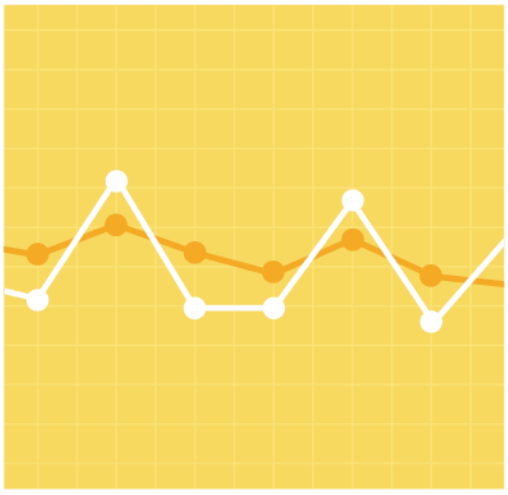
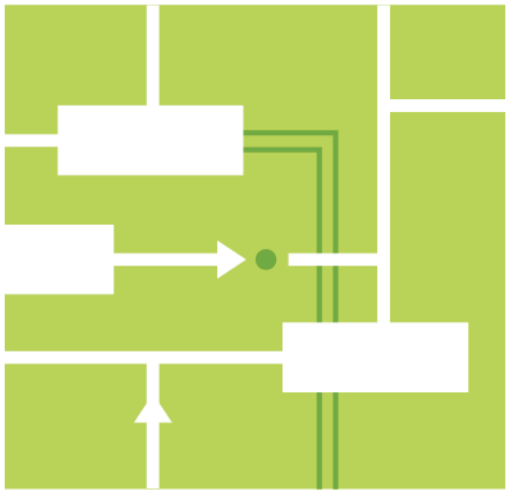
First Cape Cod Resource Integration Study Redacted Non-CEII Version

FINAL REPORT
JULY 30, 2021

ISO-NE PUBLIC – CRITICAL ENERGY INFRASTRUCTURE INFORMATION (CEII) HAS BEEN REMOVED FROM THIS VERSION OF THE REPORT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Section 1
Executive Summary

ISO New England Inc. (ISO), in consultation with the Planning Advisory Committee (PAC), conducted the *First Cape Cod Resource Integration Study* (CCRIS) to identify the transmission upgrades necessary to enable the interconnection of proposed new offshore wind resources to Cape Cod. This CCRIS was conducted pursuant to Attachment K of the ISO's *Open Access Transmission Tariff* (OATT), which is Section II of the *ISO New England Inc. Transmission, Markets and Services Tariff* (ISO Tariff).[1]

The CCRIS was conducted as part of the approach to Clustering Interconnection Requests in the ISO-administered interconnection queue that was approved by the Federal Energy Regulatory Commission (FERC) in an October 31, 2017, order.[2] Clustering under the FERC-approved rules uses a two-phased study methodology in certain circumstances to expedite the consideration of two or more Interconnection Requests and allocate interconnection upgrade costs among Interconnection Customers (ICs) on a cluster basis.

The first phase of Clustering involves conducting a transmission planning study, performed under the Regional System Planning Process pursuant to the OATT, Attachment K (Section 15.4), to identify the transmission infrastructure and associated system upgrades necessary to enable the interconnection of potentially all the proposed resources in the interconnection queue. This infrastructure is called "Cluster Enabling Transmission Upgrades" (CETUs), and the study is referred to as a CETU Regional Planning Study (CRPS).

The second phase consists of conducting a Cluster Interconnection System Impact Study (CSIS) pursuant to the Interconnection Procedures in the OATT (Schedule 22, Section 4.2.3; Schedule 23, Section 1.5.3.3; and Schedule 25, Section 4.2.3) and a Cluster-Interconnection Facilities Study (CFAC) performed under the Interconnection Procedures.[3] These studies must identify the specific facilities required to interconnect the resources that elect to move toward interconnection and meet the associated second-phase entry requirements.

