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March 18, 2019

Luly E. Massaro, Commission Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

RE: Review of Proposed Power Purchase Agreements Pursuant to R.I. Gen. Laws § 39-31 Docket No. 4929

Dear Ms. Massaro:

Enclosed for filing with the Rhode Island Public Utilities Commission (PUC) are the responses of National Grid[1] to the PUC's Second Set of Data Requests.

This filing also includes a Motion for Protective Treatment in accordance with Rule 1.3(H)(2) of PUC's Rules of Practice and Procedure and R.I. Gen. Laws § 38-2-2(4)(B). The Company seeks protection from public disclosure of the highly sensitive and proprietary information contained in the confidential version of Attachment PUC 2-35 and Attachment PUC 2-36. Accordingly, the Company has provided the PUC with one (1) complete, unredacted copy of the confidential document in a sealed envelope marked **"Contains Privileged Information – Do Not Release."** A redacted copy of each attachment has been included for filing on the public record.

Please contact me at 617-951-1400 if you have any questions regarding this filing.

Very truly yours,

John K. Habib

John K. Habib, Esq.
R.I. Bar # 7431

cc: Docket No. 4929 Service List

[1] The Narragansett Electric Company d/b/a National Grid (National Grid or the Company).

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PUBLIC UTILITIES COMMISSION

Petition of Narragansett Electric Company d/b/a National Grid for Approval of Proposed Power Purchase Agreements Pursuant to R.I. Gen. Laws § 39-31	))))	Docket No. 4929

NATIONAL GRID'S PETITION
FOR PROTECTIVE TREATMENT OF CONFIDENTIAL INFORMATION

National Grid[1] hereby requests that the Rhode Island Public Utilities Commission (PUC) provide confidential treatment and grant protection from public disclosure of certain confidential, competitively sensitive, and proprietary information submitted in this proceeding, as permitted by PUC Rule 1.3(H) and R.I.G.L. § 38-2-1, *et seq.* National Grid further requests that, pending entry of findings pursuant to these provisions, the PUC preliminarily grant National Grid's request for confidential treatment pursuant to Public Information, PUC Rule 1.3(H)(2).

I. BACKGROUND

On February 6, 2019, National Grid filed with the PUC its request for approval of a 20-year Power Purchase Agreement entered into by National Grid for the purchase of energy and environmental attributes from DWW Rev I, LLC's (DWW) Revolution Wind Farm offshore wind facility (the PPA), pursuant to the Request for Proposals for Long-term Contracts for Offshore Wind Energy Projects issued by the Massachusetts Electric Distribution Companies[2] and the Massachusetts Department of Energy Resources (DOER), on June 29, 2017 (RFP). In support of

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[1] The Narragansett Electric Company d/b/a National Grid (National Grid or the Company).

[2] The Massachusetts Electric Distribution Companies include Fitchburg Gas and Electric Light Company d/b/a/ Unitil, Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid, and NSTAR Electric Company d/b/a Eversource Energy.

its request for approval, National Grid submitted initial testimony and supporting exhibits, including a copy of the PPA and analyses calculating the net benefits of the project, including proprietary modeling information and analysis provided by the Company's third-party consultants.

Together with this petition, the Company is submitting responses to the PUC's Second Set of Data Requests, which include confidential information that should be protected from public disclosure. Specifically, the Company is seeking protective treatment for each of the following documents (together, the Confidential Information):

- Attachment PUC 2-35, containing information for all bids received in response to National Grid's RFP issued pursuant to the PUC's decision and order in Docket No. 4822; and
- Attachment PUC 2-36, containing a roster of the Company's bid team members.

National Grid requests that the PUC give the information contained in the un-redacted versions of the document confidential treatment.

II. LEGAL STANDARD

The PUC's Rule 1.3(H) provides that access to public records shall be granted in accordance with the Access to Public Records Act (APRA), R.I.G.L. §38-2-1 *et seq.*

Under the APRA, all documents and materials submitted in connection with the transaction of official business by an agency is deemed to be a "public record," unless the information contained in such documents and materials falls within one of the exceptions specifically identified in R.I.G.L. §38-2-2(4). Therefore, to the extent that information provided to the PUC falls within one of the designated exceptions to the public records law, the PUC has the authority under the terms of APRA to deem such information to be confidential and to protect that information from public disclosure. In that regard, R.I.G.L. §38-2-2(4)(B) provides that the following types of records shall not be deemed public:

> Trade secrets and commercial or financial information obtained from a person, firm, or corporation which is of a privileged or confidential nature.

The exception "protects persons who submit financial or commercial data to government agencies from the competitive disadvantages which would result from its publication." Critical Mass Energy Project v. Nuclear Regulatory Commission, 975 F.2d 871, 873 (D. D.C. Cir. 1992); see also Providence Journal Company v. Convention Center Authority, 774 A.2d 40 (R.I. 2001) (adopting Critical Mass). The Rhode Island Supreme Court has held that this confidential information exemption applies where disclosure of information would be likely to either: (1) impair the Government's ability to obtain necessary information in the future; or (2) cause substantial harm to the competitive position of the person from whom the information was obtained. Providence Journal, 774 A.2d at 47 (emphasis added).

The second prong of the Providence Journal test has been interpreted to not require "a sophisticated economic analysis of the likely effects of disclosure." New Hampshire Right to Life v. US Dept. of Health and Human Services, 778 F. 3d 43, 50 (1st. Cir. 2015) (quoting Pub. Citizen Health Research Grp., 704 F. 2d 1280, 1291 (1983)). The party opposing disclosure must establish "actual competition and a likelihood of substantial competitive injury" to bring the information under the confidential exemption. Id. In determining whether information is confidential the court should not limit its assessment of bidding information in a singular ad-hoc manner, but rather should acknowledge the likelihood of additional bids in the future. Id., at 51. As discussed further below, the Confidential Information here should be protected because it is commercial or financial information that, if disclosed, would be likely to cause substantial harm to the competitive position of the persons from whom the information was obtained.

III. BASIS FOR CONFIDENTIALITY

Data Request PUC 2-35 asks the Company to "provide the price, capacity, and technology type or configuration, and any other pertinent information for all bids received in response to National Grid's RFP issued pursuant to the PUC's decision and order in Docket No. 4822." In its response, the Company is providing as Attachment PUC 2-35 (Confidential) a table identifying each bid submitted in response to the RFP issued pursuant to Docket No. 4822 and details regarding the pricing and other bid terms from each bid. Section 3.4 of the RFP allowed bidders to designate information within a bid as confidential and provides that the Company will use commercially reasonable efforts to treat the non-public information it receives from bidders in a confidential manner, including seeking an order for protective treatment. The process was designed in this manner to encourage participation, promote competition in the bidding process, and maximize the value of the bids received. Any disclosure of proprietary information reasonably designated as confidential by the bidders would undermine the process and potentially harm the competitiveness of future solicitations. In addition, the Company's review of the bids submitted in response to the RFP is ongoing. Disclosing pricing information and other bid terms now could adversely impact the Company's ability to negotiate favorable PPA terms in the future, following bid selection. Therefore, the confidential information in Attachment PUC 2-35 should be protected.

Data Request PUC 2-36 asks the Company, in part, to provide a complete roster of its Bid Team members. The Company is providing the requested information in Attachment PUC 2-36 (Confidential). The Company has not previously disclosed its Bid Team members on the public record. The Company maintains rosters of each Bid Team member for purposes of meeting its compliance obligations under the Standards of Conduct. However, other bidders unaffiliated with the Company and other companies with representation on the Evaluation Team and with a bid team (i.e., NSTAR Electric Company d/b/a Eversource Energy in Massachusetts) are not required to disclose their personnel participating in the preparation of a bid. As a result, if all of National Grid's Bid Team members were disclosed on the public record, it has the potential to result in an unfair competitive disadvantage to National Grid's bidding affiliates and/or to bidders submitting a joint bid with National Grid's bidding affiliates to the extent that knowing the identify of Bid Team members could be used to the advantage of a competitive bidder.

IV. CONCLUSION

Accordingly, the Company requests that the PUC grant protective treatment above-listed Confidential Information.

WHEREFORE, the Company respectfully requests that the PUC grant its Motion for Protective Treatment as stated herein.

Respectfully submitted,

NATIONAL GRID

By its attorney,

John K. Habib

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(617) 951-1400

Dated: March 18, 2019

Docket No. 4929 -- National Grid's Review of PPA w/ WWD Rev I, LLC

Service List updated 3/12/2019

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The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4929
Discovery Log

DATA SET	DATA REQUEST	DATE ISSUED	DATE FILED	WITNESS	TOPIC	Attachment	CONFIDENTIAL ATTACHMENT
COMMISSION SET 1							
COMMISSION SET 1	PUC 1-1	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Pricing		
COMMISSION SET 1	PUC 1-2	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Pricing		
COMMISSION SET 1	PUC 1-3	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Transmission		
COMMISSION SET 1	PUC 1-4	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Transmission		
COMMISSION SET 1	PUC 1-5	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Transmission		
COMMISSION SET 1	PUC 1-6	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Transmission		
COMMISSION SET 1	PUC 1-7	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Transmission		
COMMISSION SET 1	PUC 1-8	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Pricing		
COMMISSION SET 1	PUC 1-9	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Transmission		
COMMISSION SET 1	PUC 1-10	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Cost Recovery		
COMMISSION SET 1	PUC 1-11	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Transmission		
COMMISSION SET 1	PUC 1-12	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Cost Recovery		
COMMISSION SET 1	PUC 1-13	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Transmission		
COMMISSION SET 1	PUC 1-14	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Transmission		
COMMISSION SET 1	PUC 1-15	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Pricing		
COMMISSION SET 1	PUC 1-16	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	Transmission		
COMMISSION SET 1	PUC 1-17	2/25/2019	3/7/2019	Timothy J. Brennan and Corinne M. DiDomenico	PPA Terms		
COMMISSION SET 2							
COMMISSION SET 2	PUC 2-1	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Transmission		
COMMISSION SET 2	PUC 2-2	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Capacity and Reliability		
COMMISSION SET 2	PUC 2-3	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Capacity and Reliability		
COMMISSION SET 2	PUC 2-4	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Capacity and Reliability		
COMMISSION SET 2	PUC 2-5	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Value of Products		
COMMISSION SET 2	PUC 2-6	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Value of Products		

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COMMISSION SET 2	PUC 2-7	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Value of Products		
COMMISSION SET 2	PUC 2-8	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Value of Products		
COMMISSION SET 2	PUC 2-9	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Value of Products		
COMMISSION SET 2	PUC 2-10	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Value of Products	Att. PUC 2-10	
COMMISSION SET 2	PUC 2-11	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Value of Products		
COMMISSION SET 2	PUC 2-12	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Emissions and RECs		
COMMISSION SET 2	PUC 2-13	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Emissions and RECs		
COMMISSION SET 2	PUC 2-14	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Emissions and RECs	Att. PUC 2-14	
COMMISSION SET 2	PUC 2-15	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Emissions and RECs		
COMMISSION SET 2	PUC 2-16	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Emissions and RECs	Att. PUC 2-16-1 and Att. PUC 2-16-2	
COMMISSION SET 2	PUC 2-17	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Emissions and RECs		
COMMISSION SET 2	PUC 2-18	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Other Contract Provisions		
COMMISSION SET 2	PUC 2-19	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Other Contract Provisions		
COMMISSION SET 2	PUC 2-20	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Other Contract Provisions		
COMMISSION SET 2	PUC 2-21	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Other Contract Provisions		
COMMISSION SET 2	PUC 2-22	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Other Contract Provisions		
COMMISSION SET 2	PUC 2-23	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Other Contract Provisions		
COMMISSION SET 2	PUC 2-24	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Other Contract Provisions		
COMMISSION SET 2	PUC 2-25	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Reasonableness and RFP		
COMMISSION SET 2	PUC 2-26	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Reasonableness and RFP		
COMMISSION SET 2	PUC 2-27	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Reasonableness and RFP		
COMMISSION SET 2	PUC 2-28	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Reasonableness and RFP		
COMMISSION SET 2	PUC 2-29	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Reasonableness and RFP		

The Narragansett Electric Company
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DATA SET	DATA REQUEST	DATE ISSUED	DATE FILED	WITNESS	TOPIC	Attachment	CONFIDENTIAL ATTACHMENT
COMMISSION SET 2	PUC 2-30	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Reasonableness and RFP		
COMMISSION SET 2	PUC 2-31	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Reasonableness and RFP		
COMMISSION SET 2	PUC 2-32	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Reasonableness and RFP		
COMMISSION SET 2	PUC 2-33	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Reasonableness and RFP		
COMMISSION SET 2	PUC 2-34	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Reasonableness and RFP		
COMMISSION SET 2	PUC 2-35	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Reasonableness and RFP	Att. PUC 2-35 Redacted	Att. PUC 2-35 Confidential
COMMISSION SET 2	PUC 2-36	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Reasonableness and RFP	Att. PUC 2-36 Redacted	Att. PUC 2-36 Confidential
COMMISSION SET 2	PUC 2-37	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Jobs and Economic Benefits		
COMMISSION SET 2	PUC 2-38	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Jobs and Economic Benefits		
COMMISSION SET 2	PUC 2-39	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Jobs and Economic Benefits		
COMMISSION SET 2	PUC 2-40	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Jobs and Economic Benefits		
COMMISSION SET 2	PUC 2-41	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Jobs and Economic Benefits		
COMMISSION SET 2	PUC 2-42	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Modeling	Att. PUC 2-42	
COMMISSION SET 2	PUC 2-43	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Modeling		
COMMISSION SET 2	PUC 2-44	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Modeling		
COMMISSION SET 2	PUC 2-45	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Modeling		
COMMISSION SET 2	PUC 2-46	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Cost Recovery and Remuneration		
COMMISSION SET 2	PUC 2-47	3/8/2019	3/18/2019	Timothy J. Brennan and Corinne M. DiDomenico	Cost Recovery and Remuneration		

