HANDY LAW LLC
42 Weybosset Street | Providence | RI 02903
401 626 4839
401 753 6306 fax

Ms. Luly Massaro
Division Clerk
Division of Public Utilities and Carriers
89 Jefferson Boulevard
Warwick, RI 02888

December 17, 2021

Re. Docket D-21-09

Dear Luly:

Please accept this letter and its attached Exhibits A, B and C as New Energy RI's public comment in this docket. The hearing officer and the superior court have wrongfully denied New Energy RI's right to participate in this proceeding. Without any supporting basis, they conclude that New Energy RI does not have "interests warranting recognition and protection in furtherance of the general welfare of the public." They conclude that New Energy RI's members have no interests affected by the sale of Rhode Island's electric distribution company and could not otherwise claim to represent any public interest. In fact, they posit that New Energy RI's interests are "on a collision course with the interests of ratepayers." They cite an absence of proof that New Energy Rhode Island might "act in the public's interest by lowering utility bills," while in the act of denying New Energy RI its right to create any such record. They deny any bias in the decision-making process.

As a result, New Energy RI is denied the right to participate as a party in the proceedings to determine whether the proposed sale of our energy services company is in the public interest. New Energy RI was denied its right to engage in factual discovery to substantiate its position. New Energy RI was prevented from presenting testimony in support of its advocacy position. New Energy RI was precluded from cross examining the Petitioners' witnesses on questions essential to the determination of whether the proposed sale is in the public interest. New Energy RI was unable to brief its position on whether the sale of Narragansett Electric Company is in Rhode Island's public interest. New Energy RI was denied party status and, thus, not granted the capacity to appeal any decision that is inconsistent with Rhode Island's public interest.

New Energy RI does not submit this public comment because it hopes to influence this hearing officer's deliberation of the public interest. Denied the standing to appeal his decision, New Energy RI understands that its concerns are likely to go unaccounted and unaddressed. New Energy RI still files its public comment to establish how tragic is the loss suffered by and for RI's public interest when such qualified and uniquely affected members of the public are precluded from advocating on the public interest.

Thank you for your help with this filing.

Sincerely,

Seth H. Handy

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DIVISION OF PUBLIC UTILITIES AND CARRIERS

IN RE: Petition of PPL Corporation, PPL Rhode Island Holdings, LLC, National Grid USA, and The Narragansett Electric Company for Authority to Transfer Ownership of The Narragansett Electric Company to PPL Rhode Island Holdings, LLC and Related Approvals	Docket D-21-09

NEW ENERGY RHODE ISLAND
FIRST SET OF INTERROGATORY REQUESTS
TO NATIONAL GRID

(NERI-1 through NERI-20)
NOT ASKED OR ANSWERED
DUE TO PETITIONERS' OBJECTIONS
HEARING OFFICER'S DENIAL OF INTERVENTION
AND SUPERIOR COURT ORDER AFFIRMING DENIAL

REQUESTS REGARDING CONFORMITY WITH STATE LAW AND POLICY

NERI 1-1 to NG: The Systems Integration Rhode Island (SIRI) Vision Document (January 2015) was a collaborative effort of OER, the EERMC, the DG Board and National Grid. It opens with the statement that "Rhode Island's energy system is at the cusp of a long-term transformation…. As Rhode Island's energy system evolves, we face new challenges and opportunities. Utility operators will need to manage distributed generation in a system originally designed for centralized production and one-way power flow." The SIRI report advised that "Rhode Island will embrace cost-effective customer/distributed energy solutions as integral elements of its energy system." (at p. 13) It notes incomplete coordination among existing processes and "limited applications of non-wires alternatives to date" (pp 15, 16). It addresses the need to "Maintain commitment to renewable energy deployment in Rhode Island through processes that properly account for the benefits and costs of renewable energy to the distribution system and to Rhode Island consumers." (p. 23)

a. Please provide examples of any filings where National Grid embraced cost-effective customer/distributed energy solutions as integral elements of its energy system.
b. Please provide examples of filings wherein National Grid executes on non-wires alternatives.

c. Provide examples of filings in which National Grid maintained commitment to renewable energy deployment in Rhode Island through processes that properly accounted for the benefits and costs of renewable energy to the distribution system and to Rhode Island consumers.
d. Provide examples of independently owned renewable energy offsetting the need for distribution system upgrades by the company.
e. Provide evidence of any compensation offered any independent distributed generator for offsetting the need for distribution system upgrades by the company.
f. How has National Grid worked to enable implementation of a grid modernization plan in Rhode Island?
g. How has National Grid worked to enable implementation of advanced meters in Rhode Island?

NERI 1-2 to NG: Please identify, provide and describe any written proposal of any plan the Company has made in response to the Power Sector Transformation Initiative recommendations on the utility business model, beyond those addressed in 2017, as reflected here - http://www.ripuc.ri.gov/utilityinfo/electric/ubm.html.

NERI 1-3 to NG: The Docket 4600 Stakeholders Report (April 15, 2017) and resulting RIPUC Order notes "As the grid modernizes, consideration should be given to how distribution rate design, in combination with advances in energy efficiency, demand response, and other DERs can help the system evolve in an efficient manner to ultimately benefit all customers." (at p. 16).

a) Please provide all written examples of your consideration of that recommendation.
b) How has National Grid worked to enable implementation of time of use rates (as advised by unanimous consent in RIPUC Docket 4600 in 2018) in Rhode Island?

NERI 1-4 to NG: Please identify, provide and describe any filing made in association with least cost procurement planning filed per R.I. Gen. Laws §39-1-27.7 that expressly considered the extent to which the current system is prepared for least cost siting of anticipated generation growth and how planning for load and generation growth together can benefit customers.

NERI 1-5 to NG (reference DPUC 1-27 to NG; GECA 1-1; AG 1-30)
On Attachment NG-DIV 1-4-9 Page 34 of 37, Elchin Mammadov of Bloomberg asked about ESG metrics and whether any of the company's anticipated gas projects would impact the Company's emissions reporting. Mr. Pettigrew responded:

> In terms of those emissions that we see in National Grid, you know, the vast majority of our emissions in that area are through the sale of Gas to our customers in the US. We don't have any intention of further divestment for, you know, the reasons I set out earlier, which is that we're very comfortable with the overall shape of the portfolio. We think it's important that we work with our key stakeholders to work through the energy transition, and that includes the decarbonisation of gas and heat, and we think there are some, you know, really important opportunities, both in terms of renewable natural gas as well as things like repurposing the networks for hydrogen.

Then, in response to the Green Energy Consumjer's Alliance request 1-1 regarding implementation of Rhode Island's 2021 Act on Climate, National Grid replied:

> At this time, the 2021 Act does not require public utilities to comply with any specific rules or requirements. The GHG emission reduction targets established in the 2021 Act are economy-wide targets and specific targets for the utility sector are still to be ascertained. Therefore, it is unknown how future rules and regulations implementing the new targets under the 2021 Act will implicate the utility sector.

National Grid provided that same substantive response to AG 1-30.

a) How does National Grid plan to meet its ESG metrics without divesting its interests in natural gas?
b) Please identify, provide and describe any plan the Company has developed to fulfill its role in complying with Rhode Island's Act on Climate.
c) How can Rhode Island meet the goals of its Act on Climate without any commitment from its electric distribuition utility?

NERI 1-6 to NG (reference AG 1-29 to PPL)

The Attorney General asked for PPL's plans to transition to renewable energy by 2030. PPL responded that it does not currently have a specific plan to transition to renewable energy by 2030 in any of its existing territories, or in Rhode Island.

a) Given Rhode Island's executive order requiring one hundred percent renewable energy by 2030, how can PPL's response be considered consistent with the public interest?
b) Please identify, provide and describe any plan the Company has developed to fulfill its role in complying with Executive Order 20-01, January 17, 2020 "Advancing a 100% Renewable Energy Future for Rhode Island by 2030."

NERI 1-7 to NG: RI PUC Order # 22174 responded to the Company's 2014 Rhode Island Infrastructure Safety and Reliability (ISR) filing in docket 4539 by acknowledged the Company's admission that "partially due to the nature of distributed generation application process, there is little integration of the distributed generation program into the overall planning process." (at p. 25) The Commission ordered the Company to plan for the growth and better integration of renewable energy to "anticipate the growth of distributed generation spurred by, at the minimum existing state policy, programs and market forces" and required long range plans to consider the extent to which the current system is prepared for least cost siting of anticipated generation growth and how planning for load and generation growth together can benefit customers. (at p. 26)

a) Please identify, provide and describe any subsequent ISR filing in which the Company expressly addressed compliance with this mandate from order 22174.
b) Please provide a copy of any long range plans considering the extent to which the current system is prepared for least cost siting of anticipated generation growth and how planning for load and generation growth together can benefit customers.
c) Please provide total ISR expenditures approved since Order #22174 issued.
d) Please provide total ISR expenditures approved since Order #22174 issued that expressly relate to preparing the current system for least cost siting of anticipated generation growth and how planning for load and generation growth together can benefit customers.

NERI 1-8 to NG: The "Transforming the Power Sector Phase 1 Report," found that

> [w]hile many industries have become more efficient over the last few decades by leveraging information technologies to more fully utilize capital investment, Rhode Island's peak to average demand ratio is 1.98,

meaning that nearly half of the utility's capital investment is not utilized most of the time . . . To meet peak demand, our system currently invests in solutions that are more expensive than is necessary.

a) Please identify and describe any plans to reduce Rhode Island's peak to average demand ratio.

NERI 1-9 to NG: Rhode Island's Power Sector Transformation report concluded that:

> the primary financial means through which the utility can grow its business and enhance earnings for shareholders is to invest in capital projects. This bias, created by the regulatory framework rather than by the utility itself, discourages the utility from seeking more efficient solutions that do not depend on large capital investments. (at p. 16)

a) How does National Grid respond to this conclusion?
b) How does the Petitioners' proposal in this docket compare to that observation (i.e., is it consistent or inconsistent with it)?
c) If National Grid agrees with Rhode Island's conclusion, how would National Grid intend to rectify this observed conflict with Rhode Island's public interest?

REQUESTS REGARDING ECONOMIC INCENTIVES

NERI 1-9 to NG (reference DIV 1-27 to NG):

On Attachment NG-DIV 1-4-4 Page 6 of 22, National Grid provided a presentation to its shareholders regarding this transaction in which it states that it has "achieved premium valuation for its Rhode Island business." In another powerpoint presentation to shareholders provided at Attachment NG-DIV 1-4-4 Page 14 of 22, National Grid describes that Narragansett Electric has $2.6 billion in rate base including $1.8 billion in the distributrion system and $788 million in its transmission system and that the company's revenue went up from £1063 million in 2018 to £1207 million in 2020, including a rate base climb from £1576 million in 2018 to £2119 million in 2020. In the shareholder presentation provided at Attachment NG-DIV 1-4-4 Page 16 of 22, National Grid reported to its shareholders that it would receive £2.7 billion in consideration for its Rhode Island assets and £1.0 billion ($1.4 billion) assumed net debt and reported an operating profit of $206 million and a net profit of $122 million for the 2020 fiscal year.

a. Explain how rate base and revenue escalation are typically factored into a utility valuation.
b. Explain in detail and with specificity what increases accounted for this rate base and revenue inflation.
c. Explain in detail and with specificity how Rhode Island benefitted from those increases.
d. How is this utility shareholder economic interest in inflated rate base consistent with the public interest in affordable electricity?
e. How does the interest in elevating rate base comport with Rhode Island's public interest in achieving a secure electrical system by diversifying its sources as addressed in Rhode Island's state energy plan, Energy 2035?

NERI 1-10 to NG (reference DIV 1-27 to NG)

On Attachment NG-DIV 1-4-5 Page 12 of 33, in a question and answer session with investors, John Musk of RBC points out that "in the US, again, I know it's part of the asset swap in terms of getting out of Rhode Island, but I think you've achieved a two times rate base multiple on that sale. We could argue about where your current businesses are valued in the share price, but does that not signal that perhaps you should be selling more of your US activities to create value for shareholders?"

a. Is it typical to evaluate the profitability of a utility sale by comparison to rate base?
b. Is it true that this sale "achieves a two times rate base multiple?"
c. What is a typical rate base multiplier for a transaction like this?
d. Why do you think that PPL is willing to pay a premium for Narragansett Electric Company?
e. Why might PPL agree to spend such a premium to acquire Narragansett Electric Company?
f. How does this premium comport with Narragansett Electric Company's charter which granted NEC the power of eminent domain to take land and operate its system as long as aqll such plans are approved as being in the "public interest?"

NERI 1-11 to NG (reference DIV 1-27 to NG)

On Attachment NG-DIV 1-4-5 Page 16-17 of 33, Jenny Ping of Citibank asked, in part, "lastly, just on your other gas assets, clearly, you've said that you're very committed to US as a geographic area, but obviously there are still other gas assets out there. Can you just give us a bit of a feeling in terms of the direction of travel on those?" John Pettigrew responded in part:

> And, if you look, you know, below the sort of headline, we're continuing to invest significantly in gas distribution in the US, both from leak-prone pipe, which, of course, is helping to reduce leakage, for oil to gas conversions as well as - we're starting, as part of the rate filings, to look at opportunities around hydrogen, hydrogen blending and renewable natural gas as well. So, you know, we see gas as having an important role as part of the energy transition, and we remain committed to it.

On Attachment NG-DIV 1-4-5 Page 20-21 of 33, Mr. Pettigrew responded to a question from Mr. Young, "You know, we do very strongly feel that Gas has got an important role to play in the energy transition over many decades to come, both supporting electricity generation as well as supporting Heat both domestically and businesswise." Then in his CEO report provided on Attachment NG-DIV 1-4-7 Page 5-6 of 80, Mr. Pettigrew reported that

> Our US Regulated business invested $4.3 billion in the year, up 4% on prior year (at constant currency), helping to drive strong rate base growth of 8% for the regulated business. This increase and delivery of our capital investment programme was despite the impact of COVID-19 and the requirement to reschedule our capex programme at the beginning of lockdown in the spring of 2020. Around half of this capex, $2.1 billion, was across our gas distribution networks, of which 85% was mandated for safety and reliability purposes. This includes our Leak-Prone Pipe Replacement programme which this year saw a further 350 miles of pipeline 4 Revised from 11.7% in 2019/20 replaced, above our target of 300 miles.

