

2022  
CLEAN &  
RENEWABLE  
ENERGY  
REPORT

February 22, 2023

Connecticut Public Utilities  
Regulatory Authority



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# About this Report

The following report details the status of the current clean and renewable energy programs and contracts administered by the electric distribution companies (EDCs), The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource) and The United Illuminating Company (UI), and overseen by the Connecticut Public Utilities Regulatory Authority (Authority or PURA).



The clean and renewable energy programs and relevant market segments include, but are not limited to:

- Residential solar photovoltaic (PV) systems
- Non-Residential clean energy systems, including solar photovoltaic (PV) fuel cell energy systems
- Shared Clean Energy Facility (SCEF) Program
- Public Policy Contracts / Power Purchase Agreements (PPAs) selected through Department of Energy and Environmental Protection (DEEP) procurements
- Clean Energy Options Program (CEOP) / Voluntary Renewable Option (VRO) Program
- Compliance with Connecticut's Renewable Portfolio Standards (RPS).

This report is intended to act as a centralized document for tracking key performance metrics related to deployment levels and other data associated with these programs and contracts. This report acts as a framework for future annual reports; however, the Authority is committed to making incremental improvements each year, to the extent possible.

The publicly available data used to generate this report can be accessed via Docket No. 22-08-01, [2022 Clean and Renewable Energy Program Data and Report](#). Any publicly available data used to generate future reports will be made available through the corresponding proceeding using the same numbering convention, Docket No. XX-08-01, where XX is the last two digits of the year (e.g., "22" for 2022). Information on the program eligibility requirements, additional documents and resources, and an acronym glossary can be found in the appendices.

# Equitable Modern Grid (EMG)

On October 2, 2019, PURA issued an [Interim Decision](#) in Docket No. 17-12-03, [PURA Investigation into Distribution System Planning of the Electric Distribution Companies](#). The Interim Decision outlines the Authority's framework for investigating near-term and long-term methods for realizing an equitable modern electric grid in Connecticut (EMG Framework).



The decision also identified and outlined 11 dockets to help realize the EMG Framework's objectives. While those dockets and the EMG Framework are not the subject of this report, PURA strives to achieve the goals of the EMG Framework in its oversight of the programs that are outlined herein and the programs established effective January 1, 2022. Those goals, shown above, are:

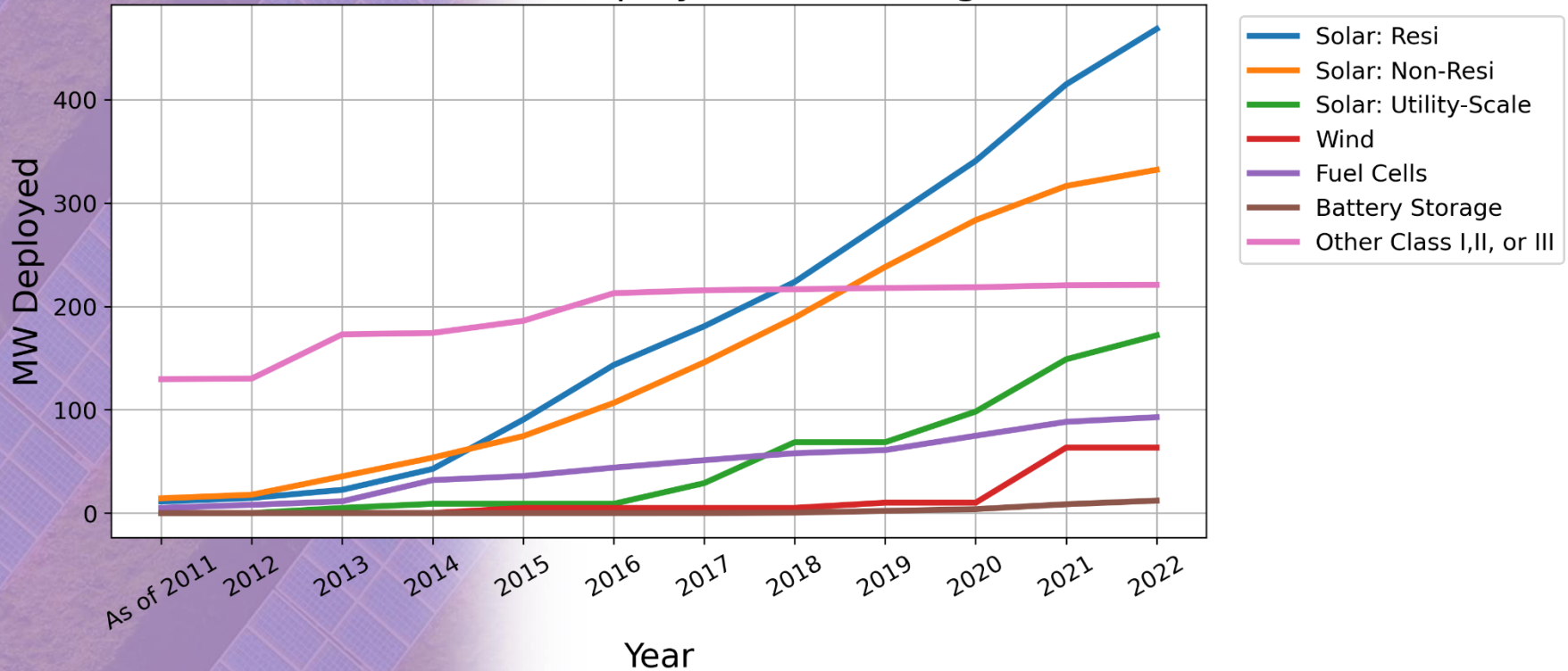
1. Support (or remove barriers to) the growth of Connecticut's green economy;
2. Enable a cost-effective, economy-wide transition to a decarbonized future;
3. Enhance customer access to a more resilient, reliable, and secure commodity; and
4. Advance the ongoing energy affordability dialogue in the State,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

To date, the Authority has reached a final determination in nine of the 11 EMG Framework dockets, resulting in numerous new programs, processes, and frameworks established to better achieve the goals outlined above. More information on the EMG Framework and the resulting programs, processes, and frameworks can be found on the [Authority's dedicated website](#).



# Emissions, Employment & Combined Program Data

## Cumulative MW Deployed via All Programs



The above figure shows the cumulative deployment of fuel cell, wind, and battery storage via all relevant state programs, including projects where the physical deployment is out of state (e.g., in New York or in federal waters).<sup>1</sup> It also shows the cumulative deployment of solar resources via all relevant state programs.<sup>2</sup> For solar, 1 MW of installed capacity powers approximately [130-140](#) houses in Connecticut. The data for 2022 is through September 30, 2022, aside from residential solar, which is through October 31, 2022.

The plot<sup>3,4</sup> shows the combined data for both EDCs, Eversource and UI. Notably, the plots do not show deployment through programs or procurements of the state's municipal electric utilities. For more information on deployment over time for individual programs, see the relevant sections below.

The following table highlights deployment data by energy type, separated by year, for both EDCs. The table reflects only deployment in the state of Connecticut via relevant state programs, as opposed to the plot on the previous page which includes projects physically located outside of Connecticut. Further, tables for the individual EDC's can be found in Appendix A3. The data in the Table is derived from Eversource and UI's responses to Interrogatory CAE-64 and their compliance filings dated November 15, 2022. More specifically, the relevant data from the EDC compliance filings are the EDC responses to CAE-33. Data for 2022 represents values through September 30, 2022, except for residential solar deployment data which is data through October 31, 2022.<sup>5</sup>

## Deployment by Year by Technology Type

Total (both EDCs) <sup>6</sup>		As of 2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total (2011-2022)
Solar Photovoltaic (PV)	Residential	11.14	3.513	7.867	20.230	47.644	52.885	37.485	42.909	58.397	58.733	74.048	49.123	<b>463.98</b>
	Non-Residential	14.3	3.49	17.79	18.08	20.81	32.14	39.25	43.17	49.11	45.37	33.02	15.65	<b>332.18</b>
	Utility	0	0	5	4	0	0	20	20	0	4.98	25.89	23.2	<b>103.07</b>
Wind		0.08	0.01	0	0.01	4.98	0	0	0	0	0	0	0	<b>5.08</b>
Fuel Cells		5	3	3.4	20.54	3.95	8.12	7.2	6.72	3.04	13.89	13.47	4.48	<b>92.81</b>
Battery Storage <sup>7</sup>		0	0	0	0	0	0	0.02	0.46	1.65	1.73	4.71	3.51	<b>12.08</b>
Energy Efficiency/Demand Response		893.35	131.75	129.36	130.71	176.75	94.76	105.31	90.36	68.51	110.47	129.05	134.81	<b>2195.19</b>
Other Class I, II, or III Resources		129.54	0.62	42.81	1.34	3.64	5.2	2.91	0.98	1.25	0.63	1.99	0.33	<b>191.24</b>



# Overview of Programs – Including Total Deployment (In and Out of State)

	<a href="#">Statutory Authority</a> <sup>8,9</sup>	Renewable Energy Source(s)	Duration of Tariff or Contract	Total No. of Annual Solicitations (or Program Length)	Initial Project Award Year	Total Deployment Levels	Total Deployment Levels through 2022 <sup>10,11</sup>
<b>Residential Solar [RSIP + RRES]<sup>12</sup></b>	16-245ff, 16-244u	Solar PV	15-year REC contract for RSIP	0 (~10 years)	2011 (RSIP)	Deployment in MWs (AC)	<b>329.140</b>
	16-244z, P.A. 19-35		20-year tariff	0 (6 years)	2022 (RRES)	No. Projects In-Service	<b>46,219<sup>13</sup></b>
	16-244z, P.A. 19-35	Solar PV	20-year tariff	0 (6 years)	2022	Deployment in MWs (AC)	<b>0</b>
						No. Projects In-Service	<b>0</b>
<b>LREC/ZREC Program</b>	16-244r, 16-244s, 16-244t	Class I RECs*	15-year tariff	10 (*10-yr procurement term)	2012	Deployment in MWs (AC)	<b>376.191</b>
						No. Projects In-Service	<b>2,297</b>
<b>VNM Program<sup>15</sup></b>	16-244u(5)	Class I & *Class III Energy	Project life	N/A	2014	Deployment in MWs (AC)	<b>7.212</b>
						No. Projects In-Service	<b>11</b>
<b>SCEF Pilot Program</b>	16-244x	Class I Energy + RECs	20-year tariff *Pilot	1 RFP (*2-year Pilot program)	2017	Deployment in MWs (AC)	<b>1.62</b>
						No. Projects In-Service	<b>1</b>
<b>SCEF Program</b>	16-244z(a)(1)(C)	Class I Energy + RECs	20-year tariff	6 (*6-year procurement term)	2020	Deployment in MWs (AC)	<b>0</b>
						No. Projects In-Service	<b>0</b>
<b>DEEP Procurements/PPAs</b>	<i>*Varies - See Public Policy Contracts Section for details</i>					Deployment in MWs (AC)	<b>1639.99</b>
						No. Projects In-Service	<b>17,575</b>
<b>CEOP/VRP Program</b>	16-244c / 16-245p(a)	Voluntary Class I RECs only	Enroll 1-year customer contract		2005 / January 2021	No. RECs Delivered (MWh)	<b>N/A</b>
						No. Enrolled Customers <sup>16</sup>	<b>N/A</b>
<b>RPS Compliance</b>	16-245a, 16-244c(h)(1) and 16-243q	Required Percentages of Class I, Class II and Class III RECs	Annual Compliance	N/A	2000	2022 Class I - Required %	<b>22.5%</b>
						2022 Class II - Required %	<b>4.0%</b>
						2022 Class III - Required %	<b>4.0%</b>
<b>ESS Program</b>	P.A. 21-53, 16-11, 16-19, 16-19e, 16-244i	Energy Storage	N/A, through 2030 for the Performance Incentive	0 (9 years)	2022	Deployment in MWs (AC)	<b>0.05</b>
						No. Projects In-Service <sup>17</sup>	<b>4</b>
<b>EV Charging Program<sup>18</sup></b>	16-11, 16-244i	EV Charging Infrastructure	N/A, through 2030 for Managed Charging	0 (9 years)	2022	Residential Deployment in MWs (AC) <sup>19</sup>	<b>10.24</b>
						Non-Residential Deployment in MWs (AC) <sup>20</sup>	<b>8.52</b>



## Deployment by Year by Program

Clean and Renewable Energy Programs/Procurements		2011-2017	2018	2019	2020	2021	2022	TOTAL
<b>RRES Program</b>	Annual Deployment in MWs (AC)	0	0	0	0	0	30.689	<b>30.689<sup>21</sup></b>
	No. of Projects In-Service	0	0	0	0	0	3,904	<b>3,904<sup>22</sup></b>
<b>RSIP</b>	Annual Deployment in MWs (AC)	152.093	38.172	51.556	46.438	35.961	4.920	<b>329.140</b>
	No. of Projects In-Service	22,135	5,411	7,137	6,437	4,477	622	<b>46,219</b>
<b>LREC/ZREC Program<sup>23</sup></b>	Annual Deployment in MWs (AC)	138.398	55.757	43.943	54.448	46.209	37.433	<b>376.191</b>
	No. of Projects In-Service	1,042	314	346	243	235	117	<b>2,297</b>
<b>NRES Program</b>	Annual Deployment in MWs (AC)	0	0	0	0	0	0	<b>0</b>
	No. of Projects In-Service	0	0	0	0	0	0	<b>0</b>
<b>SCEF Pilot Program</b>	Annual Deployment in MWs (AC)	0	0	1.62	0	0	0	<b>1.62</b>
	No. of Projects In-Service	0	0	1	0	0	0	<b>1</b>
<b>SCEF Program</b>	Annual Deployment in MWs (AC)	0	0	0	0	0	0	<b>0</b>
	No. of Projects Awarded & In-Service	0	0	0	0	0	0	<b>0</b>
<b>VNM Program<sup>24</sup></b>	Annual Deployment in MWs (AC)	1.530	0.795	0.047	0.900	1.940	2.000	<b>7.212</b>
	No. of Projects In-Service	2	1	2	1	3	2	<b>11</b>
<b>CEOP/VRO Program<sup>25</sup></b>	Annual No. RECs Delivered	1,685,232	189,017	165,509	157,541	134,416	75,640	<b>N/A</b>
	No. Enrolled Customers	171,490	21,184	19,695	18,224	16,404	11,652	<b>N/A</b>
<b>DEEP Procurements<sup>26</sup></b>	Annual Deployment in MWs (AC)	97.425	63.79	1054.751	60.641	133.379	230	<b>16399.99</b>
	No. of Projects In-Service	384	12,033	4,134	501	522	1	<b>17,575</b>
<b>C&amp;LM Plan<sup>27</sup></b>	Annual Deployment in MWs (AC) <sup>28</sup>	1652.059	81.528	65.359	104.05	123.418	134.805	<b>2,161.22</b>
	No. of Projects In-Service <sup>29</sup>	407302	33,743	39,046	57,402	56,849	195,867	<b>785,270</b>
<b>ESS Program<sup>30</sup></b>	Annual Deployment in MWs (AC)	0	0	0	0	0	0.05	<b>0.05</b>
	No. of Projects In-Service	0	0	0	0	0	4	<b>4</b>
<b>EV Charging Program</b>	Residential Annual Deployment in MWs (AC)	0	0	0	0	0	10.24	<b>10.24</b>
	Non-Residential Annual Deployment in MWs (AC)	0	0	0	0	0	8.52	<b>8.52</b>

The table above outlines the total deployment levels in MW (AC) and number of projects installed for each state program.<sup>31</sup> The 2022 data is through the last month of data available for each program.<sup>32</sup>



