SECTION 2: GRID MODERNIZATION

15 Dockets | 8 Annual Program Reviews

The electric sector and its infrastructure are the veins and arteries that power modern society. Nationally, the electric sector accounts for approximately five percent of the gross domestic product (GDP). 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. However, today's electric grid faces new and growing challenges such as rising energy demand, growing deployment of distributed energy generation resources (DERs) like rooftop solar, ambitious climate and energy policies, and increasing storm frequency and intensity. These, and other challenges, are impacting the affordability, resilience, and reliability of our electric distribution system.

In response to these challenges, PURA determined that it needed a distinct strategy for grid modernization, separate from traditional electric sector regulation. In October 2019, PURA issued an Interim Decision in Docket No. 17-12-03, PURA Investigation into Distribution Planning of the Electric Distribution Companies (2019 EMG Interim Decision) outlining the Authority's framework for investigating strategies to modernize Connecticut's electric grid, both near-term and long-term. The framework is designed to foster innovative solutions that address the major challenges and opportunities facing the electric sector and has four objectives:

- Support (or remove barriers to) the growth of Connecticut's green economy;
- Enable a cost-effective, economy-wide transition to a decarbonized future;
- Enhance customer access to a more resilient, reliable, and secure commodity; and
- Advance the ongoing energy affordability dialogue in the state, particularly in underserved communities.

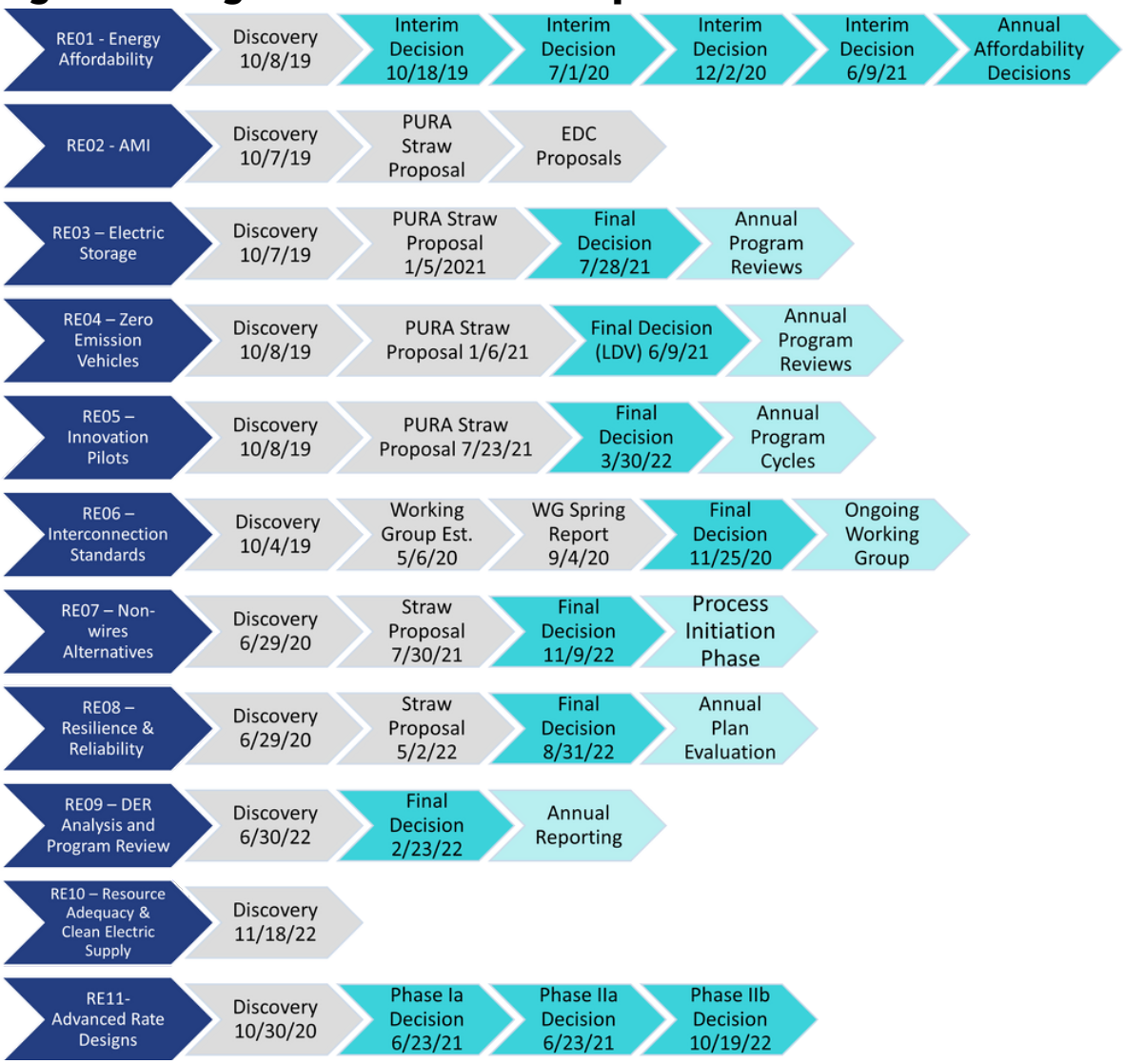
What's a "reopener docket"?

A docket that is initiated to either reassess or continue evaluating a specific part of the original docket's decision. It helps to maintain continuity between related dockets. "Reopened" proceedings use the naming convention "##-##-##re0#" in PURA's docket database.

All four objectives are inextricably connected and, thus, no single objective can be accomplished without the others if an Equitable Modern Grid is to be achieved. Similarly, the whole of an Equitable Modern Grid is greater than the sum of its parts, as the realization of each objective can further the achievement of the others.