And on Attachment NG-DIV 1-4-7 Page 14 of 80, Mr. Pettigrew reports that "In our US businesses, we expect investment of around £17 billion over the next five years. Over half of this will be safety related projects in our gas networks with the remainder in our electric networks such as for storm hardening, other net zero investments as well as further electric transmission investment."

a) What is the "energy transition" Mr. Pettigrew refers to in the firsat quote provided above?

b) What are Rhode Island's laws and policies related to that transition?
c) How are those Rhode Island laws and policies served by such continued "significant investments in gas distribution?"
d) Does this utility's interest in gas distributiuon investment compete at all with Rhode Island's policy preference for a more affordable, secure and cleaner energy economy sericed by local, distributed clean energy resources?
e) Can Narragansett Electric rationally be expected to remain neutral in its administration of the interconnection fo local clean energy resources when it has such economic interests in the success of natural gas?

NERI 1-12 to NG (reference PPL's response to DIV 1-10 to PPL):

In one of its presentations to its shareholders, PPL noted that Narragansett Electric Company's "Historical Capital" was up from $271 million in 2017 to $321 million in 2020 and that Rhode Island's Infrastructure Safety and Reliability (ISR) rules allow for recovery of "natural gas and electricity distribution capital investments and expenses for ISR outside of rate proceedings and that FERC allows formula rates for transmission investments."

a) How do these capital incentives relate to Rhode Island's policies favoring distributed energy resources for their cost, security, and environmental benefits?

NERI 1-13 to NG (reference DIV 10-3 to PPL and DIV 7-54 to NG).

DIV 10-3 notes that National Grid has spent over $15 million on its grid modernization planning effort and asked how much of that investment will be left stranded or will not be used and useful as PPL moves forward with its GMP plan? PPL responded that it has not yet determined what previous capital or operations and maintenance spending by Narragansett on its Grid Modernization Plan ("GMP") and Advanced Metering Functionality ("AMF") will be rendered obsolete. DIV 7-54 generated tables showing $0 spent on external resources (including consultants and legal) and $15 million spent on internal resources (e.g., National Grid's engineering, legal, and regulatory staff). Thus, National Grid concludes that Narragansett utilized the existing pool of resources to assist with the development of the GMP proposal. Yet, "National Grid USA did not establish a specific time charging process for those internal resources to track their GMP work. Instead, the internal teams charged their time to their home cost centers, recoverable in base distribution rates."

a. What is the product of National Grid's expenditure of $15 million on internal staff on its grid modernization planning?
b. How did and does that product benefit Rhode Island?

NERI 1-14 to NG (reference DIV 1-27 to NG)

On Attachment NG-DIV 1-4-7 Page 9 of 80, Mr. Pettigrew reports:

> Further progress in National Grid Ventures National Grid Ventures (NGV) delivered another good performance in 2020/21, with no significant impact to operations and construction as a result of COVID-19. . . . In the US, NGV completed the launch of its new US large-scale renewables brand, National Grid Renewables, which includes the renewables development company formerly known as Geronimo Energy. . . Finally, NGV and RWE Renewables, one of the world's leading renewable energy companies, have signed a joint venture partnership agreement to jointly develop offshore wind projects in the coastal region of the Northeast US. Under the agreement, NGV and RWE will work together to explore opportunities in the US offshore wind market with an intention to jointly bid in a future federal seabed lease auction.

Then on Attachment NG-DIV 1-4-7 Page 14 of 80, Mr. Pettigrew reports that "We expect NGV to invest £2-£3 billion over 5 years in completing the interconnector programme and US renewable generation." On Attachment NG-DIV 1-4-9 Page 17 of 37, he states:

> With regards to RWE and the announcement on that, so as you know over the last few years, we've always looked to use the capabilities that we have in National Grid to look to adjacent markets. Most recently, over the last three of four years, that has been in our interconnectors business, as well as onshore solar in renewables with the acquisition of Geronimo, which is now National Grid Renewables. So over the last few years we've build up a fantastic capability of being able to develop these offshore cables. Add to that the local knowledge we have in the North East and the RWE JV just looks like a national extension. So, as always, we take a very disciplined approach to any investments that we take. We are not expecting there to be significant capex in the short term. As you know the development of offshore wind has a long lead time, both in terms of the seabed lease process and then ultimately the construction. So modest capex in the next three to four years, but we do see it as a natural extension of our National Grid Ventures business. . . It's focusing on the developments as we see them today in the North East and we'll see how we take that forward on it. So it's not just a single project, it is a relationship for offshore wind in the North East of the US.

a) What is the "interconnector programme" Mr. Pettigrew references? Please describe all of its activities in or impacting Rhode Island.
b) Does National Grid Ventures' interest in a large scale renewable energy brand compete at all with Rhode Island's policy preference for a more affordable, secure and cleaner energy economy sericed by local, distributed clean energy resources?
c) What is National Grid's "local knowledge we have in the North East" that makes it particularly well suited to develop offsahore cables?
d) Does National Grid Ventures' interest in offshore wind compete at all with the interests of those developing local, distributed clean energy resources?
f) Can Narragansett Electric rationally be expected to remain neutral in its administration of the interconnection of local clean energy resources when it has such economic interests in the success of utility scale renewables and offshore wind?
g) Has Narragansett Electric ever assessed transmission system upgrade costs to local, distributed clean energy projects for parts of the transmission system that will be used by the opffshore wind industry?
h) If Narragansett Electric has ever assessed transmission system upgrade costs to local, distributed clean energy projects for parts of the transmission system that will be used by the offshore wind industry, please provide the details of any such cost assessment and allocation and the rationale for the cost allocation for those upgrades.

NERI 1-15 to NG (reference DIV 1-27 to NG)

In response to another question from Jeny Ping about the RWE JV on Attachment NG-DIV 1-4-9 Page 20 of 37, Mr. Pettigrew expanded:

> So in terms of the JV with RWE and our thinking about involvement in offshore wind, this is very much around the North East of the US. So as I've said previously, we look for opportunities where we've got capabilities and that we can create value for our shareholders. We have fantastic expertise in offshore cables, and we have fantastic expertise in understanding onshore transmission and distribution in the North East. So that capabilities means that we're a strong partner with RWE in that region. But we're not looking to expand beyond that. We will focus on the regions that we know best. In terms of the National Grid Ventures and the £2bn to £3bn, so we have a great pipeline of investment opportunities. As Andy and I have said many times we'll be disciplined around that. So those opportunities include potentially things like MPIs, as well as onshore solar and wind in the US. With regards to the MPIs, at the moment it's a relatively early concept, we think that it has potential in terms of mitigating some of the cost impacts of connecting offshore wind, whilst

take advantage of connecting the UK with the rest of Europe. So hence why we're working with TenneT and Elia to think through that. In terms of the broader sort of capex to connect the 30 gigawatts of offshore wind, I think the current review that's going on with BEIS on the Offshore Transmission Review is incredibly important. I think everybody recognises that the concept of every single individual offshore wind farm connecting to the East Coast is going to be problematic from a planning perspective and therefore a degree of coordination is needed. From our perspective, clearly when we understand exactly the timing of that investment then we'll be able to have a better understanding of how much investment is needed onshore. One of the things that National Grid has been advocating for and others in the industry are, is to have a clearer blueprint of what the networks look like, both offshore and onshore by 2030. And we'll continue to advocate that. And I know that Ofgem have recently started to engage in this issue to try and get a better understanding of what infrastructure investment is needed.

Then Andy Agg, National Grid's Chief Financial Officer added,

Yeah, so Jenny in terms of I guess your point about the funding of those potential additional investments, I think as John said, the timescales may be slightly further out, given the elements that need to be worked through. So we are comfortable in terms of funding the range of investments we put out. And as we've always said, you know, to make disciplined decisions about investing in additional projects we want to make sure we have the right regulatory or other frameworks to ensure appropriate funding for those and recovery of those investments as well. So we'd made those decisions down the track. But at this point we're very comfortable with the framework we've set out this morning.

a) Describe with specificity how your "fantastic expertise in understanding onshore transmission and distribution in the North East" creates opportunities and capabilities that provide value for your shareholders.
b) What are the "right regulatory frameworks to ensure appropriate funding for and recovery of those project investments?"

NERI 1-16 to NG (reference AG 1-1)

National Grid produced all of the Narragansett Electic Company's charters. Starting with legislation passed in 1964, the Charters authorized Narragansett Electic Company to exercise the power of eminent domain to take land and operate its system as long as its plans are approved as being in the "public interest." All subsequent charters incorporated that the system is to be operated for that "purpose for which they were taken."

a) Does National Grid agree with that interpretation of its charter?
b) Explain how National Grid's economic incentives are consistent with the public interest?
c) Is there any conflict between the company's focus on return on equity from capital investments and the public policy preference for encouraging indepenently owned energy solutions? If not, explain why not. If so, what steps has National Grid taken to rectify that conflict and what additional steps does National Grid propose, if any?

REQUESTS ABOUT TRANSMISSION ASSETS

NERI 1-17 to NG (Reference Petition ¶13 and Sobolewski at p. 9):

Petition par. 13. In addition, Narragansett will continue to own the electric transmission facilities that NEP currently physically operates in Rhode Island on Narragansett's behalf, for which NEP has transferred operational authority to ISO New England Inc.

Sobolewski at p. 9. NEP owns and physically operates its own transmission assets and physically operates the transmission assets in Rhode Island owned by Narragansett. The Transaction will not

change the availability of Narragansett facilities for transmission service under the ISO New England Inc. open access transmission tariff.

a. Please explain whether NEP has transferred operational authority to ISO New England Inc. or whether NEP owns and operates its own transmission assets and operates the transmission assets in Rhode island owned by Narragansett?

NERI 1-18 to NG (reference AG 1-23 to PPL;):

PPL notes that:

> PPL Electric's role in this process as a Transmission Owner is substantially similar to Narragansett and New England Power Company's role in the ISO-NE process. PJM and ISO-NE's processes and cost causation principles are comparable and based on FERC guidance. . .One main difference between ISO-NE and PJM is the treatment of state jurisdictional generator interconnection requests that may have impacts on the New England Transmission System. In ISO-NE, state jurisdictional generator interconnection requests of a certain size must be studied for impacts on the stability, reliability or operating characteristics of the New England Transmission System in the ISO-NE process and the generator interconnection customer could receive cost allocation for transmission upgrades ISO-NE determines are needed to mitigate such impacts. Currently in PJM, there is no formal process by which state jurisdictional requests are studied by PJM or the Transmission Owner.

a. Explain the federal law and Federal Energy Regulatory Commission policy that allows ISO-NE to require state jurisidictional generator interconnection customers to receive cost allocation for transmission upgrades ISO-NE determines are needed to mitigate such impacts while PJM has no such requirement.

NERI 1-19 to NG (reference AG 1-5)

National Grid responds that:

> National Grid USA is working with PPL Corporation and PPL Rhode Island to determine if Narragansett should file its own local service schedule in Schedule 21 to the ISO-NE Open Access Transmission Tariff to govern local FERCjurisdictional customers to be provided by Narragansett over Narragansett-owned facilities. As the Participating Transmission Owner for Narragansett-owned electric transmission assets under the Transmission Operating Agreement with ISO-NE, NEP makes those Narragansett owned facilities available to ISO-NE and ISO-NE makes those facilities available for Regional Network Service to Narragansett and other New England customers in accordance with the terms of the ISO-NE Open Access Transmission Tariff. During the transition period, NEP will continue to make those Narragansett-owned facilities available to ISO-NE under the Transmission Operating Agreement and ISO-NE is expected to continue making those facilities available for Regional Network Service to Narragansett and other New England customers.

a) Have National Grid and PPL resolved this question of how any Rhode Island transmission assets will be operated moving forward?
b) If so, please provide that resolution and any related documentation.

NERI 1-20 to NG (reference DIV 7-60)

The Division asked about "transmission and primary distribution revenue requirements for Narragansett Electric-owned facilities utilized for purposes of providing wholesale transmission service by New England Power Company d/b/a National Grid (NEP) to Narragansett that are currently determined under Schedule III-B to NEP's FERC Tariff No. 1." National Grid responded that " Transmission and primary distribution facilities owned by The Narragansett Electric Company ("Narragansett") are utilized by New England Power for the purpose of providing

wholesale transmission service to wholesale customers in the New England region; not solely to Narragansett."

a) Given National Grid's position that its transmission system serves the region and not just Narragansett, what is National Grid's basis for allocating costs of upgrading that system designed to service all customers in the New England region to customers interconnecting local renewable energy projects to Narragansett's local distribution system?

b) In Massachusetts DPU Docket 20-75, National Grid has advocated new cost allocation formulas including allocating transmission upgrades and a substantial portion of distribution system upgrades to ratepayers generally see https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/13129455 and https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/13002938

    i. Do you intend to introduce the same cost allocation policy here in RI?
    ii. If so, when?
    iii. If not, how does National Grid justify implementing such different policies and procedures across your jurisdictions?

STATE OF RHODE ISLAND
DIVISION OF PUBLIC UTILITIES AND CARRIERS

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(NERI-1-1 through NERI-1-29 TO PPL)

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a. Provide PPL's position on these and any other recommendations in the Systems Integration Rhode Island (SIRI) Vision Document.
b. Specifically describe how PPL plans to serve this public interest by "embrac[ing] cost-effective customer/distributed energy solutions as integral elements of its energy system."

c. How will PPL "Maintain commitment to renewable energy deployment in Rhode Island through processes that properly account for the benefits and costs of renewable energy to the distribution system and to Rhode Island consumers?" examples of any filings where National Grid embraced cost-effective customer/distributed energy solutions as integral elements of its energy system.

