Advancing the Clean Energy Future

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Dear Executive Secretary Gaudiosi:

Acadia Center appreciates the opportunity to submit written comments in response to Public Utilities Regulatory Authority (PURA) Docket No. 17-12-03RE07 ("PURA Investigation into Distribution System Planning of the Electric Distribution Companies – Non-Wires Alternatives"). Acadia Center is a non-profit research and advocacy organization committed to advancing the clean energy future. Acadia Center strongly supports the use of non-wires alternatives (NWA) as a tool to lower customer and utility costs, lower emissions, and to help facilitate the deployment of clean energy resources.

Introduction

Non-wires alternatives refer to technologies and energy services that can delay or defer traditional transmission and distribution infrastructure investment. NWA can include energy efficiency, demand response, storage, dynamic pricing, solar PV, microgrids, and other distributed energy resources (DERs). NWA can consist of individual technologies or a portfolio of resources that meet a grid need in a more cost-effective way than traditional "wires and poles" solutions.

Non-wires alternatives have the potential to provide significant benefits to ratepayers and grid operators in Connecticut. By avoiding the need to pay for large infrastructure investments that may become unnecessary in the future, NWA can save ratepayers significant amounts of money. As Connecticut seeks to meet its climate and energy targets, it is critical to avoid wasting ratepayer funds on infrastructure that may become financially stranded, in which case the infrastructure is no longer needed but still needs to be paid for.

Connecticut's electricity grid will likely change considerably in the coming decades as the state reconfigures the infrastructure required to bring unprecedented amounts of utility-scale and distributed energy resources online to meet Connecticut's climate and energy goals. By deploying NWA, rather than more expensive traditional infrastructure that locks in solutions for many years, grid operators in Connecticut will benefit from much greater flexibility. NWA can allow grid operators to quickly adapt and modify resources as grid conditions change over time.

The Boothbay Harbor NWA project is a notable example of the value of this flexibility. Rather than meeting expected load growth with traditional transmission expansion, third-party providers deployed a range of NWA, including energy efficiency, demand response, battery and thermal storage systems, and solar PV. The NWA pilot concluded after several years once it was clear that the expected load growth would no longer materialize. The Boothbay NWA pilot was cheaper than a traditional transmission upgrade and enabled some of the NWA to be decommissioned when no longer needed.

NWA are well-suited to address a wide range of grid needs, including load relief, hosting capacity, reliability, resiliency, and voltage/VAR support. In addressing these grid needs, NWA can provide many benefits. NWA

technologies can reduce line losses, improve efficiency and reliability, and shift load to times of day when electricity is cheaper and the carbon-intensity of the grid is lower, all of which can save money and contribute to lower emissions. NWA can also improve power quality and extend the life of existing equipment, avoiding the need for costly repairs.

NWA screening and solicitation should become integral to normal utility planning processes in Connecticut. With this in mind, Acadia Center respectfully puts forth several recommendations for PURA to consider as it works to establish an NWA program in Connecticut:

- PURA must change the regulatory structure and incentives that serve as the foundation for the current utility business model to support the use of NWA.
- PURA must allow third-party control and ownership of NWA, when cheaper.
- Procurement and solicitation processes must be transparent and sufficiently detailed to ensure robust solutions.
- Benefit-cost methodologies used to evaluate NWA solutions must consider all potential costs and benefits.

While all of these actions are important, taken together they may still not be enough to fully deliver the benefits of non-wires alternatives. To do so, it may be necessary to separate grid planning and owning responsibilities to overcome existing perverse incentives and conflicts of interest. Below, Acadia Center outlines how this framework could work and how it could benefit ratepayers.

Recommendations

NWA screening and solicitation should become integral to normal utility planning processes

The slow progress to date around non-wires alternatives in Connecticut reflects the broader need for reform of the existing utility regulatory framework. Under current utility business models and cost-of-service regulation, utilities are incentivized to invest in large capital infrastructure projects, on which they earn high returns, and to erect barriers to DERs and other NWA solutions that could cut into earnings opportunities. Moreover, current reliability rules incentivize over-estimating grid needs, which raises costs for customers.

PURA must reform existing utility distribution planning processes in order to more effectively facilitate the deployment of NWA. Non-wires alternatives should be a business-as-usual practice for long-term utility planning, rather than consisting of one-off projects that are separate to normal utility operations. The current bias towards the default options of traditional infrastructure investment and against NWA must change.

Below, Acadia Center outlines several recommendations for PURA to consider. While all of these recommendations are important, Acadia Center argues that even more fundamental changes may be required that go beyond the recommendations listed here. In order to truly realize the potential for a modern energy system that addresses consumer and climate needs, we must separate the owning and planning functions for the entire energy system.

1. PURA must change the regulatory structure and incentives that serve as the foundation for the current utility business model to support the use of NWA.

