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Connecticut Department of Energy and Environmental Protection
2018 Integrated Resources Plan
Written Comments on Revised Scope and Procedural Schedule

The New England Power Generators Association (NEPGA)[1] appreciates the opportunity to provide comments on the Department of Energy and Environmental Protection's (DEEP) 2018 Integrated Resources Plan (IRP) Revised Scope and Procedural Schedule.

NEPGA is the trade association that represents competitive electric generating companies in New England. NEPGA's member companies account for approximately 25,000 MW – or approximately 90% of all generating capacity throughout New England - and roughly 8,074 MW of the generating capacity in Connecticut. NEPGA companies also provide thousands of well-paying, highly skilled jobs to the state's workforce, pay millions of dollars in taxes to the state and its cities and towns and contribute millions of dollars in income taxes paid by employees. NEPGA's mission is to support competitive wholesale electricity markets in New England. We believe that open markets guided by stable public policies are the best means to provide reliable and competitively-priced electricity for consumers. A sensible, market-based approach furthers economic development, jobs and balanced environmental policy for the region.

The IRP presents an opportunity for Connecticut to provide a long-term view of the state's energy future. NEPGA suggests that DEEP include three issues that are important aspects of that future in the Revised Scope. First, the IRP should consider adoption of economy-wide pricing on carbon dioxide (CO_2) emissions[2] (i.e., not just electricity generation). Encouraging other carbon sources (e.g., buildings and transportation) to electrify via economy-wide price signals will be an effective pathway to encourage and achieve the 100% zero carbon electricity grid envisioned by Governor Ned Lamont's Executive Order No. 3 while reducing carbon emissions from other sources. Second, the IRP is an ideal vehicle for assessing Connecticut's energy storage needs, exploring existing opportunities in the competitive markets to meet those needs, and planning implementation of the energy storage provisions of Public Act 19-35, *An Act Concerning A Green Economy and Environmental Protection*. Third, the IRP should assess the impacts of current state energy and environmental policies on existing

[1] The comments expressed herein represent those of NEPGA as an organization, but not necessarily those of any particular member.
[2] Such pricing can be phased in and the IRP analysis could include sensitivities to provide insight with respect to what could be achieved with varied alternatives so as not to create excessive consumer impacts.

generating resources, particularly those dispatchable and flexible resources that will be needed during a transition to a 100% decarbonized electricity grid by 2040. Therefore, NEPGA recommends that DEEP include economy-wide CO_2 pricing in its analysis of Pathways to a 100% Zero Carbon Electric Grid and use the IRP scoping process to conduct a comprehensive evaluation of energy storage and set a path for implementation of Public Act 19-35 energy storage provisions.

In its November 16 notice, DEEP states that new policy and market changes that have occurred since it initiated the IRP process in June 2018 now "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." Since the IRP was initiated, policymakers in Connecticut and in other northeast states have introduced CO_2 pricing legislation or proposed similar market-based compliance mechanisms designed to reduce economy-wide CO_2 emissions and meet state environmental targets.[3] For example, the Transportation and Climate Initiative (TCI) in October released a draft framework for a "cap-and-invest" program aimed at reducing CO_2 emissions from transportation sources, similar to the Regional Greenhouse Gas Initiative (RGGI). On June 28, 2019, Governor Lamont signed into law Public Act 19-35, which, among other things, amends Connecticut's restructuring act to expressly allow the state's electric distribution companies (EDCs) to build, own and operate energy storage systems. Public Act 19-35 further allows the Public Utilities Regulatory Authority (PURA) to authorize the EDCs to recover prudently incurred costs of and investments in those energy storage systems from their customers through a reconciling mechanism and in future base distribution rates.

These policy developments have significant implications for Connecticut's energy policy that justify inclusion in the revised IRP scope and stakeholder process. In light of these developments, DEEP and stakeholders should include adoption of an economy-wide price on CO_2 as part of a comprehensive analysis of Pathways to a 100% Zero Carbon Electric Grid. The IRP should also identify the state's energy storage needs and establish a regulatory framework to ensure that Connecticut's energy storage policies avoid harm to the region's competitive wholesale electricity markets, encourage robust competition, and protect the state's ratepayers from undue risk. The IRP offers the opportunity to lay the foundation for the necessary governing framework in advance of any specific proposal by utilities for such rate-base storage projects. NEPGA strongly urges DEEP to provide the certainty necessary for the competitive marketplace by creating an open deliberative process, as proposed below.

