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August 20, 2015

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

**Subject: Docket No. 4570, Solicitation for Proposals for Clean Energy Projects Pursuant to R.I.G.L. § 39-31-1 *et seq.***

Ms. Massaro:

In response to the Public Utilities Commission's ("PUC") July 20, 2015, Notice of Technical Record Session, Intervention Deadline, and to Solicit Comments, RENEW Northeast, Inc. ("RENEW") submits these comments on the Request for Proposal ("RFP") The Narragansett Electric Company d/b/a National Grid ("National Grid") filed with the PUC for its review and approval pursuant to the Affordable Clean Energy Security Act, R.I. Gen. Laws § 39-31-1 to -9 (the "Act").

RENEW is a non-profit association uniting the renewable energy industry and environmental advocates whose mission involves coordinating the ideas and resources of its members with the goal of increasing environmentally sustainable energy generation in the Northeast from the region's abundant, indigenous renewable resources.[1] RENEW has focused on highlighting the value of grid-scale resources- specifically offshore and onshore wind and hydropower- and the benefits of transmission investment to deliver renewable energy to load centers in the Northeast. RENEW members own and/or are developing large-scale wind and hydropower facilities in Rhode Island and throughout the Northeast. Others are independent transmission developers with proposals for transmission facilities to connect clean energy resources from around the region to load centers.

[1] The comments expressed herein represent the views of RENEW and not necessarily those of any particular member of RENEW.

RENEW strongly supports this collaboration among the State of Connecticut and the electric distribution companies ("EDCs") of Massachusetts and Rhode Island (collectively, the "Soliciting Parties") in pursuit of conducting a region-wide aggregated competitive solicitation for wind and hydropower, including imports from Canada if paired with Renewable Energy Standard ("RES") resources. The multi-state approach can provide scale that cannot be achieved by one state or through individual EDCs to support the new transmission necessary to deliver clean energy from remote areas, where it is abundant and low-cost, to load centers.

## I. Delivery Commitment Is Risky; Excluding PPAs Minimizes Competition

RENEW opposes National Grid's decision to limit its consideration of proposals to those conforming to the definition of Qualified Clean Energy Delivery Commitment ("Delivery Commitment").[2] Due to the legal uncertainty, reliance on the Delivery Commitment alone might jeopardize Rhode Island's ability to meet its RES requirements[3] and the carbon reduction goals of the Resilient Rhode Island Act.[4] While the Act does give National Grid the authority to contract for transmission upgrades, legal clarity will need to be provided by the Federal Energy Regulatory Commission as to whether the Delivery Commitment meets its requirements for the development of regional infrastructure to meet the collective public policy goals of the New England states.[5] By contrast, New England has a successful history of enabling renewable energy project development using Power Purchase Agreements ("PPAs") that should not be excluded from consideration.

Equally as important, the Delivery Commitment cannot support the development of new RES resources as those projects cannot be financed without long-term contracts for energy and/or Renewable Energy Certificates ("RECs"). The key ingredient for the success of a procurement program is providing developers with the long-term commitment from a creditworthy counterparty, such as an EDC, for their products of energy and RECs. Today, RES projects and even most traditional new generation, which have a much lower construction cost but have significantly higher operations and maintenance costs,[6] are very difficult to finance without a long-term contract due to the risks of relying on short term energy markets to recover a project's long term capital investment.[7] By contrast, Hydro-Quebec, as a wholly-owned entity of the government of Quebec, does not face these financing challenges in building its large-scale hydropower. It may be the only eligible clean energy supplier not requiring a long-term contract.

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[2] RFP at G-2.

[3] R.I. Gen. Laws § 39-26-4.

[4] R.I. Gen. Laws § 42-6.2-2.

[5] *See Emera Maine, f/k/a Bangor Hydro-Electric Co., et al. v. FERC*, Nos. 15-1141, et al. (D.C. Cir. filed 5/15/2015)(NESCOE et al. petition for review of FERC's Order 1000 compliance orders challenging *inter alia* FERC authority over states on planning and selecting of public policy transmission projects).