NERI 1-2 to PPL: Please identify, provide and describe any written proposal of any plan PPL offers in response to the Power Sector Transformation Initiative recommendations on the utility business model, including any continuation those addressed in 2017, as reflected here - http://www.ripuc.ri.gov/utilityinfo/electric/ubm.html.

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> the primary financial means through which the utility can grow its business and enhance earnings for shareholders is to invest in capital projects. This bias, created by the regulatory framework rather than by the utility itself, discourages the utility from seeking more efficient solutions that do not depend on large capital investments. (at p. 16)

a) How does PPL respond to this conclusion?
b) How does the Petitioners' proposal in this docket compare to that observation (ie, is it consistent or inconsistent with it)?
c) If PPL agrees with Rhode Island's conclusion, how does PPL intend to rectify this observed conflict with Rhode Island's public interest?

NERI 1-4 to PPL: The Docket 4600 Stakeholders Report (April 15, 2017) and resulting RIPUC Order notes "As the grid modernizes, consideration should be given to how distribution rate design, in combination with advances in energy efficiency, demand response, and other DERs can help the system evolve in an efficient manner to ultimately benefit all customers." (at p. 16).

a) How will PPL give consideration to "how distribution rate design, in combination with advances in energy efficiency, demand response, and other DERs can help the system evolve in an efficient manner to ultimately benefit all customers."
b) Please provide all written examples of PPL's past consideration of "how distribution rate design, in combination with advances in energy efficiency, demand response, and other DERs can help the system evolve in an efficient manner to ultimately benefit all customers."
c) How will PPL enable implementation of time of use rates (as advised by unanimous consent in RIPUC Docket 4600 in 2018) in Rhode Island?

NERI 1-5 to PPL: In accordance with Rhode Island's least cost procurement law, please identify, provide and describe:

a) Any filing PPL has made that expressly considered the extent to which the current system is prepared for least cost siting of anticipated generation growth and how planning for load and generation growth together can benefit customers.

b) Any plan PPL has for Rhode Island that expressly consider[s] the extent to which the current system is prepared for least cost siting of anticipated generation growth and how planning for load and generation growth together can benefit customers.

NERI 1-6 to PPL: RI PUC Order # 22174 responded to Narragansett Electric Company's 2014 Rhode Island Infrastructure Safety and Reliability (ISR) filing in docket 4539 by acknowledged the Company's admission that "partially due to the nature of distributed generation application process, there is little integration of the distributed generation program into the overall planning process." (at p. 25) The Commission ordered the Company to plan for the growth and better integration of renewable energy to "anticipate the growth of distributed generation spurred by, at the minimum existing state policy, programs and market forces" and required long range plans to consider the extent to which the current system is prepared for least cost siting of anticipated generation growth and how planning for load and generation growth together can benefit customers. (at p. 26)

a) How does PPL intend to comply with RIPUC order #22174?
b) Please provide a copy of any long range plans considering the extent to which Rhode Island's current system is prepared for least cost siting of anticipated generation growth and how planning for load and generation growth together can benefit customers.
c) Please provide any ISR filings PPL has made in any existing jurisidictions that would comply with the intent of Order #22174 in those jurisidictions.
d) Please provide total ISR expenditures approved since Order #22174 issued that expressly relate to preparing any of PPL's current systems for least cost siting of anticipated generation growth and how planning for load and generation growth together can benefit customers.

NERI 1-7 to PPL: The "Transforming the Power Sector Phase 1 Report," found that

> [w]hile many industries have become more efficient over the last few decades by leveraging information technologies to more fully utilize capital investment, Rhode Island's peak to average demand ratio is 1.98, meaning that nearly half of the utility's capital investment is not utilized most of the time . . . To meet peak demand, our system currently invests in solutions that are more expensive than is necessary.

a) Please identify and describe any plans to reduce Rhode Island's peak to average demand ratio.

NERI 1-8 to PPL (reference AG 1-29 to PPL)

The Attorney General asked for PPL's plans to transition to renewable energy by 2030. PPL responded that it does not currently have a specific plan to transition to renewable energy by 2030 in any of its existing territories, or in Rhode Island.

a) Given Rhode Island's executive order requiring one hundred percent renewable energy by 2030, how can PPL's response be considered consistent with the public interest?
b) Please identify, provide and describe any plan PPL has since developed to fulfill its role

in complying with Executive Order 20-01, January 17, 2020 "Advancing a 100% Renewable Energy Future for Rhode Island by 2030."

NERI 1-9 to PPL (reference AG 1-29 to PPL): The Attorney General asked for PPL's plans to transition to renewable energy by 2030. PPL responded that it does not currently have a specific plan to transition to renewable energy by 2030 in any of its existing territories, or in Rhode Island.

a) Given Rhode Island's executive order requiring one hundred percent renewable energy by 2030, how can PPL's response be considered consistent with the public interest?
b) Please identify, provide and describe any plan the Company has developed to fulfill its role in complying with Executive Order 20-01, January 17, 2020 "Advancing a 100% Renewable Energy Future for Rhode Island by 2030."

NERI 1-10 to PPL:

In response to GECA 1-13, PPL stated that PPL's Kentucky subsidiary, LG&E and KU Energy LLC, opposed the Obama Administration's final Clean Power Plan ("CPP") as it was inconsistent with this view and subsequently joined in a lawsuit requesting reconsideration of the rule based on flaws in EPA's methodology, analyses, and assumptions." The CPP was a proposed federal regulation that never achieved full enforcement. Rhode Island, this past year, passed the 2021 Act on Climate which mandates emission reductions and has the full force of law. Please identify, provide, and describe any plan the Company has developed to comply with the enacted state law and how it plans to achieve its role of reducing carbon emissions under the enacted state law.

NERI 1-11 to PPL:

Please identify, provide, and describe any plan the Company has developed to fulfill its role in complying with any climate legislation in any jurisdiction it currently operates in.

NERI 1-12 to PPL (reference AG 1-33):

In response to Data Request AG 1-33, PPL maintained it "has not developed any specific plans to transition Rhode Island away from gas" because such plans "will be governmental policy decisions."

a) Please clarify what you mean by the statement that plans to transition Rhode island away from gas will be governed by governmental policy decisions.
b) Are not the executive order requiring Rhode Island to achieve 100% renewable energy by 2030 and the 2021 Act on Climate evidence that such governmental policy decisions have been made?
c) Please identify, provide, and describe any plan PPL has developed to competently retire fossil fuel assets in any jurisdiction in response to any governmental policy decision and how any such plan has affected ratepayers.
d) How can Rhode Island meet the goals of its Act on Climate without any commitment

from its electric distribuition utility?

REQUESTS REGARDING ECONOMIC INCENTIVES

NERI 1-13 (reference Sorgi at p. 10; Petition at ¶25):

On page 10 of his testimony, Mr. Sorgi states:

> PPL sees opportunities to invest in electric and gas infrastructure to enhance safety, reliability, and customer satisfaction for Rhode Island customers while maintaining affordability. Third, as discussed in greater detail above, consistent with PPL's corporate goals, PPL intends to drive compelling value for the customers and communities that Narragansett serves by building upon the existing service quality to deliver energy safely, reliably, and affordably to Rhode Island customers, while at the same time our extensive experience with grid modernization initiatives and innovation will help advance Rhode Island's ambitious decarbonization goals.

Paragraph 25 of the petition states:

> PPL also expects that it will have significant opportunities to invest in Narragansett's electric and gas infrastructure to enhance safety, reliability, and customer satisfaction for Rhode Island customers, a core tenet of PPL's strategy in all of the jurisdictions in which it provides utility service.

a) Are you aware that Rhode Island's state energy plan (Energy 2035) concludes that our over-reliance on natural gas for our electricity and thermal energy supplies leaves us in insecure and calls for diversification of our energy supply to enhance our security?
b) Given Rhode Island's conclusion and resolution, how will PPL's ionvesatments in gas infreastructure enhance safety, reliability and customer satisfaction and, thereby, serve Rhode Island's public interest?
c) Is not Mr. Sorgi's effort to distinguish the goals of safety, reliability and customer satrisfaction (which he seeks to address through yet more investments in electric and gas infrastructure) and achievement of our ambitious decarbonization goals, inconsistent with the public interest in Rhode Island's energy policy?
d) Does not the diversificastion of our energy supply through increased reliance on local, distributed energy resources better meet Rhode Island's public interests in safety, reliability and customer satisfaction?
e) What data and benefit cost analyses supports PPL's conclusion that electric and gas infrastructure investments will enhance safety, reliability, and customer satisfaction for Rhode Island customers while maintaining affordability?

NERI 1-14 (reference DPUC 1-1 to PPL):

In its powerpoint presentation on the benefits of the acquisition of Narragansett Electric Company to its shareholders produced in response to DIV 1-1 to PPL at Attachment PPL-DIV 1-12-5 Page 6 of 21, PPL notes that:

- Narragansett Electric Company had adjusted net income of $150 million in the fiscal year ending March 31, 2021;

- There is significant geographic overlap between Narragansett's electric and gas operational territories
- Rhode Island is a constructive regulatory jurisdiction (RRA – Avg/2) (recovery mechanisms reduce regulatory lag)
- further opportunities to invest in electric and gas infrastructure (annual rate base growth greater than 9% over the past 5 years)
- Historical rate base growth – 9.3% CAGR from 2015 through 2020
- "Historical Capital" up from $271 million in 2017 to $321 million in 2020 (Infrastructure Safety and Reliability program allows for recovery of "natural gas and electricity distribution capital investments and expenses for *ISR* outside of rate proceedings and FERC allows formula rates for transmission investments)

a) How does Narragansett Electric Company's net income of $150 million serve Rhode Island's public interest in lower rates and its public policies, including but not limited to those addressed above?
b) How does Narragansett Electric Company's historical rate base growth of 9.3% CAGR from 2015 through 2020 serve Rhode Island's public interest in lower rates and its public policies, including but not limited to those addressed above?
c) How does Narragansett Electric Company's "Historical Capital" up from $271 million in 2017 to $321 million in 2020 (Infrastructure Safety and Reliability program allows for recovery of "natural gas and electricity distribution capital investments and expenses for *ISR* outside of rate proceedings and FERC allows formula rates for transmission investments) serve Rhode Island's public interest in lower rates and its public policies, including but not limited to those addressed above?
d) How does Narragansett Electric Company's further opportunities to invest in electric and gas infrastructure (annual rate base growth greater than 9% over the past 5 years) serve Rhode Island's public interest in lower electric rates in lower rates and its public policies, including but not limited to those addressed above?
e) Has PPL also considered the alternative of further opportunities to leverage non wires alternatives and distributed energy resources in order to reduce costs for ratepayers?
f) Explain what PPL means by Rhode Island is a constructive regulatory jurisdiction (RRA – Avg/2) (recovery mechanisms reduce regulatory lag)?
g) What is the transactional benefit to PPL of Rhode Island's constructive regulatory jurisdiction (RRA – Avg/2) (recovery mechanisms reduce regulatory lag) as presented to your shareholders?
h) Explain the transactional benefit to PPL of "significant geographic overlap between Narragansett's electric and gas operational territories."

NERI 1-15 to PPL (reference DIV 1-54(d) to PPL):

In DIV 1-54(d), the Division requested any data, studies, workpapers, reports, and information to support PPL's claim that the Transaction will result in economic development. PPL responded, in part, that

> A key component of utility operations is investments in infrastructure. If the Transaction is approved, PPL expect to submit plans for approval that increases the amount of infrastructure investments in Rhode Island,

> which will have a direct impact on the Rhode Island economy through direct and indirect purchases, use of contractors and service providers. In addition, PPL plans to create certain functions in Rhode Island that will require investments in facilities, construction, professional services and purchases (see item c. above)

a) How do such investments in infrastructure serve Rhode Island's public interest in lower rates and its public policies, including but not limited to those addressed above?

NERI 1-16 to PPL (reference AG 1-29):

PPL responds to AG 1-29, in part,

> On the generation side of PPL's business, advancing a cleaner energy future involves investing in renewable projects. PPL's subsidiary, Safari Energy, LLC, supports the development of renewable energy in dozens of states across the U.S. Safari Energy, LLC ("Safari") has developed or acquired more than 500 commercial-scale solar projects since 2008 with projects generating approximately 618,942 megawatt hours of electricity. PPL through Safari is also responsibly expanding its unregulated renewable generation portfolio, adding 93 megawatts of solar generation through 2020.

a) Does PPL's economic interest in its owned, non-regulated electric generation businesses compete at all with Rhode Island's policy preference for a more affordable, secure and cleaner energy economy serviced by local, distributed clean energy resources?
b) What is National Grid's "local knowledge we have in the North East" that makes it particularly well suited to develop offsahore cables?
c) Can PPL rationally be expected to remain neutral in its administration of the interconnection of local clean energy resources when it has such economic interests in the success of utility scale renewables and offshore wind?

NERI 1-17 (reference DIV 1-30 to PPL; Sorgi Testimony at 8; Sobolewski Testimony at 13):

In response to DIV 1-30, PPL states that "PPL expects that it will serve Narragansett customers with an improved cost structure after the transition is complete."

a) What is the role of non wires alternatives in achieving this improved cost structure?
b) What is the role of distributed energy resources in achieving this improved cost structure?
c) Referencing the testimony of Mr. Sorgi at page 8 and Mr. Sobolewski at page 13, please identify, provide, and describe any plan for how the synergies, efficiencies, and savings that PPL predicts the transaction to bring will be reinvested in Rhode Island's local businesses and further the achievement of Rhode Island's renewable energy solutions rather than providing PPL the "flexibility to invest in renewable energy solutions across the U.S."