One of the main reasons why NWA have not been utilized at scale is that utilities are not adequately incentivized to deploy them. Under traditional cost-of-service regulation, utilities earn a rate of return on capital infrastructure investment, which incentivizes utilities to invest in those projects, rather than in non-wires alternatives.

In order to make investment in NWA the norm for utility planning, Connecticut needs a new utility revenue model that overcomes the gaps in the traditional cost-recovery model and is, instead, based on savings customers money and lowering emissions. Without reforming the existing utility business model and the regulatory incentives that influence utility decision-making, traditional infrastructure solutions will remain the default option. PURA must remove the regulatory barriers that favor traditional solutions in order to level the playing field for NWA.

PURA should also establish performance incentives that encourage utilities to prioritize NWA. While regulatory mandates can clarify the importance of considering NWA, specific performance incentives for the use of NWA can help to deliver better outcomes by enabling new earnings opportunities based on NWA deployment.

The recently passed House Bill No. 7006 (*An Act Concerning Emergency Response By Electric Distribution Companies, the Regulation of Other Public Utilities and Nexus Provisions For Certain Disaster-Related or Emergency-Related Work Performed in the State*) requires PURA to adopt a performance-based regulation (PBR) framework by June 2022. PURA should ensure that any PBR framework provides clear incentives to encourage the use of NWA.

2. **PURA must allow third-party control and ownership of NWA**.

Stakeholders that are skeptical of third-party ownership and/or operation of NWA point to the risk of utilities not having direct control and therefore not being able to ensure reliability. However, it is possible for third-party entities to successfully manage NWA and for utilities to still have sufficient oversight over reliability. It is entirely feasible to build risk management stipulations into third-party NWA contracts, overcoming the obstacles that utilities typically present as insurmountable when assessing NWA programs.

Third-party control of NWA can reduce costs for ratepayers, enable more comprehensive data collection and better DER forecasts, and can lead to more diverse solutions. Third-party providers can also help utilities better integrate a portfolio of DER solutions in a more cost-effective way.

3. **NWA procurement and solicitation processes must be transparent and sufficiently detailed to ensure robust solutions.**

NWA must become an integral component of utility planning. To that end, PURA should require EDCs to regularly consider NWA by conducting annual distribution screens to evaluate needs and identify opportunities for non-wires alternatives. EDCs should identify projects that do and do not meet screening criteria, and PURA should require solicitations for NWA that meet screening criteria. EDCs should also report in detail on their NWA procurement and solicitation processes to ensure that they have taken appropriate steps to fully compare NWA and traditional investments.

PURA can encourage the procurement of NWA through several methods, including RFPs or auctions, supplementing existing customer programs (e.g. expanding demand response), and/or pricing mechanisms (e.g. using time-varying

rates to shift load, reducing the need for grid expansions). PURA should keep all of these options in mind as it develops a framework for NWA procurement.

RFPs and competitive solicitations must be designed in a transparent way that enables third-party providers to put forward robust solutions. NWA solicitations must provide as much data as possible so developers can be fully informed about the grid needs and the solutions that might be feasible. Third-party providers should have transparent access to data about performance needs, hosting capacity, granular load profiles, estimated costs for traditional solutions, customer demographics, among others. RFPs must include accurate and probabilistic load growth estimates that take electrification into account. They must be actionable and focused on solving a particular problem, not seeking a particular technology. They must also allow for sufficient time for third-party providers to assess the opportunity and develop a coherent proposal.

Beyond third-party management of specific NWA projects, it can also be helpful to establish a neutral third-party administrator for NWA procurement. Third-party NWA administrators can lead to more transparent procurement processes and overcome the utility bias towards traditional infrastructure investment.

For example, in 2019, Maine enacted a statute (*An Act to Reduce Electricity Costs through Nonwires Alternatives*) to develop NWA in Maine to reduce consumer costs and drive consumer benefits. The legislature also required the Public Advocates Office to hire a third-party NWA coordinator who has helped to bring a neutral perspective to the development of an NWA program in Maine and facilitated a robust stakeholder process.

4. **Benefit-cost methodologies used to evaluate NWA solutions must be comprehensive and consider all potential costs and benefits.**

PURA should carefully consider the cost-effectiveness methodology used to evaluate NWA solutions. In order to fully account for the benefits that NWA offer, assessments of cost-effectiveness should include societal benefits and should not be simply be limited to utility costs and benefits.

To take just one example, the utility cost test does not capture the full range of benefits from avoided emissions. To some degree, the price of electricity in Connecticut includes a compliance cost for avoided emissions through implementation of the Regional Greenhouse Gas Initiative (RGGI). However, in order to properly account for these benefits, PURA should recognize the limits of only using the value of avoided emissions as currently embedded in the price of electricity. The existing RGGI compliance costs do not come close to reflecting the full cost of greenhouse gas emissions to society. The 2018 Avoided Energy Supply Components in New England (AESC) study provides a framework for including environmental avoided costs that are not embedded in the price of energy. The AESC framework uses a "marginal abatement cost" approach wherein the NWA would be compared to other methods of reducing emissions, like offshore wind. Acadia Center recommends that any benefit-cost framework include "non-embedded" environmental costs in order to provide a more accurate assessment of the benefits that NWA offer.

