



# Second Maine Resource Integration Study: Scope

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*Planning Advisory Committee (PAC)*

Al McBride

SYSTEM PLANNING



# Agenda

- At the [June 13, 2018 PAC meeting](#), the ISO discussed the initiation of the **Second** Maine Resource Integration Study (MRIS)
- In this presentation the ISO will:
  - Update the identification of the cluster-eligible Interconnection Requests for the Second MRIS
  - Further describe the scope and the initial conceptual Cluster Enabling Transmission Upgrades to be considered in the Second MRIS

# Comments Received in Response to the June 13 PAC Presentation

- The ISO received comments from three participants in response to the June 13 PAC presentation
- Two of those comments included specific project details regarding certain Interconnection Requests currently participating in the ISO interconnection Queue
- This presentation contains responses to the comments received
  - The ISO does not plan to post the comments that contained specific project details

# CLUSTER-ELIGIBLE INTERCONNECTION REQUESTS

*Second Maine Resource Integration Study*

# Cluster Triggering Conditions

- The ISO has identified that the conditions in Section 4.2.1 of Schedule 22, Section 1.5.3.1 of Schedule 23, and Section 4.2.1 of Schedule 25 of Section II of the Tariff have again been triggered
  - At the discretion of the System Operator, Interconnection Requests will be studied in clusters for the purpose of the Interconnection System Impact Study and the Interconnection Facilities Study when the combination of the following circumstances is present in the interconnection queue: (a) there are two (2) or more Interconnection Requests without completed Interconnection System Impact Studies in the same electrical part of the New England Control Area based on the requested Point of Interconnection, and (b) the System Operator determined that none of the Interconnection Requests identified in (a) of this Section will be able to interconnect, either individually or on a cluster basis, without the use of common significant new transmission line infrastructure rated at or above 115 kV AC or HVDC
- The queue currently contains several Interconnection Requests (listed on subsequent slides) for generation projects and Elective Transmission Upgrades that are remote from the existing system and will require common new transmission infrastructure to interconnect

# Eligible Interconnection Requests

- The following Interconnection Requests are currently being considered in a new CRPS – i.e. the **Second** MRIS – and have been identified as potentially eligible to participate in a subsequent Cluster System Impact Study (CSIS)
- This **does not** reflect the final list of Interconnection Requests that will be ultimately identified as eligible to participate in a subsequent CSIS
- The final eligibility to participate in such a subsequent CSIS will be determined by the status of each Interconnection Request at the time of the finalization of the **Second** MRIS