NERI 1-18 to PPL (reference OER 1-8 to PPL):

OER requested PPL's experience with deploying non-wires solutions and non-pipes solutions. PPL replied, in part:

> PPL Electric Utilities Corporation's ("PPL Electric") planning process evaluates non-wires alternatives ("NWA") when considering system improvements to address reliability or planning criteria improvements. . . Through these NWA solutions, PPL Electric has both addressed planning concerns and also provided further improvements to system performance and customer reliability, which has led to avoiding over 1 million customer outages using PPL Electric's Fault Location, Isolation, and Service Restoration ("FLISR") technology. For Louisville Gas and Electric Company and Kentucky Utilities Company ("LGE-KU"), electric distribution utilizes NWAs to reduce distribution system constraints and defer or avoid capital investments.

Further, in response to GECA 1-10, PPL wrote:

> PPL Electric Utilities Corporation ("PPL Electric") considers Non-Wires Alternatives ("NWA") as the first mitigation option when addressing reliability concerns. Through a cost-benefit analysis and the consideration of the historic performance of the grid, PPL Electric has identified opportunities where NWAs are the least-cost alternative to minimize the duration of a sustained outage to customers. This method targets circuits with persistently poor performance that extend towards the end of the service territory with limited viable alternatives and a high Customer Experiencing Multiple Interruptions ("CEMI") count, restoring single-phase customers in adverse conditions due to upstream, three-phase outages. Additionally, the implementation of NWAs not only addresses the reliability for these customers, but also improves voltage and power quality of the system.

a) PPL acknowledges that non wires alternatives improve system performance and customer reliability, avoided over 1 million customer outages, reduce distribution system constraints and defer or avoid capital investments. PPL has also acknowledged that NWAs "are the least-cost alternative to minimize the duration of a sustained outage to customers" and that "the implementation of NWAs not only addresses the reliability for these customers, but also improves voltage and power quality of the system." Why does PPL's investment strategy speak only of increased investment in electric distribution and gas infrastructure to enhance safety, reliability and customer satisfaction.
b) What is the role of NWAs in enhancing safety, reliability and customer satisfaction and what is PPL's proposal to leverage those benefits?

NERI 1-19 (reference DPUC 1-1 to PPL):

In the filing made at FERC for this transaction, the petitioners claimed that:

> neither PPL Corp. nor any of its affiliates own or control within ISO-NE: (i) any electric transmission facilities; (ii) any intrastate natural gas transportation, storage, or distribution facilities; (iii) any physical coal supply sources or control over coal transportation facilities; or (iv) any generation capacity development sites. Additionally, all of the transmission facilities owned by Narragansett are under the functional control of ISO-NE and transmission service is provided under ISO-NE's OATT (which the Commission has determined adequately mitigates vertical market power concerns with respect to control of transmission facilities).

a) How did this filing address the conclusion in Rhode Island's Power Sector Transformation report that "the primary financial means through which the utility can grow its business and enhance earnings for shareholders is to invest in capital projects. This bias, created by the regulatory framework rather than by the utility itself,

discourages the utility from seeking more efficient solutions that do not depend on large capital investments (at p. 16)"? If it did not, why did PPL deem Rhode Island's conclusion regarding this inherent competitive conflict with Rhode Island's public interest impertinent to FERC's requirement?

b) Why did the FERC petition neglect to address any potential conflict between PPL's potential economic interests in investments in transmission infrastructure in or affecting this jurisidiction and its proposed administration of the intereconnection of local renewable energy resources to the electric distribution system?

c) Why did the FERC petition neglect to address any potential conflict between PPL's interests in natural gas in this jurisidiction and its proposed administration of the intereconnection of local renewable energy resources to the electric distribution system?

d) Why did the FERC petition neglect to address any potential conflict between PPL's economic interests in renewable energy project development and its proposed administration of the intereconnection of local renewable energy resources to the electric distribution system?

e) Is the "significant geographic overlap between Narragansett's electric and gas operational territories" presented in PPL's powerpoint presentation to its shareholders (see NERI 1-13 to PPL) relevant to FERC's review of this transaction? If so, why did the petitioners elect to omit mention of it?

f) Is Narragansett Electric Company's "Historical Capital" up from $271 million in 2017 to $321 million in 2020 (Infrastructure Safety and Reliability program allows for recovery of "natural gas and electricity distribution capital investments and expenses for *ISR* outside of rate proceedings and FERC allows formula rates for transmission investments) (see NERI 1-13 to PPL) relevant to FERC's review of this transaction? If so, why did the petitioners elect to omit mention of it?

NERI 1-20 (reference DPUC 1-1 to PPL):

In the filing made at FERC for this transaction, the petitioners claimed that:

> B. Effect on Rates
>
> PPL Corp. and its affiliates and Narragansett and its NGUSA-affiliates, commit that they will not include any Transaction-related costs in their cost-based wholesale power sale rates or their transmission rates for a period of five years, except to the extent they can demonstrate that Transaction-related savings are equal to or in excess of Transaction-related costs. The Commission approved the aforementioned hold harmless commitment in its Merger Policy Statement as an effective means to address any transaction-related rate effects and has full authority to enforce its provisions.

a) How did this filing address the conclusion in Rhode Island's Power Sector

Transformation report that "the primary financial means through which the utility can grow its business and enhance earnings for shareholders is to invest in capital projects. This bias, created by the regulatory framework rather than by the utility itself, discourages the utility from seeking more efficient solutions that do not depend on large capital investments (at p. 16)"? If it did not, why did PPL deem Rhode Island's conclusion regarding this inherent competitive conflict with Rhode Island's public interest impertinent to FERC's requirement?

b) How did this filing account for Rhode Island's public interest as reflected in its other policies regarding its energy future, including but not limited to those addressed herein?

NERI 1-21 to PPL (reference AG 1-1)

National Grid produced all of the Narragansett Electic Company's charters. Starting with legislation passed in 1964, the Charters authorized Narragansett Electic Company to exercise the power of eminent domain to take land and operate its system as long as its plans are approved as being in the "public interest." All subsequent charters incorporated that the system is to be operated for that "purpose for which they were taken."

a) Does PPL agree with that interpretation of its charter?
b) Explain how PPL's economic incentives are consistent with the public interest?

REQUESTS ON PLANNING FOR RHODE ISLAND'S ENERGY FUTURE

NERI 1-22 (reference petition ¶ 33; Sorgi at p. 7; Dudkin at p.10; DIV 9-33):

The Petition states:

> 33. PPL is committed to the clean energy future and recognizes that utilities play a major role in delivering a clean economy. PPL has adopted a clean energy strategy aimed at decarbonizing its owned generation and non-generation operations through (1) investments in clean and renewable energy; (2) reductions in energy use; (3) fleet vehicle electrification; (4) enabling third party decarbonization through its transmission and distribution networks; and (5) advancing research and development of clean energy technology necessary to achieve net-zero. Through its prudent investments in and implementation of smart grid technology in Pennsylvania, PPL already has created a grid that is ready to integrate significant renewable energy generation through distributed energy resources ("DER"). PPL will bring this experience to Narragansett as it works to modernize electric grid infrastructure in Rhode Island to enable further DER integration and to help facilitate the forthcoming electrification of the transportation and industrial sectors. PPL's clean energy strategy is a cornerstone of PPL's overall commitment to sustainability, with Board-level oversight through the Governance and Nominating Committee of the Board.

Mr. Sorgi, PPL's CFO, added on page 7 of his testimony,

> The acquisition of Narragansett and sale of WPD will reposition PPL as a U.S.- based energy company focused on building the utilities of the future and supporting the U.S.'s transition to a clean energy future.

And again, Mr. Sorgi on pgs. 8-9:

> We expect that PPL's knowledge and experience, particularly with respect to the 16 implementation of smart grid technology, will allow us to enhance reliability and customer satisfaction for Rhode Islanders. We are also confident that PPL will further improve the distribution systems' ability to accept and embrace renewable energy resources, large and small, to help fulfill the State's ambitious decarbonization goals. PPL's experience in automating electricity networks will help Rhode Island achieve its net zero by 2050 goal, including the potential drive for 100% renewable energy by 2030.

Mr. Dudkin (PPL's Chief Operating Officer) adds at page 10:

> PPL has made industry-leading advances in integrating DER, enabling easier, more transparent, and faster renewable choices for customers. The transition to renewable energy resources will require different grid capabilities and data management systems than the traditional energy delivery approach.

And again, Mr. Dudkin at page 14:

> PPL, through smart grid technology, has been able to streamline the process of gathering data about what is needed to safely interconnect these resources and more easily make adjustments to grid operation to accommodate the challenges from distributed renewable resources. Our experience in this area will serve Rhode Island well as the State pursues its clean energy ambitions of net-zero by 2050 and potentially drives for 100% renewable energy by 2030.

Finally, in reply to DIV 9-33, PPL states:

> PPL and PPL RI's reference to taking a "fresh look at the investments needed" was a reference to their plan to conduct a complete assessment of all aspects of Narragansett's transmission and distribution infrastructure to determine what investments it identifies as necessary to facilitate "a truly integrated electric grid that can support a high penetration of renewables.". . PPL and PPL RI will conduct a complete assessment to create its proposed investment plan for grid modernization, taking into account the plan already set forth by National Grid in the exercise of PPL's judgment and expertise based on its experience.

a) Given this great experience why not commit to a plan to implement 100% renewables by 2030 and RI's 2021 Act on Climate?

b) Please indicate what part of National Grid's expenditure of $15 million oin its internal team's implementation of a grid modernization plan for RI will be helpful to PPL's grid modernization planning process.

c) When would RI have grid modernization under your plan?

d) When would Rhode Island have advanced meters under your plan?

e) When will Rhode Island have time of use rates (as advised by unanimous consent in RIPUC Docvket 4600 in 2017) undser your plan?

f) Has National Grid developed any plan for time of use rates that will be of advantage to PPL?

NERI 1-23 to PPL: Identify, provide, and describe any plan PPL has developed that demonstrates the ability to support the beneficial siting of renewable energy resources and support technologies (like carports) that further Rhode Island's policies to site on already disturbed parcels.

NERI 1-24 to PPL: Describe why PPL has the requisite expertise in "constructing and managing intrastate and regional transmission to identify and propose necessary upgrades to Rhode Island's grid to facilitate the interconnection of additional renewable energy generation."

REQUEST ON PPL'S STANDARDS OF INTEGRITY

NERI 1-25 (reference DIV 1-20-3 to PPL):

In response to DIV 1-20-3 to PPL, PPL produced its standards of integrity including its standard regarding "Competitive Practices Antitrust Laws." It says:

> We compete fairly on the basis of price, service and value and comply with applicable laws and regulations that are intended to allow customers to freely make choices in the marketplace without obstruction from improper conduct or agreements that would affect price, restrict volumes or reduce the number of suppliers of goods and services. We comply with U.S. antitrust laws and anti-market manipulation rules of the Federal Energy Regulatory Commission and the Commodity Futures Trading Commission. We comply with PPL Corporation's Antitrust Policy.

PPL also produced its standard regarding "Affiliate Relationships." It says:

> We are subject to requirements that are meant to make sure that relationships and transactions among PPL subsidiaries do not disadvantage customers of PPL's public utility operations. We strictly follow these requirements, including appropriate accounting and cost allocation practices, and we comply with PPL Corporation's Affiliate Relationships.

PPL also produced its standard regarding "Fair Dealing." It says:

> We deal fairly and honestly with governmental and regulatory bodies, customers, suppliers, competitors, peer companies, employees and anyone else with whom we have contact in our jobs. We never take unfair advantage of anyone through manipulation, concealment, abuse of privileged information, misrepresentation of material facts or any other unfair-dealing practice. We comply with laws when gathering competitive information and use such information only for legitimate business purposes. We comply with PPL Corporation's Fair Dealing Policy.

a) In this docket, NERI sought intervention to, among other things, address its concerns regarding Narraganasett Electric Company's anticompetitive interests and practices, including but not limited to how the Company's economic interests in its gas and its transmission and distribution infrastructure and its interest in renewable energy development conflict with its administration of the interconnection of local renewable energy to the electric distribution system. PPL opposed NERI's intervention and has yet to address those concerns, even when raised in data requests from other parties. How are these positions that PPL has taken in this docket consistent with these standards of integrity?

OTHER REQUESTS

NERI 1-26 (reference DIV 1-37 to PPL):

In DIV 1-37(c), the Division asked PPL to provide any documents related to the operation of Narragansett's transmission assets post Transaction. PPL responded that it had "applied the rule of reason and used sound judgment in limiting the breadth and scope of documents produced in response to this request, and have considered the Division Advocacy Section's goal of protecting ratepayers in determining which documents it will produce." However, PPL added that "PPL and PPL RI anticipate that there may be additional documents that will be completed to transfer the Management of Transmission to PPL, and, accordingly, PPL and PPL RI will supplement this response as appropriate as new milestones are met."

a) Does PPL maintain its position that the requested documents must be protected against disclosure to protect ratepayers? If so, please explain the basis of that position.
b) Are there any "additional documents that [have been] completed to transfer the Management of Transmission to PPL, and, accordingly, PPL and PPL RI" such that PPL can supplement this response? If so, please supplement your response.

NERI 1-27: In response to Data Request GECA 1-11, PPL maintained it has always "met its alternative energy supply obligations through the purchase of alternative energy credits."

a) In Rhode Island does PPL intend to continue its practice of meeting its alternative energy supply obligations through the purchase of alternative energy credits?
b) Explain why meeting your alternative energy supply obligations through the purchase of alternative energy credits is in Rhode island's public interest as reflected in Rghode Island's energy policy.
c) Explain why meeting your alternative energy supply obligations through the purchase of alternative energy credits is in Rhode Island's public interest with regard to Rhode Island's economic development policy.

