



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Rhode Island Division of  
Public Utilities and Carriers  
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Warwick RI 02888  
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April 5, 2019

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

**In Re: Docket No. 4929 -- National Grid's Review of PPA w/ DWW Rev I, LLC**

Dear Luly,

Please find the State of Rhode Island Division of Public Utilities and Carriers, (the "Division") Memorandum, in lieu of pre-filed testimony for filing with the Public Utilities Commission relating to its review of National Grid's Power Purchase Agreement with DWW Rev I, LLC in the above captioned docket.

I appreciate your anticipated cooperation in this matter.

Very truly yours,

  
Jon G. Hagopian  
Deputy Chief Legal Counsel

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS  
PUBLIC UTILITIES COMMISSION

IN RE: THE NARRAGANSETT ELECTRIC :  
COMPANY d/b/a NATIONAL GRID REVIEW : DOCKET NO. 4929  
OF POWER PURCHASE AGREEMENT :  
PURSUANT TO R.I. GEN. LAWS § 39-31-1 TO 9 :

**MEMORANDUM**



Jonathan Schrag, Deputy Administrator

April 5, 2019

## **Introduction**

In accordance with [R.I. Gen. Laws § 39-31](#) the Division of Public Utilities and Carriers submits this Memorandum to the Rhode Island Public Utilities Commission (Commission) on a proposed twenty year Power Purchase Agreement (PPA) between the Narragansett Electric Company, d/b/a National Grid (National Grid or the utility), and DWW Rev I, LLC, also known as the Revolution Wind offshore wind project developed by Ørsted U.S. Offshore Wind (Ørsted). The proposed PPA was filed with the Commission on February 7, 2019 in accordance with the Affordable Clean Energy Security Act (ACES), [R.I. Gen. Laws § 39-31-1 et seq.](#)

Under ACES, the Division of Public Utilities and Carriers is assigned to work “in consultation and coordination” with the Rhode Island Office of Energy Resources to advise the Commission on the benefits of any proposal made by the distribution utility. The Division of Public Utilities and Carriers has worked since April 2018 with the Office of Energy Resources (OER) through a shared consultant, Power Advisory LLC. Based upon our review of the proposed contract and underlying analysis, the Division concurs with the conclusions reached by OER in its Advisory Opinion (submitted on March 22, 2019) and the testimony of our joint consultant, Mr. John Dalton of Power Advisory LLC.

In addition to reviewing the broad energy, economic, and environmental implications of the proposed project, the Division has also focused on several key areas that are the subject of this memorandum. In doing so, we have considered both the requirements of ACES “that the total energy security, reliability, environmental and economic benefits to the state of Rhode Island and its ratepayers exceed the costs of such projects” as well as consistency with the Commission’s Docket 4600 Framework.

## **Net Benefits**

The Division requested its joint consultant to review the quantification of benefits conducted by the consultant Tabors Caramanis Rudkevich (TCR) which are presented in schedule NG-5. The TCR quantification identified \$91.6 million in 2018 net benefits on a 2018 net present value basis. In addition, the quantification identified just under \$950 million in indirect benefits, including \$544 million in benefits from the reduction of greenhouse gas emissions and over \$405 million in economic development benefits on a 2018 net present value basis. Based on our consultant’s review, the Division finds the quantification of benefits by TCR to satisfy the requirement established in ACES and codified in Docket 4600 that benefits exceed the costs. The Division also recognizes the additional unquantified benefits that stem from the strategic importance of this project to advance Rhode Island’s development of a scalable carbon-free energy resource.

## **Revolution Wind and Natural Gas Demand**

In addition to the aggregate evaluation of benefits and costs, the Division’s opinion on the proposed contract is informed by the impact this project, and future offshore wind development projects, will have on Rhode Island’s energy security. The proposed Revolution Wind project offers significant energy security benefits for Rhode Island in the face of increasing threats to regional energy security during extreme cold weather events.