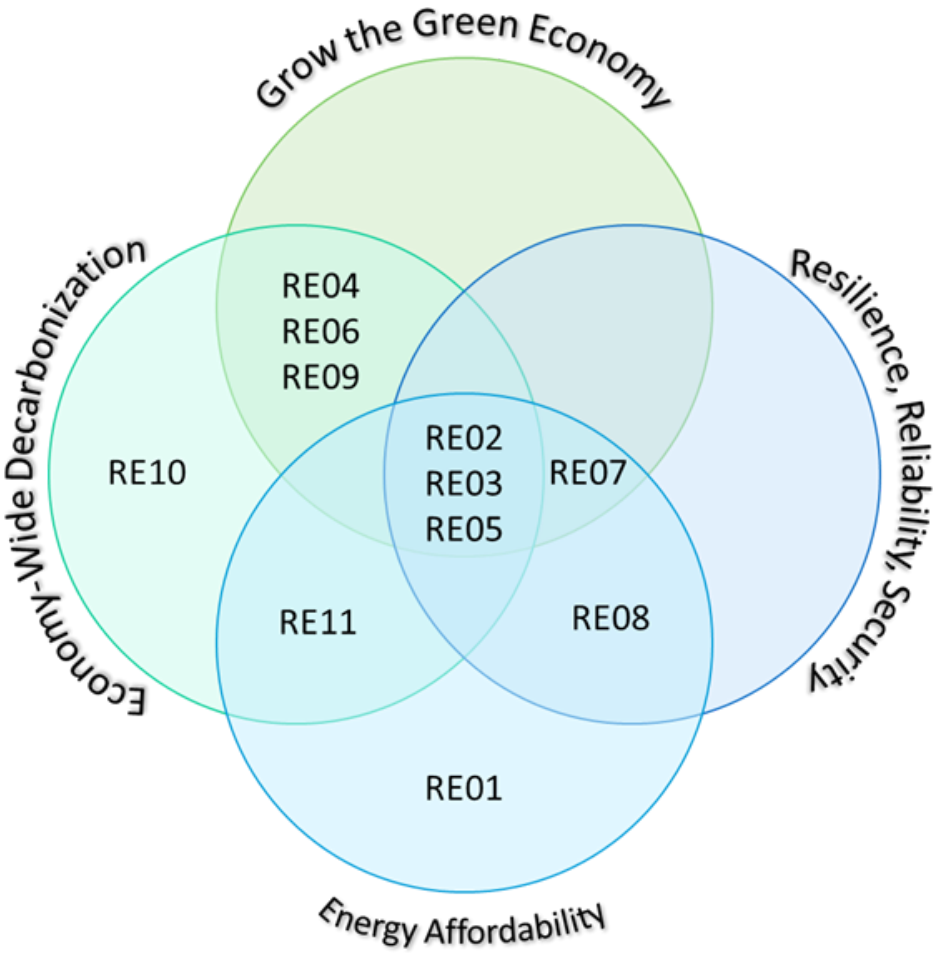
The 2019 EMG Interim Decision introduced eleven sub-topics for further investigation through a series of "reopened" proceedings, where PURA has been and, in some cases, continues to evaluate potential solutions for their cost-effectiveness and ability to meet the objectives of the framework in the long-term. Since 2019, PURA has initiated all eleven reopeners, and has issued decisions in nine with several decisions issued in some of the reopeners. The reopeners and their topics are as follows:

Figure 3: Progress Across EMG Reopener Dockets



Though each reopener contributes towards all four EMG objectives, some further more of the objectives than others. Figure 4 below helps to demonstrate the relationship between each topic and the EMG objectives, and PURA's strategy to ensuring all four are accomplished through this comprehensive approach.

Figure 4: Reopener Alignment with EMG Objectives



KEY GRID MODERNIZATION TOPICS IN 2022

As demonstrated by Figure 4 above, each EMG reopener docket addresses one or more of the original EMG Interim Decision objectives. In 2022, the Authority issued multiple groundbreaking grid modernization decisions, each supporting the EMG Framework as a whole, and making significant contributions towards a specific objective. In Docket No. 17-12-03RE08, PURA Investigation into Distribution System Planning of the Electric Distribution Companies – Resilience and Reliability Standards and Programs, PURA's August 31, 2022 Decision created a strategic resilience and reliability framework designed to enhance, among other things, the cost effectiveness of these investments moving forward. In Docket No. 17-12-03RE11, PURA Investigation into Distribution System Planning of the Electric Distribution Companies – New Rate Designs and Rates Review, PURA's

October 19, 2022 Decision approved a two-tiered low-income discount rate for qualifying residential customers, improving energy affordability tools. In Docket No. 17-12-03RE05, PURA Investigation into Distribution System Planning of the Electric Distribution Companies –Innovative Technology Applications and Programs (Innovation Pilots), PURA's March 30, 2022 Decision established the Innovative Energy Solutions Program, which will enhance novel clean energy technology deployment and economic development in Connecticut. And finally, in Docket No. 17-12-03RE09, PURA Investigation into Distribution System Planning of the Electric Distribution Companies – Clean and Renewable Energy Resource Analysis and Program Reviews, PURA's February 23, 2022 Decision created a centralized and consolidated inventory of all of PURA's clean energy annual program reviews, as well as a repository for data and an overview of the state's clean and renewable energy programs as a whole, to monitor progress toward the state's decarbonization goals. Further details on each grid modernization decision and clean energy annual program review are provided below.

Dkt. No. 17-12-03RE08: A Comprehensive, Cost-Effective Approach to Resilience and Strategic Vegetation Management

A modern grid must both be able to reliably meet increasing demand from conventional and newly electrified end uses, and resist any threats to that reliability, especially those that are weather-based. Decades of investment in reliability and resilience measures have helped maintain high blue-sky reliability performance for both electric distribution companies (EDCs) in Connecticut, but the marginal returns from these investments must, by definition, diminish at a certain point. As a result, achieving the same reliability and resilience levels is becoming increasingly expensive.[1]

In the October 2019 EMG Interim Decision, PURA concluded that establishing a process to identify resilience measures with the highest marginal returns will deliver the most value to ratepayers by cost-effectively enhancing resilience and reliability of the electric grid. The Interim Decision then introduced Docket 17-12-03RE08, PURA Investigation into Distribution System Planning of The Electric Distribution Companies – Resilience and Reliability Standards and Programs, with the goal of investigating how best to accomplish that objective and establish a comprehensive framework to do so. On August 31, 2022, PURA issued its decision in Docket No. 17-12-03RE08 and established both Reliability and Resilience Frameworks, a Long-term Undergrounding Strategy, and established the Vegetation Management Working Group.

Vegetation management, also known as tree-trimming and tree removal for the purpose of electric resilience and safety, has long been a controversial topic. Connecticut is a densely forested state and has the most urban tree cover in the nation. The state's tree cover and forests provide critical services such as protecting soil, water quality and supply, providing wildlife habitat, and sequestering carbon. However, given that

Connecticut is also the fourth most densely populated state, the proximity of trees to human infrastructure can at times be problematic regarding electric reliability and resilience.[2] Trees are often cited by the utilities as a major cause of electric utility outages, which is why aggressive vegetation management practices like removing hazardous trees is historically relied on as a common mitigation measure.

