



SECTION 4: GRID MODERNIZATION

The electric sector and its infrastructure are the veins and arteries that power modern society. Nationally, the electric sector accounts for approximately 5% 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% 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 a distinct strategy for grid modernization was necessary, 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 (EMG Interim Decision) outlining the Authority's framework for investigating both near- and long-term- strategies to implement an Equitable Modern Grid (EMG) for Connecticut.

The EMG framework is designed to foster innovative solutions that address the major challenges and opportunities facing the electric sector and 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 single objective can be accomplished without the others to achieve an Equitable Modern Grid. 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 11 sub-topics for further investigation through a series of “reopened” proceedings, where PURA has evaluated and in some cases, continues to consider potential solutions for cost-effectiveness and achievement of objectives in the longer-term. Since 2019, PURA has completed decisions or final reports in all 11 reopeners, with several having moved into a cycle of ongoing annual program reviews. The EMG reopener dockets are summarized below in Table 4.

What is 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.

Table 4: Overview of the EMG Reopener Dockets

Docket Number 17-12-03REXX	Topic Area	Date of Decision or Final Report	Ongoing Annual Dockets
RE01	Energy Affordability	10/18/2019, 07/01/2020, 12/02/2020, 06/09/2021	Yes
RE02	Advanced Metering Infrastructure	1/3/2024	N/A
RE03	Energy Storage Systems	7/28/2021	Yes
RE04	Zero Emissions Vehicles	6/9/2021	Yes
RE05	Innovation Pilots	3/30/2022	Yes
RE06	Interconnection Standards	11/25/2020	N/A
RE07	Non-Wires Solutions	11/9/2022	Yes
RE08	Reliability & Resilience	8/31/2022	Yes
RE09	DER Analysis and Program Review	2/23/2022	Annual Reporting
RE10	Resource Adequacy & Clean Energy Supply	2/1/2024	N/A
RE11	Advanced Rate Design	02/23/2021, 06/23/2021, 10/19/22	N/A

KEY GRID MODERNIZATION TOPICS

The Authority's work in 2025 to advance the Grid Modernization objectives is illustrated below by a summary of a select docket for each objective.

Support (or Remove Barriers to) the Growth of Connecticut's Green Economy

Docket No. 24-08-07: Innovative Energy Solutions Program Cycle 3

The Authority issued a decision in Docket No. 17-12-03RE05, PURA Investigation into Distribution System Planning of the Electric Distribution Companies -Innovative Technology Applications and Programs (Innovation Pilots), on March 30, 2022, officially approving the program design of the Innovative Energy Solutions Program (IES Program). The goal of this program is to enable the deployment of, on a limited basis, innovative pilot 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.

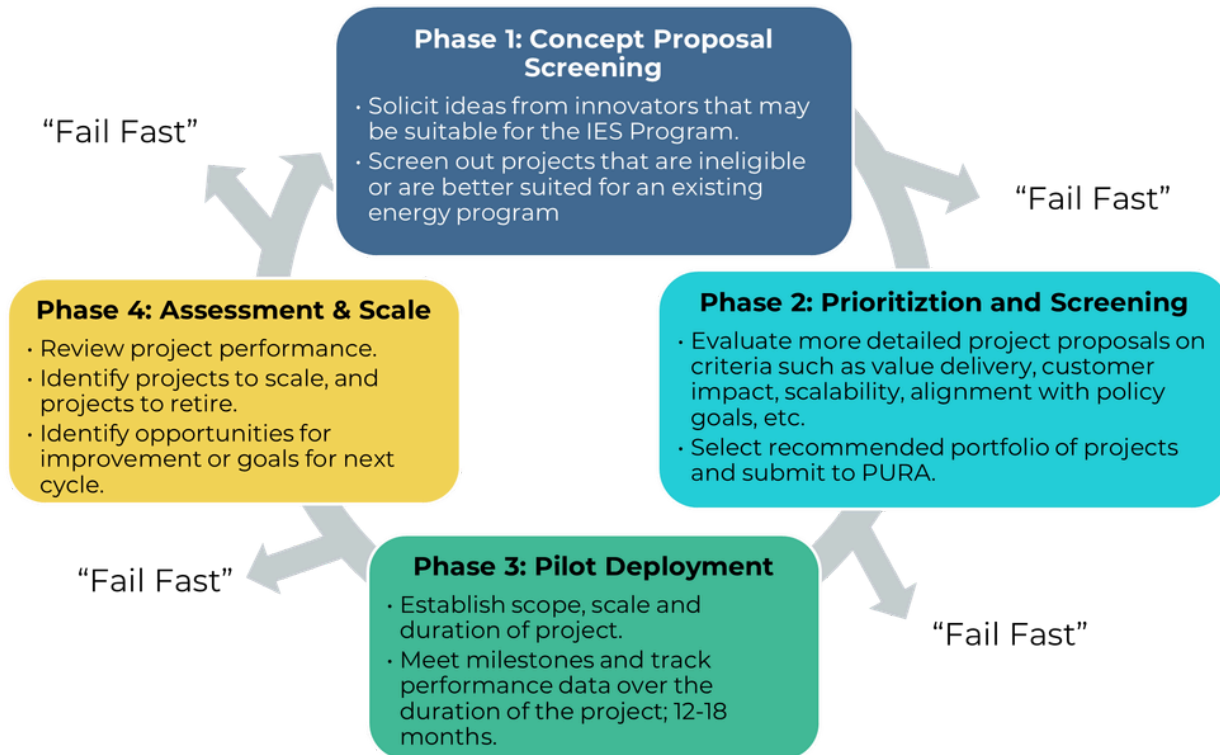
There are two features that distinguish this program from other pilot programs. First, it employs guardrails and project "off-ramps" to ensure value and to minimize ratepayer risk. The IES Program is structured into four phases, where potential innovations are reviewed with increasing scrutiny to ensure that their product or service meets the needs of Connecticut's grid and ratepayers, and can deliver their claimed benefits at scale. If a project cannot meet the criteria and thresholds at a certain phase, the Authority will be able to quickly retire the project, thereby avoiding unnecessary risk and costs to ratepayers.