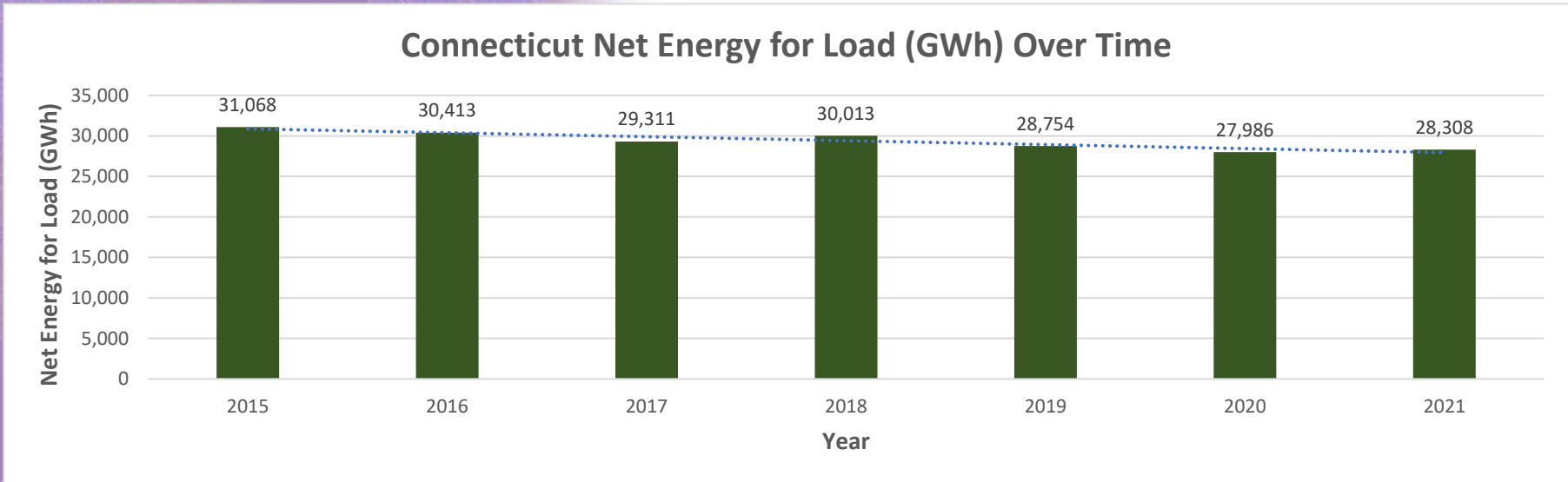
# Statutory Renewable Energy Goals

In May of 2022, the Connecticut General Assembly passed [Public Act No. 22-5, An Act Concerning Climate Change Mitigation](#), (PA 22-5) which established ambitious statutory renewable energy goals for the state of Connecticut. PA 22-5 amends Section 22a-200a of the General Statutes of Connecticut, which requires the State to reduce the level of emissions from greenhouse gases to at least 45% below 2001 levels by 2030 and 80% below 2001 levels by 2050, to also require all electricity supplied to customers in Connecticut to come from zero-carbon sources by January 1, 2040.

Electricity supplied to electric customers can be thought of as the electricity consumed in the state, otherwise known as the electric load, which typically has units of megawatt-hours (MWh) or gigawatt-hours (GWh). The below graph displays Connecticut’s net electricity load over time.<sup>33</sup> As can be seen in the chart below, Connecticut’s electricity load requirement has been steadily decreasing (by about 9% between 2015 and 2021), in part due to increased energy efficiency.

**What is a MWh?** A MWh is the amount of energy produced if a 1 MW electric generation unit ran for 1 hour. As an example, if a 3 MW capacity solar panel installation ran at full capacity (3 MW) due to optimal operating conditions (perfect weather) for 2 hours, it would generate 6 MWh of energy. Conversely, a MWh is the amount of energy consumed if a 1 MW engine ran for 1 hour.

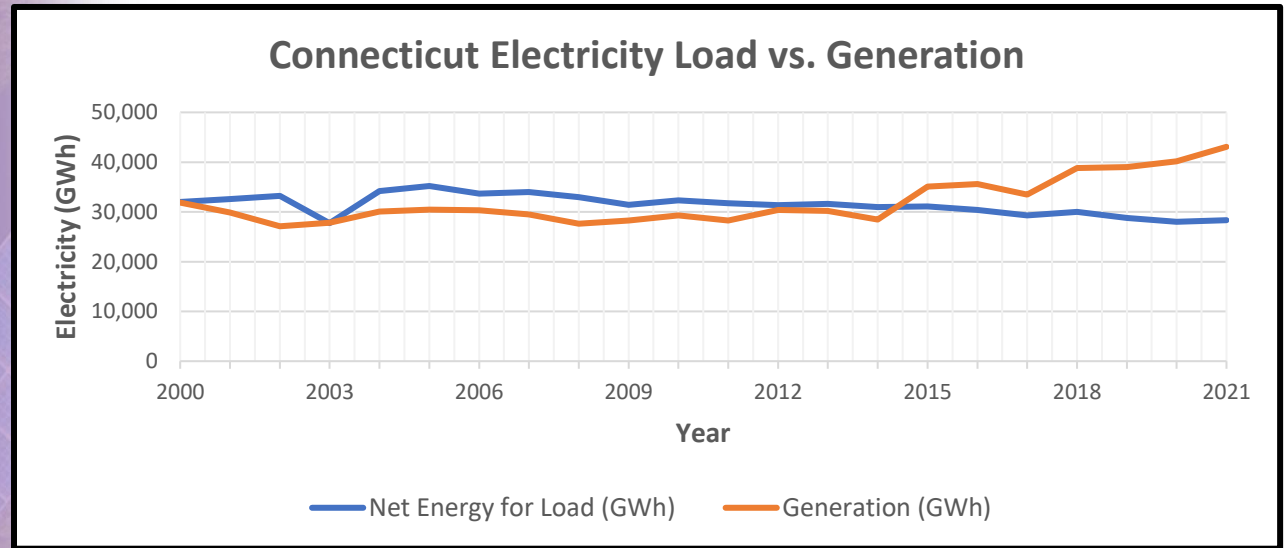
Per [FERC Financial Reports – Form 1](#), the average home in Connecticut uses approximately 8.4 MWh of energy per year, or 700 kWh per month.



## Connecticut Greenhouse Gas Emissions – Power Sector

There are two ways to measure electricity-sector emissions in Connecticut: (1) Emissions associated with electricity usage or consumption within the state (load); and (2) Emissions from power generation within the state.<sup>34</sup> In 2018, electric-sector greenhouse gas emissions accounted for 19.1% of the state’s total greenhouse gas emissions. Electric-sector emissions in Connecticut have been decreasing overtime and are currently 35% below 2001 levels, due to increases in energy efficiency and the retiring of petroleum and coal-fired power plants in favor of natural gas and renewable energy generation. See, DEEP Response to CAE-78, p. 5.

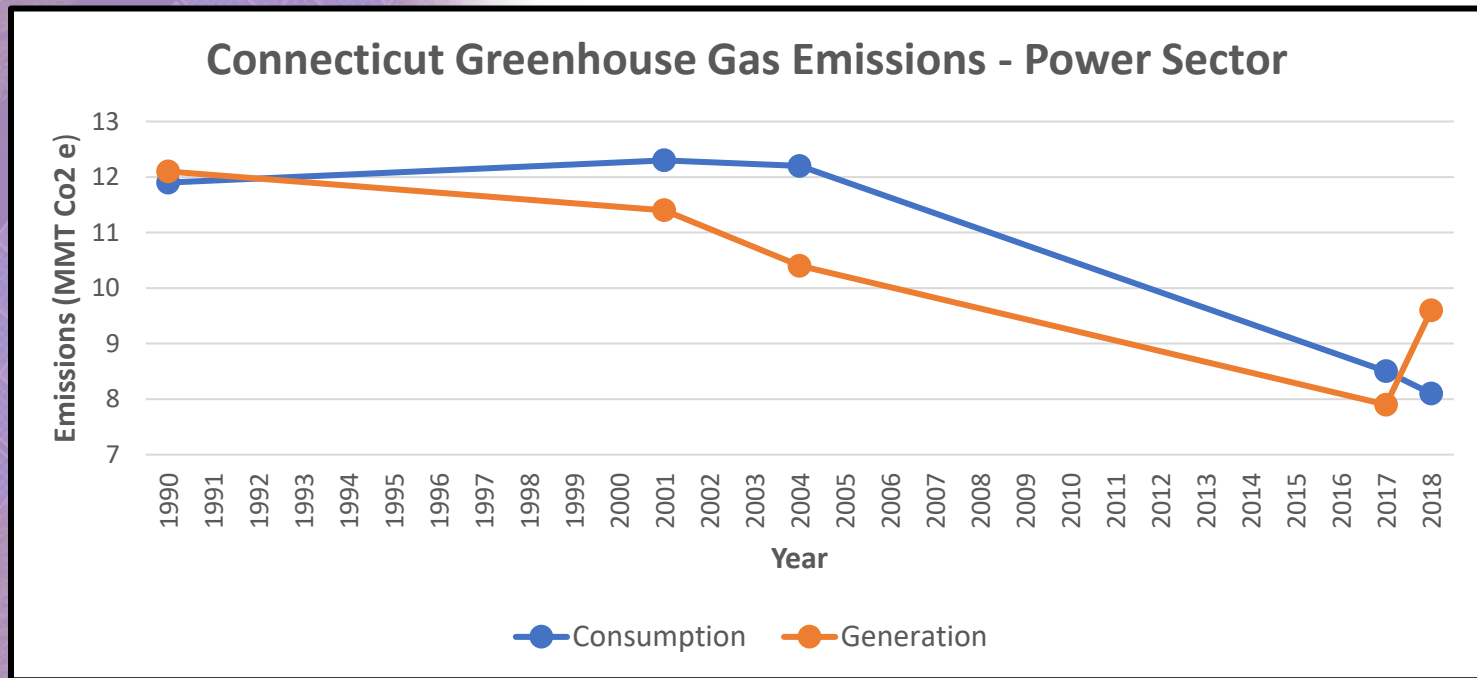
As shown in the graph, Connecticut is currently a net exporter of energy, consuming energy that sums to only about 66% of the energy generated in the state in 2021.<sup>35</sup> Consequently, if Connecticut used the energy it generates from non-carbon sources to serve the states load and meet the zero-carbon electricity goal outlined in PA 22-5, the state would have to increase its zero-carbon energy production from 41% to approximately 66% of total electricity generation. However, in that case, all remaining energy (the energy to be exported to surrounding states) would be from carbon-based energy sources as all non-carbon energy would be used to serve the state’s own load.



In the future, Connecticut is expected to produce a greater share of the region’s power, increasing the state’s power generation emissions total, despite the increase in state-wide renewable energy generation, due to an increased burning of natural gas. This trend was evident in 2018, when emissions from power generation within the state increased by 22% from the prior year. Conversely, emissions based on power consumption within the state are expected to continue to decrease, as the current trend indicates, because the state continues to invest in energy efficiency and renewable energy generation. Consequently, generation- and consumption-based power emissions in Connecticut are expected to increasingly diverge in the future. See, DEEP Response to CAE-78, p. 5.

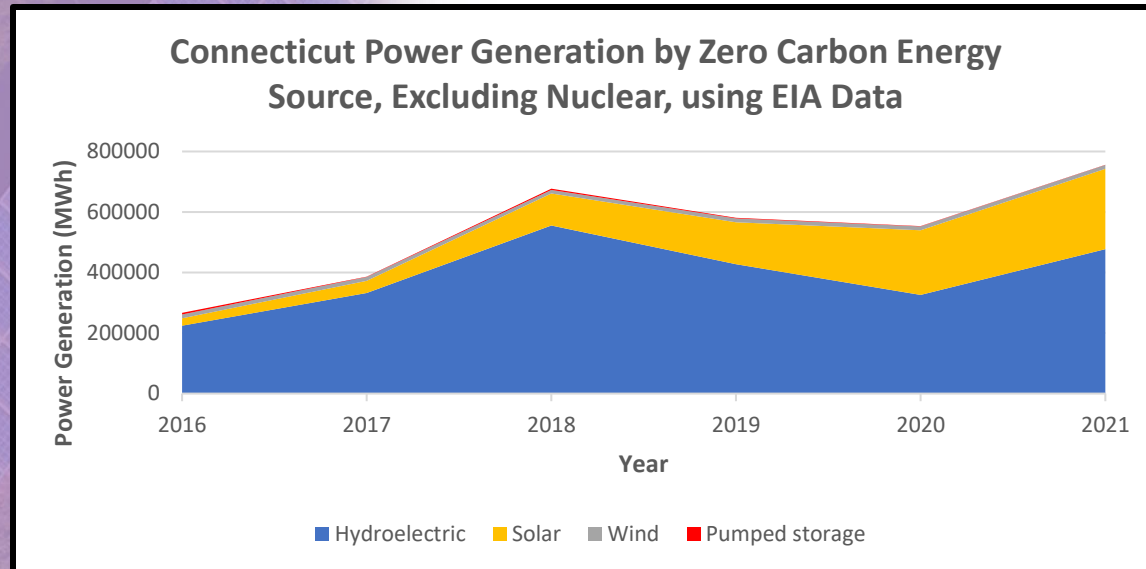


The below table and graph highlight both generation- and consumption-based power emissions in Connecticut over time, where consumption-based emissions are those emissions related to electric load in Connecticut, and generation-based emissions are based on energy generated in the state. As previously mentioned, these values are expected to diverge, with generation-based emissions rising and consumption-based emissions decreasing.

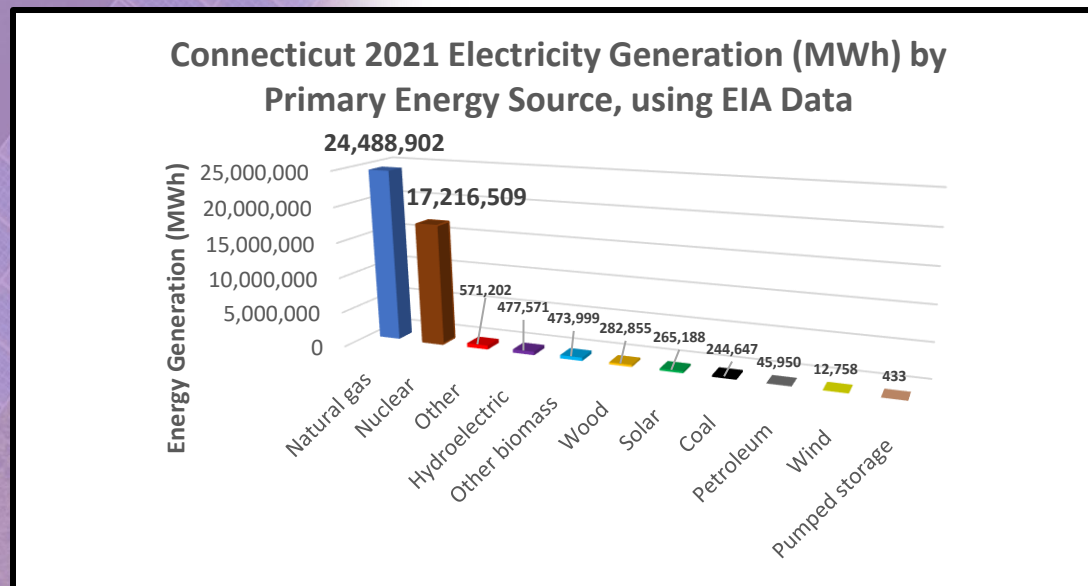


	Year	1990	2001	2004	2017	2018
<b>Electric Power Emissions (MMTCo2e)<sup>36</sup></b>	Consumption	11.9	12.3	12.2	8.5	8.1
	Generation	12.1	11.4	10.4	7.9	9.6

The first graph below provides insight into how Connecticut’s zero carbon power generation has changed overtime. As can be seen from the graph, total power zero carbon generation in Connecticut has steadily increased overtime. Most notably, power generation from solar sources has sharply increased since 2016, as can be seen in the graph.

