



# Forward Capacity Auction 14 (FCA-14) Capacity Zone Development Preview

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*Planning Advisory Committee*

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# Agenda

- Review the Forward Capacity Market Capacity Zone formation methodology
- Review the Capacity Zone determinations for FCA-13 (Capacity Commitment Period 2022-2023)
- Commence the Capacity Zone formation process and preview the determinations for FCA-14 (Capacity Commitment Period 2023-2024)



# METHODOLOGY FOR DETERMINING CAPACITY ZONES IN FCM

*Background*



# Developing Zonal Boundaries for the FCM

- Included in Attachment K of the Open Access Transmission Tariff:
  - Annual Assessment of Transmission Transfer Capability
    - Each year, the ISO shall issue the results of the annual assessment of transmission transfer capability, conducted pursuant to applicable NERC, NPCC and ISO New England standards and criteria and the identification of potential future transmission system weaknesses and limiting facilities that could impact the transmission system's ability to reliably transfer energy in the planning horizon.
    - Each annual assessment will identify those portions of the New England system, along with the associated interface boundaries, that should be considered in the assessment of Capacity Zones to be modeled in the Forward Capacity Market pursuant to ISO Tariff Section III.12.



# Zone Formation: A Two Step Process

Step ONE*	Step TWO
Identify the potential zonal boundaries and associated transfer limits to be tested for modeling in the FCM	Use objective criteria to conduct the test determining whether or not the zone meets the trigger to be modeled for the Capacity Commitment Period
	<p>Import-constrained zone Trigger to model the zone is based on the quantity of surplus resources in the zone above the zonal requirement</p> <p>Export-constrained zone: Trigger to model the zone is based on the quantity of existing and proposed new resources compared with the maximum capacity capability in the zone</p> <p>Zones that are neither import- or export-constrained are collapsed into the rest-of-pool zone</p>

\*With this presentation, we are beginning Step One of the process for FCA-14



# Zonal Modeling Timeline

Preview  
Boundary  
Expectations  
for Upcoming  
FCA Cycle

Pursuant To Attachment K:

- Conduct Transfer Analysis
- Identify Zones & Boundaries to be evaluated in FCM preparation
- Discuss with PAC
- Present to RC

File New  
Capacity  
Zone  
Boundary at  
FERC – if  
proposed

Pursuant To Tariff Section III.12:

- Determine whether the Capacity Zones identified pursuant to Attachment K should be modeled using the objective criteria – Reviewed with PSPC
- ICR, LSR, MCL & Tie Benefits calculations and related values
- Discuss ICR and related values with PSPC
- Present ICR and related values to RC for vote

Retirement  
requests that are  
received in this  
time-frame would  
be captured in the  
zone-modeling  
calculation

SOI

File Capacity  
Zones and  
Requirements  
at FERC

FCA

Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb

# REVIEW OF CAPACITY ZONE FORMATION DETERMINATIONS FOR FCA-13



# FCA-13 Transmission Transfer Capabilities

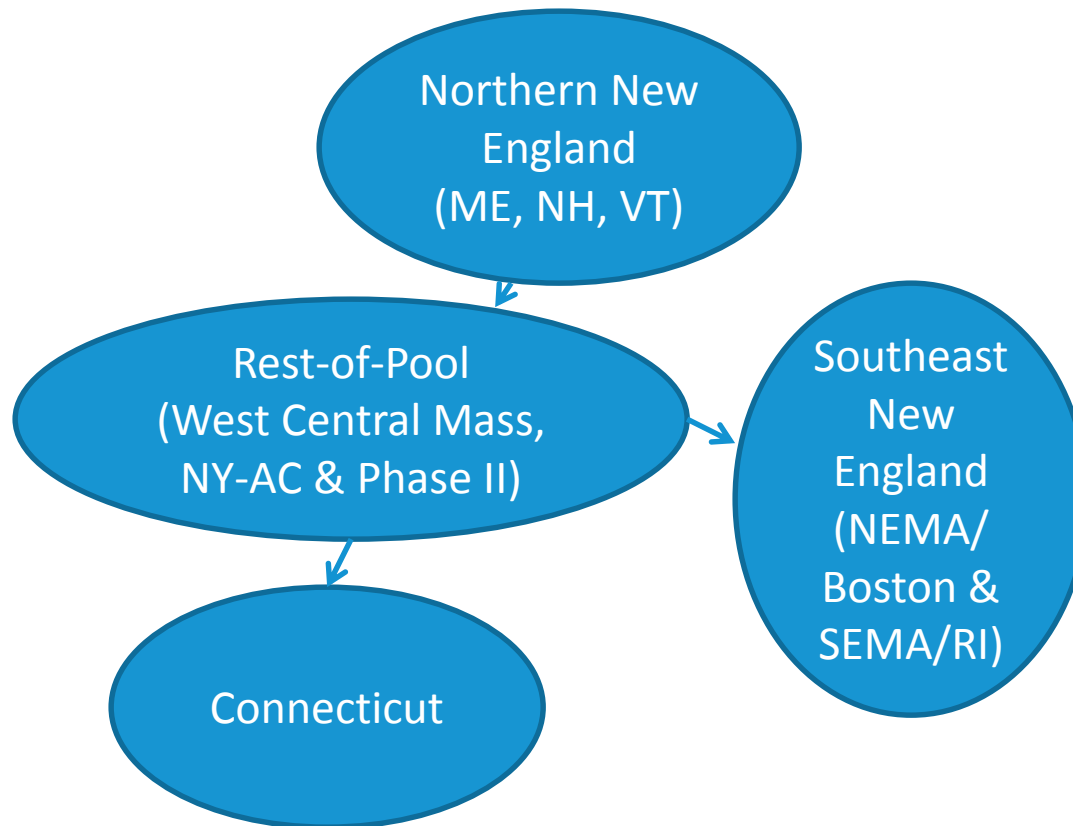
- Capacity Zone boundary transfer capabilities

