



February 28, 2019

VIA ELECTRONIC FILING

The Honorable Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: ISO New England Inc., Docket No. ER19-____-000
Forward Capacity Auction Results Filing
April 12, 2019 COMMENT DATE REQUIRED BY REGULATION

Dear Secretary Bose:

Pursuant to Section 205 of the Federal Power Act (“FPA”)¹ and Section III.13.8.2 of the ISO New England Transmission, Markets and Services Tariff (the “Tariff”),² ISO New England Inc. (the “ISO”) submits this Forward Capacity Auction Results Filing (“FCA Results Filing”) for the thirteenth Forward Capacity Auction (“FCA”). Section III.13.8.2 (a) of the Tariff requires the ISO to file the results of the FCA with the Federal Energy Regulatory Commission (“Commission” or “FERC”) as soon as practicable after the FCA is complete. The thirteenth FCA was held on February 4, 2019 for the June 1, 2022 through May 31, 2023 Capacity Commitment Period. The ISO submits this filing in accordance with the Tariff.

Pursuant to Section III.13.8.2 (c) of the Tariff, any objection to the FCA results must be filed with the Commission within 45 days from the date of the FCA Results Filing. **Accordingly, any objections must be filed on or before April 12, 2019, and the ISO requests that the Commission issue a notice setting an April 12, 2019 comment date.**³ As discussed below, the ISO requests an effective date of June 28, 2019, which is 120 days from the date of this submission.

¹ 16 U.S.C. § 824d (2006).

² The rules governing the Forward Capacity Market (“FCM Rules”) are primarily contained in Section III.13 of the Tariff, but also may include other provisions, including portions of Section III.12.

³ 45 days from February 28, 2019 is Sunday, April, 14, 2019. Because the Tariff requires that comments be filed within 45 days of the FCA Results Filing, the ISO requests that the comment date be set for Friday, April 12, 2019.

In accordance with Section III.13.8.2 of the Tariff, this submission contains the results of the thirteenth FCA, including the Capacity Zones in the auction; the Capacity Clearing Price in each of those Capacity Zones; the substitution auction clearing prices and the total amount of payments associated with any demand bids cleared at a substitution auction clearing price above their demand bid prices; a list of which resources received Capacity Supply Obligations in each Capacity Zone; and the amount of those Capacity Supply Obligations. Pursuant to Section III.12.4 of the Tariff, the Capacity Zones for the thirteenth FCA were the Southeast New England (“SENE”) Capacity Zone, the Northern New England (“NNE”) Capacity Zone and the Rest-of-Pool Capacity Zone. The SENE Capacity Zone includes the Northeastern Massachusetts/Boston (“NEMA/Boston”), Southeastern Massachusetts, and Rhode Island energy load zones. The NNE Capacity Zone includes the Maine, New Hampshire, and Vermont energy load zones. The Rest-of-Pool Capacity Zone includes the Connecticut and Western/Central Massachusetts energy load zones.

Section III.13.8.2 (b) of the Tariff requires the ISO to provide documentation regarding the competitiveness of the FCA. The documentation may include certification from the auctioneer and the ISO that: (i) all resources offering and bidding in the FCA were properly qualified in accordance with the provisions of Section III.13.1; and (ii) the FCA was conducted in accordance with the provisions of Section III.13. To meet the requirement of Section III.13.8.2 (b) of the Tariff, the ISO has included the Testimony of Stephen J. Rourke, Vice President of System Planning at the ISO (“Rourke Testimony”); the Testimony of Robert G. Ethier, Vice President of Market Operations at the ISO (“Ethier Testimony”); and the Testimony of Lawrence M. Ausubel, the auctioneer (“Ausubel Testimony”).

The ISO tenders the instant filing in compliance with Section III.13.8.2 of its Tariff pursuant to Section 205 of the FPA, and the ISO requests that the Commission find that the ISO conducted the thirteenth FCA in accordance with its FERC-approved Tariff.

I. COMMUNICATIONS

All correspondence and communications in this proceeding should be addressed to the undersigned as follows:

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II. STANDARD OF REVIEW

The ISO tenders the instant filing in compliance with Section III.13.8.2 of its Tariff and pursuant to Section 205 of the FPA.⁴ The ISO respectfully requests that the Commission find that the thirteenth FCA Results Filing meets the standard of Section 205, in that the results are just and reasonable rates derived from the auction that was conducted in accordance with the ISO's FERC-approved Tariff.

III. REQUESTED EFFECTIVE DATE

The ISO respectfully requests that the Commission accept the thirteenth FCA Results Filing, confirming that the auction was conducted in conformance with the ISO's Commission-approved Tariff, to be effective June 28, 2019, which is 120 days after the date of submission. Under the Tariff, parties have 45 days to file with the Commission an objection to the FCA Results Filing.⁵ An effective date of 120 days from the date of submission gives interested parties an opportunity to respond to any objections and provides the Commission time to review the FCA Results Filing and associated pleadings.

IV. SPECIFIC FCA RESULTS

A. Capacity Zones Resulting from the Auction

Section III.13.8.2 (a) of the Tariff requires the ISO to provide the Capacity Zones resulting from the FCA. The Capacity Zones for the thirteenth FCA were SENE, NNE and Rest-of-Pool. The Capacity Zones determined under Section III.13.2.3.4 of the Tariff are the same Capacity Zones that were modeled pursuant to Section III.12.4 of the Tariff.

B. Capacity Clearing Price

The Tariff requires the ISO to provide the Capacity Clearing Price in each Capacity Zone (and, pursuant to Section III.13.2.3.3 (d), the Capacity Clearing Price associated with certain imports, if applicable).⁶ For the thirteenth FCA, the descending clock auction starting price in each Capacity Zone was \$13.050/kW-month. As explained in the Ethier Testimony, the auction resulted in the same Capacity Clearing Price of \$3.800/kW-month for the SENE, NNE and Rest-of-Pool Capacity Zones.⁷

⁴ It should be noted that the Commission has consistently held that the matters that may properly be in dispute in the annual FCA results filing are the results of the FCA and not the underlying market design or rules. *See e.g., ISO New England Inc.*, 130 FERC ¶ 61,145 at P 33 (2010) (finding that challenges to the FCM market design are outside the scope of the proceeding evaluating the FCA results filing).

⁵ Tariff Section III.13.8.2 (c).

⁶ Tariff Section III.13.8.2 (a).

⁷ Ethier Testimony at 11-13.

Imports over the New York AC Ties external interface, totaling 521.690 MW, imports over the Hydro-Quebec Highgate external interface, totaling 51 MW, and imports over the Phase I/II HQ Excess external interface, totaling 431 MW, will also receive a Capacity Clearing Price of \$3.800/kW-month. Imports over the New Brunswick external interface, totaling 184 MW, will receive a Capacity Clearing Price of \$2.681/kW-month.⁸

C. Substitution Auction Clearing Prices and Total Amount of Payments Associated with any Demand Bids Cleared at a Substitution Auction Clearing Price Above Their Demand Bid Prices

Section III.13.8.2 (a) of the Tariff requires the ISO to provide the clearing prices and total amount of payments associated with any demand bids cleared at the substitution auction clearing price above their demand bid prices. The substitution auction resulted in a single clearing price of \$0.000 for all Capacity Zones. No demand bids cleared that were priced below the substitution auction clearing price.

D. Capacity Supply Obligations

The Tariff requires the ISO to specify in the FCA Results Filing the resources that received Capacity Supply Obligations in each Capacity Zone.⁹ This information is provided in Attachment A.

The Tariff also requires the ISO to list which resources cleared as Conditional Qualified New Generating Capacity Resources and to provide certain information relating to Long Lead Time Generating Facilities.¹⁰ No resources cleared as Conditional Qualified New Generating Capacity Resources in the thirteenth FCA. In addition, there were no Long Lead Time Generating Facilities that secured a Queue Position to participate as a New Generating Capacity Resource in the thirteenth FCA; as such, there were no resources with a lower queue priority that were selected in the FCA subject to a Long Lead Time Generating Facility with a higher queue priority.

⁸ *Id.* at 14-15.

⁹ Tariff Section III.13.8.2 (a).

¹⁰ *Id.*

E. De-List Bids Reviewed for Reliability Purposes

Prior to the thirteenth FCA, pursuant to Section III.13.2.5.2.5 of the Tariff, the ISO reviewed each submitted Retirement De-List Bid, Permanent De-List Bid, and Static De-List Bid¹¹ to determine if the capacity associated with each such bid was needed for reliability reasons. During the FCA, also pursuant to Section III.13.2.5.2.5, the ISO reviewed each Dynamic De-List Bid to determine if the capacity associated with each such bid was needed for reliability reasons. The capacity is deemed to be needed for reliability reasons if a violation of any North American Electric Reliability Corporation (“NERC”), Northeast Power Coordinating Council (“NPCC”), or ISO criteria would occur in the absence of the capacity. The ISO’s review of de-list bids considered the availability of all existing supply resources in the FCM, including Demand Resources. The ISO process for performing the reliability review of de-list bids pursuant to Section III.13.2.5.2.5 of the Tariff is described in that provision, and in Section 7 of ISO New England Planning Procedure No. 10 — Planning Procedure to Support the Forward Capacity Market (“PP-10”).

Section III.13.8.2 (a) of the Tariff requires that, in the FCA Results Filing, the ISO enumerate de-list bids rejected for reliability reasons pursuant to Section III.13.2.5.2.5, and the reasons for those rejections. As explained in the Rourke Testimony, in the thirteenth FCA, the ISO did not reject any bids for reliability reasons pursuant to Section III.13.2.5.2.5.¹²

V. DOCUMENTATION REQUIRED PURSUANT TO SECTION III.13.8.2 (b) OF THE TARIFF

Section III.13.8.2 (b) of the Tariff requires the ISO to provide documentation regarding the competitiveness of the FCA, and states that the documentation may include certification from the auctioneer and the ISO that: (i) all resources offering and bidding in the FCA were properly qualified in accordance with the provisions of Section III.13.1 of the Tariff; and (ii) the FCA was conducted in accordance with the provisions of Section III.13 of the Tariff. In this regard, the ISO has included the Rourke Testimony, the Ethier Testimony, and the Ausubel Testimony.

In his testimony, Mr. Rourke, who oversaw the qualification of resources, certifies that all resources offering and bidding in the thirteenth FCA were qualified in accordance with Section III.13.1 of the Tariff.¹³ Mr. Rourke also testifies that he oversaw the reliability review of de-list bids for the thirteenth FCA pursuant to Section III.13.2.5.2.5 of the Tariff.

¹¹ No Export De-List Bids or Administrative Export De-List Bids were submitted for the thirteenth FCA.

¹² While Section III.13.8.2 (a) of the Tariff does not require the ISO to enumerate de-list bids rejected for reliability reasons pursuant to Section III.13.2.5.2.5A of the Tariff, the ISO notes that, as accepted by the Commission, in the thirteenth FCA, the Retirement De-List Bids that Exelon Generation Company, LLC submitted for the Mystic 8 and 9 generating facilities were rejected for fuel security reasons. *See ISO New England Inc.*, 164 FERC ¶ 61,003 at P 49 (2018).

¹³ Rourke Testimony at 3.

In his testimony, Dr. Ethier explains the prices resulting from the auction and how the prices were determined.¹⁴ Dr. Ethier also explains the prices over the external interfaces and why one of those prices was lower than other Capacity Clearing Prices.¹⁵

Dr. Ausubel, the auctioneer, and chairman and founder of Power Auctions LLC, the company that helped implement and administer the FCA, certifies that the auction was conducted in accordance with Section III.13.2 of the Tariff.¹⁶ Dr. Ausubel's certification is based on his vast experience in conducting energy auctions.

VI. ADDITIONAL SUPPORTING INFORMATION

The ISO tenders the instant filing in compliance with Section III.13.8.2 of its Tariff pursuant to Section 205 of the FPA.¹⁷ Section 35.13 of the Commission's regulations generally requires public utilities to file certain cost and other information related to an examination of cost-of-service rates.¹⁸ However, the results of the FCA are not traditional "rates" and the ISO is not a traditional investor-owned utility. Therefore, to the extent necessary, the ISO requests waiver of Section 35.13 of the Commission's regulations. Notwithstanding its request for waiver, the ISO submits the following additional information in compliance with the identified filing regulations of the Commission applicable to Section 205.

35.13(b)(1) - Materials included herewith are as follows:

- This transmittal letter;
- Attachment A: List of Capacity Supply Obligations;
- Attachment B: Testimony of Stephen J. Rourke;
- Attachment C: Testimony of Robert G. Ethier;
- Attachment D: Testimony of Lawrence M. Ausubel; and
- Attachment E: List of governors and utility regulatory agencies in Connecticut, Maine, Massachusetts, New Hampshire,

¹⁴ Ethier Testimony at 11-13.

¹⁵ *Id.* at 14-15.

¹⁶ Ausubel Testimony at 4.

¹⁷ As noted above, the Commission has consistently held that the scope of the proceeding evaluating the annual FCA results filing is limited to the results of the FCA. *See e.g., ISO New England Inc.*, 130 FERC ¶ 61,145 at P 33 (2010) (finding that challenges to the FCM market design are outside the scope of the proceeding evaluating the FCA results filing).

¹⁸ 18 C.F.R. § 35.13 (2017).

Rhode Island, and Vermont to which a copy of this filing has been mailed.

35.13(b)(2) - The ISO respectfully requests that the Commission accept this filing to become effective on June 28, 2019, which is 120 days after the submission of this FCA Results Filing.

35.13(b)(3) - Pursuant to Section 17.11 (e) of the Participants Agreement, Governance Participants are being served electronically rather than by paper copy. The names and addresses of the Governance Participants are posted on the ISO's website at <https://www.iso-ne.com/participate/participant-asset-listings/directory?id=1&type=committee>. An electronic copy of this transmittal letter and the accompanying materials have also been emailed to the governors and electric utility regulatory agencies for the six New England states which comprise the New England Control Area, and to the New England Conference of Public Utility Commissioners, Inc. The names and addresses of these governors and regulatory agencies are shown in Attachment F.

35.13(b)(4) - A description of the materials submitted pursuant to this filing is contained in the transmittal letter;

35.13(b)(5) - The reasons for this filing are discussed in this transmittal letter; and

35.13 (b)(7) - The ISO has no knowledge of any relevant expenses or cost of service that have been alleged or judged in any administrative or judicial proceeding to be illegal, duplicative, or unnecessary costs that are demonstrably the product of discriminatory employment practices.

VII. CONCLUSION

In this FCA Results Filing, the ISO has presented all of the information required by the Tariff. The ISO has demonstrated that the thirteenth FCA was conducted in accordance with the Tariff, as found just and reasonable by the Commission. The ISO has specified the Capacity Zones that were used in the auction. The ISO has also provided the Capacity Clearing Price for each of the Capacity Zones and external interfaces, including the clearing price for the substitution auction, and it has provided a list of resources that received Capacity Supply Obligations. Finally, the ISO has provided documentation, in the form of testimony, regarding the outcome of the thirteenth FCA. Accordingly, the ISO requests that the Commission accept the results of the thirteenth FCA within 120 days of this filing.

Respectfully submitted,

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cc: Governance Participants (electronically) and entities listed in Attachment E.

Attachment A

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419	FRAMINGHAM JET 3	Generator	8506	Southeast New England	MA	NEMA	Existing	11.045	11.045	11.045	11.045	11.045	11.045	11.045	11.045	11.045	11.045	11.045
420	FRANKLIN DRIVE 10	Generator	8500	Rest-of-Pool	CT	CT	Existing	15.417	15.417	15.417	15.417	15.417	15.417	15.417	15.417	15.417	15.417	15.417
421	FRONT STREET DIESELS 1-3	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
424	GREAT LAKES - MILLINOCKET	Generator	8505	Northern New England	ME	ME	Existing	88.672	88.672	88.672	88.672	88.672	88.672	88.672	88.672	88.672	88.672	88.672
426	GORGE 1 DIESEL	Generator	8505	Northern New England	VT	VT	Existing	7.288	7.288	7.288	7.288	7.288	7.288	7.288	7.288	7.288	7.288	7.288
427	GORHAM	Generator	8505	Northern New England	NH	NH	Existing	0.899	0.899	0.899	0.899	1.532	1.532	1.532	1.532	1.532	1.532	1.532
432	HARRIS 1	Generator	8505	Northern New England	ME	ME	Existing	16.776	16.776	16.776	16.776	16.776	16.776	16.776	16.776	16.776	16.776	16.776
433	HARRIS 2	Generator	8505	Northern New England	ME	ME	Existing	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5
434	HARRIS 3	Generator	8505	Northern New England	ME	ME	Existing	33.905	33.905	33.905	33.905	33.905	33.905	33.905	33.905	33.905	33.905	33.905
435	HARRIMAN	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	39.446	39.446	39.446	39.446	38.663	38.663	38.663	38.663	38.663	38.663	38.663
436	HEMPHILL 1	Generator	8505	Northern New England	NH	NH	Existing	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
440	HIRAM	Generator	8505	Northern New England	ME	ME	Existing	11.189	11.189	11.189	11.189	11.189	11.189	11.189	11.189	11.189	11.189	11.189
445	COVANTA WEST ENFIELD	Generator	8505	Northern New England	ME	ME	Existing	20.461	20.461	20.461	20.461	20.461	20.461	20.461	20.461	20.461	20.461	20.461
446	COVANTA JONESBORO	Generator	8505	Northern New England	ME	ME	Existing	20.226	20.226	20.226	20.226	20.226	20.226	20.226	20.226	20.226	20.226	20.226
448	IPSWICH DIESELS	Generator	8506	Southeast New England	MA	NEMA	Existing	9.457	9.457	9.457	9.457	9.457	9.457	9.457	9.457	9.457	9.457	9.457
449	JACKMAN	Generator	8505	Northern New England	NH	NH	Existing	3.541	3.541	3.541	3.541	3.541	3.541	3.541	3.541	3.541	3.541	3.541
452	KENDALL JET 1	Generator	8506	Southeast New England	MA	NEMA	Existing	18	18	18	18	18	18	18	18	18	18	18
457	LAWRENCE HYDRO	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	5.598	5.598	5.598	5.598	9.827	9.827	9.827	9.827	9.827	9.827	9.827
460	LOCKWOOD	Generator	8505	Northern New England	ME	ME	Existing	3.421	3.421	3.421	3.421	4.251	4.251	4.251	4.251	4.251	4.251	4.251
462	LISBON RESOURCE RECOVERY	Generator	8500	Rest-of-Pool	CT	CT	Existing	13.47	13.47	13.47	13.47	13.334	13.334	13.334	13.334	13.334	13.334	13.334
463	AEI LIVERMORE	Generator	8505	Northern New England	ME	ME	Existing	34.43	34.43	34.43	34.43	34.43	34.43	34.43	34.43	34.43	34.43	34.43
464	LOST NATION	Generator	8505	Northern New England	NH	NH	Existing	13.953	13.953	13.953	13.953	13.953	13.953	13.953	13.953	13.953	13.953	13.953
465	DEERFIELD 2 LWR DRFIELD	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	19.275	19.275	19.275	19.275	19.5	19.5	19.5	19.5	19.5	19.5	19.5
467	MARBLEHEAD DIESELS	Generator	8506	Southeast New England</														

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760	NORTH GORHAM	Generator	8505	Northern New England	ME	ME	Existing	1.203	1.203	1.203	1.203	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
761	SHAWMUT	Generator	8505	Northern New England	ME	ME	Existing	5.222	5.222	5.222	5.222	6.793	6.793	6.793	6.793	6.793	6.793	6.793	6.793
766	CABOT TURNERS FALLS	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	67.881	67.881	67.881	67.881	67.881	67.881	67.881	67.881	67.881	67.881	67.881	67.881
767	SES CONCORD	Generator	8505	Northern New England	NH	NH	Existing	11.991	11.991	11.991	11.991	12.35	12.35	12.35	12.35	12.35	12.35	12.35	12.35
768	GARVINS HOOKSETT	Generator	8505	Northern New England	NH	NH	Existing	3.29	3.29	3.29	3.29	6.194	6.194	6.194	6.194	6.194	6.194	6.194	6.194
769	HADLEY FALLS 1&2	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	13.479	13.479	13.479	13.479	26.835	26.835	26.835	26.835	26.835	26.835	26.835	26.835
772	NEWPORT HYDRO	Generator	8505	Northern New England	VT	VT	Existing	0	0	0	0	0	0	0	0	0	0	0	0
774	LOWER LAMOILLE COMPOSITE	Generator	8505	Northern New England	VT	VT	Existing	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8
779	MIDDLESEX 2	Generator	8505	Northern New England	VT	VT	Existing	0.851	0.851	0.851	0.851	1.407	1.407	1.407	1.407	1.407	1.407	1.407	1.407
781	WEST DANVILLE 1	Generator	8505	Northern New England	VT	VT	Existing	0	0	0	0	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
786	KEZAR LEDGEMERE COMPOSITE	Generator	8505	Northern New England	ME	ME	Existing	0.338	0.338	0.338	0.338	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
789	CEC 002 PAWTUCKET U5	Generator	8506	Southeast New England	RI	RI	Existing	0.099	0.099	0.099	0.099	0.584	0.584	0.584	0.584	0.584	0.584	0.584	0.584
792	CENTENNIAL HYDRO	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.139	0.139	0.139	0.139	0.562	0.562	0.562	0.562	0.562	0.562	0.562	0.562
793	METHUEN HYDRO	Generator	8506	Southeast New England	MA	NEMA	Existing	0	0	0	0	0.136	0.136	0.136	0.136	0.136	0.136	0.136	0.136
794	MINIWAWA	Generator	8505	Northern New England	NH	NH	Existing	0.142	0.142	0.142	0.142	0.544	0.544	0.544	0.544	0.544	0.544	0.544	0.544
795	RIVER MILL HYDRO	Generator	8505	Northern New England	NH	NH	Existing	0	0	0	0	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045
796	GOODWIN DAM	Generator	8500	Rest-of-Pool	CT	CT	Existing	3	3	3	3	3	3	3	3	3	3	3	3
797	CEC 003 WYRE WYND U5	Generator	8500	Rest-of-Pool	CT	CT	Existing	0.372	0.372	0.372	0.372	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
798	COLEBROOK	Generator	8500	Rest-of-Pool	CT	CT	Existing	0.644	0.644	0.644	0.644	0.366	0.366	0.366	0.366	0.366	0.366	0.366	0.366
800	KINNEYTOWN B	Generator	8500	Rest-of-Pool	CT	CT	Existing	0.027	0.027	0.027	0.027	0.521	0.521	0.521	0.521	0.521	0.521	0.521	0.521
801	WILLIMANTIC 1	Generator	8500	Rest-of-Pool	CT	CT	Existing	0	0	0	0	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164
802	WILLIMANTIC 2	Generator	8500	Rest-of-Pool	CT	CT	Existing	0	0	0	0	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
803	TOUTANT	Generator	8500	Rest-of-Pool	CT	CT	Existing	0.028	0.028	0.028	0.028	0.131	0.131	0.131	0.131	0.131	0.131	0.131	0.131
804	PUTNAM	Generator	8500																

854	ORANGE HYDRO 1	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0	0	0	0	0.096	0.096	0.096	0.096	0.096	0.096	0.096
855	ORANGE HYDRO 2	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.068	0.068	0.068	0.068	0.15	0.15	0.15	0.15	0.15	0.15	0.15
856	HUNT'S POND	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0	0	0	0	0.026	0.026	0.026	0.026	0.026	0.026	0.026
857	OAKDALE HYDRO	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	2.535	2.535	2.535	2.535	0.223	0.223	0.223	0.223	0.223	0.223	0.223
859	BOATLOCK	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	1.367	1.367	1.367	1.367	1.884	1.884	1.884	1.884	1.884	1.884	1.884
860	BRIAR HYDRO	Generator	8505	Northern New England	NH	NH	Existing	0.991	0.991	0.991	0.991	2.422	2.422	2.422	2.422	2.422	2.422	2.422
861	CANAAN	Generator	8505	Northern New England	NH	NH	Existing	0.75	0.75	0.75	0.75	0.96	0.96	0.96	0.96	0.96	0.96	0.96
862	CHEMICAL	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.356	0.356	0.356	0.356	0.302	0.302	0.302	0.302	0.302	0.302	0.302
863	CLEMENT DAM	Generator	8505	Northern New England	NH	NH	Existing	0.446	0.446	0.446	0.446	0.557	0.557	0.557	0.557	0.557	0.557	0.557
864	DWIGHT	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.153	0.153	0.153	0.153	0.169	0.169	0.169	0.169	0.169	0.169	0.169
865	ERROL	Generator	8505	Northern New England	NH	NH	Existing	1.862	1.862	1.862	1.862	1.955	1.955	1.955	1.955	1.955	1.955	1.955
866	GREGGS	Generator	8505	Northern New England	NH	NH	Existing	0.359	0.359	0.359	0.359	1.069	1.069	1.069	1.069	1.069	1.069	1.069
867	INDIAN ORCHARD	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.086	0.086	0.086	0.086	0.432	0.432	0.432	0.432	0.432	0.432	0.432
868	MILTON MILLS HYDRO	Generator	8505	Northern New England	NH	NH	Existing	0.277	0.277	0.277	0.277	1.028	1.028	1.028	1.028	1.028	1.028	1.028
869	MINE FALLS	Generator	8505	Northern New England	NH	NH	Existing	0.39	0.39	0.39	0.39	1.194	1.194	1.194	1.194	1.194	1.194	1.194
870	PEMBROKE	Generator	8505	Northern New England	NH	NH	Existing	0.242	0.242	0.242	0.242	1.07	1.07	1.07	1.07	1.07	1.07	1.07
871	PENNACOOK FALLS LOWER	Generator	8505	Northern New England	NH	NH	Existing	1.164	1.164	1.164	1.164	2.587	2.587	2.587	2.587	2.587	2.587	2.587
872	PENNACOOK FALLS UPPER	Generator	8505	Northern New England	NH	NH	Existing	0.834	0.834	0.834	0.834	1.805	1.805	1.805	1.805	1.805	1.805	1.805
873	PUTTS BRIDGE	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.487	0.487	0.487	0.487	1.869	1.869	1.869	1.869	1.869	1.869	1.869
874	RED BRIDGE	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.181	0.181	0.181	0.181	0.927	0.927	0.927	0.927	0.927	0.927	0.927
875	RIVER BEND	Generator	8505	Northern New England	NH	NH	Existing	0.734	0.734	0.734	0.734	0.828	0.828	0.828	0.828	0.828	0.828	0.828
876	ROBERTSVILLE	Generator	8500	Rest-of-Pool	CT	CT	Existing	0	0	0	0	0.013	0.013	0.013	0.013	0.013	0.013	0.013
877	SCOTLAND	Generator	8500	Rest-of-Pool	CT	CT	Existing	0	0	0	0	0.457	0.457	0.457	0.457	0.457	0.457	0.457
878	SKINNER	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.1	0.1	0.1	0.1	0.15	0.15	0.15	0.15	0.15	0.15	0.15
879	TAFTVILLE CT	Generator	8500	Rest-of-P														