[6] *See* U.S. Energy Info. Admin., *Levelized Cost and Levelized Avoided Cost of New Generation Resources in the Annual Energy Outlook 2014* (April 17, 2014), http://www.eia.gov/forecasts/aeo/electricity_generation.cfm

[7] *See* Peregrine Energy Group, Inc., New Energy Opportunities, Inc., *Study on Long-Term Contracting Under Section 83 of the Green Communities Act* 29-30 (December 31, 2012) (Submitted to the Massachusetts Department of Energy Resources), http://www.mass.gov/eea/docs/doer/pub-info/long-term-contracting-section-83-green-communitiesa-act.pdf.

The Act's goal of securing new supplies of large-scale clean authorizes National Grid to procure resources using all "competitive processes" for the benefit of ratepayers.[8] Even if National Grid wishes to consider Delivery Commitment proposals, which might be an appropriate approach to secure large-scale hydropower imports, the RFP should consider other types of proposals, including PPAs, to maximize competitiveness. It should not accept only commitments to delivery energy over transmission that may result in the submission of only one qualifying proposal. Accepting proposals for PPAs under the RFP does not obligate National Grid to select any of those projects. It will, however, give National Grid and the PUC the benefit of seeing a wider variety of proposals to assess when determining which are in the best interest of consumers to meet Rhode Island's clean energy goals.

## II. Long-Term Contracts With Renewable Resources Offer Numerous Benefits

Several factors support National Grid considering PPAs at this time: (1) Given the lead-time in building RES resources, contracts entered into with projects this year will ensure they will be built in time to meet RES resource shortfalls the region will likely experience around the year 2017.[9] Projects take several years to obtain siting and environmental permits and receive approval from ISO New England to interconnect to the grid; and (2) some potential wind projects in the region are being developed by companies that took steps (like the purchase of major wind turbine components) to ensure that their projects will be grandfathered for a limited time under the now expired federal Production Tax Credit ("PTC"). A procurement of wind power this year, in the event Congress does not extend the PTC, will ensure Rhode Island consumers can benefit from the lower prices associated with PTC eligible projects. By excluding PPAs from consideration, National Grid will also deny Rhode Island consumers two key benefits of renewable energy: the hedge value of renewable energy and the complementary nature of onshore wind and hydropower.

### A. Large-Scale Renewables Are Cost-Effective and Protect Consumers from Price Volatility

Wind energy is competitive on price. The pricing in National Grid's PPA with Champlain Wind, approved by the PUC in 2013, for bundled capacity, energy, and RECs is at the fixed price of $78 per MWh for the entire 15-year term of the PPA.[10] The PPA with Copenhagen Wind that National Grid filed this month with the PUC for approval has a fixed price of $78.75

[8] R.I. Gen. Laws § 39-31-5.

[9] *See* Connecticut Department of Energy and Environmental Protection, *2014 Integrated Resource Plan for Connecticut* iv (March 17, 2015), http://www.dpuc.state.ct.us/DEEPEnergy.nsf/c6c6d525f7cdd1168525797d0047c5bf/8e95d81c37c7237085257e0b004770b2?OpenDocument

[10] Docket 4437, Pre-Filed Direct Testimony of Corinne M. Abrams in September 3, 2013, Filing at 9.

per MWh for bundled energy and RECs with an annual increase of 2 percent per year.[11] According to National Grid, "This pricing is anticipated to be below the projected market prices on a net present value basis over the fifteen-year term of the contract."[12] This conclusion is consistent with an analysis Synapse Energy Economics recently performed for RENEW as illustrated in Figure 1. Wind energy prices are already competitive with today's market. The ISO New England Independent Market Monitor reports the average day-ahead locational marginal price at the New England Hub *for energy-only* was $64.56 per MWh in 2014.[13] This compares favorably to wind energy prices for bundled energy *and RECs* in the range of $75 – 80 per MWh even when excluding the other non-price benefits such as price stability and improved environmental quality.

