

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

In Re: Invenergy Thermal Development LLC)
Application to Construct and)
Operate the Clear River Energy)
Center, Burrillville, Rhode Island) Docket SB-2015-06

SUPPLEMENTAL PREFILED TESTIMONY OF
GLENN C. WALKER, UPDATED AS OF SEPTEMBER 14, 2018

Summary:

The purpose of this latest supplemental testimony is to update my testimony of February 2018 regarding the events that have occurred since, which reflect the lack of need for the proposed CREC and provide yet more evidence of why the CREC is not necessary to meet the needs of Rhode Island and/or the New England region for energy of the type that would be produced by CREC, and is not needed or justified by long-term Rhode Island and/or New England energy need forecasts.

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List of Exhibits

Exhibit GCW-1	ISO-NE 2015 – 2018 Forecast of Net Demand
Exhibit GCW-2	ISO New England Identifies Growing Fuel-Security Risks as the Power System Undergoes Rapid Transformation, 5/23/18
Exhibit GCW-3	MA DOER Letter Pursuant to Section 83D, 7/23/18
Exhibit GCW-4	MA DOER Letter Pursuant to Section 83C, 8/1/18
Exhibit GCW-5	RI.gov Press Release, 5/23/18
Exhibit GCW-6	CT News Release Regarding Deepwater Wind, 6/13/18
Exhibit GCW-7	An Act to Advance Clean Energy, 8/9/18
Exhibit GCW-8	Invenergy Supplemental Response to CLF Request 13-1, 6/22/18
Exhibit GCW-9	ISO-NE Substitution Auction Elections for FCA 13 (CCP 2022-2023)
Exhibit GCW-10	Emails Regarding Permits, 7/25/18 and 7/30/18
Exhibit GCW-11	Greentech Media news article, 8/1/18
Exhibit GCW-12	ISO-NE Retirements, 8/17/18
Exhibit GCW-13	ABB Power Capacity Additions Forecast, 2018
Exhibit GCW-14	LEI Independent Analysis of Electricity Market and Macroeconomic Benefits of the New England Clean Energy Connect Project, 5/21/18, pages 81 and 82
Exhibit GCW-15	TCR Long-Term Contracts for Offshore Wind Energy Projects Pursuant to Section 83C of Chapter 169 of the Acts of 2008, Quantitative Evaluation Report, July 2018, page 67 of 196

- 1 • In September 2017, I provided surrebuttal testimony which rebutted misrepresentations
2 of facts by Ryan Hardy and Marc Vatter; and
- 3 • In February 2018, I provided supplemental testimony regarding the impact of the ISO-
4 NE disqualification of the proposed Unit Two from participating in Forward Capacity
5 Auction (“FCA”) 12 and how the disqualification is further proof that the proposed
6 CREC is not necessary to meet the needs of Rhode Island and/or the New England
7 region for energy of the type that would be produced by CREC, and is not needed or
8 justified by long-term Rhode Island and/or New England energy need forecasts.

9
10 In each instance, since Invenergy’s initial filing, my testimonies have continuously
11 demonstrated that the proposed CREC is not necessary to meet the needs of Rhode Island
12 and/or the New England region for energy of the type that would be provided by the
13 proposed CREC, and is not needed or justified by long-term Rhode Island and/or New
14 England energy need forecasts.

15
16 Since Invenergy’s filing in October 2015, the lack of need for CREC has been consistently
17 demonstrated by many factors, including declining demand, regional policy with respect
18 to global warming, and rapid changes in the Rhode Island and New England electric
19 markets, which are summarized as follows:

- 20 • Reduced Need: Existing and planned Energy Efficiency (“EE”) and behind-the-meter
21 (“BTM”) photovoltaic (“PV”) resources have reduced the net peak load needs of the
22 region in every year since 2015, with the 2018 forecast indicating a 3,000± MW

1 reduction in net peak load for the year 2024 relative to the 2015 forecast (see Exhibit
2 GCW-1);

3 • Increased Solar: Installation of 2,400± MW of solar in the New England region (see
4 Exhibit GCW-2, pages 28, 32);

5 • Increased Baseload Renewables: Massachusetts selected New England Clean
6 Energy Connect (“NECEC”) to provide approximately 1,000 MW of baseload
7 renewable energy (see Exhibit GCW-3);

8 • Increased Offshore Wind: Massachusetts, Rhode Island, and Connecticut selected
9 Vineyard Wind and Deepwater Wind to develop 1,400 MW of offshore wind (see
10 Exhibits GCW-4, GCW-5, and GCW-6);

11 • Minimal Retirements: Retirements in the FCAs held in 2016-2018 have resulted in
12 only 1,320± MW of retirements in the region with the Pilgrim Nuclear Plant (701
13 MW) and the Bridgeport Harbor coal unit (383 MW) accounting for the majority
14 of the retirements (see Exhibit GCW-12);

15 • Additional Future Offshore Wind: On August 9, 2018, Massachusetts Governor
16 Baker signed into law An Act to Advance Clean Energy¹ authorizing the
17 solicitation of an additional 1,600 MW of offshore wind (for a total of 3,200 MW)
18 by 2035 (see Exhibit GCW-7);

19 • Invenergy Has Twice Sold its Unit One CSO: Invenergy has twice been able to
20 have its 485 MW capacity supply obligation (“CSO”) for Unit One met by an
21 existing electric generator in the Annual Reconfiguration Auctions (“ARAs”) at a

¹ House Bill 4857.