# Eligible Interconnection Requests, continued

*Updated since the June 13, 2018 PAC Meeting*

QP640

QP729

QP730

QP731

QP732

QP733

QP734

QP735

QP736

QP737

QP738

QP739

QP740

QP741

QP742

QP743

QP744

# PRELIMINARY TRANSMISSION UPGRADE CONCEPTS

*Scope of the Second Maine Resource Integration Study*



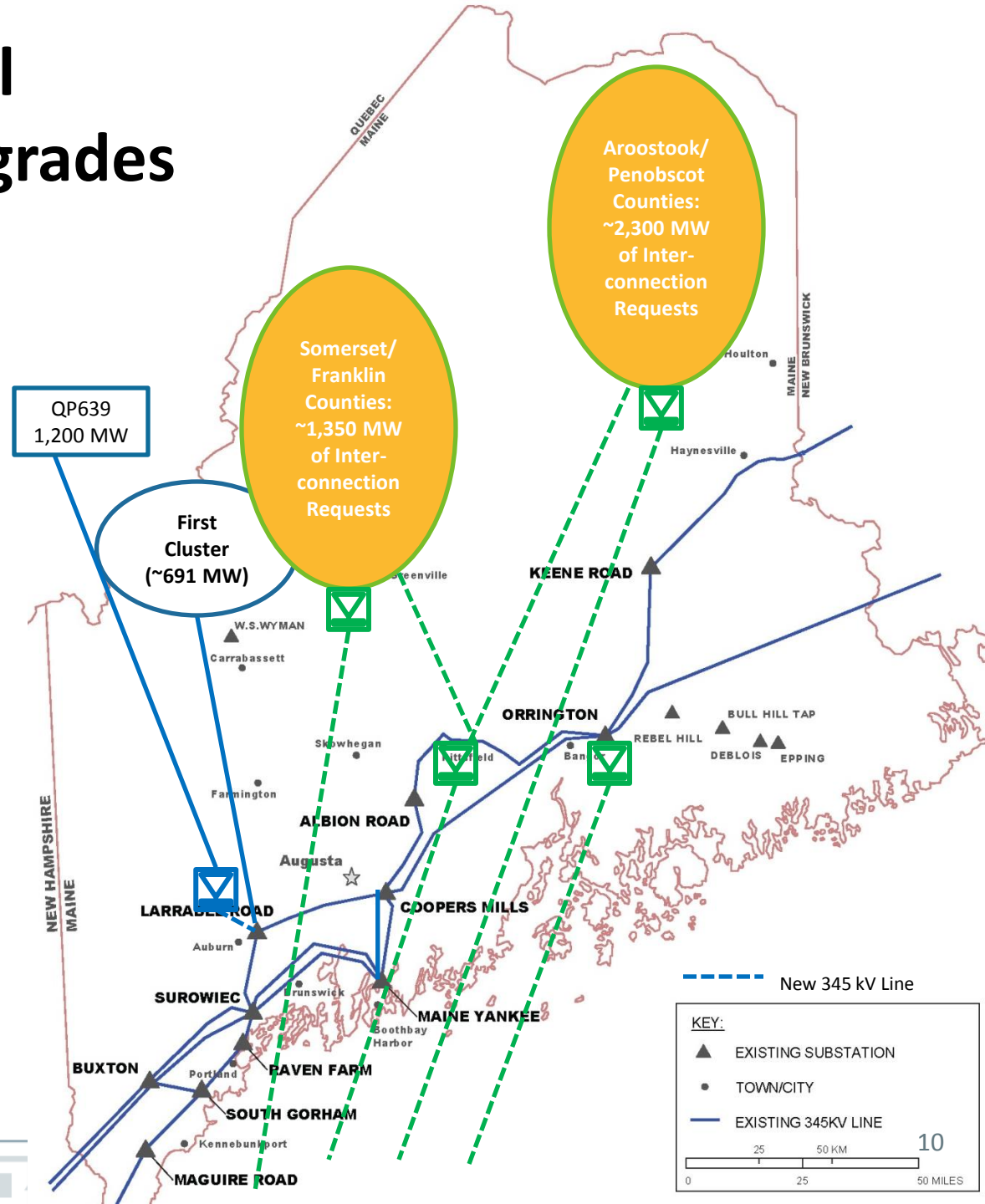
# Proposed Scope of the Second MRIS

*Updated since the June 13, 2018 PAC Meeting*

- Identify potential transmission infrastructure that could be needed to interconnect queued generation in Maine
  - Quantify generation that could interconnect with new transmission pursuant to the Network Capability Interconnection Standard (NCIS) and the Capacity Capability Interconnection Standard (CCIS)
- The conditions used in NCIS and CCIS Studies are described in [Planning Procedure 5-6](#) and [Planning Procedure 10](#)
  - Peak load (mostly for steady state) and light load (mostly for stability) testing
  - Resources are modeled at their ratings (NRC or CNRC, as appropriate)
  - New Resources may dispatch against existing resources under the Network Capability Interconnection Standard
  - Interfaces modeled at the transfer limit
- The base case will include the first cluster and associated upgrades and QP639
  - And other relevant earlier-queued projects and those projects that have ISO Tariff Section I.3.9 approval

# Initial Conceptual Transmission Upgrades

- Analysis of **new HVDC transmission** connecting to points in the southern part of the system
  - Either connecting radially to proposed generation or connecting to the existing network
- Examples of these approaches are in the ISO interconnection Queue
- These approaches were explored in the [2016 Economic Study](#) of increased integration of resources in New England



# HVDC Connection Points to be Considered

- Points of Injection
  - Radial Connection (no connection to the existing grid)
  - Coleson Cove 345 kV (New Brunswick)
  - Haynesville 345 kV
  - Keene Road 345 kV
  - Orrington 345 kV
  - Pittsfield 345 kV
  - Coopers Mills 345 kV
  - Maine Yankee 345 kV
- Points of Delivery
  - K Street 345 kV
  - Pilgrim/Jordan Road 345 kV

# Network Capability Interconnection Standard

- At the June 13 PAC meeting, and in one of the written comments, participants inquired about the ability to interconnect pursuant to the Network Capability Interconnection Standard only
  - Rather than also seeking to identify upgrades that would be expected to provide the ability to also meet the Capacity Capability Interconnection Standard
- While the ISO continues to expect that the Second MRIS will eventually identify CETUs that will provide the ability to meet the Capacity Capability Interconnection Standard,
  - Results will be provided for more minimal interconnections to allow for discussion of the quantity of MW that would/would not meet the NCIS/CCIS as a result of those approaches

# Co-Locating Additional Resources on a HVDC Terminal

- One participant comment inquired about the ability to co-locate additional resources as part of the clustered interconnections
- A HVDC converter terminal is likely to be an acceptable limiting device for the purposes of co-locating resources that have a higher total potential output than the capability of the HVDC line itself
  - For example, it may be feasible to connect more than 1,200 MW of wind turbines (or wind turbines with storage devices) to a 1,200 MW HVDC terminal
- The Second MRIS can consider this scenario
  - But the concept will require input from developers (and manufacturers as appropriate) regarding feasible approaches

# Next Steps

- Present results of the Second MRIS
- Issue draft report for comment
  - The ISO will use Reasonable Efforts to complete the Second MRIS within twelve (12) months from this notice of the cluster initiation to the Planning Advisory Committee

# Questions

