



August 31, 2022

## 2022 Procurement Plan Update

### Summary

Connecticut's Integrated Resources Plan (IRP) identifies resource needs for a clean, affordable, and reliable electricity supply for the State.<sup>1</sup> The most recent IRP, completed in 2020, included extensive modeling and analysis of strategies to achieve six key objectives, including: (1) decarbonizing the electricity sector, (2) securing the benefits of competition and minimizing ratepayer risk, (3) ensuring energy affordability and equity for all ratepayers, (4) optimal siting of generation resources, (5) upgrade the grid to support and integrate variable and distributed energy resources, and (6) balancing decarbonization and other public policy goals. The IRP included a schedule for future procurements of electricity supply, and called for updating that schedule at least annually to account for any contingencies or changed conditions.<sup>2</sup>

The 2020 IRP conducted extensive modeling of the New England power sector. Modeling assumptions were based on information and variables known and knowable through January 31, 2020. The modeling found that a 100% zero-carbon electric supply for Connecticut is achievable, and predicted that Connecticut would need to conduct its next procurement for zero-emission Class I renewables between 2023 and 2024 in order to ensure those resources begin operating by 2026-2027.

This 2022-2023 IRP Procurement Plan Update includes:

1. A review of contingencies and changed conditions since the 2020 IRP,
2. A revised schedule for procurement of electricity supply resources by DEEP

At a high level, contingency changes identified by DEEP for this update include the following:

- Statutory enactment of the 100% zero carbon electric sector target;
- Existing procurement deployments or terminations;
- Transmission resources and constraints;
- New storage procurement authority;
- Continuing grid reliability and resilience challenges;
- Passage of the federal Infrastructure Investment and Jobs Act;
- Passage of the federal Inflation Reduction Act;
- Solid waste management challenges affecting the supply of relevant Class II and Class I resources in the waste sector.

These are each discussed in greater detail below. Collectively, these changes have motivated the following four actions in this Procurement Plan:

---

<sup>1</sup> Conn. Gen. Stat. § 16a-3a

<sup>2</sup> CT DEEP, *Integrated Resources Plan: Pathways to Achieve a 100% Zero Carbon Electric Sector by 2040* (Oct. 2021).

1. Conduct a procurement for solar resources utilizing existing procurement authority to offset, or replace, the contracted capacity losses that have occurred since IRP modeling results were finalized due to project termination.
2. Consider cost-effective strategies for transmission upgrades to unlock additional offshore wind resources, including in coordination with other states in the region; and pursue federal funding for such upgrades as needed.
3. Conduct a procurement for transmission and distribution-connected front of the meter energy storage based on identified needs and determine whether other resources, like demand response, could also meet those needs.
4. Consider procurement of energy and REC contracts for anaerobic digestion facilities to help address the State's materials management infrastructure needs.

### Review of Contingencies and Changed Conditions

Since the completion of the 2020 Integrated Resources Plan, the enactment of certain state and federal legislation, as well as emerging infrastructure needs, have led to changed conditions that support the four actions detailed in this Procurement Plan. Each of these contingencies and changed conditions are detailed below.

#### Statutory Enactment of the 100% Zero Carbon Electricity Supply Target

As directed by Governor Lamont's Executive Order 3, the 2020 IRP modeled multiple pathways to achieve a 100% zero carbon electric sector goal. This modeling shows that Connecticut has made significant progress towards achieving this goal already and demonstrates multiple achievable ways to meet a zero carbon electric sector by 2040. In 2022, Public Act 22-5, *An Act Concerning Climate Change Mitigation*, was enacted which now establishes the 100% zero carbon electric sector by 2040 goal as a statutory target. This statewide statutory target makes it essential for DEEP to prioritize zero emission resources in its future procurements and other policy recommendations for the electric sector.