1 price below its original award and realizing a significant financial benefit (see
2 Exhibit GCW-8);

- 3 • Unit Two Has Failed to Obtain a CSO for Three Successive Auctions: Unit Two
4 did not obtain a CSO in FCAs 10, 11, and 12. In fact, Unit Two was disqualified
5 from last year's FCA 12, and given the significant delays in the project, it is
6 probable that Unit Two will also be disqualified in FCA 13; and
- 7 • Increased Sponsored Policy Resources (Renewables): There are over 2,900 MW
8 of Sponsored Policy Resources now seeking capacity obligations in FCA 13 (see
9 Exhibit GCW-9). This is significantly in excess of the retirements that need to be
10 replaced.

11 The facts are clear and demonstrate that CREC is not needed in Rhode Island or the region.
12

13 **PURPOSE**

14
15 **Q. What is the purpose of this supplemental testimony?**

16 A. The purpose of this latest supplemental testimony is to update my prior testimony of
17 February 2018 regarding the events that have occurred recently. These events reinforce the
18 lack of need for the proposed CREC and provide the most recent evidence of why CREC
19 is not necessary to meet the needs of Rhode Island and/or the New England region for
20 energy of the type that would be produced by CREC and is not needed or justified by long-
21 term Rhode Island and/or New England energy need forecasts.
22
23

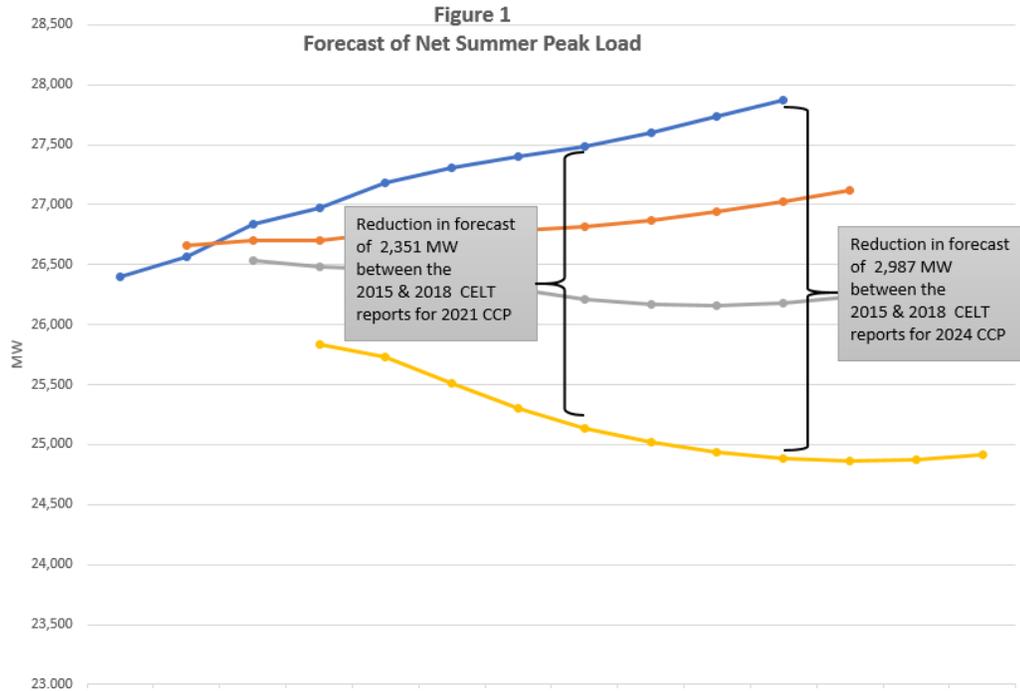
1 **STEADILY DECLINING NEED**

2 **Q. Has the need for CREC diminished in every year since 2015?**

3 A. Yes. The lack of need for CREC is demonstrated by the steady and significant decline in
4 demand and the continuing additions of large amounts of renewable resources, which are
5 expected to be in the range of 3,000 MW in the upcoming FCA 13.

6
7 **Q. How much has the net peak demand declined since CREC was proposed in 2015?**

8 A. Since 2015, there has been a drastic decline in the actual and forecast net peak demand for
9 generating resources in New England which is illustrated in Figure 1.



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20 The net summer peak load has dropped by approximately 2,351 MW for 2021 and almost
21 3,000 MW for 2024. This decline in net summer peak load illustrates that even if there was
22 at one time a perceived need for CREC Unit One, that has been eliminated by substantial

1 changes in the market. Therefore, the CSO for Unit One, issued over 2 ½ years ago in
2 early 2016, is not evidence of current needs in the region.

3
4 **LARGE-SCALE RENEWABLES ARE A REALITY**

5
6 **Q. Have the large-scale renewable projects and electric storage resources that you**
7 **previously testified would increase capacity in New England become a reality?**

8 A. Yes. Contrary to the claims of Mr. Hardy² that the New England states would not procure
9 these large-scale projects, there have been over 1,400 MW procured in 2018 at prices well
10 below market expectation. This is evidenced by the following market observations on the
11 cents per kilowatt-hour (kWh) pricing of the Massachusetts Vineyard Wind contract.

12
13 *“The Massachusetts project bid came in well below analyst expectations*
14 *and set a new U.S. record for offshore wind. The next lowest price came in*
15 *a Maryland auction in 2017, which contracted at about \$131 per megawatt-*
16 *hour[13.1 cents/kWh], according to Anthony Logan, North American wind*
17 *power analyst at MAKE Consulting, a Wood Mackenzie company.”³*

18
19 *“That’s pretty shocking for us, said Tom Harries, a wind analyst at*
20 *Bloomberg NEF. I think the wider industry expected much higher prices.*

² Pre-Filed Rebuttal Testimony of Ryan Hardy, 9/1/17, p. 19, lines 8-12, states: “The fact that new renewable projects are virtually guaranteed to clear the FCA but are not clearing demonstrates that there is a lack of cost effective renewable resource alternatives currently within the New England market. It is my assessment that Massachusetts will not burden its ratepayers with excess costs above what is necessary to meet its renewable portfolio standard, which I take into account in my analysis.”

