



# STATE OF CONNECTICUT

PUBLIC UTILITIES REGULATORY AUTHORITY  
TEN FRANKLIN SQUARE  
NEW BRITAIN, CT 06051

DOCKET NO. 17-12-03 PURA INVESTIGATION INTO DISTRIBUTION SYSTEM  
PLANNING OF THE ELECTRIC DISTRIBUTION  
COMPANIES

October 2, 2019

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**INTERIM DECISION**

## **INTERIM DECISION**

### **I. INTRODUCTION**

The Public Utilities Regulatory Authority (PURA or Authority) issues the following Interim Decision in Docket No. 17-12-03, PURA Investigation into Distribution System Planning of the Electric Distribution Companies.

This Interim Decision outlines the Authority's framework approach that will be used to investigate methods for equitably modernizing the electric grid in Connecticut (Framework for an Equitable Modern Grid or Framework), including near-term (occurring within the next two years) topics for further investigation in reopened proceedings of this Docket and a long-term plan to ensure continued enhancements to Connecticut's electric grid through a biennial integrated distribution system planning process.

The Framework is designed to foster innovative solutions to address the key challenges and opportunities facing Connecticut's electric sector. In the near-term, the Authority will conduct a series of reopened proceedings, which will provide avenues to vet potential comprehensive and cost-effective solutions, while also laying the groundwork for a long-term integrated distribution system planning process.

The Authority's Framework for an Equitable Modern Grid has four objectives: (1) support (or remove barriers to) the growth of Connecticut's green economy; (2) enable a cost-effective, economy-wide transition to a decarbonized future; (3) enhance customer access to a more resilient, reliable, and secure commodity; and (4) advance the ongoing energy affordability dialogue in the State, particularly in underserved communities. All four objectives are inextricably connected and, thus, no one objective can be accomplished without the others if an Equitable Modern Grid is to be achieved. The realization of each objective can further achievement of the others; the whole of an Equitable Modern Grid is greater than the sum of its parts.

## A. EQUITABLE MODERN GRID

The electric sector is the backbone of the economy. Nationally, the electric sector accounts for approximately five percent of the gross domestic product (GDP).<sup>1</sup> Indirectly, the electric sector contributes much more, enabling businesses and industry to create the goods and services that make up the remaining 95 percent of the GDP and improving productivity, health, safety, comfort, and convenience.

Today, the electric sector faces new challenges. Climate change is increasing the frequency and severity of weather events, rendering the safe and reliable delivery of electricity more difficult. The increased deployment of distributed energy resources (DERs), including customer-sited solar photovoltaic systems (PV), electric storage, and electric vehicles, challenge the typical electric utility business model and the traditional operation of the electric distribution system, thereby impacting the affordability of electricity and, potentially, system reliability. These challenges, as well as others, are even more pressing in light of the increased importance of electricity and electronics to modern society.

In recognition of the aforementioned realities, the Authority adopts the Framework described herein. The Authority's Framework is designed to realize an Equitable Modern Grid and will serve as an opportunity to make the most of these challenges while taking into account policy directives memorialized by the State's elected leaders and their designees. The Framework provides an avenue to comprehensively address the role of the electric sector in delivering a clean and prosperous Connecticut. It is an opportunity to develop a future electric grid that strives to provide equitable and affordable access for all. It is an opportunity to demonstrate Connecticut's leadership on climate change; to lead by example and show that economic and environmental objectives are not mutually exclusive. It is an opportunity to ask for more from the electric sector and to leverage the value of our electric grid for all citizens and businesses.

Indeed, the State is already poised to invest in many of the components of a clean, modern electric grid as a result of the bipartisan leadership exhibited by the Connecticut General Assembly and the Administration of Governor Lamont, such as through the recent enactment of Public Act 19-35, An Act Concerning a Green Economy and Environmental Protection,<sup>2</sup> and Public Act 19-71, An Act Concerning the Procurement of Energy Derived from Offshore Wind.<sup>3</sup> Now, the Authority stands ready to exercise appropriate regulatory oversight with respect to the grid modernization process, as outlined by this Framework, so that we collectively realize the maximum value of Connecticut ratepayers' investment in the electrified economy of the future. Further, in recognition of Connecticut's longstanding commitment to competition as a harbinger of

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<sup>1</sup> See, e.g., Powering America: The Economic and Workforce Contributions of the U.S. Electric Power Industry, M.J. Bradley & Associates, LLC, dated August 2017 (<https://mjbradley.com/sites/default/files/PoweringAmerica.pdf>).

<sup>2</sup> Public Act 19-35, An Act Concerning a Green Economy and Environmental Protection (<https://www.cga.ct.gov/2019/ACT/pa/pdf/2019PA-00035-R00HB-05002-PA.pdf>).

<sup>3</sup> Public Act 19-71, An Act Concerning the Procurement of Energy Derived from Offshore Wind (<https://www.cga.ct.gov/2019/act/pa/pdf/2019PA-00071-R00HB-07156-PA.pdf>).

more productive outcomes, the Framework reiterates the Authority's commitment to the same by leveraging principles of competition in the Framework's procedural design.

The electric distribution system is ground zero in this ongoing dialogue. The Authority has come to expect, appreciate, and rely on the leadership exhibited by the Electric Distribution Companies in the State, and thus looks forward to engaging both with them as well as with all interested stakeholders as we work to realize the objectives of an Equitable Modern Grid articulated in this Decision.

## **B. REALIZING THE OBJECTIVES**

*First*, the Authority's Framework for an Equitable Modern Grid will seek to remove barriers to the growth of the burgeoning Connecticut green economy (objective 1). The Framework will reinforce the State's commitment to the adoption of Zero Emission Vehicles (ZEVs), investigate the comprehensive and competitive inclusion of electric storage as well as other innovative technologies, and will then refresh current standards to enable the safe and efficient interconnection of these resources.

The Framework's first objective is consistent with the clear policy directive of the General Assembly over the past decade as first expressed in Public Act 11-80, An Act Concerning the Establishment of the Department of Energy and Environmental Protection and Planning for Connecticut's Energy Future.<sup>4</sup> In the years since enactment of Public Act 11-80, an impressive suite of varied energy policies have been considered by the General Assembly; however, not all of these initiatives have been incorporated into utility plans or reflected in the Authority's approach to regulation. Thus, the Framework will endeavor to maximize the benefits associated with energy policies duly adopted by State policymakers by addressing any lingering barriers to their cost-effective proliferation through a comprehensive, overarching planning process.

The Authority understands the cost associated with such programs, and is keenly aware of the need to derive efficiencies and ensure net benefits to all ratepayers. Moreover, the Authority understands and appreciates that electric rates are traditionally designed in a way that causes rate increases to disproportionately impact those ratepayers least able to sustain the increased burden, whether the ratepayers are low-income residents or businesses operating on tight margins. The Authority also believes transparency regarding the factors influencing local electricity rates, especially those attributable to regional or federal jurisdictional bodies, are not currently well understood by all ratepayers. Consequently, the Authority is committed to addressing these concerns through the Framework, in part through the exploration of innovative rate designs and targeted initiatives, as well as through the creation of processes to transparently communicate the components and primary drivers of electric rates in Connecticut. Thus, the Framework will first address the central theme of energy affordability in a reopened proceeding, which will tackle finite, near-term objectives and serve as the springboard for an ongoing and active dialogue between the Authority and its stakeholders on this topic.

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<sup>4</sup> Public Act 11-80, An Act Concerning the Establishment of the Department of Energy and Environmental Protection and Planning for Connecticut's Energy Future (<https://www.cga.ct.gov/2011/act/pa/pdf/2011PA-00080-R00SB-01243-PA.pdf>).

*Second*, the Authority's Framework for an Equitable Modern Grid will enable an economy-wide transition to a decarbonized future (objective 2) by not only planning for the decarbonization of power generation, but also for the transportation sector and building heating and cooling sectors. The Framework will leverage the work of the Department of Energy and Environmental Protection (DEEP) in analyzing pathways to a 100 percent zero carbon target for the electric grid by 2040 in the Integrated Resource Plan (IRP) and will ensure that cost-effective, efficient approaches are in place to deliver on those pathways. The Framework will investigate the barriers to, and improve the integration of, distributed energy resources such as solar PV and electric storage. Moreover, the Framework will ensure that the electric sector is positioned to facilitate the deployment of ZEVs and renewable thermal technologies (RTTs) as a pathway to decarbonization.