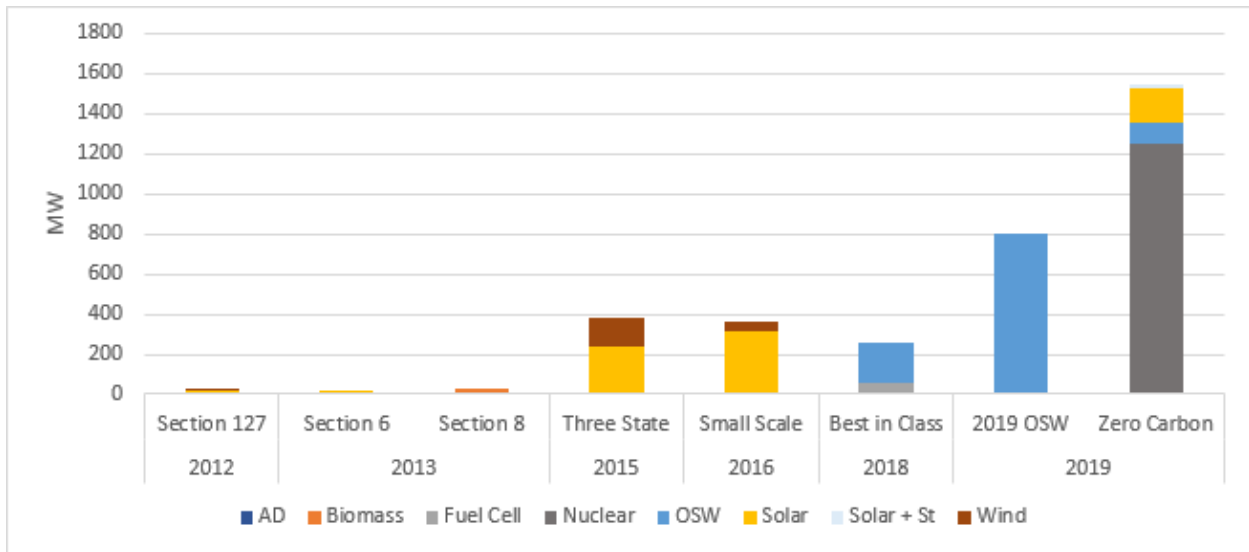
#### Deployment of Existing Contracted Resources

Connecticut DEEP has executed eight grid-scale renewable energy procurements since 2011, resulting in the selection of over 2.1 GW of new Class I resources, and 1.25 GW of nuclear resources, as shown by Figure 1. Of those new Class I resources, 433 MW are currently operational, equivalent to 5.3% of our electric distribution company (EDC) load, with another 1,460 MW under development, equivalent to 24% of our EDC load.<sup>3</sup>

---

<sup>3</sup> Of the 433 MW operating, 29.6 MW are from biomass, 20.6 MW are from fuel cells, 247 MW are from solar, and 136 MW are from land-based wind. The 1,460 MWs of projects under development does not include the recently-terminated contracts discussed in more detail below.

**Figure 1 Contracted Resources by Procurement by Type**



*Updates on solar project terminations*

While all of DEEP’s RFPs are designed to ensure that proposed projects have a high likelihood of successful commercial operation, there are sometimes unavoidable external factors that result in project termination. Such factors can include, but are not limited to, siting and permitting issues, interconnection costs, or more recently, the commercial impacts caused by the COVID-19 pandemic. The project developer bears the risks and responsibility for achieving commercial operation for selected projects, and utility ratepayers do not pay any contract costs for projects that fail to achieve commercial operation. Nevertheless, the failure of projects to achieve commercial operation delays the achievement of grid decarbonization, economic development, fuel diversity and other benefits associated with the selected projects. Since the completion of the IRP modeling, 1.2%, or 170 MWs of solar and land-based wind energy projects (totaling more than 303,000 MWhs per year) selected by DEEP through its statutory authority have been terminated.

These were not the last of previously selected projects’ construction schedules to be impacted by the pandemic, either. On December 23, 2021, DEEP notified Eversource and United Illuminating via letter that ten renewable energy projects selected under DEEP procurements had exhausted all of their Critical Milestone extensions allowed under their respective PPAs and would likely continue to experience delays due to the COVID-19 pandemic. The Department proposed that the EDCs offer the 10 projects the option to purchase an extension on their Critical Milestone Dates, including the commercial operation date, for up to 18 months on a one-time basis.<sup>4</sup> On January 5, 2022, Eversource and United Illuminating jointly submitted a motion into dockets 17-01-11 and 18-06-37, attaching DEEP’s letter and requesting that PURA approve DEEP’s recommendation. PURA granted the motion on January 19, 2022, noting that the ruling