There is inherent tension between vegetation management as an electric reliability and resilience measure and the environmental value that Connecticut's vegetation provides. This tension was evident in the opposition expressed by members of the public, local representatives, and environmental groups in Docket No. 17-12-03RE08, particularly in relation to current and planned vegetation management work. During that docket process, PURA received multiple comments requesting that the EDCs halt their vegetation management projects. Concerns regarding the cost-effectiveness and ability to measure the benefits of vegetation management were also raised. In response, the Authority sought written comments on how to structure a standing Vegetation Management Working Group that would focus on improvements to the EDCs' vegetation management programs and factor in a feedback loop so that such recommendations are considered during future decision-making processes. Comments received from both DEEP and the EDCs supported the development of a working group and provided recommendations around its structure and key focus areas. As a result, PURA directed EOE to collaborate with DEEP and OCC to establish a Vegetation Management Working Group based upon the former State Vegetation Management Task Force,[3] and tasked the Working Group with tackling issues such as:

- Incorporating environmental considerations in vegetation management program design, including impacts of climate change;
- The impact of rising costs of vegetation management programs due to notification and traffic control requirements;
- Establishing consistent and efficient vegetation management practices across the municipalities;
- The lack of definition of "trees and shrubs" that is required by Conn. Gen. Stat. § 16-234(a)(4);
- Efficient coordination with municipalities and tree wardens;
- Clarification surrounding the "minimum level of pruning" as implemented by the Authority in the 18-12-25 Decision;
- Enhanced public education regarding vegetation management programs;
- Enhanced statewide standards for roadside tree planting;
- The notification requirements pursuant to Conn. Gen. Stat. § 16-234 imposed only on EDCs and no other entities (municipal electric departments, municipalities); and
- Consideration of undergrounding utility facilities and how it relates to VM programs.

PURA also directed the Vegetation Management Working Group to issue an annual

report of the work done by the group in the preceding twelve months and to submit it to the Authority for its review and approval. Going forward, PURA will consider the findings and any recommendations included in the report during its Annual Review of the EDC's Reliability and Resilience Framework established in the Decision in Docket No. 17-12-03RE08. These Annual Reviews will be conducted through Docket No. XX-08-09 each year, with "XX" being the last two numbers of the calendar year of the review. This will contribute to PURA's objective of identifying the most cost-effective and strategic measures to improve the resilience of Connecticut's grid.

EOE filed the charter for the Vegetation Management Working Group on October 14, 2022, and has committed to a quarterly meeting schedule going forward.

Vegetation Management Related Resources

- 17-12-03RE08 August 31, 2022 Final Decision
- Vegetation Management Working Group Charter

Dkt. No. 17-12-03RE11: Affordability through New Rate Designs

Furthering energy affordability for Connecticut's residents and businesses is another tenet of grid modernization, though it is not a new priority for the state. Connecticut consistently has some of the highest retail electric rates in the nation resulting in high energy burden for some of its residents.[4] This is particularly damaging and harmful to low-income and underserved communities. 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 with low incomes or tight operating margins pay a disproportionate amount of their disposable income toward electricity compared with higher income individuals and businesses with the same electricity usage. Energy affordability has also been further exacerbated by the global COVID-19 pandemic, beginning in March 2020 when unemployment began to increase. During this time, the Authority required the public utilities to cease water, electric, and gas terminations for reasons of non-payment, and to create flexible payment plans for any customer.[5]

While these measures helped to avoid a flood of shutoffs and dangerous living conditions, they are not permanent or long-term solutions to affordability. Recognizing this, the Connecticut General Assembly passed Public Act 20-5, An Act Concerning Emergency Response by Electric Distribution Companies, the Regulation of Other Public Utilities and Nexus Provision for Certain Disaster-Related or Emergency-Related Work Performed in the State (Take Back Our Grid Act). Section 5 of the Take Back Our Grid Act specifically authorized the Authority to begin a proceeding to consider low-income rates by "[i]mplementing low-income…rates [that] better aligns public policy with electric utility performance and cost, providing needed relief to our poorest citizens."

The 2019 EMG Interim Decision had previously introduced Docket No. 17-12-03RE11, PURA Investigation into Distribution System Planning of The Electric Distribution Companies – New Rate Designs and Rates Review, with the intent of exploring new rate designs that address the disproportionate impact of increased electric rates on the lowest income customers and to ensure that Connecticut's businesses are able to remain competitive. m The Authority has already utilized this proceeding to investigate and issue decisions on rate designs including an Economic Development rate for small businesses and an interim rate decrease in late 2021.[6]

On October 19, 2022, PURA issued another Decision in Docket No. 17-12-03RE11, which established a two-tiered low-income discount rate (LIDR) that proactively seeks to provide direct energy assistance to qualifying residential electric customers. The tiers start with an overall eligibility cap at 60% state Median Income (i.e., Tier 1), while eligibility for Tier 2 is aligned with existing state benefit programs (i.e., up to 160% FPG). The Authority's calculation of an appropriate level of discount for customers eligible for Tier 1 and Tier 2 is grounded in meeting the dual LIDR objectives: (1) achieving energy affordability, as defined by the allocation of no more than 6% of annual household income spent on building energy costs; and (2) reducing uncollectible expenses paid by all ratepayers, in part, by reducing the need for service disconnections and reconnections. As a result, the Authority determined that customers eligible for the Tier 1 LIDR shall receive a 10% discount applied to their total monthly bill. In addition, customers eligible for the Tier 2 LIDR shall receive a 50% discount applied to their total monthly bill.

A key component in the successful implementation of this rate will be in identifying all ratepayers that are eligible and enrolling them. The most timely and efficient approach to eligibility verification would be through an ongoing data exchange between the EDCs and the Department of Social Services (DSS), whereby DSS could cross-reference enrollment in its Benefit Programs with similar income criteria. The EDCs have been in discussion with DSS to implement such a data sharing agreement for several years, but PURA has no jurisdiction over the participation of other state agencies. Therefore, until an agreement or legislative change that formalizes data sharing between DSS and the EDCs is made, PURA has directed the EDCs to utilize interim eligibility identification measures, such as automatic enrollment of financial hardship customers. Additionally, the EDCs are required to submit further proposed identification methods including partnerships with the Community Action Agencies (CAAs) and Operation Fuel by February 1, 2023. It is important to note that the measure put in place in lieu of a data sharing agreement between DSS and the EDCs would ultimately create additional costs borne by ratepayers and use valuable utility resources that could otherwise be used to assist other ratepayers in need of assistance. Further, such a data sharing agreement has been in place in Massachusetts for several years.[7]

Low-income discount rates are a major step forward in creating a more equitable modern

grid that will positively impact many customers. Not only will it make bills more affordable for those who struggle to pay, but it will help reduce costs for all ratepayers. Every year, the EDCs must file the amount of uncollectibles with the Authority in order to build those costs into the next year's rates for recovery. The uncollectibles are then distributed across rates and paid by all ratepayers. Though a LIDR will not completely absolve all unpaid revenues, and involves a subsidy that also must be accounted for, it is expected that this will still reduce overall costs for all ratepayers as more people will be able to afford their bills and, thus, pay them. In short, increasing the ability of low-income ratepayers to pay more of their bills is a benefit to all.

