

October 15, 2019

2018 INTEGRATED RESOURCES PLAN

NOTICE OF REVISED SCOPE, UPDATED SCHEDULE, AND OPPORTUNITY FOR PUBLIC COMMENT

I. Background of the Proceeding

Pursuant to Section 16a-3a(b) of the General Statutes of Connecticut, the Department of Energy and Environmental Protection (DEEP, or Department) initiated this proceeding to develop an Integrated Resources Plan (IRP) to assess (1) the energy and capacity requirements of customers for the next three, five and ten years, (2) the manner of how best to eliminate growth in electric demand, (3) how best to level electric demand in the state by reducing peak demand and shifting demand to off-peak periods, (4) the impact of current and projected environmental standards including, but not limited to, those related to greenhouse gas emissions and the federal Clean Air Act goals and how different resources could help achieve those standards and goals, (5) energy security and economic risks associated with potential energy resources, and (6) the estimated lifetime cost and availability of potential energy resources.

DEEP initiated the IRP proceeding in 2018 and received stakeholder comment on a preliminary scope. Since the time the IRP was initiated, however, new market and policy developments have occurred. In the intervening period since the IRP was first initiated, DEEP conducted multiple competitive Requests for Proposals for zero carbon resources and selected projects that deliver energy equal to approximately 56% of the electric distribution companies' load,¹ and zero carbon attributes associated with an additional approximate 6.6 million MWh. Landmark legislation authorizing DEEP to procure up to 2,000 MW of offshore wind was enacted, including a requirement that DEEP establish a schedule for the solicitation of 2,000 MW of offshore wind in the aggregate by December 31, 2030. And on September 3, 2019, Governor Lamont signed Executive Order No. 3 directing DEEP, in consultation with the Public Utilities Regulatory Authority as appropriate, to “analyze pathways and recommend strategies for achieving a 100% zero carbon target for the electric sector by 2040” in the IRP (the “Zero Carbon Strategy”).²

These developments warrant a revision to the IRP scope and additional opportunities for stakeholder engagement to ensure that the IRP's analysis and recommendations address current issues of importance for Connecticut's electricity sector. At the same time, there are portions of the IRP draft that are ready for stakeholder feedback and are unaffected by the market and policy

¹ Assumes the electric distribution companies have an annual load of 25.7M MWh.

² Available at <https://portal.ct.gov/-/media/Office-of-the-Governor/Executive-Orders/Lamont-Executive-Orders/Executive-Order-No-3.pdf>

developments noted above. DEEP will therefore be advancing the IRP draft in segments for public comment, to ensure efficient and timely completion of the policy process.

DEEP will consult with the Office of Consumer Counsel, the Public Utilities Regulatory Authority (PURA), and the electric distribution companies throughout the IRP process to leverage their expertise and better inform future proceedings, including but not limited to PURA Docket Nos. 17-12-03RE10, Building Blocks of Resource Adequacy and Clean Electric Supply, and 17-12-03RE11, New Rate Designs.

II. Revised Scope of Work

DEEP now proposes a revised scope of work, included below, to complete the IRP. Together with the Introduction and Legal Authority (Section 1 in the outline below), the **Policy Assessment of Deregulation** (Section 2) will introduce background information about Connecticut's electricity sector, portions of which were deregulated nearly two decades ago pursuant to Public Act 98-28. The Policy Assessment will explore some of the aims of deregulation at the time, and the evolution of the ISO-NE markets as well as state jurisdictional markets that were developed to advance the state's commitment to reducing greenhouse gases and other public policies. The Policy Assessment will also detail the performance of the ISO-NE and state jurisdictional markets in meeting Connecticut's comprehensive objectives for the electricity sector, including reliability and environmental outcomes at least cost.