Key FCA-13 Transfer Capabilities (MW)	
Southeast New England Import N-1	5,700
Southeast New England Import N-1-1	4,600
Connecticut Import N-1	3,400
Connecticut Import N-1-1	2,200
North-South N-1	2,725





# Final Potential\* Zonal Construct for FCA-13



\*The identification of the list of “Potential” Capacity Zones marks the end of the Phase 1 process

Note that zones are modeled in the FCA only if the objective criteria in Market Rule 1, Section 12 is triggered in Phase 2

# PREVIEW OF THE CAPACITY ZONE FORMATION PROCESS FOR FCA-14

*Preview of the New England system for the 2023-2024  
Capacity Commitment Period*

# Relevant System Changes

- The following system changes (since last year's Capacity Zone determination effort) are relevant to the formation of Capacity Zone boundaries
  - New transmission upgrades, including those expected to be in-service by the start of the 2023-2024 Capacity Commitment Period
  - Resource retirements
  - New Capacity Resources
- This presentation describes all of the currently known information regarding the relevant system changes

# FCM Transmission Certification Timeline

- The certification process is initiated in October
  - The process is coordinated with the October Regional System Plan (RSP) Project List update to ensure consistency between the FCM and RSP updates
  - Performed pursuant to Section 12.6 of the Tariff
- The Transmission Owners are required to provide models and contingency definitions for all projects being certified
- The ISO's review of the information and determination to accept certifications are typically made by January
- The accepted certification will be used in FCM activities
  - Transfer Limits, qualification, ICR & Related Values development, and De-list/Retirement/Substitution Auction models
- The list of accepted certified projects is presented at the January Reliability Committee meeting

# Remaining Major Transmission Projects Not Yet Certified

- Solutions have been identified for Southeast Massachusetts/Rhode Island (SEMA/RI)
  - Will result in upgrades in the SEMA/RI area
  - Not expected to change the boundaries of the SEMA/RI or Southeast New England Capacity Zones
- Currently, most of the SEMA/RI Reliability Project upgrades have not been certified for use in the Forward Capacity Market
  - Certifications for FCA-14 will be known in January 2019
  - If the SEMA/RI Reliability Project upgrades are certified, the upgrades would be assumed to be in place for the 2023-2024 Capacity Commitment Period

# Summary of Transfer Capabilities Affected by the SEMA/RI Upgrades

- With the SEMA/RI Reliability Project in-service, the SEMA/RI Import interface transfer capabilities will be as follows, based on thermal limits with summer ratings:
  - N-1 = 1,800 MW
  - N-1-1 = 800 MW
- The West-East interface transfer capability will be as follows, based on thermal limits with summer ratings:
  - N-1 = 3,000 MW
- See the [October 2018 PAC presentation](#) for further details on these transfer capabilities



# Resource Retirements

- Mystic 7 will be retiring with the commencement of Capacity Commitment Period 2022-2023
- The November 2015 Capacity Zone formation presentations (referenced in the Appendix of this presentation) included scenario analysis of different potential future retirement scenarios (including Mystic 7 and additional retirement scenarios)
  - Analysis showed that retirements were not expected to drive the need to consider different Capacity Zone boundaries
- Any major retirements received for the FCA-14 Capacity Commitment Period will be considered in the Capacity Zone formation process

# Interconnection Queue Activity (11/01/2018)

- New Hampshire/Vermont
  - Over 4,100 MW (nameplate) of capacity interconnection requests
- Maine
  - Over 6,200 MW (nameplate) of capacity interconnection requests
- SEMA/RI
  - Over 7,700 MW (nameplate) of capacity interconnection requests
- Connecticut
  - Over 2,700 MW (nameplate) of capacity interconnection requests
- West/Central Massachusetts
  - Over 700 MW of capacity interconnection requests