*Third*, the Authority's Framework for an Equitable Modern Grid will address reliability and resilience standards system-wide, and deploy or enhance the utilization of Advanced Metering Infrastructure (AMI) to provide customers with a more resilient, reliable, and secure commodity (objective 3). Through the Framework, the Authority will investigate new metrics and performance structures focused on the delivery of a better electricity product for all customers, leveraging AMI to ensure that a better product is delivered.

*Fourth*, as discussed above, the Authority's Framework for an Equitable Modern Grid will address energy affordability for *all* Connecticut ratepayers - residential, commercial, and industrial customers (objective 4). Each of the near-term topics outlined in the Framework presents an opportunity to provide net present value benefits to all ratepayers. Specifically:

- AMI is cost-effective if implemented strategically;
- Electric storage can reduce peak load, benefiting all electric customers, and can provide other beneficial services to the distribution grid;
- ZEVs can spread fixed costs over a greater volume of electricity sales reducing electric rates;
- Improving interconnection standards and procedures will save electric distribution companies (EDCs or Companies), developers, and ratepayers time and money;
- Non-Wires Alternatives (NWAs) provide alternative solutions that can defer or lower the cost of distribution system capacity upgrades;
- Improving the cost-effectiveness of current reliability and resilience programs can mitigate future rate increases;
- Finding better approaches to integrating clean energy supply into retail supply will improve administrative efficiencies, at a minimum; and
- Tackling energy affordability for underserved communities will not only decrease uncollectable bills but also empower Connecticut's citizens.

The Framework seeks to leverage the aforementioned opportunities to meet all four objectives of an Equitable Modern Grid.

## **II. BACKGROUND AND CONDUCT OF THE PROCEEDING**

### **A. ORGANIZATIONAL STRUCTURE OF THE INSTANT PROCEEDING (PHASE I)**

On January 22, 2018, the Authority issued a Notice of Proceeding in the instant, uncontested docket. PURA stated in the Notice that it would investigate the distribution system planning of the EDCs by: evaluating the current state of the distribution systems and plans; categorizing the short- and long-term needs and drivers of the distribution systems; and considering the evolving distribution grid and electric system itself, including “whether any new or modified planning objectives, metrics, solutions, performance incentives, oversight and/or procurement mechanisms should be implemented.”

In the Notice of Final Scope of this Proceeding, issued on May 8, 2018, the Authority divided the proceeding into two phases. Phase I thoroughly investigated the three topics outlined below.

- Topic 1: What are the key cost drivers associated with maintaining and modernizing the electric distribution system?
- Topic 2: To what extent are customer, electric demand and consumption patterns changing in the near-term and long-term, and how can distribution system planning efforts best respond to changing customer needs?
- Topic 3: What are the functions and capabilities of the EDCs’ distribution systems currently, and what functionality is available to optimize the grid of the future?

The Authority conducted Technical Meetings on each of the three topics outlined above on June 25, July 25, and October 4 - 5, 2018, wherein Connecticut Light and Power Company d/b/a Eversource Energy (Eversource), The United Illuminating Company (UI), the Office of Consumer Counsel (OCC), and the Bureau of Energy and Technology Policy (BETP) of the Department of Energy and Environmental Protection (DEEP) provided informative presentations. Further, PURA requested written comments from Docket Participants in the form of Notices, dated March 9, April 4, July 9, July 20, and August 8, 2018. The EDCs responded to a number of interrogatories throughout Phase I of this proceeding. Lastly, the Authority conducted Hearings on October 29 and 30, 2018, and held a Late File Hearing on November 16, 2018, at which the EDCs provided additional and extensive testimony.

### **B. CONDUCT OF THE INSTANT PROCEEDING (PHASE I)**

The Authority conducted technical meetings at its offices on June 25, July 25, October 4 and October 5, 2018. The Authority conducted hearings at its offices on October 29 and 30, 2018.

### **C. PARTICIPANTS**

The Authority recognized the following as Participants to the proceeding: Solar Connecticut, Inc.; Connecticut Industrial Energy Consumers (CIEC); DEEP; UI; University of Connecticut, Eversource Energy Center; OCC; Acadia Center, Inc.; Joel Gordes; Sierra Club; Connecticut Fund for the Environment; Sunrun, Inc.; Vivint Solar, Inc.; Northeast Clean Energy Council; Renewable Energy and Efficiency Business Association, Inc.; Eversource; Energy Storage Association; and Connecticut Green Bank.

### **D. SUBSEQUENT PHASES OF THE PROCEEDING**

The Authority stated in its May 8, 2018 Notice of Final Scope of this Proceeding that: "Following the conclusion of Phase I, the Authority will investigate and prioritize potential solutions in a second phase based on the foundational record established in Phase I. Solutions arising from Phase II may be vetted in this proceeding, or in separate proceedings."

The Authority has reviewed the foundational record established in Phase I and determined that several topics warrant further investigation in the near-term through reopened proceedings of this Docket. These reopened proceedings will strive to investigate and formulate equitable solutions to address the opportunities and challenges presented by each topic in furtherance of the Framework's objectives. The Authority has also determined, due to the volume of topics to be addressed in reopened proceedings, that multiple subsequent phases are warranted, thus creating Phases II, III, and IV of this proceeding.

The topics to be addressed in Phases II, III, and IV do not represent the entirety of the topics investigated in Phase I of this proceeding. Rather, the Authority has chosen to refine and prioritize the current list of topics to concentrate on actionable pathways. The Authority believes that the Framework as designed is flexible and can adjust to both new information and refined legislative priorities shared over the course of the subsequent Phases.

### **III. NEAR-TERM TOPICS AND REOPENED PROCEEDINGS**

PURA has determined, based on the foundational record of Phase I of this Docket, legislative guidance, and the Authority's experience that a further investigation of the eleven topics identified below may help realize the Framework's objectives:

#### **Phase II**

##### **Beginning in the fourth quarter of 2019**

- RE01 Energy Affordability
- RE02 Advanced Metering Infrastructure
- RE03 Electric Storage
- RE04 Zero Emission Vehicles
- RE05 Innovative Technology Applications and Programs (Innovation Pilots)
- RE06 Interconnection Standards and Practices

**Phase III****Beginning in the first half of 2020**

RE07 Non-Wires Alternatives

RE08 Resilience and Reliability Standards and Programs

RE09 Distributed Energy Resource Analysis and Program Reviews

**Phase IV****Beginning at the completion of DEEP's IRP / a Final Decision in RE01<sup>5</sup>**

RE010 Building Blocks of Resource Adequacy and Clean Electric Supply

RE011 New Rate Designs

The Authority will explore each topic more closely in reopened proceedings of this Docket through three additional phases (Phase II, III, and IV). Each topic and the associated reopened proceeding will be initiated at or about the same time as the other topics in the same phase.<sup>6</sup> The approximate starting date of each phase is indicated above.<sup>7</sup>

Two common themes will be investigated throughout the reopened proceedings of this Docket, and likely throughout the long-term integrated distribution system planning process: geotargeting and equity. Examining geotargeting ensures that programs are designed and technologies are deployed where they have the most value to ratepayers and the distribution system as a whole; such an approach also prioritizes the mitigation of stranded costs or investments whenever practicable. Investigating and remaining mindful of equity concerns will help deliver energy affordability for underserved communities across all sectors.

The Authority will issue a final decision in each of the eleven reopened proceedings memorializing the intended methodology(ies) and solution(s) flowing from each investigation, to be adopted and implemented (as appropriate) through subsequent EDC rate case proceedings. Each final decision will require program implementers to reflect and report on performance, budget, and net benefits metrics. In requiring this information, ratepayers will be provided with transparency as to the costs and benefits of this Framework and other statutorily mandated programs.