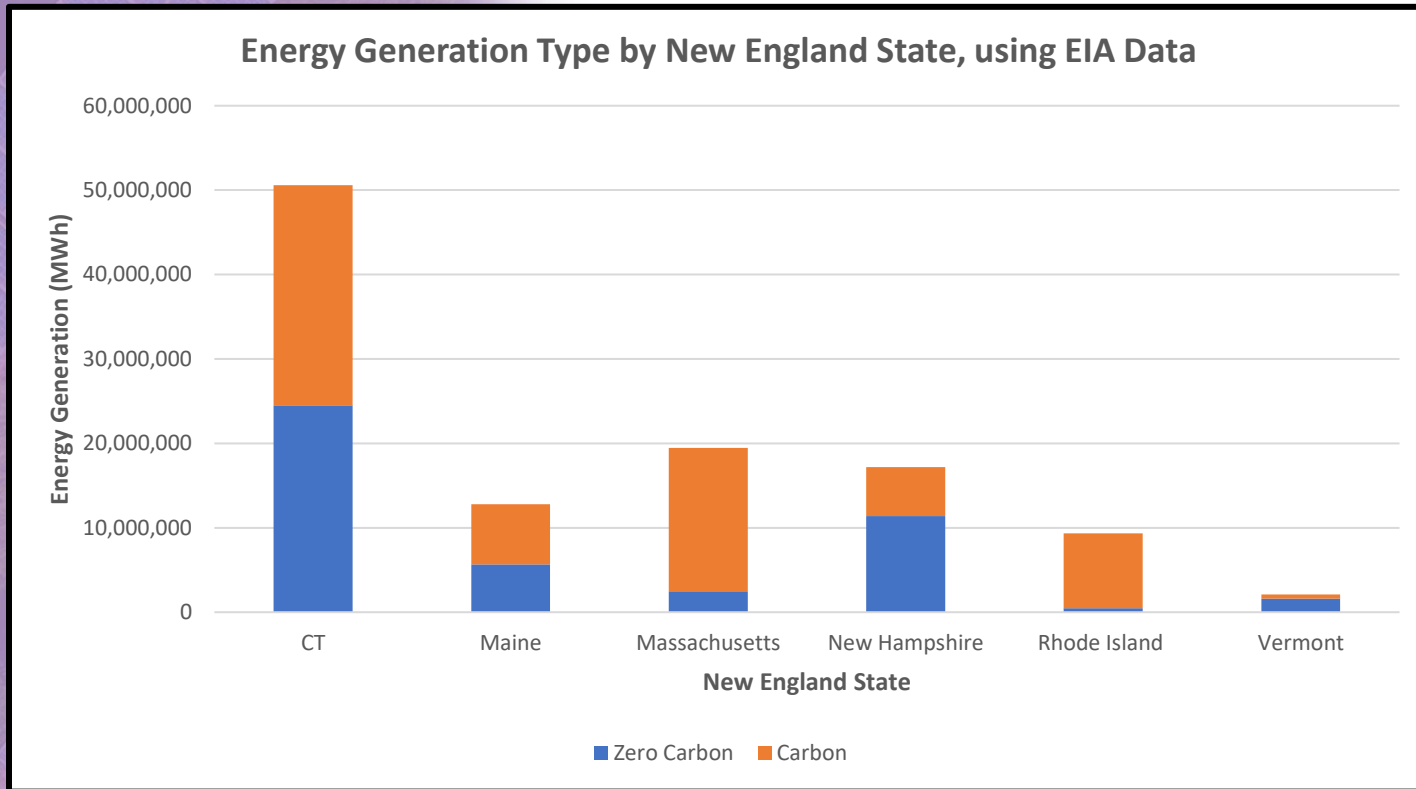


The second graph highlights electricity generation by primary energy source for the state of Connecticut in 2021. Natural gas and nuclear energy accounted for the majority of electricity generation in Connecticut last year, making up 56% and 39%, respectively.



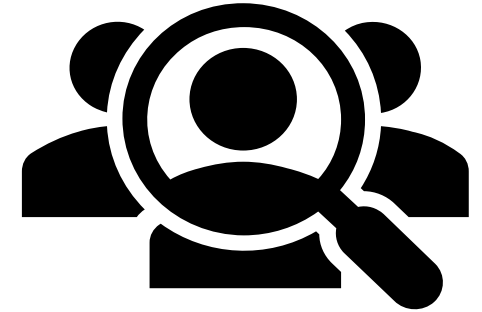


The following chart provides additional regional context for Connecticut’s electric generation.<sup>37</sup> As can be seen from the chart, Connecticut is the largest producer of electricity in New England, producing more than the double the electricity of each individual New England state. As discussed previously, Connecticut’s high electricity generation can be explained, at least in part, by Connecticut’s exportation of electricity to other New England states. Further, at 24,488,902 MWh, Connecticut generates the most zero-carbon power out of any New England state. In terms of *percent* of total electricity generated from zero carbon sources, however, Connecticut ranks third, behind New Hampshire and Vermont.



## Employment Data<sup>38</sup>

According to the 2021 Connecticut Clean Energy Industry Report, at the end of 2020, Connecticut had roughly 41,500 clean energy jobs, a decline of roughly 2,600 jobs, or roughly 6%, from the prior year due in large part to the effects of the COVID-19 pandemic. Further, in 2020, Connecticut's clean energy job market outperformed other states and experienced fewer job losses from the pandemic. For example, nationwide, clean energy jobs declined by roughly 9% in 2020, while nearby states, Massachusetts and Rhode Island, experienced clean energy job losses of between 11 and 16%. Economy-wide job losses in Connecticut, at 7%, were also greater than the job loss percentage in the State's clean energy sector, thereby highlighting the resilience of the State's clean energy economy.



The clean energy job market in Connecticut was expected to rebound in 2021, recovering all of the jobs lost in 2020 and then some (increasing to a projected total of 44,890 clean energy jobs), as the state recovered from the effects of the pandemic.

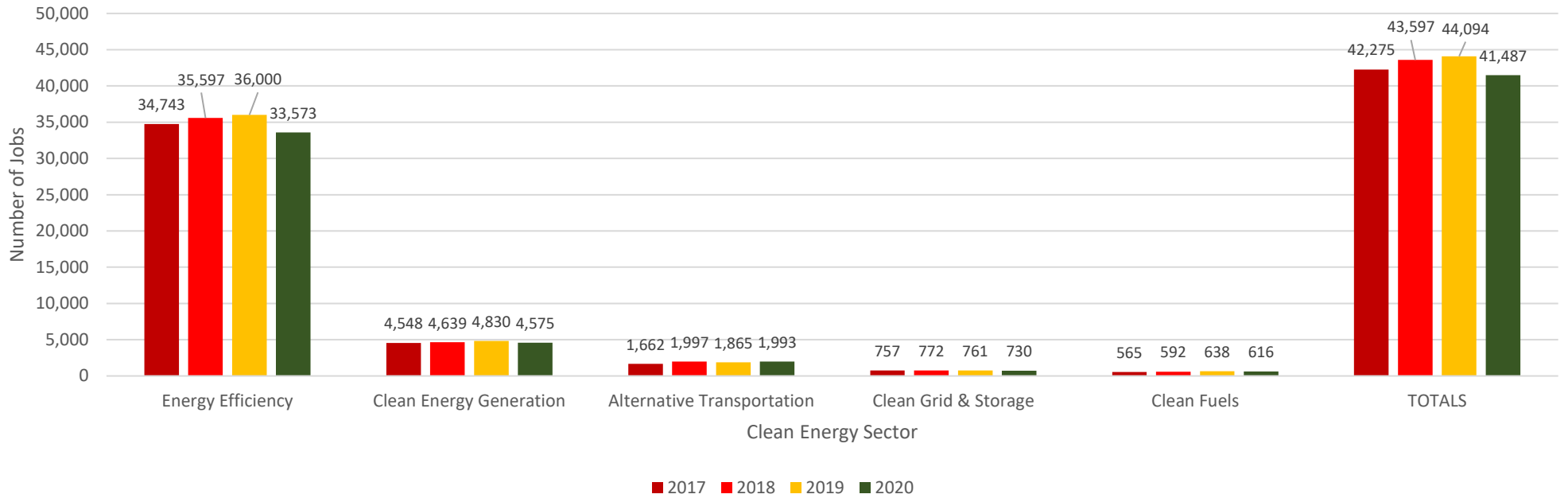
Last, the State's clean energy industry positively contributes to the State's economy as a whole. In 2020, the State's clean energy economy "contributed roughly \$6.64 billion to statewide [gross regional product (GRP)], accounting for almost three percent of total GRP."<sup>39</sup>

The 2021 Connecticut Clean Energy Industry Report, the most recently available report at the time this report was written, can be found here: [2021-CT-Clean-Energy-Industry-Report.pdf \(ctgreenbank.com\)](https://ctgreenbank.com/2021-CT-Clean-Energy-Industry-Report.pdf).

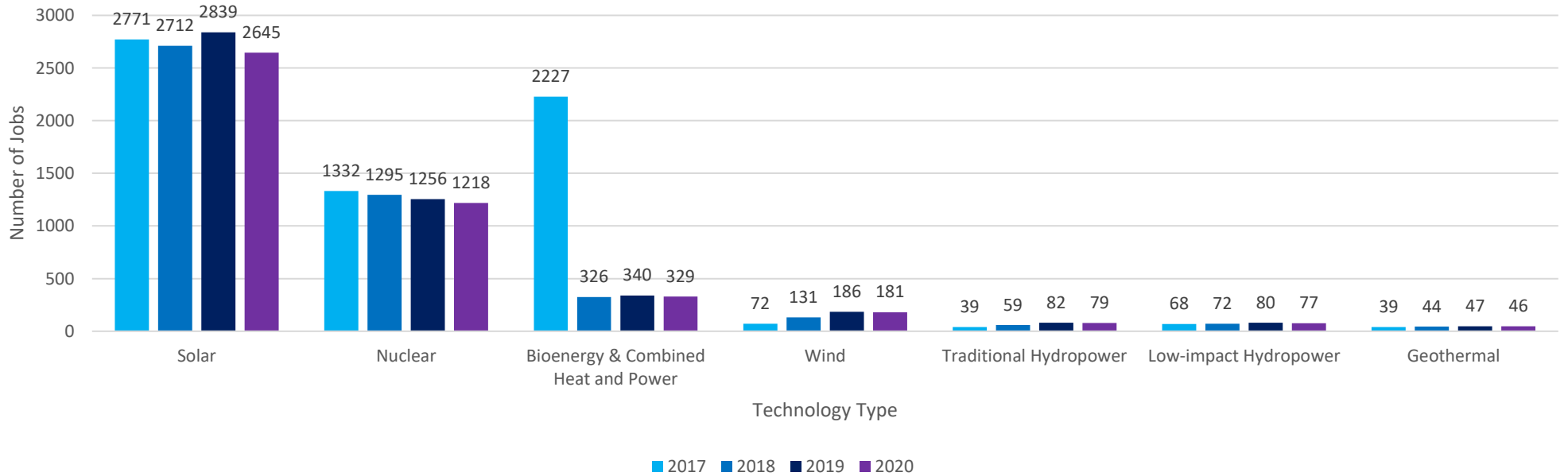
The below graphs highlight employment trends in the State's clean energy economy, showing the number of jobs by clean energy sector and by clean energy generation technology type, from 2017 to 2020.<sup>40</sup> As can be seen below, clean energy jobs were generally increasing in Connecticut for each clean energy sector in the years prior to 2020, before the COVID-19 pandemic.



### Number of Jobs in Connecticut by Clean Energy Sector



### Connecticut Clean Energy Generation Employment by Technology Type



# Residential Renewable Energy Solutions (RRES) Program



Pursuant to § 16-244z of the General Statutes of Connecticut (Conn. Gen. Stat.), beginning in 2022 and lasting through 2027, the Residential Solar Incentive Program (RSIP) and traditional net metering were replaced by a new residential tariff program, named the Residential Renewable Energy Solutions (RRES) Program, that offers eligible projects compensation for a 20 year term. |

The Authority authorized the RRES Program through a [Decision](#) in Docket No. 20-07-01, [PURA Implementation of Section 3 of P.A. 19-35, Renewable Energy Tariffs and Procurement Plans](#), dated February 10, 2021. More recently, the 2023 rules and documents for the RRES Program were reviewed and [approved](#) by PURA in Docket No. 22-08-02, [Annual Residential Renewable Energy Solutions Program Review – Year 2](#).

The RRES Program is administered by the electric distribution companies (EDCs) in their respective service territories. The RRES Program gives residential solar customers the opportunity to sell energy and renewable energy certificates (RECs) for a 20-year term under one of two tariff rate structures: (1) Buy-All; or (2) Netting.

Under the Buy-All tariff, the residential solar project is provided fixed compensation for all energy and RECs produced over a 20-year term. Alternatively, under the Netting tariff, qualified projects are effectively compensated for all energy produced at the retail electric rate at the time of generation (i.e., all renewable energy production not consumed within the established netting interval is explicitly compensated by the EDCs at the retail rate and any production consumed within the netting interval avoids costs equivalent to the retail rate) and for the RECs created at a fixed rate over a 20-year term.



Additionally, under the Buy-All tariff, compensation can be provided directly to customers in the form of monetary on-bill credits, with the potential for an annual cash out of credits in excess of their utility bill, or to third-party beneficiaries, or some combination thereof. Under the Netting tariff, a customer’s energy consumption and monthly energy bill are reduced by the energy produced and used on site. Further, under the Netting tariff, the EDCs provide customers with monetary on-bill credits for any energy the eligible project exported to the electric grid and was not consumed on site. Last, under the Netting tariff, all REC payments are made to either the customer of record or a third-party beneficiary on a quarterly basis.

More information and resources are available at the PURA program [website](#) and on each of the EDCs’ dedicated program websites (Eversource [Residential](#); United Illuminating [Residential](#)). The tariff rates and current application data for the RRES Program are shown below.<sup>41</sup>

**Table 1: 2022 RRES Application Data**

	<b>Total Applications</b>	<b>Total Application MW</b>	<b>Approved Applications</b>	<b>Approved MW</b>	<b>Deployed MW<sup>42</sup></b>
<b>Eversource</b>	9,962	79.57	8,794	70.18	22.1
<b>UI</b>	1,973	13.82	1,709	11.81	2.83

**Table 2: 2023 RRES Tariff Rates**

	<b>Buy-All Rate (Energy + RECs) (\$/kWh)</b>	<b>Netting Rate (RECs only) (\$/kWh)</b>
<b>Eversource</b>	0.2943	0.0318
<b>UI</b>	0.2943	0
<b>Low-Income Adder</b>	0.025	
<b>Distressed Municipality Adder</b>	0.0125	

# Residential Solar Investment Program (RSIP)

Initially authorized in 1998 under Conn. Gen. Stat. §16-243h, traditional net metering provided customers with monthly kWh credits for excess solar photovoltaic (PV) generation provided to the electric grid.



Later, in 2011, the General Assembly created the Residential Solar Investment Program (RSIP) to provide financial incentives beyond traditional net metering to residential homeowners installing solar PV systems and directed RSIP to be administered by the Connecticut Green Bank (CGB). The program was updated<sup>43</sup> in 2019 to increase the threshold of deployment signaling the end of the program from 300 MW to 350 MW, with the caveat that the program would not extend beyond December 31, 2022 if 350 MW was not reached by that time.

However, on November 17, 2020, CGB filed a brief 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, stating they had approved 350 MW of projects and already deployed 312.8 MW of the 350 threshold.<sup>44</sup> Further, in an exception to the draft decision filed January 21, 2022, the CGB stated that as of December 31, 2021, 348 MW had been deployed, with the legislative target of 350 MW expected to be achieved by January 31, 2022.<sup>45</sup>



To aid in the transition to the new program (i.e., the RRES Program) authorized in Conn. Gen. Stat. §16-244z, PURA ruled on October 15, 2020, that RECs may continue to be aggregated for all residential solar PV systems that CGB provides an incentive for prior to January 1, 2022.<sup>46</sup>

As a result of this ruling, the CGB continued to provide incentives in support of the residential solar PV market through 2021, including providing limited incentives to projects above the 350 MW RSIP cap. The CGB termed this separate incentive program RSIP-E.

The RRES Program, the successor program to RSIP and traditional net metering, was established through the February 10, 2021 [Decision](#) in Docket No. 20-07-01, as discussed on page 15 of this report. The RRES Program, became available to all of the EDCs' residential customers starting January 1, 2022.