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DIVISION SET 1							
DIVISION SET 1	DIV 1-1	2/25/2019	3/8/2019	Timothy J. Brennan and Corinne M. DiDomenico	Remuneration	Att. DIV 1-1	
DIVISION SET 1	DIV 1-2	2/25/2019	3/8/2019	Timothy J. Brennan and Corinne M. DiDomenico	Remuneration	Att. DIV 1-2	
DIVISION SET 1	DIV 1-3	2/25/2019	3/8/2019	Timothy J. Brennan and Corinne M. DiDomenico	Remuneration		
DIVISION SET 1	DIV 1-4	2/26/2019	3/8/2019	Timothy J. Brennan, Corinne M. DiDomenico & Robert B. Hevert	Remuneration		
DIVISION SET 1	DIV 1-5	2/26/2019	3/8/2019	Timothy J. Brennan, Corinne M. DiDomenico & Robert B. Hevert	Remuneration		
DIVISION SET 1	DIV 1-6	2/26/2019	3/8/2019	Timothy J. Brennan, Corinne M. DiDomenico & Robert B. Hevert	Remuneration		
DIVISION SET 1	DIV 1-7	2/26/2019	3/8/2019	Timothy J. Brennan, Corinne M. DiDomenico & Robert B. Hevert	Remuneration		
DIVISION SET 1	DIV 1-8	2/26/2019	3/8/2019	Robert B. Hevert	Remuneration		
DIVISION SET 1	DIV 1-9	2/26/2019	3/8/2019	Robert B. Hevert	Remuneration		
DIVISION SET 1	DIV 1-10	2/26/2019	3/8/2019	Robert B. Hevert	Remuneration		
DIVISION SET 1	DIV 1-11	2/26/2019	3/8/2019	Robert B. Hevert	Remuneration		
DIVISION SET 1	DIV 1-12	2/26/2019	3/8/2019	Robert B. Hevert	Remuneration	Att. DIV 1-12-1, DIV 1-12-2, DIV 1-12-3, DIV 1-12-4, DIV 1-12-5, DIV 1-12-6, DIV 1-12-7, DIV 1-12-8, DIV 1-12-9, DIV 1-12-10, DIV 1-12-11, DIV 1-12-12, DIV 1-12-13, DIV 1-12-14, DIV 1-12-15, DIV 1-12-16, DIV 1-12-17, DIV 1-12-18, & DIV 1-12-19	
DIVISION SET 1	DIV 1-13	2/26/2019	3/8/2019	Timothy J. Brennan, Corinne M. DiDomenico & Robert B. Hevert	Remuneration		
DIVISION SET 1	DIV 1-14	2/26/2019	3/8/2019	Robert B. Hevert	Remuneration		
DIVISION SET 1	DIV 1-15	2/26/2019	3/8/2019	Timothy J. Brennan, Corinne M. DiDomenico & Robert B. Hevert	Remuneration		

PUC 2-1

Request:

If the Delivery Facilities allow for incremental generation beyond the Contract Maximum Amount associated with the contract facility (Revolution I), please explain if energy generated by Revolution I would have priority of incremental generation in a transmission-constraint or curtailment event on the Delivery Facility.

Response:

Any such priority is difficult to address without knowing the various details and specific circumstances which might apply to any particular transmission-constraint or curtailment event, (e.g., the specific elements of facilities constrained or associated with the curtailment, the interconnection levels granted to the generation and associated facilities, the real-time generation offers into the wholesale market, operational design and limitations, system conditions, ISO-NE dispatch instructions, etc.).

However, pursuant to Section 3.3 (a) of the Power Purchase Agreement (PPA) between National Grid, as Buyer, and DWW REV I, LLC, as Seller, the "Seller shall construct the Facility as described in Exhibit A…for the delivery of the Products to Buyer." Also, pursuant to Section 4.1 (a), "the obligations for Seller to sell and Deliver the Products . . . are Unit Contingent and shall be subject to the operation of the Facility" and the "Seller agrees that Seller will not curtail or otherwise reduce deliveries of the Products in order to sell such Products to other purchasers." Moreover, pursuant to Section 4.2(a), "Seller shall Schedule and Deliver Energy hereunder with ISO-NE within the defined Operational Limitations of the Facility and in accordance with this Agreement and all ISO-NE Practices and ISO-NE Rules to Buyer" and "Buyer shall have no obligation to pay for any Energy not transferred to Buyer . . . (including, without limitation, as a result of an outage on any electric transmission system)."

PUC 2-2

Request:

Why did National Grid decide not to contract for capacity?

Response:

DWW's 400 MW Facility proposal was selected by The Narragansett Electric Company, in consultation with the Rhode Island Office of Energy Resources and the Rhode Island Division of Public Utilities and Carriers, resulting from a competitive procurement for offshore wind energy generation issued by the Massachusetts electric distribution companies (EDCs) and the Commonwealth of Massachusetts Department of Energy Resources (DOER) on June 29, 2017. The solicitation was issued in order to comply with Massachusetts legislation, commonly referred to as Section 83C. "An Act to Promote Energy Diversity," St. 2016, c. 188, s. 12, amending "An Act to Promote Green Communities," St. 2008, c. 169.

The EDCs' and the DOER's competitive procurement, and thus each bid offered in response, was for energy and/or renewable energy certificates (RECs) only, as required by Section 83C(c). While the solicitation required bidders to offer proposals for offshore wind resources that would interconnect to the ISO New England Inc. (ISO-NE) network at the equivalent of the Capacity Capability Interconnection Standard necessary to participate in the ISO-NE Forward Capacity Market (FCM), the solicitation did not invite proposals for capacity and it did not require bidders to take on a capacity supply obligation in the FCM.

Thus, the DWW 400 MW Facility offer selected by National Grid was for energy and RECs only, and the resulting contract was formed with DWW retaining responsibility for consideration of all potential capacity product risks and rewards, including those associated with their ability to clear the FCM, expected timing, and all market price and performance penalty risks.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-3

Request:

Referencing the Joint Testimony on Bates page 29, lines 5 to 8,

a. Please provide the Company's definition of reliability in this context.

b. Is the Company indicating an expectation or assumption that the Facility will be awarded a Capacity Supply Obligation in a future Forward Capacity Auction?

c. If the answer to part b is "yes" please indicate if the Company expects or assumes the facility (or part of the facility) will be awarded a Capacity Supply Obligation in the primary or substitution auction as a Sponsored Policy Resource (SPR)?

d. If the answer to part c describes any fraction of the facility obtaining a Capacity Supply Obligation as part of a substitution auction, please explain how a SPR provides incremental reliability through substitution auctions.

Response:

a. The Company's definition of reliability in this context is the overall ability of the system to satisfy customer demand.

b. While DWW has indicated in its bid that it expects capacity from the Facility to be awarded a Capacity Supply Obligation in a future Forward Capacity Auction, the Company is not indicating any such expectation or assumption in the referenced testimony.

c. Please see the response to part (b), above.

d. Please see the response to part (b), above.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne DiDomenico

PUC 2-4

Request:

Referencing the Joint Testimony on Bates page 29, lines 10 to 13:

a. Is the Company describing a historical fuel security issue or a theoretical future fuel security issue experience in the ISO-New England region?

b. If the answer to part a is "historical," please provide all hours in the last five years during which there was a fuel security issue, and any other pertinent data the Company is relying on. If the answer is "theoretical future," please provide the analysis the Company is relying on.

Response:

a. ISO-New England Inc. (ISO-NE) provides an overview of the "fuel security issues" mentioned by the Company in the referenced testimony at: https://www.iso-ne.com/about/regional-electricity-outlook/grid-in-transition-opportunities-and-challenges/fuel-security. The overview includes the following:

> Fuel security—ensuring that power plants have or can get the fuel they need to run, particularly in winter—is the foremost challenge to ensuring a reliable power grid in New England. Past operating experiences and current industry trends raise concerns about the future power system. New England has no indigenous fossil fuels and therefore, fuels must be delivered by ship, truck, pipeline, or barge from distant places. A dependable fuel supply for the region requires a fuel-delivery system that has the appropriate physical capability to transport all the fuel needed, the contractual arrangements secured in advance to ensure timely deliveries, and power plants that have fuel storage on site.
>
> The region's fuel-security risk has been evident to the ISO since a 2004 cold snap when more than 6,000 MW of natural-gas-fired generation was unavailable, due to pipeline constraints, economic outages, and operational issues. Similar challenges have continued to crop up during cold spells in recent winters, including the most recent one in late December 2017 and early January 2018. Because the reliability of the power system was maintained throughout these events, the region's electricity consumers have been shielded from this growing risk, apart from severe price spikes some winters that eventually showed up in retail rates. However, there is a real risk that the region's fuel-security risk could worsen to the point that the ISO would be required to take more severe emergency

actions to keep the lights on and protect the power grid during winter. These actions could include public pleas for electricity conservation, voltage reductions (brownouts)—and, as a last resort, load shedding (rolling blackouts).

Several factors make fuel security a growing concern:

- The regional power system is increasingly dependent on natural gas for power generation.

- The capacity of the region's natural gas infrastructure is not always adequate to deliver all the gas needed for both heating and power generation during winter.

- Natural gas is the fuel of choice for a large segment of new power plant proposals.

- The region's coal, oil, and nuclear power plants, which have fuel stored on site and are essential for reliability when natural gas is in short supply, are retiring under increasing economic and environmental pressures.

- The region has limited dual-fuel generating capability—that is, generators that can use either natural gas or oil—and emissions restrictions on burning oil are tightening."

b. Please see the response to part (a), above.

Also, please see the ISO-NE Operational Fuel-Security Analysis report available at: https://www.iso-ne.com/static-assets/documents/2018/01/20180117_operational_fuel-security_analysis.pdf. This report includes the following statement:

> Renewable resources can mitigate the region's fuel-security risk, and the study includes scenarios that incorporate all, and in some cases more than, the renewable resources that could result from existing or future clean energy initiatives of several New England states.

PUC 2-5

Request:

Please provide the annual average locational marginal price (LMP) at each proposed delivery point, or wholesale energy price if LMP is not available, for each of the last twenty calendar years.

Response:

Year	Brayton Point LD.BRAYTNPT115	Davisville LD.DAVISVIL115 1A LD	Pottersville LD.HATHAWAY115*
1999	*Not Available*	*Not Available*	*Not Available*
2000	*Not Available*	*Not Available*	*Not Available*
2001	*Not Available*	*Not Available*	*Not Available*
2002	*Not Available*	*Not Available*	*Not Available*
2003	$44.11	$46.85	$44.33
2004	$51.86	$53.34	$51.82
2005	$74.67	$76.83	$75.42
2006	$57.91	$59.42	$59.37
2007	$64.69	$66.58	$66.50
2008	$77.76	$79.74	$79.45
2009	$40.48	$41.37	$41.60
2010	$47.26	$48.47	$48.71
2011	$45.38	$46.08	$46.21
2012	$35.94	$36.53	$36.01
2013	$56.87	$58.19	$57.06
2014	$64.19	$65.26	$64.88
2015	$41.74	$42.42	$42.46
2016	$29.42	$28.87‡	$29.01†
2017	$33.00	$33.78‡	$33.98†
2018	$43.68†	$43.37‡	$43.68†

*Pottersville is a new substation and there is no historical pricing available. Hathaway is radial out of Somerset and is used as a proxy.

†Delivery point annual average LMP Not Available. Provided Average Yearly Wholesale Load Cost Report from https://www.iso-ne.com/isoexpress/web/reports/load-and-demand/-/tree/monthly-wholesale-load-cost-report (Zone = SEMASS).

‡Delivery point annual average LMP Not Available. Provided Average Yearly Wholesale Load Cost Report from https://www.iso-ne.com/isoexpress/web/reports/load-and-demand/-/tree/monthly-wholesale-load-cost-report (Zone = RHODEISLAND).

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PUC 2-6

Request:

Please provide the annual average REC price for each of the last ten calendar years.

Response:

Year	Annual Average REC Prices
2009	*Not Available*
2010	*Not Available*
2011	$30.49
2012	$59.16
2013	$63.79
2014	$57.76
2015	$48.95
2016	$35.68
2017	$23.75
2018	$14.90

Source: S&P Global Market Intelligence

Prepared by or under the supervision of:
Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-7

Request:

Please provide a table and graph comparing the proposed energy and RES prices in the proposed PPA to the energy and REC prices identified in Comm 2-5 and 2-6.

Response:

Table Summarizing Delivery Point and REC Pricing

Year	Delivery Point Brayton Point	Delivery Point Davisville	Delivery Point Pottersville *	Average Annual REC
1999	*Not Available*	*Not Available*	*Not Available*	
2000	*Not Available*	*Not Available*	*Not Available*	
2001	*Not Available*	*Not Available*	*Not Available*	
2002	*Not Available*	*Not Available*	*Not Available*	
2003	$44.11	$46.85	$44.33	
2004	$51.86	$53.34	$51.82	
2005	$74.67	$76.83	$75.42	
2006	$57.91	$59.42	$59.37	
2007	$64.69	$66.58	$66.50	
2008	$77.76	$79.74	$79.45	
2009	$40.48	$41.37	$41.60	*Not Available*
2010	$47.26	$48.47	$48.71	*Not Available*
2011	$45.38	$46.08	$46.21	$30.49
2012	$35.94	$36.53	$36.01	$59.16
2013	$56.87	$58.19	$57.06	$63.79
2014	$64.19	$65.26	$64.88	$57.76
2015	$41.74	$42.42	$42.46	$48.95
2016	$29.42	$28.87	$29.01	$35.68
2017	$33.00	$33.78	$33.98	$23.75
2018	$43.68	$43.37	$43.68	$14.90

*Pottersville is a new substation and there is no historical pricing available. Hathaway is radial out of Somerset and is used as a proxy.