This final CCRIS report documents the findings of the CRPS and identifies the Interconnection Requests, by Queue Position, that are eligible to be included in the second-phase study, the transmission upgrades (i.e., CETUs and associated system upgrades) required to enable interconnection, and the cost allocation for eligible projects if they elect to proceed to the second phase of Clustering.

Consistent with Section 15.4 of Attachment K, the posting of the final CRPS report on the ISO website will trigger the entry deadline for the CSIS (Cluster Entry Deadline) specified in the OATT

[1] *ISO New England Inc. Transmission, Markets, and Services Tariff* (ISO tariff) (2018), http://www.iso-ne.com/regulatory/tariff/index.html, including Section II, *ISO New England Open Access Transmission Tariff* (https://www.iso-ne.com/participate/rules-procedures/tariff/oatt), Attachment K, "Regional System Planning Process."

[2] FERC, *Order Accepting Tariff Revisions*, ISO New England Inc., Docket No. ER17-2421-000, 16 FERC ¶ 61,123 (October 31, 2017), https://www.iso-ne.com/static-assets/documents/2017/11/er17-2421-000_order_accept_interconnection_queue_clustering.pdf.

[3] ISO New England, OATT, Schedule 22, *Large Generator Interconnection Procedures* (2017); Schedule 23, *Small Generator Interconnection Procedures* (2017); and Schedule 25, *Elective Transmission Upgrade Interconnection Procedures* (2017), https://www.iso-ne.com/participate/rules-procedures/tariff/oatt.

(Schedule 22, Section 4.2.3.1; Schedule 23, Section 1.5.3.3.1; and Schedule 25, Section 4.2.3.1). The associated Cluster Entry Deadline is 30 days after the posting of the final CRPS report.

1.1 Eligible Queue Positions

The Interconnection Procedures provide for Interconnection Requests to be considered on a cluster basis when (a) there are two 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) 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 alternating current (AC) or high-voltage direct current (HVDC).

Consistent with the OATT (Schedule 22, Section 5.1.1.2; Schedule 23, Section 1.6.1.2; and Schedule 25, Section 5.2.1.2), Interconnection Requests seeking to interconnect into Cape Cod portion of the New England Control Area that do not have a completed Interconnection System Impact Study by the publication of the final CCRIS report, shall be included in the CCRIS. The ISO identified the following Interconnection Requests, referenced by Queue Position (QP), as eligible to participate in the second-phase cluster studies that it will conduct (in accordance with the OATT Schedule 22, Section 4.2.3; Schedule 23, Section 1.5.3.3; and Schedule 25, Section 4.2.3):

- **Cape Cod Generation Cluster Queue Positions**

QP 806	QP 922
QP 829	QP 1109
QP 830	

The ISO also identified the following Elective Transmission Upgrade Queue Position as eligible to elect to participate in the second-phase cluster studies.

- **Elective Transmission Upgrade Queue Position**

QP 828

1.2 Description of the Clusters, Cluster-Enabling Transmission Upgrades, and Associated Upgrades

This CCRIS provides a planning level description of the CETUs and associated system upgrades. It also provides the approximate megawatt (MW) quantities of resources that could be interconnected in a manner that meets the Network Capability Interconnection Standard and the Capacity Capability Interconnection Standard in accordance with (and defined in) Schedules 22, 23 and 25 of the OATT.

Figure 1-1 presents a one-line network diagram of the cluster upgrades.