### RSIP Project Deployment by Year

	Eversource	UI	TOTAL
Completed Year	Count of Project Number	Count of Project Number	Total Count of Project Number
2012	213	29	242
2013	890	147	1,037
2014	1,215	260	1,475
2015	6,975	1,184	8,159
2016	5,371	1,691	7,062
2017	2,661	1,499	4,160
2018	3,502	1,909	5,411
2019	4,650	2,487	7,137
2020	4,649	1,788	6,437
2021	3,467	1,010	4,477
2022	377	245	622
<b>Grand Total</b>	<b>33,970</b>	<b>12,249</b>	<b>46,219</b>

### RSIP MW Deployment by Year

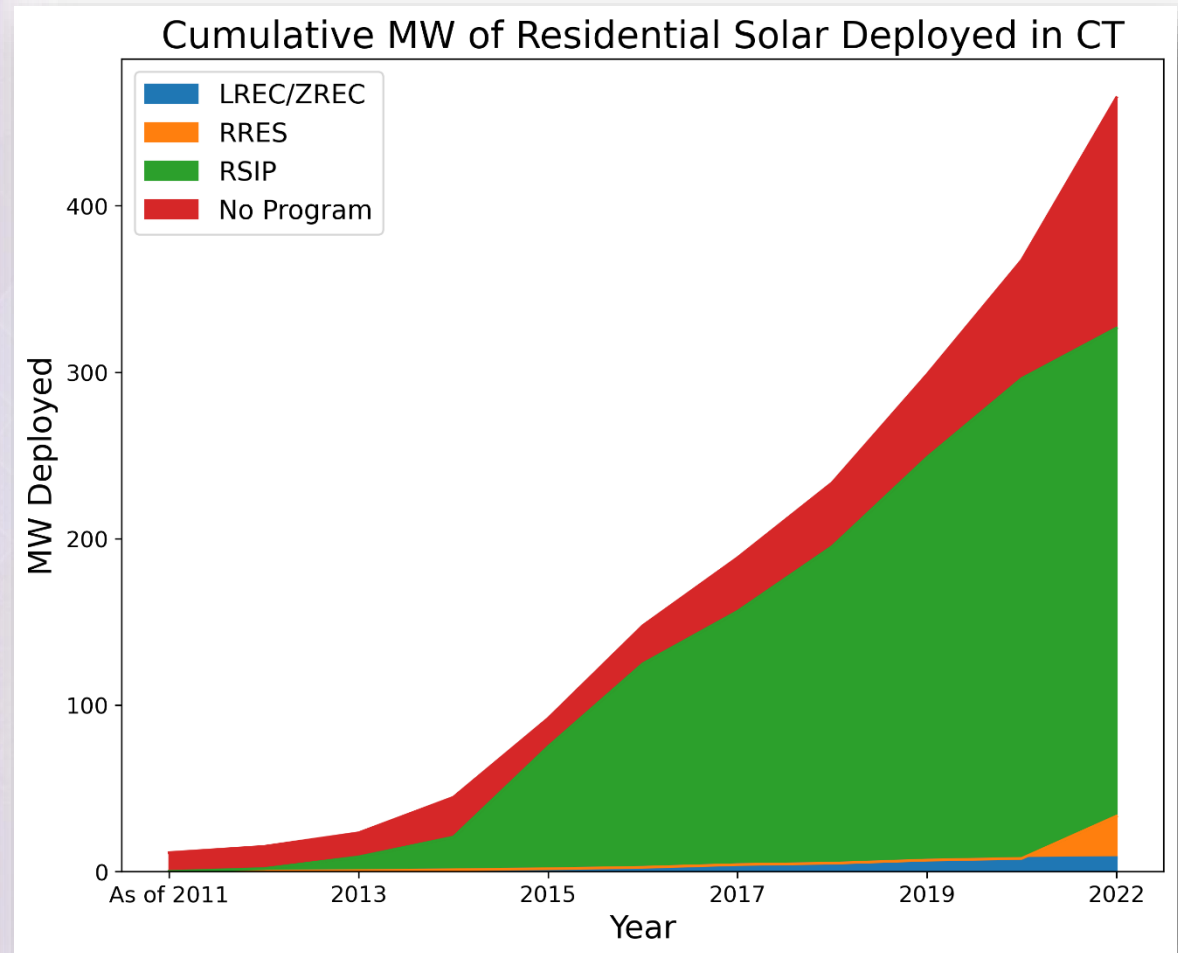
	Eversource	UI	TOTAL
Completed Year	Sum of PV System Inverter Nameplate Rating (MW-AC)	Sum of PV System Inverter Nameplate Rating (MW-AC)	Total Sum of PV System Inverter Nameplate Rating (MW-AC)
2012	1.315	0.190	1.506
2013	5.811	0.910	6.720
2014	9.870	1.507	11.378
2015	46.406	7.256	53.662
2016	37.980	11.000	48.979
2017	19.844	10.004	29.848
2018	25.829	12.343	38.172
2019	35.120	16.436	51.556
2020	34.966	11.472	46.438
2021	29.062	6.899	35.961
2022	3.269	1.651	4.920
<b>Grand Total</b>	<b>249.473</b>	<b>79.668</b>	<b>329.140</b>

## Combined Solar Program Metrics

The plot to the right shows the deployment of residential solar through state residential solar programs, including RSIP and RRES, through 2022. Notably, 2022 is the first year of deployment via the RRES Program. Also, over the past several years, there is an increasing trend in residential solar deployment outside of programs offered by the state, indicated in red.

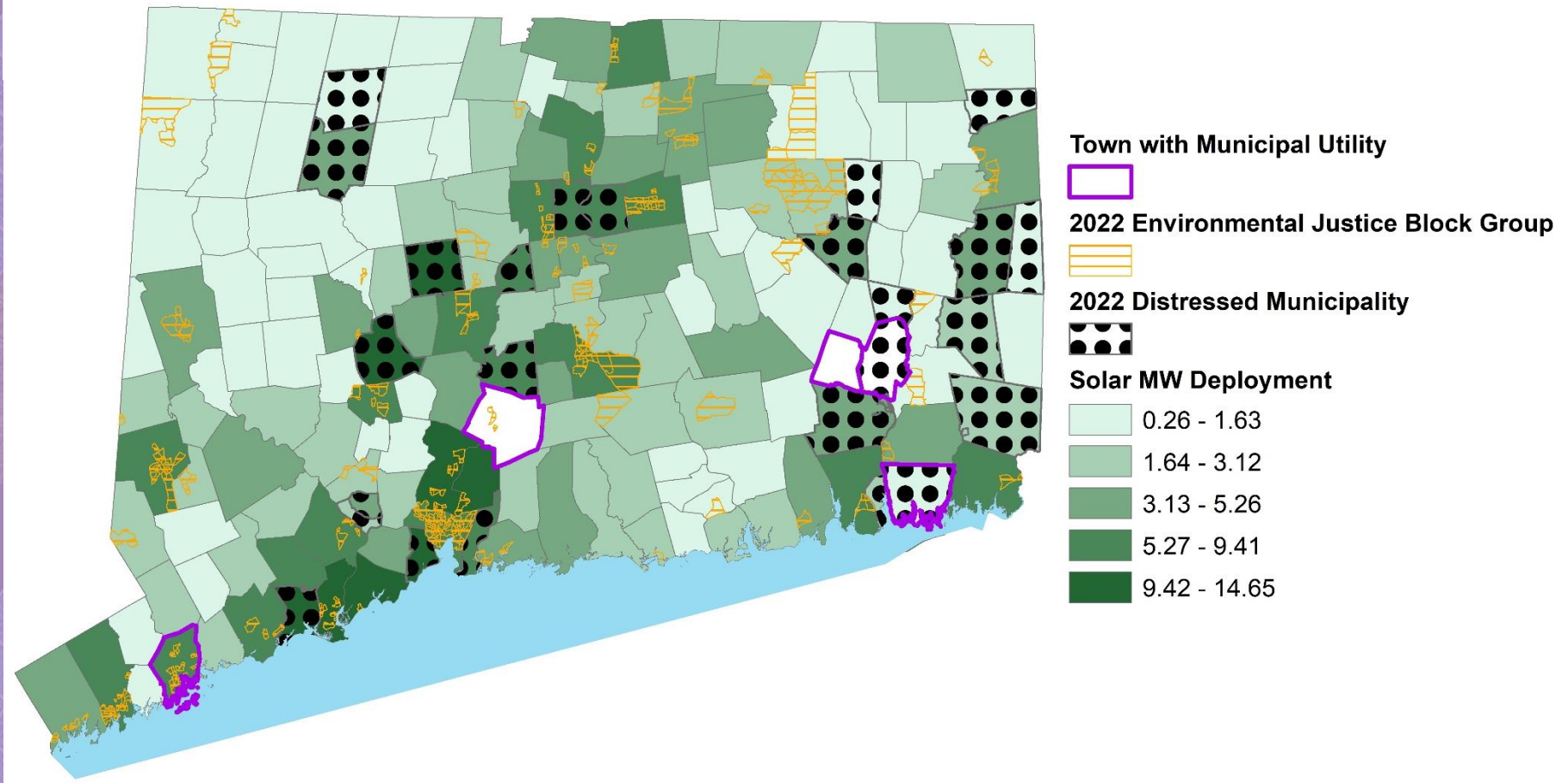
However, the data here, particularly the “No Program” data, is approximate. The value is calculated by using the total solar deployment from the EDCs’ response to Interrogatory CAE-55 and subtracting the RSIP, RRES, and LREC/ZREC data from interrogatory CAE-33. If data is attributed to different years from the different sources, the “No Program” value may be slightly higher or lower than what is represented.

Lastly, for 2022 the end date through which data is captured varies slightly for the various data sources.<sup>47</sup>



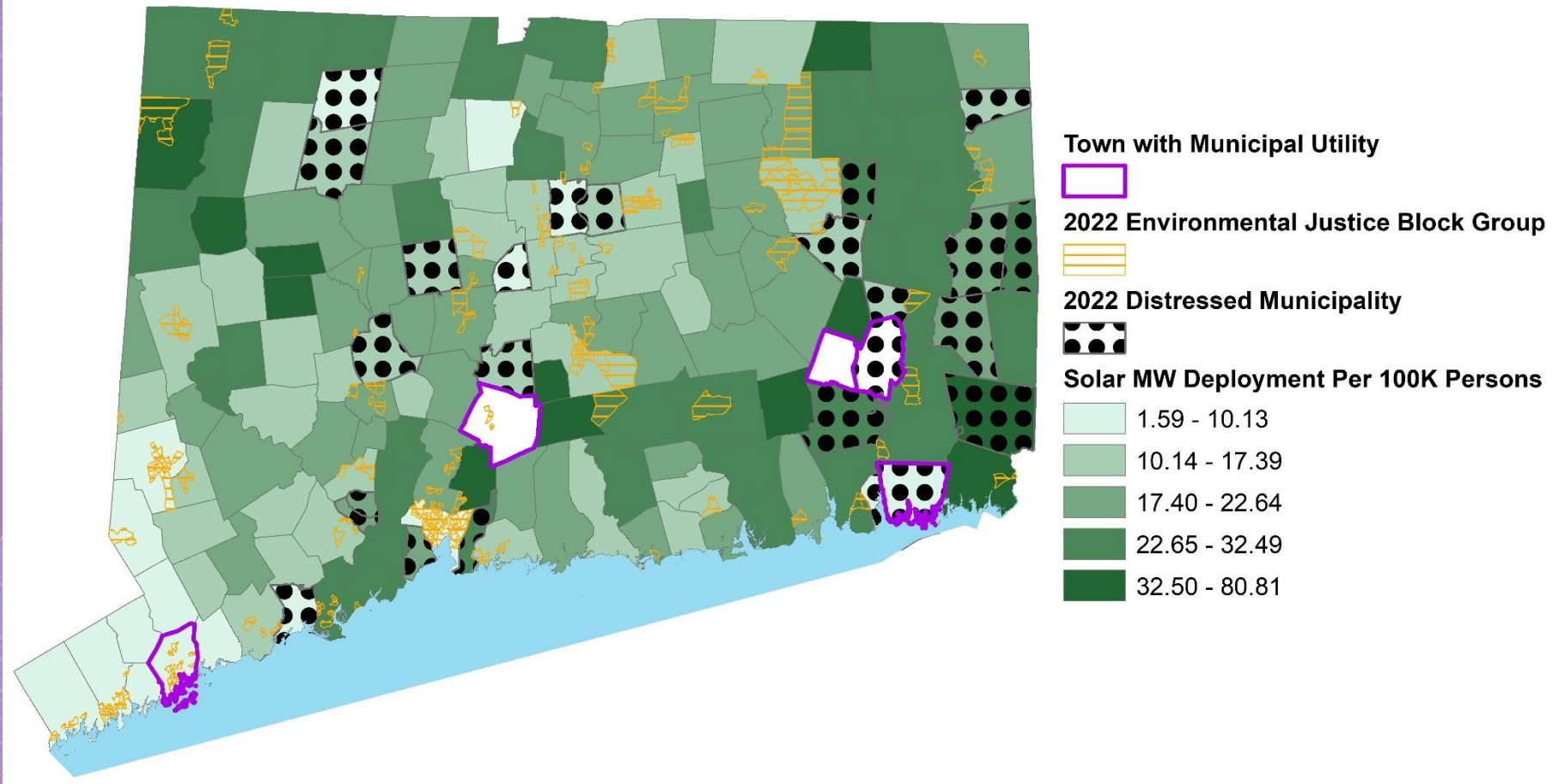


# MW of Total Installed Residential Solar Capacity by Town



This map displays the 2022 Connecticut environmental justice (EJ) communities as defined by section 22a-20a of the General Statutes of Connecticut.<sup>48,49</sup> The map<sup>50</sup> also reflects the total residential solar deployment by town through most of 2022, and is not normalized by each town's population.<sup>51</sup> In general, higher deployment is evident in towns with higher populations and/or in towns surrounding urban areas (i.e., New Haven, Bridgeport, Hartford). Additionally, some towns have municipal utilities: Bozrah, Groton, Norwich, Norwalk, Wallingford.<sup>52,53</sup> The highest deployment is in Bridgeport, with over 14.5 MW deployed, followed by North Haven at approximately 14 MW deployed.