PURA should develop a standard methodology to measure the value of NWA solutions. Benefit-cost assessments should be holistic and account for the full range of benefits from NWA, including avoided carbon emissions as well as infrastructure deferral benefits and option values that derive from future potential revenues (e.g. from participation in wholesale markets).

PURA should implement all-encompassing planning and should separate planning and owning

As Acadia Center has demonstrated in EnergyVision 2030, the fastest and most cost-effective way to reach our climate goals is to electrify our transportation and building heating sectors and decarbonize the grid through use of both large scale renewables and distributed energy resources (DER). But to electrify everything, we will need a better grid, better policies, and better, all-encompassing planning so that we can be sure our investments will hold up to future demands, without needing to rebuild to meet each successive climate target.

Today, planning is conducted within silos – fossil gas companies plan for gas usage, electric companies for electric usage – and based on horizons of 5-10 years in the future under the assumption that things stay mostly the same. The planning that Connecticut needs for its electrified future is far more integrated and ambitious. It needs to consider electrification of buildings and transportation alongside energy justice and climate goals; interconnection needs at the same time as electrification; smart meters at the same time as self-healing circuits; phase out of fossil fuels while encouraging local energy resources; reliability at the same time as resiliency; and people at the same time as profit. A siloed planning framework does not allow for a full assessment of non-wires alternatives and could inhibit the consideration of innovative solutions.

In addition, cost-of-service regulation incentives are fundamentally incompatible with NWA, given that they incentivize utilities to invest in large capital infrastructure projects on which they earn high returns, rather than DERs and other NWA solutions that would cut into earnings opportunities under the existing regulatory framework.

To address both of these challenges, Acadia Center recommends that PURA consider separating owning and planning between distinct entities. Rather than the utility conducting its own siloed planning, as well as owning the infrastructure to meet system needs, these responsibilities should be separated into different entities. A "planning entity" would do just that – plan for the future of the system. Instead of a traditional utility, the planning entity would be a new quasi-agency or non-profit established for this purpose. This neutral entity would answer to state regulators and span beyond the existing boundaries of current electric and gas utilities. Using long-range planning that takes into account electrification of heating and transportation, integration of large-scale and distributed renewables, and the need for load to be flexible enough to respond to availability of intermittent resources, the planning entity would identify distribution needs. The planning entity would create markets or run solicitations to identify solutions and select projects that meet key criteria – including grid, consumer, equity, energy justice, and climate objectives.

While the planning entity would hold the responsibility for soliciting solutions to meet grid needs, it would not have a financial stake in the outcome. Such a division would incentivize the planning entity to invest only as much as necessary to ensure resiliency and reliability – rather than gold-plating the grid just to be sure. By removing the existing financial incentives that bias utilities toward traditional utility-owned projects from the equation, this new planning entity would be well-positioned to seek the effective NWA solutions.

The "owning entity," on the other hand, would be the winner of the planning auction. It could be a traditional utility, an aggregator, or a 3rd party developer. The owning entity would design, build, own, and operate the infrastructure or DER assets – or make its own arrangements to contract out such responsibilities.

Separating planning and ownership can help to overcome existing utility incentives toward traditional investments and away from non-wires alternatives. Allowing planning decisions to be made outside of the influence of utility incentives would reduce conflicts of interest within the existing grid planning and management process. And it would lead to planning decisions that better prioritize consumer interests and the changes that are needed to meet our climate targets. By considering fundamental changes to planning processes, PURA can open the door not only for NWA, but also for other technologies and resources that will be critical for meeting the state's clean energy targets.

Conclusion

In summary, Acadia Center respectfully puts forth several recommendations for PURA to consider as it works to establish an NWA program in Connecticut:

- PURA must change the regulatory structure and incentives that serve as the foundation for the current utility business model to support the use of NWA.
- PURA must allow third-party control and ownership of NWA, when cheaper.
- Procurement and solicitation processes must be transparent and sufficiently detailed to ensure robust solutions.
- Benefit-cost methodologies used to evaluate NWA solutions must consider all potential costs and benefits
- Due to the perverse incentives and conflicts of interest presented by cost-of-service-regulation, and the need for consolidated planning to achieve climate goals, it may be necessary to separate grid planning and owning responsibilities and ensure that planning is conducted by a high-level entity, beyond the territory of individual utilities.

Acadia Center looks forward to working with PURA and other stakeholders as this process progresses.

Sincerely,

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