**A. PROCESS FOR REOPENED PROCEEDINGS**

The initiation of each reopened proceeding will be closely followed by a Request for Information, in which the Authority may seek written comments and/or provide notice of an upcoming Technical Meeting. The purpose of the Technical Meetings, stylized as either a "Public Forum" or a "Solutions Day" depending on the subject matter, will primarily be to discuss and present innovative solutions and best practices on the topic of the reopened proceeding. The Authority will actively solicit the participation of other

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<sup>5</sup> Docket No. 17-12-03RE10 will be initiated upon the issuance of DEEP's IRP. Docket No. 17-12-03RE11 will be initiated upon the issuance of the Final Decision in Docket No. 17-12-01RE01.

<sup>6</sup> Phase I of this docket is completed with the Plan. See Background and Conduct of Proceeding.

<sup>7</sup> Fourth quarter of 2019: October, November, and December of 2019; First half of 2020: January through June of 2020.

jurisdictions, EDCs, product developers and solutions providers, non-profit organizations, and all Connecticut stakeholders in these Public Forums and Solutions Days. The scope and focus of the Public Forums and Solutions Days will be clearly defined in public communication by the Authority in advance.

Following the final Public Forum or Solutions Day for the specific reopened proceeding, the Authority will issue a Request for Proposals shaped by the record developed through that date. The Authority will then create a straw proposal, in the form of a draft decision, for stakeholder comment. The Authority will revise the straw proposal with stakeholder input throughout the discovery process, issuing additional Requests for Written Comments and Interrogatories and holding additional Technical Meetings and Public Hearings as warranted. At the conclusion of the discovery process, the Authority will issue a draft decision, followed by a final decision in each reopened proceeding of Phase II anticipated to occur within a year and a half of the issuance of this Plan.

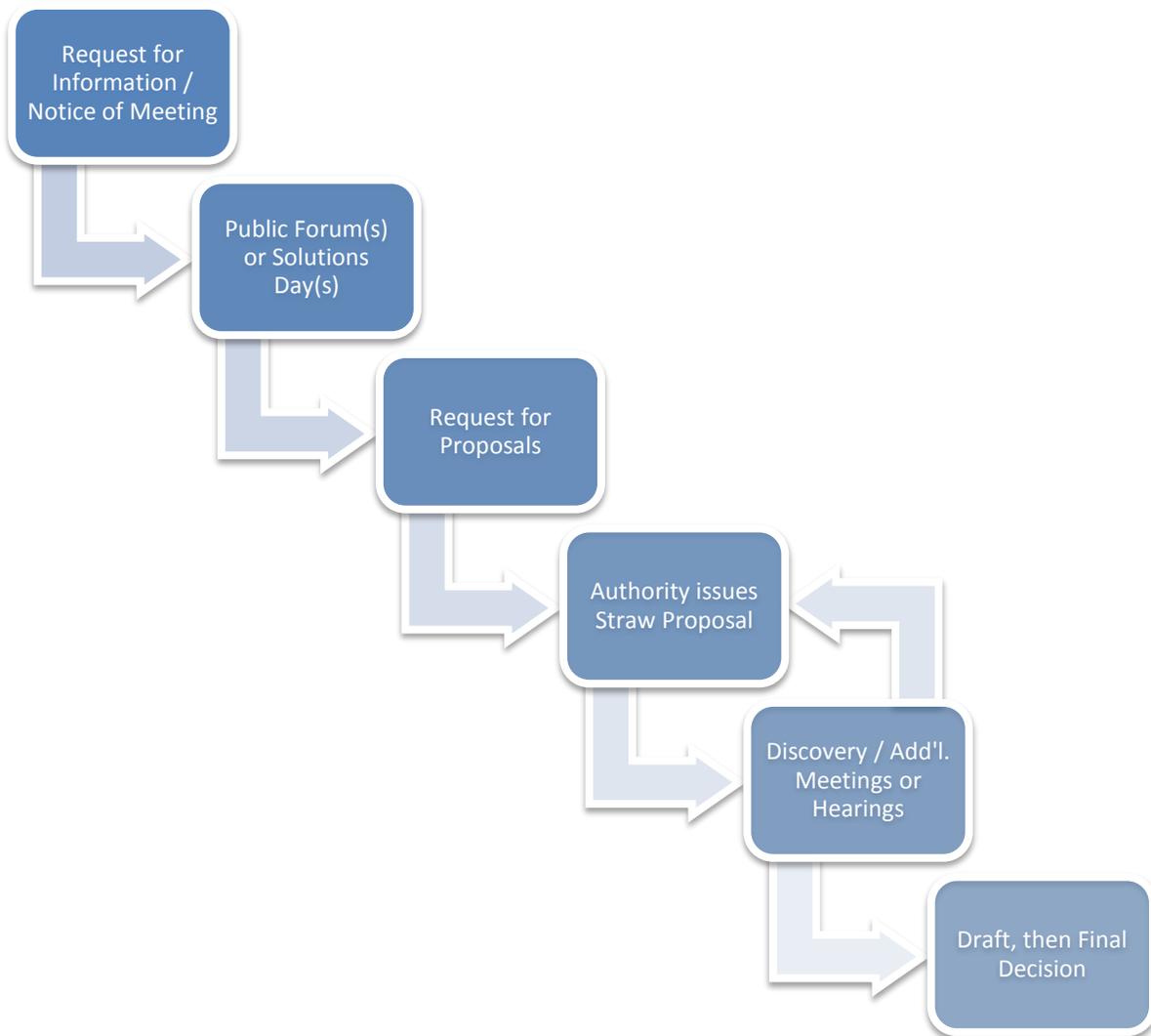


Figure 1: Process for Reopened Proceedings

Each reopened proceeding will be treated as an uncontested case, subject to modification at the Authority’s discretion. Depending on the subject matter of each reopened proceeding, some outcomes may require formal adoption as part of a

subsequent EDC rate case, going into effect shortly thereafter. In those instances, the final decision of the reopened proceeding will outline the approved methodology or solution set, with service territory-specific implementation details vetted in a contested rate proceeding.

## **B. RE01 – ENERGY AFFORDABILITY**

Docket No. 17-12-03RE01 will investigate energy affordability for all customer classes in Connecticut.

### **1. Opportunity Statement**

As of this Decision, the Authority is acutely aware that Connecticut has the highest retail electric rates in the continental United States. The Authority notes, however, that retail electric rates alone are not the sole indicator of average energy affordability. While electric rates provide part of the equation, perhaps a more telling indicator of relative energy affordability – especially within the New England region – is average customer expenditures on electricity and energy bills. Using energy expenditures per capita as the metric, Connecticut is 24th in average affordability,<sup>8</sup> in large part due to the success of the State's energy efficiency programs.

Average energy affordability, however, does not reflect income and equity disparities within the customer classes. In 2016 and 2017, more than 300,000 residents spent more, sometimes *substantially* more, than six percent of their household income on energy bills, the commonly accepted metric for determining energy affordability. In 2017, the portion of energy expenditures above six percent of household income in Connecticut was more than \$400 million.<sup>9</sup> Neighboring states are grappling with similar issues; to address energy affordability for low income customers, New York put in place a policy to limit household energy expenditures to six percent of household income in 2016.<sup>10</sup>

Connecticut's affordability gap of nearly \$450 million affects more than just low income customers. For example, Connecticut's EDCs are currently allowed to recover the missing revenue associated with unpaid or uncollectable customer electricity bills from all remaining electric customers. In turn, this increases electric rates for all customers.

Indeed, increased electric bills impact *all* ratepayers – residential, commercial, and industrial customers alike. While the energy affordability gap for residential customers is defined and quantified above, commercial and industrial customers also face energy

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<sup>8</sup> Connecticut residents pay the 24<sup>th</sup> least amount per person for energy out of 50 states plus the District of Columbia, see Connecticut State Profile and Energy Estimates, U.S. Energy Information Administration, 2017 (<https://www.eia.gov/state/rankings/?sid=CT#series/225>).