The Authority directed Eversource and UI to implement a two-tier LIDR approved in the Decision in Docket No. 17-12-03RE11 beginning January 1, 2024. The EDCs are required to begin accepting customers' proof of eligibility by August 1, 2023. Going forward, the Authority will re-evaluate the LIDR on a biennial cycle as part of the relevant energy affordability annual review proceeding, with the first review expected in 2025.

In the meantime, on December 22, 2022, the Authority approved an interim low-income discount credit (LIDC), effective January 1, 2023 through June 30, 2023, which approximates the 10% Tier 1 discount for customers identified as financial hardship. Specifically, income-eligible customers in UI's service territory will receive a monthly on-bill credit of $24 and eligible customers in Eversource's service territory will receive a monthly on-bill credit of $25. The EDCs and other parties may seek an extension of the LIDC beyond June 2023 by submitting a proposal to the Authority by May 15, 2023.

Energy Affordability Related Resources

- 17-12-03RE11 Low Income Discount Rate Decision
- PURA Affordability Website
- Low Income Discount Credit Ruling

Legislative Recommendations to Enhance Affordability & Equity

Dockets such as 17-12-03RE11 represent a key tool to enhance affordability and equity for ratepayers. However, PURA recognizes that ultimately, rates and programs are only as equitable as their design and evaluation processes. Due to the quasi-judicial nature of PURA and the corresponding legal and procedural requirements, PURA's processes can often be conducive only to stakeholders that have the resources, expertise, and time to participate during standard work week hours. The Authority has worked hard in recent years to create more equitable participation opportunities, including by hosting periodic, evening public input meetings, widely distributing opportunities for comment, and conducting public relations activities. Nonetheless, the Authority continues to seek

additional opportunities to enhance accessibility and transparency because, ultimately, limitations on the input and perspectives provided in a docket's formal record impact the Authority's ability to issue equitable decisions, as PURA is legally required to base its decisions on the information provided into its formal record.

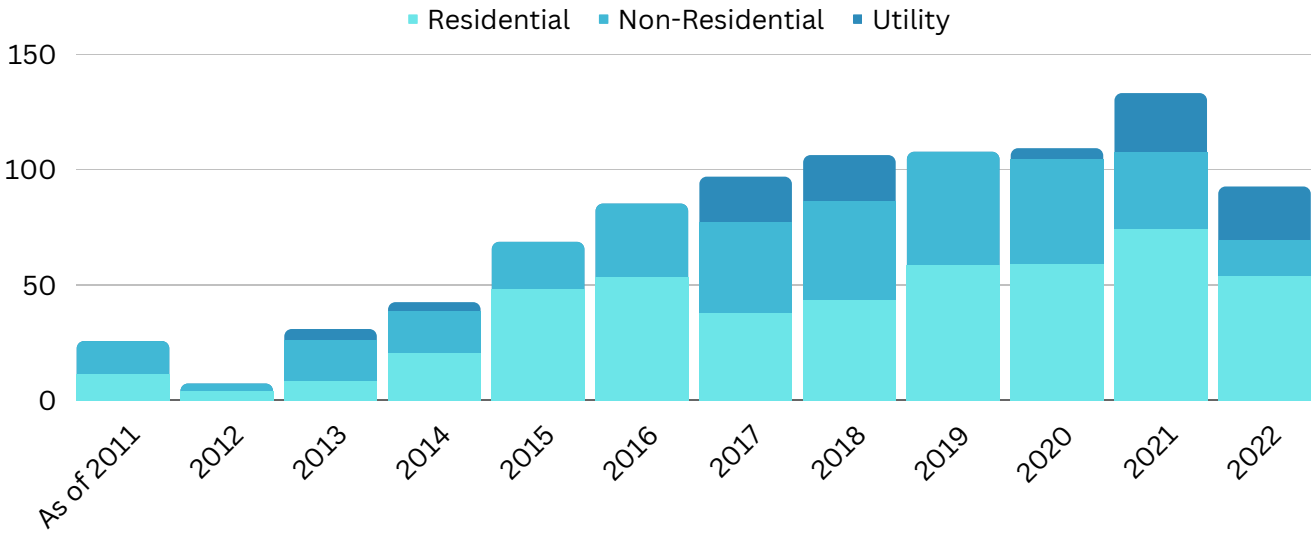
As such, PURA strongly supports any legislative changes that address the issue of equitable participation in Authority proceedings. Specifically, the Authority would support legislative proposals to expand public education efforts around energy affordability programs and PURA proceedings, providing non-profits and other organizations representing ratepayers with greater education and training regarding PURA proceedings, and compensation for underrepresented populations to cover legal fees to engage in PURA proceedings.

Further, PURA recognizes that, while the LIDR is a first step to addressing many of the systemic issues around energy affordability in Connecticut, a 50% discount may not be sufficient to support the most vulnerable populations and those facing multiple drivers of unaffordability (e.g., energy inefficient apartments, past arrearages, medical hardship, low-income, etc.). To address this issue, the Authority would strongly support efforts to expand equitable access to legal representation and resources for underrepresented and vulnerable stakeholders.

Furthering Decarbonization through Renewable Energy Deployment

Connecticut has successfully deployed renewable energy and rooftop solar resources through in-state programs for more than a decade. Figure 5 below demonstrates the state-wide solar deployments that have resulted from State programs since 2011.

Figure 5: Annual Connecticut Solar Resource Deployment by Program Category (MW)



Source: Eversource and United Illuminating Responses to CAE-33, Docket No. 22-08-01

What's a "Tariff"?
In utility regulation, a tariff refers to a per kWh pricing structure charged to customers, along with the terms and conditions of service.