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Revolution Wind

Contract Year	Energy Price	REC Price
CY1 (2024)	$71.925	$26.50
CY2 (2025)	$71.925	$26.50
CY3 (2026)	$71.925	$26.50
CY4 (2027)	$71.925	$26.50
CY5 (2028)	$71.925	$26.50
CY6 (2029)	$71.925	$26.50
CY7 (2030)	$71.925	$26.50
CY8 (2031)	$71.925	$26.50
CY9 (2032)	$71.925	$26.50
CY10 (2033)	$71.925	$26.50
CY11 (2034)	$71.925	$26.50
CY12 (2035)	$71.925	$26.50
CY13 (2036)	$71.925	$26.50
CY14 (2037)	$71.925	$26.50
CY15 (2038)	$71.925	$26.50
CY16 (2039)	$71.925	$26.50
CY17 (2040)	$71.925	$26.50
CY18 (2041)	$71.925	$26.50
CY19 (2042)	$71.925	$26.50
CY20 (2043)	$71.925	$26.50

Note: The price under the PPA is inclusive of energy and RECs. The purchase price allocated to energy, in the event the RECs associated with the Facility fail to satisfy the Renewable Energy Standard as an Environmental Attribute is $0.071925 per kWh, which is used to present the prices for energy and RECs above for purposes of comparison (see National Grid Initial Filing at Bates page 000114).

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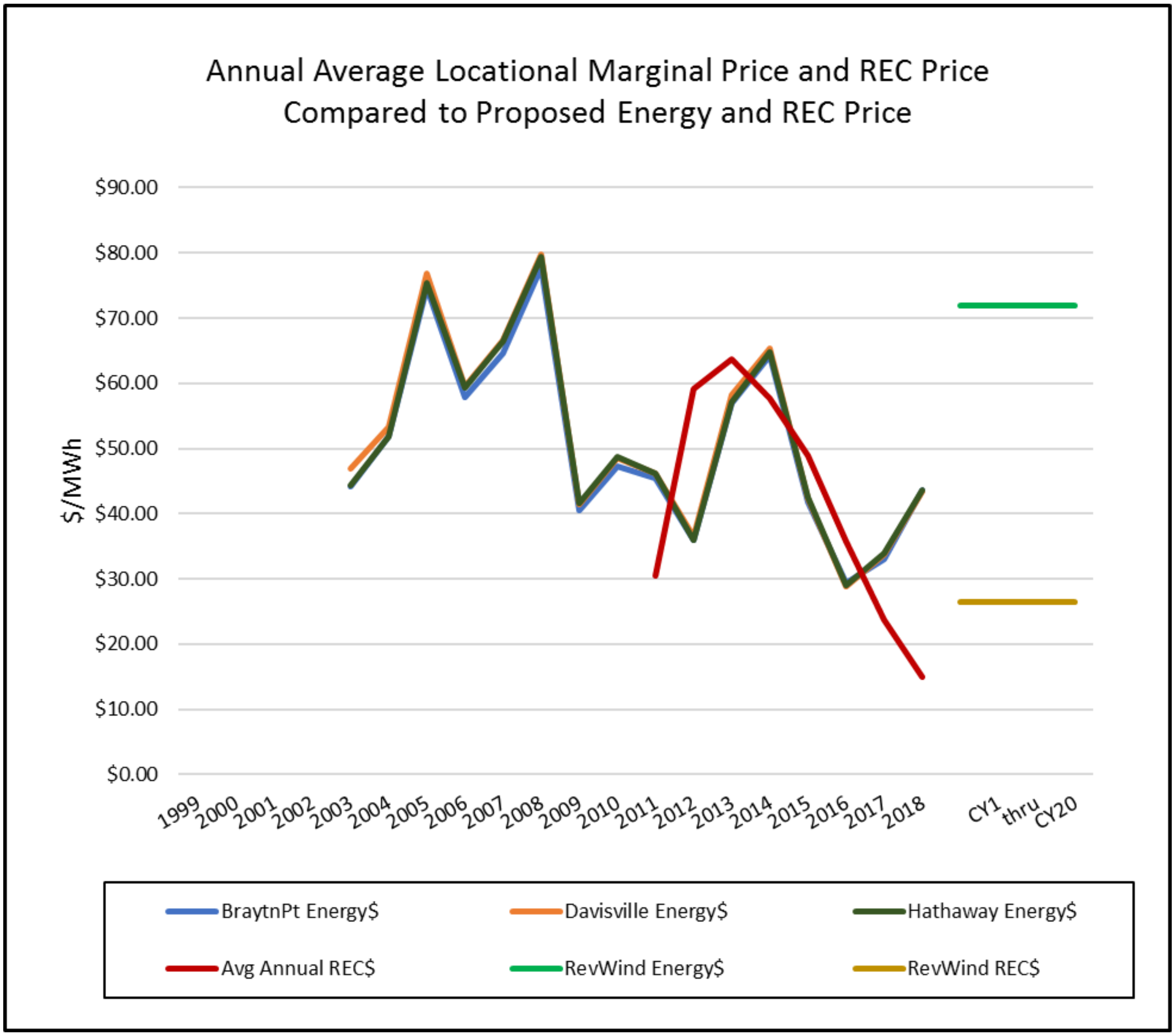

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PUC 2-8

Request:

Please provide a table and graph showing the projected above- or below-market cost of the PPA for each year of the term of the PPA in nominal and 2018$.

Response:

The table and graph summarize data provided in Schedule NG-5-A (Confidential).

Year	**Annual Above/(Below) Market Cost** *Nominal$*	**Annual Above/(Below) Market Cost** *2018$*
2024	$57,672,871	$51,211,859
2025	$54,121,903	$47,116,373
2026	$34,754,872	$29,662,949
2027	$35,933,439	$30,067,494
2028	($1,144,678)	($939,035)
2029	($3,716,752)	($2,989,246)
2030	($6,638,100)	($5,234,097)
2031	($9,839,613)	($7,606,341)
2032	($12,054,760)	($9,136,001)
2033	($14,779,002)	($10,981,016)
2034	($18,898,720)	($13,766,694)
2035	($23,013,051)	($16,435,059)
2036	($28,265,069)	($19,790,053)
2037	($31,892,998)	($21,892,335)
2038	($38,611,307)	($25,984,302)
2039	($45,091,309)	($29,750,156)
2040	($48,139,376)	($31,138,427)
2041	($52,668,779)	($33,400,218)
2042	($58,835,053)	($36,579,017)
2043	($61,257,454)	($37,338,301)

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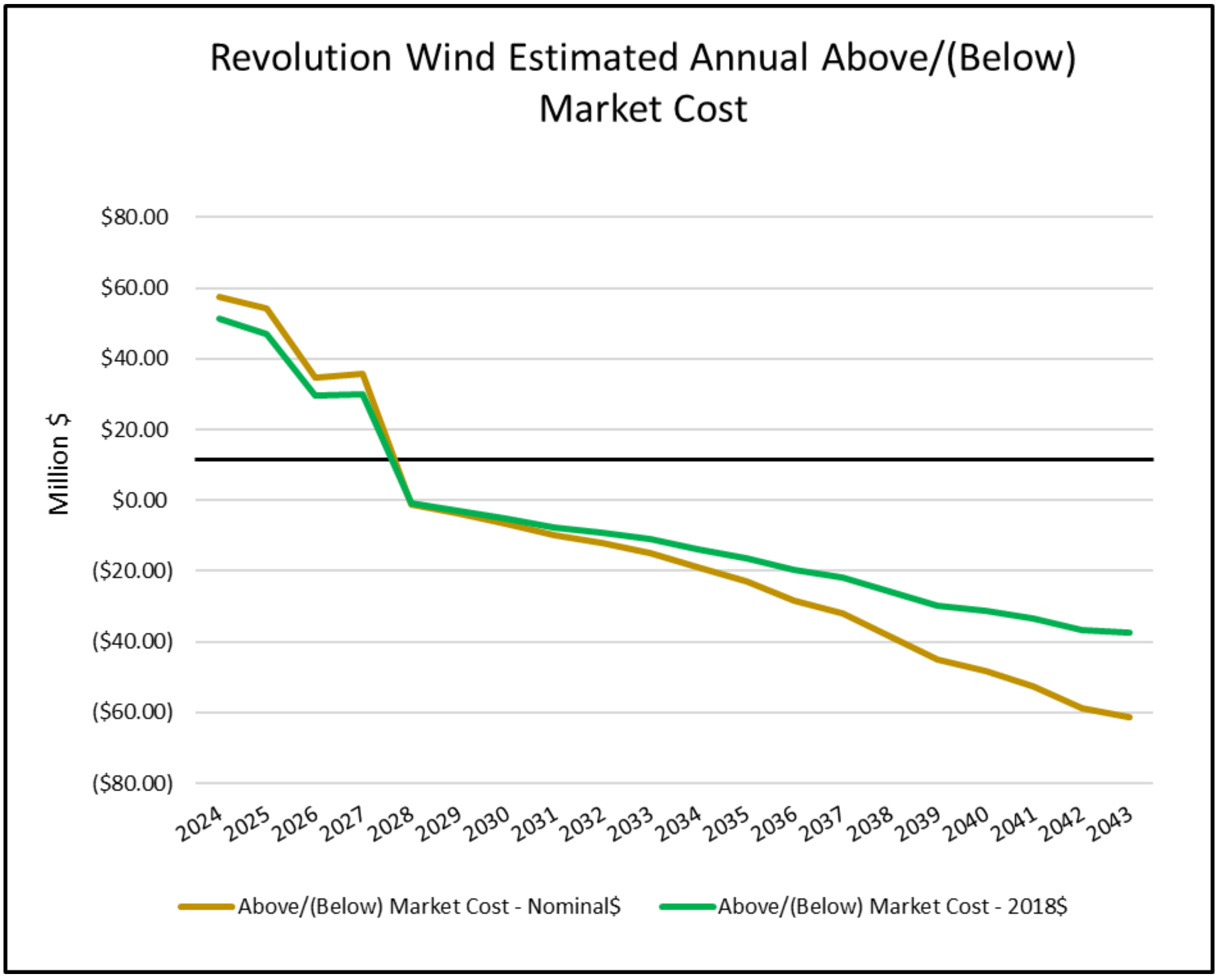

Note: The projected annual above/below market costs are based on the total net direct benefits, or the annual contract costs compared to a market forecast for energy and RECs. This does not include the expected reduction in electric supply costs.

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PUC 2-9

Request:

Please provide the expense or credit projected to flow through the LTCRER each year of the term of the PPA. Please calculate the proposed remuneration separately. Please include totals.

Response:

Year	**Projected Above/(Below) Market Cost** *Nominal$*	**Projected Remuneration @ 2.75%** *Nominal$*
2024	$47,383,963	$4,440,824
2025	$45,025,586	$4,413,470
2026	$27,488,704	$4,402,132
2027	$28,758,159	$4,372,362
2028	($12,338,891)	$4,418,537
2029	($12,279,951)	$4,412,302
2030	($17,201,412)	$4,421,213
2031	($20,880,245)	$4,413,470
2032	($21,534,833)	$4,388,928
2033	($23,932,437)	$4,390,708
2034	($32,901,570)	$4,411,440
2035	($37,873,274)	$4,412,302
2036	($48,116,286)	$4,428,291
2037	($49,483,108)	$4,402,132
2038	($55,720,398)	$4,372,362
2039	($57,444,589)	$4,390,708
2040	($51,248,728)	$4,423,328
2041	($61,251,965)	$4,421,213
2042	($57,734,274)	$4,413,470
2043	($64,419,969)	$4,402,131

Note: The projected expenses (credits) are based on a market forecast for energy and RECs and estimated annual energy production. These estimates also include the projected reduction in electric supply costs which, for simplicity, has been included in the net costs upon which the illustrative LTCRER Factor is calculated.

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PUC 2-10

Request:

For the current standard offer service rate and the rate effective April 1, 2019, please break out the retail charges for energy, RES, capacity and any deferrals.

Response:

Please see Attachment PUC 2-10 for the components of the current residential standard offer service ("SOS") rate and the rate effective April 1, 2019, including a breakout of the retail charges for energy, RES, capacity, and deferrals. Please note, the energy, capacity, and ancillary services components of the base SOS rate presented on lines (1) through (3) are estimates as the Company historically has not requested separate bids for these components. The estimate of the energy price on line (1) is based on the average of each request for proposal's NYMEX futures for the day prior to the final bid date. The estimated capacity cost on line (3) was calculated by subtracting the estimated energy price on line (1) and an estimate for ancillary services on line (2), which were both increased by a 'bid factor' which the Company used to approximate risk and margin, from the full requirements price based on the winning bid prices on line (4).

Detailed Breakout of Residential Standard Offer Service ("SOS") Rate

		Current SOS Rate (a)	Proposed April 1, 2019 SOS Rate (b)
(1)	Estimated Energy Component of Base SOS Rate	$0.06376	$0.03620
(2)	Estimated Capacity Component of Base SOS Rate	$0.05372	$0.04238
(3)	Estimated Ancillary Services Component of Base SOS Rate	$0.00210	$0.00218
(4)	Base SOS Rate	$0.11958	$0.08076
(5)	Deferral of SOS Costs	($0.01144)	$0.01091
(6)	Base SOS Rate Net of Deferral	$0.10814	$0.09167
(7)	SOS Adjustment Factor	$0.00007	($0.00223)
(8)	SOS Administrative Cost Factor	$0.00165	$0.00233
(9)	Base Renewable Energy Standard ("RES") Charge	$0.00190	$0.00183
(10)	RES Reconciliation Factor	($0.00186)	($0.00120)
(11)	Total RES Charge	$0.00004	$0.00063
(12)	Total Billed SOS Rate	$0.10990	$0.09240

(1) Estimate based on the average of each request for proposal's NYMEX futures the day prior to the final bid date, includes estimate of bid
(2) Total Bid Price - Line (1) - Line (3)
(3) Company estimate
(4) Total Bid Price: Line (1) + Line (2) + Line (3)
(5) (a) Total price of $0.10990 - Line (7) - Line (8) - Line (11)
(b) per RIPUC Docket No. 4809 January 16, 2019 SOS Rate Filing, Attachment 1, Page 3, Line (10) Column (g) ÷ Line (7) Column (g)
(6) Line (4) + Line (5)
(a) per Summary of Rates SOS, R.I.P.U.C. 2096 Effective 10/1/2018
(b) per RIPUC Docket No. 4809 January 16, 2019 SOS Rate Filing, Attachment 1, Page 3, Line (12) Column (g)
(7) (a) per Summary of Rates SOS, R.I.P.U.C. 2096 Effective 10/1/2018
(b) per RIPUC Docket No. 4930 February 15, 2019 Annual Retail Rate Filing, Schedule REP-1, Page 1, Line (1) Column (a)
(8) (a) per Summary of Rates SOS, R.I.P.U.C. 2096 Effective 10/1/2018
(b) per RIPUC Docket No. 4930 February 15, 2019 Annual Retail Rate Filing, Schedule REP-1, Page 1, Line (1) Column (b)
(9) (a) per RIPUC Docket No. 4692 February 27, 2018 Renewable Energy Standard Filing, Attachment 1, Page 1, Line (8)
(b) per RIPUC Docket No. 4809 February 27, 2019 Renewable Energy Standard Filing, Attachment 1, Page 1, Line (8)
(10) (a) per RIPUC Docket No. 4692 February 27, 2018 Renewable Energy Standard Filing, Attachment 1, Page 1, Line (9)
(b) per RIPUC Docket No. 4809 February 27, 2019 Renewable Energy Standard Filing, Attachment 1, Page 1, Line (9)
(11) Line (10) + Line (11)
(a) per RIPUC Docket No. 4692 February 27, 2018 Renewable Energy Standard Filing, Attachment 1, Page 1, Line (10)
(b) per RIPUC Docket No. 4809 February 27, 2019 Renewable Energy Standard Filing, Attachment 1, Page 1, Line (10)
(12) Line (6) + Line (7) + Line (8) + Line (11)

PUC 2-11

Request:

Please compare the energy and RES prices in the PPA to the energy and RES charges in Comm 2-10.