NERI 1-28 to PPL (reference AG 1-23 to PPL):

PPL notes that:

> PPL Electric's role in this process as a Transmission Owner is substantially similar to Narragansett and New England Power Company's role in the ISO-NE process. PJM and ISO-NE's processes and cost causation principles are comparable and based on FERC guidance. . .One main difference between ISO-NE and PJM is the treatment of state jurisdictional generator interconnection requests that may have impacts on the New England Transmission System. In ISO-NE, state jurisdictional generator interconnection requests of a certain size must be studied for impacts on the stability, reliability or operating characteristics of the New England Transmission System in the ISO-NE process and the generator interconnection customer could receive cost allocation for transmission upgrades ISO-NE determines are needed to mitigate such impacts. Currently in PJM, there is no formal process by which state jurisdictional requests are studied by PJM or the Transmission Owner.

Explain the federal law and Federal Energy Regulatory Commission policy that allows ISO-NE to require state jurisidictional generator interconnection customers to receive cost allocation for transmission upgrades ISO-NE determines are needed to mitigate such impacts while PJM has no such requirement.

NERI 1-29 to PPL (reference AG 1-5)

National Grid responds that:

> National Grid USA is working with PPL Corporation and PPL Rhode Island to determine if Narragansett should file its own local service schedule in Schedule 21 to the ISO-NE Open Access Transmission Tariff to govern local FERCjurisdictional customers to be provided by Narragansett over Narragansett-owned facilities. As the Participating Transmission Owner for Narragansett-owned electric transmission assets under the Transmission Operating Agreement with ISO-NE, NEP makes those Narragansett owned facilities available to ISO-NE and ISO-NE makes those facilities available for Regional Network Service to Narragansett and other New England customers in accordance with the terms of the ISO-NE Open Access Transmission Tariff. During the transition period, NEP will continue to make those Narragansett-owned facilities available to ISO-NE under the Transmission Operating Agreement and ISO-NE is expected to continue making those facilities available for Regional Network Service to Narragansett and other New England customers.

a) Have National Grid and PPL resolved this question of how any Rhode Island transmission assets will be operated moving forward?
b) If so, please provide that resolution and any related documentation.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

BEFORE THE DIVISION OF PUBLIC UTILITIES AND CARRIERS

IN RE: PETITION OF PPL CORPORATION, PPL RHODE ISLAND HOLDINGS, LLC, NATIONAL GRID USA, AND THE NARRAGANSETT ELECTRIC COMPANY FOR AUTHORITY TO TRANSFER OWNERSHIP OF THE NARRAGANSETT ELECTRIC COMPANY TO PPL RHODE ISLAND HOLDINGS, LLC AND RELATED APPROVALS

DOCKET NO. D-21-09

PREFILED DIRECT TESTIMONY

OF

KENNETH F. PAYNE Ph.D.

on behalf of

NEW ENERGY RHODE ISLAND

DECEMBER 14, 2021

PETITIONERS, THE HEARING OFFICER AND THE RI SUPERIOR COURT PRECLUDED THIS TESTIMONY ON THE GROUND THAT NEW ENERGY RI'S CLAIM TO SPEAK FOR THE PUBLIC INTEREST IS "DISINGENUOUS"

Q. Please state your name, title, employer, and business address.

A. My name is Kenneth F. Payne. I live at 8 Pinecrest Rd, Carolina RI 02812-1108.

Q. On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of New Energy Rhode Island ("NERI").

Q. What is the purpose of this testimony?

A. I provide my long history of service in Rhode Island and work in the energy sector. I outline the history of energy policy to provide the basis for my opinion on the public interest as it relates to the proposed sale of our electric distribution company. I specifically focus on the importance of local, distributed energy resources in our public policy. I opine that our public policy directs us to require the electric distribution utility to offer and implement a proactive plan for the large-scale integration and use of distributed energy resources to benefit our electrical system and its customers. Distributed energy sources (DERs) are clearly identified, in R.I. statutes, plans, analyses and reports, as a means to achieve a lower cost, more secure and reliable and cleaner energy system while producing new economy in Rhode Island. My purpose is to provide a contextual foundation for the New Energy Rhode Island (NERI) propositions that: (1) we will not achieve the public's interest in our longstanding public policies for energy, environmental protection and climate without a clear and effective committed plan. from our energy utility, which includes clear provision for strong DER growth during the current decade, and (2) we must immediately eliminate any economic conflicts of interest that can lead the utility to oppose operationally Rhode Island's transformative energy and climate policies.

Q. What are your credentials?

A. My life's work has been dedicated to addressing Rhode Island environmental and economic development issues civically and from positions in all three levels of government, local, federal, and state.

My family moved to Rhode Island when I was in third grade. I grew up in Wickford Village, went to North Kingstown public schools, graduating from high school in 1964. From there I went to the University of Rhode Island, graduating in 1968 with a BA in history. From late 1968 through spring 1970 I was a social case worker in the Rhode Island Department of Social and Rehabilitative Service. In the summer of 1970, I commenced planning studies at Ohio University in Athens, Ohio, I transferred to the University of Rhode Island in 1971, and completed the course work for a master's degree in Community Planning and Area Development 1973; my master's degree thesis was on the origins and early examples of Rhode Island textile mill villages, I was awarded an MCP degree in 1977. In the spring of 1973 I had an internship with the Blackstone Valley Council of Governments, which was being organized by the cities of Pawtucket, Central Falls, and Woonsocket and the towns of Cumberland, Lincoln, North Smithfield and Smithfield, with support from the Pawtucket-Blackstone Valley Chamber of Commerce. In 1974 I became executive director of the Council of Governments. In spring 1977 I was appointed executive director of the RI League of Cities and Towns, the advocacy and membership services organization of Rhode Island local governments. As executive director of the League, I also became principal investigator (PI) of the New England Innovation Group, a project jointly sponsored by the US Department of Commerce and the National Science Foundation, to fulfill my duties as PI, I had to develop a working knowledge of the theory and practice of the diffusion of innovation. While executive director of the League of Cities and Towns, I received a National Endowment for the Humanities fellowship to study federalism at

the University California San Diego during the summer of 1979. In late 1986, I resigned as executive director of the RI League of Cities and Towns.

In May of 1988 I was appointed Federal Projects Coordinator in the of U.S. Claiborne Pell. A positioned which I held through the completion of Senator Pell's sixth and final term in 1997. In the autumn of 1995 I converted to part-time status in Senator's Pell's office and commenced Ph.D. studies in Landscape Architecture and Regional Planning at the University of Massachusetts-Amherst and was received a Ph.D. in 2003, my dissertation was on Dillon's Rule and its effect on the ability of local governments to engaged in entrepreneurial activity. In late spring 1997, I was appointed Senior Policy Advisory to the Rhode Island Senate. In this position I oversaw the creation of a professional policy office within Senate and had broad involvement in legislation except in the areas of the state budget and finances, constitutional and gaming issues, courts and corrections, and after 1998, health. I resigned from the position with the Senate in autumn 2007.

In 2008, I was appointed a Research Associate Professor in the URI College of the Environment and Life Sciences at the University of Rhode Island, in that capacity I helped organize the University of Rhode Island Energy Partnership and its energy fellows program, provided staff support to the dean as co-chairperson of the Rhode island Science and Technology Advisory Council, and served as deputy director of the Rhode Island's multi-institutional, NSF funded EPSCoR program. In late summer 2009 I was asked to provide administrative guidance to the Rhode Island Office of Energy Resources (OER), and effective January 2010, I became OER's administrator, a position, which I held during period of American Recovery and Reinvestment Act (ARRA),--the energy portion of ARRA brought $58 million to Rhode Island.

With Rhode Island's ARRA-energy funds committed by the end of 2011, I retired from professional in work in government.

Since 2012 I have been in involved advocacy work in Rhode Island, predominantly in the areas of climate change, energy, and food systems. I have been administrator of the Rhode Island Agricultural Partnership, chairperson of the Rhode Island Food Policy Council, and currently I am president of the Civic Alliance for a Cooler Rhode Island, president of Eating with the Ecosystem. Inc., and I serve as a point-person for New Energy Rhode Island

Q. What has been your involvement in energy issues in Rhode Island?

A. My involvement in energy issues began in the late 1960s when a nuclear power plant was proposed by Narragansett Electric Company for construction on Rome Point in North Kingstown. A group of us got together, with me being one of its organizers. We called ourselves Rhode Islanders for Safe Power. We worked with others to question the wisdom of a nuclear power plant at the location. I went with Benjamin R. Sturges, a major property own to the south of Rome Point, and to meet with the renowned Clarence M. Tarzwell, who explained that nuclear power plant would heat waters in that area of the West Passage to unacceptably high levels. Subsequently the Rome Point proposal was dropped, and Narragansett Electric shifted its interest in building a nuclear to the former naval auxiliary landing field in Charlestown. My involvement in the Rome Point project resulted in my being invited to join the Board of Directors of the New England Coalition on Nuclear Pollution (NECNP) in 1971, as the Rhode Island representative. I remained on that board until 1977. In 1973, in part due to my connections with NECNP, I helped organize the Rhode Island Committee on Energy and was its first chairperson, Claudine Schneider was its legal and technical chair, and Frosty Drew was its public outreach and public education chair. The group brought the suit the Rhode Island Committee on Energy v. the

General Services Administration (397 F. Supp. 41 – D R.I. 1975). Governor Philip Noel and the Nixon white house supported the idea of a nuclear power plant on surplus federal property in Charlestown, RI. The organization of Concerted Citizens emerged in Charlestown, the Rhode Island Committee on Energy took a more state and regional perspective and specifically of concerned with implications of the proposed Federal action to devote former Federal lands to nuclear power on the newly enacted requirements of the National Environmental Policy Act (NEPA), if a governor and a president a project thought a project was a "should do" did NEPA still apply?

The oil crisis of 1973 and the OPEC oil embargo, October 1973 – March 1974, resulting in long lines and limited supplies at gas stations, changed the perception of energy policy. Abundant supplies became uncertain. On October 24, 1973, Governor Noel issued an Executive Order regarding conservation measures to be undertaken by state agencies and employees that proceeded from the premise "all of us must do everything possible to conserve energy" and on May 1, 1975, Governor Noel issued Executive Order No. 25 establishing the State Office, with the following justification: "the maintenance of a healthy economy and the protection of the of the health, safety, and welfare of the people makes necessary the establish of a program to coordinate the development, production, generation, importation, storage and distribution of all forms energy so that the available energy resources will be efficiently and economically managed and utilized with sound environmental and ecological protection,… 1. There is hereby created within the executive branch of state government, a State Energy Office".

In 1976, Governor Noel unsuccessfully ran for U.S. Senate, in the general election John H. Chafee won the seat that had been held by John O. Pastore. Lt. Governor J. Joseph Garrahy won the gubernatorial election.

On May 19, 1977, Governor Garrahy issued three executive orders pertaining energy, No. 7 established a State Energy Conservation Committee and called for programs in the areas of home Insulation, solar hot water heating, industrial and commercial energy conservation, public building energy conservation, and public information, No. 8 created a State Energy Council, and Executive Order No. 9, provided for the State Energy Office in the Executive department of state government that was to address two broad program areas ”The Energy Conservation Program” and “The Energy Capability Program, which shall be responsible for energy research and activities concerning the development of new and alternative energy sources.”

With a strong relationship between Governor Garrahy and key mayors and my connections with statewide planning and people involved in energy issues in state government, the League served as a conduit of information and policy concerns about energy issues between local and state government. The League’s own energy initiative was to modernize street lighting, (which was a cash cow for the electric company and a significant expense cities and towns), to from incandescent to mercury and sodium vapor street lights. The League appear in multiple electric utility rate cases—this was before Blackstone and Newport Electric were consolidated under Narragansett Electric Company.

Senator Pell was intensely interested in the law of the sea and marine affairs. Senator Pell’s Office was contacted by both the Northeast Pilots Association and RI Marine Trades Association about the need for maintenance dredging in Narragansett Bay, especially of the shipping channel into the Port of Providence. In some places the channel had shoaled to a depth 27 feet, under some condition this make it difficult and unsafe to bring petroleum supplies into the Port by tanker, instead they had to be lightered off Jamestown and brought up by barge. I took on this projected, coordinated work on it closely with Governor Sundlun’s office, and

provided staff support to the Governor's Commission on dredging, chaired by Thomas J. Skala, Fleet Bank, President in Rhode island. The dredging project was successful, channel depth was returned to 40 feet, and Providence is now considered one of the two deep water ports in New England. Most for the liquid fuels used in Rhode Island, eastern Connecticut and part of Massachusetts come through the Port of Providence.

I joined the staff of the Rhode Island Senate in the spring of 1997, the year after the enactment of the Utility Restructuring Act. It was the Enron era. Newport and Blackstone Valley were both absorbed into the Narragansett Electric System, and Narraganset Electric Company was acquired by National Grid. In the late 1990s energy and climate issues were receiving increasing public and political attention. As Senior Policy Advisor to the RI Senate I actively participated as an ex officio member in the Greenhouse Gas Stakeholders process. This provided me understanding of the positions of diverse parties regarding the issues considered by the process. The legislation that was a specific outgrowth of the process was the Renewable Energy Standard Act 2004; this was the first major piece of energy I worked for the General Assembly. It was followed by the Comprehensive Act of 2006. Regional Greenhouse Gas Initiative, Rhode island implementation legislation in 2007.

From 2004 through 2011, I was actively and directly involved in energy legislation. In the two years 2010 – 2011, as administrator of the OER, I oversaw the State's responsibilities in the Federal Weatherization Assistance program, and the Low Income Household Energy Assistance Program (LIHEAP), managed RIGGI funds allocation, was involved the state's renewable energy programs, served as executive Director of the Energy Efficiency and Resources Management Council, managed Rhode Island's American Recovery and Recovery Act funds for energy programs, (approximately 58 million dollars. I was deeply involved in

drafting the Distribute Generation Standard Contracts legislation and represented the Chafee administration before the General Assembly in securing that legislation's passage. With its enactment, I managed its initial implementation. I resigned as administrator of the Office of Energy Resources at the end of 2011.