Rhode Island customers are largely dependent on natural gas for electric generation and residential heat. The consequence of this dependence is exposure to extreme prices for both gas-fired electricity and heating during winter periods of extreme cold weather. For example, in the winter of 2017-2018, Rhode Island gas customers were subject to an additional \$40 million dollars of gas costs in the Gas Cost Recovery docket as a result of ten days of extreme cold weather in December 2017. For electric customers, ISO-NE released a report in January 2018 titled Operational Fuel-Security Analysis which identified limited availability of natural gas during extreme cold weather events as New England's greatest risk to power system reliability.<sup>1</sup>

Offshore wind projects represent a strategic resource to address regional cold-weather energy security threats for electric and gas customers. According to a December 2018 analysis performed by ISO-NE, offshore wind projects tend to increase their electric output during times that are generally coincident with high winter demand periods.<sup>2</sup> ISO-NE examined the energy, production cost, and emissions impacts associated with hypothetical offshore wind injections of 400 MW, 800 MW, and 1,600 MW into New England coincident with a real-life sixteen-day cold spell that spanned from December 24, 2017 through January 8, 2018. The projected offshore wind output estimates reflected capacity factors of about seventy percent (70%) during this winter cold snap, resulting in avoided production costs of \$20-25 million for a hypothetical 400 MW project. For Revolution Wind in particular, Ørsted estimates that the project's winter period capacity value in the Forward Capacity Market will be 226.7 MW, almost 57% of its nameplate capacity rating.

TCR evaluated how the high capacity factor of Revolution Wind during cold weather periods might affect gas supply costs for Rhode Island consumers. The Division hypothesized that, during periods of cold winter weather, the output of offshore wind generation would displace the need for some quantity of higher-cost gas generation, reducing the regional need for gas. Working with National Grid and TCR, the quantified gas savings totaled \$28.7 million in 2018 net present value.

### **Revolution Wind and Bill Impacts**

The proposed contract will result in a constant, twenty-year fixed cost of \$.098425 per kilowatt hour for energy and renewable energy credits combined. The impact of the Revolution Wind contract on customer bills is detailed in National Grid's filing in schedule NG-9. That schedule shows that for all segments of the A-16 and A-60 rate classes the proposed project would result in a bill reduction of 0.4%. The Division also requested that National Grid provide a bill impact analysis of the eleven largest customers taking service under the G-62 rate class. The Division hypothesized that the inclusion of demand charges in the rate structure for this rate class might create anomalous bill impacts. According to the analysis provided by National Grid, the Revolution Wind contract would result in a reduction of 0.6% for nine customers, a reduction of 0.7% for one customer and a reduction of 0.3% for one customer, demonstrating bill impacts consistent with that for customers in other rate classes.

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<sup>1</sup> [https://www.iso-ne.com/static-assets/documents/2018/01/20180117\\_operational\\_fuel-security\\_analysis.pdf](https://www.iso-ne.com/static-assets/documents/2018/01/20180117_operational_fuel-security_analysis.pdf).

<sup>2</sup> ISO-NE's "High-Level Assessment of Potential Impacts of Offshore Wind Additions to the New England Power System During the 2017-2018 Cold Spell" was issued on December 17, 2018 and can be accessed at: [https://www.iso-ne.com/static-assets/documents/2018/12/2018\\_iso-ne\\_offshore\\_wind\\_assessment\\_mass\\_cec\\_production\\_estimates\\_12\\_17\\_2018\\_public.pdf](https://www.iso-ne.com/static-assets/documents/2018/12/2018_iso-ne_offshore_wind_assessment_mass_cec_production_estimates_12_17_2018_public.pdf).

## Docket 4600

In Order #22851, the Commission adopted eight goals that a modernized electric system should be able to meet.<sup>3</sup> The Order stated, “The PUC’s expectation is that all parties to a National Grid rate matter will include a discussion in any testimony of how a proposal advances, detracts from, or is neutral to each of the stated goals of the electric system.”<sup>4</sup> The Division collaborated with OER to develop an evaluation of the project based on Docket 4600 goals. The Division cites the references included in the Framework categories provided by the Office of Energy Resources in its Advisory Opinion.