<sup>4</sup> Eversource & United Illuminating, Joint Motion for Approval to Extend Commercial Operation Date-- on a One-Time Basis—for State-Approved Renewable Projects, PURA Docket No. 18-06-37 *PURA Review of Clean Energy and Renewable Resource Agreements Selected in Response to DEEP’s Jan. 31, 2018 Request for Proposals from Private Developers for Clean Energy* and PURA Docket No. 17-01-11 *PURA Review of Public Act 15-107(b) Small Scale energy Resource Agreements*, January 5, 2022, available at: <http://www.dpuc.state.ct.us/2nddockcurr.nsf/8e6fc37a54110e3e852576190052b64d/b40fc1eb122f0712852587c200473a32?OpenDocument>.

was “an acknowledgement that the COVID-19 pandemic....may have resulted in an inability for some of these projects to successfully reach operation in a timely fashion.”<sup>5</sup>

The Department is monitoring whether the eligible projects accepted the option to extend their milestones and reach commercial operation but notes the volatility that projects have had to face over the last two years. Ensuring that selected projects reach commercial operation is critical to planning Connecticut’s pathway to zero carbon by 2040.

In addition, the recent passage of the federal Inflation Reduction Act has provided for extensions of both the production tax credits and investment tax credits for zero carbon Class I renewables like solar. A procurement of zero emission renewable projects at this time has the potential to secure projects at a lower cost to ratepayers, as a result of developers being able to take advantage of federal tax incentives that further lower the cost of investing in new resources.

DEEP will exercise its existing procurement authority to receive and evaluate for potential selection projects that could replace these lost resources.

#### Availability of Transmission Resources

##### *Offshore wind interconnection*

The 2020 IRP noted that a key element of New England’s transition to a clean energy grid will be development of additional offshore wind.<sup>6</sup> Under the current procurement paradigm in the region, states contract OSW generation through power purchase agreements and OSW developers take responsibility for transmission interconnection, interconnecting at a point selected by the developer, with no proactive regional planning that takes landside reliability impacts into account. As additional offshore wind is interconnected under this paradigm, significant landside transmission upgrades will be necessary to enable interconnection of any material amount of additional offshore wind, and these upgrades will cost billions of dollars.

It typically takes ten or more years to plan and develop major new transmission infrastructure. However, the Federal Energy Regulatory Commission (FERC) is evaluating reforms to the transmission planning process to streamline interconnection and permit proactive planning to identify the most cost-efficient OSW transmission system, which is anticipated to be complete by 2023.

At the same time, the U.S. Department of Energy (DOE) is studying the most efficient points of interconnection to permit the lowest cost deployment of transmission infrastructure. Separately, later this year, DOE is expected to release the application process to access loan guarantees and other financial assistance for the development of major new OSW transmission lines in furtherance of the Infrastructure

---

<sup>5</sup> PURA, Response to Joint Motion for Approval to Extend Commercial Operation Date-- on a One-Time Basis—for State-Approved Renewable Projects, PURA Docket No. 18-06-37 *PURA Review of Clean Energy and Renewable Resource Agreements Selected in Response to DEEP’s Jan. 31, 2018 Request for Proposals from Private Developers for Clean Energy* and PURA Docket No. 17-01-11 *PURA Review of Public Act 15-107(b) Small Scale energy Resource Agreements*, January 19, 2022, available at: [http://www.dpuc.state.ct.us/2nddockcurr.nsf/8e6fc37a54110e3e852576190052b64d/fa27a3d2ef70966d852587cf0052fcfd/\\$FILE/18-06-37%20Joint%20Motion%20No.%2025%20Ruling.pdf](http://www.dpuc.state.ct.us/2nddockcurr.nsf/8e6fc37a54110e3e852576190052b64d/fa27a3d2ef70966d852587cf0052fcfd/$FILE/18-06-37%20Joint%20Motion%20No.%2025%20Ruling.pdf).

<sup>6</sup> 2020 Integrated Resources Plan, Objective 5, pp. 131-133, Strategy 5. pp. 175-181,

Investment and Jobs Act.<sup>7</sup> These DOE opportunities will be competitive and time-sensitive, and have the potential to lower the cost to state ratepayers associated with new transmission investments.

No relevant amount of OSW from the New England leasehold can be interconnected until transmission issues have been resolved. One near-term step will be the issuance of a request for information (RFI) from developers and transmission providers for the best solutions. The information from such an RFI, along with the rapidly developing studies at DOE and tariff reforms at FERC, would provide state planners the ability to prepare an RFP to design and develop the needed transmission solutions in the 2030-2035 timeframe. Consequently, to avoid expensive, time consuming and possibly unnecessary landside system upgrades, it would be best to delay any new procurement of OSW until the steps above have been taken.<sup>8</sup> DEEP will seek to undertake these actions in concert with neighboring states wherever possible, given the regional benefits of offshore wind transmission investments.