<sup>9</sup> See, e.g., Home Energy Affordability in Connecticut: The Affordability Gap (2017), prepared for Operation Fuel by Fisher, Sheehan & Colton Public Finance and General Economics, dated October 2017 (<http://www.operationfuel.org/wp-content/uploads/2017/12/2017-ConnecticutHEAG-11-27-17-RDC-edits.pdf>).

<sup>10</sup> See, e.g., Governor Cuomo Announces New Energy Affordability Policy to Deliver Relief to Nearly 2 Million Low-Income New Yorkers, Governor Andrew M. Cuomo Press Office, dated May 16, 2016 (<https://www.governor.ny.gov/news/governor-cuomo-announces-new-energy-affordability-policy-deliver-relief-nearly-2-million-low>).

affordability concerns. If unaddressed, the Authority recognizes that new businesses may be disincentivized from locating in the State and existing customers may be encouraged to look elsewhere.

Unfortunately, these energy affordability concerns did not arise overnight and will require significant, time-intensive, and purposeful actions moving forward; the removal of regulatory burdens and barriers when appropriate, coupled with enhanced independent regulatory oversight when beneficial to the market and for the protection of ratepayers.

The Authority understands the following to be the most impactful barriers to address to achieve increased energy affordability and equity in the State:

- **Identifying customer eligibility**
  - For residential customers: identifying customers eligible for existing programs is difficult as it requires coordination between government and non-governmental entities, raising questions involving data-sharing and customer privacy protocols.
  - For commercial and industrial customers: data on business customers struggling with energy affordability is not currently tracked to the Authority's knowledge.
- **Lack of customer education and inter-organization coordination**
  - Customers have to visit several websites or locations to find all options for lowering their energy cost burden, including community action, government, energy efficiency, and distributed generation program websites.
- **Rate design**
  - Electric rates are often regressive. Other states, including in the New England region, have investigated progressive rate design options to account for a more equitable distribution of costs.
- **Definition of hardship customers and services provided to hardship customers**
  - Once identified, hardship customers do not benefit from mandatory, comprehensive education on the options to reduce their energy cost burden.
- **Specific areas are impacted more than others**
  - Environmental justice communities are more heavily impacted and communities without access to natural gas heating may be more heavily impacted.
  - In some instances, commercial and industrial customers interconnecting to the distribution grid for the first time or expanding existing load may require distribution system capacity upgrades, thus incurring high costs while delivering benefits to all future load.

## **2. Potential Solution(s)**

Potential solutions to the barriers above include, but are not limited to:

- A common website linking programs and measures to lower customers' energy cost burden;
- Incentives related to decoupling to encourage the EDCs to educate hardship customer on options to reduce their energy costs;
- Environmental justice community and other heat maps based on types of areas identified above;
- Electric storage-backed microgrids in environmental justice communities;
- Innovative pairings of DERs and current DER programs to avoid or defer distribution system capacity upgrades; and
- Advanced rate design.

## **3. Next Steps**

The Authority will likely release a Request for Information and Written Comments on the obstacles detailed above in Docket No. 17-12-03RE01 the week of October 7.

Subsequently, the Authority will hold a Public Forum in Docket No. 17-12-03RE01 on the barriers to increased residential energy affordability and equitability, and potential solutions to those barriers. If necessary, the Authority will continue the Public Forum at a later date.

The Authority will also host a Public Forum in Docket No. 17-12-03RE01 on the barriers to increased commercial and industrial energy affordability and equitability, and potential solutions to those barriers.

Following the public forums envisioned above, the Authority will issue a Request for Proposals. Subsequently, PURA will develop a straw proposal, in the form of a draft decision, for comment. The Authority will hold Public Hearing(s) or Technical Meeting(s) on the straw proposal and initiate subsequent rounds of discovery as necessary.

### **C. RE02 – ADVANCED METERING INFRASTRUCTURE (AMI)**

The record in Docket No. 17-12-03 presents significant data and information on the current status of AMI deployment and associated functionalities in Connecticut. Moving forward, Docket No. 17-12-03RE02 will develop the business case for statewide smart (digital interval) meter deployment in Connecticut, as well as the enhanced utilization of existing assets. Docket No. 17-12-03RE02 will also consider the business case for technologies and systems related to smart meter deployment, including information technology, data management, DER management, and billing systems, among others.

In developing the business case for smart meters and other AMI-related systems, it is important for Connecticut to look to leaders in the field, including EDCs, other

jurisdictions, the Department of Energy,<sup>11</sup> and technology providers across the country, to understand how to best leverage the value created by AMI. The Authority also intends to examine efficiencies that may be gained by exploring AMI implementation across all of the EDCs' Connecticut-based affiliates, and in consideration of the EDCs' other jurisdictions and regulatory timetables.

Lastly, the cybersecurity implications of AMI must be considered and addressed in any AMI implementation plan.

## 1. Opportunity Statement

AMI, and specifically smart meters, can cost-effectively provide additional value to electric customers, *if* implemented strategically. Currently, this value is largely unrealized in Connecticut. Furthermore, the deployment of AMI can help facilitate greater deployment and integration of DERs, such as ZEVs, solar PV, electric storage, and RTTs. For example, smart meters will help the EDCs identify new DERs deployed in their service territories, such as ZEVs and electric heat pumps that may not have otherwise been visible through existing metering infrastructure. This new information will help the EDCs avoid unaccounted for service interruptions and other problems associated with unmanaged or unanticipated higher levels of DER penetration.

## 2. Potential Solution(s)

To ensure successful deployment, the following are required (in order):

- A detailed business plan for smart meter and other AMI deployment;
- A detailed implementation plan for leveraging the value created by the AMI technology, including complementary rate design;
- A detailed approach to addressing any cybersecurity threats posed by deploying additional AMI; and
- A detailed deployment timeline.

## 3. Next Steps

The Authority will likely release a Request for Information and Presentations in Docket No. 17-12-03RE02 the week of October 7. The request will solicit presentations from Connecticut's EDCs, EDCs in other jurisdictions, the Department of Energy, technology providers across the country, and other organizations and experts on: (1) the most cost-effective AMI solutions; and (2) best practices for leveraging the value of AMI. The Authority will hold a Solutions Day(s) to review the solicited presentations.

Next, the Authority will issue a Request for Proposals and then develop a straw proposal, in the form of a draft decision, for comment. The Authority will hold Public Hearing(s) or Technical Meeting(s) on the straw proposal and initiate subsequent rounds of discovery as necessary.

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<sup>11</sup> See, e.g., Advanced Metering Infrastructure and Customer Systems: Results from the Smart Grid Investment Grand Program, U.S. Department of Energy, dated September 2016 ([https://www.energy.gov/sites/prod/files/2016/12/f34/AMI%20Summary%20Report\\_09-26-16.pdf](https://www.energy.gov/sites/prod/files/2016/12/f34/AMI%20Summary%20Report_09-26-16.pdf)).

Due to the complexity of the subject matter and far-reaching implications of a statewide AMI deployment, the Authority will likely retain a consultant to supplement staff expertise in Docket No. 17-12-03RE02.

## **D. RE03 – ELECTRIC STORAGE**

Docket No. 17-12-03RE03 will explore programs and technology applications to most effectively leverage the value of electric storage for the net benefit of the electric distribution system.

### **1. Opportunity Statement**

There are a wide variety of electric storage technologies and applications of those technologies, each providing different benefits to the grid (and to the bulk power system; although, this discussion is primarily relegated to the distribution system). Depending on the application and use case, the benefits provided by electric storage can flow to all ratepayers or to a smaller subset of customers.