<b>Table 1</b>		
<b>Docket 4600 Goals</b>		
Docket 4600 Goals	Directional Impact (+, -, N/A)	Detailed Impact
Provide reliable, safe, clean and affordable energy to Rhode Island customers over the long term.	Positive Impact	<p>Revolution Wind will provide 400 MW of newly-developed, carbon-free energy to local consumers for at least 20 years. When operating, the project will displace other sources of less cost-efficient and higher-emitting energy resources on the grid. Its high capacity factor during winter months will produce enhanced system reliability benefits during periods of natural gas supply constraints.</p> <p>The project has direct contract cost net benefits of \$4.7 million (NPV 2018\$) over its contract term and is expected to help generate an additional \$87.0 million (NPV 2018\$) in energy market price reductions over the next two decades.</p>
Strengthen the RI economy, support economic competitiveness, retain and create jobs by optimizing the benefits of a modern grid and attaining appropriate rate design structures	Positive Impact	<p>The project will support more than 800 construction jobs, 50 permanent jobs, and a substantial number of indirect and induced jobs for local workers.</p>

<sup>3</sup> PUC Docket #4600, Order #22851, 25. The list of goals begins on page 9 of the Order.

<p>Address the challenge of climate change and other forms of pollution</p>	<p>Positive Impact</p>	<p>As a carbon-free, energy resource, the project will be dispatched in economic merit and displace other, higher-emitting resources, including natural gas in most hours of the year and/or oil during winter hours. By displacing carbon-emitting resources, Revolution Wind will help reduce regional power sector GHG emissions by an estimated 11 million metric tons of CO<sub>2</sub> and nearly 1,400 metric tons of NO<sub>x</sub>.</p> <p>The integration of clean energy resources, at scale, is critical if the state and region are to meet long-term greenhouse gas emission reduction goals, not only for the electric sector, but for the decarbonization of the transportation and thermal sectors, too.</p>
<p>Prioritize and facilitate increasing customer investment in their facilities where that investment provides recognizable net benefits</p>	<p>Not Applicable</p>	<p>This goal is not applicable. OER reads this goal as applying to individual customer investments, such as implementing energy efficiency measures at a warehouse or installing solar panels on a single-family home. The underlying procurement was focused on identifying grid-scale offshore wind resources that can directly interconnect to the region's high-voltage transmission system.</p>
<p>Appropriately compensate distributed energy resources for the value they provide to the electricity system, customers, and society</p>	<p>Not Applicable</p>	<p>This goal is not applicable. This procurement is seeking grid-scale resources and not behind-the-meter resources or other distributed energy resources.</p>
<p>Appropriately charge customers for the cost they impose on the grid</p>	<p>Not Applicable</p>	<p>This goal is not applicable.</p>

<p>Appropriately compensate the distribution utility for the services it provides</p>	<p>Positive Impact</p>	<p>ACES provides for the recovery from distribution customers of reasonable costs incurred by the electric distribution company in furtherance of statutory purposes, but does not specify any additional financial remuneration for the utility.</p> <p>In this docket, National Grid has proposed to receive a financial remuneration of 2.75 percent of actual annual payments made under the contract.</p>
<p>Align distribution utility, customer, and policy objectives and interests through the regulatory framework, including rate design, cost recovery, and incentives</p>	<p>Positive Impact</p>	<p>Through its passage of ACES, the General Assembly established a regulatory framework that allows for multi-state clean energy procurements benefiting the state’s energy, economic, and environmental systems. This framework compensates the utility for costs incurred; fosters delivery of a multitude of energy and non-energy benefits for local consumers; and advances important state policy goals.</p>

**Additional Considerations**

The Division is aware that an unregulated affiliate of Narragansett Electric Company has negotiated an option to acquire the delivery facility upon commercial operation of the project. The Division considered whether this affiliate transaction would represent a conflict. The Division is satisfied that the terms of the proposed project, which includes a constant and fixed price for energy, will completely insulate Rhode Island ratepayers from the effects of this option, regardless of whether it is exercised. Rhode Island ratepayers will pay the same amount in either case, and therefore no conflict can exist.

**Conclusion**

The Division of Public Utilities and Carriers is satisfied that the conditions of ACES have been satisfied with this proposed project and that the aggregate benefits exceed the costs for Rhode Island ratepayers. The proposed project is the result of a commercially-reasonable, competitive, multi-state procurement in line with statutory requirements. The process utilized has produced here contract terms and pricing – including a proposed commercial operation date – that are also commercially reasonable. In addition, the Division finds that the project represents a strategic opportunity to address an increasing need of winter energy security and advances many of the goals of the electric system as codified in Docket 4600.