# Significant New Resource Activity in Maine

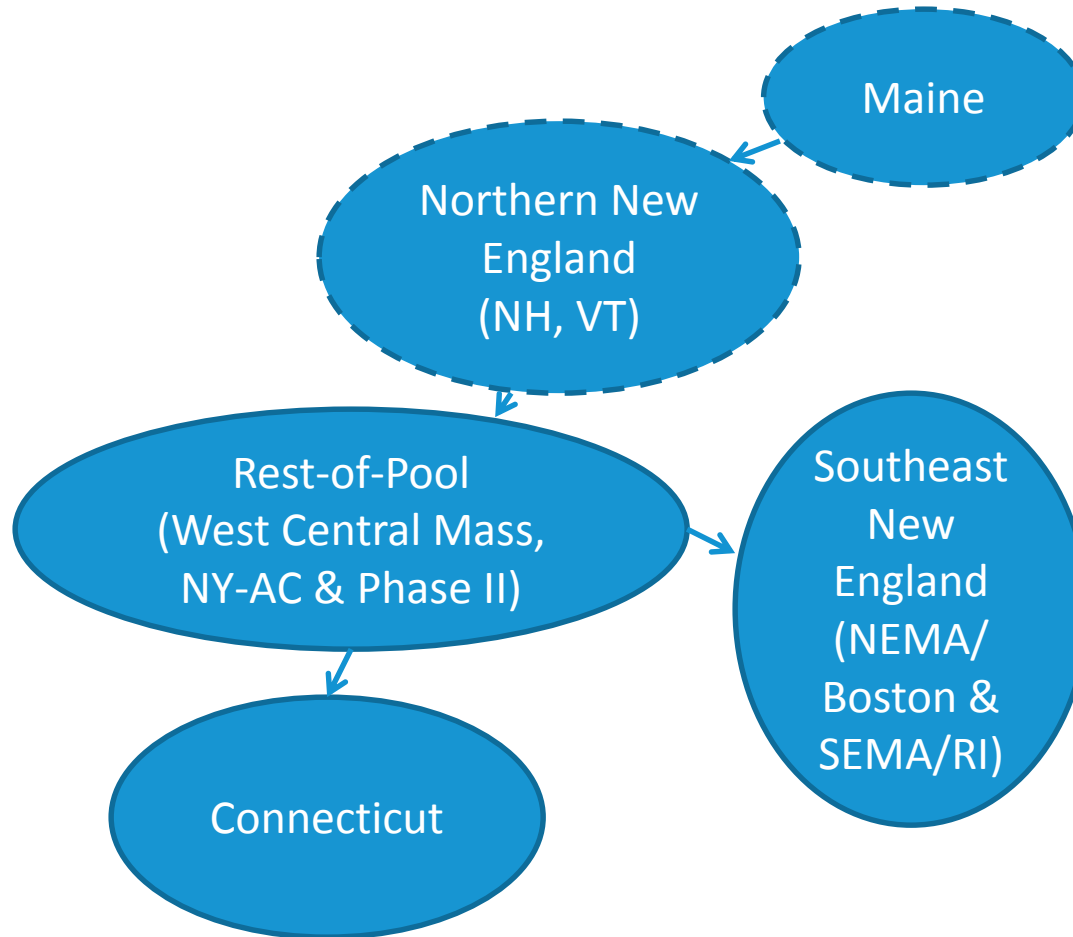
- There has been a significant backlog of requests in the ISO New England Interconnection Queue in Maine
- The November 1, 2017 FERC approval of the ISO's Clustering Proposal has enabled the queue to move forward in Maine
  - The first cluster is proceeding with over 600 MW through the system impact study process
  - An External ETU with 1,200 MW is also proceeding through the system impact study process
- Sufficient potential MW exists in the system impact study process for the Maine zone to become export-constrained



# Conclusions Regarding Relevant System Changes

- The following zonal boundaries have been used in the FCM in the past
  - Connecticut Import
  - Maine Export
  - NEMA/Boston Import
  - Northern New England Export (ME, NH, VT)
  - SEMA/RI Import
  - Southeast New England Import (NEMA/Boston, SEMA/RI)
- The following boundaries would address all of the potential limitations on transfers at a zonal level that are anticipated for FCA-14
  - Connecticut Import
  - Maine Export
  - Northern New England Export
  - Southeast New England Import

# Potential Capacity Zone Construct for FCA-14



Note that zones are modeled in the FCA only if the objective criteria in Market Rule 1, Section 12 is triggered

# Next Steps

- Review FCM Transmission Certifications for FCA-14 with the Reliability Committee in January 2019
- Further discussion of the potential Capacity Zone boundary construct for FCA-14
  - First Quarter 2019 Planning Advisory Committee



# APPENDIX 1

## *Background on the Capacity Zone Formation Process*



# Background

- In November 2015, in preparation for the Capacity Zone formation process for FCA-11, the Planning Advisory Committee engaged in comprehensive discussion of the zone formation process and the expected direction of zone preparations for FCA-11
  - Historical Development [link to presentation](#)
  - Current Process [link to presentation](#)
  - Review of Determinations for FCA-10 [link to presentation](#)
  - New England Power System in 2020 [link to presentation](#)



# Questions