³ Greentech Media news release, 8/1/18 at <https://www.greentechmedia.com/articles/read/first-large-us-offshore-wind-project-sets-record-low-price-starting-at-74#gs.PqSp3aw> (see Exhibit GCW-11).

1 *The repercussions of this are it will probably awaken a lot of other coastal*
2 *states to the value of offshore wind.”⁴*

3
4 Therefore, it is likely that not only will the region have 1,400 MW of wind added in the
5 near-term due to the recent procurements, additional offshore wind will be developed to
6 add to this minimum amount.

7
8 **Q. Is this increase in the amount of offshore wind already becoming a reality?**

9 A. Yes. On August 9, 2018, Massachusetts Governor Baker signed into law “An Act to
10 Advance Clean Energy” which doubles the amount of offshore wind procurement in its
11 intent to procure from 1,600 MW to 3,200 MW, in part due to the low pricing of its first
12 procurement. This increase in the amount of offshore wind further demonstrates the
13 direction of future capacity additions in the region and it is not a large-scale natural gas-
14 fired unit like CREC (see Exhibit GCW-7).

15
16 **Q. Does the recently enacted law “An Act to Advance Clean Energy” also include**
17 **significant targets for large-scale battery storage?**

18 A. Yes. The law sets a 1,000 MW energy storage target to be achieved by December 31, 2025.

19
20

⁴ Bloomberg news article, 8/2/18 at <https://www.bloomberg.com/news/articles/2018-08-01/first-big-u-s-offshore-wind-offers-1-4-billion-to-customers>.

1 **Q. Can you summarize the large-scale renewable projects moving forward in New**
2 **England?**

3 A. Yes. In May 2018, Massachusetts selected Vineyard Wind to provide 800 MW of offshore
4 wind. The pricing for this procurement was below expectation with energy and renewable
5 energy credits (“RECs”) at a total levelized price of 6.5 cents/kWh in 2017 dollars over the
6 term of the long-term contracts. According to the MA DOER, the price is materially below
7 the levelized projected costs of buying the same amount of wholesale energy and RECs in
8 the market, which is projected to be a total levelized price of 7.9 cents/kWh in 2017 dollars
9 over the 20-year term of contract.⁵

10
11 The Massachusetts Department of Energy Resources (“MA DOER”) selected Northern
12 Pass Hydro as its primary source of large-scale hydropower. Due to project financing and
13 possible permitting delays of Northern Pass Hydro, the NECEC 100% Hydro project was
14 offered to enter into concurrent conditional contract negotiations,⁶ to assure that the state
15 receives the benefit of carbon-free large-scale renewable energy resources.

16
17 On July 23, 2018, the MA DOER submitted its support of the long-term contracts between
18 the utilities and NECEC. The NECEC project will provide Massachusetts with 9,554,000
19 MWh of clean generation which includes energy and all associated attributes, which are
20 eligible for the Massachusetts Clean Energy Standard (“CES”) compliance, and the
21 associated transmission required to ensure delivery, at a total levelized price of 5.9
22 cents/kWh in 2017 dollars over the 20-year term of the clean energy generation long-term

⁵ Exhibit GCW-4.

⁶ MA DOER update on Section 83D Procurement Process, p. 2 (see Exhibit GCW-3).

1 contract. The 5.9 cents/kWh levelized price includes 4.8 cents/kWh for energy and
2 environmental attributes, and 1.1 cent/kWh for transmission. According to the MA DOER,
3 the total price is significantly below the projected cost of buying the same amount of
4 wholesale energy in the market and the projected compliance costs for the CES, which are
5 projected to total 7.5 cents/kWh over the 20-year term of the contract (see Exhibit GCW-
6 3).⁷

7
8 In the summer of 2018, Rhode Island and Connecticut also entered into contracts with
9 offshore wind farms for the procurement of an additional 600 MW at prices comparable to
10 those received by Massachusetts. Rhode Island selected Deepwater Wind to build a 400
11 MW offshore wind farm and Connecticut selected Deepwater Wind's Revolution Wind
12 Project to provide 200 MW (see Exhibit GCW-6).

13
14 These large-scale projects and others have resulted in there being just under 3,000 MW
15 seeking CSOs in the supplemental auction for Sponsored Policy Resources⁸ associated

⁷ "As previously stated, the DOER strongly supports the NECEC project, and recommends approval of the resulting clean energy generation long-term contracts now before the Department. The NECEC project is highly cost-effective, will deliver clean energy generation to the Commonwealth, and effectively meets the requirements and objectives of Section 83D. Specifically, the NECEC project significantly aligns with the Commonwealth's goals of creating a clean, affordable, and resilient energy future for the Commonwealth. The implementation of this project will result in nearly half (47%) of the electricity consumed by Massachusetts being generated from clean energy. The project's 9,554,000 MWh represents 17% of Massachusetts' total load, and 20% of the EDCs Massachusetts' state load. The project will significantly contribute to the Commonwealth meeting future GWSA goals. The NECEC project being in-service will reduce an estimated 36.61 million metric tons of carbon dioxide equivalents ("MMTCO₂e") in the Massachusetts Green House Gas Inventory from 2019 to 2040, an average of 1.93 MMTCO₂e annually.⁶ This is roughly equivalent to the emissions associated with 413,000 cars on the road each year."

