2	'PJM - NEW JERSEY'
J3	'LINDEN VFT CABLE'
J4	'HTP CABLE'
K	'AREA_K'
RECO	'RECO PJM'

Abbreviations of Subareas in Diagrams, cont.

New England

BHE	‘Northeastern Maine’
ME	‘Western and central Maine and Saco Valley, New Hampshire’
SME	‘Southeastern Maine’
NH	‘Northern, eastern, and central New Hampshire; eastern Vermont; and southwestern Maine’
VT	‘Vermont and southwestern New Hampshire’
Boston	‘Greater Boston, including the North Shore’
CMA/NEMA	‘Central Massachusetts and Northeastern Massachusetts’
WMA	‘Western Massachusetts’
SEMA	‘Southeast Massachusetts and Newport, Rhode Island’
RI	‘Part of Rhode Island bordering Massachusetts’
CT	‘Northern and eastern Connecticut’
SWCT	‘Southwestern Connecticut’
NOR	‘Norwalk and Stamford, Connecticut’