941	PETERBOROUGH UPPER HYDRO	Generator	8505	Northern New England	NH	NH	Existing	0.016	0.016	0.016	0.016	0.146	0.146	0.146	0.146	0.146	0.146	0.146
943	FOUR HILLS LANDFILL	Generator	8505	Northern New England	NH	NH	Existing	0.932	0.932	0.932	0.932	0.786	0.786	0.786	0.786	0.786	0.786	0.786
948	PEPPERELL HYDRO COMPANY LLC	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.302	0.302	0.302	0.302	0.534	0.534	0.534	0.534	0.534	0.534	0.534
949	VALLEY HYDRO - QF	Generator	8506	Southeast New England	RI	RI	Existing	0.001	0.001	0.001	0.001	0.045	0.045	0.045	0.045	0.045	0.045	0.045
950	LP ATHOL - QF	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.034	0.034	0.034	0.034	0.066	0.066	0.066	0.066	0.066	0.066	0.066
951	BALTIC MILLS - QF	Generator	8505	Northern New England	NH	NH	Existing	0.025	0.025	0.025	0.025	0.051	0.051	0.051	0.051	0.051	0.051	0.051
957	HG&E HYDRO CABOT 1-4	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	1.019	1.019	1.019	1.019	0.742	0.742	0.742	0.742	0.742	0.742	0.742
969	POWDER MILL HYDRO	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0	0	0	0	0.039	0.039	0.039	0.039	0.039	0.039	0.039
970	DUDLEY HYDRO	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.008	0.008	0.008	0.008	0.074	0.074	0.074	0.074	0.074	0.074	0.074
978	NEW MILFORD	Generator	8500	Rest-of-Pool	CT	CT	Existing	1.093	1.093	1.093	1.093	1.183	1.183	1.183	1.183	1.183	1.183	1.183
1005	BG DIGHTON POWER LLC	Generator	8506	Southeast New England	MA	SEMA	Existing	164.039	164.039	164.039	164.039	164.039	164.039	164.039	164.039	164.039	164.039	164.039
1030	OAK BLUFFS	Generator	8506	Southeast New England	MA	SEMA	Existing	7.471	7.471	7.471	7.471	7.471	7.471	7.471	7.471	7.471	7.471	7.471
1031	WEST TISBURY	Generator	8506	Southeast New England	MA	SEMA	Existing	5.005	5.005	5.005	5.005	5.005	5.005	5.005	5.005	5.005	5.005	5.005
1032	BRIDGEPORT ENERGY 1	Generator	8500	Rest-of-Pool	CT	CT	Existing	476.082	476.082	476.082	476.082	476.082	476.082	476.082	476.082	476.082	476.082	476.082
1034	RIVERSIDE 4-7	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	1.872	1.872	1.872	1.872	1.545	1.545	1.545	1.545	1.545	1.545	1.545
1035	RIVERSIDE 8	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	2.602	2.602	2.602	2.602	3.055	3.055	3.055	3.055	3.055	3.055	3.055
1047	FAIRFAX	Generator	8505	Northern New England	VT	VT	Existing	1.753	1.753	1.753	1.753	3.496	3.496	3.496	3.496	3.496	3.496	3.496
1048	WARE HYDRO	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.086	0.086	0.086	0.086	0.522	0.522	0.522	0.522	0.522	0.522	0.522
1049	COLLINS HYDRO	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.28	0.28	0.28	0.28	0.585	0.585	0.585	0.585	0.585	0.585	0.585
1050	CHICOPEE HYDRO	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.452	0.452	0.452	0.452	0.994	0.994	0.994	0.994	0.994	0.994	0.994
1054	BLACKSTONE HYDRO ASSOC	Generator	8506	Southeast New England	RI	RI	Existing	0	0	0	0	0.143	0.143	0.143	0.143	0.143	0.143	0.143
1057	BLACKSTONE HYDRO LOAD REDUCER	Generator	8506	Southeast New England	RI	RI	Existing	0.167	0.167	0.167	0.167	0.467	0.467	0.467	0.467	0.467	0.467	0.467
1059	BARRE LANDFILL	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0	0	0	0	0	0	0	0	0	0	0
1061	MASCOMA HYDRO	Generator	8505	Northern New England	NH	NH	Existing	0.116	0.116	0.116	0.116	0.497	0.497	0.497	0.497	0.497	0.497	0.497
1062	MWRA COSGROVE	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.733	0.733	0.733	0.733	0.312	0.312	0.312	0.312	0.312	0.312	0.312
1086	BERKSHIRE POWER	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	229.279	229.279	229.279	229.279	229.279	229.279	229.279	229.279	229.279	229.279	229.279
1109	MMWAC	Generator	8505	Northern New England	ME	ME	Existing	1.853	1.853	1.853	1.853	2.041	2.041	2.041	2.041	2.041	2.041	2.041
1113	BRASSUA HYDRO	Generator	8505	Northern New England	ME	ME	Existing	4.203	4.203	4.203	4.203	4.203	4.203	4.203	4.203	4.203	4.203	4.203
1114	MADISON COMPOSITE	Generator	8505	Northern New England	ME	ME	Existing	13.988	13.988	13.988	13.988	17.933	17.933	17.933	17.933	17.933	17.933	17.933
1117	GREAT WORKS COMPOSITE	Generator	8505	Northern New England	ME	ME	Existing	0.009	0.009	0.009	0.009	0.095	0.095	0.095	0.095	0.095	0.095	0.095
1119	KENNEBAGO HYDRO	Generator	8505	Northern New England	ME	ME	Existing	0.166	0.166	0.166	0.166	0.401	0.401	0.401	0.401	0.401	0.401	0.401
1122	CASCADE-DIAMOND-QF	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.053	0.053	0.053	0.053	0.246	0.246	0.246	0.246	0.246	0.246	0.246
1185	STONY BROOK GT1A	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	100	100	100	100	100	100	100	100	100	100	100
1186	STONY BROOK GT1B	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	97	97	97	97	97	97	97	97	97	97	97
1187	STONY BROOK GT1C	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	100	100	100	100	100	100	100	100	100	100	100
1209	CRRA HARTFORD LANDFILL	Generator	8500	Rest-of-Pool	CT	CT	Existing	0	0	0	0	0	0	0	0	0	0	0
1210	MILLENNIUM	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	331	331	331	331	331	331	331	331	331	331	331
1216	MAINE INDEPENDENCE STATION	Generator	8505	Northern New England	ME	ME	Existing	492.658	492.658	492.658	492.658	492.658	492.658	492.658	492.658	492.658	492.658	492.658
1221	ESSEX DIESELS	Generator	8505	Northern New England	VT	VT	Existing	7.215	7.215	7.215	7.215	7.215	7.215	7.215	7.215	7.215	7.215	7.215
1226	TIVERTON POWER	Generator	8506	Southeast New England	RI	RI	Existing	265.377	265.377	265.377	265.377	265.377	265.377	265.377	265.377	265.377	265.377	265.377
1255	RUMFORD POWER	Generator	8505	Northern New England	ME	ME	Existing	244.281	244.281	244.281	244.281	244.281	244.281	244.281	244.281	244.281	244.281	244.281
1258	BHE SMALL HYDRO COMPOSITE	Generator	8505	Northern New England	ME	ME	Existing	0.555	0.555	0.555	0.555	1.569	1.569	1.569	1.569	1.569	1.569	1.569
1270	SYSKO STONY BROOK	Generator	8505	Northern New England	ME	ME	Existing	0.013	0.013	0.013	0.013	0.015	0.015	0.015	0.015	0.015	0.015	0.015
1271	SYSKO WIGHT BROOK	Generator	8505	Northern New England	ME	ME	Existing	0	0	0	0	0.02	0.02	0.02	0.02	0.02	0.02	0.02
1273	KENNEBEC WATER U5	Generator	8505	Northern New England	ME	ME	Existing	0.102	0.102	0.102	0.102	0.381	0.381	0.381	0.381	0.381	0.381	0.381
1286	ANP-BLACKSTONE ENERGY CO. #1	Generator	8506	Southeast New England	MA	SEMA	Existing	239.174	239.174	239.174	239.174	239.174	239.174	239.174	239.174	239.174	239.174	239.174
1287	ANP-BLACKSTONE ENERGY 2	Generator	8506	Southeast New England	MA	SEMA	Existing	252.87	252.87	252.87	252.87	252.87	252.87	252.87	252.87	252.87	252.87	252.87
1288	BUCKSPORT ENERGY 4	Generator	8505	Northern New England	ME	ME	Existing	160.3	160.3	160.3	160.3	160.3	160.3	160.3	160.3	160.3	160.3	160.3
1342	LAKE ROAD 1	Generator	8500	Rest-of-Pool	CT	CT	Existing	269.792	269.792	269.792	269.792	269.792	269.792	269.792	269.792	269.792	269.792	269.792
1343	LAKE ROAD 2	Generator	8500	Rest-of-Pool	CT	CT	Existing	274.66	274.66	274.66	274.66	274.66	274.66	274.66	274.66	274.66	274.66	274.66
1344	LAKE ROAD 3	Generator	8500	Rest-of-Pool	CT	CT	Existing	279	279	279	279	279	279	279	279	279	279	279
1345	WESTBROOK	Generator	8505	Northern New England	ME	ME	Existing	0	0	0	0	0	0	0	0	0	0	0
1368	ROCKY GORGE CORPORATION	Generator	8505	Northern New England	ME	ME	Existing	0.068	0.068	0.068	0.068	0.265	0.265	0.265	0.265	0.265	0.265	0.265
1376	PPL WALLINGFORD UNIT 1	Generator	8500	Rest-of-Pool	CT	CT	Existing	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286
1377	PPL WALLINGFORD UNIT 2	Generator	8500	Rest-of-Pool	CT	CT	Existing	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286
1378	PPL WALLINGFORD UNIT 3	Generator	8500	Rest-of-Pool	CT	CT	Existing	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286
1379	PPL WALLINGFORD UNIT 4	Generator	8500	Rest-of-Pool	CT	CT	Existing	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286
1380	PPL WALLINGFORD UNIT 5	Generator	8500	Rest-of-Pool	CT	CT	Existing	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286	47.286
1385	Milford Power 1 Incremental	Generator	8500	Rest-of-Pool	CT	CT	Existing	267.7	267.7	267.7	267.7	267.7	267.7	267.7	267.7	267.7	267.7	267.7
1386	MILFORD POWER 2	Generator	8500	Rest-of-Pool	CT	CT	Existing	267.7	267.7	267.7	267.7	267.7	267.7	267.7	267.7	267.7	267.7	267.7
1412	ANP-BELLINGHAM 1	Generator	8506	Southeast New England	MA	SEMA	Existing	254.704	254.704	254.704	254.704	254.704	254.704	254.704	254.704	254.704	254.704	254.704

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10403	EASTMAN BROOK U5	Generator	8505	Northern New England	NH	NH	Existing	0.011	0.011	0.011	0.011	0.031	0.031	0.031	0.031	0.031	0.031	0.031
10406	LOWER VALLEY HYDRO U5	Generator	8505	Northern New England	NH	NH	Existing	0.068	0.068	0.068	0.068	0.128	0.128	0.128	0.128	0.128	0.128	0.128
10409	SWEETWATER HYDRO U5	Generator	8505	Northern New England	NH	NH	Existing	0.114	0.114	0.114	0.114	0.217	0.217	0.217	0.217	0.217	0.217	0.217
10424	Great Lakes - Berlin Incremental	Generator	8505	Northern New England	NH	NH	Existing	6.493	6.493	6.493	6.493	11.159	11.159	11.159	11.159	11.159	11.159	11.159
10615	BLUE SPRUCE FARM U5	Generator	8505	Northern New England	VT	VT	Existing	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275
10770	WEST SPRINGFIELD HYDRO U5	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.332	0.332	0.332	0.332	0.823	0.823	0.823	0.823	0.823	0.823	0.823
10801	COVENTRY CLEAN ENERGY	Generator	8505	Northern New England	VT	VT	Existing	3.483	3.483	3.483	3.483	3.687	3.687	3.687	3.687	3.687	3.687	3.687
10959	RRIG EXPANSION PHASE 2	Generator	8506	Southeast New England	RI	RI	Existing	0	0	0	0	0	0	0	0	0	0	0
11052	GRTR NEW BEDFORD LFG UTIL PROJ	Generator	8506	Southeast New England	MA	SEMA	Existing	2.344	2.344	2.344	2.344	2.478	2.478	2.478	2.478	2.478	2.478	2.478
11126	NORTH HARTLAND HYDRO	Generator	8505	Northern New England	VT	VT	Existing	0.766	0.766	0.766	0.766	1.409	1.409	1.409	1.409	1.409	1.409	1.409
11408	HULL WIND TURBINE II	Generator	8506	Southeast New England	MA	SEMA	Existing	0.037	0.037	0.037	0.037	0.267	0.267	0.267	0.267	0.267	0.267	0.267
11424	RUMFORD FALLS	Generator	8505	Northern New England	ME	ME	Existing	27.573	27.573	27.573	27.573	32.562	32.562	32.562	32.562	32.562	32.562	32.562
11842	WATERSIDE POWER	Generator	8500	Rest-of-Pool	CT	CT	Existing	70.017	70.017	70.017	70.017	70.017	70.017	70.017	70.017	70.017	70.017	70.017
11925	BROCKTON BRIGHTFIELDS	Generator	8506	Southeast New England	MA	SEMA	Existing	0.146	0.146	0.146	0.146	0	0	0	0	0	0	0
12108	FIEC DIESEL	Generator	8505	Northern New England	ME	ME	Existing	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
12180	BERKSHIRE COW POWER	Generator	8505	Northern New England	VT	VT	Existing	0.254	0.254	0.254	0.254	0.325	0.325	0.325	0.325	0.325	0.325	0.325
12274	GREEN MOUNTAIN DAIRY	Generator	8505	Northern New England	VT	VT	Existing	0.218	0.218	0.218	0.218	0.21	0.21	0.21	0.21	0.21	0.21	0.21
12323	COVENTRY CLEAN ENERGY #4	Generator	8505	Northern New England	VT	VT	Existing	2.513	2.513	2.513	2.513	2.621	2.621	2.621	2.621	2.621	2.621	2.621
12450	NYPA - CMR	Import	8500	Rest-of-Pool			Existing	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3	68.3
12451	NYPA - VT	Import	8500	Rest-of-Pool			Existing	11	11	11	11	11	11	11	11	11	11	11
12500	Thomas A. Watson	Generator	8506	Southeast New England	MA	SEMA	Existing	105.2	105.2	105.2	105.2	105.2	105.2	105.2	105.2	105.2	105.2	105.2
12504	Devon 15-18	Generator	8500	Rest-of-Pool	CT	CT	Existing	187.589	187.589	187.589	187.589	187.589	187.589	187.589	187.589	187.589	187.589	187.589
12505	Middletown 12-15	Generator	8500	Rest-of-Pool	CT	CT	Existing	187.6	187.6	187.6	187.6	187.6	187.6	187.6	187.6	187.6	187.6	187.6
12509	UNH Power Plant	Generator	8505	Northern New England	NH	NH	Existing	2	2	2	2	2	2	2	2	2	2	2
12510	Swanton Gas Turbine 1	Generator	8505	Northern New England	VT	VT	Existing	19.304	19.304	19.304	19.304	19.304	19.304	19.304	19.304	19.304	19.304	19.304
12511	Swanton Gas Turbine 2	Generator	8505	Northern New England	VT	VT	Existing	19.349	19.349	19.349	19.349	19.349	19.349	19.349	19.349	19.349	19.349	19.349
12521	Lowell Power Reactivation	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	74	74	74	74	74	74	74	74	74	74	74
12524	Cos Cob 13&14	Generator	8500	Rest-of-Pool	CT	CT	Existing	36	36	36	36	36	36	36	36	36	36	36
12526	Pierce	Generator	8500	Rest-of-Pool	CT	CT	Existing	74.085	74.085	74.085	74.085	74.085	74.085	74.085	74.085	74.085	74.085	74.085
12530	Sheffield Wind Farm	Generator	8505	Northern New England	VT	VT	Existing	3.009	3.009	3.009	3.009	9.32	9.32	9.32	9.32	9.32	9.32	9.32
12551	Kibby Wind Power	Generator	8505	Northern New England	ME	ME	Existing	18.313	18.313	18.313	18.313	32.467	32.467	32.467	32.467	32.467	32.467	32.467
12564	Waterbury Generation Facility	Generator	8500	Rest-of-Pool	CT	CT	Existing	95.71	95.71	95.71	95.71	95.71	95.71	95.71	95.71	95.71	95.71	95.71
12581	CL&P - Conservation & Load Management (CL	Demand	8500	Rest-of-Pool	CT	CT	Existing	489.104	489.104	489.104	489.104	489.104	489.104	489.104	489.104	489.104	489.104	489.104
12583	CL&P Distributed Generation FCM 2010	Demand	8500	Rest-of-Pool	CT	CT	Existing	34.232	34.232	34.232	34.232	34.232	34.232	34.232	34.232	34.232	34.232	34.232
12584	Conservation and Load Management Program	Demand	8500	Rest-of-Pool	CT	CT	Existing	0.897	0.897	0.897	0.897	0.897	0.897	0.897	0.897	0.897	0.897	0.897
12586	Efficiency Maine Residential Efficient Product	Demand	8505	Northern New England	ME	ME	Existing	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
12590	Ameresco CT DSM	Demand	8500	Rest-of-Pool	CT	CT	Existing	4.869	4.869	4.869	4.869	4.869	4.869	4.869	4.869	4.869	4.869	4.869
12597	Cambridge Energy Alliance-1	Demand	8506	Southeast New England	MA	NEMA	Existing	0.653	0.653	0.653	0.653	0.653	0.653	0.653	0.653	0.653	0.653	0.653
12598	Cambridge Energy Alliance-2	Demand	8506	Southeast New England	MA	NEMA	Existing	4.736	4.736	4.736	4.736	4.736	4.736	4.736	4.736	4.736	4.736	4.736
12600	UI Conservation and Load Management Prog	Demand	8500	Rest-of-Pool	CT	CT	Existing	87.093	87.093	87.093	87.093	87.093	87.093	87.093	87.093	87.093	87.093	87.093
12657	Unitil CORE Energy Efficiency Programs-2	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	8.235	8.235	8.235	8.235	8.235	8.235	8.235	8.235	8.235	8.235	8.235
12670	ngrid_nema_fca1_eodr	Demand	8506	Southeast New England	MA	NEMA	Existing	153.432	153.432	153.432	153.432	153.432	153.432	153.432	153.432	153.432	153.432	153.432
12671	ngrid_nh_fca1_eodr	Demand	8505	Northern New England	NH	NH	Existing	9.898	9.898	9.898	9.898	9.898	9.898	9.898	9.898	9.898	9.898	9.898
12672	ngrid_ri_fca1_eodr	Demand	8506	Southeast New England	RI	RI	Existing	248.875	248.875	248.875	248.875	248.875	248.875	248.875	248.875	248.875	248.875	248.875
12673	ngrid_sema_fca1_eodr	Demand	8506	Southeast New England	MA	SEMA	Existing	221.343	221.343	221.343	221.343	221.343	221.343	221.343	221.343	221.343	221.343	221.343
12674	ngrid_wcma_fca1_eodr	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	294.834	294.834	294.834	294.834	294.834	294.834	294.834	294.834	294.834	294.834	294.834
12684	NSTAR EE NEMA	Demand	8506	Southeast New England	MA	NEMA	Existing	480.919	480.919	480.919	480.919	480.919	480.919	472.686	472.686	472.686	472.686	480.919
12685	NSTAR EE SEMA	Demand	8506	Southeast New England	MA	SEMA	Existing	90.662	90.662	90.662	90.662	90.662	90.662	90.219	90.219	90.219	90.662	90.662
12693	PSNH CORE Energy Efficiency Programs	Demand	8505	Northern New England	NH	NH	Existing	79.291	79.291	79.291	79.291	79.291	79.291	63.851	63.851	63.851	79.291	79.291
12694	Acushnet Company - Ball Plant II - Combined	Demand	8506	Southeast New England	MA	SEMA	Existing	2.111	2.111	2.111	2.111	2.111	2.111	2.111	2.111	2.111	2.111	2.111
12696	7.9 MW CHP Plant	Demand	8505	Northern New England	NH	NH	Existing	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
12705	Cape Light Compact Energy Efficiency Portfol	Demand	8506	Southeast New England	MA	SEMA	Existing	45.468	45.468	45.468	45.468	45.468	45.468	45.468	45.468	45.468	45.468	45.468
12749	Bridgewater Correctional Complex Cogenerat	Demand	8506	Southeast New England	MA	SEMA	Existing	1.412	1.412	1.412	1.412	1.412	1.412	1.412	1.412	1.412	1.412	1.412
12753	MA SEMA state colleges	Demand	8506	Southeast New England	MA	SEMA	Existing	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
12754	Tewksbury State Hospital Cogenerator	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734
12757	NHEC Energy Efficiency Programs	Demand	8505	Northern New England	NH	NH	Existing	1.544	1.544	1.544	1.544	1.544	1.544	1.544	1.544	1.544	1.544	1.544
12779	CPLN CT On-Peak	Demand	8500	Rest-of-Pool	CT	CT	Existing	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03
12786	CSG Aggregation of DG and 24 hr lighting EE	Demand	8506	Southeast New England	MA	NEMA	Existing	12.318	12.318	12.318	12.318	12.318	12.318	12.318	12.318	12.318	12.318	12.318
12790	CSG Aggregation of DG and 24 hr lighting EE	Demand	8506	Southeast New England	RI	RI	Existing	0.217	0.217	0.217	0.217	0.217	0.217	0.217	0.217	0.217	0.217	0.217
12791	CSG Aggregation of DG and 24 hr lighting EE	Demand	8506	Southeast New England	MA	SEMA	Existing	1.517	1.517	1.517	1.517	1.517	1.517	1.517	1.517	1.517	1.517	1.517
12799	CSG Aggregation of DG and 24 hr lighting EE	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	2.106	2.106	2.106	2.106	2.106	2.106	2.106	2.106	2.106	2.106	2.106