⁸ Sponsored Policy Resource is "a New Capacity Resource: that: receives an out-of-market revenue source supported by a government-regulated rate, charge or other regulated cost recovery mechanism, and; qualifies as a renewable, clean or alternative energy resource under a renewable energy portfolio standard, clean energy standard, alternative energy portfolio standard, renewable energy goal, or clean energy goal enacted (either by statute or regulation) in the New England state from which the resource receives the out-of-market revenue source and that is in effect on January 1, 2018." ISO-NE Tariff § I.2.2 (107.0.0)

1 with FCA 13 which is scheduled for early 2019 and discussed more fully below. Clearly
2 the New England states purchasing these renewables envision a savings, not a burden on
3 their ratepayers, and they are embracing the opportunity to procure the energy and
4 renewable attributes of these projects at unprecedented low prices.

5
6 **CREC IS NOT NEEDED TO COVER RETIREMENTS**

7
8 **Q. Have you reviewed the potential for large-scale retirements in the upcoming FCA 13**
9 **and FCA 14?**

10 A. Yes. I have reviewed the potential retirements in the New England region and have
11 concluded that retirements will not result in a need for CREC and, in fact, there will likely
12 not even be enough retirements to allow all of the proposed renewable resources to acquire
13 a CSO in FCA 13. There are several reasons for this which include the lack of planned
14 retirements due to capacity prices being sufficient to retain most of the generation in New
15 England and the almost 3,000 MW seeking to obtain a CSO in the Substitution Auction
16 associated with FCA 13.

17
18 **Q. Can you explain how FCA 13 will differ from prior auctions?**

19 A. Yes. FCA 13 (scheduled for February 2019) is the first auction in which the new
20 Competitive Auctions with Sponsored Policy Resources (“CASPR”) rule will go into
21 effect. The ISO-NE will conduct the standard FCA auction as well as a second Substitution
22 Auction. The Substitution Auction will allow a Sponsored Policy Resource to procure a
23 CSO without meeting the minimum bid rule from existing capacity that obtained a CSO in

1 the standard FCA, but that is retiring or willing to exit the market. An important component
2 of the substitution auction is that there will be no minimum bid rule and Sponsored Policy
3 Resources can actually bid negative values in order to acquire a CSO from a retiring
4 resource.⁹

5
6 Therefore, given that approximately 3,000 MW of new Sponsored Policy Resources will
7 be seeking to enter the market in FCA 13 via the Substitution Auction, and only about 600
8 MW of existing resources are enrolled to retire/exit the market, as discussed below, it will
9 be virtually impossible for a new resource such as CREC Unit Two to obtain a CSO in the
10 next several FCAs until these new Sponsored Policy Resources are absorbed into the
11 capacity markets.

12
13 In analyzing new additions and retirements possible in the upcoming FCA 13 and the
14 associated Substitution Auction, as of March 23, 2018, there are only a total of 2,175 MW
15 looking to retire or exit the FCM with a demand bid in the Substitution Auction, but there
16 are 2,904 MW of supply seeking a CSO in the Substitution Auction (see Exhibit GCW-9).
17 However, included in the 2,175 MW of supply seeking to retire/exit the market are the
18 approximately 1,400± MW associated with Mystic 8 and 9 which have been retained by
19 the ISO-NE for system reliability (discussed below) and will not be allowed to retire by

⁹ For example, a 600 MW resource seeking to retire will first enter the standard FCA 13 as a price taker and receive the clearing price. Assuming hypothetically that the clearing price of FCA 13 is \$3.50/kW-month, the retiring resource will offer this CSO (from FCA 13) into the Substitution Auction. In the Substitution Auction, a Sponsored Policy Resource could offer \$3.50/kW-month which would result in a payment of \$25.2 million (600,000 kW × \$3.50/kW-month × 12 months) to the retiring resource for its CSO, or the Sponsored Policy Resource could offer negative \$(2.00)/kW-month and the retiring resource would receive \$5.50/kW-month or \$33 million (600,000 kW × (\$3.50/kW-month minus negative \$(2.00)/kW-month) × 12 months).

1 ISO-NE. Therefore, there will be only about 600 MW of permanent retirements
2 participating in the Substitution Auction.

3
4 The single largest retirement is Mystic 7 with a 592 MW FCA rating and several small
5 resources totaling just under 10 MW (see Exhibit GCW-12). However, there are
6 approximately 3,000 MW seeking to enter the market or obtain a CSO with two-thirds of
7 this supply located in southern New England. This represents five times more supply
8 seeking to enter the market than seeking to retire and three times more new resources in
9 southern New England than the 600 MW scheduled to retire (see Exhibit GCW-9).
10 Therefore, not only will retirements have no impact on whether there is a need for CREC,
11 the addition of these new resources eliminates any chance that Unit Two will clear in the
12 next several FCAs, until all the new renewables or Sponsored Policy Resources clear the
13 market.