In 2019, the Connecticut General Assembly enacted Public Act 19-35, An Act Concerning a Green Economy and Environmental Protection, directing PURA to, among other things, establish the next generation Class I renewable energy programs for each customer class to begin on January 1, 2022. Throughout 2020 and 2021, PURA and many docket participants worked to create the Residential Renewable Energy Solutions (RRES) and Non-Residential Renewable Energy Solutions (NRES) programs and their associated tariffs. The resulting successor tariffs were designed to meet the objectives of:

1. maintaining the sustained, orderly development of the state's solar industry;
2. Achieving a 100% zero carbon electric grid by 2040;
3. Balancing participant costs and benefits with non-participant costs and benefits and electric system costs and benefits;
4. Ensuring program accessibility for customers; and
5. Encouraging increased inclusivity overall, as well as program participation by LMI customers and customers in environmental justice communities.[8]

These tariffs represent the evolution of Connecticut's clean energy programs including the Residential Solar Investment Program (RSIP), traditional net metering, Virtual Net Metering, and the Low and Zero Emissions Renewable Energy Credit (LREC/ZREC) program. These programs were instrumental in deploying clean energy throughout the state, but reached a stage where they were ready to be developed into more sustainable, competitive, and transparent programs.

To ensure that these programs remain cost effective and on track to at least maintain historical deployment levels, PURA implemented an annual review process for each successor renewable energy program. These annual processes are used to review key metrics and to approve any necessary adjustments to the programs. The summaries of the 2022 Annual Reviews for these programs are included below.

Dkt. No. 17-12-03RE09: Optimization through Annual Program Review

Since the release of the EMG Framework, the Authority has designed and authorized several new clean energy programs, many at the behest of the General Assembly. These programs include the Residential Renewable Energy Solutions (RRES), Non-Residential Renewable Energy Solutions (NRES), and Shared Clean Energy Facility (SCEF) Programs, authorized pursuant to Conn. Gen. Stat. §16-244z; the Energy Storage Solutions (ESS) Program, authorized pursuant to Conn. Gen. Stat. §16-243ee; and the Electric Vehicle (EV) Charging Program.[9]

A consistent feature of these new programs is the inclusion of an annual review process.

The purpose of these annual reviews is to evaluate key program metrics from the preceding year and to make strategic program adjustments to ensure continued alignment with each program's core objectives and deployment targets. This allows program administrators to make incremental improvements to reflect changing market conditions and to account for lessons learned in the previous year.

In order to create an organized record of program modifications, the Authority has implemented a standardized numbering convention for each program, as summarized in Table 2 below:

Table 2: PURA Annual Clean Energy Program Review Dockets

Numbering Convention	Standard Docket Title
2X-08-01	20XX Clean and Renewable Energy Program Data and Report
2X-08-02	Annual Residential Renewable Energy Solutions Program Review & Rate Setting - Year X
2X-08-03	Annual Non-Residential Renewable Energy Solutions Program Review - Year X
2X-08-04	Annual Shared Clean Energy Facility Program Review - Year X
2X-08-05	Annual Energy Storage Solutions Program Review - Year X
2X-08-06	Annual EV Charging Program Review - Year X
2X-08-07	Innovative Energy Solutions Cycle X

Each of these annual reviews provide an important opportunity to review each clean energy program's design and annual progress towards its goals.

The Authority has also anticipated that there will be a need each year for one centralized resource that would consolidate all of these program reviews and information about related clean energy programs. This is achieved through the annual "Clean and Renewable Energy Program Report," established by Docket No. 17-12-03RE09, PURA Investigation into Distribution System Planning of the Electric Distribution Companies – Clean and Renewable Energy Resource Analysis and Program Reviews.

The Authority issued its first Clean and Renewable Energy Report on February 23, 2022 summarizing the status of residential solar PV deployments, the Low Emission Renewable Energy Credit and Zero Emission Renewable Energy Credit (LREC/ZREC) Program, the Virtual Net Metering (VNM) Program, public policy contracts and power

purchase agreements (PPAs) secured through DEEP procurements, and more for the year 2021. As many of those programs, like traditional traditional residential net metering, LREC/ZREC and Virtual Net Metering, were succeeded by the RRES and NRES programs in 2022, future iterations of this report will instead reflect the findings and data from the annual review dockets listed in Table 2 above. PURA will include the Clean and Renewable Energy Report as an appendix to future editions of this PURA Annual Report. It is anticipated that the 2022 Clean and Renewable Energy Report will be available in early February through Docket No. 22-08-01, 2022 Clean and Renewable Energy Program Data and Report.

Annual Clean & Renewable Energy Program Review Related Resources

- 17-12-03RE09 Decision
- 2021 Clean and Renewable Energy Report

Dkt. No. 22-08-02: RRES Program Annual Review - Year 2

As stated above, the RRES Program was created to ensure the continued growth of the residential renewable energy market following the conclusion of RSIP and the sunset of net metering on December 31, 2021. Every year, PURA opens a docket to review the RRES Program's progress towards meeting its objectives and to set the following year's tariff rates, and any other associated payments for participants. In setting the tariff rates for future program years, PURA considers both the original program objectives and the rate of return solar project need to achieve those objectives. This annual process allows PURA to account for changing variables such as federal policy changes, inflation, participation trends, and more.

Changes to the Tariffs

The Annual Review for Year 2 of the RRES Program was conducted in Docket No. 22-08-02. Based on the evidence submitted by docket participants, PURA found that the current tariff rates and rate of return are sufficient to incentivize an adequate number of applications to meet the RRES Program deployment targets in 2023. Key variables considered by the Authority included the rising costs of installation due to inflation, but also the balancing effect of the change to the federal Investment Tax Credit, which will remain at 30% for residential projects instead of declining, as previously planned. Additionally, PURA concluded that another year of program data will likely be necessary before any changes are made to the tariff rates.

Low-Income and Affordable Housing Updates

While the overall tariff rates will remain unchanged in the next year, PURA was concerned by the EDCs' report that only 16.8% of installed residential solar projects qualified for the low-income or distressed community adder; far below the Authority's benchmark of 40%. In order to ensure that the RRES Program is accessible and provides benefits to vulnerable and low-income communities, PURA approved an increase to the low-income adder from $0.025/kWh to $0.030/kWh for 2023. The Authority also approved automatic enrollment of eligible customers into the Income Eligible and Economically Distressed Municipality adders based on (1) their address; (2) whether they are already enrolled in a utility hardship program; and (3) whether they had previously participated in the Home Energy Solutions – Income Eligible program.

The Decision in Docket No. 22-08-02 also made progress in enabling affordable housing participation in the RRES Program by approving the majority of the Affordable Housing Working Group's recommendations related to PURA's orders in Docket No. 21-08-02. As a result, multi-family affordable housing with individually-metered units became able to participate in the RRES Program on January 1, 2023. Master-metered buildings are anticipated to be able to begin participating in January of 2024.