Response:

The PPA price of 9.8425 cents is for 100% of the energy and Renewable Energy Certificates (RECs) that are delivered. The table below compares this PPA price to the Estimated Energy Component of Base SOS Rate and the Base Renewable Energy Standard ("RES") Charge included in Comm 2-10.

	Current SOS Rate *(cents/kWh)*	**Proposed April 1, 2019 SOS Rate** *(cents/kWh)*
Energy Component:	6.3760	3.6200
RES Charge:	0.1900	0.1830
Total:	6.5660	3.8030
PPA Price:	9.8425	9.8425

The Base RES Charge is designed to recover the Company's estimate of the costs to comply with the Renewable Energy Standard in a given Compliance Year. The Company is required to procure a certain portion of its energy from New renewable energy resources and Existing renewable energy resources. The Company complies with the RES by purchasing New and Existing RECs equivalent to the percentage specified in the RES. The RES Charge in the previous table includes the following estimated REC prices and compliance percentages:

	New Compliance %	**New REC Price ($/MWh)**	**Existing Compliance %**	**Existing REC Price ($/MWh)**
Current SOS Rate:	11.0%	15.83	2.0%	1.59
Proposed April 1, 2019 SOS Rate:	12.5%	13.35	2.0%	1.50

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The Company will receive New RECs from Revolution Wind equal to 100% of the delivered energy. A comparison could then be made between PPA price and the Estimated Energy Component of Base SOS Rate and the New REC estimates included in the applicable RES Charge. Comparing the PPA price to the New REC estimate is appropriate because the New REC price is not modified by a RES compliance percentage. This comparison is in the following table:

	Current SOS Rate *(cents/kWh)*	**Proposed April 1, 2019 SOS Rate** *(cents/kWh)*
Energy Component:	6.3760	3.6200
New REC Price:	1.5830	1.3350
Total:	7.9590	4.9550
PPA Price:	9.8425	9.8425

PUC 2-12

Request:

Referencing the Joint Testimony on Bates page 35, lines 6 to 8 and note 9. Also referencing R.I. Gen Laws § 39-26-9 and the PUC's Rules Governing Energy Source Disclosure (810-RICR-40-05-3), in particular section 3.4:

a. Please provide the assumptions and calculations that support the consumption-based emissions reduction of 102,000 tons of CO2/year

b. Does National Grid agree or disagree that only NEPOOL GIS certificates can be used to establish consumption-based emissions from retail electric energy consumption?

c. Does National Grid's own energy source disclosure labels for Rhode Island customers receiving energy supply from National Grid calculate consumption-based greenhouse gas emissions with NEPOOL GIS Certificates in accordance with the PUC's rules?

d. Does National Grid's own Base Case analysis of Rhode Island and the region, presented in this filing (e.g., Bates 331 to 332), show that if Revolution I is not approved and constructed, there may be a regional shortage of RECs to meet state renewable energy standards (RES or RPS), but that the Connecticut Alternative Compliance Payment will set the marginal REC price, thereby indicating that only the RPS in Connecticut will not be met in the Base Case?

e. If the answer to part d is "yes," does National Grid's own Base Case analysis suggest that only consumption-based emissions in Connecticut will be improved in the Proposal Case?

f. Please explain how Revolution I will lower consumption-based emissions in Rhode Island.

Response:

a. The consumption-based emissions reduction of 102,000 tons of CO2/year is the average reduction in GHG emissions associated with electricity consumption in Rhode Island under the Proposal Case relative to the Base Case, for the period 2024-2045. The TCR workbook tab 'Proposal_GHG Calculations', in Schedule NG-5-A (Confidential), provides the annual state level and import emissions assumptions for both the Base Case and Proposal Case. The calculations are summarized in the following table:

Year	Total Base Case Emissions *Metric Ton*	Total Proposal Case Emissions *Metric Ton*	Annual GHG Reduction *Metric Ton*	RI Demand/ISO-NE Demand (1) *%*	Reduction Attributable to RI *Metric Ton*
	(A)	(B)	(C = A - B)	(D)	(E = C x D)
2024	18,673,401	17,218,994	1,454,406	5.83%	84,737
2025	18,490,870	17,030,723	1,460,147	5.77%	84,241
2026	18,427,998	16,675,268	1,752,730	5.72%	100,289
2027	17,417,448	15,787,942	1,629,506	5.68%	92,622
2028	17,958,902	15,866,412	2,092,490	5.68%	118,934
2029	17,127,208	15,035,314	2,091,894	5.68%	118,896
2030	16,748,283	14,663,945	2,084,338	5.68%	118,462
2031	17,286,357	15,208,752	2,077,605	5.68%	118,076
2032	16,909,998	14,856,216	2,053,781	5.68%	116,719
2033	16,624,268	14,553,871	2,070,397	5.68%	117,660
2034	17,065,411	15,009,576	2,055,835	5.68%	116,829
2035	17,937,220	15,874,440	2,062,780	5.68%	117,222
2036	19,092,124	16,974,285	2,117,839	5.68%	120,348
2037	19,203,015	17,105,456	2,097,560	5.68%	119,193
2038	19,018,990	17,019,214	1,999,776	5.68%	113,635
2039	19,334,314	17,410,040	1,924,274	5.68%	109,343
2040	18,863,752	17,089,010	1,774,742	5.68%	100,844
2041	18,755,061	17,082,628	1,672,433	5.68%	95,029
2042	19,091,497	17,566,868	1,524,629	5.68%	86,630
2043	18,334,717	16,986,157	1,348,560	5.68%	76,624
2044	18,012,753	16,818,886	1,193,867	5.68%	67,834
2045	18,299,773	17,255,358	1,044,416	5.68%	59,341
			Average Annual GHG Reduction Attributable to RI:		**102,432**

(1) Downscaling factor used to represent RI consumption-based accounting for GHG emissions per the RI-EC4 Rhode Island Greenhouse Gas Reduction Plan, December 2016.

b. National Grid disagrees that only NEPOOL GIS certificates can be used to establish consumption-based emissions from retail electric energy consumption. If environmental emission attributes of Imported Power are known they should be included when establishing consumption-based emissions. Currently Imported Power is a component of the quarterly Residual Mix fuel mix contained in the electric power resources used to serve National Grid's Standard Offer Service customers in Rhode Island. The environmental attributes of this Imported Power are provided by NEPOOL GIS and are included in the consumption-based emissions in the quarterly disclosure labels.

c. Yes National Grid's Rhode Island energy disclosure labels identify consumption-based greenhouse gas emissions calculated with NEPOOL GIS Certificates in accordance with the PUC's Rules Governing Energy Source Disclosure per 810-RICR-40-05-3.

d. No.

The composition of the Base Case and Proposal Case is identified in the Tabors Caramanis Rudkevich Quantitative Evaluation Report Section 3.A on Bates page 302 through 303. The Base Case represents a future where the 1,400 MW of offshore wind resources is not built, i.e., (a) the Vineyard Wind 800 MW project selected by Massachusetts, (b) the Revolution Wind 200 MW project selected by Connecticut and (c) the Revolution wind 400 MW project selected by Rhode Island.

ENELYTIX models RPS requirements by state and ensures that each state meets its annual requirements throughout the evaluation period. Compliance is achieved either through physical generation of eligible RPS Class 1 resources, or through Alternative Compliance Payments (ACPs). Overlaps in resource eligibility across states as well as provisions for trading and banking allow the ENELYTIX model to simulate a regional ISO-NE REC market. No price separation is seen in the Base Case resulting in a single ISO-NE wide market price for RECs.

An analysis of the ENELYTIX Base Case simulation model results (Bates page 331 to 332) indicates that (a) from 2021 onwards, the existing and future RPS Class 1 eligible resources across ISO-NE do not produce sufficient physical RECs to meet the total ISO-NE wide RPS requirements, and (b) this ISO-NE wide 'gap', or shortfall, is reconciled by the payment of ACPs in CT. The payment of CT ACPs is an economic decision indicating that RECs from eligible RPS Class 1 resources located in CT may be used to meet the RPS requirements in other eligible states, thereby preventing payment of more expensive ACPs in those states. The displaced RECs in CT are then met through lower cost CT ACPs thereby minimizing the regional ISO-NE REC prices.

ENELYTIX calculates the REC prices by year in the following steps:

- **Step 1:** The model establishes demand in the form of target MWh requirements for Class 1 RECs, by state, for each year in the modeling period.
- **Step 2:** The model establishes supply by (a) identifying the eligibility of all ISO-NE resources toward each state specific Class 1 RPS program, as well as imported and behind-the-meter RECs, and (b) establishing prices and allowable quantities of ACP by state.
- **Step 3**: The ENELYTIX capacity expansion module solves a 25-year market model that solves for RPS compliance among other system adequacy requirements. This step allocates available supply to demand which may result in the addition of new Class 1 REC resources if determined to be economically viable.
- **Step 4**: ENELYTIX calculates the ISO-NE wide REC prices in each year as either the marginal price of generation or the value of ACP depending on how compliance is met. If supply is in excess of demand, the REC prices drop to an assumed base price of $2.

ENELYTIX also models compliance of Massachusetts Clean Energy Certificates (CECs) requirements as incremental requirements to Massachusetts using a similar approach.

e. See response d.

f. The methodology for calculating consumption-based emissions attributable to RI is adopted by the Rhode Island Executive Climate Change Coordinating Council ("RI-EC4") in the Rhode Island Greenhouse Gas Emissions Reduction Plan ("EC4 Report"). Per this methodology, the total ISO-NE wide emissions are prorated downward by a factor equal to the ratio of Rhode Island's consumption to the total ISO-NE wide demand consumption.

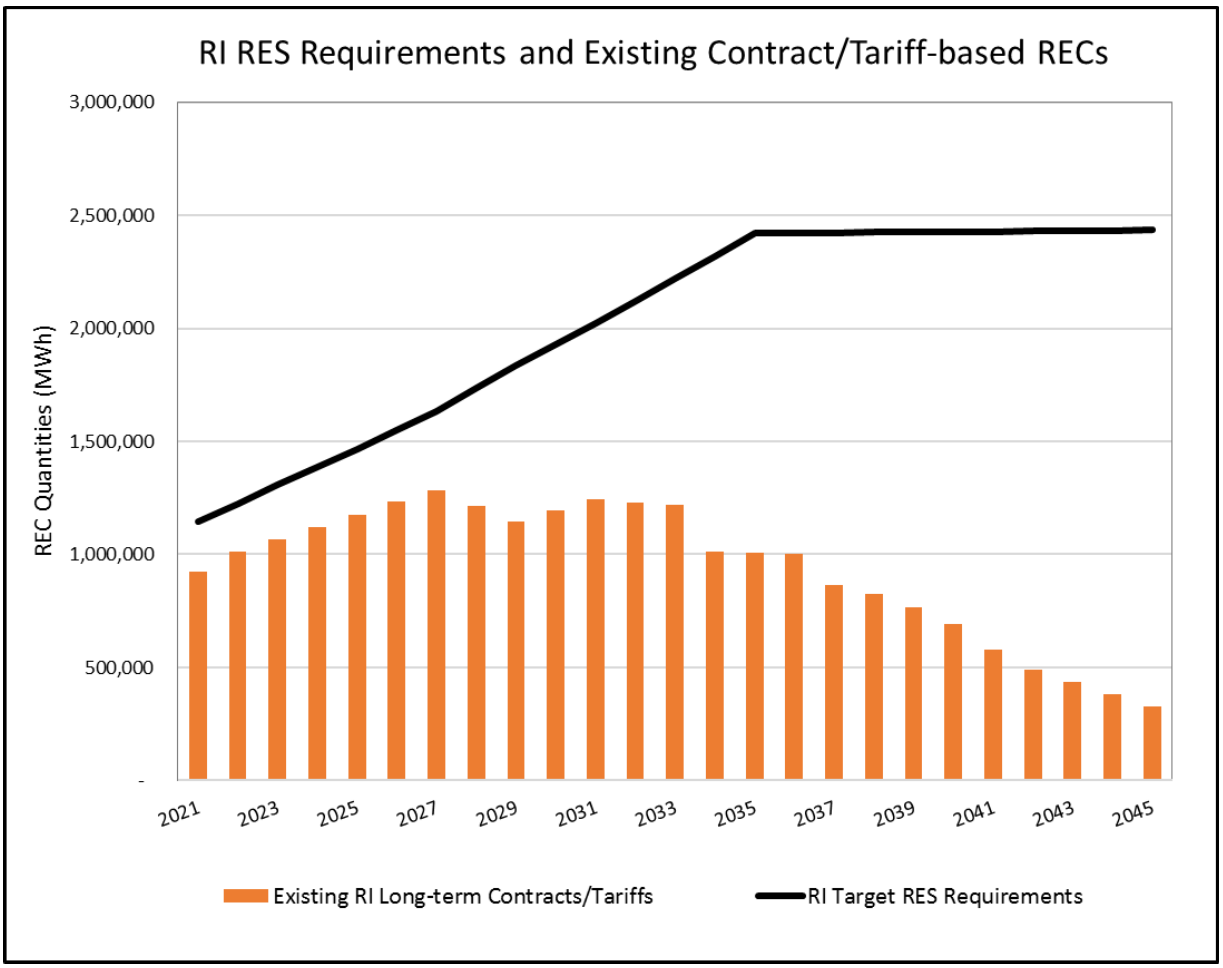
All else equal, the procurement of Revolution I will provide low cost zero emission energy that would economically displace energy produced by other conventional emission producing sources. This displacement reduces the overall ISO-NE wide emissions and consequently the consumption-based emissions in RI, as evidenced in response (a).