14
15 **Q. Can you explain why not all of the Mystic Station capacity is retiring?**

16 A. Yes. In early 2018, Exelon announced its intent to retire the Mystic Station (Units 7, 8, 9,
17 and Jet) in Everett, Massachusetts. These units total over 2,000 MW. However, due to the
18 unique fuel characteristics of Mystic 8 and 9 (1,400± MW), which are directly connected
19 to the Everett Marine Terminal (as opposed to a natural gas pipeline), and Mystic's location
20 in the Greater Boston area, these units were not allowed to retire by the ISO-NE for fuel
21 security of the ISO-NE system.¹⁰

¹⁰ The issue of fuel security and reliability are often inadvertently interchanged or confused due to both having a similar outcome, which is a less robust electric system. The issue of reliability relates to the question of whether the electric system has enough generating resources in the region to meet the electric market needs. Fuel security relates to the question of whether there is adequate fuel availability for these electric resources. In the case of Mystic 8 and 9, it is the LNG fuel which is the basis for ISO-NE not allowing it to retire. Therefore, adding the CREC capacity,

1 On May 1, 2008, ISO-NE requested that the FERC approve its determination that Mystic
2 8 and 9 are required to meet fuel security in the region and allow Mystic 8 and 9 to be
3 compensated using a cost-of-service (“COS”) agreement.

4
5 The COS provides for the continued operation of and compensation for Mystic 8 and 9 for
6 the two years associated with the CCPs for FCA 13 and FCA 14, beginning June 1, 2022
7 until May 31, 2024. FERC approved the retention of Mystic 8&9 for fuel security reasons
8 on July 13, 2018.¹¹

9
10 Mystic 8 and 9’s unique non-pipeline fuel delivery and location characteristics provide the
11 Boston area 1,400 MW of capacity that is not gas pipeline-dependent like the CREC.

12
13 In reviewing the need for Mystic 8 and 9, it is my opinion that it is unlikely that these units
14 will retire in the next 5 to 10 years given their importance to the Boston area. This was the
15 basis for the ISO-NE not allowing these units to retire.

16
17 **Q. Could the Invenergy units substitute for the Mystic Station units?**

18 **A.** No. The Invenergy units lack the unique fuel characteristics of Mystic 8 and 9 which are
19 fueled by tankers delivering liquified natural gas (“LNG”) to serve the units. In addition,
20 Mystic 8 and 9 are uniquely located to serve the Boston area. The CREC units have none
21 of these attributes.

which is dependent on the same gas pipeline system as all the other generators in New England, does not result in CREC being a substitute for Mystic 8 and 9.

¹¹ FERC Docket No. ER18-1639, Order Accepting and Suspending Filing and Establishing Hearing Procedures, 7/13/18.

1 **THE CREC WATER PLAN LIMITS CREC**

2

3 **Q. Does the CREC water plan make it an even less attractive alternative than a plant**
4 **with a non-truck dependent supply of water?**

5 A. Yes. All things being equal, CREC’s unique water supply plan utilizing truck water
6 delivery makes it a less attractive alternative than a plant with onsite or pipeline delivery
7 of water. The reason for this is when CREC utilizes oil firing, which would potentially
8 benefit the region, it is limited by its onsite water storage.

9

10 **Q. Can you give us an example?**

11 A. Yes. If the region was to experience a prolonged interruption in the natural gas pipeline
12 system and require electric generators to utilize onsite oil storage, CREC’s operating
13 duration would be approximately three days before it ran out of onsite water. It would take
14 approximately one month to refill its onsite water storage. This would mean that if, during
15 the one-month period CREC was filling its onsite water storage, CREC was called upon
16 by the ISO-NE for fuel security reasons, it would likely be unavailable or limited in its
17 ability to respond to the ISO-NE.

18

19 **Q. So, in your opinion, all things being equal, is CREC a less attractive large-scale unit**
20 **than one with a more conventional non-truck dependent source of water?**

21 A. Yes. The CREC water plan lowers its usefulness for fuel security which is typically based
22 upon 10 days of oil supply over a winter period. The ISO-NE does not expect those days
23 to be consecutive, but if there were over three consecutive days of need for CREC running

1 on oil, it would be unavailable to provide this service due to its inability to refill its onsite
2 water storage.

3
4 **REGIONAL STUDIES SHOW THERE IS NO NEED FOR CREC**

5
6 **Q. Do you have additional support for your claims that the region does not need new**
7 **units like CREC?**

8 A. Yes, I have reviewed several studies issued in 2018 relating to generating resource supply
9 and demand characteristics in New England. These studies are summarized as follows:

- 10 • ABB¹² Power Reference Case, Northeast, Spring 2018
- 11 • Daymark Energy Advisors *NECEC Transmission Project: Benefits to Maine*
12 *Ratepayers*, September 27, 2017
- 13 • LEI *Independent Analysis of Electricity Market and Macroeconomic Benefits of the*
14 *New England Clean Energy Connect Project*, May 21, 2018
- 15 • Tabors Caramanis Rudkevich *Long-Term Contracts for Offshore Wind Energy*
16 *Projects Pursuant to Section 83C of Chapter 169 of the Acts of 2008*, July 2018
- 17 • Tabors Caramanis Rudkevich *Long-Term Contracts for Clean Energy Generation*
18 *Projects Pursuant to Section 83D of Chapter 169 of the Acts of 2008*, July 3, 2018

19
20

¹² ABB (f/k/a Ventyx) is a leading business solutions provider to global energy and utility organizations. ABB is one of the largest providers of energy market data and forecasts and offers some of the industry's most rigorous forecasts, software, and independent market analyses.

1 **Q. What conclusions did you reach from these forecasts and studies?**

2 A. These studies support my opinion that there is no need for the CREC or other new gas-
3 fired generation in New England. The overriding theme is that new resources will likely be
4 renewables or transmission additions. In addition, it will be 10 years or longer before new
5 natural gas-fired units are needed or economical to construct in New England.