The unique characteristic of all electric storage technologies and technology applications is that each can provide multiple value streams. For example, a customer-sited solar PV plus battery storage system can provide customer resilience during an outage while also providing peak shaving benefits to all ratepayers when the grid is operational. Some of the myriad benefits electric storage can provide to the grid include:

- **Customer resilience**
- **Supporting more cost-effective integration of DERs**
  - o Storage can help DERs avoid transformer upgrades.
  - o Smart storage inverters can provide Volt/Var support.
- **Firming intermittent renewable energy resources**
  - o The southwestern United States is using solar plus storage facilities to displace fossil fuel peaking generation.
- **Local and community resilience**
  - o The cost of utility storm and outage responses can be lessened by hardening parts of the distribution system.
  - o Community health and safety can be increased by improving resilience of critical emergency facilities (e.g. fire department).
- **Peak shaving**
- **Providing ancillary services<sup>12</sup>**
- **Avoiding or deferring distribution system upgrades<sup>13</sup>**

Currently, Connecticut does not have a specific program for electric storage. Further, current retail electric rates are not sufficient to incent deployment of electric

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<sup>12</sup> FERC Order No. 841 will likely facilitate electric storage's participation in the ISO-NE ancillary service markets see FERC Order No. 841, Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators, dated February 15, 2018 (<https://www.ferc.gov/whats-new/comm-meet/2018/021518/E-1.pdf>).

<sup>13</sup> Docket No. 17-12-03RE07 will explore this topic.

storage. Programs in other states have shown that, if strategically designed, electric storage can provide positive net present value benefits to all ratepayers.

## **2. Potential Solution(s)**

Docket No. 17-12-03RE03 will explore programs and rate designs to incentivize electric storage technology applications that provide positive net present value to all ratepayers, or a subset of ratepayers paying for the accrued benefits.<sup>14</sup> The Authority's investigation will begin by soliciting ideas, proposals, and best practices from Connecticut EDCs, EDCs in other jurisdictions, technology providers across the country, and other organizations and experts.

Specifically, the Authority will solicit ideas, proposals, and best practices for program and rate designs that incentivize electric storage applications that: (1) provide positive net present value to those who pay for the benefits; and (2) provide multiple types of benefits to the grid, namely: customer, local, or community resilience; support for DER deployment; ancillary services; and peak shaving.

The Final Decision in Docket No. 17-12-03RE03 will establish electric storage programs or rate designs in Connecticut; implementation details specific to the EDC service territories will be adopted in subsequent rate proceedings, as appropriate. These programs will largely be based on program designs and ideas that have been vetted and are in place in other jurisdictions; whereas, the more nascent electric storage technologies, technology applications, and program designs are the subject of Docket No. 17-12-03RE05. Further, electric storage technologies and technology applications that can be implemented as a means to avoid or delay distribution system upgrades will be the subject of Docket No. 17-12-03RE07.

## **3. Next Steps**

The Authority plans to release a Request for Information and Presentations in Docket No. 17-12-03RE03 in October, 2019. The request will solicit presentations from Connecticut EDCs, EDCs in other jurisdictions, technology providers across the country, and other organizations and experts. The Authority will hold at least two Solutions Days during which the solicited presentations will be given.

The Authority will issue a Request for Proposals following the Solutions Days in Docket No. 17-12-03RE03. Subsequently, PURA will develop a straw proposal, in the form of a draft decision, for comment. The Authority will hold Public Hearing(s) or Technical Meeting(s) on the straw proposal and initiate subsequent rounds of discovery as necessary.

## **E. RE04 – ZERO EMISSION VEHICLES**

Docket No. 17-12-03RE04 will build off of the forthcoming DEEP Electric Vehicle Roadmap (Roadmap) and investigate, where appropriate, implementation of the

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<sup>14</sup> The Authority will investigate the appropriate cost-benefit methodology used to determine net positive benefits to all ratepayers in the reopened proceeding.

Roadmap's recommended policies, programs, and strategies to optimize the deployment of ZEVs and the associated distribution system infrastructure. Docket No. 17-12-03RE04 will also look to further the Roadmap's anticipated goal and Connecticut's stated commitment to the development of a self-sustaining ZEV market, ensuring that increased ZEV deployment is a system benefit rather than an impairment to the electric grid.

## 1. Opportunity Statement

The electrification of the transportation sector presents real challenges for the electric distribution system. These challenges are only increased by the expected growth of the ZEV market share and Connecticut's commitment to the eight state ZEV Memorandum of Understanding, which commits to, collectively, put 3.3 million ZEVs on the roads in the eight signatory states by 2025.<sup>15</sup> If implemented and managed properly, however, transportation sector electrification also offers real opportunities for local businesses, Connecticut EDCs, and all ratepayers to ensure realization of the Framework's objectives. Further, the increased deployment of ZEVs are a critical piece of the Governor's Council on Climate Change's (GC3) greenhouse gas reduction strategies and recommendations<sup>16</sup> and will reduce harmful health and environmental effects of internal combustion engines. Thus, a proactive approach to facilitate the seamless integration of new and emerging ZEV-related technologies is required to realize the potential electric system benefits of ZEVs, along with the economic, health, and environmental benefits they provide.

## 2. Potential Solution(s)

The Authority will explore four solution tracks in Docket No. 17-12-03RE04 in order to facilitate the seamless integration of ZEVs and ZEV-related technologies onto Connecticut's electric grid:

- **Rate design**
  - o Key question: What are the most effective rate designs for residential customers, commercial customers, and public charging stations to encourage ZEV adoption and off-peak charging to reduce infrastructure upgrades?
- **Infrastructure**
  - o Key question: How can the Authority and the EDCs best proactively plan for the necessary infrastructure upgrades to meet the state's ZEV goals in line with the GC3 strategies and recommendations?

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<sup>15</sup> State Zero-Emission Vehicle Programs Memorandum of Understanding, States of California, Connecticut, Maryland, Massachusetts, New York, Oregon, Rhode Island, and Vermont, dated October 24, 2013 ([https://www.ct.gov/deep/lib/deep/air/zeroemissionvehicle\\_mou.pdf](https://www.ct.gov/deep/lib/deep/air/zeroemissionvehicle_mou.pdf)).

<sup>16</sup> Recommendations from the Governor's Council on Climate Change, dated December 18, 2018 ([https://www.ct.gov/deep/lib/deep/climatechange/publications/building\\_a\\_low\\_carbon\\_future\\_for\\_ct\\_gc\\_3\\_recommendations.pdf](https://www.ct.gov/deep/lib/deep/climatechange/publications/building_a_low_carbon_future_for_ct_gc_3_recommendations.pdf)).

- **Innovation**
  - Key question: What innovative solutions can help minimize barriers to customer adoption, improve electric system reliability and resilience, and minimize infrastructure upgrades?<sup>17</sup>
- **Education and outreach**
  - Key question: How is customer education and outreach related to ZEVs, in the context of PURA regulated programs, best facilitated and what methods are most effective and efficient?

### 3. Next Steps

The Authority will release a Request for Information and Presentations in Docket No. 17-12-03RE04 in October, 2019. The request will solicit presentations from Connecticut EDCs, EDCs in other jurisdictions, technology providers across the country, and other organizations and experts on the four solution tracks outlined above. The Authority will hold two Solutions Days, the first of which will feature the solicited presentations relating to rate design and infrastructure, while the second will feature the solicited presentations relating to innovation and customer education and outreach.

Next, the Authority will issue a Request for Proposals and develop a straw proposal, in the form of a draft decision, for comment. The Authority will hold Public Hearing(s) or Technical Meeting(s) on the straw proposal and initiate subsequent rounds of discovery as necessary.

## F. RE05 – INNOVATIVE TECHNOLOGY APPLICATIONS AND PROGRAMS (INNOVATION PILOTS)

Docket No. 17-12-03RE05 will seek to identify a prospective structure that can support the ongoing development of innovative technology applications and programs, or Innovation Pilots, that have the potential to provide net positive benefits to all electric customers.<sup>18</sup> Through this transition, the Authority will lean on lessons-learned through the implementation of the Electric Efficiency Partners (EEP) Program,<sup>19</sup> which could serve as the basis of a regulatory sandbox; a safe, but monitored, place to test new ideas and validate their benefits in the real world.

### 1. Opportunity Statement

Gaining approval for new program designs and technology applications is time consuming in the traditional regulatory model, if a path to approval for the program or technology even exists. These challenges create a barrier for new, innovative approaches that may yet be untested or unproven. And yet, innovative approaches are

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<sup>17</sup> See, e.g., Technology Demonstration, Petition for Implementation of a Statewide Electric Vehicle Portfolio, Maryland Public Service Commission, dated January 19, 2018, p. 29 ([https://webapp.psc.state.md.us/newIntranet/Casenum/NewIndex3\\_VOpenFile.cfm?FilePath=//Coldfusion/Casenum/9400-9499/9478/1.pdf](https://webapp.psc.state.md.us/newIntranet/Casenum/NewIndex3_VOpenFile.cfm?FilePath=//Coldfusion/Casenum/9400-9499/9478/1.pdf)).