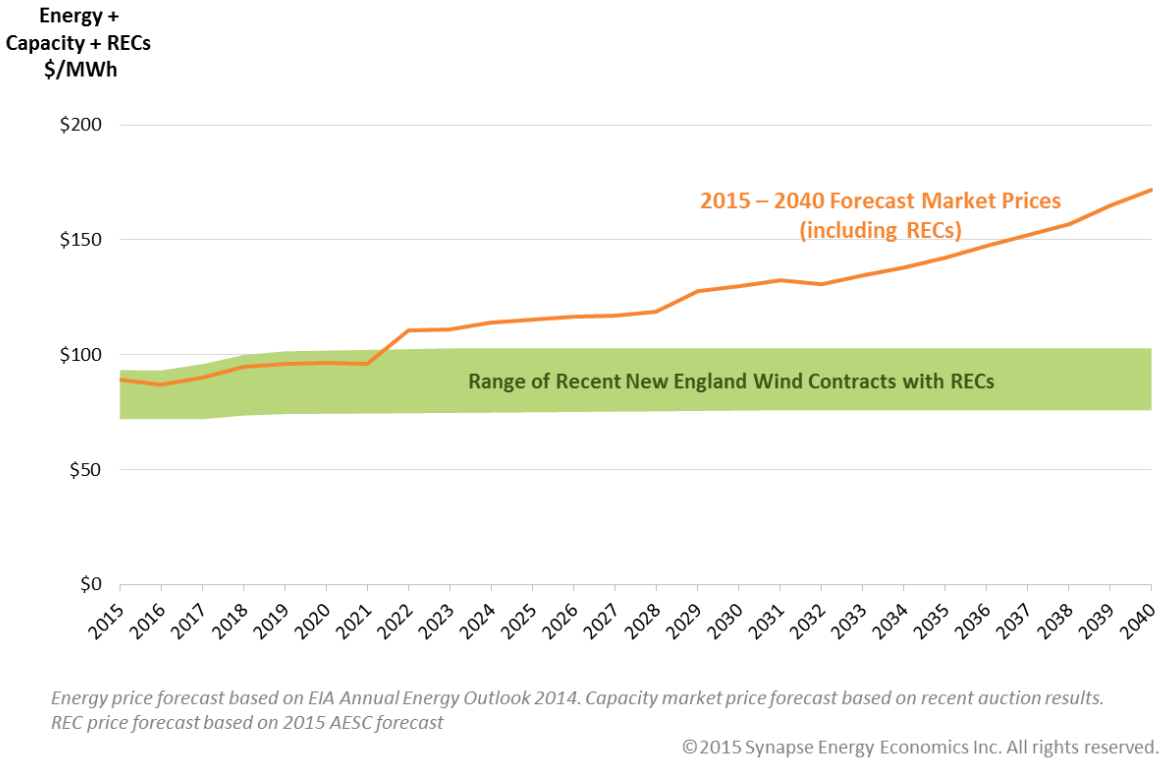


**Figure 1: Long-Term Fixed-Price Contracts Are Low Cost and an Ideal Hedge Against Rising Energy Prices.[14]**

Natural gas generally sets the price of electricity in New England, as shown in Figure 2, based on its use to fuel New England's extensive gas generator fleet.[15] This figure also captures the volatility of natural gas prices and how it drives volatility in the wholesale electricity market.