6

7 **Q. Can you summarize the ABB forecasts and its conclusion?**

8 A. The ABB Power Reference Case is the biannual forecast of electric prices prepared by ABB
9 for its clients in estimating the future price of electricity in the Northeast. This report is an
10 independent and unbiased forecast of supply and demand in the region that could be used
11 by any market participant and is one of the most widely utilized forecasts in the industry.
12 The report concludes that no new natural gas-fired units will be added in the New England
13 market between 2018 and 2042. However, it does assume that 2,000 MW of renewable
14 resources will be added during this period in addition to the Sponsor Policy Resources.
15 (See Exhibit GCW-13)

16

17 **Q. What about the other studies you mention?**

18 A. The other studies were developed in support of the Massachusetts procurements for
19 submission to the various regulatory agencies responsible for approving the Massachusetts
20 contracts or issuing permits for siting the projects, similar to the role of the RI EFSB. These
21 studies also support my opinion that there will be few significant retirements and that
22 natural gas-fired units will be uneconomic for 10 years or longer.

23

1 For example, a London Economics International LLC (“LEI”) study conducted on behalf
2 of the Maine Public Utilities Commission (“PUC”) forecasts plant additions for a period
3 of 2019 to 2037 with respect to thermal units such as combustion turbines or combined
4 cycle natural gas-fired units (see Exhibit GCW-14).

5 *“LEI understands that in the past some resources have been able to clear well*
6 *below the ISO-determined Net Cone values, although these resources tended to be*
7 *brownfield units, had good connections to existing pipelines or transmission*
8 *infrastructure, or were able to make use of certain tax advantages. LEI does not*
9 *expect these opportunities to be available in the future, and therefore expects*
10 *thermal units not to clear until beyond the modeling timeframe.”¹³*

11
12 Therefore, LEI concluded that no new thermal units will be built before 2037 and did not
13 provide forecasts for future periods.

14
15 The Quantitative Evaluation Reports prepared for the Massachusetts Clean Energy
16 contracts for offshore wind and baseload renewables also conclude that the most natural
17 gas additions will be in the year 2034. The offshore wind analysis further supports the
18 conclusion that there is little need for CREC and that Unit Two will fail to clear in the FCA
19 until the 2030 time period (see Exhibit GCW-15). These are two independent forecasts of
20 installed capacity requirements measuring retirements and additions of units that conclude

¹³ Maine PUC Case No. 2017-00232, LEI *Independent Analysis of Electricity Market and Macroeconomic Benefits of the New England Clean Energy Connect Project*, 5/21/28, p. 82.

1 that no new large-scale natural gas-fired units will be added to the generation mix until the
2 mid-2030 time period.¹⁴

3
4 **INVENERGY TIMELINE**

5
6 **Q. Can you summarize Inverenergy’s participation in the forward capacity market
7 (“FCM”) and the ARAs, including those in 2018?**

8 A. Yes. As the RI EFSB is aware, in 2015 CREC qualified two turbines for participation in
9 FCA 10, but cleared only one turbine (Unit One), acquiring a CSO of 485 MW at a price
10 of \$7.03/kW-month. Despite Ryan Hardy’s repeated predictions that Unit Two would clear
11 in FCAs 10,11, and 12, Unit Two failed to clear in FCA 10, failed again to clear in FCA
12 11, and was disqualified from participating in FCA 12 due to Inverenergy’s failure to
13 demonstrate to the ISO-NE progress in meeting project milestones.

14
15 **Q. What was the basis for disqualification?**

16 A. The ISO-NE cited significant delays and lack of progress in obtaining the necessary permits
17 as the basis for the disqualification. For example, in addition to not having a permit for the
18 power plant from the RI EFSB, Inverenergy has no agreement with National Grid for its
19 transmission interconnection, has no RI EFSB permit for the interconnection, and has no
20 air or wetlands permits for the project.

21

¹⁴ Massachusetts Department of Public Utilities (“DPU”) Docket No. 18-76/18-77/18-78, Exhibit JU-4, Tabors
Caramanis Rudkevich *Long-Term Contracts for Offshore Wind Energy Projects Pursuant to Section 83C of Chapter
169 of the Acts of 2008, Quantitative Evaluation Report*, p. 67 of 196.

1 **Q. Have you reviewed the status of the air permit?**

2 A. Yes. As of July 25, 2018, a draft permit has not been issued by the Rhode Island
3 Department of Environmental Management (“DEM”) and the Office of Air Resources
4 seems to be unsure whether a draft permit will be issued at all for the project (see Exhibit
5 GCW-10).

6

7 **Q. Have you reviewed the status of the wetlands permit?**

8 A. Yes. As of July 30, 2018, an email from the DEM Office of Water Resources states that
9 DEM had not yet determined whether Invenergy had provided sufficient information for
10 DEM to evaluate the request (see Exhibit GCW-10). In fact, it appears that DEM is still
11 waiting for information from Invenergy.¹⁵

12

13 **Q. After receiving a CSO for Unit One in FCA 10, when was CREC required to be online
14 to satisfy the CSO to the ISO-NE?**

15 A. Originally, Unit One was required to be online prior to June 1, 2019. However, due to
16 delays in meeting project milestones, such as a source of water for CREC, delays in the

¹⁵“There are no regulations that state that “DEM must help an industry”, or any applicant, with their application. That isn't really what we are doing, at least not to the extent of helping anyone design their project. However, we are obligated to make sure that any Application to Alter is “complete” before we issue a public Notice. “Completeness” is further covered under Rules 7.07(E) and 7.08(C). We don't want to send a project out for public Notice and comment that is incomplete, incorrect, misleading, or missing key information. There are two primary reasons for this. First, the DEM needs to be sure that all information we need in order to complete our evaluation and make a decision has been provided to us. Second, since the project also needs to be thoroughly understood by members of the public who wish to review and comment on the project, it is important for us to be sure that the material we send out or available in the file makes sense and includes information on all wetland alterations being proposed. In this case, it has taken multiple requests to get all the information we need, many times requesting the exact same thing multiple times... and at this time I am still not sure they have adequately responded even now (I am awaiting the results of our latest review).” See Exhibit GCW-10

1 CREC/National Grid interconnection, and other permitting-related matters, Invenergy
2 could not meet its original obligations.