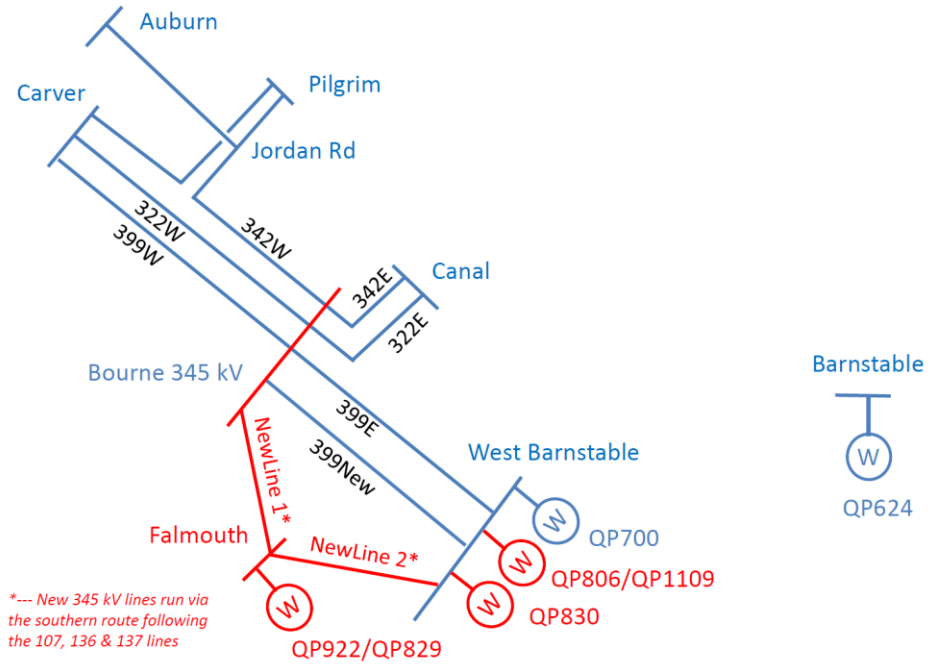

Figure 1-1: One-Line representation of the cluster-enabling upgrades for Cape Cod.

To interconnect proposed resources in the Cape Cod area, a new 345 kV line is required, connecting from the West Barnstable substation to the Bourne substation. This CETU would enable 1,200 MW of the proposed resources to interconnect, either at West Barnstable or at Falmouth, which is along the route of the required new line.

1.3 Elective Transmission Upgrades that Can Serve as Cluster-Enabling Transmission Upgrades

Section 4.2.1 of Schedule 25 of the OATT provides that Interconnection Requests for Internal ETUs in the ISO-administered interconnection queue may be eligible to take the place of CETUs in the second-phase cluster studies. In the case of this CCRIS, the cluster-eligible ETU is not eligible to take the place of the CETU that has been identified in association with the Cape Cod generation. This ETU is an objective ETU that does not identify any specific infrastructure, and the stated objective of the ETU is different from the objective of the CETU. However, this ETU may still electively decide to proceed in the interconnection process by entering into the CSIS.

1.4 Cost Estimates and Cost Allocation

Table 1-1 provides a nonbinding good-faith order-of-magnitude estimate, developed by the applicable transmission owner (TO), of the costs for the CETUs. The list also includes other facilities that may be needed in addition to the CETUs and a nonbinding good-faith order-of-magnitude estimate, developed by the applicable TOs, of the costs for these facilities. The CCRIS does not provide descriptions of expected Interconnection Facilities for specific Interconnection Requests when the Interconnection Facilities cannot be finalized until the actual Interconnection Requests that will be moving forward in the cluster are known. Finally, the list reflected in Table 1-1 also provides the expected cost allocation for the eligible Interconnection Requests, calculated in accordance with Schedule 11 of the OATT.