<sup>18</sup> The Authority will investigate the appropriate cost-benefit methodology used to determine net positive benefits to all ratepayers in the reopened proceeding.

<sup>19</sup> Electric Efficiency Partners (EEP) Programs, Public Utilities Regulatory Authority ([https://www.ct.gov/pura/cwp/view.asp?a=3355&q=417158&puraNav\\_GID=1702](https://www.ct.gov/pura/cwp/view.asp?a=3355&q=417158&puraNav_GID=1702)).

needed to more cost-effectively integrate clean energy, distributed generation, and ZEVs and to improve reliability, resilience, and affordability. A low-risk pathway that allows for these innovative approaches to be tested can be created by encouraging competition and minimizing ratepayers' financial exposure.

## **2. Potential Solution(s)**

The Authority looks forward to investigating regulatory sandbox initiatives instituted in other jurisdictions, as well as leveraging the lessons-learned in current innovative Connecticut programs, such as the EEP Program.

## **3. Next Steps**

The Authority will release a Request for Written Comments in Docket No. 17-12-03RE05 in October, 2019 followed by a Public Forum for stakeholder comment.

Next, the Authority will issue a Request for Proposals and will develop a straw proposal, in the form of a draft decision, for comment. The Authority will hold Public Hearing(s) or Technical Meeting(s) on the straw proposal and initiate subsequent rounds of discovery as necessary. The Authority looks forward to convening the first Innovation Pilot Solution Day structured as a result of this reopened proceeding in 2020.

## **G. RE06 – INTERCONNECTION STANDARDS AND PRACTICES**

Docket No. 17-12-03RE06 will investigate ways to improve the efficiency and effectiveness of the EDC's current interconnection standards, processes, and procedures (standards and practices). Docket No. 17-12-03RE06 will also seek to decrease the costs of the EDCs' interconnection standards and practices to the EDCs and project developers.

### **1. Opportunity Statement**

The EDCs' interconnection process can be time intensive and costly for everyone involved. Further, DERs increasingly trigger distribution system upgrades that add further cost and time for both the EDCs and project developers. The cost and time of the EDCs' current interconnection standards and practices represent a barrier to increased DER deployment.

Further, it will be important to ensure that the most effective, efficient, and accurate interconnection standards and practices are in place for all DERs in order to facilitate the deployment of technologies like ZEVs and electric storage and technology applications such as islanding with solar PV plus electric storage systems.

### **2. Potential Solution(s)**

The Authority will focus on the following types of solutions in Docket No. 17-12-03RE06:

- Updating current interconnection standards and practices for customer islanding, ZEVs, and electric storage;
- Transitioning to a distribution queue instead of rolling applications; and
- Developing granular heat maps or other location-based tools for hosting capacity, feeder loading, and other categories.

The Authority will look to the EDCs and outside organizations and other jurisdictions to provide valuable information on best practices for interconnection standards and practices.

### **3. Next Steps**

The Authority will release a Request for Information and Presentations in Docket No. 17-12-03RE06 in October, 2019. The request will solicit presentations from Connecticut EDCs, EDCs in other jurisdictions, technology providers across the country, and other organizations and experts on: (1) best practices on interconnection standards and procedures; and (2) ways to optimize the use of heat maps, other location-based tools, and interconnection queues. The Authority will hold two Solutions Days, one on each of the topics above, at which the solicited presentations will be given.

Next, the Authority will issue a Request for Proposals and will develop a straw proposal, in the form of a draft decision, for comment. The Authority will hold Public Hearing(s) or Technical Meeting(s) on the straw proposal and initiate subsequent rounds of discovery as necessary.

## **H. RE07 – NON-WIRES ALTERNATIVES**

Docket No. 17-12-03RE07 will establish a transparent, competitive process for comparing NWAs against traditional distribution system capacity upgrades (traditional solutions). The record in Docket No. 17-12-03 established the current process employed by the EDCs to consider NWAs. Docket No. 17-12-03RE07 will build on existing processes and further leverage competitive forces to drive down the cost of both traditional distribution system capacity solutions and NWAs.

### **1. Opportunity Statement**

The foundational record of Docket No. 17-12-03 examined the internal process currently employed by the EDCs for evaluating NWAs. The same record highlights the opportunity to better leverage competition by increasing the transparency of the EDCs' current NWA evaluation process. Specifically, it is unclear if all NWA solution providers have access to and understanding of the EDCs' internal NWA evaluation process. A fully transparent and competitive process will allow both the EDCs and PURA to understand the relative cost-effectiveness of all NWAs compared with traditional solutions now and in the future.

The EDCs noted at several points in the record that distribution system capacity upgrades are infrequent in Connecticut and, thus, the need for NWAs is limited. The EDCs also noted the lack of cost-competitiveness of NWAs against traditional solutions. Taken at face value, while NWAs may not currently be cost-competitive or necessary,

they may become necessary and cost-competitive in the future, particularly if ZEVs and RTTs are deployed at scale. Further, a transparent, competitive process provides a clear market signal to all types of solutions providers, encouraging least cost solutions and providing future opportunities for solutions that may not currently be cost-effective.

Lastly, a transparent process for evaluating NWAs will help all stakeholders better understand the types of benefits NWAs can provide and the full cost-benefit of NWAs versus traditional solutions. If NWAs can meet the same distribution system need as a traditional solution at the same price, and provide additional benefits above the traditional solution, then the NWAs should be selected.

## **2. Potential Solution(s)**

The opportunity statement above can be realized by establishing (1) a transparent process for evaluating NWAs against traditional solutions for all distribution system capacity upgrades above a certain threshold of investment amount that (2) leverages competitive forces and (3) considers all benefits provided by NWAs to the distribution system.

The key questions to answer in implementing these changes to the current NWAs evaluation process are:

- What are best practices for transparent, competitive NWA evaluation processes;
- What should the NWA evaluation process look like in Connecticut;
- What are the relevant mechanics;
- How frequently should this process be conducted;
- Should this process be integrated with other processes, if so how;
- What investment (monetary) threshold should be used; and
- How can the administrative costs of the current and future NWA evaluation process be minimized?

## **3. Next Steps**

The Authority will release a Notice of Proceeding in Docket No. 17-12-03RE07 in the first half of 2020, likely in early spring. Along with the Notice of Proceeding, the Authority will release a Request for Information and Presentations in Docket No. 17-12-03RE07. The request will solicit presentations from policymakers, regulators, and EDCs in other jurisdictions, technology providers across the country, Connecticut EDCs, and other organizations and experts on transparent, competitive NWA evaluation processes. The Authority will hold at least one Solutions Day at which the solicited presentations will be given. The Authority will provide dates for the Solution Day(s) and outline the remaining process for Docket No. 17-12-03RE07 in either the Notice of Proceeding or a subsequent notice.

### **I. RE08 – RESILIENCE AND RELIABILITY STANDARDS AND PROGRAMS**

Docket No. 17-12-03RE08 will investigate ways to increase the cost-effectiveness of maintaining and improving current reliability and resilience standards. Docket No. 17-12-03RE08 will explore in greater depth the cost-effectiveness of current resilience and

reliability programs and how and where those programs can be more cost-effective. Docket No. 17-12-03RE08 will also explore opportunities for improving reliability and resilience cost-effectively and the appropriate programs and mechanisms to incent those improvements.