The IRP will also include new modeling for **Clean Energy Pathways Analysis** to achieve a 100% zero carbon grid for Connecticut by 2040, as called for in Executive Order No. 3 (Section 3). For this analysis, DEEP will construct two base cases, including a "business as usual" case and a high electrification case that assumes deployment of electric vehicles (EVs) and renewable thermal technologies (RTT) planned to meet the state's Global Warming Solutions Act, as amended by Public Act 18-82, *An Act Concerning Climate Change Planning and Resiliency*. DEEP will analyze several scenarios, each emphasizing different types of zero carbon technologies, to compare their relative performance in achieving the zero carbon target and maintaining reliability at least cost to ratepayers. Because Connecticut shares its electric grid with the other five New England states, the Clean Energy Pathways Analysis will need to model the New England grid as a whole to obtain the insights needed for the IRP. As such, DEEP will engage counterparts in the other New England states on the development of assumptions and scenarios for the regional grid as part of the Clean Energy Pathways Analysis.

Section 4 of the IRP will consider options for establishing a **Thermal Renewable Portfolio Standard** as required by Section 16a-3a of the Connecticut General Statutes, as amended by Section 10 of Public Act 19-35, *An Act Concerning a Green Economy and Environmental Protection*. This section will survey Thermal RPS models and develop guidance with respect to program features that should be considered if a Thermal RPS is enacted for Connecticut.

Finally, Section 5 of the IRP will develop recommendations based on the foregoing sections of the IRP. Specifically, DEEP expects to recommend strategies for the state to meet the 100% zero carbon grid called for in Executive Order No. 3 based on insights from the Clean Energy Pathways Analysis, and the policy assessment of deregulation. This information will also enable

DEEP to recommend a procurement schedule for offshore wind, as required by Public Act 19-71, and a schedule for phasing down renewable energy credits for biomass facilities, as required by Section 16-245a(g) of the Connecticut General Statutes. Finally, information developed relating to Thermal Renewable Portfolio Standard analysis will be incorporated into the recommendations in Section 5.

1) BACKGROUND & LEGAL AUTHORITY

- a) Global Warming Solutions Act, as amended by Public Act 18-82
- b) Executive Order 3
- c) Progress in meeting current GWSA goals, as amended by Public Act 18-82

2) POLICY ASSESSMENT OF DEREGULATION

- a) Assessment of Connecticut's experience in pursuing its environmental goals, and the original aims of Connecticut's electric sector deregulation statute, in the current deregulated wholesale energy market

3) PATHWAYS TO A 100% ZERO CARBON ELECTRIC GRID (Modeling)

- a) Purpose: determine the amounts, timing, and locations of other resources needed to meet the Zero Carbon Scenario's carbon reduction schedule and its planning and operating reserve requirements based on hourly load and production, resulting in production costs, energy prices, and emission results for the scenario
 - i) DEEP is endeavoring to evaluate meeting Executive Order 3 on an hourly basis rather than on a net annual basis
- b) Base Cases
 - i) Business as usual, reliance on ISO-CELT
 - ii) High Electrification Case (incorporating assumptions related to EV and renewable thermal technology deployment)
- c) Scenario technology emphasis to achieve zero carbon by 2040³
 - i) Offshore wind
 - ii) Solar (grid-scale and BTM)
 - iii) Hydropower plus transmission
 - iv) Nuclear Retention
 - v) Economically optimal mix
- d) Inputs and Assumptions
 - i) CELT (Base Case) and higher load (High Electrification Case)
 - ii) Natural gas fuel price forecast
 - (1) Assume no gas pipeline capacity is built in New England
 - iii) Known and planned plant additions and retirements
 - (1) State-sponsored procurements and policy goals
 - (2) Millstone retirement date
 - iv) Potential carbon-free resources:
 - (1) OSW
 - (2) Onshore wind
 - (3) Grid-scale solar
 - (4) BTM solar
 - (5) Hydropower plus transmission

³ DEEP intends to engage counterparts in the other New England states to most accurately assess future generation mixes.