[11] Docket 4574, Pre-Filed Direct Testimony of Corinne M. Didomenico of National Grid in August 3, 2015, Filing at 15.
[12] Docket 4574, Cover Letter of Jennifer Brooks Hutchinson of National Grid in August 3, 2015, Filing at 2
[13] ISO New England Independent Market Monitor, 2014 Annual Markets Report 2 (May 20, 2015).
[14] Synapse Energy Economics, *Benefits of Long-term Wind Contracts* (June 26, 2015) (Prepared for RENEW. On file with author.).
[15] *Id.*

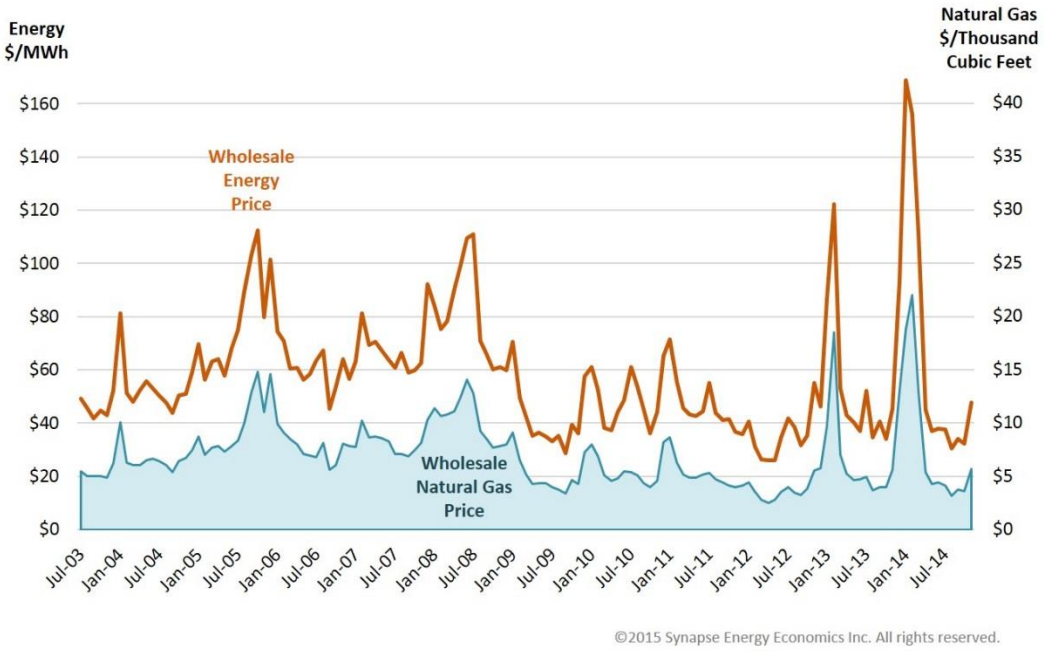


**Figure 2: Volatility of Natural Gas and Energy Prices**

RENEW recently had prepared an illustration of how renewable resources prices today would look compared to actual prices and volatility in the past.[16] In figure 3, recent wind contract prices are deflated to 2007 – 2014 dollars and then increase over time due to inflation and varying capacity market prices. Figure 3 shows how wind energy is a cost-effective resource and capable of minimizing volatility if secured under a long-term fixed-price PPA.

[16] Synapse Energy Economics, *supra* note 13.