Enabling Solar & Storage Configurations

In Docket No. 21-08-02, PURA directed the EDCs to collaborate with the solar industry to file proposed solutions for systems with energy storage to both provide back-up power and to share benefits with multi-family residential customers. The EDCs and solar industry representatives submitted multiple options but also flagged several issues in those designs that could inadvertently limit the potential of this program. In response to this feedback, PURA directed the EDCs to prepare four new engineering plans by May 1, 2023. This information will be incorporated into the RRES Program Year 3 Annual Review.

Residential Renewable Energy Solutions Related Resources

- 22-08-02 RRES Year 2 Decision
- Home Energy Solutions - Income Eligible
- PURA RRES Webpage

Dkt. No. 22-08-03: NRES Program Annual Review - Year 2

In 2022, Public Act 22-14, An Act Concerning Clean Energy Tariff Programs, increased Connecticut's already significant commitment to distributed energy resource growth by authorizing 160 MW of clean energy per year through the tariff or procurement programs established by Public Act 19-35, in addition to residential solar through the RRES program. This change, and other amendments needed to meet the above NRES program objectives, were addressed in the NRES Annual Review Docket, No. 22-08-03.

This docket was the second annual review of the NRES Program. The changes will help better align Year 2 (2023) of the NRES Program with the Program Objectives, by increasing MW deployment, fostering the sustained, orderly development of the Class I solar industry, ensuring least-cost outcomes, and increasing Program accessibility and inclusivity.

Changes to Project Size Categories

In addition to increasing the overall MW authorized each year, Public Act 22-14 also authorized an increase to the size limitation for NRES projects from 2 MW to 5 MW. In light of this, PURA sought stakeholder input on whether there should be changes to the size categories allowed in the NRES program. In order to capture economies of scale, build upon existing demand, and create competition, PURA authorized the changes to the price caps as summarized in Table 3 below.

Table 3: NRES Size Categories

Category	Old Project Size (AC)	New Project Size (AC)
Low Emission Projects	≤ 2,000 kW	≤ 5,000 kW
Large Zero Emission Projects	>600 kW ≤ 2,000 kW	≥ 1,000 kw ≤ 5,000 kW
Medium Zero Emission Projects	>200 kW ≤ 600 kW	>200 kw <1,000 kW
Small Zero Emission Projects	≤ 200 kW	≤ 200 kW

Changes to the Price Caps

In setting the price cap for each year of the NRES Program, the Authority balances the dual objectives of ensuring least-cost outcomes with the desire to deploy the full capacity allowable under statute. The Authority also carefully considers potential impacts on competition in the solicitation process, along with any other potential programmatic impacts. In the decision in Docket No. 22-08-03, the Authority determined that the changed circumstances regarding the increased program capacity and project size cap authorized by Public Act 22-14 necessitated modifications to the price caps for Year 2.

To determine an appropriate price cap for Year 2, the Authority analyzed bid prices from the Year 1 solicitation broken down by the new size categories. Since small projects do not have the benefit of economies of scale and bids were selected from a non-competitive process, the Authority directed the EDCs to maintain the Buy-All price cap for the small category the same as Year 1 at $200.97/MWh.

For the medium and large categories, the Authority grouped Year 1 bids into size categories, inclusive of low emissions projects, and eliminated bids that were withdrawn, declined, or disqualified. The Authority then took the higher value of the following two numbers to establish the project category price cap: (1) the highest selected bid price from Year 1 of the NRES Program; or (2) the eightieth percentile bid price from each category. In this way, the Authority ensured the new price cap is set at a value that the majority of projects can compete at (i.e., the eightieth percentile), while eliminating outliers and mitigating the risk of an overly burdensome price cap. As a result, the medium Zero Emissions price cap was set to $190/MWh, and the Large Zero Emissions and Low Emissions caps were set to $159/MWh.

Updated Bid Preferences

The Authority utilizes bid preferences in the NRES Program to encourage projects to better achieve certain policy goals by providing ranking priority in the solicitation results. In the original NRES Tariff Decision issued on June 30, 2021 in Docket No. 20-07-01, PURA Implementation of Section 3 of Public Act 19-35, Renewable Energy Tariffs and Procurement Plans, the Authority authorized a bid preference under the NRES Program for distressed communities, as defined by the Connecticut Department of Economic and Community Development (DECD). The goal of the distressed community bid preference, consequently, is to ensure that the NRES Program is working for the benefit of all communities. However, during the NRES Program Year 2 review, stakeholders raised concern that non-residential solar projects located in a distressed community often ultimately benefit a wealthier community instead, which runs counter to the intent of the distressed community bid preference.

In response to this, the Authority directed the EDCs to require that all of a project's beneficial accounts be located within distressed municipalities to qualify for the bid preference. This requirement ensures that distressed municipality community members are actively aware of and involved with the NRES project sited in their community, which may not be the case if the beneficial accounts reside outside of the environmental justice community.

Additionally, during this Year 2 review, PURA received recommendations from multiple stakeholders to add a solar canopy and/or carport bid preference to the NRES Program. Stakeholders argued that such a bid preference would allow for greater project deployment, encourage preservation of undeveloped land, and increase overall inclusivity. Though this bid preference may not necessarily further least-cost outcomes due to the potential added costs associated with eligible projects, the Authority approved a 20% bid preference for medium and large projects. The Authority also stated its intent to use future carport or solar canopy project cost data to better analyze the

costs of such projects.

Non-Residential Renewable Energy Solutions Related Resources

- 22-08-03 NRES Decision
- Public Act 22-14, An Act Concerning Tariff Programs
- PURA NRES Webpage

Dkt. No. 22-08-04: Annual Shared Clean Energy Facility Program Review

Since its approval and initiation in 2019, the Shared Clean Energy Facilities (SCEF) Program has selected Class I renewable generation projects through a competitive procurement process pursuant to Conn. Gen. Stat. § 16-244z(a)(1)(C). This program's primary purpose is to provide more equitable access to renewable energy systems for Connecticut residents and businesses that are unable to install a system on their property; often low-to-moderate income customers or customers in environmental justice communities. These customers could instead subscribe to a renewable energy system financed and constructed somewhere other than their residence or business' location and receive a $0.025/kWh credit on their energy bill. The clean energy system owner is responsible for the financing and the construction of the project that will deliver the energy and RECs to the EDCs. In turn, the clean energy system owner/ generator will receive direct payment for the energy production of the project on a quarterly basis.

In addition to increased customer access, PURA has identified three other specific program objectives on which to evaluate performance:

1. Annually and cost-effectively allocate up to 25 megawatts to SCEFs, as defined in Conn. Gen. Stat. § 16-244x;
2. Provide savings to specific categories of customers, particularly customers with low- to moderate-income (LMI), low-income service organizations, and customers who reside in environmental justice communities; and
3. Lower or eliminate barriers to entry for Subscriber Organizations, if and when possible.