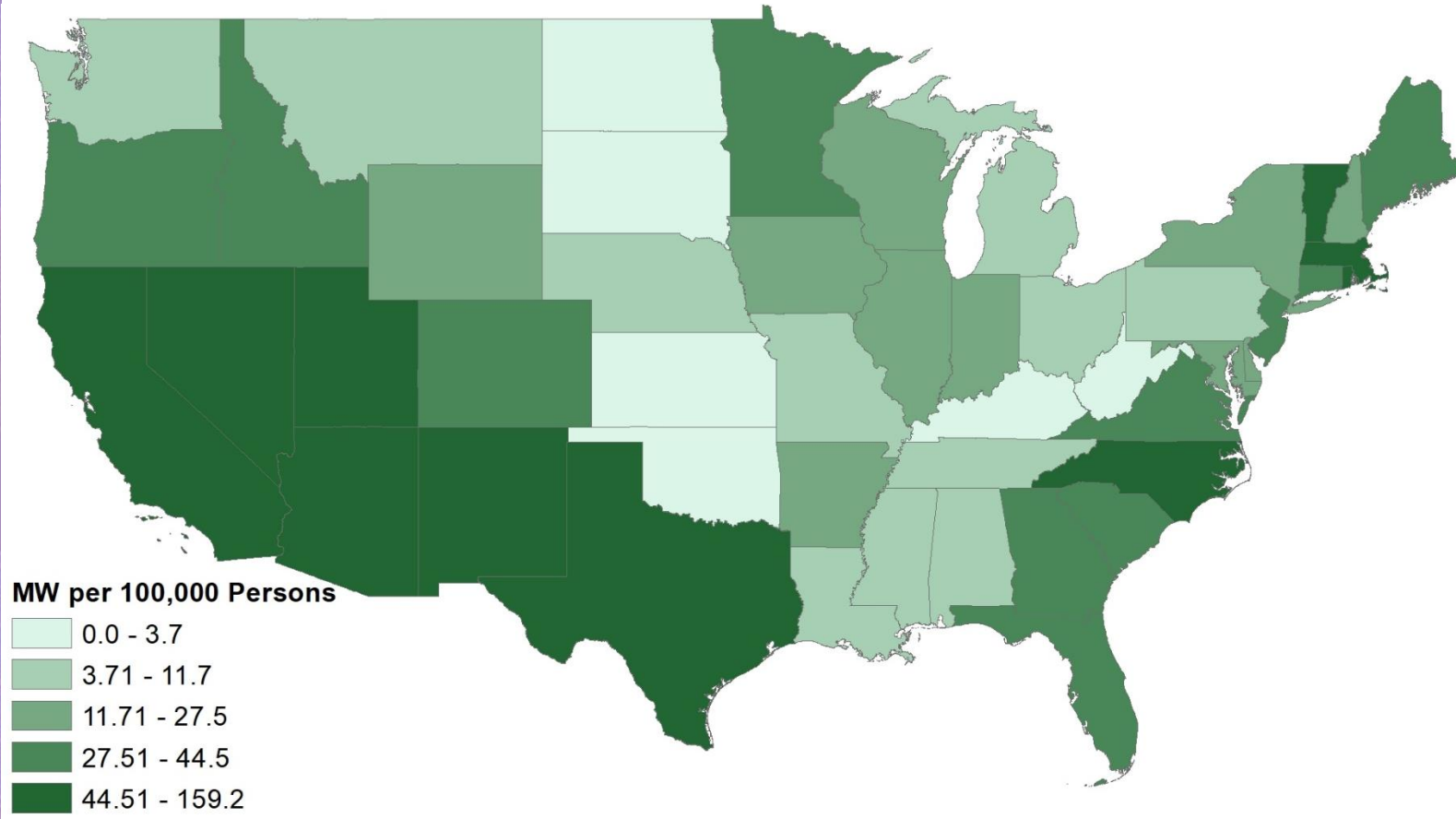
## MW of Total Installed Residential Solar Capacity by Town Per 100k Persons



The above map displays residential solar deployment per capita<sup>54</sup> (multiplied by 100,000) and reflects the total deployment by town through most of 2022. There are a few distressed municipalities and municipalities with many 2022 EJ Block groups in the lowest deployment per capita tier, but of that group, two of the distressed municipalities are in towns that also have municipal utilities. Notably, North Haven, which has the second highest total deployment in MW, also has the second most deployment per capita in the state at approximately 58 MW per 100,000 persons. The towns with the first and third highest per capita deployment are the much smaller (in terms of population) towns of Middlefield and Morris.



## MW of Solar Capacity per Capita Installed by State



State	Solar MW Capacity Installed <sup>55</sup>	Solar MW Capacity Deployed as of 2022 Q2 per 100,000 Persons <sup>56</sup> (Rank)	Solar MW Capacity Deployed Between 2018-2022 Q3 <sup>57</sup> per 100,000 Persons (Rank)	5-Yr. Projected Growth <sup>58</sup> (MW per 100,000 Persons) (Rank)
Connecticut	1137	31.53 (6 <sup>th</sup> )	20.41 (6 <sup>th</sup> )	28.04 (6 <sup>th</sup> )
Maine	559	40.74 (5 <sup>th</sup> )	41.33 (2 <sup>nd</sup> )	130.08 (1 <sup>st</sup> )
Massachusetts	3986	57.07 (2 <sup>nd</sup> )	26.41 (4 <sup>th</sup> )	26.72 (8 <sup>th</sup> )
New Hampshire	184	13.25 (8 <sup>th</sup> )	8.59 (8 <sup>th</sup> )	45.43 (3 <sup>rd</sup> )
New Jersey	4097	44.21 (4 <sup>th</sup> )	20.45 (5 <sup>th</sup> )	25.39 (9 <sup>th</sup> )
New York	3804	19.18 (7 <sup>th</sup> )	13.97 (7 <sup>th</sup> )	41.91 (4 <sup>th</sup> )
Pennsylvania	955	7.37 (9 <sup>th</sup> )	4.91 (9 <sup>th</sup> )	31.61 (5 <sup>th</sup> )
Rhode Island	600	54.76 (3 <sup>rd</sup> )	51.05 (1 <sup>st</sup> )	57.96 (2 <sup>nd</sup> )
Vermont	407	63.05 (1 <sup>st</sup> )	28.44 (3 <sup>rd</sup> )	27.42 (7 <sup>th</sup> )

# Non-Residential Renewable Energy Solutions (NRES) Program

The Non-Residential Renewable Energy Solutions (NRES) Program is a statewide, six-year non-residential solar program administered by the EDCs in their respective service territories. The NRES Program is a combined successor program to the state's Low and Zero Emissions Renewable Energy Credit (LREC/ZREC) and Virtual Net Metering (VNM) programs for non-residential customers, and was established pursuant to Conn. Gen. Statutes § 16-244z of the General Statutes of Connecticut in a [Decision](#) dated 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 (Non-Residential Tariff Decision).

Zero-emission NRES projects less than or equal to 200 kilowatts (kW) are awarded incentive agreements on a first-come, first-served basis, while zero-emission projects greater than 200 kW and less than or equal to 5,000 kW, or 5 MW, are awarded incentive agreements through a competitive solicitation process subject to price caps for the medium and large zero-emission project categories. Further, all low-emission projects less than or equal to 5 MW are awarded incentive agreements through a competitive solicitation process also subject to price caps.

Approved NRES projects are eligible to sell energy and renewable energy certificates (RECs) to the EDCs for a 20-year term under one of two tariff rate structures: (1) Buy-All; or (2) Netting. Under the Buy-All tariff, the project is provided fixed compensation for all energy and RECs produced over the 20-year term. Alternatively, under the Netting tariff, the qualified project is effectively compensated for all energy produced at the retail electric rate at the time of generation (see RRES Program above for additional information) and for the RECs created at a fixed rate over a 20-year term.







Additionally, under the Buy-All tariff, compensation is provided to the customer of record in the form of either monetary on-bill credits or quarterly cash payments. Under the Netting tariff, conversely, a customer’s energy consumption, and monthly energy bill, are reduced by the energy produced and used onsite. Further, under the Netting tariff, the EDCs provide customers with monetary on-bill credits for any energy exported to the electric grid by the eligible project and not consumed on site. Last, under the Netting tariff, all REC payments are made to either the customer of record or a third-party beneficiary on a quarterly basis.

Finally, the 2023 rules and documents for the NRES Program were reviewed and [approved](#) by PURA in Docket No. 22-08-03, Annual Non-Residential Renewable Energy Solutions Program Review – Year 2.

While there are not currently any deployments for the NRES Program, relevant plots and analytics will be incorporated in future reports. The below tables provide insight into the administration of the NRES Program.<sup>59</sup>

NRES Buy-all Price Caps	
Category	Price Cap
Small Zero Emissions	\$200.97/MWh
Medium Zero Emissions	\$190/MWh
Large Zero Emissions	\$159/MWh
Low Emissions	\$159/MWh

**Table 3: 2023 NRES Project Size Categories**

Category	New Project Size (AC)
Low Emission Projects	≤ 5,000 kW
Large Zero Emission Projects	≥1000 kW ≤ 5,000 kW
Medium Zero Emission Projects	>200 kW < 1000 kW
Small Zero Emission Projects	≤ 200 kW

	Size Categories	Total Executed Agreements	Available MW	MW of Executed Agreements
<b>Eversource</b>	Small Zero Emission	69	10	9.95
	Medium Zero Emission	28	12	12.77
	Large Zero Emission	10	18	17.21
	Low Emission	7	8	6.19
<b>UI</b>	Small Zero Emission	16	2.5	2.41
	Medium Zero Emission <sup>60</sup>	10	3	4.23
	Large Zero Emission	1	4.5	2.00
	Low Emission	0	2	0.00
<b>Total</b>		141	60	53.65

# Low Emission Renewable Energy Credit (LREC) and Zero Emission Renewable Energy Credit (ZREC) Program

The Low Emission Renewable Energy Credit (LREC) and Zero Emission Renewable Energy Credit (ZREC) Program required the EDCs to enter into 15-year contracts to purchase renewable energy credits (RECs)<sup>61</sup> from qualifying projects in Connecticut at a fixed price for 15 years. Like the NRES Program, LREC/ZREC projects were required to meet the eligibility requirements and larger projects were selected competitively, with smaller projects provided an administratively set incentive rate. If the EDCs selected a project, the “Seller” is required to execute a Contract or Service Agreement, which defines the term of the contract, price, and all the other requirements of the Seller and Buyer.<sup>62</sup> Notably, these projects were also eligible for traditional net metering, explained on page 31 of this report.

## Budget and Procurement Process

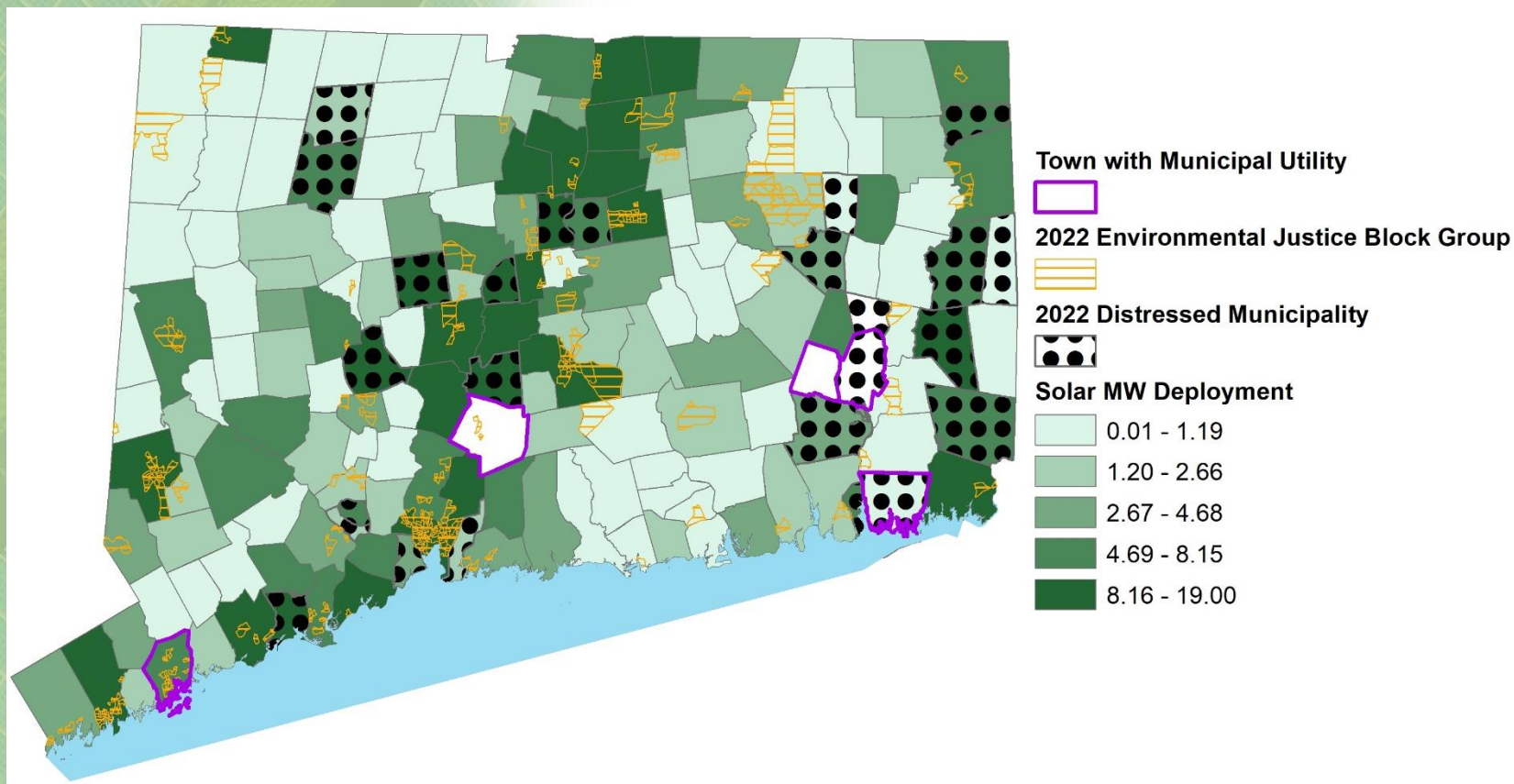
The budget for the program was split 80%/20% between Eversource and UI, respectively, for each procurement year. According to the 80/20 split, for Years 6-10 of the program (2017-2021), \$6.4M was allotted for Eversource and \$1.6M was allotted for UI. Additionally, any applicable funds from terminated LREC or ZREC projects that resulted in adjustments to the Maximum Annual Quantity (MAQ)<sup>63</sup> are added to the budget. Thus, the budget divides as follows: 50% to LREC projects; and 50% to ZREC projects, divided evenly among Small, Medium, and Large ZRECs.

UI Years 6-10 Budgets						
Solicitation	Issue Date	% of Budget	LREC	Large ZREC	Medium ZREC	Small ZREC*
<b>Overall Statutory Budget Per Category</b>			\$800,000	\$266,667	\$266,667	\$266,667
The RFP budgets will be at least what is noted above, plus any applicable funds from terminated projects or projects that resulted in MAQ adjustments.						
*Pursuant to PURA's Decision on Motion No. 3 in Dkt. 10-08-10, the Year 7 and 8 Small ZREC budgets were combined into one Year 7 Small ZREC budget. Therefore, the Year 7 Small ZREC budget was \$2.13M						

Eversource Years 6-10 Budgets						
Solicitation	Issue Date	% of Budget	LREC	Large ZREC	Medium ZREC	Small ZREC*
<b>Overall Statutory Budget Per Category</b>			\$3,200,000	\$1,066,667	\$1,066,667	\$1,066,667
The RFP budgets will be at least what is noted above, plus any applicable funds from terminated projects or projects that resulted in MAQ adjustments.						
*Pursuant to PURA's Decision on Motion No. 3 in Dkt. 10-08-10, the Year 7 and 8 Small ZREC budgets were combined into one Year 7 Small ZREC budget. Therefore, the Year 7 Small ZREC budget was \$2.13M						



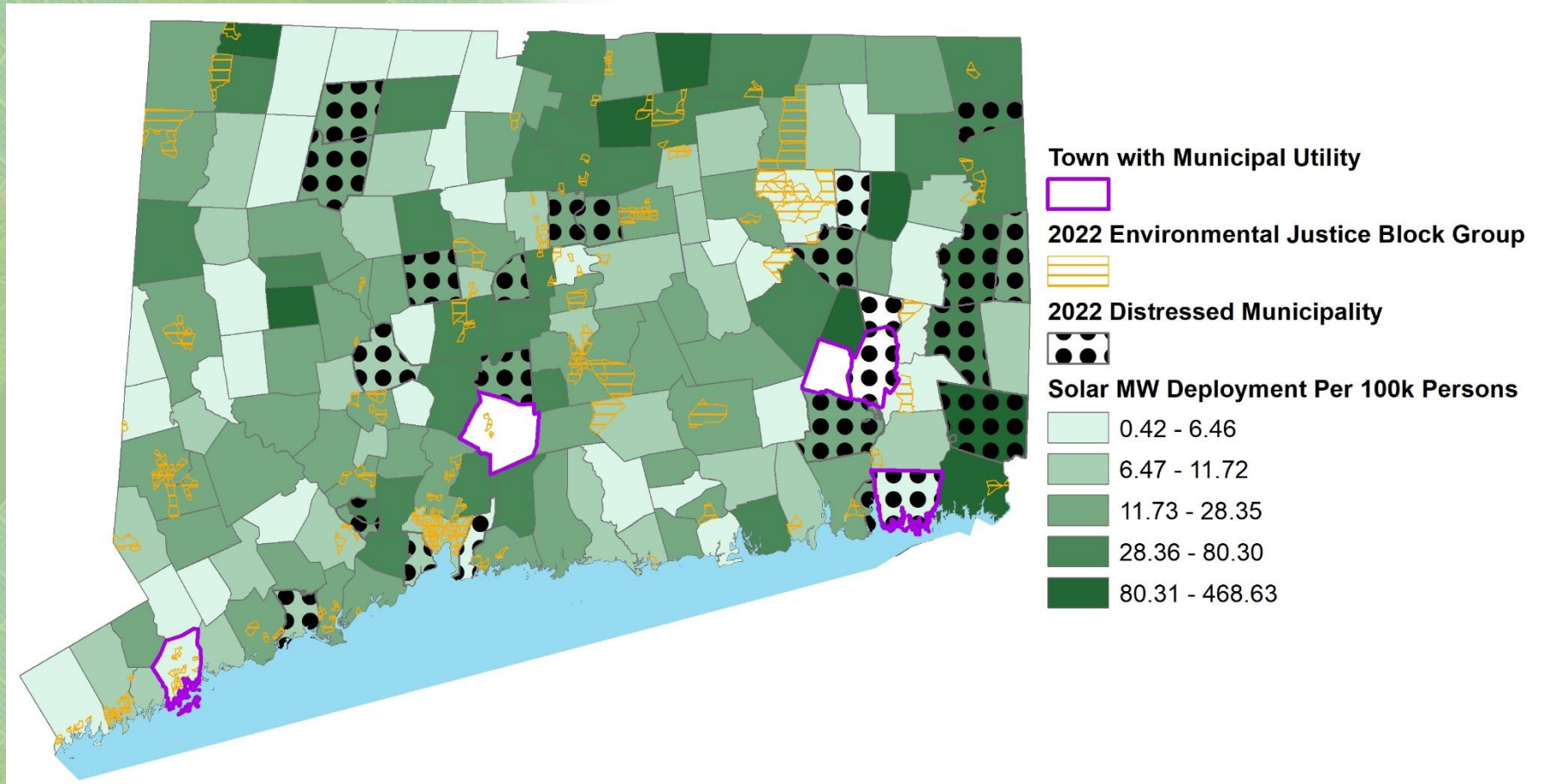
# Solar Capacity (MW) Deployment by Town via LREC/ZREC/VNM Programs



This map displays the 2022 Connecticut environmental justice (EJ) communities as defined by section 22a-20a of the General Statutes of Connecticut.<sup>64,65,66</sup> In terms of total MW deployment by town, there is a significant amount of deployment running north and south through the center of the state, around Hartford and New Haven. However, as seen on the next page, the deployment is more dispersed when looking at deployment per capita in each town.