The IRP Should Include Analysis of Carbon Pricing

The IRP's modeling of Pathways to a 100% Zero Carbon Electric Grid should include analysis of the effects of a regional, economy-wide CO_2 price on the electricity sector and its potential to help Connecticut achieve its ambitious environmental goals. That effort could be informed in part by the achievements of New England's competitive

[3] SB 74, *An Act Establishing Carbon Pricing*

wholesale electricity markets, which have produced a cleaner, more efficient fleet of power plants driven in part by innovations spurred by competition.

Since 1990, power plants have decreased CO_2 emissions by 46%. This is the most of any sector of the economy over the same period according to recent data released by the U.S. Energy Information Agency (EIA). Much of these reductions can be attributed to the innovations and efficiencies driven by private investment in New England's power plants following the restructuring of the region's electricity industry. Since 1999, the efficiency (measured in heat rate) for power plants in New England improved by 22%. This means that the electricity output that used to take four plants to produce today takes only three. Moreover, the rapid decline of natural gas prices over the last 15 years has spurred major investments in new generating facilities and improvements at existing plants that have driven a dramatic shift from primarily burning coal and oil to using natural gas for electric generation. In 2000, 40% of the electricity produced in New England was generated from coal and oil resources. Today, coal and oil plants account for just 2% of the region's resource mix. Finally, the transparency and inclusion of RGGI costs in the competitive markets provide investors with additional signals to improve emission profiles.

As such, the IRP's study of a CO_2 price could be informed by the region's experience with RGGI. RGGI demonstrates that a market-based approach can be incorporated into the competitive wholesale electricity market and help states meet their environmental policy objectives. However, to achieve the CO_2 reductions contemplated by Executive Order No. 3, a stronger price signal will be required – a price signal that crosses all areas of the economy. Accordingly, rather than continue with approaches to further subsidize electricity supply resources to meet CO_2 emissions mandates, the IRP should study a more efficient market-based mechanism structured similarly to RGGI, but with a broader and stronger price signal.

A sufficiently stringent economy wide CO_2 price would drive behavioral change in consumers across all sectors of the economy. These consumers will seek low and zero-carbon alternatives, while providing investors, entrepreneurs, and manufacturers with the financial incentive to develop clean energy technologies to meet consumer demand and state policy objectives. In competitive wholesale electricity markets, participants rely on transparent price signals to guide investment decisions to reliably supply electricity when and where it is demanded and needed. Setting the right CO_2 price would facilitate the dispatch of more efficient resources and give investors and developers the confidence to invest in the kinds of technologies that will be needed to meet the CO_2 emissions reductions goals sought by Executive Order No. 3. Those new technologies would span the economy to include not only low and zero carbon electric power resources, but also electric vehicles (EVs), EV infrastructure, and renewable thermal conditioning of buildings.

The IRP scope should also include an assessment on how to better utilize RGGI and other potential market-based mechanisms to achieve Connecticut's clean energy goals

with the fundamental principles of fostering competition, innovation and reliability at the lowest possible price.

The IRP Should Assess Storage Needs

NEPGA also recommends that the revised IRP scope include an assessment of Connecticut's energy storage needs within the context of Public Act 19-35 and consider the most efficient and competitive options to meet those needs. The final IRP should articulate how energy storage would advance Connecticut's policies, including greenhouse gas emissions reductions targets required by law and the decarbonization goals established under Executive Order No. 3. The IRP should evaluate the array of services that energy storage technologies can provide to reduce peak demand, firm up intermittent power from renewable resources and provide reliability and resiliency services. The assessment should consider ownership of energy storage systems and their associated energy and capacity rights and whether any incentives properly align with Connecticut's energy policy goals and private/competitive investment. The assessment should also examine the potential ratepayer cost of energy storage deployment if developed by a rate regulated utility, as contemplated by Public Act 19-35. NEPGA encourages DEEP to work with ISO New England on this assessment for a comprehensive analysis of energy storage in the context of the region's competitive wholesale electricity markets. This analysis would provide DEEP and PURA with a foundation for evaluating efficient energy storage planning and procurement and guide regulatory decision making in the future.