#### Energy Storage Procurement Authority

In 2021, the Legislature passed P.A. 21-53 which set an energy storage deployment goal for Connecticut of 1,000MW by 2030. This act authorized DEEP to issue RFPs for energy storage projects connected at the transmission or distribution level, including stand-alone energy storage projects and energy storage projects paired with Class I renewable energy sources or hydropower facilities not more than 100 MW. The projects must be cost-effective, and DEEP is encouraged to consider factors such as whether the projects are in the best interest of ratepayers, how they can increase grid reliability, if they contribute to economic development, how they can help reduce greenhouse gas emissions in the state, and their consistency with the CES and IRP.

Objective 5 of the 2020 IRP highlighted multiple roles that energy storage resources could serve in a zero-carbon electric grid, including curtailment reduction and other load balancing benefits for variable energy resources, peak load generation, resource adequacy, and reliability services, but the modeling did not account for this procurement authority. Given the current structure of ISO New England markets, however, the value of energy storage resources, and other resources needed to meet our climate goals, are not necessarily accounted for and properly incentivized. In addition, energy storage has the potential to play an important role in avoiding distribution and transmission system upgrades that may be associated with large amounts of new electric demand with electric vehicles and interconnection of variable energy resources. Nearly all of the scenarios included at least 1,000MW of storage deployment, but anticipated installation in the early 2030's rather than pre-2030. In order to achieve the goal set by PA 21-53, DEEP opened a proceeding on October 7, 2021 and held a technical meeting on November 10, 2021. The purpose of this proceeding is to inform future energy storage procurements and what the most strategic opportunities for grid-scale storage there are in Connecticut. Presenters at the technical meeting responded to 12 questions in the [Notice](#). DEEP also provided an opportunity for written comments which were received by December 2, 2021.

The recent enactment of the federal Inflation Reduction Act has established tax incentives for stand-alone energy storage. These incentives have the potential to further reduce the ratepayer cost associated with investment in new storage projects in the region.

---

<sup>7</sup> Pub. L. 117-58

<sup>8</sup> However, the transmission infrastructure comments above do not apply to new procurements of non-OSW zero carbon resources.

Given the added uncertainties discussed above since the IRP modeling, the availability of federal tax incentives, and the need to jumpstart the energy storage market in the state in anticipation of the need for a significant amount of storage to meet our 2040 electric sector goal, DEEP finds it is in the interest of the State to seek bids for energy storage proposals pursuant to P.A. 21-53. DEEP will continue to push for market reforms, consistent with IRP goals, to ensure that these resources are properly compensated and valued in the ISO New England markets. DEEP will analyze Connecticut's electric system through modeling to find the best use cases, appropriate incentive and contract structures, and potentially identify the best locations, for grid-scale energy storage systems. Use cases may include the ability to displace inefficient and emitting peaking units, support the integration of variable energy resources, and the interconnection of large loads associated with electrification of the transportation and buildings sectors. Once these use cases are identified, DEEP will seek storage proposals to target identified needs. DEEP also intends to explore whether the benefits associated with the identified use cases could be achieved through other resources, like demand response.

#### Federal Legislation (IIJA and IRA)

In November 2021, the federal Infrastructure Investment and Jobs Act (IIJA) became Public Law 117-58. The IIJA introduced numerous funding opportunities that were not anticipated in the 2020 IRP but could advance the state towards its 2040 goal. One non-competitive grant is for Preventing Outages and Enhancing Resilience of the Electric Grid, which could be used for projects that support the IRP objective to balance decarbonization and other public policy goals, as well as the objective to upgrade the grid to support and integrate variable and distributed energy resources. Another notable opportunity is a competitive grant available to states for Electric Grid Reliability and Resilience Research, Development, and Demonstration, which could be used for transmission system upgrades, furthering progress toward the IRP objective to upgrade the grid to support variable and distributed energy resources. Additionally, the IIJA expanded the scope of the State Energy Program (SEP) funding, which is a grant that Connecticut will receive to enhance energy security, advance state-led energy initiatives, and maximize the benefits of decreasing energy waste. SEP funding could go towards many of the state-led energy initiatives identified as Strategies in the IRP. DEEP is actively monitoring federal guidance as it is released and intends to align its authority and programs with federal initiatives, to the extent practicable, to maximize federal funding to the State.