The data used to aggregate deployment by town is from the EDC Compliance filings on November 15, 2022, in response to Interrogatory CAE-30 in Docket No. 17-12-03RE09. In subsequent years, when NRES projects begin to be deployed, the Authority anticipates plotting all LREC/ZREC, VNM, and NRES deployment together to understand the spatial deployment of commercial and industrial renewable energy systems.

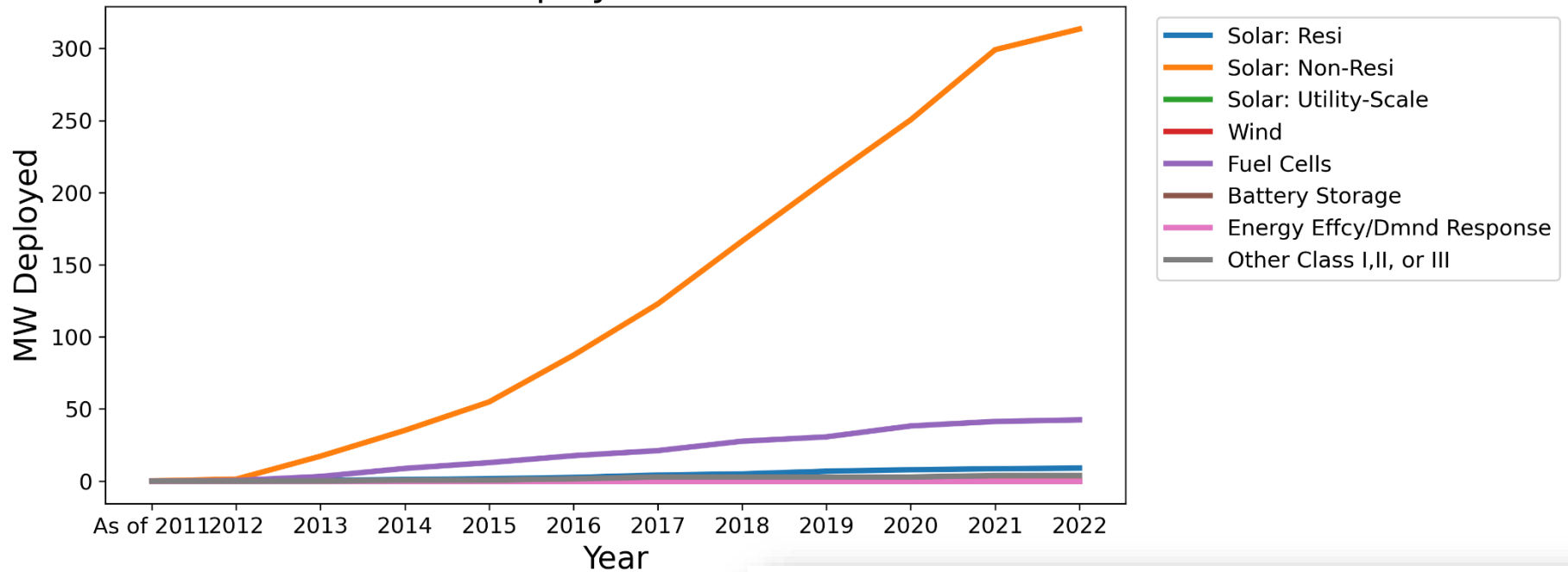
# Solar Capacity (MW) Deployment per 100k Persons by Town via LREC/ZREC/VNM Programs



When looking at the deployment in each town per capita (multiplied by 100,000), the density of deployment around the Farmington River area is reduced, due to many towns in the area having relatively high populations. There are some towns in the Southeast of the state with significant deployment levels, including North Stonington which also has the most per capita residential solar deployment. In terms of deployment via the LREC/ZREC/VNM programs, the town with the most deployment per capita is Hampton, at over 450 MW per 100,000 persons, followed by Franklin, CT, at over 330 MW per 100,000 persons, and North Stonington is fifth at over 135 MW per 100,000 persons.

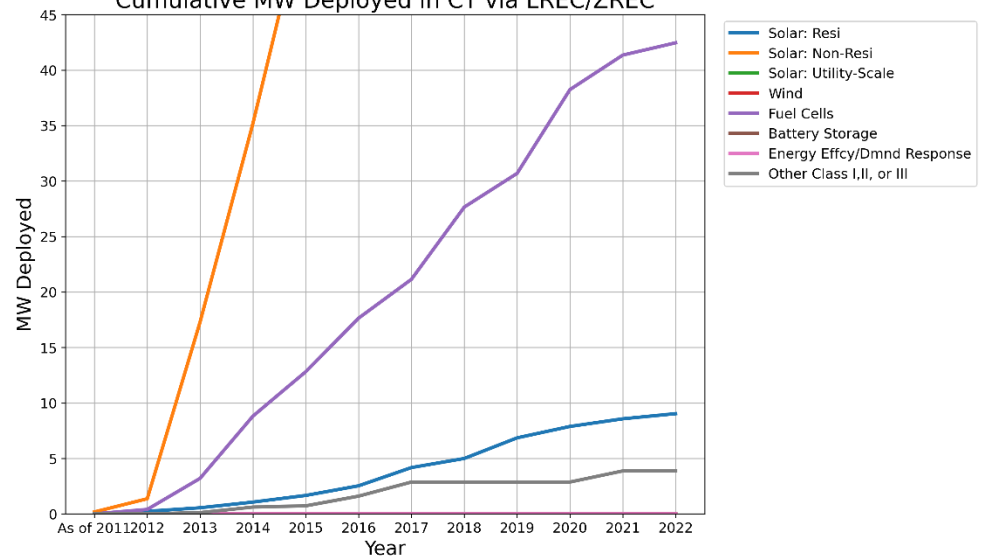


### Cumulative MW Deployed in CT via LREC/ZREC



The non-residential deployment data on this page is through September 2022. It is noteworthy to consider the above data in the context of the lingering impacts of the COVID-19 pandemic, high inflation, and supply chain issues in 2022.<sup>67</sup> Further, 2022 was the first year of the NRES program, the successor program to LREC/ZREC, and while no projects are deployed as of the drafting of this report, per Table 2 in the NRES Section earlier in the report, over 53 MW of capacity has executed contracts.

### Cumulative MW Deployed in CT via LREC/ZREC



<b>LREC/ZREC Program<sup>68</sup></b>														
Categories.		As of 2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
<b>LREC</b>	Annual Deployment in MWs (AC)	-	-	1.300	6.400	5.650	5.363	9.733	15.998	3.601	19.298	13.912	19.089	<b>100.343</b>
	No. Projects In-Service	0	0	2	14	8	11	13	16	6	17	13	14	<b>114</b>
	No. Projects In-Service in <b>VNM</b>	0	0	0	0	0	1	7	2	2	8	3	1	<b>24</b>
	Annual Deployment in MWs (AC) in <b>VNM</b>	-	-	-	-	-	0.750	11.080	1.920	1.998	10.544	3.999	2.000	<b>32.291</b>
<b>Large ZREC</b>	Annual Deployment in MWs (AC)	-	-	2.083	9.147	8.327	11.192	12.764	20.476	14.966	18.690	14.917	11.830	<b>124.391</b>
	No. Projects In-Service	0	0	5	16	12	18	21	29	23	28	23	13	<b>188</b>
	No. Projects In-Service in <b>VNM</b>	0	0	0	0	0	6	7	9	4	7	9	2	<b>44</b>
	Annual Deployment in MWs (AC) in <b>VNM</b>	-	-	-	-	-	5.302	5.999	8.944	4.000	5.996	8.989	2.000	<b>41.230</b>
<b>Medium ZREC</b>	Annual Deployment in MWs (AC)	-	0.250	5.216	9.155	6.488	9.429	6.609	10.136	13.779	8.228	9.346	2.422	<b>81.058</b>
	No. Projects In-Service	0	1	27	50	35	52	41	61	64	42	49	12	<b>434</b>
	No. Projects In-Service in <b>VNM</b>	0	0	1	0	0	2	1	0	0	0	0	0	<b>4</b>
	Annual Deployment in MWs (AC) in <b>VNM</b>	-	-	0.100	-	-	0.401	0.442	-	-	-	-	-	<b>0.943</b>
<b>Small ZREC</b>	Annual Deployment in MWs (AC)	0.053	0.057	1.617	4.272	7.229	7.235	8.830	9.146	11.598	8.231	8.031	4.091	<b>70.389</b>
	No. Projects In-Service	2	2	67	104	153	176	212	208	253	156	150	78	<b>1561</b>
	No. Projects In-Service in <b>VNM</b>	0	0	0	0	1	1	0	0	0	0	0	0	<b>2</b>
	Annual Deployment in MWs (AC) in <b>VNM</b>	-	-	-	-	0.056	0.060	-	-	-	-	-	-	<b>0.116</b>

The largest overlap between VNM and LREC/ZREC occurs for the Large ZREC category, followed by the LREC, Medium ZREC, and Small ZREC categories, respectively.

The table shows the deployment levels in MW (AC) of installed and in-service projects for the LREC/ZREC Program.

Data in the Table from the Eversource Compliance filing dated November 15, 2022, in response to CAE-39, and the UI response to CAE-74.



The below table shows the deployment in MWh by technology type across the different categories of the LREC/ZREC Program. The data for the Table comes from the EDC compliance filing dated November 15, 2022. The relevant data from the compliance filing is from the file containing the EDCs' updated responses to Interrogatory CAE-40 from Docket No. 17-12-03RE09.

LREC/ZREC Program		As of												
Categories	Technology Type	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
LREC	Fuel Cells Deployed in MWs (AC)	0	0	1.3	6.4	5.65	5.363	3.237	8.09	2.6	7.687	2.887	1.628	<b>44.842</b>
	Solar Deployed in MWs (AC)	0	0	0	0	0	0	6.496	7.908	1.001	11.611	9.925	17.461	<b>54.402</b>
	Other Resources Deployed in MWs (AC)	0	0	0	0	0	0	1.2	0	0	0	0	0	<b>1.2</b>
Large ZREC	Fuel Cells Deployed in MWs (AC)	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
	Solar Deployed in MWs (AC)	0	0	2.083	8.647	8.327	10.309	12.764	20.476	14.966	18.723	13.917	11.83	<b>122.042</b>
	Other Resources Deployed in MWs (AC)	0	0	0	0.5	0	0.883	0	0	0	0	1	0	<b>2.383</b>
Medium ZREC	Fuel Cells Deployed in MWs (AC)	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
	Solar Deployed in MWs (AC)	0	0.25	5.216	9.043	6.488	9.317	6.389	10.136	13.779	8.228	8.647	2.422	<b>79.915</b>
	Other Resources Deployed in MWs (AC)	0	0	0	0.112	0	0.112	0.22	0	0	0	0	0	<b>0.444</b>
Small ZREC	Fuel Cells Deployed in MWs (AC)	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
	Solar Deployed in MWs (AC)	0.053	0.057	1.617	4.256	7.181	7.235	8.83	9.147	11.598	8.231	8.031	4.091	<b>70.327</b>
	Other Resources Deployed in MWs (AC)	0	0	0	0.016	0	0	0	0	0	0	0	0	<b>0.016</b>

# Virtual Net Metering (VNM) Program

Virtual net metering (VNM) is the process of combining the electric meter readings and billings between a host and a beneficial account related to the host account.<sup>69,70</sup> Pursuant to Conn. Gen. Stat. § 16-244u(5), the VNM Program allows Customer Hosts (those customers who operate behind-the-meter generation)<sup>71</sup> to assign surplus production from their eligible generator to other metered accounts, called beneficial accounts, that are not physically connected to the Customer Host's generator.<sup>72</sup>

The combining of electric meter readings and billings includes any VNM credits for state, agricultural, or municipal (SAM) Customer Hosts and is accomplished via the EDCs' billing process. The VNM credits, which are applied monthly as credits to the electric bill of the beneficial account, are equal to the generation of service charges and a declining percentage of the transmission and distribution charges (80% in the first year, 60% in year two, and 40% in year three onwards).<sup>73,74</sup>

## Annual VNM Credits

In layman's terms, the customer host gets paid at the same rate the host would have been charged by the electric company for the generation used onsite and at a fixed rate for any excess energy generated.

The maximum aggregated annual compensation under the VNM Program is \$4 million for UI and \$16 million for Eversource. However, Municipal Hosts who submitted an interconnection and VNM application on or before April 13, 2016 were allocated an additional \$6 million (\$1.2M UI, \$4.8M Eversource). An additional allocation of \$3 million (\$0.6M UI, \$2.4M Eversource) is available for Agricultural Customer Hosts utilizing an anaerobic digestion Class I renewable energy source. The Individual Customer Host annual cap is based on estimated kWh production and rates in effect at the time of application. When an Individual Customer Host annual cap is reached in a calendar year, net energy billing continues, and all excess kWh produced is compensated under the applicable power purchase rate for the remainder of the year (i.e., at the wholesale power rate).



## Net Exported kWh

The amount of excess kWh delivered by the Customer Host to the electric distribution system is the net exported kWh. The net exported kWh is equal to the total kWh exported by the Customer Host to the distribution system less the total kWh imported by the Customer Host from the distribution system over a monthly billing period.

The VNM Credit is determined monthly using this formula:

$$\mathbf{VNM\ Credit = (Net\ Exported\ kWh) * ([SS\ or\ LRS] + [%\ T\ \&\ D\ rates\ of\ Customer\ Host])}$$

Where SS is standard service, LRS is last resort service, and % T & D is percentage of transmission and distribution charges.

The VNM credit is then allocated to the beneficial accounts.<sup>75</sup> Municipal & State Beneficial Accounts can have up to 5 Municipal or State accounts, respectively, plus up to 5 respective non-Municipal or non-State Critical Facilities connected to the Microgrid. Agricultural Beneficial Accounts can have up to 10, consisting of Agricultural, Municipal, or non-commercial Critical Facilities connected to the Microgrid.