## 1. Opportunity Statement

At the June 25, 2018 Technical Meeting in Docket No. 17-12-03, both EDCs testified to maintaining electric reliability in the top quartile of electric utilities as measured by the Institute of Electrical and Electronics Engineers (IEEE).<sup>20</sup> UI's presentation included historical System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) numbers from 2001 to 2017.<sup>21</sup> Eversource's presentation noted the company's 31 percent improvement in SAIDI and 20 percent improvement in SAIFI.<sup>22</sup>

Both EDCs' presentations attest to the increased cost of reliability, resilience, and modernization programs over the last decade. In 2008, UI spent \$7.6 million on reliability, system resilience, and modernization. In 2017, UI spent close to \$11 million on the same categories. Even more striking, Eversource spent \$47 million on reliability programs in 2008<sup>23</sup> and \$224 million on reliability and resilience programs in 2017.

There are several factors contributing to these increased costs, including diminishing marginal returns from specific measures. Thus, it is important to understand which measures are delivering diminishing marginal returns and which other measures might deliver higher marginal returns. Deploying more measures with high marginal returns and less measures with low marginal returns will deliver the most value to ratepayers, through increased reliability and resilience.

The EDCs should be applauded for their responsiveness to customer and political demands to increase reliability and system resilience. The EDCs have improved reliability and system resilience through a patchwork of programs in the absence of clear reliability and system resilience targets. Clear direction, and targets if necessary, from the Authority on expected improvements to reliability and system resilience may help the EDCs to further improve both and to do so more cost-effectively.

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<sup>20</sup> Tr. 6/25/18, pp.81:12-130:11.

<sup>21</sup> Presentation, Topic 1: Key Cost Drivers Associated with Maintaining and Modernizing the Electric Distribution System, United Illuminating, dated June 25, 2018, pp. 5-6 ([http://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/996a2dd1452b824f852582b3006aba17/\\$FILE/2018-06-21%20UI%20Presentation%20for%20June%2025th%20Technical%20Meeting%20%2317-12-03.pdf](http://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/996a2dd1452b824f852582b3006aba17/$FILE/2018-06-21%20UI%20Presentation%20for%20June%2025th%20Technical%20Meeting%20%2317-12-03.pdf)).

<sup>22</sup> Presentation, Key Cost Drivers Associated with Maintaining and Modernizing the Electric Distribution System, dated June 25, 2018, p. 5 ([http://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/9ca6d7e02d4f18b4852582b3006efe5a/\\$FILE/PURA%20Planning%20Tech%20Session%201%20Panel%201%20v5%20180625.pdf](http://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/9ca6d7e02d4f18b4852582b3006efe5a/$FILE/PURA%20Planning%20Tech%20Session%201%20Panel%201%20v5%20180625.pdf)).

<sup>23</sup> Eversource's system resilience programs were not in place in 2008.

## 2. Potential Solution(s)

The Authority will explore three solution paths in Docket No. 17-12-03RE08:

- Path 1: An investigation into which current reliability and system resilience programs and measures provide the greatest marginal returns to ratepayers;
- Path 2: An investigation into new reliability and system resilience programs and measures the EDCs may wish to deploy and the marginal returns to ratepayers of those programs or measures; and
- Path 3: An investigation into reliability and system resilience metrics and targets, and associated incentives for the EDCs to meet and exceed those targets.

## 3. Next Steps

The Authority will release a Notice of Proceeding in Docket No. 17-12-03RE08 in the first half of 2020, likely in early spring. The Authority will outline the process for Docket No. 17-12-03RE08 in either the Notice of Proceeding or a subsequent notice.

## J. RE09 – DISTRIBUTED ENERGY RESOURCE ANALYSIS AND PROGRAM REVIEWS

The Authority will examine and establish state DER programs, as appropriate, in Docket No. 17-12-03RE09. The Authority will also use Docket No. 17-12-03RE09 to incorporate the analysis and findings of DEEP and PURA's joint study on the value of DERs in Connecticut (Study) in Docket No. 19-06-29, DEEP and PURA Joint Proceeding on the Value of Distributed Energy Resources, into the Authority's Framework for an Equitable Modern Grid.

### 1. Opportunity Statement

Public Act 19-35, An Act Concerning a Green Economy and Environmental Protection,<sup>24</sup> directs the Authority to reexamine Section 7 of Public Act 18-50, An Act Concerning Connecticut's Energy Future,<sup>25</sup> (Section 7) as modified by Public Act 19-35, starting no later than July 1, 2020. Public Act 19-35 also directs the Authority to consider DEEP and PURA's VDER Study in its reexamination. Both Section 7 and the VDER Study have implications for the Authority's Framework, and the State's DER programs in general. Thus, including both the reexamination of Section 7 and the Study in this Framework ensures that the lessons learned from implementing the State's new DER programs and DEEP and PURA's VDER Study, as well as DER policies and programs in general, will be included in the EDCs' long-term distribution system planning process.

Furthermore, creating one proceeding for incorporating the State's DER programs and policies into the EDCs' distribution system planning process provides: (1) an opportunity to conduct further analysis on ways to maximize the benefits of DERs and to minimize the deployment and integration costs; and (2) a focal point for all data related to

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<sup>24</sup> Public Act 19-35, An Act Concerning a Green Economy and Environmental Protection (<https://www.cga.ct.gov/2019/act/pa/pdf/2019PA-00035-R00HB-05002-PA.pdf>).

<sup>25</sup> Public Act 18-50, An Act Concerning Connecticut's Energy Future (<https://www.cga.ct.gov/2018/act/pa/pdf/2018PA-00050-R00SB-00009-PA.pdf>).

deployment and costs for future programs. Currently, multiple entities including the EDCs and the Connecticut Green Bank collect and provide data on the State's DER programs through compliance and other filings with the Authority, reports to the General Assembly, and their respective websites. A singular, comprehensive data source would provide the public, the Authority, and others with a better understanding of the cost-effectiveness of different programs and if and how program rules can be improved.

## **2. Potential Solution(s)**

PURA will reexamine Section 7, incorporate the Study into the Authority's Framework, and address other matters related to the State's DER policies and PURA's statutory authority as appropriate.

## **3. Next Steps**

The Authority will release a Notice of Proceeding in Docket No. 17-12-03RE09 in the first half of 2020. The Authority will outline the process for Docket No. 17-12-03RE09 in either the Notice of Proceeding or a subsequent notice. As part of Docket No. 17-12-03RE09, the Authority will likely require the EDCs to track the annual and cumulative costs, benefits, and deployment of each of the State's DER programs. The Authority will detail the costs and benefits the EDCs must track and methodologies for doing so at a later date based on DEEP and PURA's Study.

## **K. RE10 – BUILDING BLOCKS OF RESOURCE ADEQUACY AND CLEAN ELECTRIC SUPPLY**

Executive Order 3, signed by Governor Lamont on September 3, 2019, directs DEEP to “analyze pathways and recommended strategies for achieving a 100% zero carbon target for the electric sector by 2040” in the IRP, in consultation with the Authority.<sup>26</sup> Docket No. 17-12-03RE10 will leverage DEEP's work to ensure that cost-effective and efficient approaches are in place to deliver on DEEP's recommended pathways.

### **1. Opportunity Statement**

Delivering one hundred percent zero carbon electricity would fundamentally change how resource adequacy and reliability are operationally maintained and which bulk power resources provide ancillary services. As directed by EO3, the Authority will consult with DEEP in the evaluation of how a one hundred percent zero carbon goal will effect resource adequacy and reliability in the State and proactively consider approaches to best integrate this future. The Authority will focus on providing guidance and input to the following questions: (1) how will increased renewable energy deployment affect the state and region's need for increased ancillary services (i.e. flexible load and generation); and (2) what are the state-level solutions for ensuring resource adequacy under these scenarios and for providing zero carbon ancillary services?

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<sup>26</sup> Executive Order No. 3, Governor Ned Lamont, dated September 3, 2019 (<https://portal.ct.gov/-/media/Office-of-the-Governor/Executive-Orders/Lamont-Executive-Orders/Executive-Order-No-3.pdf?la=en>).

## **2. Potential Solution(s)**

Following issuance of the IRP, the Authority will look to answer the following question in Docket No. 17-12-03RE10:

How should state-level solutions to providing both clean energy (i.e. state-sponsored PPAs) and ancillary services (i.e. the answer to question #2) be incorporated into retail electric supply?