PUC 2-13

Request:

Please provide a graph projecting National Grid's Rhode Island RES Obligation through 2045. Please show the number of RECs National Grid expects to acquire through current contracts or tariff-based projects through 2045, without the DWW Rev I, LLC project's RECs.

Response:



Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

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PUC 2-14

Request:

Please provide the RECs National Grid expects to be in the market from remote net metering projects that have either achieved commercial operation or have an executed interconnection services agreement with all payments current.

Response:

National Grid estimates that approximately 147,758 RECs per year eventually will be in the market from remote net metering projects that have either already achieved commercial operation, or have an executed interconnection services agreement with all payments current. Please see Attachment PUC 2-14.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

Case Number	Service Address City	Nameplate Capacity (kW AC)	Status	Fuel Type	Estimated Annual Capacity Factor	Estimated Annual RECs
174854	JOHNSTON	10	Connected	Solar	15%	13
176565	GREENE	11.4	Connected	Solar	15%	15
177553	COVENTRY	25	Connected	Solar	15%	33
178521	NORTH SCITUATE	27.2	Connected	Solar	15%	36
177610	CRANSTON	46	Connected	Solar	15%	60
177096	PROVIDENCE	69	Connected	Solar	15%	91
177211	MIDDLETOWN	86.4	Connected	Solar	15%	114
177214	PROVIDENCE	98	Connected	Solar	15%	129
177783	PEACE DALE	216	Connected	Solar	15%	284
175888	WEST WARWICK	384	Connected	Solar	15%	505
176602	NORTH KINGSTOWN	1000	Connected	Solar	15%	1,314
175823	LINCOLN	1116	Connected	Solar	15%	1,466
176037	NORTH SMITHFIELD	1250	Connected	Solar	15%	1,643
174969	COVENTRY	1500	Connected	Wind	37%	4,822
175043	COVENTRY	1500	Connected	Wind	37%	4,822
177012	RICHMOND	1500	Connected	Solar	15%	1,971
174804	COVENTRY	1500	Connected	Wind	37%	4,822
176078	PORTSMOUTH	1500	Connected	Wind	37%	4,822
177050	JOHNSTON	1620	Connected	Solar	15%	2,129
176792	NORTH PROVIDENCE	2100	Connected	Solar	15%	2,759
176983	RICHMOND	3000	Connected	Solar	15%	3,942
177241	JOHNSTON	3000	Connected	Wind	37%	9,645
177242	JOHNSTON	3000	Connected	Wind	37%	9,645
177525	JOHNSTON	3000	Connected	Solar	15%	3,942
177277	JOHNSTON	3000	Connected	Wind	37%	9,645
176830	WEST KINGSTON	3100	Connected	Solar	15%	4,073
176801	SOUTH KINGSTOWN	3780	Connected	Solar	15%	4,967
174882	COVENTRY	4500	Connected	Wind	37%	14,467
176606	WARWICK	4992	Connected	Solar	15%	6,559
164988	PROVIDENCE	35	Connected	Solar	15%	46

Case Number	Service Address City	Nameplate Capacity (kW AC)	Status	Fuel Type	Estimated Annual Capacity Factor	Estimated Annual RECs
207949	WAKEFIELD	25	Executed ISA	Solar	15%	33
200142	WOONSOCKET	30	Executed ISA	Solar	15%	39
204969	NORTH KINGSTOWN	30	Executed ISA	Solar	15%	39
197727	WOONSOCKET	30	Executed ISA	Solar	15%	39
201727	PORTSMOUTH	34.2	Executed ISA	Solar	15%	45
204315	WOONSOCKET	120	Executed ISA	Solar	15%	158
207785	ESMOND	479.1	Executed ISA	Solar	15%	630
178088	JOHNSTON	2010	Executed ISA	Solar	15%	2,641
178153	SMITHFIELD	2640	Executed ISA	Solar	15%	3,469
176955	HOPKINTON	3875	Executed ISA	Solar	15%	5,092
176954	HOPKINTON	5000	Executed ISA	Solar	15%	6,570
176956	HOPKINTON	5000	Executed ISA	Solar	15%	6,570
176950	WEST GREENWICH	8000	Executed ISA	Solar	15%	10,512
176346	HOPE	10000	Executed ISA	Solar	15%	13,140
Total						**147,758**

PUC 2-15

Request:

If the state passes a carbon tax, under the PPA, how are the costs/benefits allocated between National Grid and DWW Rev I, LLC?

Response:

The Company has no information regarding the design, scope or applicability of any carbon tax that may be passed into law in Rhode Island. The allocation of costs or benefits between the contractual parties resulting from a state carbon tax would depend upon the details of how such a carbon tax would operate. Accordingly, the Company cannot meaningfully respond to this question.

Prepared by or under the supervision of:
Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-16

Request:

Referencing the Tabors Caramanis Rudkevich Quantitative Evaluation Report Table 6.b, on Bates page 331 of National Grid's filing, please provide data to support the projections, including any supporting data from sources other than the authors.

Response:

Projections reported in Table 6.b are based on TCR's analysis of the results from the ENELYTIX capacity expansion module. Please refer to the Company's response to Data Request PUC 2-12 (d) for details on how the model handles RPS compliance.

TCR's relevant input assumptions to the ENELYTIX model are provided in the following attachments:

- Attachment PUC 2-16-1 provides relevant documentation and external sources used in the development of the RPS requirements by state.
- Attachment PUC 2-16-2 provides the ACP prices by state that are assumed by the model.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

(a) Net Energy for Load (NEL) Gross-PV-PDR Forecast (GWh)

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
CT	29,639	29,432	29,271	29,112	28,967	28,857	28,776	28,800	28,806	28,712	28,641	28,597	28,573
MA	57,058	56,425	55,932	55,477	55,113	54,910	54,812	54,858	54,870	54,691	54,555	54,472	54,425
ME	11,941	11,986	12,055	12,111	12,165	12,228	12,301	12,311	12,314	12,274	12,243	12,224	12,214
NH	11,980	11,994	12,018	12,030	12,037	12,055	12,081	12,091	12,094	12,055	12,025	12,006	11,996
RI	7,563	7,399	7,250	7,113	6,998	6,908	6,840	6,845	6,847	6,825	6,808	6,797	6,791

(b) RPS-exempt load as a proportion of NEL

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
CT	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%
MA	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
ME	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
NH	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
RI	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%

(c) NEL Subject to RPS Obligations (GWh) = (a) x (1 - b)

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
CT	27,295	27,105	26,956	26,810	26,676	26,575	26,500	26,522	26,528	26,442	26,376	26,336	26,313
MA	47,143	46,620	46,212	45,837	45,536	45,368	45,287	45,325	45,335	45,188	45,075	45,006	44,968
ME	11,677	11,721	11,788	11,843	11,896	11,958	12,029	12,039	12,041	12,002	11,972	11,954	11,944
NH	11,780	11,794	11,818	11,830	11,836	11,854	11,880	11,890	11,893	11,854	11,824	11,806	11,796
RI	7,374	7,214	7,069	6,936	6,823	6,735	6,669	6,674	6,676	6,654	6,637	6,627	6,622

(d) Class 1 RPS Requirements (%)*

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
CT	22.5%	24.0%	26.0%	28.0%	30.0%	32.0%	34.0%	36.0%	38.0%	40.0%	40.0%	40.0%	40.0%
MA	18.0%	20.0%	22.0%	24.0%	26.0%	28.0%	30.0%	32.0%	34.0%	35.0%	36.0%	37.0%	38.0%
ME	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
NH	12.1%	13.0%	13.9%	14.8%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%
RI	15.5%	17.0%	18.5%	20.0%	21.5%	23.0%	24.5%	26.0%	27.5%	29.0%	30.5%	32.0%	33.5%

(e) Class 1 RPS Requirements (GWh) = (c) x (d)

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
CT	6,141	6,505	7,009	7,507	8,003	8,504	9,010	9,548	10,081	10,577	10,550	10,534	10,525
MA	8,486	9,324	10,167	11,001	11,839	12,703	13,586	14,504	15,414	15,816	16,227	16,652	17,088
ME	1,168	1,172	1,179	1,184	1,190	1,196	1,203	1,204	1,204	1,200	1,197	1,195	1,194
NH	1,425	1,533	1,643	1,751	1,858	1,861	1,865	1,867	1,867	1,861	1,856	1,854	1,852
RI	1,143	1,226	1,308	1,387	1,467	1,549	1,634	1,735	1,836	1,930	2,024	2,121	2,218

* NH Requirement includes Class II solar (0.7%)

Sources:

(a) 2019-2027: ISO-NE 2018 CELT and PV Forecast, reduced for PDR and BMPV. Post-2027 energy, PDR, and BMPV values based on TCR calculations.

(b) Values based on RPS compliance reports, ISO-NE historical NEL data, and EIA data.

(d) Massachusetts: MGL ch. 25A, Section 11F, as amended by Chapter 227 of the Acts of 2018, Section 12.
https://malegislature.gov/Laws/GeneralLaws/PartI/TitleII/Chapter25A/Section11F,
https://malegislature.gov/Laws/SessionLaws/Acts/2018/Chapter227.
Connecticut: Connecticut Renewable Portfolio Standard, Connecticut Public Utilities Regulatory Authority.
https://www.ct.gov/pura/cwp/view.asp?a=3354&q=415186
Rhode Island: RES Obligation Targets, by Compliance Year, for Both New and Existing Resources, Rhode Island Public Utilities Commission, http://www.ripuc.ri.gov/utilityinfo/RES-Annual-Targets.pdf.
New Hampshire: SB 129, enacted July 2017.
http://gencourt.state.nh.us/bill_status/billText.aspx?sy=2017&id=957&txtFormat=pdf&v=current.
Maine: Maine Renewable Portfolio Standard, Maine Public Utilities Commission.
https://www.maine.gov/mpuc/electricity/RPSMain.htm.

(a) Net Energy for Load (NEL) Gross-PV-PDR Forecast (GWh)

	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
CT	28,586	28,600	28,617	28,635	28,659	28,679	28,678	28,695	28,724	28,752	28,770	28,810
MA	54,450	54,478	54,510	54,545	54,590	54,627	54,625	54,658	54,713	54,767	54,801	54,878
ME	12,219	12,226	12,233	12,241	12,251	12,259	12,259	12,266	12,278	12,291	12,298	12,315
NH	12,001	12,008	12,015	12,022	12,032	12,041	12,040	12,047	12,060	12,072	12,079	12,096
RI	6,794	6,798	6,802	6,806	6,812	6,817	6,816	6,820	6,827	6,834	6,838	6,848

(b) RPS-exempt load as a proportion of NEL

	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
CT	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%
MA	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
ME	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
NH	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
RI	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%

(c) NEL Subject to RPS Obligations (GWh) = (a) x (1 - b)

	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
CT	26,325	26,339	26,354	26,371	26,393	26,411	26,410	26,426	26,452	26,479	26,495	26,532
MA	44,988	45,011	45,038	45,066	45,104	45,134	45,133	45,160	45,205	45,250	45,278	45,341
ME	11,949	11,955	11,962	11,970	11,980	11,988	11,988	11,995	12,007	12,019	12,026	12,043
NH	11,801	11,808	11,814	11,822	11,832	11,840	11,840	11,847	11,858	11,870	11,878	11,894
RI	6,625	6,628	6,632	6,636	6,642	6,646	6,646	6,650	6,657	6,663	6,667	6,677

(d) Class 1 RPS Requirements (%)*

	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
CT	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
MA	39.0%	40.0%	41.0%	42.0%	43.0%	44.0%	45.0%	46.0%	47.0%	48.0%	49.0%	50.0%
ME	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
NH	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%
RI	35.0%	36.5%	36.5%	36.5%	36.5%	36.5%	36.5%	36.5%	36.5%	36.5%	36.5%	36.5%

(e) Class 1 RPS Requirements (GWh) = (c) x (d)

	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
CT	10,530	10,536	10,542	10,548	10,557	10,564	10,564	10,570	10,581	10,591	10,598	10,613
MA	17,545	18,005	18,465	18,928	19,395	19,859	20,310	20,774	21,247	21,720	22,186	22,671
ME	1,195	1,196	1,196	1,197	1,198	1,199	1,199	1,199	1,201	1,202	1,203	1,204
NH	1,853	1,854	1,855	1,856	1,858	1,859	1,859	1,860	1,862	1,864	1,865	1,867
RI	2,319	2,419	2,421	2,422	2,424	2,426	2,426	2,427	2,430	2,432	2,434	2,437

* NH Requirement includes Class II solar (0.7%)