12801	UES CORE Energy Efficiency Programs	Demand	8505	Northern New England	NH	NH	Existing	7.768	7.768	7.768	7.768	7.768	7.768	7.768	7.768	7.768	7.768
12802	University of Massachusetts Central Heating	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	10.26	10.26	10.26	10.26	10.26	10.26	10.26	10.26	10.26	10.26
12806	WMECO - Conservation & Load Management	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	35.176	35.176	35.176	35.176	35.176	35.176	14.419	14.419	14.419	35.176
12822	Burlington Electric Department - On-Peak Eff	Demand	8505	Northern New England	VT	VT	Existing	6.724	6.724	6.724	6.724	6.724	6.724	6.224	6.224	6.224	6.724
12832	CPLN MA NEMA OP	Demand	8506	Southeast New England	MA	NEMA	Existing	8.721	8.721	8.721	8.721	8.721	8.721	8.721	8.721	8.721	8.721
12835	CPLN MA SEMA OP	Demand	8506	Southeast New England	MA	SEMA	Existing	3.848	3.848	3.848	3.848	3.848	3.848	3.848	3.848	3.848	3.848
12838	CPLN MA WC OP	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	8.139	8.139	8.139	8.139	8.139	8.139	8.139	8.139	8.139	8.139
12843	CPLN RI OP	Demand	8506	Southeast New England	RI	RI	Existing	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44	2.44
12845	Vermont Efficiency Portfolio-1	Demand	8505	Northern New England	VT	VT	Existing	103.357	103.357	103.357	103.357	103.357	103.357	103.357	103.357	103.357	103.357
13669	Manchester Methane LLC East Windsor Facili	Generator	8500	Rest-of-Pool	CT	CT	Existing	0.44	0.44	0.44	0.44	0.331	0.331	0.331	0.331	0.331	0.331
13673	MATEP (DIESEL)	Generator	8506	Southeast New England	MA	NEMA	Existing	17.12	17.12	17.12	17.12	17.12	17.12	17.12	17.12	17.12	17.12
13675	MATEP (COMBINED CYCLE)	Generator	8506	Southeast New England	MA	NEMA	Existing	42.515	42.515	42.515	42.515	42.515	42.515	42.515	42.515	42.515	42.515
13703	Verso VCG1	Generator	8505	Northern New England	ME	ME	Existing	47.223	47.223	47.223	47.223	47.223	47.223	53.733	53.733	53.733	47.223
13704	Verso VCG2	Generator	8505	Northern New England	ME	ME	Existing	44.38	44.38	44.38	44.38	44.38	44.38	55.38	55.38	55.38	44.38
13705	Verso VCG3	Generator	8505	Northern New England	ME	ME	Existing	41.962	41.962	41.962	41.962	41.962	41.962	53.962	53.962	53.962	41.962
13975	Corriveau Hydroelectric LLC	Generator	8505	Northern New England	ME	ME	Existing	0.033	0.033	0.033	0.033	0.032	0.032	0.032	0.032	0.032	0.032
14087	MAT3	Generator	8506	Southeast New England	MA	NEMA	Existing	16.86	16.86	16.86	16.86	16.86	16.86	16.86	16.86	16.86	16.86
14217	NORTHFIELD MOUNTAIN 1	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	292	292	292	292	292	292	292	292	292	292
14218	NORTHFIELD MOUNTAIN 2	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	292	292	292	292	292	292	292	292	292	292
14219	NORTHFIELD MOUNTAIN 3	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	292	292	292	292	292	292	292	292	292	292
14220	NORTHFIELD MOUNTAIN 4	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	292	292	292	292	292	292	292	292	292	292
14271	Ameresco Northampton	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.748	0.748	0.748	0.748	0.748	0.748	0.748	0.748	0.748	0.748
14579	FGE Energy Efficiency Portfolio 2011	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
14580	UES Energy Efficiency Portfolio 2011	Demand	8505	Northern New England	NH	NH	Existing	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
14595	Granite Reliable Power	Generator	8505	Northern New England	NH	NH	Existing	13.898	13.898	13.898	13.898	27.24	27.24	27.24	27.24	27.24	27.24
14599	Rhode Island LFG Genco, LLC - ST	Generator	8506	Southeast New England	RI	RI	Existing	20.492	20.492	20.492	20.492	24.058	24.058	24.058	24.058	24.058	24.058
14610	Princeton Wind Farm Project	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.146	0.146	0.146	0.146	0.394	0.394	0.394	0.394	0.394	0.394
14614	Kleen Energy	Generator	8500	Rest-of-Pool	CT	CT	Existing	620	620	620	620	620	620	620	620	620	620
14623	Valley Hydro (Station No. 5)	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.356	0.356	0.356	0.356	0.359	0.359	0.359	0.359	0.359	0.359
14652	Templeton Wind Turbine	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.062	0.062	0.062	0.062	0.112	0.112	0.112	0.112	0.112	0.112
14660	Lempster Wind	Generator	8505	Northern New England	NH	NH	Existing	2.824	2.824	2.824	2.824	8.233	8.233	8.233	8.233	8.233	8.233
14661	Berkshire Wind Power Project	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	1.811	1.811	1.811	1.811	6.503	6.503	6.503	6.503	6.503	6.503
14663	WMRE Crossroads	Generator	8505	Northern New England	ME	ME	Existing	2.806	2.806	2.806	2.806	2.806	2.806	2.806	2.806	2.806	2.806
14665	Record Hill Wind	Generator	8505	Northern New England	ME	ME	Existing	6.045	6.045	6.045	6.045	11.863	11.863	11.863	11.863	11.863	11.863
14706	Kimberly-Clark Corp Energy Independence Pr	Generator	8500	Rest-of-Pool	CT	CT	Existing	13.063	13.063	13.063	13.063	13.063	13.063	13.063	13.063	13.063	13.063
15415	Dartmouth Power Expansion	Generator	8506	Southeast New England	MA	SEMA	Existing	19.578	19.578	19.578	19.578	19.578	19.578	19.578	19.578	19.578	19.578
15477	New Haven Harbor Units 2, 3, & 4	Generator	8500	Rest-of-Pool	CT	CT	Existing	129.6	129.6	129.6	129.6	129.6	129.6	129.6	129.6	129.6	129.6
15509	Plainfield Renewable Energy	Generator	8500	Rest-of-Pool	CT	CT	Existing	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5
15586	Gardner Wind Turbine	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	0.318	0.318	0.318	0.318	0.318	0.318	0.318	0.318	0.318	0.318
16296	Milford Hydro	Generator	8505	Northern New England	ME	ME	Existing	4.371	4.371	4.371	4.371	5.843	5.843	5.843	5.843	5.843	5.843
16523	Stillwater	Generator	8505	Northern New England	ME	ME	Existing	1.39	1.39	1.39	1.39	1.258	1.258	1.258	1.258	1.258	1.258
16525	Medway	Generator	8505	Northern New England	ME	ME	Existing	3.415	3.415	3.415	3.415	2.869	2.869	2.869	2.869	2.869	2.869
16547	UI C&LM Programs	Demand	8500	Rest-of-Pool	CT	CT	Existing	3.934	3.934	3.934	3.934	3.934	3.934	3.934	3.934	3.934	3.934
16631	Victory Road Dorchester PV	Generator	8506	Southeast New England	MA	NEMA	Existing	0.316	0.316	0.316	0.316	0	0	0	0	0	0
16640	Hilldale Ave Haverhill PV	Generator	8506	Southeast New England	MA	NEMA	Existing	0.27	0.27	0.27	0.27	0	0	0	0	0	0
16642	Railroad Street Revere PV	Generator	8506	Southeast New England	MA	NEMA	Existing	0.245	0.245	0.245	0.245	0	0	0	0	0	0
16643	Rover Street Everett PV	Generator	8506	Southeast New England	MA	NEMA	Existing	0.168	0.168	0.168	0.168	0	0	0	0	0	0
16644	Main Street Whitinsville PV	Generator	8506	Southeast New England	MA	SEMA	Existing	0.28	0.28	0.28	0.28	0	0	0	0	0	0
16651	Efficiency Maine Trust Efficient Products	Demand	8505	Northern New England	ME	ME	Existing	29.51	29.51	29.51	29.51	29.51	29.51	0	0	0	29.51
16653	Berlin Biopower	Generator	8505	Northern New England	NH	NH	Existing	65.38	65.38	65.38	65.38	65.38	65.38	65.38	65.38	65.38	65.38
16659	Ipswich Wind Farm 1	Generator	8506	Southeast New England	MA	NEMA	Existing	0.187	0.187	0.187	0.187	0.314	0.314	0.314	0.314	0.314	0.314
16688	Nor1	Generator	8500	Rest-of-Pool	CT	CT	Existing	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76
16700	Ri CoolSentry	Demand	8506	Southeast New England	RI	RI	Existing	3.338	3.338	3.338	3.338	3.338	3.338	3.338	3.338	3.338	3.338
16713	Comverge CoolSentry 2	Demand	8500	Rest-of-Pool	CT	CT	Existing	21.592	21.592	21.592	21.592	21.592	21.592	21.592	21.592	21.592	21.592
16718	Comverge CoolSentry 4	Demand	8500	Rest-of-Pool	CT	CT	Existing	0.947	0.947	0.947	0.947	0.947	0.947	0.947	0.947	0.947	0.947
16737	DFC-ERG Hybrid Fuel Cell (3)	Generator	8500	Rest-of-Pool	CT	CT	Existing	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
16738	BFCP Fuel Cell	Generator	8500	Rest-of-Pool	CT	CT	Existing	13.054	13.054	13.054	13.054	13.054	13.054	13.054	13.054	13.054	13.054
16750	Norden #2	Generator	8500	Rest-of-Pool	CT	CT	Existing	1.765	1.765	1.765	1.765	1.765	1.765	1.765	1.765	1.765	1.765
16752	Norden #3	Generator	8500	Rest-of-Pool	CT	CT	Existing	1.753	1.753	1.753	1.753	1.753	1.753	1.753	1.753	1.753	1.753
16790	WCMA Project E	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
17359	Sugar River 2	Generator	8505	Northern New England	NH	NH	Existing	0.014	0.014	0.014	0.014	0.104	0.104	0.104	0.104	0.104	0.104

35442	Seaman Energy	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0	0	0	0	0	0	0	0	0	0	0	0
35453	Efficiency Maine Trust	Demand	8505	Northern New England	ME	ME	Existing	9.134	9.134	9.134	9.134	9.134	9.134	0.616	0.616	0.616	0.616	9.134	9.134
35485	Fitchburg-FCA-5	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	3.316	3.316	3.316	3.316	3.316	3.316	3.316	3.316	3.316	3.316	3.316	3.316
35555	GMCW	Generator	8505	Northern New England	VT	VT	Existing	0.835	0.835	0.835	0.835	2.951	2.951	2.951	2.951	2.951	2.951	2.951	2.951
35593	Fiske Hydro	Generator	8505	Northern New England	NH	NH	Existing	0.069	0.069	0.069	0.069	0.107	0.107	0.107	0.107	0.107	0.107	0.107	0.107
35594	Spaulding Pond Hydro	Generator	8505	Northern New England	NH	NH	Existing	0.02	0.02	0.02	0.02	0.161	0.161	0.161	0.161	0.161	0.161	0.161	0.161
35656	Rainbow_2	Generator	8500	Rest-of-Pool	CT	CT	Existing	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
35657	Shrewsbury Diesels	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65
35658	Rainbow_1	Generator	8500	Rest-of-Pool	CT	CT	Existing	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
35693	Spruce Mountain Wind	Generator	8505	Northern New England	ME	ME	Existing	2.622	2.622	2.622	2.622	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
35728	Moretown LG	Generator	8505	Northern New England	VT	VT	Existing	1.862	1.862	1.862	1.862	1.862	1.862	1.862	1.862	1.862	1.862	1.862	1.862
35979	Kingdom Community Wind	Generator	8505	Northern New England	VT	VT	Existing	9.146	9.146	9.146	9.146	18.231	18.231	18.231	18.231	18.231	18.231	18.231	18.231
37040	KENDALL STEAM	Generator	8506	Southeast New England	MA	NEMA	Existing	21.967	21.967	21.967	21.967	21.967	21.967	21.967	21.967	21.967	21.967	21.967	21.967
37050	Groton Wind Project	Generator	8505	Northern New England	NH	NH	Existing	5.459	5.459	5.459	5.459	11.562	11.562	11.562	11.562	11.562	11.562	11.562	11.562
37072	Beaver_Ridge_Wind	Generator	8505	Northern New England	ME	ME	Existing	0.474	0.474	0.474	0.474	1.204	1.204	1.204	1.204	1.204	1.204	1.204	1.204
37077	Woronoco Hydro LLC	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.254	0.254	0.254	0.254	0.914	0.914	0.914	0.914	0.914	0.914	0.914	0.914
37105	Blue Sky West	Generator	8505	Northern New England	ME	ME	Existing	30.976	30.976	30.976	30.976	65.96	65.96	65.96	65.96	65.96	65.96	65.96	65.96
37112	Efficiency Maine Trust FCA6	Demand	8505	Northern New England	ME	ME	Existing	1.698	1.698	1.698	1.698	1.698	1.698	1.698	1.698	1.698	1.698	1.698	1.698
37120	Thundermist Hydropower	Generator	8506	Southeast New England	RI	RI	Existing	0	0	0	0	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
37855	Hess DR Northwest VT 2015-16	Demand	8505	Northern New England	VT	VT	Existing	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
37917	RTDR_50744_Boston (7507) - Grp C	Demand	8506	Southeast New England	MA	NEMA	Existing	19.273	19.273	19.273	19.273	19.273	19.273	19.273	19.273	19.273	19.273	19.273	19.273
37918	RTDR_50744_Central MA (7515) - Grp A	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	2.28	2.28	2.28	2.28	2.28	2.28	2.28	2.28	2.28	2.28	2.28	2.28
37919	RTDR_50744_Lower SEMA (7511) - Grp C	Demand	8506	Southeast New England	MA	SEMA	Existing	4.384	4.384	4.384	4.384	4.384	4.384	4.384	4.384	4.384	4.384	4.384	4.384
37920	RTDR_50744_North Shore (7508) - Grp C	Demand	8506	Southeast New England	MA	NEMA	Existing	1.599	1.599	1.599	1.599	1.599	1.599	1.599	1.599	1.599	1.599	1.599	1.599
37922	RTDR_50744_Northern CT (7501) - Grp B	Demand	8500	Rest-of-Pool	CT	CT	Existing	10.331	10.331	10.331	10.331	10.331	10.331	10.331	10.331	10.331	10.331	10.331	10.331
37924	RTDR_50744_SEMA (7512) - Grp C	Demand	8506	Southeast New England	MA	SEMA	Existing	5.684	5.684	5.684	5.684	5.684	5.684	5.684	5.684	5.684	5.684	5.684	5.684
37925	RTDR_50744_Springfield MA (7516) - Grp A	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38
37927	RTDR_50744_Western CT (7503) - Grp B	Demand	8500	Rest-of-Pool	CT	CT	Existing	5.297	5.297	5.297	5.297	5.297	5.297	5.297	5.297	5.297	5.297	5.297	5.297
37928	RTDR_50786_Boston (7507)	Demand	8506	Southeast New England	MA	NEMA	Existing	4.263	4.263	4.263	4.263	4.263	4.263	4.263	4.263	4.263	4.263	4.263	4.263
37929	RTDR_50786_Central MA (7515)	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
37930	RTDR_50786_Eastern CT (7500)	Demand	8500	Rest-of-Pool	CT	CT	Existing	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337
37931	RTDR_50786_Lower SEMA (7511)	Demand	8506	Southeast New England	MA	SEMA	Existing	1.482	1.482	1.482	1.482	1.482	1.482	1.482	1.482	1.482	1.482	1.482	1.482
37933	RTDR_50786_New Hampshire (7509)	Demand	8505	Northern New England	NH	NH	Existing	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119
37934	RTDR_50786_North Shore (7508)	Demand	8506	Southeast New England	MA	NEMA	Existing	1.488	1.488	1.488	1.488	1.488	1.488	1.488	1.488	1.488	1.488	1.488	1.488
37935	RTDR_50786_Northern CT (7501)	Demand	8500	Rest-of-Pool	CT	CT	Existing	2.789	2.789	2.789	2.789	2.789	2.789	2.789	2.789	2.789	2.789	2.789	2.789
37936	RTDR_50786_Norwalk - Stamford (7502)	Demand	8500	Rest-of-Pool	CT	CT	Existing	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195
37937	RTDR_50786_Portland Maine (7506)	Demand	8505	Northern New England	ME	ME	Existing	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998
37938	RTDR_50786_Rhode Island (7518)	Demand	8506	Southeast New England	RI	RI	Existing	3	3	3	3	3	3	3	3	3	3	3	3
37939	RTDR_50786_SEMA (7512)	Demand	8506	Southeast New England	MA	SEMA	Existing	0.759	0.759	0.759	0.759	0.759	0.759	0.759	0.759	0.759	0.759	0.759	0.759
37940	RTDR_50786_Seacoast (7510)	Demand	8505	Northern New England	NH	NH	Existing	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208
37941	RTDR_50786_Springfield MA (7516)	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	1.502	1.502	1.502	1.502	1.502	1.502	1.502	1.502	1.502	1.502	1.502	1.502
37942	RTDR_50786_Vermont (7514)	Demand	8505	Northern New England	VT	VT	Existing	0.893	0.893	0.893	0.893	0.893	0.893	0.893	0.893	0.893	0.893	0.893	0.893
37943	RTDR_50786_Western CT (7503)	Demand	8500	Rest-of-Pool	CT	CT	Existing	5.099	5.099	5.099	5.099	5.099	5.099	5.099	5.099	5.099	5.099	5.099	5.099
37944	RTDR_50786_Western MA (7517)	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	2.466	2.466	2.466	2.466	2.466	2.466	2.466	2.466	2.466	2.466	2.466	2.466
38057	Efficiency Maine Trust FCA6 B	Demand	8505	Northern New England	ME	ME	Existing	96	96	96	96	96	118.705	118.705	118.705	118.705	96	96	
38078	NFM Solar Power, LLC	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.507	0.507	0.507	0.507	0	0	0	0	0	0	0	0
38089	Footprint Combined Cycle	Generator	8506	Southeast New England	MA	NEMA	Existing	674	674	674	674	674	674	674	674	674	674	674	674
38114	East Bridgewater Solar Energy Project	Generator	8506	Southeast New England	MA	SEMA	Existing	0.85	0.85	0.85	0.85	0	0	0	0	0	0	0	0
38115	Harrington Street PV Project	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	1.43	1.43	1.43	1.43	0	0	0	0	0	0	0	0
38120	RTDR_50017_Bangor Hydro (7504) - 3	Demand	8505	Northern New England	ME	ME	Existing	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43
38122	RTDR_50017_Central MA (7515) - 3	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	10.746	10.746	10.746	10.746	10.746	10.746	10.746	10.746	10.746	10.746	10.746	10.746
38123	RTDR_50017_Eastern CT (7500) - 3	Demand	8500	Rest-of-Pool	CT	CT	Existing	5.806	5.806	5.806	5.806	5.806	5.806	5.806	5.806	5.806	5.806	5.806	5.806
38124	RTDR_50017_Lower SEMA (7511) - 3	Demand	8506	Southeast New England	MA	SEMA	Existing	1.871	1.871	1.871	1.871	1.871	1.871	1.871	1.871	1.871	1.871	1.871	1.871
38125	RTDR_50017_Maine (7505) - 3	Demand	8505	Northern New England	ME	ME	Existing	32.379	32.379	32.379	32.379	32.379	32.379	32.379	32.379	32.379	32.379	32.379	32.379
38126	RTDR_50017_New Hampshire (7509) - 3	Demand	8505	Northern New England	NH	NH	Existing	14.192	14.192	14.192	14.192	14.192	14.192	14.192	14.192	14.192	14.192	14.192	14.192
38128	RTDR_50017_Northern CT (7501) - 3	Demand	8500	Rest-of-Pool	CT	CT	Existing	16.982	16.982	16.982	16.982	16.982	16.982	16.982	16.982	16.982	16.982	16.982	16.982
38129	RTDR_50017_Northwest Vermont (7513) - 3	Demand	8505	Northern New England	VT	VT	Existing	24.622	24.622	24.622	24.622	24.622	24.622	24.622	24.622	24.622	24.622	24.622	24.622
38130	RTDR_50017_Norwalk - Stamford (7502) - 3	Demand	8500	Rest-of-Pool	CT	CT	Existing	2.131	2.131	2.131	2.131	2.131	2.131	2.131	2.131	2.131	2.131	2.131	2.131
38131	RTDR_50017_Portland Maine (7506) - 3	Demand	8505	Northern New England	ME	ME	Existing	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11
38132	RTDR_50017_Rhode Island (7518) - 3	Demand	8506	Southeast New England	RI	RI	Existing	13.652	13.652	13.652	13.652	13.652	13.652	13.652	13.652	13.652	13.652	13.652	13.652
38133	RTDR_50017_SEMA (7512) - 3	Demand	8506	Southeast New England	MA	SEMA	Existing	2.638	2.638	2.638	2.638	2.638	2.638	2.638	2.638	2.638	2.638	2.638	2.638

38134	RTDR_50017_Seacoast (7510) - 3	Demand	8505	Northern New England	NH	NH	Existing	7.991	7.991	7.991	7.991	7.991	7.991	7.991	7.991	7.991	7.991	7.991
38135	RTDR_50017_Springfield MA (7516) - 3	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	16.309	16.309	16.309	16.309	16.309	16.309	16.309	16.309	16.309	16.309	16.309
38136	RTDR_50017_Vermont (7514) - 3	Demand	8505	Northern New England	VT	VT	Existing	5.81	5.81	5.81	5.81	5.81	5.81	5.81	5.81	5.81	5.81	5.81
38137	RTDR_50017_Western CT (7503) - 3	Demand	8500	Rest-of-Pool	CT	CT	Existing	17.655	17.655	17.655	17.655	17.655	17.655	17.655	17.655	17.655	17.655	17.655
38138	RTDR_50017_Western MA (7517) - 3	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	19.166	19.166	19.166	19.166	19.166	19.166	19.166	19.166	19.166	19.166	19.166
38173	Saddleback Ridge Wind	Generator	8505	Northern New England	ME	ME	Existing	3.75	3.75	3.75	3.75	10.23	10.23	10.23	10.23	10.23	10.23	10.23
38178	Southbridge Landfill Gas to Energy 17-18	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
38181	Westford Solar	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	1.8	1.8	1.8	1.8	0	0	0	0	0	0	0
38206	Bridgeport Harbor 5	Generator	8500	Rest-of-Pool	CT	CT	Existing	484.3	484.3	484.3	484.3	484.3	484.3	524.066	524.066	524.066	524.066	484.3
38210	RTDR_50689_North_Shore_38210	Demand	8506	Southeast New England	MA	NEMA	Existing	9.743	9.743	9.743	9.743	9.743	9.743	9.743	9.743	9.743	9.743	9.743
38216	WCMA CHP	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	12.853	12.853	12.853	12.853	12.853	12.853	12.853	12.853	12.853	12.853	12.853
38217	RI CHP	Demand	8506	Southeast New England	RI	RI	Existing	11.452	11.452	11.452	11.452	11.452	11.452	11.452	11.452	11.452	11.452	11.452
38219	WMECO EE WCMA	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	63.515	63.515	63.515	63.515	63.515	63.515	63.411	63.411	63.411	63.515	63.515
38249	Silver lake Photovoltaic Facility	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.674	0.674	0.674	0.674	0	0	0	0	0	0	0
38250	Indian Orchard Photovoltaic Facility	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.695	0.695	0.695	0.695	0	0	0	0	0	0	0
38252	Indian River Power Supply# LLC	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.133	0.133	0.133	0.133	0.393	0.393	0.393	0.393	0.393	0.393	0.393
38268	NEMA 1 EG	Demand	8506	Southeast New England	MA	NEMA	Existing	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62
38270	NEMA 2 EG	Demand	8506	Southeast New England	MA	NEMA	Existing	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62
38272	SEMA 1 EG	Demand	8506	Southeast New England	MA	SEMA	Existing	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
38274	WCMA 1 EG	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
38276	RI 1 EG	Demand	8506	Southeast New England	RI	RI	Existing	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
38278	Wallingford Unit 6 and Unit 7	Generator	8500	Rest-of-Pool	CT	CT	Existing	94.57	94.57	94.57	94.57	94.57	94.57	94.57	94.57	94.57	94.57	94.57
38287	WMA Chester Solar 1	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	1.904	1.904	1.904	1.904	0	0	0	0	0	0	0
38289	Medway Peaker - SEMARI	Generator	8506	Southeast New England	MA	SEMA	Existing	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8
38297	CPV_Towantic	Generator	8500	Rest-of-Pool	CT	CT	Existing	750.5	750.5	750.5	750.5	750.5	750.5	750.5	750.5	750.5	750.5	750.5
38302	Fisher Road Solar I	Generator	8506	Southeast New England	MA	SEMA	Existing	1.92	1.92	1.92	1.92	0	0	0	0	0	0	0
38310	Canal 3	Generator	8506	Southeast New England	MA	SEMA	Existing	333	333	333	333	333	333	333	333	333	333	333
38311	NEMA CHP	Demand	8506	Southeast New England	MA	NEMA	Existing	2.238	2.238	2.238	2.238	2.238	2.238	2.238	2.238	2.238	2.238	2.238
38322	DRCR_Central MA_201403	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	10	10	10	10	10	10	10	10	10	10	10
38324	DRCR_Lower SEMA_201403	Demand	8506	Southeast New England	MA	SEMA	Existing	3.038	3.038	3.038	3.038	3.038	3.038	3.038	3.038	3.038	3.038	3.038
38331	DRCR_Rhode Island_201403	Demand	8506	Southeast New England	RI	RI	Existing	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9
38334	DRCR_SEMA_201403	Demand	8506	Southeast New England	MA	SEMA	Existing	20.034	20.034	20.034	20.034	20.034	20.034	20.034	20.034	20.034	20.034	20.034
38360	DRCR_Boston_201403	Demand	8506	Southeast New England	MA	NEMA	Existing	10	10	10	10	10	10	10	10	10	10	10
38372	Dartmouth Solar	Generator	8506	Southeast New England	MA	SEMA	Existing	1.43	1.43	1.43	1.43	0	0	0	0	0	0	0
38373	Holliston	Generator	8506	Southeast New England	MA	SEMA	Existing	1.274	1.274	1.274	1.274	0	0	0	0	0	0	0
38374	Plymouth	Generator	8506	Southeast New England	MA	SEMA	Existing	1.9	1.9	1.9	1.9	0	0	0	0	0	0	0
38375	Uxbridge	Generator	8506	Southeast New England	MA	SEMA	Existing	1.23	1.23	1.23	1.23	0	0	0	0	0	0	0
38376	Landcraft	Generator	8506	Southeast New England	MA	SEMA	Existing	1.339	1.339	1.339	1.339	0	0	0	0	0	0	0
38378	LSRHS	Generator	8506	Southeast New England	MA	NEMA	Existing	0.42	0.42	0.42	0.42	0	0	0	0	0	0	0
38380	Treasure Valley- SE	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	2.07	2.07	2.07	2.07	0	0	0	0	0	0	0
38381	Belchertown SED	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.53	0.53	0.53	0.53	0	0	0	0	0	0	0
38387	CSG Aggregation of DG and 24 hr lighting EE	Demand	8506	Southeast New England	MA	NEMA	Existing	11.923	11.923	11.923	11.923	11.923	11.923	11.923	11.923	11.923	11.923	11.923
38388	CSG Aggregation of DG and 24 hr lighting EE	Demand	8506	Southeast New England	MA	SEMA	Existing	2.861	2.861	2.861	2.861	2.861	2.861	2.861	2.861	2.861	2.861	2.861
38389	CSG Aggregation of DG and 24 hr lighting EE	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	4.655	4.655	4.655	4.655	4.655	4.655	4.655	4.655	4.655	4.655	4.655
38390	Efficiency Maine Trust FCA9	Demand	8505	Northern New England	ME	ME	Existing	4.049	4.049	4.049	4.049	4.049	4.049	4.049	4.049	4.049	4.049	4.049
38393	RTDR_51325_Maine (7505)	Demand	8505	Northern New England	ME	ME	Existing	59.4	59.4	59.4	59.4	59.4	59.4	59.4	59.4	59.4	59.4	59.4
38402	SEMA 1 - New T4	Demand	8506	Southeast New England	MA	SEMA	Existing	0.877	0.877	0.877	0.877	0.877	0.877	0.877	0.877	0.877	0.877	0.877
38404	WCMA 1 - New T4	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	1	1	1	1	1	1	1	1	1	1	1
38421	Jericho Power	Generator	8505	Northern New England	NH	NH	Existing	2.5	2.5	2.5	2.5	3.9	3.9	3.9	3.9	3.9	3.9	3.9
38438	Deerfield Wind Project	Generator	8505	Northern New England	VT	VT	Existing	8.1	8.1	8.1	8.1	13.6	13.6	13.6	13.6	13.6	13.6	13.6
38440	Cottage St PV	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	1.591	1.591	1.591	1.591	0	0	0	0	0	0	0
38441	UI RCP BGPT FC	Generator	8500	Rest-of-Pool	CT	CT	Existing	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52
38442	UI RCP NH FC	Generator	8500	Rest-of-Pool	CT	CT	Existing	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52
38447	Boston_PeakDR	Demand	8506	Southeast New England	MA	NEMA	Existing	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
38468	Norfolk-Walpole Co-Gen	Demand	8506	Southeast New England	MA	SEMA	Existing	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296	1.296
38475	Hoosac Wind Project	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	3.942	3.942	3.942	3.942	10.412	10.412	10.412	10.412	10.412	10.412	10.412
38480	Hubbardston SE	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	1.295	1.295	1.295	1.295	0	0	0	0	0	0	0
38483	Ngrid_SEMA_CHP	Demand	8506	Southeast New England	MA	SEMA	Existing	1.692	1.692	1.692	1.692	1.692	1.692	1.692	1.692	1.692	1.692	1.692
38487	CT_RTDR	Demand	8500	Rest-of-Pool	CT	CT	Existing	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16
38494	24 Boutillier Rd Leicester PV	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.248	0.248	0.248	0.248	0	0	0	0	0	0	0
38495	Deepwater Wind Block Island	Generator	8506	Southeast New England	RI	RI	Existing	4.689	4.689	4.689	4.689	0	0	0	0	0	0	0