Consistent with the other Class I renewable energy programs it oversees, PURA initiates an annual review proceeding to consider modifications to the SCEF program design that would better align it with the program objectives. Modifications usually include changes to the bid price cap and bid preference criteria proposed by DEEP, or changes to the RFP documents proposed by the EDCs. On June 20, 2022, PURA issued a Notice of Proceeding in Docket No. 22-08-04, Annual Shared Clean Energy Facility Program Review – Year 4. In addition to the standard modifications identified above, PURA also used this proceeding

to consider changes to the SCEF Program required as a result of the passage of Public Act 22-14, which went into effect on October 1, 2022.

The most significant changes resulting from Public Act 22-14 were to the definitions of low- and moderate-income customers, which impacts customer eligibility provisions. Specifically, the definition of "low-income customer" was changed from customers whose income does not exceed 80% of the area median income (AMI) to customers whose income does not exceed 60% of the state median income (SMI). The amendment lowers the maximum income threshold (from 80% to 60%) and changes the relevant median income (from AMI to SMI). Additionally, the statutory definition for affordable housing facilities was removed from the definition of "low-income customer" and was replaced with the tiered definition of affordable housing used in the RRES Program.

Public Act 22-14 also increased the nameplate capacity rating from four megawatts or less, to five megawatts or less, and expanded the aggregate megawatt cap per year from 25 to 50 megawatts. The Authority recognized these statutory changes and approved the associated revisions to the program rules proposed by the EDCs in its decision issued on December 7, 2022.

Legislative Recommendations to Clarify SCEF Eligibility

As identified in PURA's decision in Docket No. 22-08-04, the definition of "moderate-income customer" was not amended in line with the changes made to the definition of "low-income customer" in Public Act 22-14. As such, there is currently a disconnect between the two definitions, resulting in an unintended eligibility gap between low- and moderate- income customers. Specifically, any resident that makes 60% or less of the area median income, but not 60% or less than the state median income, is not specifically covered in the existing definitions. As this is clearly an unintended consequence that yields an untenable result, the Authority was able to issue the following guidance through the decision in Docket No. 22-08-04:

> Those customers whose income exceeds the 60% SMI threshold, but do not meet the 60% AMI threshold, shall qualify as "moderate income customers." Where there is an overlap in the eligibility criteria, the Authority directs the EDCs to qualify those customers that qualify as both low- and moderate income, as "low-income customers" for purposes of SCEF Program administration.
>
> Docket No. 22-08-04, Decision dated December 7, 2022, p. 5

Despite the practical resolution of this matter through Docket No. 22-08-04, the Authority nonetheless respectfully recommends that the definition of "moderate-income customer" be amended in the future to be between 60% and 100% of state median income.

Shared Clean Energy Facilities Related Resources

- 22-08-04 SCEF Decision
- Public Act 22-14
- DEEP SCEF Webpage

Dkt. No. 17-12-03RE05: Growing the Green Economy Through Innovation Pilots

Innovation is a natural complement to modernization; one that can, if harnessed, greatly enhance the benefits and services delivered to ratepayers. With the increase of data availability, grid-edge visibility, and distributed energy resources comes significant opportunities to optimize the grid, its resiliency and reliability, and the customer experience. However, the risk and uncertainty of requiring utilities to conduct traditional research and development or even to pilot new technologies or applications can often be too great to consider the expenses prudent. So, conventional strategies often continue to be implemented, even though novel and emerging options show promise to lower costs and/or improve service.

Two of the main objectives of the EMG Framework are to support the growth of Connecticut's green economy and to enable a cost-effective, economy-wide transition to a decarbonized future. In the 2019 EMG Interim Decision, PURA introduced Docket No. 17-12-03RE05, PURA Investigation into Distribution Planning Of The Electric Distribution Companies – Innovative Technology Applications And Programs (Innovation Pilots) with the goal of creating a regulatory program that allowed the EDCs to deploy, on a limited basis, innovative pilot programs, technologies, products or services, and to evaluate their performance. If satisfactory ratepayer benefits are demonstrated, the innovation(s) could be scaled up for statewide deployment by the EDCs.

The Authority issued its decision in Docket No. 17-12-03RE05 on March 30, 2022, officially approving the program design of the Innovative Energy Solutions Program (IES Program). There are two features of this program that distinguish it from other pilots or test beds. The first is that it employs guardrails and project "off-ramps" to ensure value and to minimize ratepayer risk. The IES Program is structured into four phases, where potential innovations are reviewed with increasing scrutiny to ensure that their product or service meets the needs of Connecticut's grid and ratepayers, and can deliver their claimed

benefits or value at scale. If a project cannot meet the criteria and thresholds at a certain phase, the Authority will be able to retire the project, thereby avoiding unnecessary risk and costs to ratepayers.

The second feature addresses the inverse situation where a pilot project demonstrates substantial ratepayer and grid benefits. In this case, the IES program provides a clear pathway by which to move a successful pilot project to full-scale deployment across the state's two largest EDCs' territories, which the traditional approach to EDC pilots have lacked nation-wide to date. This ensures that successful pilots are brought to scale, thereby delivering the benefits of innovation to all ratepayers.

The IES Program also places a high value on transparency, which is achieved through the external Innovation Advisory Council (IAC) comprised of a representative set of stakeholders, who would have a responsibility for ensuring a balanced perspective in the IES program.[10] Though the Authority is the primary entity responsible for developing, administering, and managing the IES Program, and retains ultimate decision-making authority over aspects of program design and project selection, the IAC provides a forum where potential participating innovators can engage and discuss the program without violating the standard communications rules with PURA. Additionally, the IAC will set the themes and objectives for each annual Program Cycle and will screen projects through the first two phases.

PURA has allocated up to $25 million per program Cycle, with no more than $5 million to any individual project. There are three pathways that will be used to categorize each project's participation: 1) third-party projects or companies; 2) EDC-administered customer and system needs innovations; and 3) collaborations between the EDCs and third parties. It is the goal that in each cycle there will be at least one project in each pathway. This will help maintain a diversified portfolio of solutions, each focusing on a different system challenge.

The first IES Program Launch officially launched on January 31, 2023 in Docket No. 22-08-07, Innovative Energy Solutions Program Cycle 01. Each program Cycle focuses on a selected "theme" for which to solicit projects, but does not exclude proposals that fall outside that theme. Cycle 1 is focused on "Demand-side Flexibility" which may include, but is not limited to, advanced forecasting, automation, flexible winter peak technology, thermal storage and more. Opportunities for public participation will occur throughout the docket. More information can be found at the IES Program Online Portal.