Second, and conversely, if a pilot project demonstrates substantial ratepayer and grid benefits, the IES program provides a clear pathway by which to move a successful pilot project to full-scale deployment across the state's two EDCs' territories. This path to potential scale has been lacking in other EDC pilots nationwide to date. This allows the opportunity for successful pilots to be 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. 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 applications before submitting recommendations to PURA for final approval.

The IES Program operates around a four-phase cycle, with a new cycle launching each year. Each cycle takes approximately two years to complete. The four phases are summarized in Figure 4 below.

Figure 4: Connecticut IES Program Cycle Phases



In 2025 the Authority issued the Interim Decision for IES Program Cycle 3 authorizing approximately \$7.5 million in pilot project funding for six innovators: Aion Grid, Edge Zero, Gridsight, Kelvin, Stepwise, and Switched Source. Summaries of each of the six selected projects (Cycle 3 Selected Projects) are listed below. Detailed information related to these projects and the Authority’s rationale for selecting each are discussed in full in the Cycle 3 Interim Decision.

Aion Grid

Aion Grid proposed a project that would deploy a behind-the-meter (BTM) smart microgrid at the Mansfield Elementary School in Mansfield, CT. The BTM smart microgrid will integrate an existing 395-kilowatt direct current rooftop solar system and 522 kilowatt-hour battery storage units managed by a distributed energy resource management system (DERMS). Although demand response programs and efficiency incentives for BTM distributed energy resources (DERs) are offered in Connecticut, there is currently not a solution that offers real-time control of the BTM DERs to provide a resiliency-as-a-service model at critical infrastructure sites, such as public buildings, during peak or outage events. The Aion Grid project, which is in collaboration with the UConn Eversource Energy Resource Center, will demonstrate that Aion Grid’s DERMS can deliver scalable, cost-effective resiliency and load flexibility at public and community sites, validating a "microgrid-as-a-service" business model. The Mansfield Elementary

School and surrounding community are expected to benefit from backup power during outages, reduced demand charges, and improved utilization of solar assets. The project has an annual target reduction of 15 to 25 metric tons of carbon dioxide.

Edge Zero

Edge Zero proposed a project that would deploy Edge Zero sensors, which are real-time, transformer-level monitoring devices, at 625 transformers across the distribution system to provide the EDC granular visibility into voltage, current, and power quality. The Edge Zero sensors use cellular communications and cloud-hosted analytics to deliver insights that support asset management, DER optimization, and power quality improvements. Specifically, the Edge Zero sensors enable utilities to assess transformer health and predict failures, helping to manage supply chain challenges. In addition, the utilities can integrate real-time, transformer-level data delivered by the Edge Zero sensors with DERMS or managed charging systems to improve dispatch and allow for more DER interconnections based on actual loading conditions. The Edge Zero sensors also detect issues such as voltage irregularities and harmonic distortion, which enables utilities to address issues before reliability is impacted. The data provided by the Edge Zero sensors can also inform optimal battery asset placement and dynamic dispatch through platforms such as DERMS or Advanced Distribution Management Systems (ADMS).