38758	CT Small Gen	Demand	8500	Rest-of-Pool	CT	CT	Existing	1.944	1.944	1.944	1.944	1.944	1.944	1.944	1.944	1.944	1.944	1.944	1.944
38760	Norwich WWT	Generator	8500	Rest-of-Pool	CT	CT	Existing	2	2	2	2	2	2	2	2	2	2	2	2
38761	NEMA Small Gen	Demand	8506	Southeast New England	MA	NEMA	Existing	1.944	1.944	1.944	1.944	1.944	1.944	1.944	1.944	1.944	1.944	1.944	1.944
38789	NEMA_ActiveLM	Demand	8506	Southeast New England	MA	NEMA	Existing	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
38795	Hadley 2	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.851	0.851	0.851	0.851	0	0	0	0	0	0	0	0
38800	DRCR_Western MA_2016	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	14	14	14	14	14	14	14	14	14	14	14	14
38803	DRCR_Springfield MA_2016	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	7.805	7.805	7.805	7.805	7.805	7.805	7.805	7.805	7.805	7.805	7.805	7.805
38813	DRCR_New Hampshire_2016	Demand	8505	Northern New England	NH	NH	Existing	14.394	14.394	14.394	14.394	14.394	14.394	14.394	14.394	14.394	14.394	14.394	14.394
38815	Hubbardston PV	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.87	0.87	0.87	0.87	0	0	0	0	0	0	0	0
38833	DGSC PV405_28 Jacome Way_Middletown	Generator	8506	Southeast New England	RI	RI	Existing	0.163	0.163	0.163	0.163	0	0	0	0	0	0	0	0
38834	DGSC PV1666_179 Plain Meeting House Rd_V	Generator	8506	Southeast New England	RI	RI	Existing	0.855	0.855	0.855	0.855	0	0	0	0	0	0	0	0
38840	Maple EE CT 1718	Demand	8500	Rest-of-Pool	CT	CT	Existing	2.646	2.646	2.646	2.646	2.646	2.646	2.646	2.646	2.646	2.646	2.646	2.646
38841	Syncarpha Freetown	Generator	8506	Southeast New England	MA	SEMA	Existing	1.5	1.5	1.5	1.5	0	0	0	0	0	0	0	0
38842	DGSC PV3000_Forbes St Landfill_East Providence	Generator	8506	Southeast New England	RI	RI	Existing	1.267	1.267	1.267	1.267	0	0	0	0	0	0	0	0
38843	DGSC PV2000_338 Compass Circle_North King	Generator	8506	Southeast New England	RI	RI	Existing	0.768	0.768	0.768	0.768	0	0	0	0	0	0	0	0
38853	DGSC PV400_1 Balco Way_Cumberland	Generator	8506	Southeast New England	RI	RI	Existing	0.195	0.195	0.195	0.195	0	0	0	0	0	0	0	0
38858	DGSC PV1225_100 Dupont Dr_Providence	Generator	8506	Southeast New England	RI	RI	Existing	0.497	0.497	0.497	0.497	0	0	0	0	0	0	0	0
38860	DGSC PV450_0 Martin St_Cumberland	Generator	8506	Southeast New England	RI	RI	Existing	0.182	0.182	0.182	0.182	0	0	0	0	0	0	0	0
38861	DGSC PV225_225 Dupont Dr_Providence	Generator	8506	Southeast New England	RI	RI	Existing	0.115	0.115	0.115	0.115	0	0	0	0	0	0	0	0
38862	DGSC PV450_35 Martin St_Cumberland	Generator	8506	Southeast New England	RI	RI	Existing	0.183	0.183	0.183	0.183	0	0	0	0	0	0	0	0
38863	Syncarpha Lexington	Generator	8506	Southeast New England	MA	NEMA	Existing	0.71	0.71	0.71	0.71	0	0	0	0	0	0	0	0
38864	DGSC PV250_65 All American Way_North King	Generator	8506	Southeast New England	RI	RI	Existing	0.103	0.103	0.103	0.103	0	0	0	0	0	0	0	0
38865	DGSC PV850_582 Great Rd_North Smithfield	Generator	8506	Southeast New England	RI	RI	Existing	0.409	0.409	0.409	0.409	0	0	0	0	0	0	0	0
38867	DGSC PV300_45 Sharp Dr_Cranston	Generator	8506	Southeast New England	RI	RI	Existing	0.128	0.128	0.128	0.128	0	0	0	0	0	0	0	0
38868	DGSC PV1375_101 Peck Hill Rd_Johnston	Generator	8506	Southeast New England	RI	RI	Existing	0.44	0.44	0.44	0.44	0	0	0	0	0	0	0	0
38869	DGSC PV499_76 Silson Rd_Richmond	Generator	8506	Southeast New England	RI	RI	Existing	0.194	0.194	0.194	0.194	0	0	0	0	0	0	0	0
38871	SEMA 1 - Battery	Demand	8506	Southeast New England	MA	SEMA	Existing	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16
38873	NEMA-B 1 - Battery	Demand	8506	Southeast New England	MA	NEMA	Existing	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16
38875	NEMA-N 1 - Battery	Demand	8506	Southeast New England	MA	NEMA	Existing	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16
38877	WCMA 1 - Battery	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
38879	CT - RW	Demand	8500	Rest-of-Pool	CT	CT	Existing	11.88	11.88	11.88	11.88	11.88	11.88	11.88	11.88	11.88	11.88	11.88	11.88
38881	DGSC PV495_1720 Davisville Rd_North King	Generator	8506	Southeast New England	RI	RI	Existing	0.197	0.197	0.197	0.197	0	0	0	0	0	0	0	0
38883	DGSC PV1170_23 Theodore Foster Rd_Foster	Generator	8506	Southeast New England	RI	RI	Existing	0.427	0.427	0.427	0.427	0	0	0	0	0	0	0	0
38884	DGSC PV912_260 South County Trail_Exeter	Generator	8506	Southeast New England	RI	RI	Existing	0.444	0.444	0.444	0.444	0	0	0	0	0	0	0	0
38885	DGSC PV1000_90 Tift Rd_North Smithfield	Generator	8506	Southeast New England	RI	RI	Existing	0.432	0.432	0.432	0.432	0	0	0	0	0	0	0	0
38888	Patterson Rd 1 Shirley PV	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.432	0.432	0.432	0.432	0	0	0	0	0	0	0	0
38889	Patterson Rd 2 Shirley PV	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.229	0.229	0.229	0.229	0	0	0	0	0	0	0	0
38927	MAPLE EE ME 1718	Demand	8505	Northern New England	ME	ME	Existing	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691
38928	MAPLE EE NEMA 1718	Demand	8506	Southeast New England	MA	NEMA	Existing	1.922	1.922	1.922	1.922	1.922	1.922	1.922	1.922	1.922	1.922	1.922	1.922
38929	MAPLE EE NH 1718	Demand	8505	Northern New England	NH	NH	Existing	1.815	1.815	1.815	1.815	1.815	1.815	1.815	1.815	1.815	1.815	1.815	1.815
38931	MAPLE EE RI 1718	Demand	8506	Southeast New England	RI	RI	Existing	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
38932	MAPLE EE VT 1718	Demand	8505	Northern New England	VT	VT	Existing	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275
38933	MAPLE EE WCMA 1718	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	1.362	1.362	1.362	1.362	1.362	1.362	1.362	1.362	1.362	1.362	1.362	1.362
38934	MAPLE EE SEMA 1718	Demand	8506	Southeast New England	MA	SEMA	Existing	1.306	1.306	1.306	1.306	1.306	1.306	1.306	1.306	1.306	1.306	1.306	1.306
38943	Athens Energy LLC_1	Generator	8505	Northern New England	ME	ME	Existing	7	7	7	7	7	7	7	7	7	7	7	7
38944	Barre I	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.627	0.627	0.627	0.627	0	0	0	0	0	0	0	0
38945	Gill	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	1.147	1.147	1.147	1.147	0	0	0	0	0	0	0	0
38956	CentralMA_DR	Demand	8500	Rest-of-Pool	MA	WCMA	Existing	2.376	2.376	2.376	2.376	2.376	2.376	2.376	2.376	2.376	2.376	2.376	2.376
38957	SEMA_DR	Demand	8506	Southeast New England	MA	SEMA	Existing	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
38958	RI_DR	Demand	8506	Southeast New England	RI	RI	Existing	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
38961	Fitchburg Solar, LLC	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.209	0.209	0.209	0.209	0	0	0	0	0	0	0	0
38962	Ashby 1 Solar	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.374	0.374	0.374	0.374	0	0	0	0	0	0	0	0
38963	Ashby 2 Solar	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.422	0.422	0.422	0.422	0	0	0	0	0	0	0	0
38964	NorthernCT_DRCR	Demand	8500	Rest-of-Pool	CT	CT	Existing	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9
38968	DR_WesternCT	Demand	8500	Rest-of-Pool	CT	CT	Existing	17.079	17.079	17.079	17.079	17.079	17.079	17.079	17.079	17.079	17.079	17.079	17.079
38970	Barre II	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	0.656	0.656	0.656	0.656	0	0	0	0	0	0	0	0
38971	Seacoast_12	Demand	8505	Northern New England	NH	NH	Existing	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
38973	Partners Healthcare Sandwich	Generator	8506	Southeast New England	MA	SEMA	Existing	0.432	0.432	0.432	0.432	0	0	0	0	0	0	0	0
40595	Southwick	Generator	8500	Rest-of-Pool	MA	WCMA	Existing	1.867	1.867	1.867	1.867	0	0	0	0	0	0	0	0
40597	DRCR_Northwest VT_2017	Demand	8505	Northern New England	VT	VT	Existing	7.323	7.323	7.323	7.323	7.323	7.323	7.323	7.323	7.323	7.323	7.323	7.323
40599	Duxbury Chandler	Generator	8506	Southeast New England	MA	SEMA	Existing	0.109	0.109	0.109	0.109	0	0	0	0	0	0	0	0

[illegible]

38447	Boston_PeakDR	Demand	8506	Southeast New England	MA	NEMA	New	12.96	12.96	12.96	12.96	12.96	12.96	12.96	12.96	12.96	12.96	12.96
38523	CT 2B - Auto	Demand	8500	Rest-of-Pool	CT	CT	New	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36	10.36
38663	Killingly Energy Center	Generator	8500	Rest-of-Pool	CT	CT	New	631.955	631.955	631.955	631.955	631.955	631.955	631.955	631.955	631.955	631.955	631.955
38693	NEMA_ActiveDR	Demand	8506	Southeast New England	MA	NEMA	New	7.031	7.031	7.031	7.031	7.031	7.031	7.031	7.031	7.031	7.031	7.031
38694	RTDR_Maine	Demand	8505	Northern New England	ME	ME	New	0	0	0	0	0	0	0	0	0	0	0
38787	CT On-Peak Solar	Demand	8500	Rest-of-Pool	CT	CT	New	27.659	27.659	27.659	27.659	27.659	27.659	10.249	10.249	10.249	10.249	27.659
38789	NEMA_ActiveLM	Demand	8506	Southeast New England	MA	NEMA	New	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16
38800	DRCR_Western MA_2016	Demand	8500	Rest-of-Pool	MA	WCMA	New	0	0	0	0	0	0	0	0	0	0	0
38803	DRCR_Springfield MA_2016	Demand	8500	Rest-of-Pool	MA	WCMA	New	0	0	0	0	0	0	0	0	0	0	0
38823	Coolidge Solar	Generator	8505	Northern New England	VT	VT	New	6.85	6.85	6.85	6.85	0	0	0	0	0	0	0
38824	Nutmeg Solar	Generator	8500	Rest-of-Pool	MA	WCMA	New	0	0	0	0	0	0	0	0	0	0	0
38825	Sanford Airport Solar	Generator	8505	Northern New England	ME	ME	New	0	0	0	0	0	0	0	0	0	0	0
38826	Quinebaug Solar	Generator	8500	Rest-of-Pool	CT	CT	New	0	0	0	0	0	0	0	0	0	0	0
38831	Montague Site 36-Grosolar PV	Generator	8500	Rest-of-Pool	MA	WCMA	New	1.28	1.28	1.28	1.28	0	0	0	0	0	0	0
38835	Lee Site 31-Conti PV	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.375	0.375	0.375	0.375	0	0	0	0	0	0	0
38836	Pittsfield 44-M&W PV	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.197	0.197	0.197	0.197	0	0	0	0	0	0	0
38838	Farmington Solar	Generator	8505	Northern New England	ME	ME	New	0	0	0	0	0	0	0	0	0	0	0
38840	Maple EE CT 1718	Demand	8500	Rest-of-Pool	CT	CT	New	0	0	0	0	0	0	0	0	0	0	0
38848	Constitution Solar	Generator	8500	Rest-of-Pool	CT	CT	New	0	0	0	0	0	0	0	0	0	0	0
38849	W Portsmouth Solar	Generator	8505	Northern New England	NH	NH	New	0	0	0	0	0	0	0	0	0	0	0
38871	SEMA 1 - Battery	Demand	8506	Southeast New England	MA	SEMA	New	0	0	0	0	0	0	0	0	0	0	0
38872	SEMA 7 - Battery	Demand	8506	Southeast New England	MA	SEMA	New	0	0	0	0	0	0	0	0	0	0	0
38873	NEMA-B 1 - Battery	Demand	8506	Southeast New England	MA	NEMA	New	0	0	0	0	0	0	0	0	0	0	0
38874	NEMA-B 7 - Battery	Demand	8506	Southeast New England	MA	NEMA	New	0	0	0	0	0	0	0	0	0	0	0
38875	NEMA-N 1 - Battery	Demand	8506	Southeast New England	MA	NEMA	New	0	0	0	0	0	0	0	0	0	0	0
38876	NEMA-N 7 - Battery	Demand	8506	Southeast New England	MA	NEMA	New	0	0	0	0	0	0	0	0	0	0	0
38877	WCMA 1 - Battery	Demand	8500	Rest-of-Pool	MA	WCMA	New	0	0	0	0	0	0	0	0	0	0	0
38904	NEMA DG	Demand	8506	Southeast New England	MA	NEMA	New	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62
38905	Connecticut DG	Demand	8500	Rest-of-Pool	CT	CT	New	3.402	3.402	3.402	3.402	3.402	3.402	3.402	3.402	3.402	3.402	3.402
38927	MAPLE EE ME 1718	Demand	8505	Northern New England	ME	ME	New	0	0	0	0	0	0	0	0	0	0	0
38928	MAPLE EE NEMA 1718	Demand	8506	Southeast New England	MA	NEMA	New	0	0	0	0	0	0	0	0	0	0	0
38929	MAPLE EE NH 1718	Demand	8505	Northern New England	NH	NH	New	0	0	0	0	0	0	0	0	0	0	0
38931	MAPLE EE RI 1718	Demand	8506	Southeast New England	RI	RI	New	0	0	0	0	0	0	0	0	0	0	0
38932	MAPLE EE VT 1718	Demand	8505	Northern New England	VT	VT	New	0	0	0	0	0	0	0	0	0	0	0
38933	MAPLE EE WCMA 1718	Demand	8500	Rest-of-Pool	MA	WCMA	New	0	0	0	0	0	0	0	0	0	0	0
38934	MAPLE EE SEMA 1718	Demand	8506	Southeast New England	MA	SEMA	New	0	0	0	0	0	0	0	0	0	0	0
38956	CentralMA_DR	Demand	8500	Rest-of-Pool	MA	WCMA	New	0.756	0.756	0.756	0.756	0.756	0.756	0.756	0.756	0.756	0.756	0.756
38964	NorthernCT_DRCR	Demand	8500	Rest-of-Pool	CT	CT	New	0	0	0	0	0	0	0	0	0	0	0
38965	DRCR_Eastern_CT	Demand	8500	Rest-of-Pool	CT	CT	New	0	0	0	0	0	0	0	0	0	0	0
38966	DRCR_NorwalkStamford_2017	Demand	8500	Rest-of-Pool	CT	CT	New	0	0	0	0	0	0	0	0	0	0	0
38968	DR_WesternCT	Demand	8500	Rest-of-Pool	CT	CT	New	0	0	0	0	0	0	0	0	0	0	0
38969	CPLN ME Solar OP	Demand	8505	Northern New England	ME	ME	New	3.38	3.38	3.38	3.38	3.38	3.38	0	0	0	3.38	3.38
38971	Seacoast_12	Demand	8505	Northern New England	NH	NH	New	0	0	0	0	0	0	0	0	0	0	0
38972	CPLN MA NEMA Solar OP	Demand	8506	Southeast New England	MA	NEMA	New	0.725	0.725	0.725	0.725	0.725	0.725	0	0	0	0.725	0.725
38974	CPLN RI Solar OP	Demand	8506	Southeast New England	RI	RI	New	2.29	2.29	2.29	2.29	2.29	2.29	0	0	0	2.29	2.29
40594	SEMA Solar DG	Demand	8506	Southeast New England	MA	SEMA	New	5.026	5.026	5.026	5.026	5.026	5.026	0	0	0	5.026	5.026
40596	CPLN MA WC Solar OP	Demand	8500	Rest-of-Pool	MA	WCMA	New	7.174	7.174	7.174	7.174	7.174	7.174	0	0	0	7.174	7.174
40597	DRCR_Northwest VT_2017	Demand	8505	Northern New England	VT	VT	New	0	0	0	0	0	0	0	0	0	0	0
40602	DRCR_Vermont	Demand	8505	Northern New England	VT	VT	New	0	0	0	0	0	0	0	0	0	0	0
40610	Seneca Grandfathered FCA13	Import	8500	Rest-of-Pool			New	45	45	45	45	45	45	45	45	45	45	45
40611	Seneca NonGrandfathered FCA13	Import	8500	Rest-of-Pool			New	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
40613	Fusion Solar Center LLC	Generator	8500	Rest-of-Pool	CT	CT	New	7.44	7.44	7.44	7.44	0	0	0	0	0	0	0
40614	LIEVRE RIVER Import 2022-23	Import	8500	Rest-of-Pool			New	45	45	45	45	0	0	0	0	0	0	0
40615	Hatfield Solar PV	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.63	0.63	0.63	0.63	0	0	0	0	0	0	0
40616	Pawcatuck Solar Center	Generator	8500	Rest-of-Pool	CT	CT	New	9	9	9	9	0	0	0	0	0	0	0
40617	Sunderland PV Solar	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.175	0.175	0.175	0.175	0	0	0	0	0	0	0
40618	Greenfield Solar PV	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.376	0.376	0.376	0.376	0	0	0	0	0	0	0
40619	Southampton Solar PV	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.347	0.347	0.347	0.347	0	0	0	0	0	0	0
40620	Savoy Solar PV	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.359	0.359	0.359	0.359	0	0	0	0	0	0	0
40621	Hampden Solar PV	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.59	0.59	0.59	0.59	0	0	0	0	0	0	0
40622	Springfield Solar PV	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.712	0.712	0.712	0.712	0	0	0	0	0	0	0