In early 2012, Governor Chafee appointed me to the Distributed Generation Board as its chairman, I was reappointed to that position by Governor Raimondo, and served as such into 2019, when I resigned. During the period I worked with the Board I presented the its annual plan for annual megawatt targets and ceiling prices to the Public Utilities Commission.

In late 2013, Professor Timmons Roberts of Brown University and I organized the Civic Alliance for a Cooler Rhode Island, (CACRI) which has e-published a Rhode Island oriented handbook on things people can do to reduce their carbon foot, participated development Resilient Rhode Island legislation in 2014, provided civic oversight of the Executive Climate Change Coordinating Council, held an energy and climate change briefing session for candidates, and CACRI has sponsored a poster campaign circulates among galleries art exhibition spaces in Rhode island. I have served as president of CACRI since its organization.

In 2021, I was asked to serve as point person for New Energy Rhode Island.

Q. Is there a single public interest?

A. No. There are multiple public interests. Often the goal accomplishing of multiple public interests is set forth in the statement of purposes of a law, here in a nutshell is a common place sort of contemporary example that would be typical in an act pertaining to the reduction of greenhouse gas emissions: "the purposes of this act are to protect the natural environment of the state, create well-paying jobs, and address issues of environmental justice." Certainly, the public

has a distinction interest the quality of the environment, the robustness of the economy, and equity, the fairness of outcomes. There can be, often is, lots of debate the relative weight that should be assigned.

Having worked in the legislative arena, I have realized that values are genuinely incommensurable, that they cannot be measured by the same yard stick, and that people place different weights on them. The great mid-twentieth century historian of philosophy, Sir Isaiah Berlin held that the incommensurability values is the basis of freedom, there are choices to be made in there is pluralism; monism, the idea that there is a unity of values, invites authoritarianism, if there is one right way, then of course it is reasonable that everyone should conform with it.

The distinguished scholar in economics and history, Deirdre Nansen McCloskey, observes that, in western tradition there are "four 'pagan' or 'cardinal' virtues (courage, temperance, justice, and prudence and three 'Christian' or 'theological' virtues (faith, hope and love)." The seven are like "primary colors. They cannot be derived from each other, just as blue cannot be derived from red." (McCloskey. Bourgeois Equality, How ideas, Not Capital or Institutions, Enriched the World. Chicago, University of Chicago Press, 2016, pp 188-189.)

The practical reality of the incommensurability of basic virtues makes necessary the Rawlsian idea of "overlapping consensus" in American government. We must have a means that enables actions to be taken even if there are differences in values. Majority rule is effectively a consensus mechanism; it does mean that the parties voting have changed their minds regarding their values.

Q. Why did you join with the coalition New Energy Rhode Island?

A. Because I believe that in making major public decisions it is vital that the interests and concerns of directly affected private sector business be taken into account. I will give three examples.

When I was working on dredging issues in Senator Pell's office, I found that a vital rational for dredging was presented by the Northeast Marine Pilots Association, the Propeller Club of Narragansett Bay, and the RI Marine Trades Association. I long and gratifying relationships with Save the Bay and the staff of the RI Coastal Resources Management Council, but they hadn't, at that point, focused on the need for dredging in Rhode Island water or in the practicality of how that need might be met. Business interests made clear the importance of addressing the dredging issue, which has significant environmental and economic implications.

When I was research professor at the University of Rhode Island and had been asked by the Coastal Resources Center at the University to convene and chair the stakeholders process for Ocean Special Area Management Plan, a marine spatial planning effort to guide the location of wind turbines in RI waters, I was acutely aware that similar initiatives (e.g. Cape Wind) had stalled in Massachusetts because they were opposed by various interests, including especially commercial fishermen, which are clearly a business interest. I listened to what fishermen were saying, realized that their concerns were mappable, and met with them privately to go over those issues, which were publicly presented at a stakeholders process public meeting. A decision was made was to focus first on areas that met criteria important to fishermen. This saved millions of dollars in scientific evaluations, because the geographic areas to be assessed was defined rather than wide open. The process worked, and Rhode Island proudly is the location of the first off-shore wind farm in North America.

When I was administrator of the Office of Energy Resources and was working to expand renewable energy development in the State, Governor Carcieri's office was very supportive of a project in East Providence on the former landfill on Forbes Street but there wasn't a state program available that could support its development. I learned from the developer the basic requirements of what would be needed to make such projects viable. Appropriate provisions were incorporated into legislation that was strongly supported by both environmentalists and renewable energy developers and enacted as the Distributed Generation Standard Contracts Act of 2011 (RIGL chapter 39-26.2).

It is vital, in my experience, to incorporate the concerns of directly affected communities of interest in decision makings processes. I know how to write legislation that can be enacted by the General Assembly, i.e. pass test of "overlapping" consensus. I do not know how to think like a private sector business person-- their direct input into decision making processes is crucial to securing outcomes advancing the public interest in present tense economic development.

Q. Does the public interest have a temporal dimension?

A. Yes, the public interest does have a temporal dimension. As basic conditions and understanding changes, what is specifically in the public interest changes too. When structural changes are occurring, how government operates evolves, either incrementally or quickly to conform with the reality of the times, it either does this or the place of its jurisdiction suffers: regimes can and do fail. Amartya Sen's work on famines has shown that wide-spread death causing famines doesn't occur in democracies, starvation is unacceptable to the electorate; in authoritarian and colonial regimes famines are more possible. In our modern era, if there is a pandemic, the government is expected to address it; if there is a severe recession and people are

out of work, government is expected to address what is happening and to do what needs to be done to get the economy moving again.

Q. Could you please provide an overview of the State's response to energy issues over the last fifty (50) years?

A. Yes. Going into the 1970s, energy supply in Rhode Island was pretty much a private sector matter, the public role involved providing infrastructure, such as port areas and regulation of utilities by the Public Utilities Commission. With oil crises of 1973-74 and 1979, with U.S. usage of petroleum was greater than, prices were rising. The Arab-Israeli War and the OPEC oil embargo turned a challenging situation into a crisis. Energy issues became highly significant government concern, the cause of the time. Governor Noel issued an Executive Order, No. 9, on October 24, 1973, in other words just five days after the imposition of the embargo. The "whereas" clauses give a sense of the situation:

> WHEREAS, the State of Rhode Island is extremely concerned along with the rest of the nation, about the energy problems confronting us; and
> WHEREAS, all of us must do everything possible to conserve energy; and
> WHEREAS, the state Government must set a significant example by reducing its consumption of energy….

In January 1974, President Nixon reduced the speed limit on highways nationally to 55 mph as an energy conservation measure. On May 1, 1975, by Executive Order No. 25, Governor Noel created the State Energy Office "to implement and formulate the following policies:

> (i) the encouragement of the efficient and use existing energy resources and of the development of new energy resources;
> (ii) participate with other government or private agencies and instrumentalities in the formulation of energy policy;

(iii) participate with other government or private agencies in the development and implementation of new energy facilities;

(iv) participate with other government or private agencies in achieving the more efficient and economic utilization of existing energy producing facilities in a manner consistent with applicable environmental standards;

(v) participate with other government or private agencies to develop energy policy on a regional or area wide basis;

In 1976 the federal Weatherization Assistance Program (WAP) was launched. It worked through state governments to support local agency efforts providing weatherization services, predominantly insulation and window calking, to low income households. On May 19, 1977, newly elected Governor Garrahy issued three executive orders pertaining to energy. Executive Order No. 7 established a State Energy Conservation Committee, Executive Order No. 8 created a State Energy Council, "in keeping with the principles that: (1) energy must be efficiently used and economically managed, and (2) sound environmental and ecological protection must be maintained, and (3) a healthy economy must be sustained, and that (4) contingencies for emergency and long-term interruptions in supply must be available, …". Executive Order No. 9 provided for the State Energy Office within the Executive Department, i.e. the Governor's office. The Low Income Home Energy Assistance Program (LIHEAP) was created in the final year of the Carter administration to help low-income households meet their energy costs.

With the Noel-Garrahy executive orders and the federal WAP and LIHEAP programs the configuration of Rhode Island's means of addressing had been established without legislation, it would last thirty years. Refinements to how it operated were accomplished by executive order. Governor Sundlun consolidated it into his Governor's Office of Housing Energy and

Intergovernmental Relations (GOHEIR), but Governor Almond changed things back State Energy Office by Executive Order No. 24, Octoberv2, 1995.

During this period, Mary Kilmarx's work with the Public Utilities Commission was exemplary, even on a national scale. The National Association of Regulatory Commissioners, Committee on Energy Resources and the Environment annually gives the Mary N. Kilmarx Award to a person who has been an outstanding champion of "good government, clean energy and the environment". In 1996 the demand side management charge of 2.3 mils per kilowatt hour, created by the PUC, was made statuary by the Utility Restructuring Act (RI Public Laws of 1996 chapter 316). While very modest in terms of size, this innovation seeded Rhode Island programs for energy efficient and renewable. Mary Kilmarx helped launch the Greenhouse Gas Stakeholder Process, which got underway in in the fall of 2001.

The Greenhouse Gas Stakeholders Process, which included ten associations representing private business interests among its 30 plus members, and received basic funding from the US EPA and US DoE, was game changing. Prior to the Stakeholders Process, reducing greenhouse gas emissions were not a significant consideration in the State's energy programming. The Rhode Island Greenhouse Gas Action Plan (July 15, 2002) changed that and commenced another era of energy efforts.

The New England Governors/Eastern Canadian Premiers had issued a Climate Change Action Plan 2001, in August of that year. The Action Plan set a short-term goal of reducing regional emissions to 1990 levels by 2010, a mid-term goal of achieving emissions reductions of 10% below 1990 levels by 2020, and a long-term goal emission reductions of 75-85% below current levels (p. 7). The Rhode Island Greenhouse Gas Action Plan (July 15, 2002 and dedicated to the memory of Mary Kilmarx) built on the agreement reached by the New England

Governors/Eastern Canadian Premiers and offered an initial Rhode Island program to meet to the emissions reduction goals but forward by the Governors and Premiers. I was an ex officio member of the Stakeholders Process, which through the facilitation of Raab Associates Ltd, and technical and policy support from the Tellus Institute, developed the Action Plan. The Action Plan's recommendations fell into five categories:

- Higher Priority Consensus In-State Options.
- Lower Priority Consensus in State Options
- Non-Consensus In-State Options
- Consensus Regional/ National Options
- Consensus Priority Study Options

All options were ranked on the basis "Saved Carbon." Of the Higher Priority In-State Options, Renewable Portfolio Standards had the highest ranking, with a carbon score of 140. The highest ranked option of all was a National Fuel Efficiency Standards for Cars and Light Trucks (CAFÉ) at 250 in the Consensus Regional/National Options category; in the same category a Carbon (And Multi-Pollutant) Cap and Permit Trade System for the Power Sector tied with the Renewable Portfolio Standards, with a ranking of 140--the Regional Greenhouse Gas Initiative

2004. In 2004, Renewable Energy Standard legislation was introduced. The original bill, which was developed by the environmental advocacy community and naturally reflected their values. It's tone and balance did not sit well with other interests represented in the stakes holders process. Although the bill had most of the right ingredients and a good deal of solid technical language, it appeared stalled. However, by focusing on getting the mechanics right, toning down the rhetoric, and providing a multi-year ramp up in meeting obligations to comply with the portfolio standard, the legislation became acceptable to all of the key parties. As the General

Assembly was moving to closure a Substitute A version of the bill moved rapidly through Senate committee and onto passage.

A vibrant period of enacting energy had commenced, which would last a decade and move Rhode Island into the top rankings of states in terms of "clean energy" momentum.

2005 In 2005, Resolutions were passed in the Senate (March 29, 2005) and in the House (May 5, 2005) strongly encouraging participation in the Regional Greenhouse Gas Initiative (RGGI) and supporting the work of the New England Governors and Eastern Canadian Premiers in various specific areas. The Resolutions recognized need to reduce "global warming pollution".

2006 In the winter 2005 -2006 two summits on energy issues were jointly held by Senate chairpersons William Walaska and Susan Sosnowski and House chairman Brian Patrick Kennedy. Numerous energy bills on various topics were the result. In the waning days of the 2006 General Assembly session, when the crush was on to pass bills, Senate Financial Services, Technology and Regulatory Issues Committee Chairman William Walaska met with House Majority Leader Gordon Fox and House Corporations Committee Chairman Brian Patrick Kennedy to discuss how handle the energy bills in each chamber. Either existing bills could be amended so that they worked in a complementary manner or a single comprehensive bill could be prepared. Leader Fox decidedly favored the latter course and Chairman Walaska concurred. The Comprehensive Energy Conservation, Efficiency and Affordability Act of 2006 Act of 2006 was the result. A lengthy bill of eighteen sections, the Comprehensive Act notably created the energy efficiency "least cost procurement program " and a distributed generation program, recognizing that having "multiple reliable sources of power generation reduces risks and can temper price volatility", established the Office of Energy Resources and the Energy Efficiency and Resources Management Council, and provided for an Affordable Energy program to assist

low income houses meet their energy costs, this program was to be supported in significant part through the diversion of a portion of the receipts gross tax paid by gas and electric utilities.

The development of this legislation would not have been possible without the direct involvement of persons representing different areas of the public interest: Sam Krasnow, Environment Northeast (now Acadia Center), John Farley, The Energy Council R.I, a group representing the interests of major electricity users in the state, the George Wiley Center, a group representing low income persons and households, and National Grid, which through legal counsel gave invaluable insights into how frame the "least cost procurement" energy efficiency provisions of the legislation.