Table 1-1
Cost Allocation for the Cluster Upgrades in Cape Cod

Cost Allocation		New 345 kV AC Transmission Line from West Barnstable to Falmouth	New 345 kV AC Transmission Line from Falmouth to Bourne	New 345 kV Connection at West Barnstable Substation	New 345 kV Connection at Bourne Substation	345 kV Undergrounding at West Barnstable and Bourne	New 345 kV Substation at Falmouth		
	Cost $ M	$125.0	$ 88.0	$ 22.0	$ 28.0	$ 26.0	$ 46.0	Cost	Cluster
Cluster Total	1200	$125.0	$ 88.0	$ 22.0	$ 28.0	$ 26.0	$ 46.0	Allocation	Participation
Queue Position	MW								Deposit $ M
806	827	$ 71.0	$ 32.7	$ 15.2	$ 19.3	$ 17.9	$ -	$ 156.1	$ 7.81
829	1000	$104.2	$ 73.3	$ 18.3	$ 23.3	$ 21.7	$ 38.3	$ 279.2	$ 13.96
830	860	$ 75.0	$ 35.4	$ 15.8	$ 20.1	$ 18.6	$ -	$ 164.9	$ 8.25
922	200	$ 20.8	$ 14.7	$ 3.7	$ 4.7	$ 4.3	$ 7.7	$ 55.8	$ 2.79
1109	373	$ 26.4	$ 9.4	$ 6.8	$ 8.7	$ 8.1	$ -	$ 59.5	$ 2.97
ETUs	-	-	-	-	-			$ -	
828	ETU	-	-	-	-	-	-	$ -	$ 1.00

Each resource that choses to enter the CSIS must pay a Cluster Participation Deposit (CPD), as shown in Table 1-1 for each Interconnection Request, on the basis of the expected cost allocation for each Interconnection Request. The CPD for Internal ETUs shown on the table is $1 million. In general, for Internal ETUs, the CPD is the lesser of $1 million, or 5% of the Interconnection Customer's estimated costs for the Internal ETU as of the time the initial CPD is due.

Section 2
Introduction

2.1 Background to the Cape Cod Resource Integration Study

The Cape Cod area in southeast Massachusetts is primarily connected to the rest of the New England system by three 345 kV transmission circuits that extend down from the Medway, Walpole, Stoughton and Holbrook substations that are on the southern edge of the greater Boston load area. Electrically, this connection is essentially radial from the perspective of Cape Cod. In many places, these circuits share common rights-of-way. The nature of this connection to the greater New England system is a primary driver of interconnection outcomes for large amounts of proposed new resources on Cape Cod.

The transmission infrastructure that serves the Cape Cod area was developed to serve the area load and historically connected generation, particularly Canal station and Pilgrim station. Significant amounts of offshore wind resources are now projected to interconnect to the New England region. Offshore lease areas have been established to the south of Martha's Vineyard and Nantucket. Cape Cod is one of the closer landing points from these lease areas and, as a result, several projects have proposed to connect to this part of the system. The total quantity of proposed connections, however, is much higher than what was contemplated by the current area infrastructure.

Significant new transmission infrastructure will be required to interconnect all of proposed resources in Cape Cod. This need for significant infrastructure is common to all of the resources seeking to interconnect in these areas of the system. The Clustering rules provide the process for identifying common infrastructure and avoiding instances of queue backlog which can evolve when such circumstances are present. More specifically, the rules establish a two-phased study methodology for expediting the consideration of two or more Interconnection Requests and allocating interconnection upgrade costs among Interconnection Customers (ICs) in a cluster in certain circumstances.

The ISO initiated this First Cape Cod Resource Integration Study (First CCRIS) to identify the transmission upgrades necessary to enable the interconnection of proposed resources in Cape Cod. This study is a Cluster Enabling Transmission Upgrade Regional Planning Study (CRPS) and will be the basis for a subsequent Cluster Interconnection System Impact Study (CSIS).

2.2 Summary of the Study Approach

Before the ISO invoked Clustering for Cape Cod, the interconnection process had already identified the interconnection plans for two large proposed resources:

1. QP 624 (800 MW) has a completed Interconnection System Impact Study and will be interconnecting to the Barnstable 115 kV substation.
2. QP 700 (800 MW) has a completed Interconnection System Impact Study, will be interconnecting to the West Barnstable 345 kV substation, and will require Network Upgrades, including the following:
    a. A 345 kV line from West Barnstable to Bourne
        i. Converting a planned 115 kV line to 345 kV
    b. A new Bourne 345 kV substation
    c. A new 345/115 kV autotransformer at West Barnstable

These generators and these upgrades are assumed in the base case for the First CCRIS.