Gridsight

Gridsight proposed a project that would use its AI-driven platform to analyze advanced metering infrastructure (AMI) and GIS data to identify cost-effective non-wires solutions (NWS) as alternatives to traditional grid upgrades. Gridsight's platform improves upon conventional planning tools by using real, observed data to build hosting capacity models. The Gridsight project will also evaluate how advanced NWS strategies, such as flexible interconnection and dynamic operating envelopes, can unlock additional hosting capacity. In areas where AMI data is limited or unavailable, Gridsight can supplement its analysis with transformer-level aggregations and grid-edge data as Gridsight's algorithms are designed to produce accurate results using at least 20% smart meter penetration. Gridsight can also deploy its platform incrementally in parallel with AMI rollouts to incorporate AMI data.

Kelvin

Kelvin proposed a project that would install window-mounted heat pumps paired with smart thermostats and integrated with existing centralized boiler systems to demonstrate a hybrid electrification solution for multifamily buildings. This room-by-room approach enables autonomous load shifting during peak demand events, reducing electric heating load while maintaining comfort. The Kelvin project addresses a key gap in the HVAC electrification market for multifamily affordable housing and, if successful, could establish a scalable business model for strategic electrification in this sector. The project is expected to benefit participating customers by lowering heating costs and improving indoor comfort and all ratepayers by reducing grid stress and supporting more efficient heating loads during peak periods.

Stepwise

Stepwise proposed a project that would install its "Stepwise Tap" device between residential Level 2 EV chargers and electric panels to manage energy usage and avoid the need for costly electric panel upgrades. The Stepwise Tap enables load balancing at the home level, reducing the typical cost of electric panel upgrades by an estimated \$3,500 to \$4,500 per participant, thereby supporting more equitable access to EV charging programs. The devices also enable participation in utility-managed charging programs through Wi-Fi and cellular connectivity, while providing EDCs with enhanced visibility into EV charging behavior. These data can support improved rate design, grid planning, and load forecasting.

Switched Source

Switched Source proposed a project that would deploy its grid enhancing technology, known as Phase-EQ devices, at select locations on the medium-voltage distribution grid to increase load-serving capacity and improve grid performance. Switched Source's Phase-EQ devices function like an "internet router" for the grid, using power electronics and specialty transformers to intelligently route power through existing infrastructure, thereby increasing delivery capacity by 10-25% without the need for equipment replacement. Switched Source proposes to pilot up to five Phase-EQ devices across multiple use cases to demonstrate up to 1 megawatt (MW) of additional load-serving capacity per feeder. Switched Source's Phase-EQ devices will enable improved reliability, voltage quality, and greater integration of DERs, EV chargers, and other electrification technologies. All ratepayers are expected to benefit through avoided capital investments and reduced long-term operations and maintenance costs.

[Read the Program Cycle 3 Interim Decision.](#)

Enable a Cost-Effective, Economy-Wide Transition to a Decarbonized Future

Docket No. 25-02-14: Clean Energy Successor Program Study

In 2025, the Authority conducted annual program reviews of the state's existing renewable energy tariff programs, specifically the Residential Renewable Energy Solutions (RRES) Program, the Non-Residential Renewable Energy Solutions Program (NRES), and the Sharef Clean Energy Facilities (SCEF) Program. In these annual program reviews, the Authority made modifications to the programs in alignment with statutes and with program objectives as needed. Concurrently in 2025, the Authority initiated a proceeding in Docket No. 25-02-14 to develop a report to the General Assembly regarding proposed successor programs to RRES, NRES, and SCEF.

Consistent with the directives set forth in Public Act No. 25-173, § 6, the Authority's draft legislative report assesses specified elements of current and successor program design, analyzes program performance and cost impacts, and summarizes stakeholder

input received during the proceeding. Based on this evaluation, the Authority issued its preliminary findings and recommendations for stakeholder comment in a draft legislative report on January 21, 2026. The proposed frameworks aim to maintain Connecticut's clean energy deployment pace while improving cost-effectiveness, grid-responsiveness, and equity for all ratepayers. In its draft report, the Authority recommends a comprehensive shift from current structures to a unified eight-year program duration (2028–2035) to provide long-term market stability. The final legislative report was submitted to the General Assembly on February 27, 2026. Key recommendations for each renewable energy tariff program in the draft legislative report are as follows.