Section 1 of the "The Comprehensive Energy Conservation, Efficiency and Affordability Act of 2006", which is to be found in chapters 236 and 237 of the Public Laws of 2006, sets forth the general purposes of the Act, which are as follows:

> (1) to provide Rhode Island residents, institutions and businesses the benefit of stability through diversification of energy resources, energy conservation, efficiency, demand management and prudent procurement,
>
> (2) to facilitate the development of renewable energy resources;
>
> (3) to make the cost of energy more affordable by mitigating demand and rates charged to low-income households; and
>
> (4) to strengthen energy planning, program administration, management, and oversight in a manner that is publicly accountable and responsive.

The Affordable Energy program was a casualty of the Great Recession, which began in late 2007 and lasted into 2009 nationally. The Office of Energy Resources superseded the state energy office, creature of thirty years of executive orders. A key purpose of the OER was to "Develop and put into effect plans and programs to promote, encourage, and assist the provision of energy

resources for Rhode Island in a manner that enhances economic well-being, social equity, and environmental quality." The Comprehensive Energy Conservation, Efficiency and Affordability Act of 2006 had, in its provision for least cost procurement, a robust program energy efficiency, by comparison programs to promote renewable development were meager. The Renewable Energy Standard (RIGL ch. 39-26) contained provisions allowing for net metering and use of "alternative compliance payments" to support renewable energy projects; of the 2.3 mils per kilowatt hour demand side management charge, 0.3 mils could go to support renewables, and RGGI funds could be used for cost-effective renewable energy projects. Between from 2009 through 2014, support renewable Section 13 of the Comprehensive Act speaks to the importance of distributed generation:

> § 42-140.2-1. Findings.
>
> It is hereby found and declared that:
>
> (a) Distributed generation can if well implemented, contribute to electric system reliability and efficiency and have system benefits including, but not limited to, reduced congestion, improved management of system peak demands through demand response, and added capacity that mitigates the needs for additional central generating capacity in the region;
>
> (b) Distributed generation from renewable resources diversifies the power sources for electrical generation, and having multiple, reliable sources of power for electrical generation reduces risks and can temper price volatility;
>
> (c) Distributed generation from renewable resources and from combined heat and power systems can reduce the environmental impacts, including greenhouse gas emissions, of electrical generation;
>
> (d) The system benefits of distributed generation are a function of the location of the distributed generation capacity, the reliability and the efficiency of distributed generation

facilities individually and/or collectively, and the time of operation of the distributed generation facilities;

(e) The value of distributed generation can vary with changes in the wholesale and retail markets for electricity;

(f) Properly designed regulatory and financing programs for distributed generation can have both system benefits and economic benefits for entities.

(g) The independent system operator of New England has stated that mitigating peak demand should be a central strategy in reducing wholesale electricity and has established a demand response to accomplish this purpose.

(h) Established tariffs and embedded principals for rate setting and cost allocation may present substantial barriers to realizing the full potential of distributed generation in Rhode Island.

The Energy Efficiency and resources Management Council created by the Comprehensive Act was explicitly with developing a plan for distributed generation. RIGL section 42-140.2-3 provides, "The energy efficiency and resources management council is hereby authorized and directed to monitor the implementation of distributed generation and to report its findings and recommendations biennially on or before February 1, commencing in 2009 and ending in 2015."

2007. RGGI. Rhode Island was a laggard in joining the Regional Green House Gas Initiative, Senate Resolution 2007 – S 0097 noting that the nine other Northeast states had joined RGGI, respectfully requested that Governor Carcieri do the same. That action was taken, and implementing legislation was introduced first in the House and later in the Senate, where the Senate Minority Leader was the prime sponsor and the Senate President was the first co-sponsor. The Act, which added a chapter to Title 23, Health and Safety, of the General Laws specified that Rhode island's "proceeds from the auction or sale of

allowances shall be used for the benefit of energy consumers through investment in the most cost-effective available projects that can reduce long-term consumer energy demands and costs." § 23-82-6. Use of RGGI allowance funds to promote renewable energy projects is an explicitly allowed purpose.

2009. Long Term Contracting Standard

§ 39-26.1-1. Purpose.

> The purpose of this chapter is to encourage and facilitate the creation of commercially reasonable long-term contracts between electric distribution companies and developers or sponsors of newly developed renewable energy resources with the goals of stabilizing long-term energy prices, enhancing environmental quality, creating jobs in Rhode Island in the renewable energy sector, and facilitating the financing of renewable energy generation within the jurisdictional boundaries of the state or adjacent state or federal waters or providing direct economic benefit to the state.

2010 In 2010 the Long Term Contracting Standard was amended to clarify the Town of New Shoreham section Act (off-shore wind) and again to provide for a Town of Johnston Project (land fill gas).

Also 2010 Climate Risk Reduction Act added a new chapter, 84, to Title 23 of the General Laws, Health and Safety. This is notable for two things, first its extensive findings which set forth the risks posed to Rhode Islanders, subsection 11 of the Legislative Findings §23-84-2, states that the chapter "seeks to protect the historic culture, heritage, economy, public infrastructure, natural resources, and the current and future wellbeing well-being of the population of Rhode Island. The second thing the Act did was established a twenty-eight (28) member legislative commission, that included three (3) members from the Senate appointed by the Senate President and three (3) members from the House the appointed by the Speaker. The purpose of the Commission is to "study the projected impacts of climate change on Rhode Island

and to report for adapting to these climate change impacts § 23-84-3(b)." The section of the Act establishing the commission was repealed by in 2014 in the Act establishing the Executive Climate Change Coordinating Council. During its short life the Commission an outstanding report: "Adapting to Climate Change in the Ocean State: a Starting Point"

2011. In 2011 instead of comprehensive as was used in 2006, the General Assembly to enact a suite of measures pertaining to renewable energy development. Until then renewable energy was pretty much described in subsection of the Renewable Energy Standard of 2004 for net metering and the Long Term Contracting Standard of 2009 for larger projects. 2011 legislation gave net metering its own chapter in the Generals Laws, clarified interconnection issues in a distinct chapter and established a new Distributed Generation program; collectively these measure strengthening Rhode Island's programs of support renewable energy resource development within the state. In the words of the distributed generation statute RIGL 39-26.2**, the** purpose was:

> to facilitate and promote installation of grid-connected generation of renewable energy; support and encourage development of distributed renewable energy generation systems; reduce environmental impacts; reduce carbon emissions that contribute to climate change by encouraging the local siting of renewable energy projects; diversify the state's energy generation sources; stimulate economic development; improve distribution system resilience and reliability; and reduce distribution system costs.

2013. Enabling legislation was passed allowing communities to establish Property Assessed Clean Energy (PACE) programs to enable property owners finance renewable energy projects on their premises/

2014. In 2014 the Distributed Generation Standard Contracts program was converted into a feed-in tariff program, the RE-growth Program, RIGL 39-26.6, and roughly quadrupled in size , the RE-Growth Program has its purpose:

> to facilitate and promote installation of grid-connected generation of renewable energy; support and encourage development of distributed renewable energy generation systems; reduce environmental impacts; reduce carbon emissions that contribute to climate change by encouraging the siting of renewable energy projects in the load zone of the electric distribution company; diversify the energy-generation sources within the load zone of the electric distribution company; stimulate economic development; improve distribution-system resilience and reliability within the load zone of the electric distribution company; and reduce distribution system costs.

Next, the 2014 Resilient Rhode Island Act established the Executive Climate Change Coordinating Council as a statutory body , to assess, coordinate, and integrate the activities of executive branch departments and agencies in addressing climate change issues. The Resilient RI Act made the goals for greenhouse gas emission reductions agreed to by the New England Governors and Eastern Canadian Premiers in 2001 targets for Rhode Island planning. The Council established by the Act is essentially a codification of an executive order 14-01 by Governor Chafee.

Finally, 2014 the Affordable Clean Energy Act Security Act (ACES), RIGL chapter 39-31, established a framework for Rhode Island to participate in multi-state renewable energy projects. The purposes of the chapter are to:

> (1) Secure the future of the Rhode Island and New England economies, and their shared environment, by making coordinated, cost-effective, strategic investments in energy resources and infrastructure such that the New England states improve energy system reliability and security; enhance economic competitiveness

> by reducing energy costs to attract new investment and job growth opportunities; and protect the quality of life and environment for all residents and businesses;
>
> (2) Utilize coordinated competitive processes, in collaboration with other New England states and their instrumentalities, to advance strategic investment in energy infrastructure and energy resources, provided that the total energy security, reliability, environmental, and economic benefits to the state of Rhode Island and its ratepayers exceed the costs of the projects, and ensure that the benefits and costs of the energy infrastructure investments are shared appropriately among the New England States; and
>
> (3) Encourage a multistate or regional approach to energy policy that advances the objectives of achieving a reliable, clean-energy future that is consistent with meeting regional greenhouse gas reduction goals at reasonable cost to ratepayers. RIGL section 39-31-2.

ACES makes clear that the vision for Rhode Island energy for renewable resources is both to have in-state DERs and to participate in larger projects within the region.

In sum, between 2004 and 2014 Rhode Island went from having little in the way of energy programs to having outstanding ones. In 2017 the Union of Concerned Scientists ranked Rhode Island the fourth best among the states in terms of "clean energy momentum". The same year Rhode Island was third in the nation in the rankings of the American Council for an Energy Efficient Economy.

Q. What happen after 2014?

A. After 2014, the momentum to pass more legislation slowed. Over the preceding decade a comprehensive and interlocking system of energy policies and programs had been established. The task at hand was to realize the potential of this set enactments. Rhode Island had really moved into a period of implementation. After 2014, community remote programs in the net metering and distributed generation chapters (2016). Also, in 2016 the Renewable Energy

Standard was extended to 2035, and a Consumer Protection Bill of Rights for Non-Regulated Power Producers was enacted (RIGL chapter 39-26.7). And in 2017 The Renewable Energy Growth program was extended through 2029. Overall, however, there was a shift away from establishing new statutory structures, and a return to the use of executive orders, with a significant difference: the executive orders authorized studies of major topics pertaining to renewable energy development and the reduction of greenhouse gas emissions. From June 2014 through March 2021 has been period plans, studies and analyses, done by or per the Governor's request, the Office of Energy Resources, and the Public Utilities Commission, and Statewide Planning. Here is a list of these documents and pertinent executive orders:

Plans, Analyses, Reports and Orders:

1. June 2014. A Resilient Rhode Island: Being Practical about Climate Change. Preliminary Report to Governor Lincoln D. Chafee. RI Executive Climate Change Council (RI-EC3). (84 Pages)
2. July 2015 Rhode island Thermal Working Group Report. Office of Energy Resources. (55 pages)
3. October 8, 2035. Energy 2035. RI Department of Administration, Division of State Planning. (158 pages)
4. January 2016. Systems Integration Rhode Island Vision Document. Office of Energy Resources. (67 pages)
5. March 2016. State of Rhode island Zero Emission Vehicle action Plan. Office of Energy Resources. (29 pages)
6. December 2016. Greenhouse Gas Emissions Reduction Plan. RI-.EC4. (88 pages)
7. April 5, 2017, Docket 4600: Stakeholder Working Group Process: Report to the Rhode Island Public Utilities Commission. Raab Associates, Ltd. with Paul Centolella & Associates and Tabors Caramanis Rudevich (TCR) (38 pages)
8. May 4, 2017, written Order July 31, 2017. Docket 4600 Report and Order. RI Public Utilities Commission. (30 pages)

9. November 2017. Rhode Island Power Sector Transformation, Phase One report to Governor Gina M. Raimondo. Division of Public Utilities & Carriers, Office of Energy Resources, and Public Utilities Commission. (85 pages)

10. April 23, 2020. Heating Sector Transformation, Pathways to Decarbonization by 2050. The Brattle Group. (77 pages)

11. August 18, 2020. Solar Siting Opportunities for Rhode island. Synapse Energy Economics, Inc. (81 pages)

12. December 2020. The Road to 100% Renewable Energy by 2030 in Rhode Island. The Brattle Group, RI Office of Energy Resources. (81 pages)

13. February 8, 2021. Rhode Island Carbon Pricing Study. Final Report. Cadmus. (106 pages)

Executive Orders

1. Lincoln D, Chafee, Executive 0rder 14-01, February 21, 2014. Rhode Island Executive Climate Change Council.

2. Gina M. Raimondo Executive Order 17-06. June 12, 2017. Reaffirming Rhode Island's Commitment to the Principles of the Paris Climate Agreement

3. Gina M. Raimondo Executive Order 19-06. Heating Sector Transformation to Ensure Reliability and Protect Against Climate Change.

4. Gina M. Raimondo Executive Order 20-01, January 17, 2020. Advancing A100% Renewable Energy Future for Rhode Island by 2030.

Q. What role do distributed energy resources have in the period of major plans, studies and analyses?

A. Distributed Energy Resources (DER) have a central role. It is a recurring topic, a central concern. Reducing greenhouse gas emissions requires shifting to other resources to meet energy needs, and DER is a means of doing this. Governor Chafee's executive order can be seen as the starting point of the planning period, the direct outcomes of the executive order were the creation of the Executive Climate Change Council (EC3) and the report "A Resilient Rhode Island:

Being Practical About Climate Change." That report remains the most comprehensive assessment Rhode Island has of the powers state agencies to do things to address climate change. The Executive Order states "To support the Council's work, state agencies shall" and there follows a long list of to-dos, which includes "increase the deployment of in-state generation of renewable energy and energy efficiency". This is the fifth bullet point.

A Resilient Rhode Island (June 2014), Goal 5 is "Increase Resilience Through Mitigation- to protect, reduce risk and create new opportunity, and Objective 5.4 is "Increase renewable energy and clean fuels." (p.45). Objective 5.5 is "Pursue clean energy industry growth opportunities" and Objective 5.6 is "modernize the grid." (p.46)

Energy 2035, the State Guide Plan element # 120 adopted October 8, 2015, states "Rhode Island must address supply-side GHG emissions, via displacement of fossil fuel generation by renewable energy generation. This can be achieved by either through the promotion of renewable energy development in state or out of state. One of the strategies Energy 2035 recommends is renewable energy procurement. (pp. 62-63). In its Portfolio of Strategies number 7 is "Expand the Renewable Energy Standard" (pp. 107-109); number 8 is "Expand renewable Energy Procurement" (pp. 110 – 115), and number 16 is "Reduce the Soft Cost of Renewable Energy" (pp. 142 – 144).