In addition to the above 1,600 MW with completed Interconnection System Impact Studies, a further 3,260 MW of generation (and an Elective Transmission Upgrade) are seeking to interconnect to Barnstable/West Barnstable or Bourne. Significant new infrastructure will be required to connect this generation.

For the First CCRIS, the ISO prepared and posted on its website a proposed scope of study along with the associated parameters and assumptions. The scope was discussed at the October 21, 2020, Planning Advisory Committee (PAC) meeting to solicit stakeholder input for the ISO's consideration on the CRPS scope, parameters, and assumptions, consistent with the responsibilities of the PAC.[4]

The ISO identified that the CRPS would include the following:

- A summary of the Interconnection Requests that gave rise to the need to consider major new transmission line infrastructure
- The preliminary transmission upgrade concepts proposed for consideration in the study

The preliminary transmission upgrade concepts developed in the CCRIS accounted for previously conducted transmission-reinforcement studies and previously identified concepts for transmission upgrades in the relevant electrical area, including Elective Transmission Upgrades (ETUs) with Interconnection Requests pending in the interconnection queue before the initiation of the study. Section 3 of this report describes the alternative upgrades that were considered.

Preliminary testing results that supported the identification of a preferred upgrade configuration were discussed at the March 2021 PAC meeting.[5] The preferred upgrade configuration was tested with the following detailed analyses:

- Steady-state thermal
- Steady-state voltage
- Stability
- Power System Computer-Aided Design (PSCAD)

The results of the detailed testing are discussed in Section 4 of this report.

2.3 Megawatts Enabled

One of the deliverables of the CRPS is to identify the approximate megawatt quantity (or quantities if more than one level of megawatt injection was studied) of resources that could be interconnected in a way that meets the Network Capability Interconnection Standard and the Capacity Capability Interconnection Standard (CCIS) in accordance with Schedules 22, 23 and 25 of the OATT. Section 5 of this report contains a discussion of the megawatts enabled by the First CCRIS CETU.

[4] ISO New England, *Notice of Initiation of the Cape Cod Resource Integration Study*, PAC presentation (October 21, 2020), https://www.iso-ne.com/static-assets/documents/2020/10/a6_initiation_of_the_cape_cod_resource_integration_study.pdf .

[5] ISO New England, *First Cape Cod Resource Integration Study Preliminary Results*, PAC presentation (March 17, 2021), https://smd.iso-ne.com/operations-services/ceii/pac/2021/03/a7_cape_cod_resource_integration_study_ceii.pdf .

2.4 Cost Estimates and Cost Allocation

Cost estimates for the preferred upgrade configuration were developed by Eversource, the Interconnecting Transmission Owner. The cost estimates were discussed at the May 2021 PAC meeting. Section 6 of this report contains the cost estimates and projected cost allocations for the required upgrades.

Section 3
Evaluation of Alternative Upgrade Concepts

This Section had been removed from the redacted non-CEII version.

Section 4
Detailed Testing of Preferred Upgrades

This Section had been removed from the redacted non-CEII version.

Section 5
Megawatt Sensitivities and Scenario Analyses

As described in Section 4, the detailed testing for the CCRIS was conducted with the assumption of a total of approximately 2,800 MW of offshore wind resources connecting to Cape Cod. Given that approximately 1,600 MW of generation on Cape Cod already has completed Interconnection System Impact Studies, this means that the interconnection of approximately 1,200 MW of additional generation can be enabled by the CETU and associated upgrades.[6]

The nature of the CETU that was identified – a new 345 kV line connecting from the West Barnstable substation to the Bourne substation – did not lend itself to identifying lower threshold amounts that could interconnect with fewer upgrades. The addition of more megawatts beyond the incremental approximately 1,200 MW identified in this First CCRIS will require further additional infrastructure in separate right-of-way beyond Cape Cod and will be the subject of a subsequent Clustering effort.