40623	East Longmeadow Solar PV	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.842	0.842	0.842	0.842	0	0	0	0	0	0	0	0
40624	East Springfield Solar PV	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.261	0.261	0.261	0.261	0	0	0	0	0	0	0	0
40625	Ludlow Site 72 - Conti	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.264	0.264	0.264	0.264	0	0	0	0	0	0	0	0
40626	Plymouth Solar PV	Generator	8506	Southeast New England	MA	SEMA	New	0.229	0.229	0.229	0.229	0	0	0	0	0	0	0	0
40627	New Bedford Solar PV	Generator	8506	Southeast New England	MA	SEMA	New	0.169	0.169	0.169	0.169	0	0	0	0	0	0	0	0
40629	Wareham Solar PV	Generator	8506	Southeast New England	MA	SEMA	New	0.553	0.553	0.553	0.553	0	0	0	0	0	0	0	0
40630	Hinsdale Solar PV	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.365	0.365	0.365	0.365	0	0	0	0	0	0	0	0
40631	Southwick Solar PV	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.823	0.823	0.823	0.823	0	0	0	0	0	0	0	0
40632	RI_23_DGSC PV_200 Frenchtown Rd_North K	Generator	8506	Southeast New England	RI	RI	New	0.552	0.552	0.552	0.552	0	0	0	0	0	0	0	0
40633	Roseton 1 22-23	Import	8500	Rest-of-Pool			New	0	0	0	0	0	0	0	0	0	0	0	0
40634	Roseton 2 22-23	Import	8500	Rest-of-Pool			New	0	0	0	0	0	0	0	0	0	0	0	0
40635	Rensselaer 22-23	Import	8500	Rest-of-Pool			New	77	77	77	77	77	77	77	77	77	77	77	77
40636	Chaffee FCA13	Import	8500	Rest-of-Pool			New	6	6	6	6	6	6	6	6	6	6	6	6
40637	Millseat FCA13	Import	8500	Rest-of-Pool			New	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
40639	Oneida Herkimer FCA13	Import	8500	Rest-of-Pool			New	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
40641	RI_25_RE Growth PV_50 Snell Rd_Little Com	Generator	8506	Southeast New England	RI	RI	New	0.158	0.158	0.158	0.158	0	0	0	0	0	0	0	0
40642	RI_26_RE Growth PV_451 Putnam Pike_Gloc	Generator	8506	Southeast New England	RI	RI	New	0.112	0.112	0.112	0.112	0	0	0	0	0	0	0	0
40643	Empire_CC	Import	8500	Rest-of-Pool			New	0	0	0	0	0	0	0	0	0	0	0	0
40644	RI_27_RE Growth PV_304 Progress Rd_Tivert	Generator	8506	Southeast New England	RI	RI	New	0.103	0.103	0.103	0.103	0	0	0	0	0	0	0	0
40647	RI_28_RE Growth PV_401 Snake Hill Rd_Gloc	Generator	8506	Southeast New England	RI	RI	New	0.117	0.117	0.117	0.117	0	0	0	0	0	0	0	0
40648	Alton Road Solar Project	Generator	8506	Southeast New England	RI	RI	New	0	0	0	0	0	0	0	0	0	0	0	0
40651	Erie Boulevard Hydro Import 2022-23	Import	8500	Rest-of-Pool			New	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
40652	Carr Street Generating FCA 2022-23	Import	8500	Rest-of-Pool			New	0	0	0	0	0	0	0	0	0	0	0	0
40653	Madison BESS	Generator	8505	Northern New England	ME	ME	New	4.99	4.99	4.99	4.99	4.99	4.99	4.99	4.99	4.99	4.99	4.99	4.99
40654	RI_29_RE Growth PV_44 Bank St_Hopkinton	Generator	8506	Southeast New England	RI	RI	New	0.227	0.227	0.227	0.227	0	0	0	0	0	0	0	0
40655	RI_33_RE Growth PV_200 Frenchtown Rd_Ng	Generator	8506	Southeast New England	RI	RI	New	0.426	0.426	0.426	0.426	0	0	0	0	0	0	0	0
40656	RI_34_RE Growth PV_0 Danielson Pike_Provid	Generator	8506	Southeast New England	RI	RI	New	1.183	1.183	1.183	1.183	0	0	0	0	0	0	0	0
40658	Vineyard Wind	Generator	8506	Southeast New England	MA	SEMA	New	53.805	53.805	53.805	53.805	82.383	82.383	82.383	82.383	82.383	82.383	82.383	82.383
40659	RI_36_RE Growth PV_540 Nooseneck Hill Rd	Generator	8506	Southeast New England	RI	RI	New	0.377	0.377	0.377	0.377	0	0	0	0	0	0	0	0
40664	Syncarpha Massachusetts	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.67	0.67	0.67	0.67	0	0	0	0	0	0	0	0
40666	Cranberry Point Battery Energy Storage	Generator	8506	Southeast New England	MA	SEMA	New	0	0	0	0	0	0	0	0	0	0	0	0
40667	RI_42_RE Growth PV_320 Compass Circle_Ng	Generator	8506	Southeast New England	RI	RI	New	0.464	0.464	0.464	0.464	0	0	0	0	0	0	0	0
40668	Georges River Energy, LLC	Generator	8505	Northern New England	ME	ME	New	0	0	0	0	0	0	0	0	0	0	0	0
40670	MacDill Solar	Generator	8500	Rest-of-Pool	MA	WCMA	New	0	0	0	0	0	0	0	0	0	0	0	0
40675	RI_50_RE Growth PV_722 Main St_Hopkinton	Generator	8506	Southeast New England	RI	RI	New	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0
40676	RI_52_RE Growth PV_139 Heaton Orchard Rd	Generator	8506	Southeast New England	RI	RI	New	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0
40683	NY_2022-23_01	Import	8500	Rest-of-Pool			New	2	2	2	2	2	2	2	2	2	2	2	2
40685	NY_2022-23_02	Import	8500	Rest-of-Pool			New	0	0	0	0	0	0	0	0	0	0	0	0
40686	NY_2022-23_03	Import	8500	Rest-of-Pool			New	0	0	0	0	0	0	0	0	0	0	0	0
40687	NY_2022-23_04	Import	8500	Rest-of-Pool			New	0	0	0	0	0	0	0	0	0	0	0	0
40689	NY_2022-23_06	Import	8500	Rest-of-Pool			New	0	0	0	0	0	0	0	0	0	0	0	0
40690	NY_2022-23_07	Import	8500	Rest-of-Pool			New	0	0	0	0	0	0	0	0	0	0	0	0
40695	RI_31_RE Growth PV_1275 Seven Mile Rd_Cr	Generator	8506	Southeast New England	RI	RI	New	0.112	0.112	0.112	0.112	0	0	0	0	0	0	0	0
40696	RI_32_RE Growth PV_1275 Seven Mile Rd_Cr	Generator	8506	Southeast New England	RI	RI	New	0.112	0.112	0.112	0.112	0	0	0	0	0	0	0	0
40698	Syncarpha North Adams	Generator	8500	Rest-of-Pool	MA	WCMA	New	1	1	1	1	0	0	0	0	0	0	0	0
40700	Syncarpha Bondsville	Generator	8500	Rest-of-Pool	MA	WCMA	New	1.36	1.36	1.36	1.36	0	0	0	0	0	0	0	0
40706	HQ_HG_Yearly_22-23	Import	8505	Northern New England			New	51	51	51	51	51	51	51	51	51	51	51	51
40708	Davenport Solar	Generator	8505	Northern New England	VT	VT	New	0	0	0	0	0	0	0	0	0	0	0	0
40709	HQ_NB_Yearly_22-23	Import	8505	Northern New England			New	35	35	35	35	35	35	35	35	35	35	35	35
40711	HQ_NY_Yearly_22-23	Import	8500	Rest-of-Pool			New	300	300	300	300	300	300	300	300	300	300	300	300
40712	Randolph Ctr. Solar	Generator	8505	Northern New England	VT	VT	New	0	0	0	0	0	0	0	0	0	0	0	0
40714	HQ_PII_Yearly_22-23	Import	8500	Rest-of-Pool			New	386	386	386	386	386	386	386	386	386	386	386	386
40716	Chinook Solar Resource	Generator	8505	Northern New England	NH	NH	New	0	0	0	0	0	0	0	0	0	0	0	0
40717	Battery Storage	Generator	8506	Southeast New England	MA	SEMA	New	0	0	0	0	0	0	0	0	0	0	0	0
40718	RI_30_RE Growth PV_1378 Snake Hill Rd_Glo	Generator	8506	Southeast New England	RI	RI	New	0.115	0.115	0.115	0.115	0	0	0	0	0	0	0	0
40720	Saugus River Battery Energy Storage	Generator	8506	Southeast New England	MA	NEMA	New	0	0	0	0	0	0	0	0	0	0	0	0
40728	Bayside 2022-23	Import	8505	Northern New England			New	65	65	65	65	65	65	65	65	65	65	65	65
40729	Ballston Grid, LLC	Generator	8500	Rest-of-Pool	MA	WCMA	New	0	0	0	0	0	0	0	0	0	0	0	0
40730	Bethlehem	Import	8500	Rest-of-Pool			New	0	0	0	0	0	0	0	0	0	0	0	0
40732	Three Corners Solar	Generator	8505	Northern New England	ME	ME	New	85.2	85.2	85.2	85.2	0	0	0	0	0	0	0	0
40735	Control Area Backed 2022-2023	Import	8505	Northern New England			New	84	84	84	84	84	84	84	84	84	84	84	84

40736	Syncarpha Billerica	Generator	8500	Rest-of-Pool	MA	WCMA	New	1.6	1.6	1.6	1.6	0	0	0	0	0	0	0	0	0	0	0
40738	NY_2022-23_13	Import	8500	Rest-of-Pool			New	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40739	NY_2022-23_14	Import	8500	Rest-of-Pool			New	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40740	NY_2022-23_15	Import	8500	Rest-of-Pool			New	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40741	NY_2022-23_16	Import	8500	Rest-of-Pool			New	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40744	RI_43_RE Growth PV_582 Great Rd_North Sm	Generator	8506	Southeast New England	RI	RI	New	0.392	0.392	0.392	0.392	0	0	0	0	0	0	0	0	0	0	0
40746	Syncarpha Hancock I	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.8	0.8	0.8	0.8	0	0	0	0	0	0	0	0	0	0	0
40747	Cranston Solar Project	Generator	8506	Southeast New England	RI	RI	New	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40749	Syncarpha Hancock II	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.8	0.8	0.8	0.8	0	0	0	0	0	0	0	0	0	0	0
40750	TFCP	Generator	8500	Rest-of-Pool	CT	CT	New	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40751	Syncarpha Hancock III	Generator	8500	Rest-of-Pool	MA	WCMA	New	0.4	0.4	0.4	0.4	0	0	0	0	0	0	0	0	0	0	0
40763	RAH 22-23	Import	8505	Northern New England			New	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40765	CVEC EDGARTOWN - 1886	Generator	8506	Southeast New England	MA	SEMA	New	0.508	0.508	0.508	0.508	0	0	0	0	0	0	0	0	0	0	0
40766	CVEC BARNSTABLE FIRE 2423	Generator	8506	Southeast New England	MA	SEMA	New	0.155	0.155	0.155	0.155	0	0	0	0	0	0	0	0	0	0	0
40767	CVEC DY HIGH SCHOOL 2175 2173	Generator	8506	Southeast New England	MA	SEMA	New	0.439	0.439	0.439	0.439	0	0	0	0	0	0	0	0	0	0	0
40768	CVEC EASTHAM 1915	Generator	8506	Southeast New England	MA	SEMA	New	0.18	0.18	0.18	0.18	0	0	0	0	0	0	0	0	0	0	0
40769	CVEC MARGUERITE SMALL SCHOOL 2168	Generator	8506	Southeast New England	MA	SEMA	New	0.333	0.333	0.333	0.333	0	0	0	0	0	0	0	0	0	0	0
40770	CVEC MARSTON MILLS 1964 1965	Generator	8506	Southeast New England	MA	SEMA	New	1.668	1.668	1.668	1.668	0	0	0	0	0	0	0	0	0	0	0
40771	CVEC WEST TISBURY 2189	Generator	8506	Southeast New England	MA	SEMA	New	0.283	0.283	0.283	0.283	0	0	0	0	0	0	0	0	0	0	0
40772	CVEC VINEYARD HAVEN 1923	Generator	8506	Southeast New England	MA	SEMA	New	0.47	0.47	0.47	0.47	0	0	0	0	0	0	0	0	0	0	0
40773	CVEC ORLEANS 2217	Generator	8506	Southeast New England	MA	SEMA	New	0.222	0.222	0.222	0.222	0	0	0	0	0	0	0	0	0	0	0
40774	CVEC HYANNIS 2181	Generator	8506	Southeast New England	MA	SEMA	New	2.294	2.294	2.294	2.294	0	0	0	0	0	0	0	0	0	0	0
40775	CVEC CHATHAM 1911	Generator	8506	Southeast New England	MA	SEMA	New	0.696	0.696	0.696	0.696	0	0	0	0	0	0	0	0	0	0	0
40776	CVEC BREWSTER 1912	Generator	8506	Southeast New England	MA	SEMA	New	0.492	0.492	0.492	0.492	0	0	0	0	0	0	0	0	0	0	0
40777	CVEC HARWICH - 1913	Generator	8506	Southeast New England	MA	SEMA	New	1.797	1.797	1.797	1.797	0	0	0	0	0	0	0	0	0	0	0
40778	CVEC EDGARTOWN - 1887	Generator	8506	Southeast New England	MA	SEMA	New	0.548	0.548	0.548	0.548	0	0	0	0	0	0	0	0	0	0	0
40779	Springfield_DR	Demand	8500	Rest-of-Pool	MA	WCMA	New	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
40783	CT RESJ On-Peak	Demand	8500	Rest-of-Pool	CT	CT	New	22.356	22.356	22.356	22.356	22.356	22.356	22.356	0	0	0	0	0	22.356	22.356	22.356
40785	Vermont Solar On-Peak	Demand	8505	Northern New England	VT	VT	New	1.188	1.188	1.188	1.188	1.188	1.188	0	0	0	0	0	1.188	1.188	1.188	1.188
40786	Cambridge Park Solar	Generator	8506	Southeast New England	MA	NEMA	New	0.186	0.186	0.186	0.186	0	0	0	0	0	0	0	0	0	0	0
40789	Maxwell Green Solar	Generator	8506	Southeast New England	MA	NEMA	New	0.104	0.104	0.104	0.104	0	0	0	0	0	0	0	0	0	0	0
40796	Charles Moore Arena	Generator	8506	Southeast New England	MA	SEMA	New	0.12	0.12	0.12	0.12	0	0	0	0	0	0	0	0	0	0	0
40797	Holliston Field 2	Generator	8506	Southeast New England	MA	SEMA	New	0.12	0.12	0.12	0.12	0	0	0	0	0	0	0	0	0	0	0
40800	Hayden Rowe Solar Farm	Generator	8506	Southeast New England	MA	SEMA	New	0.101	0.101	0.101	0.101	0	0	0	0	0	0	0	0	0	0	0
40804	NH-LR	Demand	8505	Northern New England	NH	NH	New	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
40809	SR Aggregation VT 2	Demand	8505	Northern New England	VT	VT	New	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
40811	SR Aggregation NH 4	Demand	8505	Northern New England	NH	NH	New	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
40815	SR Aggregation MA 11	Demand	8506	Southeast New England	MA	NEMA	New	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
40817	SR Aggregation MA 13	Demand	8506	Southeast New England	MA	SEMA	New	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
40819	SR Aggregation CT 15	Demand	8500	Rest-of-Pool	CT	CT	New	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40822	SR Aggregation RI 19	Demand	8506	Southeast New England	RI	RI	New	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Attachment B

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

ISO New England Inc.

) Docket No. ER19-____-000

TESTIMONY OF STEPHEN J. ROURKE

1 **Q: PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.**

2 A: My name is Stephen J. Rourke. I am Vice President of System Planning with ISO
3 New England Inc. (the “ISO”). My business address is One Sullivan Road,
4 Holyoke, Massachusetts 01040.

5

6 **Q: PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**
7 **WORK EXPERIENCE.**

8 A: I have a B.S. in Electrical Engineering from Worcester Polytechnic Institute and a
9 M.B.A. from Western New England University. In my current position as Vice
10 President of System Planning, I am responsible for planning for a reliable New
11 England bulk power system according to prescribed reliability standards and
12 guidelines of the Northeast Power Coordinating Council (“NPCC”) and the North
13 American Electric Reliability Corporation (“NERC”); overseeing development of
14 the annual Regional System Plan; analysis and approval of new transmission and
15 generation interconnection projects, including the approval of qualification of
16 generating capacity resources, demand resources, and import capacity resources
17 to participate in the Forward Capacity Auction¹ (“FCA”); implementing the

¹ Capitalized terms used but not otherwise defined in this testimony have the meanings ascribed to them in the ISO’s Transmission, Markets and Services Tariff (the “Tariff”).

1 Federal Energy Regulatory Commission (“Commission” or “FERC”) approved
2 generator interconnection process; developing the ISO’s findings for
3 Transmission Cost Allocation; and supporting the capacity market in New
4 England.

5
6 Previously, I served as the ISO’s Director, Reliability and Operations Services. I
7 was also a former manager of the Rhode Island—Eastern Massachusetts—
8 Vermont Energy Control (“REMVEC”) center in Westborough, Massachusetts
9 and former manager of marketing operations for Northeast Utilities/Select Energy
10 Inc. in Berlin, Connecticut. I have over 40 years of experience in the operations
11 and planning of the New England bulk power system.

12
13 **Q: WHAT ARE THE PURPOSES OF YOUR TESTIMONY?**

14 A: My testimony has two purposes. The first purpose of my testimony is to certify
15 that resources participating in the thirteenth FCA, which was held on February 4,
16 2019, were properly qualified in accordance with Section III.13.1 of the Tariff.
17 Section III.13.8.2 (b) of the Tariff requires that documentation regarding the
18 competitiveness of the FCA be filed with the Commission. Section III.13.8.2 (b)
19 states that such documentation may include a certification from the ISO that all
20 entities offering and bidding in the FCA were properly qualified in accordance
21 with Section III.13.1 of the Tariff. My testimony provides such certification.

22
23 The second purpose of my testimony is to explain the ISO’s reliability review of

1 de-list bids submitted in the thirteenth FCA.

2

3 **Q: WERE ALL RESOURCES OFFERING AND BIDDING IN THE**
4 **THIRTEENTH FCA HELD ON FEBRUARY 4, 2019 PROPERLY**
5 **QUALIFIED IN ACCORDANCE WITH TARIFF SECTION III.13.1?**

6 A: Yes. Section III.13.1 of the Tariff sets forth the process for qualification in the
7 FCA. In my role as Vice President of System Planning, I was responsible for
8 overseeing the qualification of all resources in the thirteenth FCA held on
9 February 4, 2019. I certify that all resources offering and bidding in the thirteenth
10 FCA were properly qualified in accordance with Section III.13.1 of the Tariff. In
11 a November 6, 2018 informational filing with the Commission, the ISO provided
12 resources qualified to participate in the thirteenth FCA.² The Commission
13 accepted the Informational Filing in a letter order dated December 19, 2018.

14

15 **Q: HOW ARE DE-LIST BIDS USED IN THE FCA?**

16 A: Under the Tariff, all Existing Capacity Resources participate in the FCA as price-
17 takers, unless the resource submits a de-list bid.³

18

19 **Q: WHAT WAS YOUR ROLE IN THE RELIABILITY REVIEW OF THE**
20 **VARIOUS DE-LIST BIDS?**

² *ISO New England Inc.*, Informational Filing for Qualification in the Forward Capacity Market, Docket No. ER19-295-000 (filed November 6, 2018) (“Informational Filing”).

³ Section III.13.2.3.2(c) of the Tariff.

1 A: As the Vice President of System Planning, I oversaw the reliability review of all
2 submitted de-list bids.

3

4 **Q: WHAT TYPES OF DE-LIST BIDS DID THE ISO REVIEW?**

5 A: There are five different types of de-list bids that are reviewed for reliability:
6 Permanent De-List Bids, Retirement De-List Bids, Static De-List Bids, Export
7 De-List Bids, and Dynamic De-List Bids. With the exception of Dynamic De-
8 List Bids,⁴ all de-list bids are submitted and reviewed for reliability in advance of
9 the FCA.

10

11 **Q: HOW MANY TYPES OF REVIEW DOES THE ISO PERFORM ON DE-**
12 **LIST BIDS?**

13 A: There are two types of review performed by the ISO on the de-list bids. I explain
14 each of those below.

15

16 **Q: PLEASE EXPLAIN THE FIRST TYPE OF REVIEW THAT THE ISO**
17 **PERFORMS ON DE-LIST BIDS.**

18 A: Pursuant to Section III.13.1.2.3.2 of the Tariff, prior to the auction, the ISO's
19 Internal Market Monitor ("IMM") reviews Export De-List Bids and Static De-List
20 Bids submitted above the Dynamic De-List Bid threshold, which was set at
21 \$4.30/kW-month for the thirteenth FCA, to determine whether the bids are

⁴ Dynamic De-List Bids are reviewed for reliability as a part of the real-time auction process. See Sections III.13.2.3.2(d) and 13.2.5.2.5 of the Tariff.

1 consistent with the resource's net risk-adjusted going forward and opportunity
2 costs. This review is not performed for Dynamic De-List Bids, which are
3 submitted during the auction itself, if the price drops below the Dynamic De-List
4 Bid threshold (\$4.30/kW-month for the thirteenth FCA).

5
6 In addition, prior to the auction, the IMM reviews all submitted Permanent and
7 Retirement De-List Bids regardless of price, and a filing was made on July 20,
8 2018 (Docket No. ER18-2047-000) indicating, on a confidential basis: (i) the
9 IMM's determination with respect to each Permanent De-List Bid and Retirement
10 De-List Bid, (ii) supporting documentation for each determination, (iii) the
11 capacity that will permanently de-list or retire prior to the FCA, and (iv) whether
12 capacity suppliers that submitted the bids have elected to conditionally or
13 unconditionally retire the capacity pursuant to Section III.13.1.2.4.1.⁵

14
15 **Q: PLEASE EXPLAIN THE SECOND TYPE OF REVIEW THAT THE ISO**
16 **PERFORMS ON DE-LIST BIDS.**

17 A: Pursuant to Section III.13.2.5.2.5 of the Tariff and ISO New England Planning
18 Procedure No. 10 – Planning Procedure to Support the Forward Capacity Market,
19 the ISO reviews each Retirement De-List Bid, Permanent De-List Bid, Export De-
20 List Bid, Administrative Export De-List Bid, and Static De-List Bid to determine
21 if the capacity associated with the bid is needed for local reliability during the
22 Capacity Commitment Period associated with the FCA. The Tariff provides that

⁵ The Commission accepted the filing in a letter order dated November 13, 2018.

1 capacity will be needed for local reliability if the absence of that capacity would
2 result in violation of any NERC, NPCC, or ISO criteria.⁶ If the capacity
3 associated with the de-list bid is determined not to be needed for local reliability,
4 and the auction price falls below the de-list bid price, the capacity associated with
5 the bid is removed from the auction.

6

7 **Q: FOR THE THIRTEENTH FCA, HOW MANY DE-LIST BIDS DID THE**
8 **ISO REVIEW FOR RELIABILITY?**

9 A: The ISO reviewed one Permanent De-List Bid totaling approximately 30 MW and
10 eight Retirement De-List Bids totaling approximately 587 MW.⁷ A total of 3,223
11 MW of pre-auction Static De-List Bids were submitted. However, pursuant to
12 Tariff Section III.13.1.2.3.1.1, prior to the auction, participants elected to
13 withdraw approximately 2,554 MW of their submitted Static De-List Bids. As a
14 result, the ISO reviewed 669 MW of Static De-List Bids. Finally, no Export De-
15 List Bids or Administrative Export De-List Bids were submitted for the thirteenth
16 FCA.

17

18 During the fourth round of the auction where the price fell below \$4.30/kW-
19 month (*i.e.*, the threshold for review of Dynamic De-List Bids prescribed for the

⁶ Section III.13.2.5.2.5 of the Tariff.

⁷ The totals noted above do not include two Permanent De-List Bids and one Retirement De-List Bid for resources that elected to not be reviewed for reliability (*i.e.* those three resources elected to be unconditionally retired). In addition, the totals noted above do not include the Retirement De-List Bids that Exelon Generation Company, LLC submitted for the Mystic 8 and 9 generating facilities. As accepted by the Commission, the Retirement De-List Bids for Mystic 8 and 9 were rejected for fuel security reasons. *See, ISO New England Inc.*, 164 FERC ¶ 61,003 at P 49 (2018).

1 thirteenth FCA), 53 Dynamic De-List Bids were submitted, seeking to delist
2 approximately 2,542 MW.⁸ However, during the course of the auction, the
3 auction closing price was estimated to be \$3.799/kW-month, and, as a result,
4 approximately 33 Dynamic De-List Bids above the anticipated closing price,
5 totaling 867 MW, were reviewed for reliability.

6

7 **Q: DID THE ISO REVIEW SHOW THE NEED TO RETAIN FOR**
8 **RELIABILITY ANY RESOURCES THAT SUBMITTED DE-LIST BIDS**
9 **FOR THE THIRTEENTH FCA?**

10 **A:** No. The ISO's review of de-list bids did not show the need to retain for reliability
11 any resources that submitted de-list bids for the thirteenth FCA. Accordingly, the
12 ISO did not reject any de-list bids that it studied for the thirteenth FCA.⁹

13

14 **Q: DOES THIS CONCLUDE YOUR TESTIMONY?**

15 **A:** Yes.

⁸ The fourth round was the first round of the auction in which Dynamic De-List Bids could be submitted.

⁹ As already mentioned, the Retirement De-List Bids submitted for the Mystic 8 and 9 generating facilities were rejected for fuel security reasons.

1 I declare that the foregoing is true and correct.

2

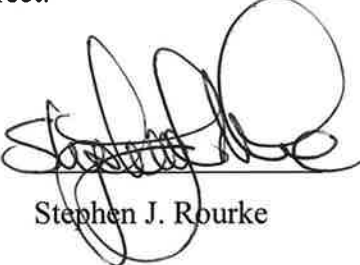
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Stephen J. Rourke

February 28, 2019

Attachment C

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

ISO New England Inc.

) Docket No. ER19-____-000

**TESTIMONY OF ROBERT G. ETHIER
ON BEHALF OF ISO NEW ENGLAND INC.**

1 **Q: PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.**

2 A: My name is Robert G. Ethier. I am employed by ISO New England Inc. (the
3 “ISO”) as Vice President of Market Operations. My business address is One
4 Sullivan Road, Holyoke, Massachusetts 01040.