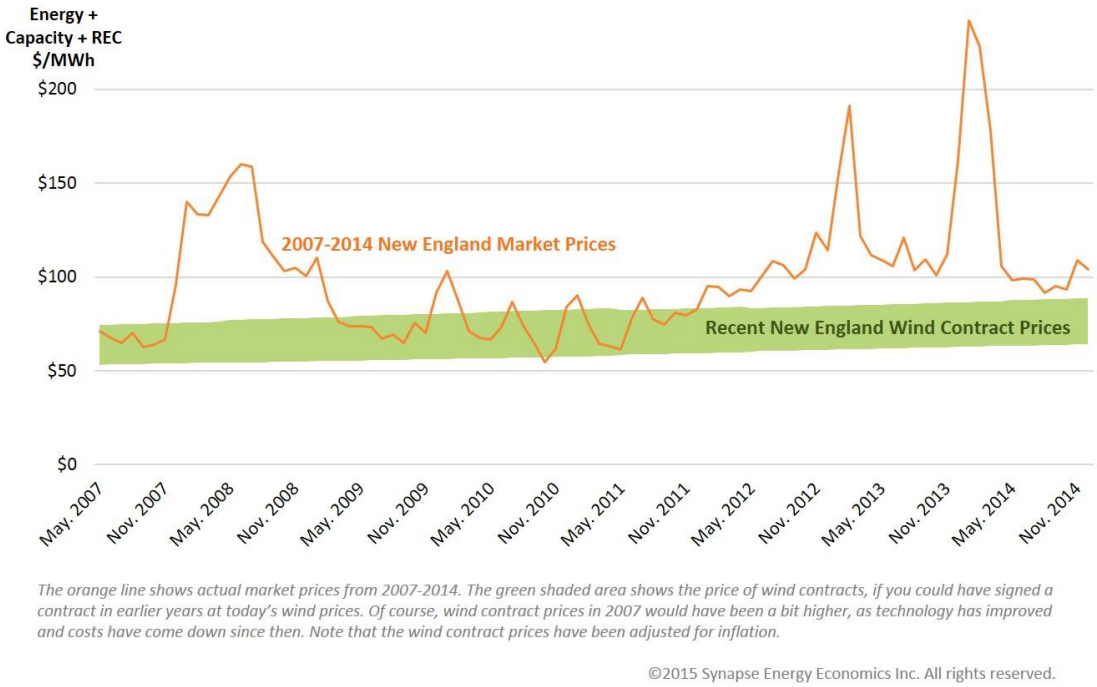


**Figure 3: Hedge Value and Cost-Effectiveness of Wind PPA Compared to Historical Energy Prices and Volatility.**[17]

While natural gas prices are historically low today, forecasts, as shown in Figure 1, indicate rising prices over the long term. Despite today's rock bottom natural gas prices, consumers are unable to secure a long-term lock on these low prices due to the futures market lacking liquidity beyond a year.[18] Here is where wind energy and its lack of fuel inputs can fill a role as an alternative hedging instrument for electricity consumers. Figure 1 illustrates how only renewable resources with their "free" fuel can provide an effective long-term hedge in the electricity market, like a 30 year fixed-rate mortgage, that will moderate short term price spikes and rising prices due to the underlying price for natural gas.[19] Figure 1 shows how the green line of a fixed-price long-term contract can protect against forecasted natural gas price increases (orange line). Although energy market prices are uncertain, they can be represented using a probability distribution for each future year. In contrast, long-term wind contract prices are known with certainty. While energy market costs could be cheaper in the future, they are much more likely to be higher than wind contract costs. Synapse Energy Economic estimated for RENEW that the levelized hedging benefit of wind is in the range of $13 - $16/MWh.[20]

[17] *Id.*

[18] *See* Bolinger, Mark, Lawrence Berkeley National Laboratory, *Revisiting the Long-Term Hedge Value of Wind Power in an Era of Low Natural Gas Prices* LBNL-6103E (March, 2013), http://emp.lbl.gov/publications/revisiting-long-term-hedge-value-wind-power-era-low-natural-gas-prices

[19] *Id.* at 10.

[20] Synapse Energy Economics, *supra* note 13.

### B. Wind Energy and Hydropower Are Complementary

Allowing for the submission of PPA proposals not only increases competition but also allows developers and suppliers to submit mixed resource proposals that might offer additional benefits compared to proposals for a Delivery Commitment or involving only variable resources. For example, RES hydropower resources and non-RES small and large hydropower resources in tandem with wind power could lower natural gas demand for electric power generation and minimize the need for natural gas pipeline capacity to meet New England's winter peaking needs. Low-carbon emitting hydropower imports, either small-scale domestic or large-scale Canadian imports, can serve as an alternative to expanded natural gas pipelines in balancing variable renewable resources and provide the region with much needed additional capacity. As shown in Figure 4, a combined hydropower and wind energy product might also be able to lower capacity prices.