5.1 Megawatt Quantity that Could Be Interconnected in a Manner that Meets the Capacity Capability Interconnection Standard

This CCRIS provides an approximate megawatt quantity of resources that could be interconnected in a manner that meets the Capacity Capability Interconnection Standard (CCIS) in accordance with Schedules 22, 23 and 25 of the OATT.

This analysis does not constitute the definitive determination of the ability to meet the CCIS. Definitive evaluation takes place within the Capacity Network Resource (CNR) Group Study as part of Forward Capacity Market (FCM) qualification. Note that wind resources are qualified for the FCM as intermittent resources. The qualified capacity of intermittent resources is based on the output over specified (reliability) peak hours in each season. Typically, offshore wind resources qualify for the FCM with summer qualified capacity of approximately 30 to 35% of their nameplate capability. 30% of 2,800 MW corresponds to 840 MW.

As described in Section 4, the primary thermal constraints observed in the testing were the Stoughton-K Street 345 kV cables. The CCIS test evaluates deliverability to the Load Zone to which the resource is connecting. The Stoughton-K Street cables are on the boundary between the southeast Massachusetts (SEMA) and the northeast Massachusetts/Boston Load Zones. The Stoughton-K Street cables would only limit qualification of SEMA resources as deliverable if the impact of those resources on the cable was above the required threshold when the resources are delivering to the SEMA load zones. For these reasons, at this time it seems likely that all of the capacity associated with the 2,800 MW would qualify as deliverable under the CCIS. However, as described above, this would have to be confirmed as part of the FCM qualification process.

[6] 1,200 MW is the approximate megawatt quantity of resources that could be interconnected as a result of the addition of the CETU and associated upgrades. Note that the actual enabled amount can be slightly higher than this number, as supported by the 2,887 MW value (equivalent to an incremental 1,287 MW) that was used in the detailed testing.

Section 6
Cost Estimates and Cost Allocation

This section describes the cost estimates of the associated infrastructure for the cluster.

6.1 Cost Estimates

Table 6-1 shows the cost estimates for the CETU and associated upgrades.

Table 6-1
Cost Estimates for Upgrades for the First Cape Cod Cluster

Transmission Facility Upgrades		Cost ($M)
Substation upgrades	New 345 kV Connection at West Barnstable Substation	22.0
	New 345 kV Connection at Bourne Substation	28.0
	345 kV Undergrounding at West Barnstable and Bourne Substations	26.0
	New 345 kV Substation at Falmouth (including undergrounding)	46.0
Transmission upgrades	New 345 kV AC transmission line from Falmouth to West Barnstable	125.0
	New 345 kV AC transmission line from Falmouth to Bourne	88.0
		335.0

6.2 Cost-Allocation Calculations

In accordance with Schedule 11 of the OATT, if a Generator or ETU-Interconnection-Related Upgrade (Upgrade) "consists of Interconnecting Transmission Owner's Interconnection Facilities, Network Upgrades, or Distribution Upgrades, including a Cluster Enabling Transmission Upgrade, that were identified under Clustering and are not included in Direct Interconnection Transmission Costs, then the costs to be paid by each Generator Owner or ETU IC (that is not the ETU IC for an ETU that is taking the place of a CETU, or portion thereof, pursuant to Section 4.2.3.4 of Schedule 22, Section 1.5.3.3.3.4 of Schedule 23, or Section 4.2.3.4 of Schedule 25, Section II of the Tariff) with an Interconnection Request included in the cluster shall be the total costs of such Upgrade multiplied by the ratio of the Generator Owner or ETU IC's respective distribution impact divided by the total distribution impact of the entire cluster based on the following distribution factor cost allocation methodology."