## **3. Next Steps**

The Authority will release a Notice of Proceeding in Docket No. 17-12-03RE10 upon the issuance of the IRP in 2020. The Authority will outline the process for Docket No. 17-12-03RE10 in either the Notice of Proceeding or a subsequent notice.

## **L. RE11 – NEW RATE DESIGNS**

Docket No. 17-12-03RE11 will explore new rate designs that address the disproportionate impact of increased electric rates on the lowest income customers. The reopened proceeding will also continue the dialogue from Docket No. 17-12-03RE01, ensuring that energy affordability and the need for Connecticut businesses to remain competitive with neighboring states remains central to the narrative.

### **1. Opportunity Statement**

The purpose of tiered tax structures based on income level is to more equitably share the tax burden across all income levels. The design is justified by its proponents on the basis that individuals with lower incomes are more heavily impacted by the same tax rate as compared to individuals with higher incomes, given that the same tax rate disproportionately impacts the disposable income and ability to pay of lower income individuals.

Electric rates are traditionally designed differently. Increased electricity usage is generally charged at the same rate for all customers of a specific customer class. For electric rates, customer class is defined by usage and type of customer (e.g. residential, commercial, or industrial), not by income level. Thus, ratepayers subject to lower income or tight operating margins pay a disproportionate amount of their disposable income on electricity compared with higher income individuals and businesses with the same electricity use.

### **2. Potential Solution(s)**

The question of new rate designs more closely aligned with how tax rates are structured is highly nuanced and cannot be considered in a vacuum. While it is a good idea to explore new ways to more equitably distribute costs, the Authority is mindful of the consequences to all other customers of any changes to electric rates. The Authority will seek the knowledge and experience of the EDCs, as well as local and national experts, and leverage any lessons learned from Docket Nos. 17-12-03RE01 and 17-13-03RE11.

The Authority will lean on the experience of the OCC, the Limited Income Energy Advisory Board members, the CIEC, and all other representatives of customer classes in the State in investigating and evaluating potential solutions in this reopened docket.

### **3. Next Steps**

The Authority will release a Notice of Proceeding in Docket No. 17-12-03RE11 upon the issuance of a final decision in Docket No. 17-12-03RE01. The Authority will outline the process for Docket No. 17-12-03RE11 in either the Notice of Proceeding or a subsequent notice.

## **IV. LONG-TERM DISTRIBUTION SYSTEM PLANNING**

In January 2022, PURA will issue an Interim Decision in this docket directing the EDCs to develop an Integrated Distribution System Plan (IDSP) to be submitted to the Authority for approval by July 1, 2022. At a minimum, the Authority will require the EDCs to incorporate the Final Decisions and the associated orders and compliance filings from RE01 through RE10, as available,<sup>27</sup> into the IDSP. The Authority may include any additional orders relating to an Equitable Modern Grid it deems appropriate and reasonable in the January 2022 Interim Decision.

Every two years following July 1, 2022, the EDCs will be required to submit an updated IDSP no later than July 1, which, at a minimum, will: (1) summarize the compliance filings submitted in this docket and all associated reopeners over the preceding two years; (2) summarize the work performed related to the orders included in the preceding IDSP; and (3) identify problems and potential solutions concerning the topics examined in the reopened proceedings associated with this docket (e.g. electric storage) or any other topics identified by the Authority.

The Authority will provide guidance on each IDSP in January of the year the IDSP is due. The Authority may amend the process associated with and the content required of the IDSP in subsequent interim decisions.

## **V. CONCLUSION**

The foregoing Framework for an Equitable Modern Grid outlines the Authority's approach to modernizing the electric grid, including near-term topics for further investigation in reopened proceedings of this docket and a long-term plan that will seek to iterate on the near-term efforts through a biennial distribution system planning process.

Over the next two years, the Authority will investigate the eleven topics discussed herein through reopened proceedings of this docket, culminating in interim and final decisions through each pathway. Depending on the subject matter of each reopened proceeding, some outcomes may require formal adoption as part of a subsequent EDC

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<sup>27</sup> In the absence of a Final Decision in any of the dockets, RE01 through RE10, the Authority will provide direction in its January 2022 Interim Decision.

rate case, going into effect shortly thereafter. In those instances, the final decision of the reopened proceeding will outline the approved methodology or solution set, with service territory-specific implementation details vetted in the following contested rate proceeding.

The eleven reopened proceedings will be initiated in three phases of this docket, as outlined below:

### **Phase II**

#### **Beginning in the fourth quarter of 2019**

- RE01 Energy Affordability
- RE02 Advanced Metering Infrastructure
- RE03 Electric Storage
- RE04 Zero Emission Vehicles
- RE05 Innovative Technology Applications and Programs (Innovation Pilots)
- RE06 Interconnection Standards and Practices

### **Phase III**

#### **Beginning in the first half of 2020**

- RE07 Non-Wires Alternatives
- RE08 Resilience and Reliability Standards and Programs
- RE09 Distributed Energy Resource Analysis and Program Reviews

### **Phase IV**

#### **Beginning at the completion of DEEP's IRP / a Final Decision in RE01<sup>28</sup>**

- RE10 Building Blocks of Resource Adequacy and Clean Electric Supply
- RE11 New Rate Designs

Starting in 2022, and every two years thereafter, the Authority will direct the EDCs to submit an Integrated Distribution System Plan for approval by July 1. The Authority will provide guidance on each IDSP through interim decisions issued no later than January 31 of the calendar year in which each IDSP is due. This iterative, long-term approach to implementing an Equitable Modern Grid creates a purposeful process for considering all solutions to the key opportunities and challenges facing the electric sector now and in the future, and also fosters an environment for learning from previously implemented initiatives.

Ultimately, both the near- and long-term processes outlined in this Framework will ensure that Connecticut consistently and increasingly delivers a more equitable, modern grid through the realization of the following objectives: (1) support of (or the removal of barriers thereto) the growth of Connecticut's green economy; (2) facilitation of a cost-effective, economy-wide transition to a decarbonized future; (3) enhanced customer access to a more resilient, reliable, and secure commodity; and (4) advancements in the ongoing energy affordability dialogue, particularly in underserved communities.

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<sup>28</sup> Docket No. 17-12-03RE10 will be initiated upon the issuance of DEEP's IRP. Docket No. 17-12-03RE11 will be initiated upon the issuance of the Final Decision in Docket No. 17-12-01RE01.

**DOCKET NO. 17-12-03 PURA INVESTIGATION INTO DISTRIBUTION SYSTEM  
PLANNING OF THE ELECTRIC DISTRIBUTION  
COMPANIES**

This Decision is adopted by the following Commissioners:

Marissa P. Gillett

John W. Betkoski, III

Michael A. Caron

CERTIFICATE OF SERVICE

The foregoing is a true and correct copy of the Decision issued by the Public Utilities Regulatory Authority, State of Connecticut, and was forwarded by Certified Mail to all parties of record in this proceeding on the date indicated.



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Jeffrey R. Gaudiosi, Esq.  
Executive Secretary  
Public Utilities Regulatory Authority

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October 2, 2019

Date

**VI. APPENDIX A**

Table 1: Tentative Phase II Procedural Dates

REOPENED PROCEEDING	SOLUTIONS DAY / PUBLIC FORUM	2ND SOLUTIONS DAY / PUBLIC FORUM	ALTERNATE DATE
RE01 – Energy Affordability	October 25 <sup>th</sup> (Residential)	December 4 <sup>th</sup> (Commercial and Industrial)	November 1 <sup>st</sup> (Residential)
RE02 – Advanced Metering Infrastructure	October 28 <sup>th</sup>	-	November 5 <sup>th</sup>
RE03 – Electric Storage	November 14 <sup>th</sup>	November 15 <sup>th</sup>	December 6 <sup>th</sup>
RE04 – Zero Emission Vehicles	November 22 <sup>nd</sup>	December 20 <sup>th</sup>	-
RE05 – Innovation Pilots	December 13 <sup>th</sup>	-	December 17 <sup>th</sup>
RE06 – Interconnection Standards	November 11 <sup>th</sup> (Best Practices)	November 25 <sup>th</sup> (Other)	-