5

6 **Q: PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**
7 **WORK EXPERIENCE.**

8 A: I have a Bachelor of Arts degree in Economics from Yale University, a Masters in
9 Resource Economics from Cornell University, and a Ph.D. in Resource
10 Economics from Cornell University. Since 2000, I have worked at the ISO in
11 various roles. I was responsible for Market Monitoring for nearly four years and
12 Resource Adequacy for more than two years before becoming Vice President of
13 Market Development in July 2008. In July 2014, I took on my current role as
14 Vice President of Market Operations. Before 2000, I was a Senior Associate at
15 Stratus Consulting with responsibility for energy market modeling.

16

17 **Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

18 A: My testimony explains the auction prices resulting from the recently conducted

1 thirteenth Forward Capacity Auction (“FCA”),¹ including the associated
2 substitution auction. The thirteenth FCA was held on February 4, 2019. The
3 substitution auction was held on February 5, 2019.

4

5 **Q: WHAT WAS YOUR ROLE IN THE DEVELOPMENT OF THE LIST OF**
6 **RESOURCES THAT RECEIVED CAPACITY SUPPLY OBLIGATIONS**
7 **IN THE THIRTEENTH FCA?**

8 A: Section III.13.8.2 (a) of the Tariff, requires the ISO to provide a list of resources
9 that received Capacity Supply Obligations (“CSOs”) in each Capacity Zone and
10 the size of the CSOs. The ISO has provided this information in Attachment A to
11 this filing. As the Vice President of Market Operations, Attachment A was
12 developed under my supervision and direction.

13

14 **Q: WHAT CAPACITY ZONES WERE MODELED IN THE THIRTEENTH**
15 **FCA?**

16 A: The ISO modeled three Capacity Zones in the thirteenth FCA: the Southeastern
17 New England (“SENE”) Capacity Zone, the Northern New England (“NNE”) Capacity
18 Zone and the Rest-of-Pool Capacity Zone. The SENE Capacity Zone
19 includes Northeastern Massachusetts/Boston, Southeastern Massachusetts, and
20 Rhode Island. The NNE Capacity Zone includes Maine, New Hampshire and
21 Vermont. The Rest-of-Pool Capacity Zone includes Connecticut and
22 Western/Central Massachusetts. As detailed in the ISO’s Informational Filing for

¹ Capitalized terms used but not otherwise defined in this testimony have the meanings ascribed to them in the ISO’s Transmission, Markets and Services Tariff (the “Tariff”).

1 the thirteenth FCA, the Local Sourcing Requirement for the import-constrained
2 SENE Capacity Zone is 10,141 MW.² For the export-constrained NNE Capacity
3 Zone, the Maximum Capacity Limit is 8,545 MW.³ Under Section III.13.2.2 of
4 the Tariff, the total amount of capacity cleared in the FCA is determined using the
5 System-Wide Capacity Demand Curve and Capacity Zone Demand Curves.
6

7 **Q: PLEASE DESCRIBE THE METHODOLOGY USED FOR**
8 **CALCULATING THE MRI CURVES FOR THE THIRTEENTH FCA.**

9 A: Pursuant to Sections III.13.2.2.1, III.13.2.2.2 and III.13.2.2.3 of the Tariff, to
10 calculate the System-Wide Capacity Demand Curve, the Import-Constrained
11 Capacity Zone Demand Curve for SENE, and the Export-Constrained Capacity
12 Zone Demand Curve for NNE for the thirteenth FCA, the ISO used the marginal
13 reliability impacts (i.e., the MRI) methodology. The MRI methodology measures
14 the change in “expected energy not served” (or “EENS”, which measures
15 unserved load and is used as a performance metric) with another 1 MW of
16 capacity, associated with various capacity levels for the system and the Capacity
17 Zones.
18

19 EENS is measured in MWh per year and can be calculated for any set of system
20 and zonal installed capacity levels. The EENS values for system capacity levels

² Informational Filing for Qualification in the Forward Capacity Market, filed on November 6, 2018 in Docket No. ER19-295-000, at p. 9.

³ *Id.*

1 are produced by the GE MARS model,⁴ in 10 MW increments and by applying
2 the same assumptions used in determining the Installed Capacity Requirement.
3 These system EENS values are translated into MRI values by estimating how a 1
4 MW incremental change in capacity impacts EENS at various capacity levels. An
5 MRI curve is developed from these MRI values with capacity represented on the
6 X-axis and the corresponding MRI values on the Y-axis.

7
8 MRI values at various capacity levels are also calculated for the SENE import-
9 constrained Capacity Zone and the NNE export-constrained Capacity Zone using
10 the same modeling assumptions and methodology as those used to determine the
11 Local Resource Adequacy Requirement and the Maximum Capacity Limit for
12 those Capacity Zones, with the exception of the modification of the transmission
13 transfer capability for the SENE import-constrained Capacity Zone as described
14 in more detail below. These MRI values are calculated to reflect the change in
15 system reliability associated with transferring incremental capacity from the Rest-
16 of-Pool Capacity Zone into the constrained capacity zone.

17
18 **Q: PLEASE EXPLAIN THE TRANSITION METHODOLOGY USED TO**
19 **DEVELOP THE SYSTEM-WIDE CAPACITY DEMAND CURVE FOR**
20 **THE THIRTEENTH FCA.**

⁴ The GE MARS model is the same simulation system that is already used to develop the Installed Capacity Requirement and other values that specify how much capacity is required for resource adequacy purposes from a system planning perspective. For the development of the MRI Curves, the GE MARS model is used to calculate reliability values using 10 MW additions above and 10 MW deductions below the calculated requirements until a sufficient set of values that covers the full range necessary to produce the MRI-based Demand Curves is determined.

1 A: The MRI transition period aims to provide a transition from the linear system-
2 wide capacity demand curve methodology used in the ninth and tenth FCAs to the
3 MRI-based system-wide capacity demand curve methodology. This transition
4 seeks to provide a relatively stable and consistent market signal and balance
5 stakeholder interests while moving to a curve that more accurately reflects
6 efficient trade-offs between costs and reliability. The transition period began with
7 the eleventh FCA and terminates with this, the thirteenth FCA, pursuant to
8 Section III.13.2.2.1 of the Tariff. During the MRI transition period, the System-
9 Wide Capacity Demand Curve is represented as a hybrid of the previous linear
10 demand curve design and the MRI-based demand curve design.

11

12 During the MRI transition period, the System-Wide Capacity Demand Curve for
13 the thirteenth FCA consists of the following three sections:

- 14 (1) at prices above \$7.03/kW-month and at or below the Forward Capacity
15 Auction Starting Price, the System-Wide Capacity Demand Curve shall
16 specify a price for system capacity quantities based on the product of the
17 system-wide Marginal Reliability Impact value, calculated pursuant to Section
18 III.12.1.1, and the scaling factor specified in Section III.13.2.2.4 of the Tariff;
19 (2) for prices below \$7.03/kw-month, the System-Wide Capacity Demand Curve
20 is represented by a linear segment that runs from a price of \$7.03 and a
21 capacity quantity of 34,097 MW to a price of \$0 and a capacity quantity of
22 35,713 MW; and

1 (3) a horizontal line at a price of \$7.03/kw-month which connects segments (1)
2 and (2) specified above.⁵
3

4 **Q: PLEASE PROVIDE ADDITIONAL DETAILS REGARDING THE**
5 **DEVELOPMENT OF THE IMPORT-CONSTRAINED CAPACITY ZONE**
6 **DEMAND CURVE FOR THE SENE CAPACITY ZONE.**

7 A: For import-constrained Capacity Zones, the Local Resource Adequacy
8 Requirement and Transmission Security Analysis Requirement values both play a
9 role in defining the MRI-based demand curves, just as they do in setting the Local
10 Sourcing Requirement. Under Section III.12.2.1.3 of the Tariff, prior to each
11 FCA, the ISO must determine the MRI value at various capacity levels for each
12 import-constrained Capacity Zone. For purposes of these calculations, the ISO
13 applies the same modeling assumptions and methodology used to determine the
14 Local Resource Adequacy Requirement, except that the capacity transfer
15 capability between the Capacity Zone under study and the rest of the New
16 England Control Area is reduced by the greater of: (i) the Transmission Security
17 Analysis Requirement minus the Local Resource Adequacy Requirement, and; (ii)
18 zero. By using a transfer capability that accounts for both the Transmission
19 Security Analysis Requirement and the Local Resource Adequacy Requirement,
20 the ISO applies the same “higher of” logic used in the Local Sourcing
21 Requirement to the derivation of sloped zonal demand curves. Using the values
22 calculated pursuant to Section III.12.2.1.3 and the scaling factor specified in

⁵ Section III.13.2.2.1 of the Tariff.

1 Section III.13.2.2.4 of the Tariff, the ISO must determine each Import-
2 Constrained Capacity Zone's Demand Curve pursuant to Section III.13.2.2.2 of
3 the Tariff. For the thirteenth FCA, the only import-constrained Capacity Zone is
4 SENE and, therefore, there is only one Import-Constrained Capacity Zone
5 Demand Curve.

6

7 **Q: PLEASE PROVIDE ADDITIONAL DETAILS REGARDING THE**
8 **DEVELOPMENT OF THE EXPORT-CONSTRAINED CAPACITY ZONE**
9 **DEMAND CURVE FOR THE NNE CAPACITY ZONE.**

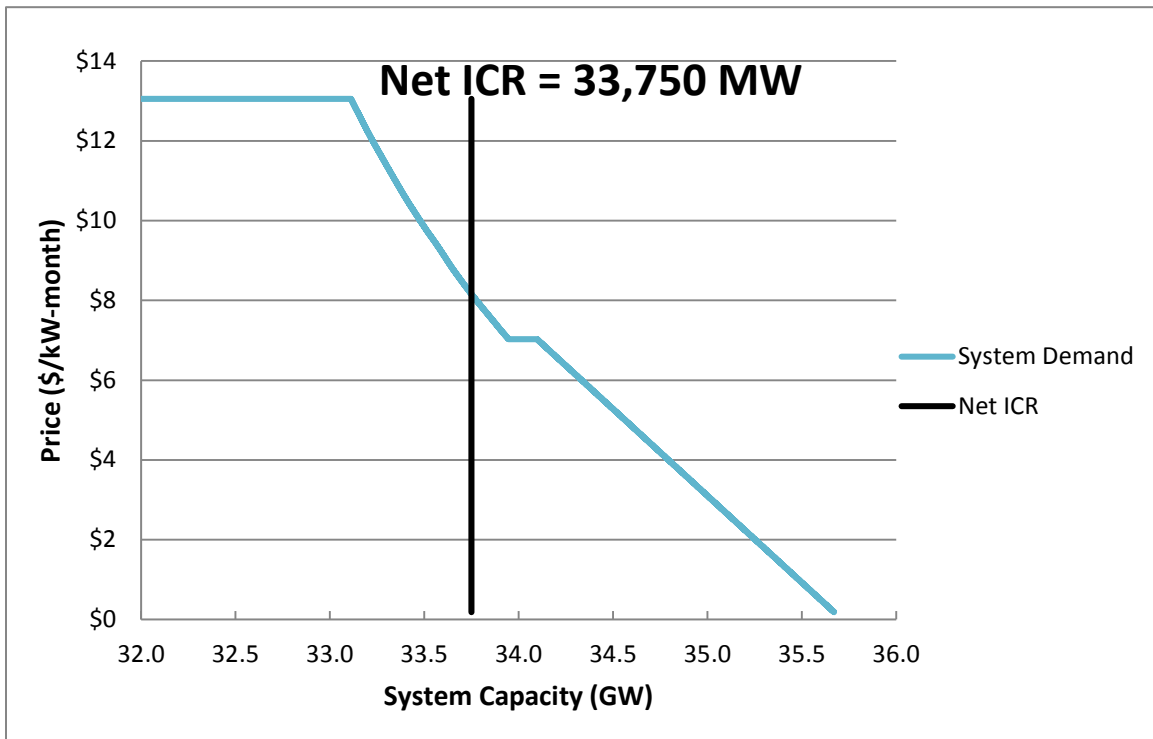
10 A: Under Section III.12.2.1.3 of the Tariff, prior to each FCA, the Export-
11 Constrained Capacity Zone Demand Curve is calculated using the same modeling
12 assumptions and methodology used to determine the export-constrained Capacity
13 Zone's Maximum Capacity Limit. Using the values calculated pursuant to
14 Section III.12.2.2.1 and the scaling factor specified in Section III.13.2.2.4 of the
15 Tariff, the ISO must determine each Export-Constrained Capacity Zone's
16 Demand Curve pursuant to Section III.13.2.2.3 of the Tariff. For the thirteenth
17 FCA, the only export-constrained Capacity Zone is NNE and, therefore, there is
18 only one Export-Constrained Capacity Zone Demand Curve.

19

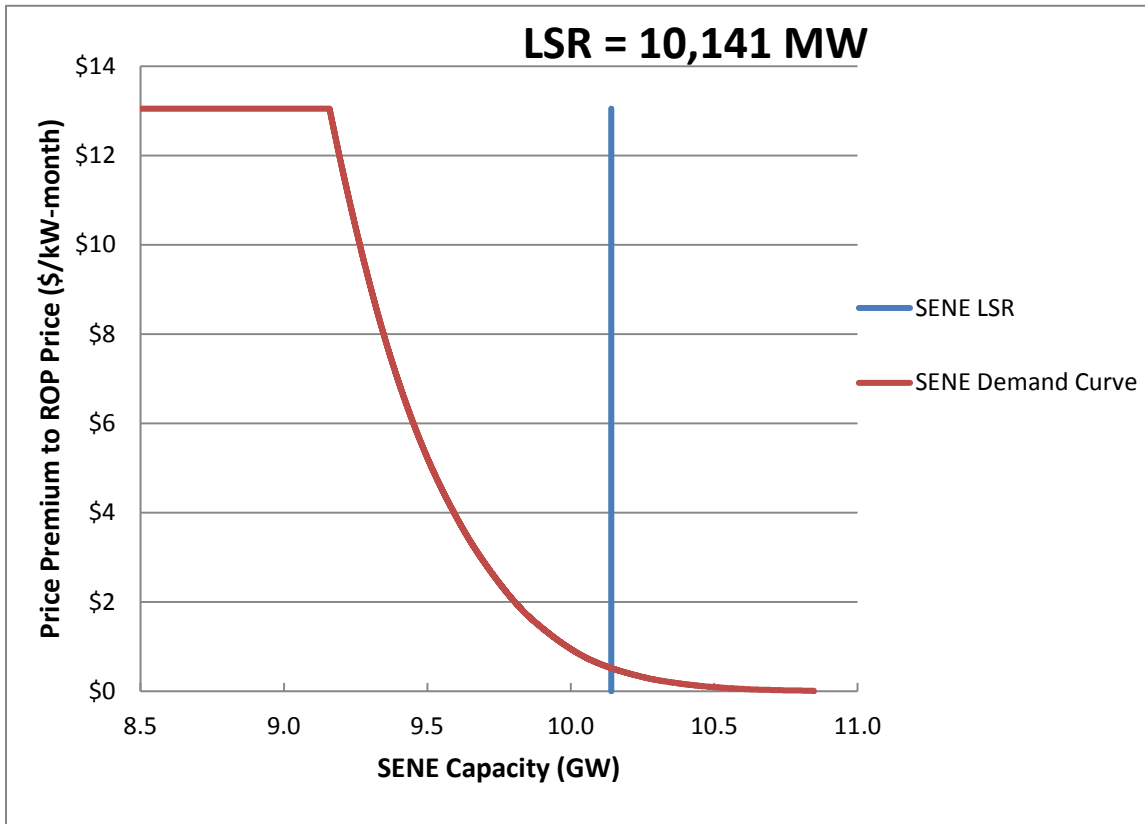
20 **Q: WHAT DEMAND CURVES DID THE ISO CALCULATE FOR THE**
21 **THIRTEENTH FCA?**

22 A: As required under Section III.12 of the Tariff, the ISO calculated the following
23 Demand Curves for the thirteenth FCA:

1. System-Wide Capacity Demand Curve

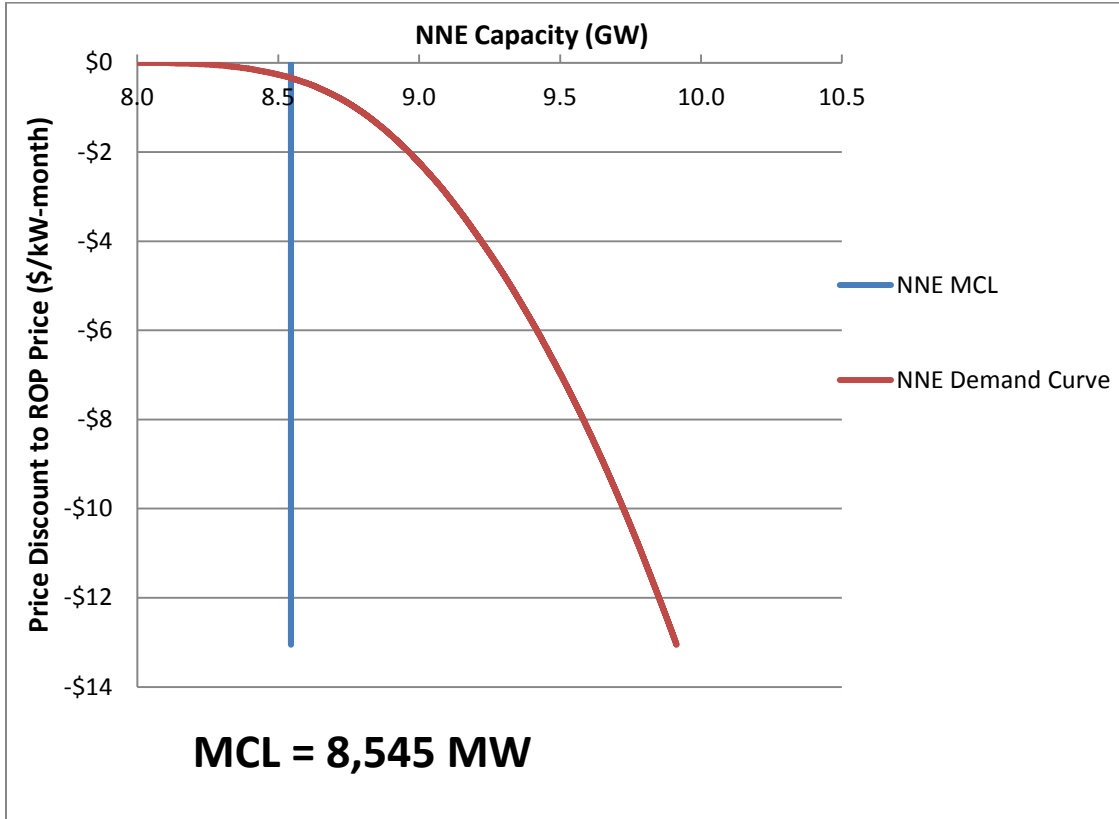


1 2. Import-Constrained Capacity Zone Demand Curve for the SENE Capacity
2 Zone
3



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1 3. Export-Constrained Capacity Zone Demand Curve for the NNE Capacity Zone



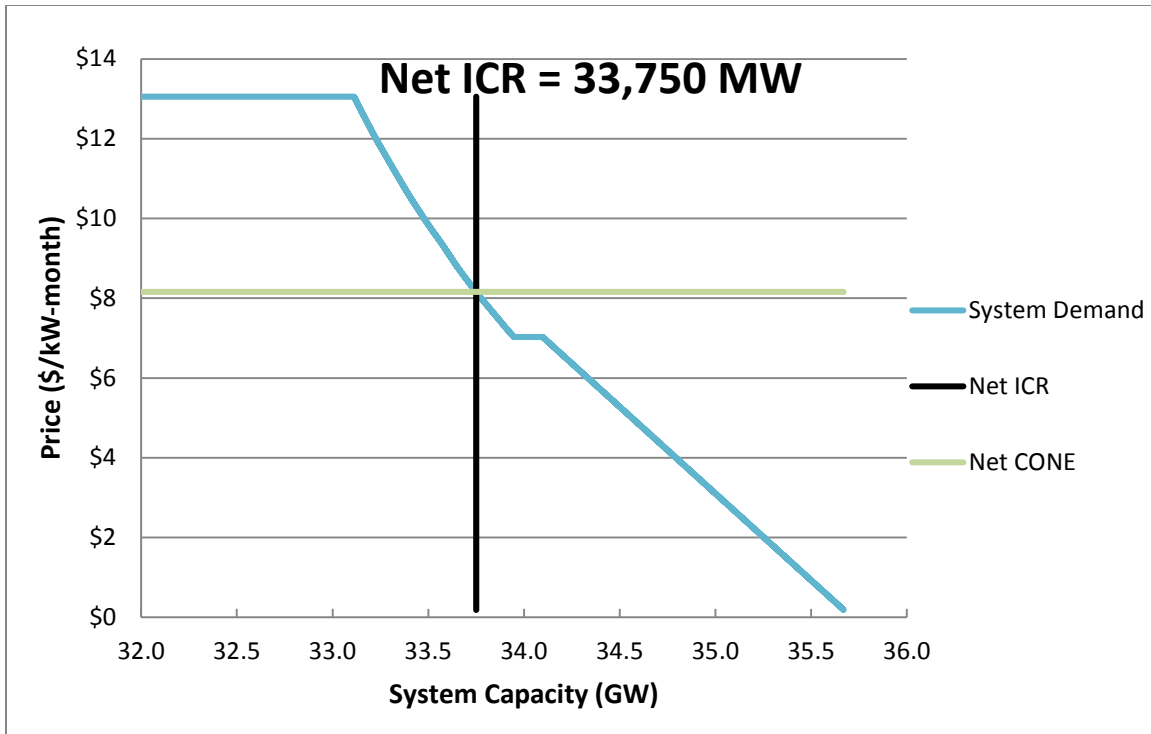
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4 **Q: CAN YOU PROVIDE A GRAPH OF THE SYSTEM-WIDE SLOPED**
5 **DEMAND CURVE ALONG WITH THE NET INSTALLED CAPACITY**
6 **REQUIREMENT (“NET ICR”) AND NET COST OF NEW ENTRY (“NET**
7 **CONE”) FOR THE THIRTEENTH FCA?**

8 **A:** Yes. Below is a graph of the system-wide sloped demand curve, Net CONE, and
9 NICR beginning at 32,000 MW:

10



Q: WHAT CAUSED THE DESCENDING CLOCK AUCTION TO CLOSE?

A: The descending clock auction bound system-wide after the fourth round of bidding and at a price below the Dynamic De-List Bid Threshold when a Dynamic De-List Bid resulted in system-wide supply falling short of system-wide demand. One additional round was conducted for the New Brunswick external interface because at the \$3.300/kW-month end-of-round price of the fourth round, supply over the external interface continued to exceed its Capacity Transfer Limit.

Q: WHAT WERE THE FORWARD CAPACITY AUCTION CLEARING PRICES FOR THE CAPACITY ZONES?

A: The descending clock auction commenced with a starting price of \$13.050/kW-month and concluded for the SENE, NNE and Rest-of-Pool Capacity Zones after

1 four rounds of bidding. Resources in those Capacity Zones will be paid at the
2 Capacity Clearing Price set pursuant to the system-wide sloped demand curve,
3 which was \$3.800/kW-month.⁶
4

5 **Q: WHY WAS THE CAPACITY CLEARING PRICE \$3.800/KW-MONTH IN**
6 **THE SENE, NNE AND REST-OF-POOL CAPACITY ZONES?**

7 A: Under the rules for the FCA, a de-list bid represents the price at which an auction
8 participant wishes to withdraw a resource's capacity from the auction; so, to
9 award a CSO to a resource with a submitted de-list bid, the auction price must be
10 strictly above the bid price. In the thirteenth FCA, a Dynamic De-List Bid was
11 submitted for an Existing Capacity Resource at \$3.799/kW-month. At prices
12 above \$3.799/kW-month, this capacity was offered and would be included in the
13 capacity procured by the auction. Above \$3.799/kW-month, system-wide supply
14 exceeded system-wide demand. However, at prices at and below \$3.799/kW-
15 month, the capacity withdrawn by the Existing Capacity Resource with the
16 Dynamic De-List Bid was not offered and system-wide supply was less than
17 system-wide demand. Therefore, the Dynamic De-List Bid was marginal and set
18 the price of \$3.800/kW-month. However, the entire quantity of the Dynamic De-
19 List Bid was not needed to meet the quantity demanded at the price that cleared
20 the FCA. Dynamic De-List Bids are able to be rationed, which means that they
21 can be taken in part or in full. To allow supply to precisely match demand, the

⁶ Existing Capacity Resources with multi-year obligations from previous auctions will be paid based on the Capacity Clearing Price in the auction in which they originally cleared. Self-supplied resources will not be paid through the FCM. Capacity for which a de-list bid was submitted, but the de-list bid was rejected for reliability, will be paid pursuant to Section III.13.2.5.2.5.1 of the Tariff.

1 price-setting de-list bid in the thirteenth FCA was rationed to a cleared quantity
2 that resulted in system-wide supply meeting system-wide demand at \$3.800/kW-
3 month. This quantity maximizes social surplus. The Existing Capacity Resource
4 received a CSO for the quantity necessary to meet system-wide demand. The
5 Capacity Clearing Price was \$3.800/kW-month because this was the lowest price
6 at which the marginal Dynamic De-List Bid was willing to accept a CSO. This
7 marginal Dynamic De-List bid set the Capacity Clearing Prices in the SENE,
8 NNE and Rest-of-Pool Capacity Zones at \$3.800/kW-month.