The distribution factor is the measure of responsiveness (i.e., change in electrical loading on system facilities due to a change in electric power transfer from one part of the electric power system to another), expressed in percentage of the change in the power transfer. The calculation of the distribution factor for each of the eligible upgrades must do the following:

- Use the final CSIS study case for summer peak load conditions
- Use the precontingency condition (i.e., no contingencies will be modeled)
- Be conducted using a transfer from the injection point associated with the respective generator owner or ETU IC's facility to New England Control Area load

The distribution impact of each generator or ETU IC with an Interconnection Request included in the cluster shall be determined by multiplying the generator or ETU IC's respective distribution

factor, as calculated above, by the summer Network Resource Capability (in the case of a Generating Facility) or the absolute value of the higher of the requested bidirectional capability that results in a positive distribution factor (in the case of an Elective Transmission Upgrade).

The total distribution impact of the entire cluster must be the sum of all the individual distribution impacts for the generator and ETU ICs with Interconnection Requests included in the cluster.

Where the cost allocation for an upgrade identified under clustering cannot be determined using the distribution factor cost-allocation methodology (e.g., a dynamic reactive device), each generator or ETU IC with an Interconnection Request included in the cluster must be obligated to pay the costs of such an upgrade based on its pro-rata-megawatt share of the Interconnection Requests included in the cluster study, to be determined using the summer Network Resource Capability (in the case of a Generating Facility) and the absolute value of the higher of the requested bidirectional capability (in the case of an Elective Transmission Upgrade).

Table 6-3 contains the distribution factors for the cluster upgrades. Table 6-4 contains the distribution impacts for the cluster upgrades. Table 6-5 contains the impact share for the cluster upgrades, and Table 6-6 contains the cost allocation for the cluster upgrades.

Note that in the cost allocation calculations, for megawatts that currently list a Point of Interconnection (POI) at West Barnstable, it was assumed that the remainder of the 1,200 MW proceeding in the cluster were connecting at Falmouth. For megawatts that currently list a POI at Bourne, it was assumed that megawatts were connecting at Falmouth and that the remainder of the 1,200 MW proceeding in the cluster were connecting at Falmouth. The CSIS will determine the final interconnection plans for the proposed resources and it is possible, through the CSIS process that a more efficient interconnection may be identified than the currently listed POI.

Table 6-2
Distribution Factors for the Cluster Upgrades

Distribution Factors		New 345 kV AC Transmission Line from West Barnstable to Falmouth	New 345 kV AC Transmission Line from Falmouth to Bourne	New 345 kV Connection at West Barnstable Substation	New 345 kV Connection at Bourne Substation	345 kV Undergrounding at West Barnstable and Bourne	New 345 kV Substation at Falmouth			
	Cost $ M	$ 125.0	$ 88.0	$ 22.0	$ 28.0	$ 26.0	$ 46.0			
Cluster Total	1200	*18.4%*	*18.4%*							
Queue Position	MW									
806	827	18.4%	18.4%	-	-	-	-			
829	1000	31.0%	69.0%	-	-	-	-			
830	860	18.4%	18.4%	-	-	-	-			
922	200	31.0%	69.0%	-	-	-	-			
1109	373	18.4%	18.4%	-	-	-	-			
ETUs										
828	ETU	-	-	-	-	-	-			

Table 6-3
Distribution Impacts for the Cluster Upgrades

Distribution Impact		New 345 kV AC Transmission Line from West Barnstable to Falmouth	New 345 kV AC Transmission Line from Falmouth to Bourne	New 345 kV Connection at West Barnstable Substation	New 345 kV Connection at Bourne Substation	345 kV Undergrounding at West Barnstable and Bourne	New 345 kV Substation at Falmouth			
	Cost $ M	$125.0	$ 88.0	$ 22.0	$ 28.0	$ 26.0	$ 46.0			
Cluster Total	1200	*220.8*	*220.8*							
Queue Position	MW									
806	827	152.2	152.2	-	-	-	-			
829	1000	310.0	690.0	-	-	-	-			
830	860	158.2	158.2	-	-	-	-			
922	200	62.0	138.0	-	-	-	-			
1109	373	68.6	68.6	-	-	-	-			
ETUs										
828	ETU	-	-	-	-	-	-			