Storage and the Competitive Markets

NEPGA's view is that the revised IRP scope should look first to the region's competitive wholesale electricity markets for the most efficient means to help Connecticut meet its energy storage needs. Since restructuring in the late 1990s, participants in New England's competitive wholesale electricity markets have invested billions of dollars to develop innovative technologies to efficiently and reliably supply electricity when it is needed, all without exposing consumers to the risks of cost overruns or guaranteed rates of return. Today, the region can rely on two large-scale pumped storage facilities that can provide nearly 2,000 MW of capacity within ten minutes as well as 20 MW of existing battery storage resources. The region's competitive markets are poised to add another 1,300 MW of battery storage by 2022, including 20 MW that was procured for the first time through ISO New England's Forward Capacity Auction in February.[4] The wholesale electric market is not an end but a means to achieve state policy goals by using transparent market signals to drive investment and operations in a cost effective manner without ratepayer support.

As DEEP considers implementation of Public Act 19-35 under the revised IRP scope, NEPGA urges DEEP to limit EDC ownership of energy storage systems to the distribution system to avoid disruption to the region's wholesale markets. EDC-owned energy storage should be treated like any other distribution asset and confined to

[4] https://www.iso-ne.com/static-assets/documents/2019/03/2019_reo.pdf

services that support the distribution system. Allowing ratepayer-supported, EDC-owned storage systems to participate in the region's wholesale energy, capacity and ancillary services markets would distort competitive market signals, artificially suppress prices, and potentially displace more efficient resources that rely on market revenues, all while exposing captive ratepayers to the risks of bad investments or cost overruns. EDC investments in energy storage systems lock in technologies that may be obsolete in just a few years, given the investment in technology and competition to produce better batteries for cheaper costs. The competitive markets will ensure that investors, not utility ratepayers, absorb the technology and performance risks of energy storage systems. NEPGA urges the Committee to allow competitive wholesale markets to continue on this successful path and not undermine their benefits through utility developed and owned storage resources with guaranteed cost-of-service or incentive rate recovery.

The IRP Should Establish a Plan for Implementation

The revised IRP scope should include a plan for how the energy storage provisions of Public Act 19-35 will be implemented in the most transparent and competitive means possible.

First, a separate rulemaking would establish regulations based on DEEP's assessment of Connecticut's energy storage needs and the various issues discussed above, including ownership of storage systems and their corresponding energy, capacity and ancillary services, reliability and resiliency services, and deferment of traditional distribution system infrastructure investments. The rulemaking could also include guidance on the deployment of energy storage systems, whether on the distribution system or behind-the-meter, and provisions that limit the size of distribution-level energy storage, depending on the needs identified in the assessment.

Second, the revised IRP scope should make explicit that any state-mandated storage financed outside of the wholesale market will be the result of a competitive procurement. Any competitive procurement should be as open, competitive and non-discriminatory as possible. Such a procurement process should also seek all qualified energy storage resources regardless of technology type or vintage to maximize opportunities to meet the state's energy storage needs at the lowest cost possible for ratepayers.

Pathways to a 100% Zero Carbon Electric Grid

The goal of a 100% zero carbon electric grid by 2040, as articulated in Executive Order No. 3, should include a review of current and proposed environmental regulations and policies that affect existing fuel secure resources and should consider what fuel security and schedulable or flexible ramping resource needs will need to be met in order to maintain grid reliability during the transition to a zero carbon grid. A grid in transition may have different needs along the way as renewable penetration increases and battery storage technology continues to evolve. It will be important for the state to understand how the timing of any regulations affecting existing resources may interact

with the timing of its clean energy goals and to ensure an orderly transition over the timeline to 2040.

For example, the region's system will likely need to rely on natural gas resources that can respond quickly when solar and wind technologies are unable to perform because of changing weather conditions.[5] These flexible resources will play an important role to balance the system, ensuring ongoing reliability and stability as new zero carbon resources are added and over time. This is true even as electricity storage systems expand and potentially improve to provide energy for longer periods and in greater quantities, It is therefore critical that the state include an assessment and valuation of the resources that will be needed for reliability along the pathway to a 100% zero carbon electricity grid.

Conclusion

The revised IRP scoping process is an optimal opportunity for DEEP to study an economy-wide price on CO_2, plan for implementation of the energy storage provisions of Public Act 19-35 and evaluate the role of existing resources to support a 100% zero carbon grid by 2040. NEPGA urges DEEP to include an evaluation of a CO_2 pricing to meet Connecticut's decarbonization and energy storage needs, the current and future role of the region's competitive wholesale electricity markets to meet those needs, and the importance of regulatory framework and procurement process to ensure the most competitive and cost-effective outcomes. We thank DEEP for the opportunity to provide our perspective on this issue and stand by to serve as a resource throughout the IRP process.

[5] https://www.iso-ne.com/static-assets/documents/2019/03/2019_reo.pdf