3
4 **Q. When does Invenergy now claim Unit One will be online?**

5 A. According to the Pre-Filed Supplemental Testimony of John Niland to the RI EFSB on
6 November 20, 2017, he claims Unit One will be online by June 1, 2021.¹⁶

7
8 **Q. Do you agree with this conclusion?**

9 A. No. As I have stated previously, it is highly unlikely given the lack of progress in meeting
10 its project milestones that Invenergy will have Unit One online by June 1, 2021. Even if
11 they obtain all permits by early 2019, that would only allow less than two and one-half
12 years for construction of the plant and the interconnection. I do not believe that is enough
13 time.

14
15 **INVENERGY IS MAKING MILLIONS SELLING ITS CSO**

16
17 **Q. Has Invenergy been able to beneficially replace its Unit One CSO?**

18 A. Yes. Invenergy has been able to find replacement capacity in the ARAs for its CSO
19 associated with Unit One for the past two years at a price lower than its CSO.

20
21 **Q. What does it mean that Invenergy has been able to find replacement capacity for its**
22 **CSO in the ARAs at a lower price?**

¹⁶ Pre-Filed Supplemental Testimony of John Niland, 11/20/17, p. 3, line 25.

1 A. It means that other generators with available capacity to offer have stepped in to take on
2 this obligation. The generator (or generators) that have bought Invenergy's CSO must all
3 – like Invenergy – be qualified by the ISO-NE to accept that obligation. The bottom line
4 is that the ISO-NE does not need Invenergy for system reliability for the period 2020-2021
5 nor for 2021-2022. The ISO-NE has determined that it is fully able to run the New England
6 electricity grid for those periods with no electricity at all from Invenergy.

7
8 **Q. Can you calculate the approximate amount of benefit or gross profit to Invenergy
9 associated with these transactions in the ARAs?**

10 A. Yes. In simple terms, Unit One has a CSO with a price of \$7.03/kW-month locked in for
11 seven years. That seven-year price lock-in is a feature of the ISO-NE Tariff which is
12 approved by the Federal Energy Regulatory Commission ("FERC"). Invenergy replaced
13 the capacity for its FCA 10 capacity period at a price of \$5.87/kW-month. This resulted in
14 a benefit or gross profit to Invenergy of approximately \$6.75 million (485,000 kW CSO ×
15 \$1.16/kW-month benefit or profit × 12-month duration) for the capacity commitment
16 period ("CCP") that runs from June 1, 2019 to May 31, 2020.

17
18 Invenergy also replaced the CSO for the FCA 11 capacity period at a price of \$3.67/kw-
19 month. This resulted in a benefit or gross profit for Invenergy of approximately \$20 million
20 (485,000 kW CSO × \$3.36/kW-month benefit or profit × 12-month duration). So in two
21 years, Invenergy has made over \$26 million by selling its CSO.

22

1 **Q. Is it your opinion that Invenergy will replace its CSO for Unit One a third time in the**
2 **summer of 2019 for the FCA 12 capacity period?**

3 A. Yes. It is very likely, given the current status of its interconnection and likely legal
4 challenges that CREC faces prior to construction, that Invenergy will either have the CSO
5 terminated by the ISO-NE due to a lack of progress, or Invenergy will replace the CSO a
6 third time and receive even more benefits.

7
8 **Q. If Invenergy was to replace its CSO a third time, do you have an opinion as to the**
9 **results?**

10 A. Yes. Given the current level of capacity prices, it is likely that the replacement would occur
11 at a price similar to that of the last ARA or approximately \$3.70/kW-month and result in
12 an additional benefit or gross profit of approximately \$20 million. This would bring
13 Invenergy's total three-year benefits/gross profit to over \$46 million.

14
15 **Q. Are you saying that, with its current CSO, Invenergy could just sell out of its**
16 **obligation in successive ARAs, receiving millions, while not having a power plant and**
17 **not even necessarily having the permits to build a power plant?**

18 A. Yes. Invenergy has been doing exactly that in the last two ARAs.

19
20 **Q. It seems counter-intuitive that a company with no power plant and no permits to even**
21 **build a power plant would be able to receive benefits in the market, are you sure this**
22 **is correct?**

1 A. Yes. That is exactly what is happening. Invenergy is selling out of its CSO in successive
2 ISO-NE ARAs and receiving millions of dollars in benefits. The ISO-NE Tariff, which
3 must be approved by FERC, allows this to happen, because the ISO-NE Tariff
4 contemplated the possibility of a plant being delayed by months or maybe a year. In that
5 context, it makes sense that a resource with a CSO is obligated to “cover” its obligation,
6 and still be made whole financially. However, the Tariff also gives the ISO-NE the ability
7 to terminate the CSO based on lack of progress meeting critical milestones.