Systems Integration Rhode Island (SIRI) Vision Document (January 2015). The Vision Document was a collaborative effort of the RI Office of Energy Resources. RI Energy Efficiency and Resources Management Council, the Distributed Generation Board and National Grid. It uses the term "distributed energy resources" (DER) and opens with the statement that "Rhode Island's energy system is at the cusp of a long-term transformation…. As Rhode Island's energy system evolves, we face new challenges and

opportunities. Utility operators will need to manage distributed generation in a system originally designed for centralized production and one-way power flow.

A foundational idea in SIRI is: "Rhode Island will embrace cost-effective customer/distributed energy solutions as integral elements of its energy system." Accordingly, "the SIRI report bins the processes in to three categories: (1) Customer-Facing, (2) Renewable Energy Promotion, and (3) Grid Planning, Procurement and Investment. (pp, 9, 10). SIRI notes incomplete coordination among existing processes and the "Limited applications of non-wires alternatives to date" (pp 15, 16). SIRI speaks to the need to "Maintain commitment to renewable energy deployment in Rhode Island through processes that properly account for the benefits and costs of renewable energy to the distribution system and to Rhode Island consumers." (p. 23)

Rhode Island Greenhouse Gas Emissions Reduction Plan (December 2016) was adopted by the Executive Climate Coordinating Council (EC4) to fulfill the requirements of RIGL § 42-6.2-2 (2). The Plan showed Rhode Island successfully meeting its 2020 target, but continuing business as usual would not enable to its meeting the statutory targets for 2035 and 2050. In discussing "The Path Forward" the Plan gives as an "implementation action … Initiate an effort to escalate clean energy adoption in Rhode Island, . . . " (p.27).

Docket 4600 Stakeholders Report (April 15, 2017) and Public Utilities Commission Report and Order predominantly examined the use of cost benefit analysis as a tool in rate structure proceedings, but within this broad analytic topic issues of Distributed Energy Resources (DE/DERs) Programs and Technologies, Conventional Distribution Projects, and Grid Modernization were foregrounded as significant issues (Stakeholders Report p.6). The Stakeholder Report notes "As the grid modernizes, consideration should be

given to how distribution rate design, in combination with advances in energy efficiency, demand response, and other DERs can help the system evolve in an efficient manner to ultimately benefit all customers." (p. 16). A specific question is "What is the appropriate way to measure any cost-shift between DER and non-DER customers and at what level does it become unreasonable?"

The Public Utilities Commission Docket 4600 Report and Order, states "Essentially the PUC determined that the Growth Act [RIGL ch. 39-26.6] requires that rates be modernized to account appropriately for the modernization of the electric system." At its core the REGrowth Act had provided for DER projects to be supported by a feed in tariff.

Rhode Island Power Sector Transformation (November 2017), the Executive Summary, in its first paragraph observes,

> The state's electric utility and regulatory framework were developed in era in which demand consistently increased, technologies change incrementally, customers exerted little control over their electricity demand, electricity flowed one way from the utility to the customers, and the risks of climate change were unknown. Today, none of those factors is true: demand for electricity has plateaued; many customers generate their own power; electricity flows to and from customers; technologies are being introduced at a rapid pace; and the need to mitigate and adapt to climate change is real." (p. 7).

Goal 3 put forward in the study is to "Build a flexible grid to integrate more clean generation." (p. 9). Multiple potential benefits of DERs are summarized on pages 15 -16 of the study. The study observes "Enabling Rhode Island to invest in DER solutions is not currently a core of the utility regulatory framework or utility compensation, even though it is in the public interest to reduce wholesale market costs, improve environmental impacts, and increase resilience." (p.18)

In the Study, section 1.2 “Shift to a pay for performance model by developing performance incentive mechanisms for system efficiency, DER, and customer and network support, Distributed Energy Resources are given specific attention (pp. 25 – 26). DERs are also a recurring topic in Part III of the Study, “Distribution System Planning” (pp 44-55). In Appendix II on functions desired from an Advanced Meter, a major goal is “Integrate Energy” and six specific desirable functions are listed (p. 67).

Solar Siting Opportunities for Rhode Island (August 18, 2020), this report by Synapse Energy Economics was prepared for the RI Office of Energy Resources. It is fundamentally about the capacity for solar installations in a manner consistent with Rhode Island zoning laws and current programs, it looks at single and multi-family residential , commercial, industrial municipal and other building roof tops”, ground-mounted solar “In four categories (1) landfills, (2) gravel pits, (3) brownfields, and (4) Commercial and industrial developed and undeveloped lots” and canopy solar in “Parking lots/ car ports.” (p. 1).

It finds, in summary: that in aggregate across all six categories analyzed, technical potential for solar is between 3,390 megawatts (MW) and 7,340 MW, or 13 to 30 times the amount of solar that is currently installed in Rhode Island. This translates into 5,560 gigawatt-hours (GWh) to 12,600 GWh of electricity able to be produced. Median estimated upfront prices for these categories range from about $3 to $5 per watt. If this entire technical potential were installed, we estimate that up to 7.65 million metric tons of carbon dioxide (MMTCO2) could be displaced, equal to about 70 percent of Rhode Island’s total, current greenhouse gas emissions. (p.3)

While this study is not definitive, it is very useful. It shows that there is space in to locate DERs in Rhode Island at a level that contributes substantially to meeting greenhouse gas emissions reduction goals.

The Road to 100% Renewable Electricity by 2030 (December 2020), this analysis was undertaken pursuant to Executive Order 20-01. The report was developed by RI Office of Energy Resources and the Brattle Group, serving as its authors. The first three whereas clauses in the Executive Order are telling:

> WHEREAS. Rhode Island and the world face significant environmental, economic, energy, and public health challenges from the impacts of climate change; and
>
> WHEREAS, Rhode Island is committed to mitigating economy-wide greenhouse gas emissions and their effect on climate change, while spurring new and innovative opportunities for investment and job growth throughout the state's clean energy economy; and
>
> WHEREAS, Rhode Island's clean energy sector has seen a 74% increase in jobs since 2014, demonstrating that protecting against climate change strengthening our economy are complementary goals; and . . .

The Road to 100% Renewables looks at four broad categories of renewable energy development: off-shore wind, land-based wind within the region, wholesale solar within the region, and retail solar within Rhode Island. While out of state projects may be lower cost per unit of electricity produce, they generally have little benefit in terms of Rhode Island job creation. Furthermore, the larger the project the more complex it is, the longer it takes for completion. Local small projects to medium scale projects providing whole sale power can be accomplished more quickly and have the benefit of local economy contributions. Rhode Island because of its small size and high population density is unlikely to cite large regional projects within its territorial limits.

The Road to 100% Renewables takes into account both project costs and Rhode Island economic benefits. Over the long term it is easy to see a mix of project types might be advantageous for Rhode Island. In such a mix DERs have a significant role and The Road to 100% Renewables deals with them extensively. Two key points are made on page 48, first:

> Purchasing out-of-state land-based wind, offshore wind, or wholesale solar resources may result in negative economic impacts. Only when the out-of-state resource is less costly than purchasing market energy and RECs (i.e., when resource costs are low and market REC prices are high) does procuring mostly out-of-state resources result in positive economic impacts.

And second:

> Rhode Island can increase the economic benefits associated with the 100% renewable electricity goal by developing programs and policies that procure in-state resources at the lowest reasonable cost to ratepayers.

The Road to 100% Renewables acknowledges that the GDP benefits may not accrue to the same population as the higher rate-payer costs. (p. 55)

The Road to 100% Renewables offers as a key concept in moving toward the 2030 goal, "Continue to advance the recommendations of the Power Sector Transformation stakeholder report."

Q. How is distributed generation of renewable energy treated in the enactments 2004 – 2014?

A. Prominently. Rhode Island clearly wants to a vibrant distributed generation sector in the state.

Q. How are DER treated in the 2014 -2021 plans, analyses, reports and orders?

A. They are prominent and recurring topic.

Q. How does scientific understanding bear on the NEC sale?

A. We are no longer in a period when historic-baseline referenced decision making is adequate. Decisions need to be responsive to the trajectory of change. In November 2019, 11,000 scientist were signatory to a warning that, clearly and equivocally," "planet Earth is facing a climate emergency". The World Economic Forum's "Global Risks Report of 2020" "Top Five Risks in Term of Likelihood" were all climate change, they were listed in the environmental risk category, and it was the first that one category of risks included all of the top five risks in terms of likelihood; the number one risk in Terms of Impact was "Climate action failure;" in Terms of Impact "Weapons of Mass Destruction" was in second place. AIRMIC (the UK Association of Insurance Risk Managers in Industry and Commerce), FM Global (the Rhode Island based company) and Swiss RE, jointly issued a report to businesses stating that the 2020 World Economic Forum Risk report was "unprecedented" and calling on businesses to take climate risks, such as supply chain interruption, seriously: "A refusal to grasp the magnitude of the environmental challenge could cost reputations and even render business models obsolete. The August 9, 2021 UN Intergovernmental Panel on Climate Change "Climate Change 2021" report opening summary finding "It is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere [the areas of the Earth's surface covered by frozen water, e.g. snow or ice)}and biosphere have occurred." The New York Times front page article (August 9, 2021) covering the release of the IPCC report, was headlined: "A Hotter, Future Is Now Inevitable, A U.N. Report Says, Scientists Find Rapid Shift From Fossil Fuels Could Avert Greater Perils".

A basic shift in thinking has occurred, we are no longer looking at climate change as something that could happen in the future: it is something that is happening now. The question before us now as a society is what can be done to avoid levels of temperature increase that could be catastrophic. We are caught in a trajectory change.

During the two-decade period in Rhode Island, 2000 -2020, climate change was treated as a risk, which could be mitigated, regarding future conditions. In 2021 we have recognized that climate change is the condition we are in and the necessity is now not to go from bad to worse. The 2021 Act on Climate needs to be understood this context. The goals established in the 2021 Act on Climate are both enforceable and much more ambitious than the targets in the Resilient Rhode Island Act of 2014. The target for greenhouse gas emissions reductions Rhode Island has been striving to reach over the last two decades has been to be "Ten percent below 1990 levels by 2020"; this is the target essentially agreed by the New England Governors and Eastern Canadian Premiers in August 2001. It was based on the scientific understanding of that time. Scientific understanding has solidified and advance substantially since then. Addressing existential threats is clearly a matter of fundamental public interest. The amount of emissions reduction to achieved by 2030, under the 2021 Act on Climate, is four and a half times great than the amount to be achieved between 2001 and 2020.

The twelve plans, reports, analyses done during the period 2014 to 2021 provide a basis for developing "strategies, programs and actions" to achieve the required emissions reductions. DERs are among the most readily available and easily implementable means of reducing emissions in Rhode Island, and having a far larger proportion of non-greenhouse gas emitting power on the grid amplifies the benefits of beneficial electrification, with electric vehicles be being an exemplar.

DER implementation is, at this time, strongly in the public interest. This was not the immediate circumstance when the Utility Restructuring Act was passed in 1996 or a few years later when National Grid acquired the Narragansett Electric Company. In our capitalist-market economy, the firms doing the on-the-ground work of developing DERs in Rhode Island must be profitable to survive and be effective in their work. This means the economic viability of the firms is a matter of public interest. Creating private sector jobs, which is something businesses do, is a core purpose of publicly initiated economic development. The Office of Energy Resources-Commerce Corporation "Clean Energy Industry Report 2020" showcased this reality, overall growth in the sector was 7,130 jobs since 2014, an increase of 77.3 percent. A key purpose of the energy statutes enacted since 2004 was truly being realized; the COVID pandemic knocked these numbers down—now Rhode Island's full recovery requires returning to this level of growth in the current decade.

Scientific understanding underpins economic development; this has historically been the case. It is no less true now than it was when the industrial revolution got underway in the 18th century. Rhode Island's heyday occurred when it was an innovator and early adopter of innovations developed elsewhere.

Q. Does this conclude your testimony?

A. Yes, it does. In closing, I'll observe that science moves forward both by slow Darwinian evolutionary increments and by abrupt, fractured equilibriums. So, it is with policy and culture. Law too can follow the course ecology, a reality that has been constructively explored by Richard O. Brooks. (Law and Ecology, The Rise of the Ecosystem Regime, Richard O. Brooks, Ross Jones, and Ross A. Virginia, Burlington Vermont, Ashgate Publishing Company, 2002, is a solid legal examination of this subject.) In Rhode Island, both the energy statutes beginning in

2004 and the plans, reports, and analyses in the 2014 to 2021 period speak to refinements and adjustments to existing practices and to transitions and transformations. Climate change is a fractured equilibrium, what we need to do is being shaped by forces we do not control, now that they have been let loose by greenhouse gas emissions. We need to figure out both new methods of resilience and ways to mitigate the greenhouse emissions that imperil our global future; in both areas, distributed renewable energy resources have a vital role.

The history of statutory enactments and plans, analyses, reports and orders, which I have provided, show, I believe, that Rhode Island has undergone a profound change in the last two decades: how the public interest in DERs might have been defined in 2001 no longer holds in 2021. We have entered a period when ecosystem stewardship is widely recognized as vital. Such stewardship must be responsive to the trajectory of change rather than simply pursuing the maintenance of historic baseline conditions (see F. Stuart Chapin, III, Gary P. Kofnas, and Carl Folke, ed. Principles of Ecosystem Stewardship. New York: Springer Science +Business Media, 2009). We have entered a new historic era (Dipesh Chakrabarty, The Climate of History in a Planetary Age. Chicago: the University of Chicago Press, 2021).