Residential Program (Successor to RRES):

- **Reduced Export Compensation:** Transition from full retail rate credits with non-bypassable charges to compensation below the retail rate for exported energy to encourage load shifting and maximize onsite consumption.
- **Instantaneous Netting:** Transition from monthly to instantaneous netting intervals to better align with the actual value of energy produced.
- **Low-Income Protections:** Retain a "Buy-All" tariff option specifically for Low-Income Discount Rate (LIDR) and Multifamily Affordable Housing (MFAH) customers to ensure predictable savings and avoid complex credit accumulation issues.
- **Storage Alignment:** Incentivize energy storage by reducing export rates, encouraging customers to store energy for peak usage, rather than creating new direct storage adders within the solar tariff.

Non-Residential Program (Successor to NRES):

- **"First-Ready" Selection and Standard-Offer Compensation Rates:** Replace the current competitive solicitation process with a "walk-up" approach where projects are awarded standard-offer tariffs upon meeting maturity requirements (e.g., site control, permits, and interconnection agreements).
- **Adders:** Establish adder compensation categories aligned with existing NRES Program bid preference categories – distressed municipalities, landfills, brownfields, and solar canopies – to advance state policy objectives.
- **Budget-Based Cap:** Transition from a megawatt (MW) capacity limit to an annual budget cap to better control ratepayer cost impacts.

Community Renewable Energy Program (Successor to SCEF):

- **Customer Eligibility and Selection:** Limit enrollment to low-income subscribers, prioritizing selection of those with outstanding arrearage balances to help reduce hardship-related uncollectible costs for all ratepayers.
- **Compensation:** Consider adopting a slightly higher compensation rate than the non-residential program to expand access to solar subscriber credits for low-income participants.
- **Alignment with Non-Residential Program:** Align project selection methodologies with the non-residential program to promote statewide consistency.

In addition, the Authority recommends adoption of these additional initiatives for the successor programs in the draft legislative report:

- **Consumer Protections:** Urge the Consumer Protection Task Force to establish comprehensive licensing requirements for clean energy contractors and ongoing compliance auditing to protect participants from predatory practices.
- **Front-of-the-Meter (FTM) Storage:** Request legislative authorization for PURA to develop a dedicated cost-effective FTM storage program to shift non-residential solar output into peak periods, support grid reliability, and address market gap in current storage programs.

Importantly, the Authority's approach is not to slow or constrain renewable deployment, but rather to ensure that future deployment is efficient, equitable, and cost-effective. By redesigning incentives to better target periods of highest system value and encouraging technologies that enhance grid flexibility, the successor programs are intended to deliver greater benefits to both participating customers and non-participating ratepayers. In light of these considerations, the Authority does not recommend continuing the existing RRES, NRES, and SCEF Programs in their current forms. While those programs were effective in launching and scaling clean energy markets, the framework proposed in the draft legislative report is better suited to current and expected future conditions. The successor programs are designed to maintain robust clean energy deployment across the state, advance statutory climate goals, enhance equity and accessibility, and deliver improved value and affordability for all Connecticut ratepayers.

The final legislative report was submitted to the General Assembly and posted to PURA Docket No. 25-02-14 on February 27, 2026. [Read the report.](#)

Enhance Customer Access to a More Resilient, Reliable, and Secure Commodity

Docket No. 24-08-08: Non-Wires Solution Process Cycle 1

In 2022, PURA issued a Decision in Docket No. 17-12-03RE07, PURA Investigation into Distribution System Planning of the Electric Distribution Companies – Non-Wires Alternatives (NWS Decision), establishing a process to transparently leverage competition to identify and deploy non-wires solutions (NWS) to meet distribution system needs with the ultimate objectives of improving grid resilience and reliability, as well as improved outcomes for customers (NWS Process). As technology has changed over time, new options are available to lower system costs and improve outcomes, and specifically to avoid, defer, or reduce the cost of necessary grid investments. In addition, EDCs are now permitted by statute to own energy storage systems under a wider range of conditions than previously possible. The NWS Process enables the Authority and stakeholders to receive the necessary and appropriate information to review the potential EDC investments, including EDC-owned energy storage.

Further, in the NWS Decision, PURA determined that the NWS Process and its policy objectives would greatly benefit from the expertise and oversight of an official NWS Process Monitor. Given the role of the EDCs in this process, oversight and transparency is key to the provision of results in the public interest. The NWS Process Monitor would act as an extension of PURA staff in the annual NWS Process proceedings to supplement existing staff expertise in its oversight of the NWS Process and provide expertise in areas in which Authority staff expertise does not currently exist. Further, given the importance of the robust stakeholder process called for by many docket participants, the Process Monitor would assist in the creation of key NWS Process materials and analytical tools to provide information to stakeholders and facilitate their input.