## Current Status of VNM Program

The table below provides information on the current availability status of the VNM project. More information on the program eligibility, application process, queuing and program caps can be found in *Appendix 1: Program Eligibility*.

VNM Program	Statutory Authority (Conn. Gen. Stat.)	PURA Dockets	Renewable Energy Source(s)		Municipal Sector	State Sector	Agriculture Sector	Agriculture Anaerobic Digester Sector
Eversource	16-244u(5) and (6)	DN 13-08-14; DN 15-09-08	Class I (All) and Class III (Municipal & State)	Amount Subscribed	Fully Subscribed	Fully Subscribed	Fully Subscribed	Fully Subscribed
				No. Applications in Queue	33	0	11	0
				Total Deployed in MWs	40.765	10.999	17.726	0.550
UI	16-244u(5) and (6)	DN 13-08-14; DN 15-09-08	Class I (All) and Class III (Municipal & State)	Amount Subscribed	Fully Subscribed	\$284.6k Cap Space Available	\$98.8k Cap Space Available	\$600k Cap Space Available
				No. Applications in Queue	3.34	0	0	
				Total Deployed in MWs	4.65	0	2	

The above Table, and the Table on the next page were both created from the data filed in the EDCs compliance filing, dated November 15, 2022. The specific data inside of the compliance filing which was used to create the Table are the EDC responses to Interrogatory CAE-42. While some capacity for new projects under this program is available in UI's service territory, the VNM Program has largely been sunsetted and succeeded, along with the LREC/ZREC program, by the NRES Program. However, as seen in the plot on the next page, deployment of subscribed projects continued through 2022.

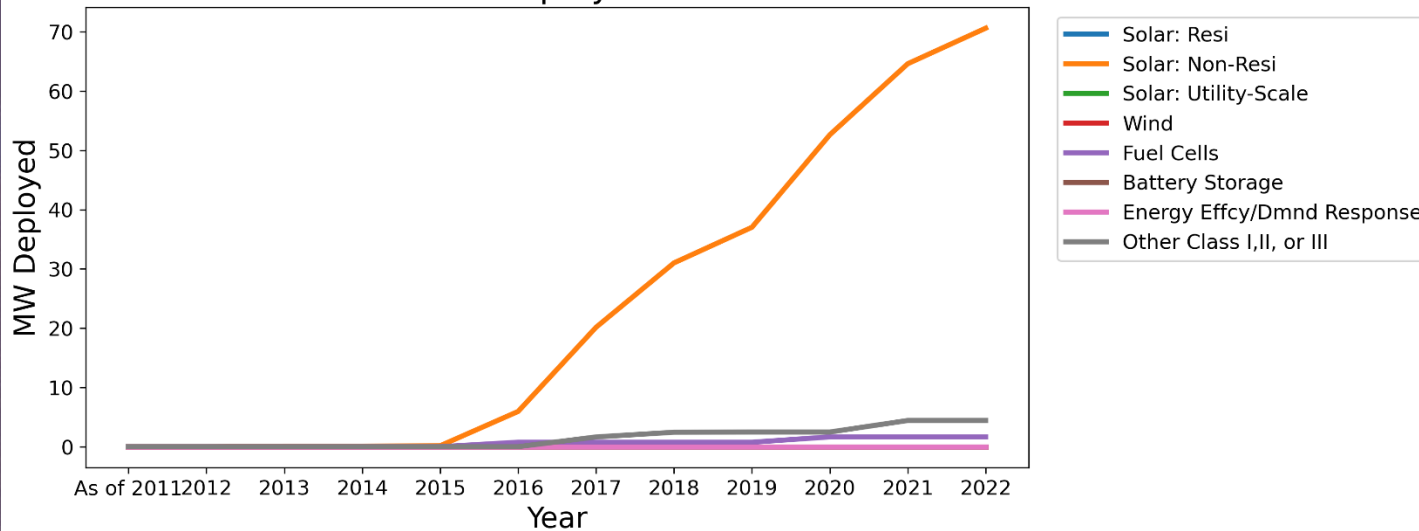


VNM Program		Municipal Sector	State Sector	Agriculture Sector	Agriculture Anaerobic Digester Sector
<b>Eversource</b>	Total Annual Cap	\$11,200,000.00	\$3,543,334.00	\$6,056,666.00	\$2,400,000.00
	Cap Subscribed	\$11,200,000.00	\$3,543,334.00	\$6,056,666.00	\$2,400,000.00
	No. Projects Subscribed	40	12	19	4
	No. Applications Waiting List	33	0	11	0
	Total MW Deployed (Fuel Cells)	0.75	0	0	0
	Total MW Deployed (Solar)	38.373	9.999	17.726	0
	Total MW Deployed (Other)	1.642	1	0	0.55
<b>UI</b>	Total Annual Cap	\$2,597,412.66	\$1,600,000.00	\$800,000.00	\$600,000.00
	Cap Subscribed	\$2,597,412.66	\$1,315,395.00	\$701,209.66	\$0.00
	No. Projects Subscribed <sup>76</sup>	7.66	2.89	2.00	0
	No. Projects Provisional <sup>77</sup>	1.34			
	No. Applications Waiting List <sup>78</sup>	2	0.11	0	0
	Total MW Deployed (Fuel Cells)	0.90	0	0	0
	Total MW Deployed (Solar)	2.52	0	2	0
	Total MW Deployed (Other)	1.23	0	0	0

The VNM program is largely comprised of non-residential solar PV, as is evident from the plot below.

Plots based on data submitted in response to Interrogatory CAE-33 in Docket No. 17-12-03RE09 on December 3, 2021.

Cumulative MW Deployed in CT via VNM



# Shared Clean Energy Facility (SCEF) Program and SCEF Pilot Program

Pursuant to Conn. Gen. Stat. § 16-244z(a)(1)(C), and established in 2020, the Shared Clean Energy Facility (SCEF) Program is a 6-year competitive procurement effort focused on broadening clean energy participation in Connecticut.



More specifically, the goal of the SCEF Program is to 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. Typically, residents or businesses can choose to invest in, or lease, a renewable energy system on the rooftops of their homes or businesses. However, some Connecticut residents and businesses, especially LMI customers, may not be able to invest in or lease an individual installation for a variety of reasons (e.g., high installation costs, unsuitable rooftop orientation, shaded property, or because they rent a property instead of owning one).

Customer subscription to SCEF projects helps overcome such barriers to clean energy installation, thereby expanding consumer access to renewable energy. A SCEF enables multiple customers to benefit directly from a facility's energy production. Participating SCEF customers, or subscribers, then receive clean energy savings in the form of a fixed monthly payment on their utility bill.

The EDCs administer the SCEF Program, in coordination with DEEP. Specifically, the subscription management, identification, and enrollment of customers/subscribers, as well as project selection through an annual, competitive solicitation, is managed by the EDCs. The Authority reviews the program requirements, price caps, and bid preferences each year to ensure the program's effectiveness.

The SCEF owner is responsible for the financing and construction of the project that delivers and RECs to the EDCs. In turn, the SCEF owner receives direct payment for the energy production of the project on a quarterly basis over a 20-year term.

The Program allocated 25 MW of new clean power generation per year for the first three program years and 50 MW per year for the subsequent three program years, for a total of 225 MW over the program's 6 years of procurement. The MW allocation is split 80/20 between Eversource and UI.



The SCEF project requirements and tariff design, including the program timeline, project eligibility requirements, and the EDCs' solicitation and bid selection process were approved by PURA through the December 18, 2019 [Decision](#) in Docket No. 19-07-01.<sup>79</sup> Additionally, the 2023 Program documents and manual were reviewed and [approved](#) by PURA in Docket No. 22-08-04, [Annual Review of Statewide Shared Clean Energy Facility Program Requirements – Year 4](#).

### SCEF Pilot Program

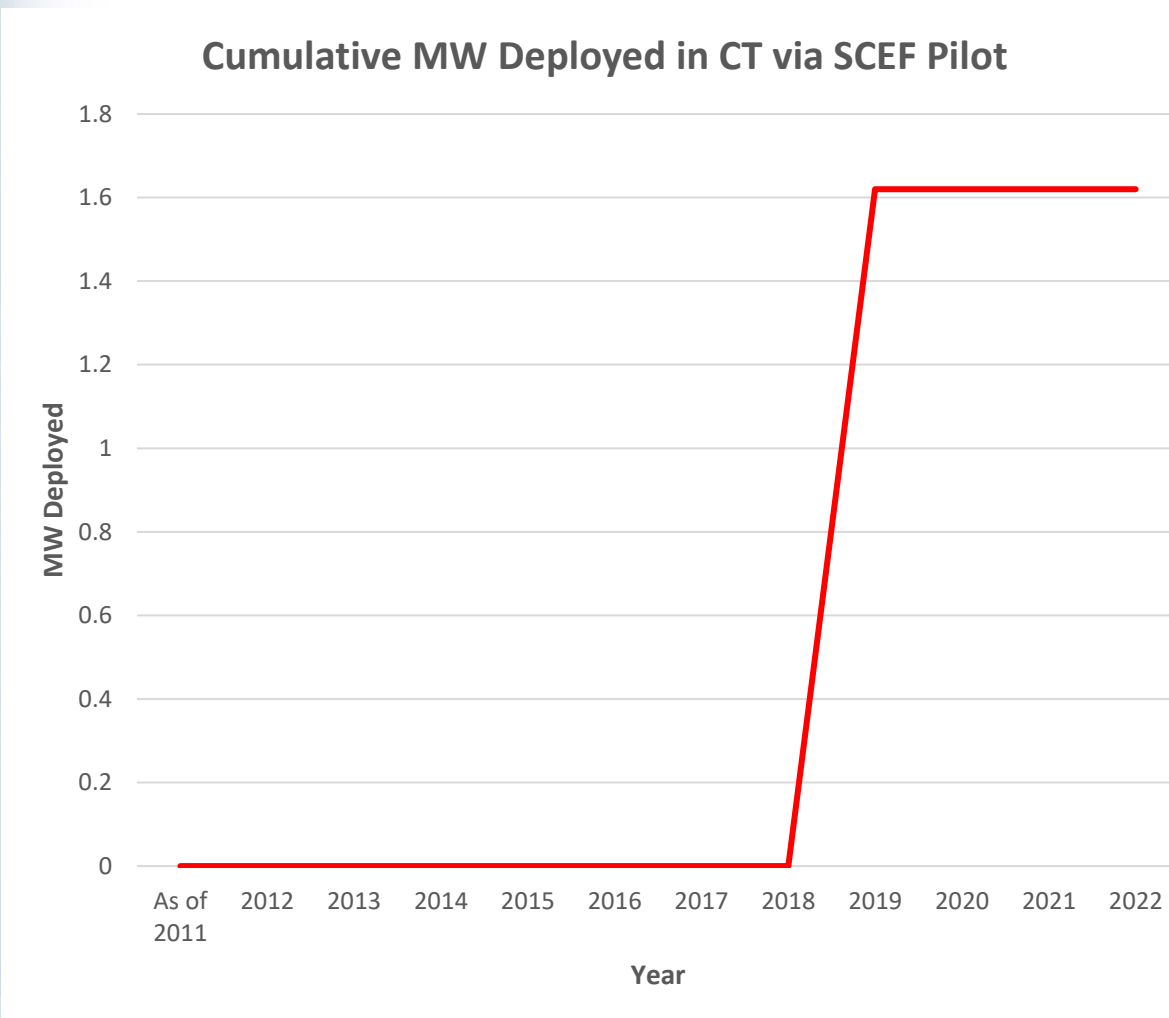
In a Final Decision<sup>80</sup> dated November 8, 2017, PURA approved DEEP's selection of three solar projects for a two-year SCEF Pilot Program with the EDCs.

The selected projects consist of a 2.0 MW facility by CHIP Fund 5 and a 1.62 MW facility by Clean Energy Collective located in Eversource territory, and a 1.6 MW facility by US Solar Corporation located in UI territory. Currently, only the 1.62 MW facility in the Eversource territory is in service under the SCEF Pilot Program.<sup>81</sup>

The RFP issued by DEEP to select pilot projects was conducted pursuant to Conn. Gen. Stat. §16-244x. The statute directed DEEP to: (1) establish a billing credit for subscribers of a SCEF; (2) establish consumer protections for subscribers and potential subscribers of such facility; and (3) select, pursuant to a competitive RFP process,

SCEF projects with an aggregate total nameplate capacity rating of no more than 6 MW, including no more than 2 MW in the aggregate in the service territory of UI, and no more than 4 MW in the aggregate in the service territory of Eversource.

Additional information on the SCEF Pilot Program can be found on DEEP's [website](#).



## Current Status of SCEF Program

Eversource and UI issued the Year 1 request for proposal (RFP) on April 30, 2020 to solicit bids for projects that will result in on-bill credits to qualified customers. The Year 2 RFP was issued on April 30, 2021, and the year 3 RFP was issued on January 21, 2022. Subsequent solicitations will occur annually in January with selected projects eligible to generate in July of the following year. Once projects are operational and are generating electricity, project developers will receive payments for generation for up to 20 years. While there are not currently any deployments for the SCEF Program, relevant plots and analytics will be incorporated in future reports. However, a plot showing SCEF application and project selection information is included in the LREC/ZREC section of the report. Last, data for the Year 3 solicitation of the SCEF Program is included on the next page.

More information and resources on the SCEF Program are available on [Eversource's](#) dedicated program webpage and on DEEP's [website](#). Further, the tables on the following page highlight key information on the SCEF Program, including Program price caps and bid preferences, as well as the results of Eversource's and UI's year 3 solicitation.



**Table 1: 2023 SCEF Program Tariffs**

Year 4 Price Cap		Bid Preferences <sup>82</sup>	
Solar Canopies	All Other Projects	Solar Canopies	Landfills/Brownfields
\$0.15543/kWh	\$0.135/kWh	30%	20%

**Table 2: Eversource Year 3 SCEF Solicitation Summary**

<b>Total MW Selected<sup>83</sup></b>	59.97
<b>Total In-Service MWs</b>	-
<b>Unallocated MWs</b>	0.027
<b>Total Projected 20-Year Payments to Subscriber Organizations</b>	\$ 226,005,040.29
<b>Total Projected 20-Year Payments to Subscribers</b>	\$ 60,411,378.50

**Table 3: UI Year 3 SCEF Solicitation Summary**

<b>Total MW Selected<sup>84</sup></b>	11.875
<b>Total In-Service MWs</b>	-
<b>Allocated, but Unused MW</b>	-
<b>Unallocated MW</b>	3.125
<b>Total Projected 20-Year Payments to Subscriber Organizations</b>	\$ 186,533,891.88
<b>Total Projected 20-Year Payments to Subscribers</b>	\$ 34,880,537.00



# Energy Storage Solutions (ESS) Program

Effective beginning January 1, 2022 through December 31, 2030, the Energy Storage Solutions (ESS) Program incentivizes and supports the deployment of electric storage devices statewide. The program was developed pursuant to [Public Act 21-53](#), which establishes a program goal of 580 MW deployment of energy storage by year-end 2030. The program is administered by the Connecticut Green Bank (CGB) along with the EDCs.

The ESS Program was established through the [Decision](#) dated July 28, 2021 in Docket No. 17-12-03RE03, [PURA Investigation Into Distribution System Planning Of The Electric Distribution Companies – Electric Storage](#). The Decision further authorized three-year Program cycles with interim goals of 100 MW energy storage deployment by 2025, and 300 MW energy storage deployment by 2028. The Program Manual and documents for 2023 were reviewed and [approved](#) in Docket No. 22-08-05, [Annual Review of The Electric Storage Program – Year 2](#).

Participants in the ESS Program can receive an upfront incentive, which requires participation in passive dispatch. During passive dispatch, projects discharge stored energy back into the electric grid at set times each day to provide benefits to the electric grid, including peak shaving and the deferral of distribution system upgrades. Projects can also receive a performance-based incentive for participation in active dispatch events, which are called by the EDCs under rules approved by PURA to reduce stress on the electric grid during periods of peak energy use, resulting in financial savings for all ratepayers. Program incentives vary by project type (commercial and industrial versus residential projects) and Program tranche, where incentives change once each tranche's capacity is fully committed. Table 1 on the next page shows the tranches for each project type.