In August 2022, the federal Inflation Reduction Act (IRA) became Public Law 117-169 and provides several tax incentives and funding opportunities to reduce greenhouse gas emissions and invest in domestic energy production and manufacturing. The most notable opportunities relevant to this Procurement Plan are extended production and investment tax credits for zero carbon resources, like solar, that can reduce the cost of these resources for Connecticut ratepayers. In addition, Section 50152 of the IRA provides grant funding for siting impacts analyses and alternatives analyses for transmission projects, and Section 50153 of the IRA provides funding to convene stakeholders, and conduct planning, modeling and analyses relating to interregional offshore wind transmission buildout. DEEP will continue to monitor these new funding opportunities for alignment with its regional transmission planning coordination.

#### Solid Waste Management

As noted in the IRP, the Hartford Resource Recovery facility owned by the Materials Innovation and Recycling Authority (MIRA), the second largest WTE facility in the state, was expected to come offline and has now closed, as of July 2022. Without the MIRA facility, the state is relying more heavily on out-

of-state landfills for municipal solid waste disposal, in conflict with the state's statutory waste hierarchy of preferred disposal options in its Comprehensive Materials Management Strategy. Thus, the 2020 IRP emphasized the importance of implementing policies, including energy policies, that can help states and municipalities adopt more sustainable materials management programs and policies that reduce reliance on disposal via WTE or landfilling.

One such policy that diverts organic waste from the waste disposal stream is through the use of anaerobic digestion. The state has energy policy incentives to support the deployment of anaerobic digestors, including the fact that they qualify for Class I renewable energy certificates and can participate in the Non-Residential Renewable Energy Solutions program for on-site resources. In addition, DEEP has authority to procure up to 10 MW from anaerobic digestors that are animal feeding operations and collocated on land used for the purpose of farming under Section 16a-3p of the General Statutes, and has authority remaining under Section 16a-3h for an additional approximate 6 MW from anaerobic digestors.

In response to the MIRA retirement, DEEP will utilize this existing procurement authority to consider supporting these resources that will divert organic waste from the municipal solid waste disposal stream. DEEP will be seeking collaboration with municipalities, Councils of Governments, and potentially Regional Waste Authorities in pursuing any procurement for the above resources, recognizing the comprehensive benefits that could result from aligning any DEEP procurement with infrastructure investment, siting, or complementary programs (e.g., food scrap collection) that are under municipal authority and control.

### Proposed Procurement Process and Schedule Modifications

Achieving a 2040 zero carbon target will require flexible planning that strategically schedules use of the State's existing legislative procurement authority. Prudent use of authority will ensure cost-effective projects and best-use applications. This procurement update serves as an inventory of recent contingencies and changed conditions that may influence the IRP's modeled pathways, allowing Connecticut to stay nimble in its planning and seek the most cost-effective options in the market for Connecticut ratepayers. Based on the inventory of issues raised above, DEEP has determined that accelerating the timeline of procurements originally laid out in the 2020 IRP is warranted.

In the second half of 2022, DEEP will initiate a procurement for solar to replace the capacity lost due to recent project terminations. Concurrently, DEEP will seek to coordinate with other states in the region and release an RFI from developers and transmission providers for the best transmission solutions in an effort to align with federal funding opportunities. In addition, DEEP will identify the best use cases for transmission and distribution-connected front of the meter energy storage in the State and will conduct a procurement for energy storage systems that meet those identified needs and analyze whether other resources like demand response could also meet those identified needs and whether existing programs could support those resources. Finally, DEEP will initiate an RFI for anaerobic digestors to support the state's solid waste management goals in light of MIRA's retirement.

Throughout these proceedings, DEEP will be monitoring federal guidance on IIJA and IRA funding and may propose innovative procurement structures that leverages new federal funding opportunities, and weaves in reliability and resiliency into proposals. In the notices for these procurement processes, DEEP will also be proposing opportunities for engagement with stakeholders and experts on minimization of impacts to

natural resources, agricultural lands, and other sensitive resources as part of each of these procurement processes. DEEP also will be proposing processes to ensure investments are aligned with equity and environmental justice principles and values.