Table 6-4
Impact Shares for the Cluster Upgrades

Impact Share		New 345 kV AC Transmission Line from West Barnstable to Falmouth	New 345 kV AC Transmission Line from Falmouth to Bourne	New 345 kV Connection at West Barnstable Substation	New 345 kV Connection at Bourne Substation	345 kV Undergrounding at West Barnstable and Bourne	New 345 kV Substation at Falmouth			
	Cost $ M	$125.0	$ 88.0	$ 22.0	$ 28.0	$ 26.0	$ 46.0			
Cluster Total	1200									
Queue Position	MW									
806	827	0.57	0.37	0.69	0.69	0.69	0.00			
829	1000	0.83	0.83	0.83	0.83	0.83	0.83			
830	860	0.60	0.40	0.72	0.72	0.72	0.00			
922	200	0.17	0.17	0.17	0.17	0.17	0.17			
1109	373	0.21	0.11	0.31	0.31	0.31	0.00			
ETUs										
828	ETU	-	-	-	-	-	-			

Table 6-5
Cost Allocation for the Cluster Upgrades

Cost Allocation		New 345 kV AC Transmission Line from West Barnstable to Falmouth	New 345 kV AC Transmission Line from Falmouth to Bourne	New 345 kV Connection at West Barnstable Substation	New 345 kV Connection at Bourne Substation	345 kV Undergrounding at West Barnstable and Bourne	New 345 kV Substation at Falmouth			
	Cost $ M	$125.0	$ 88.0	$ 22.0	$ 28.0	$ 26.0	$ 46.0	Cost	Cluster	
Cluster Total	1200	$125.0	$ 88.0	$ 22.0	$ 28.0	$ 26.0	$ 46.0	Allocation	Participation	
Queue Position	MW								Deposit $ M	
806	827	$ 71.0	$ 32.7	$ 15.2	$ 19.3	$ 17.9	$ -	$ 156.1	$ 7.81	
829	1000	$104.2	$ 73.3	$ 18.3	$ 23.3	$ 21.7	$ 38.3	$ 279.2	$ 13.96	
830	860	$ 75.0	$ 35.4	$ 15.8	$ 20.1	$ 18.6	$ -	$ 164.9	$ 8.25	
922	200	$ 20.8	$ 14.7	$ 3.7	$ 4.7	$ 4.3	$ 7.7	$ 55.8	$ 2.79	
1109	373	$ 26.4	$ 9.4	$ 6.8	$ 8.7	$ 8.1	$ -	$ 59.5	$ 2.97	
ETUs	-	-	-	-	-			$ -		
828	ETU	-	-	-	-	-	-	$ -	$ 1.00	

Section 7
Conclusion

This First Cape Cod Resource Integration Study constitutes the first Cluster-Enabling Transmission Upgrade Regional Planning Study pursuant to Section 15.4 of Attachment K of the OATT, and forms the basis for the first Cluster-Interconnection System Impact Study to be conducted in accordance with Section 4.2.3 of Schedule 22, Section 1.5.3.3 of Schedule 23, and Section 4.2.3 of Schedule 25 to the OATT. As described in this report, the study identifies the Interconnection Requests, by Queue Position, that are eligible to be included in the second-phase study; the transmission upgrades (i.e., CETUs and associated system upgrades) required to enable the interconnection; and the cost allocation for eligible projects if they elect to proceed to the second phase of Clustering.

Consistent with Section 2.4 (d) of the OATT Attachment K, the posting, of the final CRPS report on the ISO website will trigger the Cluster Entry Deadline specified in Section 4.2.3.1 of Schedule 22, Section 1.5.3.3.1 of Schedule 23, and Section 4.2.3.1 of Schedule 25 of the OATT. The associated Cluster Entry Deadline is 30 days from the posting of the final CRPS report.

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Appendix 4
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