Exemptions from RPS Requirements

State	Percentage of Load Exempt from RPS Requirements	Methodology	Sources	Links
CT	7.9%	Determined by comparing 2015 compliance data to ISO-NE Net Energy for Load data. (More recent data not available).	CT PURA Decision in DOCKET NO. 16-07-20 ANNUAL REVIEW OF CONNECTICUT ELECTRIC SUPPLIERS' AND ELECTRIC DISTRIBUTION COMPANIES' COMPLIANCE WITH CONNECTICUT'S RENEWABLE ENERGY PORTFOLIO STANDARDS IN THE YEAR 2015, November 8, 2017. Generation & Load Data for ISONE & States (2000-2016), ISO New England.	http://www.dpuc.state.ct.us/dockhistpost2000.nsf/8e6fc37a54110e3e852576190052b64d/4318dd8e652d53df8525829c006f0315?OpenDocument https://www.iso-ne.com/static-assets/documents/2017/08/gen_nel_iso_states.xls
MA	17.4%	Mass. DOER forecasts exempt municipal load as 14% of wholesale. Remaining 3.4% is wholesale load (large exempt end users), the remaining difference between wholesale load and RPS obligation.	RPS 2015 Data from Compliance Report.xlsx, provided by MA DOER. Generation & Load Data for ISONE & States (2000-2015), ISO New England.	https://www.iso-ne.com/static-assets/documents/2015/02/gen_nel_iso_states.xls
ME	2.2%	For portion of ME in ISO-NE only. Used 2010 MPUC load data to determine exempt company proportion of state and ISO-NE; added customer exemption for Pine Tree Development Zone.	ANNUAL REPORT ON NEW RENEWABLE RESOURCE PORTFOLIO REQUIREMENT, Report for 2015 Activity, Maine PUC, March 31, 2017. Electricity Statistics, 2010, Maine PUC. Generation & Load Data for ISONE & States (2000-2015), ISO New England.	http://www.maine.gov/mpuc/electricity/delivery_rates.shtml http://www.maine.gov/mpuc/electricity/documents/FinalAnnualNewRPSReport_2017-03-31.pdf https://www.iso-ne.com/static-assets/documents/2015/02/gen_nel_iso_states.xls
NH	1.7%	Ratio of EIA municipal load from 2015 EIA-861 to total of that load.	Form EIA-861, 2015.	http://www.eia.gov/electricity/data/eia861/index.html
RI	2.5%	Value stated in RIPUC 2016 compliance report.	Rhode Island Renewable Energy Standard Annual RES Compliance Report for Compliance Year 2016, April 2018, Rhode Island Public Utilities Commission	http://www.ripuc.org/utilityinfo/2016%20RES%20Annual%20Compliance%20Report%20-%20final.pdf

Connecticut	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
RPS Class I %	17.0%	19.5%	21.0%	22.5%	24.0%	26.0%	28.0%	30.0%	32.0%	34.0%	36.0%	38.0%	40.0%	40.0%	40.0%	40.0%	40.0%

Maine	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Class I %	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%

Massachusetts	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Class I %	13.0%	14.0%	16.0%	18.0%	20.0%	22.0%	24.0%	26.0%	28.0%	30.0%	32.0%	34.0%	35.0%	36.0%	37.0%	38.0%	39.0%

New Hampshire	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
RPS Class I %	8.7%	9.6%	10.5%	11.4%	12.3%	13.2%	14.1%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
RPS Class II %	0.5%	0.6%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%

Rhode Island	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
RPS New%	11.00%	12.50%	14.00%	15.50%	17.00%	18.50%	20.00%	21.50%	23.00%	24.50%	26.00%	27.50%	29.00%	30.50%	32.00%	33.50%	35.00%

Sources:

Massachusetts: MGL ch. 25A, Section 11F, as amended by Chapter 227 of the Acts of 2018, Section 12. https://malegislature.gov/Laws/GeneralLaws/PartI/TitleII/Chapter25A/Section11F, https://malegislature.gov/Laws/SessionLaws/Acts/2018/Chapter227.
Connecticut: Connecticut Renewable Portfolio Standard, Connecticut Public Utilities Regulatory Authority. https://www.ct.gov/pura/cwp/view.asp?a=3354&q=415186
Rhode Island: RES Obligation Targets, by Compliance Year, for Both New and Existing Resources, Rhode Island Public Utilities Commission, http://www.ripuc.ri.gov/utilityinfo/RES-Annual-Targets.pdf.
New Hampshire: SB 129, enacted July 2017. http://gencourt.state.nh.us/bill_status/billText.aspx?sy=2017&id=957&txtFormat=pdf&v=current.
Maine: Maine Renewable Portfolio Standard, Maine Public Utilities Commission. https://www.maine.gov/mpuc/electricity/RPSMain.htm.

Connecticut	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**
RPS Class I %	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%

Maine	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**
Class I %	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%

Massachusetts	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**
Class I %	40.0%	41.0%	42.0%	43.0%	44.0%	45.0%	46.0%	47.0%	48.0%	49.0%	50.0%	51.0%

New Hampshire	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**
RPS Class I %	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
RPS Class II %	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%

Rhode Island	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**
RPS New%	36.50%	36.5%	36.5%	36.5%	36.5%	36.5%	36.5%	36.5%	36.5%	36.5%	36.5%	36.5%

Sources:

Massachusetts: MGL ch. 25A, Section 11F, as amended by Ch
Connecticut: Connecticut Renewable Portfolio Standard, Con
Rhode Island: RES Obligation Targets, by Compliance Year, fo
New Hampshire: SB 129, enacted July 2017. http://gencourt.
Maine: Maine Renewable Portfolio Standard, Maine Public U

Projected ACPs, Real 2018$

Inputs	Calculations

Class 1	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
CT	$ 55.00	$ 53.92	$ 52.86	$ 37.69	$ 36.95	$ 36.23	$ 35.52	$ 34.82	$ 34.14	$ 33.47	$ 32.81	$ 32.17	$ 31.54	$ 30.92
MA	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95
ME	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87
NH	$ 56.54	$ 55.43	$ 54.34	$ 53.28	$ 52.23	$ 51.21	$ 50.21	$ 49.22	$ 48.26	$ 47.31	$ 46.38	$ 45.47	$ 44.58	$ 43.71
RI	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96
MA CES	$ 51.71	$ 51.71	$ 51.71	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48

			2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Deflators	Deflate in real terms at rate of inflation	CT		1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
	Deflate in real terms at 1/2 rate of inflation	NH		1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
MA CES factor			0.75	0.75	0.75	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50

Notes	**Comment**	**Source**
CT	Flat at $55 in nominal terms until 2020; $40 in nominal terms from 2021 onward.	Public Act 18-50, approved 5-24-2018, page 11 https://legiscan.com/CT/text/SB00009/2018
MA	Indexed to previous year's CPI (Northeast, all products)	https://www.mass.gov/service-details/compliance-information-for-retail-electric-suppliers
	CES ACP phased in as per final rule, 310 CMR 7.75 CLEAN ENERGY STANDARD	http://www.mass.gov/eea/agencies/massdep/climate-energy/climate/ghg/ces.html
ME	Same approach as MA	http://www.maine.gov/tools/whatsnew/attach.php?id=794997&an=1 https://www.maine.gov/mpuc/electricity/electric_supply/documents/2018_alternative_compliance_payment.pdf
NH	Class I adjusted at 1/2 the CPI	http://www.puc.state.nh.us/Sustainable%20Energy/Renewable_Portfolio_Standard_Program.htm
RI	Same approach as MA	http://www.ripuc.ri.gov/utilityinfo/RES-ACPRate.pdf http://www.ripuc.ri.gov/utilityinfo/res.html
Deflators	2019-2060: Use GDP deflators as proxy for CPI	Financial Assumptions 2018_07_24.xlsx

Projected ACPs, Real 2018$

Inputs

Class 1	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
CT	$ 30.32	$ 29.72	$ 29.14	$ 28.57	$ 28.01	$ 27.46	$ 26.92	$ 26.39	$ 25.87	$ 25.37	$ 24.87	$ 24.38	$ 23.90	$ 23.43
MA	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95	$ 68.95
ME	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87	$ 68.87
NH	$ 42.85	$ 42.01	$ 41.19	$ 40.38	$ 39.59	$ 38.81	$ 38.05	$ 37.30	$ 36.57	$ 35.86	$ 35.15	$ 34.46	$ 33.79	$ 33.12
RI	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96	$ 68.96
MA CES	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48	$ 34.48

Deflators Deflate in real terms at rate of inflation	CT	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
Deflate in real terms at 1/2 rate of inflation	NH	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
MA CES factor		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50

Notes	**Comment**	**Source**
CT	Flat at $55 in nominal terms until 2020; $40 in nominal terms from 2021 onward.	Public Act 18-5 https://legisc
MA	Indexed to previous year's CPI (Northeast, all products)	https://www
	CES ACP phased in as per final rule, 310 CMR 7.75 CLEAN ENERGY STANDARD	http://www.r
ME	Same approach as MA	http://www.r https://www
NH	Class I adjusted at 1/2 the CPI	http://www.p
RI	Same approach as MA	http://www.r http://www.r
Deflators	2019-2060: Use GDP deflators as proxy for CPI	Financial Assu

PUC 2-17

Request:

Referencing the Tabors Caramanis Rudkevich Quantitative Evaluation Report Table 6.c, on Bates page 332 of National Grid's filing, please provide data to support the projections including any supporting data from sources other than the authors.

Response:

The projections reported in Table 6.c are based on TCR's analysis of the results from the ENELYTIX capacity expansion module. Please refer to the Company's response to Data Request PUC 2-12(d) for details on how the model handles RPS compliance and calculates REC prices. Please refer to the Company's response to Data Request PUC 2-16 for additional input assumptions.

PUC 2-18

Request:

If any security is forfeited by DWW Rev I, LLC, do the funds flow back to ratepayers? Why or why not? If any non-refundable deposits are forfeited, do the funds flow to ratepayers? Why or why not?

Response:

Yes, consistent with current practices and the Long Term Contracting for Renewable Energy Recovery ("LTCRER") Provision, R.I.P.U.C. 2175, Section 3(a)(6), any security or non-refundable deposits forfeited by the Seller would flow back to customers as a credit through the LTCRER reconciliation and resulting factor.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

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PUC 2-19

Request:

Referencing section 3.2 of the PPA on Bates page 67, what is the latest date the Facility can achieve commercial operation and avoid Delay Damages?

Response:

As noted in Section 3.2(a) of the PPA, the Guaranteed Commercial Operation Date of January 15, 2024 (see Section 3.1(a)(vii)) can be extended pursuant to Sections 3.1(c) and 10.1 of the PPA, and Delay Damages only begin to accrue after any such extension of the Guaranteed Commercial Operation Date expires. Under Section 3.1(c), the Seller may extend the Guaranteed Commercial Operation Date by up to four six-month periods (i.e., up to two years) by posting additional Development Period Security of $2,000,0000 (as potentially adjusted) for each such six-month period. Under Section 3.1(d) and Section 10.1, the Guaranteed Commercial Operation Date may be extended by up to another 24 months (i.e., two years) due to a Force Majeure event that justifies such an extension. Therefore, if all possible extensions of the Guaranteed Commercial Operation Date are applied, the latest possible date for the Guaranteed Commercial Operation Date is January 15, 2028.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-20

Request:

Referencing Exhibit D of the PPA on Bates page 114, is the mathematical result of the language related to negative pricing such that, during periods of negative locational marginal price (LMP) at the Delivery point, ratepayers would have a net cost rate of $98.425/megawatt-hour (i.e., the exact contract price assuming there is no Adjusted Price in effect)?

Response:

No. Under Exhibit D to the PPA, if the Seller does not exercise its right not to deliver under the PPA during any time when the LMP at the Delivery Point is negative, then the Seller must credit to the Buyer the absolute value of the negative LMP. Per the example provided, if the LMP at the Delivery Point during a time period is -$98.425 per megawatt-hour, then the Contract Price for the Products Delivered under the PPA paid by customers during that period would effectively be $0.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

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PUC 2-21

Request:

Referencing section 4.2 of the PPA on Bates page 75, does the language allow the Seller, at its own discretion, to curtail generation in times during which the Locational Marginal Price at the Delivery Point is negative?

Response:

Yes, during a time period when the LMP at the Delivery Point is negative, the Seller may elect to not Deliver Products during that time period.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-22

Request:

If the response to PUC 2-21 was in the affirmative, and referencing National Grid's response to Comm 2-20, would ratepayers be harmed during periods in which the LMP is negative and RECs are trading for more than $98.425/REC?

Response:

It is possible, but unlikely that the Company's customers could be harmed if LMP prices are negative and REC prices are trading above $98.425. Two unlikely conditions would have to occur contemporaneously in order for customers to be harmed: (1) the LMP price would have to be more negative than -$98.425; and (2) REC prices would have to be trading above the $98.425 contract price.

The Company looked back at historical real-time LMP prices at Brayton Point during the twelve-month period between August 2017 and July 2018 and found that LMP prices went negative only 102 hours out of the 8,760 hours per year, which is approximately 1% of the time. Of that, only 2 hours were more negative than -$98.425.

The TCR analysis forecasts that REC prices will remain well below the contract price of $98.425 for the term of the contract. Currently, the Alternative Compliance Payment price is $70.45 and, with the inflation adjustment, it is not forecasted to exceed the contract price until 2035. Therefore, REC prices could not be greater than the contract price until after 2035. One or more New England states would have to significantly increase their requirements for new RECs in order to cause upward price pressure above the contract price. For these reasons, the Company believes that it is unlikely that its customers would be harmed.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

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PUC 2-23

Request:

Referencing section 7.2(n) of the PPA on Bates page 91, please explain the significance of the reference to Connecticut RFPs and law?

Response:

During the time when the Seller and National Grid were negotiating the PPA, the Seller was also negotiating power purchase agreements with The United Illuminating Company (UI) and The Connecticut Light and Power Company (CL&P) in connection with the Connecticut RFP referred to in Section 7.2(n) of the PPA. The representation in Section 7.2(n) was included to provide assurance that the pricing in the PPA in this docket was at least as favorable to National Grid as the pricing in the power purchase agreements with UI and CL&P.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-24

Request:

Referencing section 9.3(b)(v) of the PPA on Bates page 97, in particular the language that states "damages and losses (including without limitation the loss of environmental, reliability, and economic benefits contemplated under this Agreement) that the Parties would incur due to an Event of Default would be difficult or impossible to predict with certainty," please compare the Termination Payment to the net environmental, reliability, and economic benefits to Rhode Island projected by National Grid in support of this filing.