- (6) Storage
- (7) Nuclear
- (8) Energy efficiency
- e) Reliability Assessment
 - i) DEEP intends to obtain as much help from ISO-NE as possible to accurately model resource adequacy
- 4) THERMAL RENEWABLE PORTFOLIO STANDARD
 - a) Purpose: Develop recommendations for the creation of a portfolio standard for thermal energy.
 - b) Description of the structure
 - c) Setting a thermal target
 - d) Qualifying technologies/fuel sources
 - e) Alternative compliance payments
 - f) Administering a thermal RPS program
 - i) Metering considerations
 - ii) Compliance entities
- 5) RECOMMENDATIONS
 - a) OSW procurement schedule
 - b) Biomass phasedown

DEEP expects that the full IRP will be complete in June 2020, in accordance with the schedule proposed below. However, DEEP expects to release portions of the IRP in advance related to certain subjects (i.e. renewable thermal, regional energy markets, etc.), and will release a new schedule in the near future incorporating those timeframes. In addition, DEEP is reaching out to the other New England States to seek input and incorporate as much information as possible regarding their state policies and goals, including but not limited to electrification, resource mix, and other state-sponsored mechanisms impacting the modeling outlined above.

III. Tentative Proposed Schedule and Opportunities for Public Comment

1. Revised Scope and Procedural Schedule – October 15, 2019
 - a. Written comments due on Revised Scope and Procedural Schedule – October 29, 2019
2. (Section 3) Detailed Modeling Scenarios and Base Case Assumptions for Clean Energy Pathways Analysis
 - a. DEEP to release draft scenarios and assumptions – Early November 2019
 - b. Technical Meeting on Scenarios and Assumptions – Mid-November 2019
 - c. Written Comments due on Modeling Scenarios and Assumptions – Late November 2019
3. (Section 4) Thermal Renewable Portfolio Standard Discussion Draft
 - a. DEEP to release draft – Early November 2019
 - b. Technical Meeting – Mid-November 2019
 - c. Written Comments due on Thermal Renewable Portfolio Standard Discussion Draft - Mid-November 2019
4. (Sections 1 & 2) Background, Legal Authority, and Policy Assessment of Deregulation
 - a. DEEP to release white paper – December 2019

- b. Technical Meeting – December 2019
- c. Written Comments – Late December 2019
- 5. Release final Clean Energy Pathways Analysis (Section 3), and Recommendations (Section 5) – June 2020
 - a. Public Hearing and Technical Meeting – July/July 2020
 - b. Written Comments – August 2020
- 6. Release consolidated Final IRP – Fall 2020

IV. Request for Written Comments on Revised Scope and Procedural Schedule

Written Comments: DEEP welcomes written comments on the IRP revised scope of work, tentative procedural schedule, and questions below. Written comments may be filed electronically on [DEEP's website](#) or submitted directly to DEEP at DEEP.EnergyBureau@ct.gov on or before **October 29, 2019 by 4:00 p.m. EPT.** All materials submitted by stakeholders in this proceeding will be posted on the DEEP website. Any questions may be directed to Sean Condon at (860) 827-2618 and/or via e-mail at DEEP.EnergyBureau@ct.gov.

1. DEEP is proposing to analyze the state's ability to achieve a 100% zero carbon electric sector by 2040 using hourly accounting for electric load and production. Comment on this approach.
2. Connecticut has energy policy mechanisms that support carbon-generating resources that are important public policy resources, like waste-to-energy, combined heat and power, biomass, and fuel cells. Should these resources be included in Connecticut's accounting to achieve a 100% zero carbon electric sector by 2040? If so, how?
3. What resource mix should DEEP consider in each of the scenarios under II.3.c above?
4. What load profile and/or should DEEP include in the High Electrification Case in II.3.b.ii. above?
5. Given the finding that Millstone is At-Risk of retiring prior to the expiration of operating licenses, DEEP is assuming Millstone Units 2 and 3 retire in 2029, at the end of the contract with the state's electric distribution companies. Please provide comment on whether this is the appropriate approach.
6. What is the availability, operating potential, and/or likelihood of deployment for each of the carbon-free resources listed in II.3.D.iv. above?
7. How should the Global Warming Solutions Act, as amended by Public Act 18-82, and Executive Order 3 be applied to or take account of Connecticut's municipal cooperatives?
8. What considerations, if any, should strategies developed to meet the 100% zero carbon electric sector goal Executive Order 3, include with respect to third-party suppliers and competitive retail electricity supply?

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service; have limited proficiency in English and may need information in another language; or if you wish to file an ADA or Title VI discrimination complaint. Any person needing a hearing accommodation may call the State of Connecticut relay number - 711. Requests for accommodations must be made at least two weeks prior to any agency hearing, program or event.