8

9 **Q. Given the delays and lack of progress by Invenergy in developing CREC, do you think**
10 **it is possible that CREC may not even get built?**

11 A. Yes. In fact, I am currently of the opinion that not only will Unit One be delayed beyond
12 the June 1, 2021 date, but that it is uneconomical to build CREC in the foreseeable future
13 due to the significant changes in the market that I have identified in this testimony. In my
14 opinion, it is very likely Invenergy is seeking to simply permit the project and either sell
15 the permits to another entity or wait for better market conditions before moving forward
16 with construction.

17

18 **Q. Is this approach common in the industry?**

19 A. Yes. For example, the Towantic Energy Center in Oxford, Connecticut, originally proposed
20 by Calpine, was conceived in the late 1990s. Calpine submitted an application to the
21 Connecticut Siting Council for a Certificate of Environmental Compatibility and Public
22 Need for the 512 MW project primarily fueled by natural gas in 1998.¹⁷ Sometime after

¹⁷ CT Siting Council Docket No. 192, Findings of Fact, 6/23/99.

1 obtaining the original approvals, the development rights were transferred to Competitive
2 Power Ventures, Inc (“CPV”). In 2014, CPV filed an application to upgrade the project’s
3 two combustion turbines which increased the output from 512 MW to 785 MW and was
4 granted a permit.¹⁸ The facility was awarded a CSO in FCA 9 and began operating in June
5 2018.¹⁹ This project represents a good example of how a project with little or no need at
6 the time of original permitting and approval can be built almost 20 years later.

7
8 A second example is the 431± MW Pioneer Valley Energy Center in Westfield,
9 Massachusetts proposed by EMI, Inc which received its original approvals in the 2009 time
10 period. The economic conditions were not suitable to profitably build the project and it was
11 put on hold. The project was sold or transferred to Calpine to bid the project into FCA 10.
12 However, the project failed to get a CSO (likely due to the introduction of CREC Unit
13 One). After this project failed to get a CSO in FCA 10, Calpine abandoned the project due
14 to the expectation that the unit would be financially infeasible to develop for the
15 foreseeable future.

16
17 These examples illustrate how it is common for projects to be permitted by developers and
18 held for more advantageous market conditions. Given the current lack of need for Unit One
19 and the absence of a CSO for Unit Two, it is likely that if a permit is granted by the RI
20 EFSB, the project will not be built in the near future due to the lack of need and poor
21 economics.

¹⁸ CT Siting Council Docket No. 192B, Certificate Holder’s Motion to Reopen and Modify Certificate, 11/3/14.

¹⁹ CPV press release, 6/14/18.

1 **Q. Are you saying that if the RI EFSB issues a permit, Invenergy or someone else may**
2 **hold the project and possibly build it 10 or 20 years from now?**

3 A. Yes. I believe that is the likely outcome given the lack of need in the current market and
4 the Sponsored Policy Resources currently under contract negotiations. I recognize that
5 doing so would require maintaining an option for site control and updating various permits.
6 However, modifying or updating permits is typically much easier than obtaining the
7 original permits.

8

9 **RI EFSB SHOULD DENY A LICENSE TO CREC**

10

11 **Q. Is there anything that the RI EFSB can do to prevent such an outcome?**

12 A Yes, the RI EFSB can deny Invenergy’s application for a license. As I have shown in all
13 of my testimonies to the RI EFSB, there simply is no need for the CREC.

14

15 This is exactly what the Connecticut Siting Council did when it contemplated the very
16 situation as stated in the Siting Council’s decision.

17 *“The public benefit, or need, for a facility is a function of time, a relationship*
18 *directly contingent upon a date when additional capacity will be needed. The*
19 *Council finds and determines that the proposed facility is not necessary for the*
20 *reliability of the electric power supply of the state or for a competitive market for*
21 *electricity at this time. If there is a future need for additional capacity, the market*
22 *will respond.*

23

1 *Without a finding and determination of a public benefit for the facility, which is the*
2 *first decision criterion under C.G.S. §16-50p, the Council does not reach any*
3 *finding and determination on the second decision criterion regarding*
4 *environmental impacts and the Council does not reach any finding and*
5 *determination on the third decision criterion regarding why the environmental*
6 *impacts are or are not sufficient reason to deny the application. There is no public*
7 *benefit to balance with the environmental impacts.*

8
9 *Furthermore, without a finding and determination of a public benefit for the facility*
10 *at this time, the Council will not assert its jurisdiction over the ARRR Orders to*
11 *affirm, modify or revoke any municipal regulate and restrict orders or make any*
12 *order in substitution thereof in accordance with C.G.S. §16-50x. Likewise, the*
13 *Council will not reach a determination at this time under CEPA regarding whether*
14 *or not the facility is reasonably likely to have the effect of pollution, impairment or*
15 *destruction of the public trust in the air, water or other natural resources of the*
16 *state or whether there is a feasible and prudent alternative.*

17
18 ***For the foregoing reasons, the Council finds and determines that there is not a***
19 ***public benefit for the KEC and hereby directs the application for a Certificate be***
20 ***denied without prejudice.”***²⁰ ***[emphasis added]***

²⁰ Connecticut Siting Council Docket No. 470, Opinion, 5/11/17, pp. 11, 12.

1 The situation in this instance is the same. The CREC project is not needed based on the
2 overwhelming evidence.

3

4 **Q. Do the events that have occurred since your last testimony further support your**
5 **opinion that the PUC Advisory Opinion is no longer valid?**

6 A. Yes. The PUC Advisory Opinion did not have the benefit of the information that I have
7 presented in my testimony which makes the PUC Advisory Opinion outdated and
8 inaccurate in light of current changes in the market.

9

10 **Q. Does that conclude your supplemental testimony?**

11 A. Yes.