Response:

While National Grid has provided calculations of the current estimates of various benefits expected to be realized through the PPA, those amounts are estimates. As stated in Section 9.3(b)(v), if the PPA were terminated because of an Event of Default by either Party, the exact value of the lost benefits to National Grid or to the Seller at the time of the termination of the PPA would be difficult or even impossible to predict. The Termination Payment that would be due to National Grid upon a termination of the PPA due to an Event of Default by the Seller, either before or after the Commercial Operation Date, reflects a negotiated amount that balances the approximate economic loss to National Grid resulting from that termination and the Seller's potential ability to pay that amount.

PUC 2-25

Request:

Referencing the Joint Testimony on Bates page 36, lines 4 to 6, did National Grid, OER, and Division seek the opportunity to co-procure offshore wind capacity with Massachusetts through the RFP, as was done in the RFP that resulted in the PPAs reviewed in Docket No. 4764? If so, why was coordination limited to procuring capacity after Massachusetts had selected a proposal, if known?

Response:

The RFP that resulted in the PPAs reviewed in Docket No. 4764 was a regional solicitation issued jointly by The Narragansett Electric Company in Rhode Island, the Massachusetts Electric Distribution Companies (Massachusetts EDCs) in Massachusetts, and the Commissioner of the Connecticut Department of Energy and Environmental Protection in Connecticut. Each soliciting party issued the RFP pursuant to the applicable enabling statutes in its state.

Conversely, the RFP that resulted in the PPA at issue in this case was issued by the Massachusetts EDCs and the Massachusetts Department of Energy Resources, and monitored by an Independent Evaluator, pursuant to Section 83C of Chapter 169 of the Acts of 2008, as amended by the Energy Diversity Act. The RFP, on page 1, note 8 (National Grid's initial filing at Bates page 125), provided the following statement with respect to coordination with other states:

> The Commonwealth of Massachusetts in consultation with the Distribution Companies will consider the participation of other states as a means to achieve the Commonwealth's Offshore Wind Energy Generation goals if such participation has a positive or neutral impact on Massachusetts ratepayers. If the Commonwealth determines that such participation provides a reasonable means to achieve its Offshore Wind Energy Generation goals cost effectively through multi-state coordination and contract execution, selected projects may be allocated on a load ration share basis to one or more electric distribution companies in such state, subject to applicable legal requirements in the Commonwealth and the respective state. […].

As a result, the nature of the coordination between National Grid, OER and Division with the Commonwealth of Massachusetts and the Massachusetts EDCs was not the same here as the coordination within the three-state RFP that resulted in the PPAs reviewed in Docket No. 4764.

Prepared by or under the supervision of:
Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-26

Request:

Under current Massachusetts law, could Massachusetts select an offshore wind project with the same pricing as set forth in the Revolution I PPA in future RFPs?

Response:

No. As currently written, Section 83C(b) of Chapter 169 of the Acts of 2008, as amended by the Energy Diversity Act, Chapter 188 of the Acts of 2016, provides that: "[a] staggered procurement schedule developed by the department of energy resources, if applicable, shall specify that a subsequent solicitation shall occur within 24 months of a previous solicitation; provided, however, that the department of public utilities shall not approve a long-term contract that results from a subsequent solicitation and procurement period if the levelized price per megawatt hour, plus associated transmission costs, is greater than or equal to the levelized price per megawatt hour plus transmission costs that resulted from the previous procurement."

Prepared by or under the supervision of:
Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-27

Request:

Referencing witnesses Brennan and DiDomenico's joint testimony (Joint Testimony) on Bates page 9, lines 5 to 8 of the filing, what was the date that the analyses of the Massachusetts RFP was provided to National Grid, the Office of Energy Resources (OER), and the Division of Public Utilities and Carriers (Division)?

Response:

The analyses were provided to The Narragansett Electric Company, OER, and the Division on May 16, 2018 and May 18, 2018.

Prepared by or under the supervision of:
Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-28

Request:

Referencing the Joint Testimony on Bates Page 14, note 5, please provide the number of independent bidders that could submit bids that met the definition of Offshore Wind Generation pursuant to Massachusetts Section 83C.

Response:

At the time of the MA 83C RFP, there were three bidders eligible to submit bids.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-29

Request:

Referencing the Joint Testimony on Bates page 15, lines 9 to 10, was the project selected by Connecticut chosen through a separate RFP process from the RFP that resulted in the selection of Vineyard Wind by Massachusetts and Revolution I by Rhode Island?

Response:

Yes, the project referenced in joint testimony on Bates page 15, lines 9 to 10, is an incremental 200 MW from the Revolution Wind project selected by Connecticut through a separate RFP.

Prepared by or under the supervision of:
Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-30

Request:

Referencing the Joint Testimony on Bates page 15, line 20:

a. How many of the 18 bids with 27 pricing options were available to Rhode Island to consider for selection after Massachusetts selected Vineyard Wind project?

b. Of the remaining options noted in part a, how many bidders had remaining bids for Rhode Island to consider for selection after Massachusetts selected Vineyard Wind?

c. Of the remaining options and bidders noted in parts a and b, how many bids and pricing options were associated with each bidder for Rhode Island for selection after Massachusetts selected Vineyard Wind?

d. Were all the bids and pricing options from each bidder referenced in part c reviewed by National Grid, OER, and the Division prior to selecting Revolution I?

Response:

a. All of the remaining bids were available to Rhode Island after Massachusetts selected the Vineyard Wind project.

b. Two bidders had remaining bids for Rhode Island to consider for selection after Massachusetts selected Vineyard Wind.

c. 10 bids and 16 pricing options were available to Rhode Island after Massachusetts selected Vineyard Wind.

d. Yes.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-31

Request:

Please provide a list of all RFPs issued in a jurisdiction in the United States in which an offshore wind facility was the top-ranked facility or was awarded a PPA as a result of the RFP. Please indicate which of these RFPs allowed other facility types, such as solar PV or onshore wind, to submit bids and which of these RFPs were restricted to proposals for offshore wind facilities.

Response:

Other than the Massachusetts Section 83C RFP, which only allowed for offshore wind bids, the Company is aware that Connecticut has selected two offshore wind projects pursuant to two RFPs that allowed for other facility types.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-32

Request:

Regarding the Block Island Wind Farm:

a. How much time passed between the PUC's approval of the PPA and commercial operation, and how did this compare to timelines set forth in that PPA?

b. Was this information and experience used to establish the reasonableness and credibility of the PPA's Commercial Operation Date?

Response:

a. Six years passed between the PUC's approval of the PPA in August 2010 and the commercial operation date in December 2016. The PPA with Deepwater Wind Block Island, LLC (DWBI) provided for a deadline to achieve commercial operation of December 31, 2012, which could be extended by up to five years by DWBI by written notice to National Grid (plus additional extensions due to Force Majeure events, not to exceed 36 months). By notice to National Grid dated October 26, 2012, DWBI exercised its option to extend the commercial operation deadline by five years, to not later than December 31, 2017.

b. This point of information was one of several factors considered to establish the reasonableness and credibility of the PPA's Commercial Operation Date.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

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PUC 2-33

Request:

Was information from other proposed offshore wind farms, such as Cape Wind, used to establish the reasonableness and credibility of the PPA's Commercial Operation Date?

Response:

Previous US offshore wind experience was one of several factors considered to establish the reasonableness and credibility of the PPA's Commercial Operation Date.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

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PUC 2-34

Request:

Referencing the Joint Testimony on Bates page 26, lines 10 to 12, the witnesses state, "…the prices received in response to the RFP are highly informative of what an experienced market analyst should expect to see in transactions involving regional offshore wind energy infrastructure." [Emphasis added]

a. Please confirm if it is the Company's opinion that commercially reasonable per R.I. Gen. Laws § 39-31-3 (ACES) is defined, in part, as "terms and pricing that are reasonably consistent with what an experienced power market analyst would expect to see in transactions involving regional-energy resources and regional-energy infrastructure." [Emphasis added]

b. Please confirm if it is the Company's opinion that commercially reasonable as defined in R.I. Gen. Laws § 39-31-3 is distinct from the definition provided in § 39-26.1-2(1), which states, in part, " 'Commercially reasonable' means terms and pricing that are reasonably consistent with what an experienced power market analyst would expect to see in transactions involving newly developed renewable energy resources." [Emphasis added]

c. Please provide a list of facility types that the Company believes are "regional-energy resources and regional-energy infrastructure."

d. For the facility types listed in response to part c, please explain if the proposed contract price for energy and/or RECs is consistent with, higher than, or lower than prices an experienced market analyst should expect to see in transactions involving such facility types.

Response:

a. Confirmed that R.I. Gen. Laws § 39-31-3 defines "Commercially reasonable" as stated above.

b. Confirmed that R.I. Gen. Laws § 39-26.1-2(1) defines "Commercially reasonable" as stated above, which is distinct from the definition under ACES.

c. R.I. Gen. Laws § 39-31-5, Regional energy procurement, authorizes the public utility company to voluntarily participate in multi-state or regional efforts to: (1) procure domestic or international large-or small-scale hydroelectric power; (2) procure eligible renewable energy resources including wind, as defined by § 39-26-5(a); (3) procure incremental natural gas pipeline infrastructure and capacity into New England; and (4) support the development and filing of tariffs or other appropriate cost recovery mechanisms that allocate the costs of new electric-transmission and natural-gas pipeline infrastructure and capacity projects.

Reading these sections of ACES as a whole, it is reasonable to interpret "regional-energy resources and regional-energy infrastructure" as including domestic or international large or small-scale hydroelectric power, eligible renewable energy resources, including wind, incremental natural-gas pipeline infrastructure and capacity, and electric-transmission infrastructure.

d. It is difficult to speculate how energy and/or REC prices for all other technologies eligible under ACES may compare to the energy and REC prices within the proposed contract for offshore wind under review here. For example, not all other technologies can produce energy and RECs, and energy pricing generally varies on the basis of a facility's capacity, economic factors, and a host of other variables.

Prepared by or under the supervision of:
Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-35

Request:

Please provide the price, capacity, and technology type or configuration, and any other pertinent information for all bids received in response to National Grid's RFP issued pursuant to the PUC's decision and order in Docket No. 4822.

Response:

Please see Attachment PUC 2-35 (Confidential).

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

REDACTED

Confidential: NG Evaluation Team Information – DO NOT FORWARD

2018 Rhode Island Long-Term Contracts for Renewable Energy Solicitation (Docket No. 4822)

	Company	Bidder Name	Project Title	Resource Type
1	Ameresco, Inc.	Ameresco, Inc.	Gray Road Solar Energy LLC	Solar
2	Apex Clean Energy	Downeast Wind, LLC, wholly owned subsidiary of Apex GCL,	Downeast Wind	Land Based Wind
3	Cypress Creek Renewables	Cypress Creek Renewables, LLC	MacDill Solar	Solar
4	Deepwater Wind	Deepwater Wind	Revolution Wind Expansion	Off Shore Wind
5	Deepwater Wind	Deepwater Wind	Independent Wind	Off Shore Wind
6	DESRI - North Light	DESRI - North Light	Gravel Pit Solar, LLC	Solar
7	EDF Renewables	EDF Renewables Development, Inc.	Tracy Solar Energy Center	Solar
8	EDF Renewables	EDF Renewables Development, Inc.	Morris Ridge Solar Energy Center	Solar
9	EDP Renewables	Number Nine Wind Farm LLC	Number Nine Wind Farm (200MW)	Land Based Wind
10	EDP Renewables	Number Nine Wind Farm LLC	Number Nine Wind Farm (250MW)	Land Based Wind
11	EDP Renewables	Number Nine Wind Farm LLC	Number Nine Wind Farm (350MW)	Land Based Wind
12	Freepoint Solar LLC	Freepoint Solar LLC	FPS Vernon Solar	Solar
13	Freepoint Solar LLC	Freepoint Solar LLC	FPS Fair Haven Solar	Solar
14	Freepoint Solar LLC	Freepoint Solar LLC	FPS Campton 1 Solar	Solar
15	Freepoint Solar LLC	Freepoint Solar LLC	FPS Peterborough Solar	Solar
16	Freepoint Solar LLC	Freepoint Solar LLC	FPS Berlin Solar	Solar
17	Freepoint Solar LLC	Freepoint Solar LLC	FPS Shaftsbury Solar	Solar
18	Freepoint Solar LLC	Freepoint Solar LLC	FPS Claremont Solar	Solar
19	Freepoint Solar LLC	Freepoint Solar LLC	FPS Campton 2 Solar	Solar
20	Freepoint Solar LLC	Freepoint Solar LLC	FPS Thornton Solar	Solar
21	Freepoint Solar LLC	Freepoint Solar LLC	FPS Plainfield Solar	Solar
22	Freepoint Solar LLC	Freepoint Solar LLC	FPS Sterling Solar	Solar
23	Freepoint Solar LLC	Freepoint Solar LLC	FPS Panton Solar	Solar
24	Freepoint Solar LLC	Freepoint Solar LLC	FPS Alfred Solar	Solar
25	Longroad Energy	Weaver Wind, LLC	Weaver Wind	Land Based Wind
26	Longroad Energy	Three Corners Solar, LLC	Three Corners Solar	Solar
27	Nextera Energy	Chariot Solar, LLC	Chariot Solar	Solar
28	Nextera Energy	Lone Pine Solar, LLC	Lone Pine Solar	Solar
29	Vineyard Wind LLC	Vineyard Wind LLC	Vineyard Wind Rhode Island	Off Shore Wind
30	Vineyard Wind LLC	Vineyard Wind LLC	Vineyard Wind Rhode Island	Off Shore Wind

[redacted]

PUC 2-36

Request:

Referencing the Joint Testimony on Bates page 20:

a. Please describe the responsibilities of the Evaluation Team, the Bid Team, and the Subject Matter Experts.

b. Please provide a list of the members of each of these three groups and their titles.

c. Please indicate which Subject Matter Experts advised members of both Teams.

Response:

a. The Utility Standard of Conduct Governing Activity Related to the Solicitations for Clean Energy Resources under Sections 83C and 83D of the Massachusetts Green Communities Act (Schedule NG-5, Bates pages 282 through 286) describes the respective responsibilities of these team members and Subject Matter Experts (SMEs).