9

10 **Q: WHY WERE THE CAPACITY CLEARING PRICES FOR THE SENE**
11 **AND NNE CAPACITY ZONES THE SAME AS THE CAPACITY**
12 **CLEARING PRICE FOR THE REST-OF-POOL CAPACITY ZONE?**

13 A: At the clearing price, there were sufficient resources offered in the SENE
14 Capacity Zone such that there was no additional reliability benefit of the capacity
15 procured in the SENE Capacity Zone relative to the capacity procured from
16 resources in the Rest-of-Pool Capacity Zone. An import-constrained zone's
17 demand curve specifies the additional amount that should be paid to capacity in
18 the import-constrained zone in addition to the system-wide clearing price (i.e., the
19 zone's congestion price). The amount of the congestion price adder for an
20 import-constrained zone corresponds to the increase in overall system reliability
21 (as measured by EENS) for adding capacity in the import-constrained zone rather
22 than the Rest-of-Pool. However, above a certain capacity level, there is no
23 additional reliability benefit of procuring an increment of capacity from within the

1 import-constrained zone and the import-constrained zone's Capacity Clearing
2 Price will be same as the system-wide clearing price (i.e., the congestion price is
3 zero). This was the case for the SENE Capacity Zone in the thirteenth FCA.
4

5 At the clearing price, the amount of capacity offered from resources in the NNE
6 Capacity Zone did not exceed the level where capacity located in the export-
7 constrained zone would have a lower reliability benefit relative to capacity
8 procured from resources in Rest-of-Pool. An export-constrained zone's demand
9 curve specifies the amount by which the Capacity Clearing Price in the export-
10 constrained zones should be lower than the system-wide clearing price (i.e., the
11 zone's congestion price). The potential price difference for an export-constrained
12 zone is negative because locating additional capacity in an export-constrained
13 zone, rather than in Rest-of-Pool, can reduce overall system reliability (as
14 measured by EENS). However, below a certain capacity level, an increment of
15 capacity added in the export-constrained zone does not have a lower reliability
16 benefit and the export-constrained zone's Capacity Clearing Price will be the
17 same as the system-wide clearing price (i.e., the congestion price is zero). This
18 was the case for the NNE Capacity Zone in the thirteenth FCA.
19

20 **Q: WHAT WERE THE CAPACITY CLEARING PRICES ON THE**
21 **EXTERNAL INTERFACES?**

22 A: Imports over the New York AC Ties external interface, totaling 521.690 MW,
23 imports over the Phase I/II HQ Excess external interface, totaling 431 MW, and

1 imports over the Hydro-Quebec Highgate external interface, totaling 51 MW, will
2 receive \$3.800/kW-month. Imports over the New Brunswick external interface,
3 totaling 184 MW, will receive \$2.681/kW-month.
4

5 **Q: WHY WAS THE CAPACITY CLEARING PRICE FOR THE NEW**
6 **BRUNSWICK EXTERNAL INTERFACE LOWER THAN THE OTHER**
7 **CAPACITY CLEARING PRICES?**

8 A: The associated Capacity Zone for the New Brunswick external interface in the
9 thirteenth FCA was the NNE Capacity Zone. At the \$3.800/kW-month Capacity
10 Clearing Price for the NNE Capacity Zone, the New Brunswick external interface
11 had a greater amount of capacity offered than the interface's capacity transfer
12 limit allowed. Accordingly, pursuant to Section III.13.2.3.3 (d) of the Tariff, this
13 external interface was treated in the auction as if it comprised a separately
14 modeled export-constrained capacity zone. Therefore, a fifth round of bidding
15 was required and a separate Capacity Clearing Price was determined for the New
16 Brunswick external interface.
17

18 **Q: FOLLOWING COMPLETION OF THE PRIMARY AUCTION-**
19 **CLEARING PROCESS, WAS A SUBSTITUTION AUCTION**
20 **ADMINISTERED?**

21 A: Yes. After the primary auction-clearing process was completed, a substitution
22 auction was administered because (a) at least one Existing Capacity Resource
23 received a CSO in the primary auction-clearing process and had a substitution

1 auction demand bid that met all conditions to participate in the substitution
2 auction as specified in Section III.13.2.8.3 of the Tariff; and (b) at least one new
3 Sponsored Policy Resource did not receive a CSO for all of its qualified capacity
4 in the primary auction-clearing process and had a substitution auction supply offer
5 that met all of the conditions to participate in the substitution auction as specified
6 in Section III.13.2.8.2 of the Tariff.

7
8 **Q: WHAT IS THE PURPOSE OF THE SUBSTITUTION AUCTION AND**
9 **WHAT ARE THE CORE MECHANICS OF THE AUCTION?**

10 A: The purpose of the substitution auction is to accommodate entry of the New
11 England states' policy-preferred resources into the Forward Capacity Market
12 over-time while maintaining competitively-based prices for capacity. In essence,
13 the substitution auction achieves this purpose by coordinating the entry of new
14 sponsored resources with the retirement of existing capacity resources.

15
16 The substitution auction is a secondary market that is held immediately after the
17 primary auction. A new sponsored resource can obtain a CSO (if it was unable to
18 do so in the primary auction) by acquiring the CSO that an existing resource is
19 willing to shed and, consequently, have its existing capacity retired from the
20 markets. New sponsored resources may be unable to sell capacity at their
21 preferred offer price in the primary auction due to the Minimum Offer Price Rule
22 which prevents out-of-market revenues from lowering their offer price below a
23 competitive level in the primary auction. An existing resource that is nearing

1 retirement may be willing to forego its continued participation in the markets and
2 the associated profits in exchange for compensation.

3

4 The substitution auction is a sealed bid auction that matches the voluntary offers
5 from participating supply (new sponsored resources) and demand (existing
6 resources), using the clearing objective to maximize social surplus among the set
7 of offers and bids, and subject to certain network constraints. New sponsored
8 resources that acquire a CSO in the substitution auction are paid the substitution
9 auction clearing price for the commitment period and take on the same rights and
10 obligations as other capacity resources. An existing resource that shed its CSO in
11 the substitution auction must pay the substitution auction clearing price to the new
12 sponsored resource that is acquiring the CSO. Because new sponsored resources
13 can offer at, and the substitution auction will tend to clear at, a lower price than
14 the primary auction, an existing resource that sheds its CSO in the substitution
15 auction is generally able to retain a one-time net payment equal to the difference
16 between the (higher) primary auction clearing price and the (lower) substitution
17 auction clearing price for the commitment period (much like a severance payment
18 for retiring).

19

20 **Q: WERE ANY CONSTRAINED CAPACITY ZONES PRECLUDED FROM**
21 **TRANSFERRING CAPACITY SUPPLY OBLIGATIONS INTO OR OUT**
22 **OF CAPACITY ZONE IN THE SUBSTITUTION AUCTION?**

1 A: No. The total amounts of CSO acquired in the primary auction within the SENE
2 import-constrained capacity zone and the NNE export-constrained capacity zone
3 were not at the level where capacity within the constrained zone provides a
4 different marginal reliability benefit than capacity located in the Rest-of-Pool. In
5 simple terms, capacity in a constrained zone does not have a different marginal
6 reliability benefit if it does not price-separate from Rest-of-Pool – as was the case
7 for both constrained zones in the primary auction of the thirteenth FCA.

8

9 **Q: WHAT WAS THE SUBSTITUTION AUCTION CLEARING PRICE?**

10 A: The substitution auction clearing price for all locations was set at \$0.000/kW-
11 month in accordance with the rules specified in Section III.13.2.8.1.2 of the
12 Tariff. The relevant network constraints among capacity zones were not binding
13 in the substitution auction clearing solution and, therefore, all of the cleared offers
14 and demand bids were analyzed together to determine the single auction clearing
15 price. The clearing price was set by the price of the marginal cleared supply
16 offer.

17

18 **Q: DID ANY DEMAND BIDS CLEAR IN THE SUBSTITUTION AUCTION**
19 **THAT WERE PRICED ABOVE THE SUBSTITUTION AUCTION**
20 **CLEARING PRICE?**

21 A: No. There were no demand bids that cleared which were priced above the
22 substitution auction clearing price.

23

1 **Q:** **DOES THIS CONCLUDE YOUR TESTIMONY?**

2 **A:** Yes.

1 I declare that the foregoing is true and correct.

2

3

4



5

Robert G. Ethier

6

7 February 28, 2019

Attachment D

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**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

ISO New England Inc.

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)

Docket No. ER19-__-000

TESTIMONY OF LAWRENCE M. AUSUBEL

Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.

A. My name is Lawrence M. Ausubel. I am the Founder and Chairman of Power Auctions LLC, the company that has helped to design, implement, and administer the Forward Capacity Auction (“FCA”) for ISO New England Inc. (the “ISO”). I am also a Professor of Economics at the University of Maryland. My business address is 3333 K St. NW Suite 425, Washington, DC 20007.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A. I have an A.B. in Mathematics from Princeton University, an M.S. in Mathematics from Stanford University, an M.L.S. in Legal Studies from Stanford University, and a Ph.D. in Economics from Stanford University. I am the Chairman of Power Auctions LLC, a provider of auction implementation services and software worldwide. I was also the President of Market Design Inc., an economics consultancy that (until its dissolution in 2016) offered services in the design of auction markets. I have played a lead role in the design and implementation of: electricity auctions in France, Germany, Spain, Belgium and

1 the US; gas auctions in Germany, France, Hungary and Denmark; the world's first
2 auction for greenhouse gas emission reductions in the UK; and a prototype airport
3 slot auction in the US. I have advised the US Federal Communications
4 Commission, Innovation Science and Economic Development Canada, and the
5 Australian Communications and Media Authority on spectrum auctions. I have
6 also advised BOEM (the US Bureau of Ocean Energy Management) and ICANN
7 (the Internet Corporation for Assigned Names and Numbers) on auction design. I
8 hold 22 U.S. patents related to auction technology and I have published numerous
9 articles on auction design, bargaining, industrial organization and financial
10 markets. My curriculum vitae, which includes a list of publications and other
11 experience, is attached.

12
13 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

14 A. The purpose of this testimony is to certify that the thirteenth Forward Capacity
15 Auction ("FCA"), which was held on February 4, 2019, was conducted in
16 accordance with the relevant provisions of the ISO New England Transmission,
17 Markets, and Services Tariff ("Tariff") currently in effect. Section III.13.8.2(b) of
18 the Tariff requires that, after each FCA, documentation regarding the
19 competitiveness of the FCA be filed with the Federal Energy Regulatory
20 Commission ("Commission"). Section III.13.8.2(b) states that such
21 documentation may include certification from the auctioneer that the FCA was
22 conducted in accordance with the provisions of Section III.13 of the Tariff.
23 Section III.13.2 of the Tariff provides the rules relating to the mechanics of the

1 FCA. My testimony certifies that the FCA was conducted in accordance with
2 Section III.13.2 of the Tariff.

3
4 **Q. PLEASE DESCRIBE POWER AUCTIONS LLC**

5 A. Power Auctions LLC designs, implements and conducts high-stakes electronic
6 auctions utilizing proprietary software, processes, and other intellectual property.
7 The PowerAuctions software platform designed by Power Auctions LLC has been
8 used to implement over 250 auctions worldwide in the electricity, gas and
9 resource sectors. In the electricity sector, the software platform was used to
10 operate 42 quarterly EDF Generation Capacity Auctions in France. It was also
11 used for the Endesa-Iberdola Virtual Power Plant Auctions in Spain, the
12 Electrabel Virtual Power Plant Auctions in Belgium and the E.ON Virtual Power
13 Plant Auction in Germany. Currently, our software platform is also used for
14 implementing the UK's Capacity Market auctions and for implementing the
15 US Department of Interior's auctions of offshore wind energy tracts. Further,
16 Power Auctions LLC was part of the team that the US Federal Communications
17 Commission assembled to design and implement the FCC Incentive Auction
18 (2016–17), and it is prime contractor to the Governments of Australia, Canada
19 and the US for the ongoing design and implementation of spectrum auctions.

20
21 Power Auctions LLC worked with the ISO to design and implement (on the
22 PowerAuctions platform) the previous FCAs held on February 4-6, 2008;
23 December 8-10, 2008; October 5-6, 2009; August 2-3, 2010; June 6-7, 2011;

1 April 2-3, 2012; February 4-5, 2013; February 3, 2014; February 2, 2015;
2 February 8, 2016; February 6, 2017, and February 5-6, 2018.
3

4 **Q. WHAT WAS POWER AUCTIONS LLC'S ROLE IN THE THIRTEENTH**
5 **FCA HELD ON FEBRUARY 4, 2019?**

6 A. The ISO retained Power Auctions LLC as the independent auction manager
7 ("Auction Manager") for the thirteenth FCA. As the Auction Manager, Power
8 Auctions LLC worked with the ISO to design and implement the FCA in
9 conformance with the Tariff. By design, the Auction Manager conducted the
10 auction independently, with limited involvement by the ISO. The auction was
11 implemented using the PowerAuctions software platform.
12

13 **Q. WAS THE THIRTEENTH FCA HELD ON FEBRUARY 4, 2019**
14 **CONDUCTED IN ACCORDANCE WITH SECTION III.13.2 OF THE**
15 **TARIFF?**

16 A. Yes. In accordance with Section III.13.8.2 (b) of the Tariff, I certify that, to the
17 best of my knowledge, the thirteenth FCA held on February 4, 2019 was
18 conducted in conformance with the provisions of Section III.13.2 of the Tariff.
19

20 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

21 A. Yes.
22
23

1 I declare that the foregoing is true and correct.

2

3 Executed on February 22, 2019

4

5

6

Laurence Ausubel

Lawrence M. Ausubel

Curriculum Vitae

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Personal

Year of Birth: 1959
Place of Birth: New York City

Education

Ph.D. (1984) Stanford University, Economics
M.L.S. (1984) Stanford Law School, Legal Studies
M.S. (1982) Stanford University, Mathematics
A.B. (1980) Princeton University, Mathematics

Honors: Fellow of the Econometric Society
Phi Beta Kappa
Sigma Xi
Magna cum laude in mathematics
Stanford University Economics Department, graduate fellowship, 1982
Stanford Law School, fellowship in law and economics, 1983

Fields of Concentration

Microeconomic Theory and Game Theory
Auctions and Bargaining
Market Design
Credit Cards, Bankruptcy and Banking
Industrial Organization
Law and Economics

Professional Experience

Professor of Economics, University of Maryland (August 1992 – present).

Chairman and Founder, Power Auctions LLC (2003 – present).

Power Auctions LLC has been a technology provider of auction design, auction software, implementation services and intellectual property since 2003. The PowerAuctions™ software platform has been used for more than 250 high-stakes auctions on six continents, with total transaction values approaching \$100 billion.

President, Market Design Inc. (2003 – 2016).

Until its dissolution in 2016, Market Design Inc. was a consultancy of leading economists and game theorists (Al Roth, Peter Cramton, R. Preston McAfee, Paul Milgrom, Robert Wilson, et al) that worked with governments and companies worldwide to design and implement state-of-the-art auctions and markets.

Assistant Professor of Managerial Economics and Decision Sciences, Kellogg School, Northwestern University (September 1984 – August 1992).

Visiting Assistant Professor, New York University (January 1990 – May 1990).

Recent Consulting Experience

Provided expert bidding advice to bidders in more than a dozen large spectrum auctions, including Bharti Airtel in India's 900/1800 MHz auction, Orange in Slovakia's Multi-Band spectrum auction, Three (Hutchison) in the UK 4G and PSSR auctions, Eircom in Ireland's 800/900/1800 MHz auction, Aircel in India's 3G/BWA auctions, Spain's Telefónica in the UK, German, Italian and Austrian UMTS/3G spectrum auctions, Ericsson in the US PCS spectrum auctions, MTN in the Nigerian spectrum auctions, MCI in the US Direct Broadcast Satellite auction, US Airwaves in the US C-Block Auction, Mobile Media in the US Narrowband Auction, and other confidential clients.

Advised the Secretaría de Energía (SENER) by preparing an expert report on Mexico's first two capacity auctions and by providing advice for future auctions, 2016.

Provided expert bidding advice to a confidential client in India's 500 MW solar auction, 2015.

Advisor to the US government (Federal Communications Commission) on the design and implementation of the FCC Incentive Auction and ongoing spectrum auctions and universal service fund auctions, 2011 – present.

Advisor to the Canadian government (Innovation, Science and Economic Development Canada) on the design and implementation of the 600 MHz, 700 MHz, 2.5 GHz and 3.5 GHz spectrum auctions, 2010 – present.

Advisor to the Australian government (ACMA) on the design and implementation of the Australian Digital Dividend auction and future spectrum auctions, 2011 – present.

Provided auction design advice to the IDA Singapore on their Auction of Public Cellular Mobile Telecommunication Services Spectrum Rights, 2007 – 2008.

Design and implementation of the Trinidad and Tobago GSM auction, 2005.

Design and implementation of the UK Capacity Market auction (electricity, 2014 – present).

Design and implementation of auctions for offshore wind energy tracts for the Bureau of Ocean Energy Management (BOEM), US Department of Interior (2010 – present).

Design and implementation of the Forward Capacity Auction for ISO New England (electricity, 2007 – present).

Design and implementation of the quarterly Electricité de France generation capacity auctions (2001 – 2011) and Long-Term Contract auctions (2008 – 2009).

Design and implementation of the quarterly Spanish Virtual Power Plant (VPP) auctions (electricity, 2007 – 2009).

Design and implementation of the E.ON VPP auction in Germany (2007).

Design and implementation of the quarterly Electrabel Virtual Power Plant (VPP) auctions in Belgium (2003 – 2005).

Design and implementation of auctions for new gTLDs for ICANN (Internet Corporation for Assigned Names and Numbers (2008 – present).

Design and implementation of rough diamond auctions for Okavango Diamond Company, Botswana (2013 – present).

Design and implementation of rough diamond auctions for BHP Billiton/Dominion Diamonds (2007 – 2014).

Design and implementation of the annual E.ON Földgáz Trading gas release programme auction in Hungary (2006 – 2013).

Design and implementation of the annual Danish Oil and Natural Gas (DONG Energy) gas release programme auction (2006 – 2011).

Design and implementation of the annual E.ON Ruhrgas gas release programme auction in Germany (2003 – 2008, 2010).

Design and implementation of the Gaz de France gas storage auction (2006).

Design and implementation of the Gaz de France gas release programme auction (2004).

Design and implementation of the Total gas release programme auction (2004).

Design and implementation of the UK Emissions Trading Scheme auction to procure greenhouse gas emission reductions for the UK Government (2002).

Design and implementation of a demonstration auction of landing and takeoff slots for LaGuardia Airport, for the US Federal Aviation Administration (2005, 2008).

Teaching

Econ 456	Law and Economics (Undergraduate; Maryland)
Econ 603	Microeconomic Analysis (Ph.D.; Maryland)
Econ 661	Industrial Organization (Ph.D.; Maryland)
Econ 704	Advanced Microeconomics: Market Design (Ph.D.; Maryland)
Mngl Econ D30	Intermediate Microeconomics (M.B.A.; Northwestern)
Mngl Econ D45	Regulation and Deregulation (M.B.A.; Northwestern)

Publications

“An Experiment on Auctions with Endogenous Budget Constraints” (with Justin E. Burkett and Emel Filiz-Ozbay), *Experimental Economics*, Vol. 20, No. 4, pp. 973-1006, December 2017.

“A Practical Guide to the Combinatorial Clock Auction” (with Oleg V. Baranov), *Economic Journal*, Vol. 127, No. 605 (Feature Issue), pp. F334-F350, October 2017.

“Efficient Procurement Auctions with Increasing Returns” (with Oleg V. Baranov, Christina Aperjis and Thayer Morrill), *American Economic Journal: Microeconomics*, Vol. 9, No. 3, pp. 1-27, August 2017.

“Demand Reduction and Inefficiency in Multi-Unit Auctions” (with Peter Cramton, Marek Pycia, Marzena J. Rostek and Marek Weretka), *Review of Economic Studies*, Vol. 81, No. 4, pp. 1366-1400, October 2014.

“Sequential Kidney Exchange” (with Thayer Morrill), *American Economic Journal: Microeconomics*, Vol. 6, No. 3, pp. 265-285, August 2014.

“Market Design and the Evolution of the Combinatorial Clock Auction” (with Oleg V. Baranov), *American Economic Review: Papers & Proceedings*, Vol. 104, No. 5, pp. 456-451, May 2014.

“Common-Value Auctions with Liquidity Needs: An Experimental Test of a Troubled Assets Reverse Auction” (with Peter Cramton, Emel Filiz-Ozbay, Nathaniel Higgins, Erkut Ozbay and Andrew Stocking), Chapter 20 of *Handbook of Market Design* (Nir Vulkan, Alvin E. Roth, and Zvika Neeman, eds.), Oxford University Press, 2013.

- “Non-Judicial Debt Collection and the Consumer’s Choice among Repayment, Bankruptcy and Informal Bankruptcy” (with Amanda E. Dawsey and Richard M. Hynes), *American Bankruptcy Law Journal*, Vol. 87, pp. 1-26 [lead article], March 2013.
- “Virtual Power Plant Auctions” (with Peter Cramton), *Utilities Policy*, Vol. 18, No. 4, pp. 201-208, December 2010.
- “Using Forward Markets to Improve Electricity Market Design” (with Peter Cramton), *Utilities Policy*, Vol. 18, No. 4, pp. 195-200, December 2010.
- “An Efficient Dynamic Auction for Heterogeneous Commodities,” *American Economic Review*, Vol. 96, No. 3, pp. 602-629, June 2006.
- “An Efficient Ascending-Bid Auction for Multiple Objects,” *American Economic Review*, Vol. 94, No. 5, pp. 1452-1475, December 2004.
- “Dynamic Auctions in Procurement” (with Peter Cramton), Chapter 9 of *Handbook of Procurement* (N. Dimitri, G. Piga, and G. Spagnolo, eds.), pp. 220-245, Cambridge: Cambridge University Press, 2006.
- “The Lovely but Lonely Vickrey Auction” (with Paul Milgrom), Chapter 1 of *Combinatorial Auctions* (P. Cramton, Y. Shoham, and R. Steinberg, eds.), pp. 17-40, Cambridge: MIT Press, 2006.
- “Ascending Proxy Auctions” (with Paul Milgrom), Chapter 3 of *Combinatorial Auctions* (P. Cramton, Y. Shoham, and R. Steinberg, eds.), pp. 79-98, Cambridge: MIT Press, 2006.
- “The Clock-Proxy Auction: A Practical Combinatorial Auction Design” (with Peter Cramton and Paul Milgrom), Chapter 5 of *Combinatorial Auctions* (P. Cramton, Y. Shoham, and R. Steinberg, eds.), pp. 115-138, Cambridge: MIT Press, 2006.
- “Auctioning Many Divisible Goods” (with Peter C. Cramton), *Journal of the European Economics Association*, Vol. 2, Nos. 2-3, pp. 480-493, April-May 2004.
- “Vickrey Auctions with Reserve Pricing” (with Peter C. Cramton), *Economic Theory*, 23, pp. 493-505, April 2004. Reprinted in Charalambos Aliprantis, et al. (eds.), *Assets, Beliefs, and Equilibria in Economic Dynamics*, Berlin: Springer-Verlag, 355-368, 2003.
- “Auction Theory for the New Economy,” Chapter 6 of *New Economy Handbook* (D. Jones, ed.), San Diego: Academic Press, 2003.
- “Ascending Auctions with Package Bidding” (with Paul Milgrom), *Frontiers of Theoretical Economics*, Vol. 1, No. 1, Article 1, August 2002.
<http://www.bepress.com/bejte/frontiers/vol1/iss1/art1>
- “Bargaining with Incomplete Information” (with Peter Cramton and Raymond Deneckere), Chapter 50 of *Handbook of Game Theory* (R. Aumann and S. Hart, eds.), Vol. 3, Amsterdam: Elsevier Science B.V., 2002.