Innovative Energy Solutions Related Resources

- 17-12-03RE05 IES Program Decision
- IES Program Online Portal
- PURA IES Program Webpage

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[1] See, PURA Docket No. 17-12-03, Interim Decision, October 2, 2019, p. 20, available at: https://www.dpuc.state.ct.us/2nddockcurr.nsf/8e6fc37a54110e3e852576190052b64d/0e5fc32986954bf78525875200798b44?OpenDocument

[2] See, DEEP 2020 Connecticut Forest Action Plan, December 3, 2021, available at: https://storymaps.arcgis.com/stories/b448641810a848de9d5d378c3c5b1c5d.

[3] Details regarding the mission, structure, and ground rules of the State Vegetation Management Task Force can be found here: https://portal.ct.gov/DEEP/Forestry/VM-Task-Force/Vegetation-Management-Task-Force

[4] Energy burden is defined as the percentage of disposable income spent on energy utilities and expenses. A 6% energy burden is the generally accepted threshold for unaffordability.

[5] For more information on PURA's 2020 actions in response to the COVID-19 pandemic, visit: https://portal.ct.gov/pura/consumer-services/pura-covid-actions. For more information on the Authority's order requiring the electric and gas distribution companies to offer flexible payment arrangements, see Decision dated April 20, 2022 in Docket No. 21-07-01, Application of The Connecticut Light and Power Company and Yankee Gas Services Company, each individually d/b/a Eversource Energy, The United Illuminating Company, Connecticut Natural Gas Corporation, and The Southern Connecticut Gas Company for Approval of Arrearage Forgiveness Program 2021-2022, pp. 12-22, available at, https://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/7a4863c58dbf9ccb8525882a005b0335/$FILE/210701-042022.pdf.

[6] See, PURA Interim Decision in Docket No. 21-01-04, PURA Annual Review of the Rate Adjustment Mechanisms of the United Illuminating, June 23, 2022, available at: https://portal.ct.gov/-/media/PURA/electric/Decision--Phase-1B.pdf. See also PURA Interim Decision in Docket No. 17-10-46RE03, Application of the Connecticut Light and Power Company d/b/a Eversource Energy to amend its Rate Schedules - Interim Rate Decrease, Low-income Rates, and Economic Development Rates, October 27, 2021, available at: https://www.dpuc.state.ct.us/2nddockcurr.nsf/8e6fc37a54110e3e852576190052b64d/93f811461f4ff3538525877b00553b38/$FILE/171203RE11%20&%20171046RE03-102721.pdf

[7] See, PURA Notice of Issuance of Low-Income Discount Rate Straw Proposal and Request for Associated Tariffs, dated May 4, 2022, in Docket No. 17-12-03RE11, PURA Investigation into Distribution System Planning of the Electric Distribution Companies – New Rate Designs and Rates Review, pp. 14-15; 18, available at: https://www.dpuc.state.ct.us/2nddockcurr.nsf/8e6fc37a54110e3e852576190052b64d/a7525b1b9b17381285258838006ec184?OpenDocument

[8] This is a summary of the objectives of both programs though some are specific to each program. For detailed lists of each program's objectives, see the most recent program decisions linked on pages 25 and 28.

[9] The Authority cited several statutes under Title 16 when establishing the EV Charging Program in 2021. See, Docket No. 17-12-03RE04, Decision dated July 14, 2021, pp. 2-4, https://www.dpuc.state.ct.us/2nddockcurr.nsf/8e6fc37a54110e3e852576190052b64d/eb6c28c81c508b208525875200799494/$FILE/171203RE04-071421.pdf.

[10] Specifically, the IAC includes representation from key categories of stakeholders including consumer protection representatives, such as the Office of Consumer Counsel (OCC); innovator and venture capital representatives, such as the Connecticut Green Bank (CGB) and Connecticut Innovations (CI); technical representatives from each EDC; environmental, non-government organization representatives and/or equity- or community-focused organization representatives; and the Department of Energy and Environmental Protection (DEEP). The Authority is also open to IAC representatives from academia familiar with technology innovation and/or energy policy and additional representatives from the for-profit venture capital community. Additional organizations will be identified to correspond with the categorical representation outlined above.

2022 GRID MODERNIZATION DECISIONS

Docket Number	Title	Decision Date
17-12-03RE09	PURA Investigation into Distribution System Planning of the Electric Distribution Companies – Clean and Renewable Energy Resource Analysis and Program Reviews	2/23/2022
17-12-03RE05	PURA Investigation into Distribution System Planning of the Electric Distribution Companies –Innovative Technology Applications and Programs (Innovation Pilots)	3/30/2022
21-07-01	Application of The Connecticut Light and Power Company and Yankee Gas Services Company, each individually d/b/a Eversource Energy, The United Illuminating Company, Connecticut Natural Gas Corporation, and The Southern Connecticut Gas Company for Approval of Arrearage Forgiveness Program 2021-2022	4/20/2022
21-08-02	Annual Residential Renewable Energy Tariff Program Review and Rate Setting	1/05/2022 6/8/2022
17-12-03RE08	PURA Investigation into Distribution System Planning of the Electric Distribution Companies – Resilience and Reliability Standards and Programs	8/31/2022
22-06-05	PURA Implementation of Public Act 22-55	9/14/2022
22-05-01	2022 Energy Affordability Annual Review	10/12/2022

Docket Number	Title	Decision Date
17-12-03RE11	PURA Investigation into Distribution System Planning of the Electric Distribution Companies – New Rate Designs and Rates Review	10/19/2022
22-08-02	Annual Residential Renewable Energy Solutions Program Review – Year 2	11/2/2022
22-08-03	Annual Non-Residential Renewable Energy Solutions Program Review – Year 2	11/9/2022
17-12-03RE07	PURA Investigation into Distribution System Planning of the Electric Distribution Companies – Non-Wires Alternatives	11/9/2022
22-06-01	Annual Review of Connecticut's Electric Suppliers' and Electric Distribution Companies' Compliance with Connecticut's Renewable Energy Portfolio Standards in the Year 2021	11/23/2022
22-08-04	Annual Shared Clean Energy Facility Program Review – Year 4	12/7/2022
22-08-06	Annual Review of the Electric Vehicle Charging Program – Year 2	12/14/2022
22-08-05	Annual Energy Storage Solutions Program Review – Year 2	12/21/2022

A comprehensive list of PURA 2022 decisions is available in Appendix 2, attached to this Report.