   Individuals participating "in a direct and meaningful way in the [s]olicitation process" must be designated to be either on the Bid Team or the Evaluation Team.

   The Bid Team comprises members of the Utility or the Utility's affiliate(s) who are responsible for the planning, conduct, administration, endorsement, or oversight of the development of proposals in response to the Solicitation Process Request for Proposals.

   The Evaluation Team is responsible for the planning, conduct, administration, endorsement, or oversight of the development of the RFP, the evaluation of proposals, selection of proposed projects, negotiation of any agreements, and related filings with state and/or federal regulatory authorities under the Solicitation Process.

   SMEs are neither members of the Bid Team nor Evaluation Team but may provide guidance, advice, information, or support to the Bid Team and/or Evaluation Team in the normal course of their responsibilities.

b. A roster of the Evaluation Team members and SMEs is maintained on the Section 83C and 83D website, available at:
   https://macleanenergy.files.wordpress.com/2016/12/edc-evaluation-team-members8.pdf.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

A roster of the Bid Team members is provided as Attachment PUC-2-36 (Confidential).

Because The Narragansett Electric Company (Company) is also a signatory to the Standard of Conduct, each of the rosters contains employees whose work is focused on Massachusetts and/or Rhode Island.

The Company will supplement this response to identify the departments that its employees are members of, as soon as practicable.

c. SMEs are not permitted to "communicate directly or indirectly any confidential, non-public information obtained from the Evaluation Team with a member of the Bid Team regarding the [s]olicitation [p]rocessesor, any proposal, or the evaluation of any proposal . . . ." Due to the nature of SMEs, and because the witnesses in this proceeding are each members of the Evaluation Team, National Grid is unable to identify whether any SMEs actually advised members of both teams.

National Grid Employees

Last Name	First Name	Email Address
[redacted]		

[redacted]

Non-National Grid Employees

Last Name	First Name	Email Address
[redacted]		

[redacted]

[redacted]

REDACTED

[redacted]

PUC 2-37

Request:

Regarding the Block Island Wind Farm

a. How many full-time jobs are associated with the facility?

b. How many temporary job-years are associated with the facility?

c. Regarding the full-time jobs noted in part c, please provide the fraction of full-time jobs held by residents in Rhode Island, Massachusetts, all other New England States, all other states, and all other countries.

d. Regarding the temporary job-years noted in part b, please provide the fraction of job-years held by residents in Rhode Island, Massachusetts, all other New England States, all other states, and all other countries.

Response:

Please refer to the response to Data Request PUC-DWW-2-3.

PUC 2-38

Request:

Regarding Revolution I:

a. Please provide the fraction of full-time jobs expected to be held by residents in Rhode Island, Massachusetts, all other New England States, all other states, and all other countries.

b. Please provide the fraction of temporary job-years held by residents in Rhode Island, Massachusetts, all other New England States, all other states, and all other countries.

Response:

Please refer to the response to Data Request PUC-DWW-2-4.

PUC 2-39

Request:

Please explain if and what contractual or non-contractual commitments for local jobs and economic growth have been made in association with proposals for offshore wind projects in Connecticut, Massachusetts, and New York. Please also explain if and how these commitments were considered when estimating the jobs and economic impact Revolution I would have on Rhode Island.

Response:

Please refer to the response to Data Request PUC-DWW-2-5.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-40

Request:

What contractual and non-contractual commitments, if any, has DWW made to invest in Rhode Island, hire Rhode Island residents, and/or use Rhode Island infrastructure and facilities (such as Rhode Island ports) in association with Revolution I?

Response:

Please refer to the response to Data Request PUC-DWW-2-6.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-41

Request:

What assumptions about Rhode Island infrastructure and workforce skills were used to produce the jobs and economic projections associated with Revolution I, and the justification for these assumptions. For example, are the physical limitations of Rhode Island ports, inclusive of any investment planned for these ports, capable of serving work associated with Revolution I?

Response:

The Company does not have information responsive to this request beyond what is provided in the Navigant Report, Schedule NG-6.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

PUC 2-42

Request:

Please provide all the inputs used to calculate benefits associated with Revolution I that were different than inputs used to evaluate Massachusetts Section 83C project selection (Vineyard Wind), what those difference were, and why those differences are reasonable.

Response:

The key differences in the calculation of benefits associated with Revolution I (RI RW Analysis) and the Massachusetts Section 83C project selection (MA 83C Analysis) are as follows:

- The differences in the evaluation metrics used to calculate the net benefits are compared in Attachment PUC 2-42. The methodology used to calculate each of the metrics under the RI RW Analysis is documented in Tabors Caramanis Rudkevich Quantitative Evaluation Report (Report) Section 2 on Bates page 300 through 302.

  These differences reflect: (a) the removal of metrics and evaluation methodologies that were not a requirement of the Rhode Island procurement; (b) re-assessment of Rhode Island state specific metrics; and (c) addition of metrics required under the Rhode Island's Docket 4600 evaluation framework.

- The differences in input assumptions are provided in Report Section 3.C on Bates page 304 through 307. These reflect recent changes to the ISO-NE market such as changes in the generation mix (retirements and buildouts) including recent clean energy procurements, changes to ISO-NE transmission network, updated load forecasts, resource adequacy requirements, RPS requirements, and emission allowance prices.

These differences are reasonable and justified as a means of assuring that the analysis of Revolution I is based on the most current conditions.

Prepared by or under the supervision of: Timothy J. Brennan and Corinne M. DiDomenico

Attachment PUC 2-42
Comparison

DIFFERENCES IN QUANTITATIVE EVALUATION METRICS

Row Ref	Evaluation Metric	MA 83C Analysis	RI RW Analysis [Note 1]	Notes and Comments
DIRECT COSTS AND BENEFITS				
4	Direct Cost of Project energy + RECs	Yes	Yes	Note 2
5	Direct Cost of Transmission	Yes	Yes	Note 2
6	***Sub - Total Direct Costs of Proposal energy + RECs + Transmission***	-	-	Calculation: 4+5
7	Market Value of Project energy	Yes	Yes	Note 2
8	Savings from Project RECs used for RPS and CES compliance	Yes	Yes	Note 2, 3
9	RECs from Project sold out of state * Project Case REC market price	Yes	Yes	Note 2, 3
10	***Sub-Total Direct Benefit of energy, RECs***	-	-	Calculation: 7+8+9
11	Total Net Direct Benefit (Cost)	-	-	Calculation: 6+10
INDIRECT COSTS AND BENEFITS				
13	Impact of Change in State energy prices	Yes	Yes	Note 2, 3, 4
14	Impact of Change in REC prices	Yes	Yes	Note 2, 3, 4
15	Net GWSA Compliance contribution	Yes	-	GWSA Calculations are MA specific
16	Annual impact of Change in Proposal PPA market value in year with extreme Winter prices assuming a 1 in 15 year frequency of ocurrence	Yes	-	RI RW analysis reports this metric under other benefits.
17	Total Net Indirect Benefits (Cost)	-	-	Calculation: 13+14+15+16
18	Total Net Benefits (Cost) [Direct + Indirect]		-	Calculation: 11+17
OTHER BENEFITS				
20	Societal Impact of Reduction in GHG Emissions	-	Yes	Note 5
21	Societal Impact of Reduction in NOx Emissions	-	Yes	Note 5
22	Economic Benefit to Rhode Island	-	Yes	Note 5
23	Increase in Project PPA market value from year with extreme Winter fuel prices ocurring once in 15 years	-	Yes	Note 5
24	Impact of Reduction in gas supply cost to RI gas customers	-	Yes	Note 5

Notes	
1	All MA 83C Analysis is in 2017$ with data sources as of October 2017. RI RW Analysis is in 2018$ with data sources updated as of October 2018
2	Calculation of these specific metrics for the MA 83C evaluation includes costs and benefits attributable to a 400 MW proxy tranche 2 unit in addition to the 400 MW RW unit
3	Calculation of these specific metrics are state dependent. 83C Analysis is based on Massachussets, RI RW analysis is based on Rhode Island
4	Calculation of these specific metrics for the RI RW analysis include the impact of the 1400 MW portfolio resources
5	These metrics are included for the quantitative analysis per the Docket 4600 Framework applicable to Rhode Island

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PUC 2-43

Request:

Refencing the Tabors Caramanis Rudkevich Quantitative Evaluation Report on Bates page 299 of National Grid's filing, please provide the rationale for conducting the study based on all three projects being built versus none of the projects being built.

Response:

The rationale for conducting the study based on all of the projects being built was that the selection of each of the three projects assumed the selection of the others. Massachusetts and Rhode Island simultaneously selected the 1,200 MW of offshore wind projects from Vineyard Wind and Revolution Wind under the MA 83C RFP. At around the same time, Connecticut selected a 200 MW expansion of the Rhode Island's Revolution Wind project, which is under review here. Therefore, the Company analyzed the expected 1,400 MW regional portfolio of offshore wind resulting from the three states' 2018 efforts.

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PUC 2-44

Request:

Referencing the Tabors Caramanis Rudkevich Quantitative Evaluation Report on Bates page 300 of National Grid's filing, paragraph (iii), please indicate (a) which delivery point the study referenced; and (b) the market energy forecast model used.

Response:

(a) The study modeled the point of delivery at Brayton Point.

(b) The value of market energy forecast is based on the ENELYTIX projections of nodal hourly Locational Marginal Prices (LMPs) multiplied by the proposal generation at the delivery point. The projected LMPs are calculated using ENELYTIX Energy and Ancillary Services simulations over the evaluation period. Please refer to Tabors Caramanis Rudkevich Quantitative Evaluation Report Section 3.B on Bates page 303 through 304 for further details on ENELYTIX simulation model.

PUC 2-45

Request:

Referencing the Tabors Caramanis Rudkevich Quantitative Evaluation Report on Bates page 300 of National Grid's filing, paragraph (iv), please explain how the avoided cost was developed; how the assumed market prices were developed; how the market value Narragansett would receive was developed.

Response:

The Avoided cost of RECs reflects the value of RECs supplied by the selected proposal that would otherwise have been purchased by Rhode Island at market prices in order to meet its annual RPS compliance targets.

The avoided cost of RECs is calculated in the following manner:

- **Step 1:** Establish target annual REC Requirements for RI based on state RPS targets
- **Step 2**: Calculate the total annual quantity of RECs available to RI held under existing clean energy contracts
- **Step 3**: Calculate the annual incremental quantity of RECs that would be required by Rhode Island to meet its target requirements, i.e. the 'gap'. This is calculated by subtracting the quantities obtained in step 2 from the quantities obtained in step 1. If available RECs under existing contracts is greater than the target, then this quantity is zero.
- **Step 4**: Calculate the annual quantity of RECs from the project that would supply the gap established in Step 3 for each year. This is equal to either the quantity of proposal RECs or the gap calculated in step 3, whichever is lower.
- **Step 5:** The supplied RECs are then valued at the market price of RECs per the Base Case, i.e. a future scenario where the proposal does not exist. The annual avoided cost is calculated by multiplying the annual quantities of RECs calculated in step 4 by the corresponding Base Case price of RECs in that year.

TCR develops projections for REC prices for the Base Case and the Proposal Case based on the results of their respective ENELYTIX simulations. Please refer to response PUC 2-12(d) for further details on REC prices calculated by ENELYTIX.

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PUC 2-46

Request:

Referencing Mr. Hevert's testimony on Bates page 381 of National Grid's filing, please explain how entering into the Power Purchase Agreement is different from the Wholesale Standard Offer Service Agreements that were in place from 1998-2009.

Response:

The PPA for the 400 MW Revolution Wind Project (Project) differs significantly from the earlier Wholesale Standard Offer Service (SOS) Agreements in the areas of rate recovery, accounting regulations, contract term, price, technology and supply concentration. First, the SOS Agreements were required for the Company to meet its obligation to serve customers, whereas the Company entered into this PPA on a voluntary basis to facilitate the public policy goals of Rhode Island. Additionally, the SOS contract terms were for 8-12 years or about half the 20-year term of the PPA and the SOS price was on average approximately five cents per kilowatt hour or about half the price of the PPA. In addition, the newly constructed Project will represent new technology in the U.S. as an offshore wind project. In his Direct Testimony at pages 14 through 15 (Bates pages 388 through 389), Mr. Hevert discusses the scale of the financial obligation under the PPA, which totals $3.21 billion over the life of the PPA, relative to the size of the Company's existing long-term contracts for renewable energy, the size of its net utility plant, and the size of its shareholder's equity. In all instances, the relative size of the financial obligation under the PPA is very material relative to the benchmarks identified above. Because the Project represents a more concentrated source of supply for the Company, and because the offshore location of the Project represents new technology in the U.S., the business and financial risks associated with the Project and the PPA are significantly greater than the level of business and financial risks reflected in the earlier SOS Agreements.

Prepared by or under the supervision of: Timothy J. Brennan, Corinne M. DiDomenico, and Robert B. Hevert

PUC 2-47

Request:

Referencing Mr. Hevert's testimony on Bates pages 400-401, if National Grid is concerned about declining consumption, why did it propose a recovery mechanism based on volumetric usage?

Response:

National Grid does not have a specific concern regarding declining consumption that would lead to a request for an alternative recovery mechanism not based on volumetric usage. However, the Company may be exposed to a higher level of operating income variability, or increased operating leverage, with the Power Purchase Agreement (PPA) in place due to daily cash flow variability for any number of reasons. Mr. Hevert discusses the sources of potential variability in the Company's daily cash flow at pages 16 through 17 (Bates pages 390 through 391) of his Direct Testimony, and how the Company's financial risk increases given the fixed PPA payments that must be funded regardless of variability in the Company's sources of daily cash flow. At pages 25 through 27 (Bates pages 399 through 401) of his Direct Testimony, Mr. Hevert describes how the credit rating agencies take this increased financial risk resulting from a higher level of fixed costs into account in their credit rating evaluations. National Grid's proposed remuneration in this proceeding helps to mitigate the financial risk accepted by the Company for entering into the long-term fixed PPA obligations.

Prepared by or under the supervision of: Timothy J. Brennan, Corinne M. DiDomenico, and Robert B. Hevert