- “Package Bidding: Vickrey vs. Ascending Auctions” (with Paul Milgrom), *Revue Economique*, Vol. 53, No. 3, pp. 391-402, May 2002.
- “Implications of Auction Theory for New Issues Markets,” *Brookings-Wharton Papers on Financial Services*, Vol. 5, pp. 313-343, 2002.
- “Synergies in Wireless Telephony: Evidence from the Broadband PCS Auctions” (with Peter Cramton, R. Preston McAfee, and John McMillan), *Journal of Economics and Management Strategy*, Vol. 6, No. 3, Fall 1997, pp. 497-527.
- “Credit Card Defaults, Credit Card Profits, and Bankruptcy,” *American Bankruptcy Law Journal*, Vol. 71, Spring 1997, pp. 249-270; recipient of the Editor's Prize for the best paper in the American Bankruptcy Law Journal, 1997.
- “Efficient Sequential Bargaining” (with R. Deneckere), *Review of Economic Studies*, Vol. 60, No. 2, April 1993, pp. 435-461.
- “A Generalized Theorem of the Maximum” (with R. Deneckere), *Economic Theory*, Vol. 3, No. 1, January 1993, pp. 99-107.
- “Durable Goods Monopoly with Incomplete Information” (with R. Deneckere), supercedes “Stationary Sequential Equilibria in Bargaining with Two-Sided Incomplete Information,” *Review of Economic Studies*, Vol. 59, No. 4, October 1992, pp. 795-812.
- “Bargaining and the Right to Remain Silent” (with R. Deneckere), *Econometrica*, Vol. 60, No. 3, May 1992, pp. 597-625.
- “The Failure of Competition in the Credit Card Market,” *American Economic Review*, Vol. 81, No. 1, March 1991, pp. 50-81; reprinted as Chapter 21 in *Advances in Behavioral Finance* (D. Thaler, ed.), Russell Sage Foundation, 1993.
- “Insider Trading in a Rational Expectations Economy,” *American Economic Review*, Vol. 80, No. 5, December 1990, pp. 1022-1041.
- “Partially-Revealing Rational Expectations Equilibrium in a Competitive Economy,” *Journal of Economic Theory*, Vol. 50, No. 1, February 1990, pp. 93-126.
- “A Direct Mechanism Characterization of Sequential Bargaining with One-Sided Incomplete Information” (with R. Deneckere), *Journal of Economic Theory*, Vol. 48, No. 1, June 1989, pp. 18-46; reprinted as Chapter 15 in *Bargaining with Incomplete Information* (P. Linhart, R. Radner, and M. Satterthwaite, eds.), Academic Press, 1992.
- “Reputation in Bargaining and Durable Goods Monopoly” (with R. Deneckere), *Econometrica*, Vol. 57, No. 3, May 1989, pp. 511-531; reprinted as Chapter 13 in *Bargaining with Incomplete Information* (P. Linhart, R. Radner, and M. Satterthwaite, eds.), Academic Press, 1992.

“One is Almost Enough for Monopoly” (with R. Deneckere), *Rand Journal of Economics*, Vol. 18, No. 2, Summer 1987, pp. 255-274.

Patents

“System and Method for an Auction of Multiple Types of Items” (with Peter Cramton and Wynne P. Jones), U.S. Patent Number 8,762,222, issued June 24, 2014.

“System and Method for the Efficient Clearing of Spectrum Encumbrances” (with Peter Cramton and Paul Milgrom), U.S. Patent Number 8,744,924, issued June 3, 2014.

“System and Method for a Dynamic Auction with Package Bidding” (with Paul Milgrom), U.S. Patent Number 8,566,211, issued October 22, 2013.

“System and Method for an Efficient Dynamic Multi-Unit Auction,” U.S. Patent Number 8,447,662, issued May 21, 2013.

“System and Method for a Hybrid Clock and Proxy Auction” (with Peter Cramton and Paul Milgrom), U.S. Patent Number 8,335,738, issued December 18, 2012.

“System and Method for a Hybrid Clock and Proxy Auction” (with Peter Cramton and Paul Milgrom), U.S. Patent Number 8,224,743, issued July 17, 2012.

“System and Method for the Efficient Clearing of Spectrum Encumbrances” (with Peter Cramton and Paul Milgrom), U.S. Patent Number 8,145,555, issued March 27, 2012.

“Computer Implemented Methods and Apparatus for Auctions,” U.S. Patent Number 8,065,224, issued November 22, 2011.

“Ascending Bid Auction for Multiple Objects,” U.S. Patent Number 7,966,247, issued June 21, 2011.

“System and Method for an Auction of Multiple Types of Items” (with Peter Cramton and Wynne P. Jones), U.S. Patent Number 7,899,734, issued March 1, 2011.

“System and Method for an Efficient Dynamic Multi-Unit Auction,” U.S. Patent Number 7,870,050, issued January 11, 2011.

“Computer Implemented Methods and Apparatus for Auctions,” U.S. Patent Number 7,774,264, issued August 10, 2010.

“System and Method for a Hybrid Clock and Proxy Auction” (with Peter Cramton and Paul Milgrom), U.S. Patent Number 7,729,975, issued June 1, 2010.

“System and Method for an Efficient Dynamic Multi-Unit Auction,” U.S. Patent Number 7,467,111, issued December 16, 2008.

“System and Method for an Efficient Dynamic Multi-Unit Auction,” U.S. Patent Number 7,343,342, issued March 11, 2008.

“Ascending Bid Auction for Multiple Objects,” U.S. Patent Number 7,337,139, issued February 26, 2008.

“Computer Implemented Methods and Apparatus for Auctions,” U.S. Patent Number 7,249,027, issued July 24, 2007.

“System and Method for an Efficient Dynamic Multi-Unit Auction,” U.S. Patent Number 7,165,046, issued January 16, 2007.

“System and Method for an Efficient Dynamic Multi-Unit Auction,” U.S. Patent Number 7,062,461, issued June 13, 2006.

“System and Method for an Efficient Dynamic Auction for Multiple Objects,” U.S. Patent Number 6,026,383, issued February 15, 2000.

“Computer Implemented Methods and Apparatus for Auctions,” U.S. Patent Number 6,021,398, issued February 1, 2000.

“Computer Implemented Methods and Apparatus for Auctions,” U.S. Patent Number 5,905,975, issued May 18, 1999.

Book Reviews and Encyclopedia Entries

“Auction Theory,” *New Palgrave Dictionary of Economics*, Second Edition, Steven N. Durlauf and Lawrence E. Blume, eds., London: Macmillan, 2008.

“Credit Cards,” *McGraw-Hill Encyclopedia of Economics*, McGraw-Hill, 1994.

“Book Review: The Credit Card Industry, by Lewis Mandell,” *Journal of Economic Literature*, Vol. 30, No. 3, September 1992, pp. 1517-18.

“Credit Cards,” *New Palgrave Dictionary of Money and Finance*, Stockton Press, 1992.

Working Papers

“Market Design and the FCC Incentive Auction” (with Christina Aperjis and Oleg V. Baranov), October 2017.

“The Combinatorial Clock Auction, Revealed Preference and Iterative Pricing” (with Oleg V. Baranov), February 2014.

“Core-Selecting Auctions with Incomplete Information” (with Oleg V. Baranov), working paper, University of Maryland, August 2010.

- “Penalty Interest Rates, Universal Default, and the Common Pool Problem of Credit Card Debt” (with Oleg V. Baranov and Amanda E. Dawsey), mimeo, University of Maryland, June 2010.
- “A Troubled Asset Reverse Auction” (with Peter Cramton), working paper, University of Maryland, October 2008.
- “Time Inconsistency in the Credit Card Market” (with Haiyan Shui), mimeo, University of Maryland, January 2005.
- “Informal Bankruptcy” (with Amanda E. Dawsey), mimeo, University of Maryland, April 2004.
- “Adverse Selection in the Credit Card Market,” mimeo, University of Maryland, June 1999.
- “The Credit Card Market, Revisited,” mimeo, University of Maryland, July 1995.
- “Walrasian Tâtonnement for Discrete Goods,” mimeo, University of Maryland, July 2005.
- “Bidder Participation and Information in Currency Auctions” (with Rafael Romeu), Working Paper WP/05/157, International Monetary Fund, 2005.
- “A Mechanism Generalizing the Vickrey Auction,” mimeo, University of Maryland, September 1999.
- “The Ascending Auction Paradox” (with Jesse Schwartz), mimeo, University of Maryland, July 1999.
- “The Optimality of Being Efficient” (with Peter Cramton), mimeo, University of Maryland, June 1999.
- “Sequential Recontracting Under Incomplete Information” (with Arijit Sen), mimeo, University of Maryland, June 1995.
- “Separation and Delay in Bargaining” (with Raymond Deneckere), mimeo, University of Maryland, April 1994.
- “A Model of Managerial Discretion and Corporate Takeovers,” mimeo, University of Maryland, March 1993.
- “Rigidity and Asymmetric Adjustment of Bank Interest Rates,” mimeo, University of Maryland, August 1992.
- “Oligopoly When Market Share Matters,” mimeo, Stanford University, May 1984.
- “Partially-Revealing Equilibria,” Stanford University, Department of Economics, August 1984. Dissertation committee: Mordecai Kurz (principal advisor); Peter J. Hammond; Kenneth J. Arrow.

Works in Progress

“The Hungarian Auction” (with T. Morrill)

“Bargaining and Forward Induction” (with R. Deneckere)

Op-Eds

“Making Sense of the Aggregator Bank” (with Peter Cramton), *Economists’ Voice*, Vol. 6, Issue 3, Article 2, February 2009.

“No Substitute for the ‘P’-Word in Financial Rescue” (with Peter Cramton), *Economists’ Voice*, Vol. 6, Issue 2, Article 2, February 2009.

“Auction Design Critical for Rescue Plan” (with Peter Cramton), *Economists’ Voice*, Vol. 5, Issue 5, Article 5, September 2008.

Research Grants

Principal Investigator, “Common-Value Auctions with Liquidity Needs” (with P. Cramton, E. Filiz-Ozbay and E. Ozbay), National Science Foundation Grant SES-09-24773, September 1, 2009 – August 31, 2013.

Principal Investigator, “Dynamic Matching Mechanisms” (with P. Cramton), National Science Foundation Grant SES-05-31254, August 15, 2005 – July 31, 2008.

Co-Principal Investigator, “Slot Auctions for U.S. Airports” (with M. Ball, P. Cramton and D. Lovell), Federal Aviation Administration, September 1, 2004 – August 31, 2005.

Co-Principal Investigator, “Rapid Response Electronic Markets for Time-Sensitive Goods” (with G. Anandalingam, P. Cramton, H. Lucas, M. Ball and V. Subrahmanian), National Science Foundation Grant IIS-02-05489, Aug 1, 2002 – July 31, 2005.

Principal Investigator, “Multiple Item Auctions” (with P. Cramton), National Science Foundation Grant SES-01-12906, July 15, 2001 – June 30, 2004.

Principal Investigator, “Auctions for Multiple Items” (with P. Cramton), National Science Foundation Grant SBR-97-31025, April 1, 1998 – March 31, 2001.

Co-Principal Investigator, “Auctions and Infrastructure Conference” (with P. Cramton), National Science Foundation, April 1, 1998 – March 31, 1999.

Principal Investigator, “Bargaining Power, Sequential Recontracting, and the Principal-Agent Problem” (with A. Sen), National Science Foundation Grant SBR-94-10545, October 15, 1994 – September 30, 1997.

Principal Investigator, “Insider Trading and Economic Efficiency,” The Lynde and Harry Bradley Foundation, May 15, 1989 – May 14, 1992.

Principal Investigator, “Bargaining with One- and Two-Sided Incomplete Information” (with R. Deneckere), National Science Foundation Grant SES-86-19012, June 1, 1987 – May 31, 1989.

Principal Investigator, “Information Transmission in Bargaining and Markets” (with R. Deneckere), National Science Foundation Grant IST-86-09129, July 1, 1986 – June 30, 1987.

Conference Presentations

“On Generalizing the English Auction,” Econometric Society Winter Meetings, Chicago, January 1998.

“The Optimality of Being Efficient,” Maryland Auction Conference, Wye River, May 1998.

“Adverse Selection in the Credit Card Market,” Western Finance Association, Monterey, June 1998.

“The Optimality of Being Efficient,” Econometric Society Summer Meetings, Montreal, June 1998.

“Bargaining and Forward Induction,” Northwestern Summer Microeconomics Conference, Evanston, IL, July 1998.

“Predicting Personal Bankruptcies,” National Conference of Bankruptcy Judges, Dallas, October 1998.

“Adverse Selection in the Credit Card Market,” NBER Behavioral Macroeconomics Conference, Boston, December 1998.

“The Ascending Auction Paradox,” Econometric Society Summer Meetings, Madison, June 1999.

“Adverse Selection in the Credit Card Market,” Econometric Society Summer Meetings, Madison, June 1999.

“Predicting Personal Bankruptcies,” Meeting of the National Association of Chapter Thirteen Trustees, New York, July 1999.

“The Ascending Auction Paradox,” Southeast Economic Theory Conference, Washington DC, November 1999.

“Adverse Selection in the Credit Card Market,” Utah Winter Finance Conference, Salt Lake City, February 2000.

- “An Efficient Dynamic Auction for Heterogeneous Commodities,” Conference on Auctions and Market Structure, Heidelberg, Germany, July 2000.
- “An Efficient Dynamic Auction for Heterogeneous Commodities,” Conference on Multiunit Auctions, Stony Brook, NY, July 2000.
- “A Mechanism Generalizing the Vickrey Auction,” Econometric Society World Congress, Seattle, August 2000.
- “Auctions for Financial E-Commerce,” New York Federal Reserve Bank Conference on Financial E-Commerce, New York, February 2001.
- “An Efficient Dynamic Auction for Heterogeneous Commodities,” NSF General Equilibrium Conference, Providence, RI, April 2001.
- “An Efficient Dynamic Auction for Heterogeneous Commodities,” NSF/NBER Decentralization Conference, Evanston, IL, April 2001.
- “Informal Bankruptcy,” Association of American Law Schools Workshop on Bankruptcy, St. Louis, MO, May 2001.
- “An Efficient Dynamic Auction for Heterogeneous Commodities,” Econometric Society Summer Meetings, College Park, MD, June 2001.
- “Ascending Auctions with Package Bidding,” FCC, SIEPR and NSF Conference on Combinatorial Auctions, Wye River, MD, October 2001.
- “The Electricité de France Generation Capacity Auctions,” CORE-ECARES-LEA Workshop on Auctions, Brussels, Belgium, November 2001.
- “Informal Bankruptcy,” Utah Winter Finance Conference, Salt Lake City, February 2002.
- “Defictionalizing the Walrasian Auctioneer,” Conference on Market Design in Honor of Robert Wilson, Stanford, CA, May 2002.
- “Adverse Selection in the Credit Card Market,” Conference on the Economics of Payment Networks, Toulouse, France, June 2002.
- “Ascending Auctions with Package Bidding,” Econometric Society Summer Meetings, Los Angeles, June 2002.
- “An Efficient Dynamic Auction for Heterogeneous Commodities,” Conference in Honor of Mordecai Kurz, Stanford, CA, August 2002.
- “Adverse Selection in the Credit Card Market,” Conference on Credit, Trust and Calculation, San Diego, November 2002.
- “Package Bidding for Spectrum Auctions,” American Economic Association Meetings, Washington, DC, January 2003.

- “Auctioning Many Divisible Goods,” invited session, European Economic Association Annual Congress, Stockholm, August 2003.
- “Spectrum Auctions with Package Bidding,” TPRC Research Conference on Communication, Information and Internet Policy, Arlington, VA, September 2003.
- “Defictionalizing the Walrasian Auctioneer,” invited lecture, Conference on Auctions and Market Design: Theory, Evidence and Applications, Fondazione Eni Enrico Mattei, Milan, September 2003.
- “Clock Auctions, Proxy Auctions, and Possible Hybrids,” Workshop on Auction Theory and Practice, Pittsburgh, PA, November 2003.
- “Clock Auctions, Proxy Auctions, and Possible Hybrids,” FCC Combinatorial Bidding Conference, Wye River, MD, November 2003.
- “Time Inconsistency in the Credit Card Market,” Utah Winter Finance Conference, Salt Lake City, February 2004.
- “The Clock-Proxy Auction: A Practical Combinatorial Auction Design,” Conference on Auctions and Market Design: Theory, Evidence and Applications, Consip, Rome, Italy, September 2004.
- “Bidder Participation and Information in Currency Auctions,” Conference on Auctions and Market Design: Theory, Evidence and Applications, Consip, Rome, Italy, September 2004.
- “The Clock-Proxy Auction: A Practical Combinatorial Auction Design,” Market Design Conference, Stanford University, December 2004.
- “Dynamic Matching Mechanisms,” Econometric Society World Congress, London, August 2005.
- “The Clock-Proxy Auction, with Recent Applications,” SISL Workshop, Caltech, October 2005.
- “Dynamic Matching Mechanisms,” Conference on Matching and Two-Sided Markets, University of Bonn, May 2006.
- “The Hungarian Auction,” DIMACS Workshop on Auctions with Transaction Costs, Rutgers University, March 2007.
- “The Hungarian Auction,” PSE Lecture at the Paris School of Economics, June 2007.
- “Time Inconsistency in the Credit Card Market,” John M. Olin Conference on Law and Economics of Consumer Credit, University of Virginia, February 2008.

- “The Hungarian Auction,” 6th Annual International Industrial Organization Conference, Arlington, VA, May 2008.
- “The Hungarian Auction,” Frontiers of Microeconomic Theory and Policy, Symposium in Honour of Ray Rees, University of Munich, July 2008.
- “Common-Value Auctions with Liquidity Needs: An Experimental Test of a Troubled Assets Reverse Auction,” 2009 CAPCP Conference on Auctions and Procurement, Penn State University, March 2009.
- “Market Design for Troubled Assets,” NBER Workshop on Market Design, Cambridge, MA, May 2009.
- “Market Design for Troubled Assets,” Madrid Summer Workshop on Economic Theory, Universidad Carlos III de Madrid, June 2009.
- “Virtual Power Plant Auctions,” (with Peter Cramton), Workshop: Designing Electricity Auctions, Research Institute of Industrial Economics, Stockholm, Sweden, September 2009.
- “Using Forward Markets to Improve Electricity Market Design,” (with Peter Cramton), Workshop: Designing Electricity Auctions, Research Institute of Industrial Economics, Stockholm, Sweden, September 2009.
- “Virtual Power Plant Auctions,” (with Peter Cramton), Market Design 2009 Conference, Stockholm, Sweden, September 2009.
- “Using Forward Markets to Improve Electricity Market Design,” (with Peter Cramton), Market Design 2009 Conference, Stockholm, Sweden, September 2009.
- “Auctions with Multiple Objects,” 2009 Erwin Plein Nemmers Prize in Economics, Conference in Honor of Paul Milgrom, Northwestern University, November 2009.
- “Penalty Interest Rates, Universal Default, and the Common Pool Problem of Credit Card Debt” (with Oleg V. Baranov and Amanda E. Dawsey), Credit, Default and Bankruptcy Conference, University of California - Santa Barbara, June 2010.
- “Core-Selecting Auctions with Incomplete Information” (with Oleg V. Baranov), World Congress of the Econometric Society, Shanghai, China, August 2010.
- “Core-Selecting Auctions with Incomplete Information” (with Oleg V. Baranov), NBER Workshop on Market Design, Cambridge, MA, October 2010.
- “Core-Selecting Auctions with Incomplete Information” (with Oleg V. Baranov), NSF/CEME Decentralization Conference, Ohio State University, April 2011
- “Penalty Interest Rates, Universal Default, and the Common Pool Problem of Credit Card Debt” (with Oleg V. Baranov and Amanda E. Dawsey), Centre for Financial Analysis

- & Policy Conference on Consumer Credit and Bankruptcy, University of Cambridge, UK, April 2011.
- “Core-Selecting Auctions with Incomplete Information” (with Oleg V. Baranov), Center for the Study of Auctions, Procurements and Competition Policy Conference, Penn State University, April 2011.
- “Design Issues for Combinatorial Clock Auctions” (with Oleg V. Baranov), Annual Meeting of the Institute for Operations Research and the Management Sciences (INFORMS), Phoenix AZ, October 2012.
- “An Enhanced Combinatorial Clock Auction” (with Oleg V. Baranov), SIEPR Conference on the FCC Incentive Auctions, Stanford University, February 2013.
- “Enhancing the Combinatorial Clock Auction” (with Oleg V. Baranov), Ofcom Conference, Combinatorial Auctions for Spectrum, London School of Economics, September 2013.
- “The Combinatorial Clock Auction, Revealed Preference and Iterative Pricing” (with Oleg V. Baranov), NBER Workshop on Market Design, Stanford University, October 2013.
- “Market Design and the Evolution of the Combinatorial Clock Auction” (with Oleg V. Baranov), invited session in honor of the Nobel Prize in Economics awarded to Market Design, American Economic Association meetings, Philadelphia, January 2014.
- “Revealed Preference in Bidding: Empirical Evidence from Recent Spectrum Auctions” (with Oleg V. Baranov), NBER Market Design Conference, Palo Alto, CA, June 2014.
- “Enhancing the Combinatorial Clock Auction” (with Oleg V. Baranov), Industry Canada Retrospective on the Canadian 700 MHz Spectrum Auction, Ottawa, Canada, November 2014.
- “Efficient Procurement Auctions with Increasing Returns” (with Oleg V. Baranov, Christina Aperjis and Thayer Morrill), Annual Meeting of the Institute for Operations Research and the Management Sciences (INFORMS), Philadelphia PA, November 2015.
- “Efficient Procurement Auctions with Increasing Returns” (with Oleg V. Baranov, Christina Aperjis and Thayer Morrill), Workshop on Auction Design, University of Vienna, August 2016.
- “Vickrey-Based Pricing in Iterative First-Price Auctions” (with Oleg V. Baranov), Workshop on Auction Design, University of Vienna, August 2016.
- “Efficient Procurement Auctions with Increasing Returns” (with Oleg V. Baranov, Christina Aperjis and Thayer Morrill), NBER Market Design Conference, Palo Alto, CA, October 2016.
- “Market Design and the FCC Incentive Auction” (with Christina Aperjis and Oleg V. Baranov), Tenth Biannual Conference on Economic Design, York, UK, June 2017.

- “Market Design and the FCC Incentive Auction” (with Christina Aperjis and Oleg V. Baranov), NBER Market Design Conference, Cambridge, MA, October 2017.
- “Market Design and the FCC Incentive Auction” (with Christina Aperjis and Oleg V. Baranov), New Perspectives on Spectrum Policy Workshop, U Penn Law School, April 2018.
- “Revealed Preference and Activity Rules in Auctions” (with Oleg V. Baranov), keynote talk, York Annual Symposium on Game Theory 2018, York, UK, June 2018.
- “Market Design and the FCC Incentive Auction” (with Christina Aperjis and Oleg V. Baranov), INFORMS Workshop on Mathematical Optimization in Market Design, Ithaca, NY, June 2018.
- “Market Design and the FCC Incentive Auction” (with Christina Aperjis and Oleg V. Baranov), European Economic Association Annual Congress, Cologne, August 2018.

Professional Service

- Mentored the National Winner of the 2017-18 Siemens Competition in Math, Science and Technology (Andrew Komo of Bethesda, MD).
- Member of working group for the design and implementation of the FCC Incentive Auction for the US Federal Communications Commission, 2011 – 2017.
- Advisor to Innovation, Science and Economic Development Canada for the design and implementation of 600 MHz, 700 MHz and 2.5 GHz spectrum auctions, 2011 – present.
- Advisor to the Australian Communications and Media Authority for the design and implementation of the Australian Digital Dividend Auction and future spectrum auctions, 2011 – present.
- Congressional Briefing on “How Fundamental Economic Research Improves People’s Lives,” Rayburn House Office Building, March 2010.
- Testified before the Committee on Banking, Housing and Urban Affairs of the US Senate, Hearing on “Modernizing Consumer Protection in the Financial Regulatory System: Strengthening Credit Card Protections,” February 12, 2009.
- Testified before the Subcommittee on Financial Institutions and Consumer Credit of the US House of Representatives, Hearing on “The Credit Cardholders’ Bill of Rights: Providing New Protections for Consumers,” March 13, 2008.
- Member, National Science Foundation Economics Panel, 2004 – 2005.
- Associate Editor, *Berkeley Electronic Journals of Theoretical Economics*, 2004 – present.
- Guest Associate Editor, *Management Science*, issue on Electronic Auctions, 2003.

Program Chair of the 2001 North American Summer Meeting of the Econometric Society (with Peter Cramton), University of Maryland, June 21–24, 2001.

Program Committee of the North American Summer Meeting of the Econometric Society, UCLA, June 2002, and University of Pennsylvania, June 1991.

Organized Maryland Auction Conference (with Peter Cramton), Wye River Conference Center, May 1998, sponsored by the National Science Foundation, the World Bank, and the University of Maryland.

Spoke at a Forum on Bankruptcy of the Financial Services Committee of the United States House of Representatives, February 28, 2001.

Testified before the Subcommittee on Commercial and Administrative Law of the United States House of Representatives, Hearing on the Consumer Bankruptcy Issues in the Bankruptcy Reform Act of 1998, March 10, 1998.

Testified before the Subcommittee on Financial Institutions and Regulatory Relief of the United States Senate, Hearing on Bankruptcy Reform, February 11, 1998.

Testified before the National Bankruptcy Review Commission, January 1997.

Referee for: *American Economic Review*, *Econometrica*, *European Economic Review*, *Games and Economic Behavior*, *International Journal of Game Theory*, *International Journal of Industrial Organization*, *Journal of Banking and Finance*, *Journal of Business*, *Journal of Economic Theory*, *Journal of Financial Intermediation*, *Journal of Political Economy*, *Quarterly Journal of Economics*, *Rand Journal of Economics*, *Review of Economic Studies*, and the National Science Foundation.

Professional Organizations

American Economic Association
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Attachment E

New England Governors, State Utility Regulators and Related Agencies*

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