In 2025, PURA completed the first cycle of the NWS Process in Docket No. 25-08-08 with the EDCs and the NWS Process Monitor. In its 2025 Decision, PURA reviewed the annual EDC Data and Grid Needs Filings for Eversource and UI and the Process Monitor's comments on the Grid Needs Filings to screen distribution system grid needs that offer a meaningful opportunity to procure NWS. The Authority also evaluated the quality, transparency, and completeness of the EDCs' NWS program filings and highlights areas where future submissions and process components could be improved.

Regarding Eversource's Grid Needs Filing, the Authority determined that while a planned transformer replacement project at the Brookfield 14H substation is a valid NWS opportunity, it is Eversource's choice as to whether to pursue a competitive solicitation for NWS, consistent with the Authority's use of permissive rather than mandatory language when making a finding that a competitive request for proposal "should" be pursued rather than "shall" or "must" be pursued. Additionally, the Authority found that in future NWS Process Cycles, Eversource's Grid Needs Filing could be improved by, (1) more clearly articulating the supporting justification for the Company's recommendations, (2) providing project context in a more developed narrative document and, (3) by improving the quality of documentation on which the recommendations are based.

Regarding UI's Grid Needs Filing, the Authority concurred in its Decision with the UI and Process Monitor recommendations that none of the grid needs in UI's Grid Needs Filings should advance to a competitive NWS solicitation. Additionally, the Authority similarly highlighted that UI's Grid Needs Filing could be improved by, (1) including a more developed narrative document with clearer statements justifying the Company's recommendations, and (2) by improving the quality of documentation to justify its recommendations.

Finally, the Authority concluded that overall effectiveness and transparency of the NWS Program could be improved by providing more context on how the Grid Needs Filings integrate with each Company's five-year capital plan. Subsequent to its 2025 NWS Decision, the Authority will consider potential NWS Process improvements resulting from discussions in the third and fourth quarter stakeholder meetings. Though no NWS opportunities may result from the first NWS Process cycle, the Authority is grateful for the EDCs and stakeholders' partnership in advancing this important Grid Modernization initiative.

Advance the Ongoing Energy Affordability Dialogue in the State, Particularly in Underserved Communities

Docket No. 25-05-01: Annual Affordability Review

Each year, PURA conducts a comprehensive review of the energy affordability and arrearage forgiveness programs (AFP) offered by the EDCs and LDCs through one consolidated proceeding. The annual review process provides the Authority with an opportunity to assess these programs' effectiveness at addressing ongoing energy affordability issues, particularly for low-income or disadvantaged communities, as well as their impact on reducing overall unpaid utility bills. The programs available to help customers pay their bills are the result of collaboration between the Authority, the utilities, the Office of Consumer Counsel, EOE, the Department of Social Services (DSS), the General Assembly, low-income and community advocates, and other stakeholders with a commitment to ensuring these offerings are as helpful to customers as possible.

These programs are designed to ensure that as many customers and their varying circumstances can be addressed as possible. The official objectives of the programs are to:

1. Help customers maintain service by offering payment plans to help them resolve their past due balance and make timely payments;
2. Help reduce past due balances for eligible financial hardship customers with a past due balance by offering matching arrears forgiveness with their timely payments;
3. Increase awareness of and participation in energy assistance, weatherization, and relevant clean energy programs, including but not limited to Residential Renewable Energy Solutions (RRES) and Energy Storage Solutions (ESS) programs; and
4. Evaluate collections management practices for those with past due balances along with the cost and affordability impact on all customers.

In 2025, the Authority issued two Decisions during its Annual Review of Affordability Programs and Offerings in Docket No. 25-05-01. The Interim Decision issued on April 4, 2025 streamlined dozens of energy affordability orders across multiple dockets. Many standing orders were either rescinded or modified to improve the efficacy of affordability reporting and to reduce the administrative burden for the companies.

[Read the 2025 Affordability Interim Decision.](#)

In the October 22, 2025 Decision, the Authority reviewed arrearage forgiveness plan goals, the Matching Payment Program, financial hardship income verification practices, Department of Social Services (DSS) data sharing, clean energy programs, medical protection claims, the Avangrid Customer Experience Initiative, collections practices, outreach and education, and other company affordability compliance matters.

[Read the 2025 Affordability Decision.](#)