*Graphs are based on recent auction results and roughly approximate the current New England capacity market.*
*Savings estimates based on 35,000 MW of cleared capacity.*

**No Impacts:** In other situations, adding 500 MW of wind and hydro will not alter the clearing price.


*Graphs are based on recent auction results and roughly approximate the current New England capacity market.*
*Savings estimates based on 35,000 MW of cleared capacity.*



**Figure 4: Potential Reductions in Capacity Costs from a Combined Wind and Hydropower Proposal.**[21]

At peak winter times wind can even "balance" large-scale hydropower imports by providing power to New England when Quebec must retain its hydropower to meet its periods of

[21] Graphs show illustrative demand and supply curves, based on recent ISO New England capacity market auction results. They are intended to roughly approximate the current New England capacity market. Savings estimates are based on a plausible change in market clearing price due to the addition of 500 MW of low-cost resources, and assume 35,000 MW of cleared capacity. The savings are calculated as the product of the change in price and the 35,000 MW of cleared capacity.

peak winter demand. According to a January, 2014, analysis on Canadian power flows into New England conducted by the New England States Committee on Electricity ("NESCOE"), which represents the collective interests of the six New England States on regional electricity matters, "there are times when the lines [from Canada] are not full. These drops correspond most closely with the times of the morning ramp up and the early evening peak, the two times when the New England System needs the power the most. It is not possible to tell why these flows dropped from the data. It could be that the price in [New York] was better than New England; it could be that [Hydro-Quebec] needed the power for its own needs and did not have excess."[22] Most likely, it is the latter assumption that Quebec will have insufficient capacity to meet peak winter demand for, on March 4, 2015, Hydro-Québec Distribution issued a solicitation for the purchase of up to 500 MW of firm capacity and the related energy during "peak periods".[23]

Wind energy resources are well-suited to meet winter electricity demands in New England including when Canadian hydropower is retained for local demand. Adding wind power in New England and even in Quebec can complement large-scale hydropower imports. With New England onshore wind peaking in winter, it can help both Quebec and New England meet winter demand needs with zero emissions and low, stable prices. According to one analysis, wind helped to lower market prices during the 2014 Polar Vortex. Although it only constituted approximately 1 percent of energy, wind reduced total energy market costs by approximately 3 percent during the Polar Vortex. Each megawatt-hour of wind energy produced during the Polar Vortex reduced wholesale energy costs by an average of $544.[24]

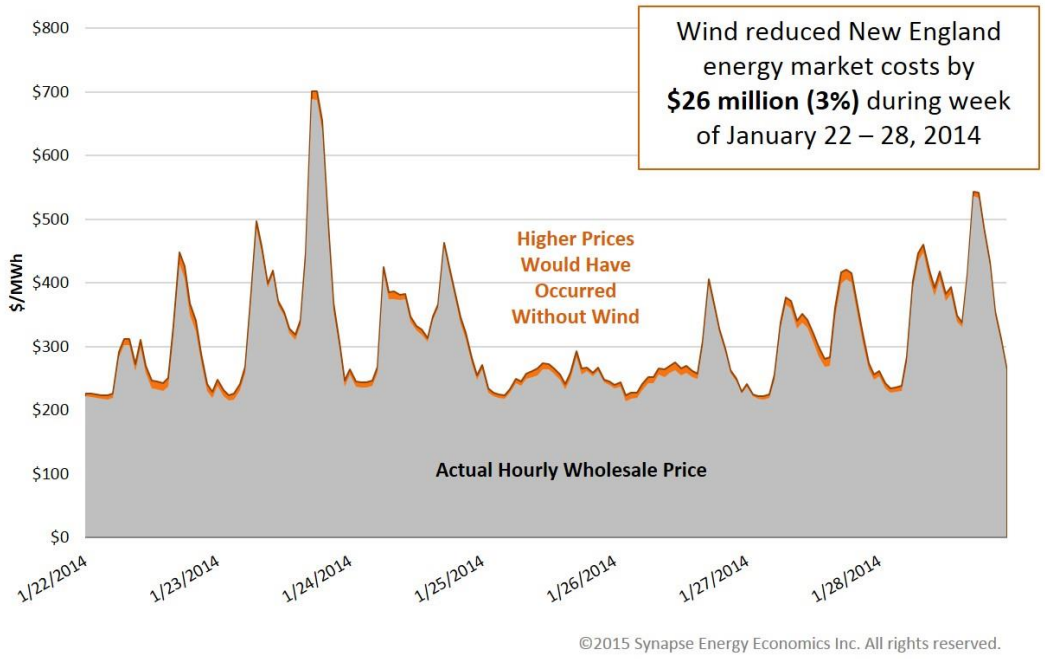


**Figure 5: New England Wind Energy Performance, January 22 – 28, 2014.**

[22] Memorandum of the New England States Committee on Electricity (January 31, 2014) (on file with author).
[23] Hydro-Québec Distribution, *Call for Tenders A/0 2015-01* (March 4, 2015), http://www.hydroquebec.com/distribution/en/marchequebecois/ao-201501/index.html.
[24] Synapse Energy Economics, *supra* note 13.

## III. Greenhouse Gas Reductions Must Be Measurable and Verifiable

The Act requires imported large-scale hydropower be "tracked and verifiable through the expansion of the New England Pool – Generation Information System ("GIS") or the development of another appropriate tracking and verification mechanism."[25] Canadian jurisdictions currently have no verification system in place to track and verify hydropower attributes sold into New England and to measure compliance with statutory greenhouse gas emissions limits.[26] No solicitation should allow the eligibility of large-scale hydropower from Canada either using the Delivery Commitment or PPAs until the attributes from these imports can be tracked and verified.

In addition to requiring that an exporter of hydropower have a verification system in place, any procurement of hydropower imports must increase the amount of clean energy resources on the New England power system with the goal of displacing fossil fuel use and lowering emissions across the Northeast and Eastern Canada. Safeguards must be in place to ensure any arrangement for non-RES hydropower will result in measurable and verifiable new emissions reductions across the region that are fully consistent with the carbon reduction goals of the Resilient Rhode Island Act[27] and the State Energy Plan once adopted.[28] Particularly with Quebec's shortage of peak winter capacity,[29] Rhode Island must ensure Quebec is not simply meeting its peak needs with fossil-fueled generation either from power it imports from New York and Ontario or from new fossil-fueled generation emerging out of its recent RFP. New hydropower supply should not merely transfer existing low-carbon generation from one province to New England with that other province replacing the transferred supply with increased fossil-fueled generation.

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[25] R.I. Gen. Laws § 39-31-8.

[26] Eversource Energy, National Grid, United Illuminating, Unitil, the Connecticut Department of Energy and Environmental Protection, the Massachusetts Department of Energy Resources and the Rhode Island Office of Energy Resources under the coordination of NESCOE have submitted to the NEPOOL Markets Committee proposed changes to Rule 2.7(c) of NEPOOL GIS to create unit-specific GIS Certificates for hydro units in adjacent control areas. The proposal requires approval by the NEPOOL Participants Committee.

[27] R.I. Gen. Laws § 42-6.2-2.

[28] Department of Administration, *Preliminary Draft State Energy Plan* (June 2015), http://www.planning.ri.gov/documents/LU/energy/Energy2035_All_Preliminary_06032015.pdf

[29] *See Joint Memorandum: Seasonal Exchange of Electricity Capacity between Ontario and Québec* (November 24, 2014), http://news.ontario.ca/opo/en/2014/11/joint-memorandum-seasonal-exchange-of-electricity-capacity-between-ontario-and-Québec.html; and Hydro-Québec Distribution, *Call for Tenders A/0 2015-01* (March 4, 2015), http://www.hydroquebec.com/distribution/en/marchequebecois/ao-201501/index.html.

## IV. Conclusion

RENEW appreciates the opportunity to offer these comments on the RFP.

Sincerely,

Francis Pullaro
Executive Director