More information and resources on the ESS Program are available on PURA's [website](#) and on the dedicated ESS Program [website](#).





**Table 1: ESS Program MW Deployment Targets**

Customer Class	2022-2024 Tranche 1	2025-2027 Tranche 2	2028-2030 Tranche 3	Total
Residential	50 MW	100 MW	140 MW	290 MW
Commercial and Industrial	50 MW	100 MW	140 MW	290 MW
<b>Total</b>	100 MW	200 MW	280 MW	580 MW

The megawatt capacity and deployment targets for each customer class and Program tranche are shown above in Table 1, while the varying incentives for the ESS Program are shown below in tables 2 through 4.

**Table 2: Residential Customer Upfront Incentives (Tranche 1)**

Incentive Step	Installed Capacity (MW)	Baseline (\$/kWh)	Underserved Community (\$/kWh)	Low-Income (\$/kWh)
1	10	\$200	\$300	\$400
2	15	\$170	\$255	\$340
3	25	\$130	\$195	\$260

**Table 3: Commercial and Industrial Customer Upfront Incentives (Tranche 1)**

Installed Capacity (MW)	Small Commercial (\$/kWh)	Large Commercial (\$/kWh)	Industrial (\$/kWh)
50	\$200	\$175	\$100

**Table 4: All Customer Classes Performance-Based Incentives (Tranche 1)**

Years 1-5		Years 6-10	
Summer (\$/kW)	Winter (\$/kW)	Summer (\$/kW)	Winter (\$/kW)
\$200	\$25	\$115	\$15
\$225 annually		\$130 annually	

Tables 5 through 7, below, highlight the application deployment data for the ESS Program, as well as the progress the Program is making towards its deployment goals. While the ESS Program is not presently on track to achieve its residential deployment target, commercial deployment is currently exceeding the expected application pace and is on track to meet or exceed its deployment goal.

**Table 5: Progress Made Toward ESS Program Goal as of June 30, 2022**

Customer Type	Applications Submitted (kW)	Applications Approved (kW)	Application Complete (kW)	Total (kW)	Program Goals (2022-2024) (kW)	Percent of Capacity Approved Relative to 2024 Goal	Percent of Capacity Submitted or Approved Relative to 2024 Goal
<b>Residential</b>	768	185	0	953	50,000	0.37%	1.91%
<b>C&amp;I</b>	60,111	2,626	0	62,737	50,000	5.25%	125.47%



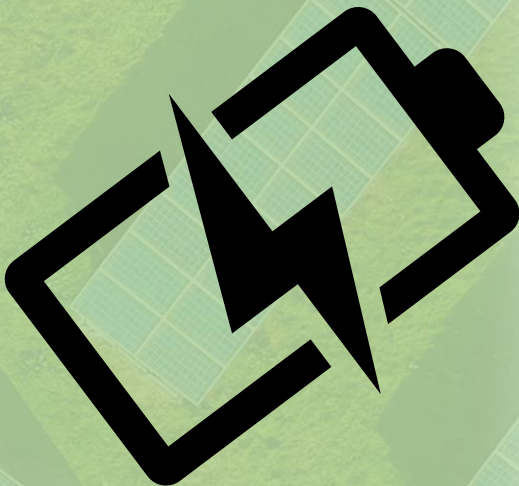


**Table 6: C&I  
Project Submissions as of June 30, 2022**

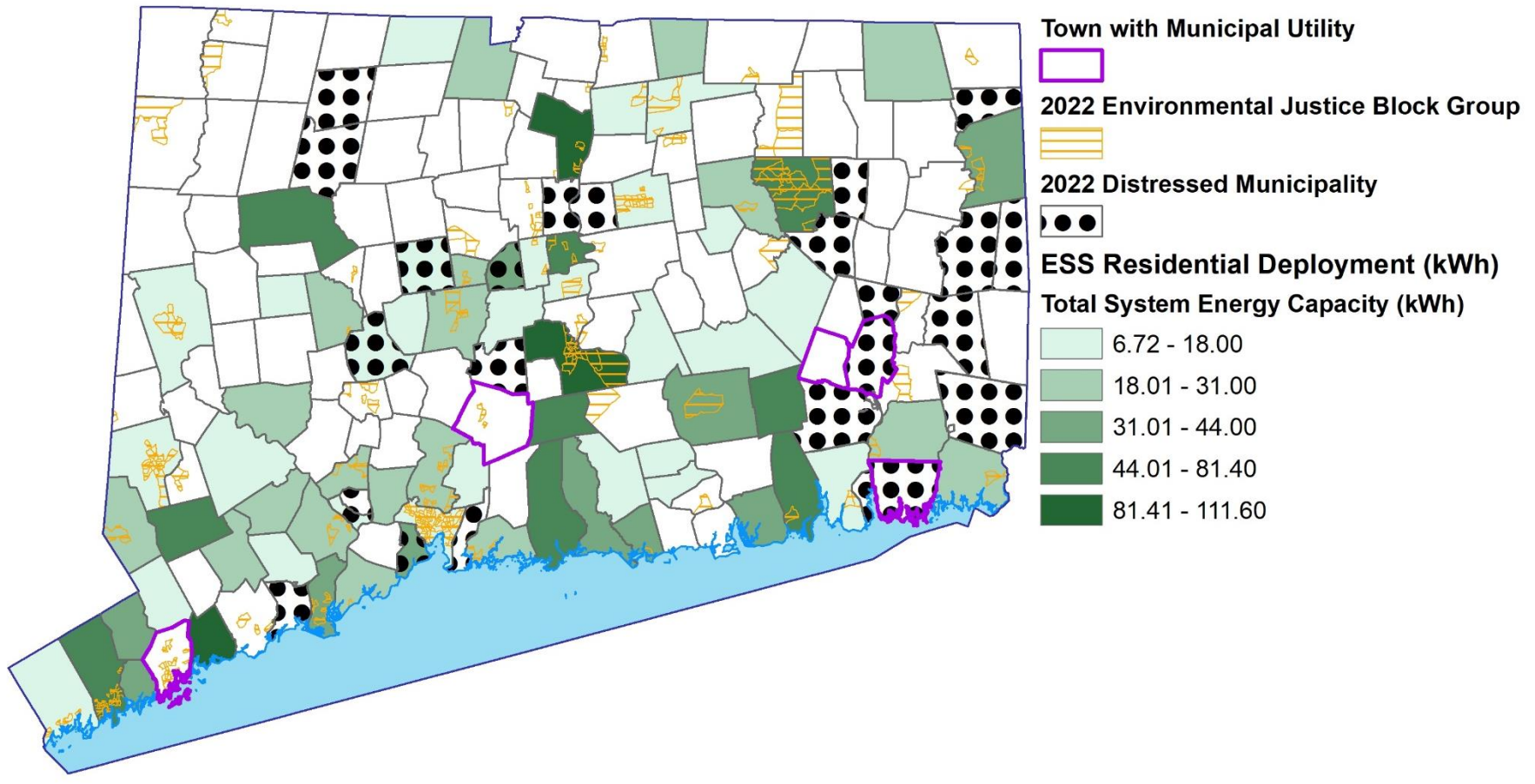
	Projects	Total System Power Rating (kW)	Total System Energy Capacity (kWh)	Forward Capacity Market Participation
<b>Large C&amp;I</b>	14	34,197	88,681	5
Submitted	13	32,856	85,999	5
Approved	1	1,341	2,682	0
<b>Medium C&amp;I</b>	12	16,373	49,380	2
Submitted	11	15,088	46,811	2
Approved	1	1,285	2,570	0
<b>Small C&amp;I</b>	9	12,167	38,524	5
Submitted	9	12,167	38,524	5
<b>Grand Total</b>	35	62,737	176,586	12

**Table 7: Residential Project Application Data as of June 30, 2022**

	Projects	Total System Power Rating (kW)	Total System Energy Capacity (kWh)	Projects Paired with Solar PV	Low Income	Underserved Community
<b>Application Submitted</b>	<b>76</b>	<b>768.58</b>	<b>1874.5</b>	<b>76</b>	<b>N/A</b>	<b>6</b>
Eversource	64	679.42	1639.1	64	N/A	4
UI	12	89.16	235.42	12	N/A	2
<b>Approved</b>	<b>21</b>	<b>184.5</b>	<b>384</b>	<b>21</b>	<b>1</b>	<b>1</b>
Eversource	19	171	357	19	1	1
UI	2	13.5	27	2	N/A	N/A
<b>Grand Total</b>	<b>97</b>	<b>953.08</b>	<b>2258.5</b>	<b>97</b>	<b>1</b>	<b>7</b>



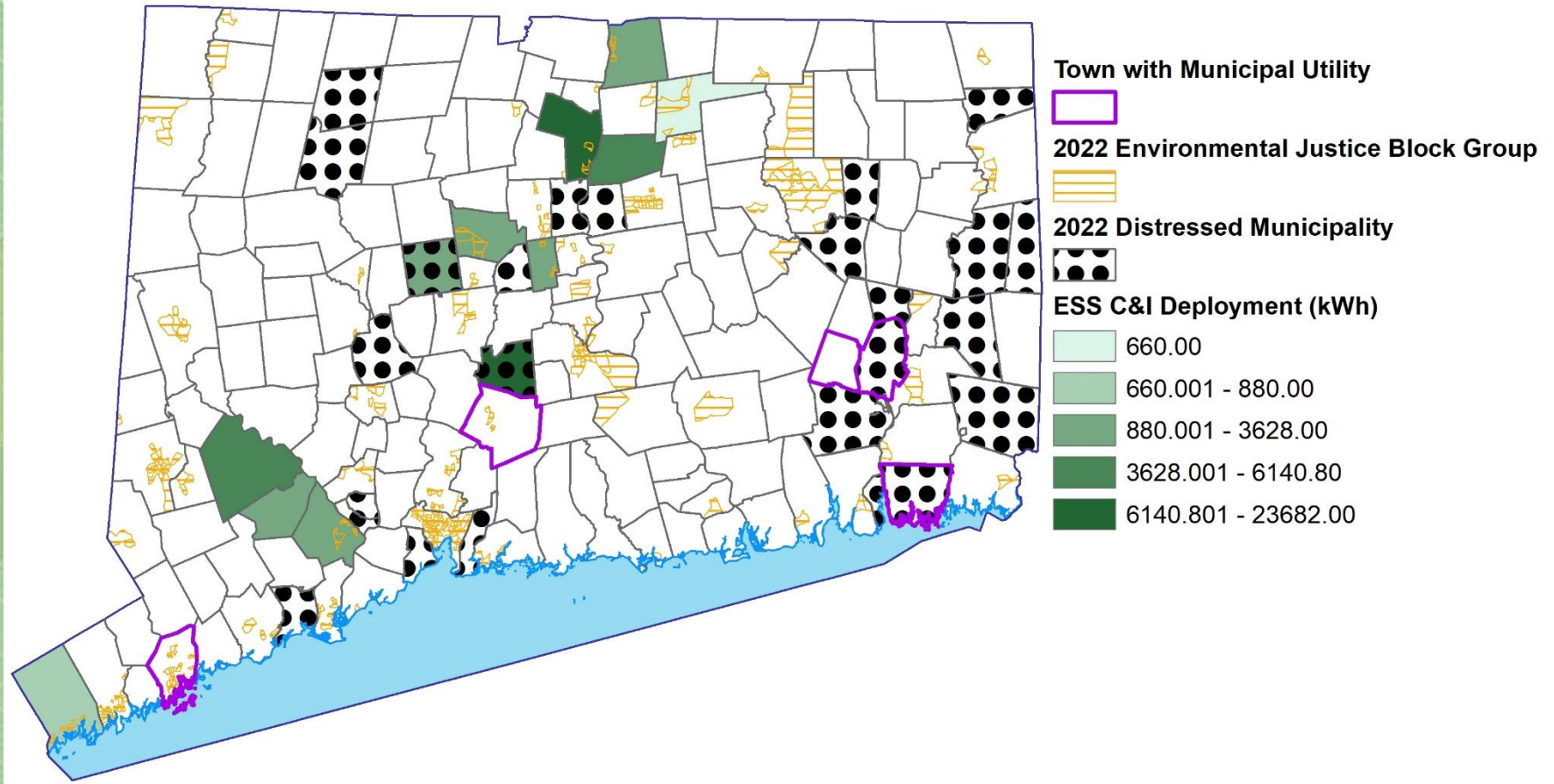
# Total Approved Residential Battery Storage Capacity by Town



In year one of deployment of battery storage via the ESS program, systems have been approved and deployed throughout many towns in Connecticut.<sup>85</sup> However, as can be seen in the above Figure, a majority of 2022 distressed municipalities have yet to have a residential battery system approved for installation. Through the annual review process held in Docket No. XX-08-05 each year, where XX stands for the calendar year, the Authority will work with stakeholders to ensure progress towards target deployment levels of 40% in low-income and underserved communities.



## Total Approved C&I Battery Storage Capacity by Town



During the first year of ESS deployment, 15 commercial and industrial customer projects were approved for deployment across 12 towns with a total system energy capacity approaching 74,000 kWh.<sup>86</sup> Notably, two of twelve projects approved are in distressed municipalities. As the program deployment grows over the years, the Authority will closely monitor the distribution of projects across towns in Connecticut to identify any trends and to ensure an fair and equitable distribution of program incentives.



# Electric Vehicle Charging Program

Effective beginning January 1, 2022 through December 31, 2030, the Electric Vehicle (EV) Charging Program supports the statewide installation of EV charging infrastructure to meet the State's commitment to the [multi-state zero emission vehicle Memorandum of Understanding \(MOU\) for light-duty vehicles](#). The Program was designed with a focus on equity and inclusion. The EV Charging Program is administered by the EDCs.

The [Decision](#) dated July 14, 2021 in Docket No. 17-12-03RE04, [PURA Investigation into Distribution System Planning of the Electric Distribution Companies – Zero Emission Vehicles](#), outlines a statewide EV Charging Program that establishes deployment targets, as shown in Table 1, and provides a combination of incentives to help reach those targets for infrastructure for electric vehicle supply equipment (EVSE), including direct current fast charging (DCFC) stations and accompanying rate design offerings, in an effort to support a self-sustaining EV market. The Program design includes EV charging incentives for residential and commercial customers, as well as managed charging components. The program rules and documents for 2023 were reviewed and [approved](#) in Docket No. 22-08-06, [Annual Review of The Electric Vehicle Charging Program – Year 2](#).



For residential customers, upfront incentives are available for networked Level 2 chargers and any necessary electrical wiring upgrades; see Table 3. Upfront incentives are distributed once the residential customer has demonstrated all of the Program eligibility requirements, such as proof of charger installation. Additionally, to receive the full incentives offered by the EV Charging Program, residential customers must participate in a managed charging program. Managed charging is designed to lower costs for all ratepayers by avoiding high-cost and carbon-intensive electricity sources by shifting EV charging to off-peak times, such as overnight. Participants receive ongoing incentives when they adjust their EV charging time to align with an EDC-proposed schedule. Customers can participate in the managed charging program if they received a networked Level 2 charger rebate or if their EV includes telematics compatible with the program. Participants



receive incentives when they adjust their EV charging time to align with an EDC-proposed schedule. Ultimately, participating in the EV Charging Program can help offset the cost of customers' EV charging infrastructure and usage over time.

For commercial customers, upfront incentives are designed to reduce the significant costs associated with EV charging station installation, including electric connection upgrades and supply infrastructure (e.g., Make-Ready Infrastructure); See Table 2. The chargers eligible for the commercial part of the Program include Level 2 Chargers located in multi-unit dwellings, public destinations, workplaces, inclusive of light-duty fleet applications, and DCFCs, which are often located along highways and other public sites. For charging sites located in underserved communities, as defined by the EV Charging Program, the make-ready incentives cover up to 100% of the costs associated with make-ready infrastructure upgrades. To qualify, commercial customers must meet the requirements of the EV Charging Program, including maintaining and servicing the charging station for at least 5 years.

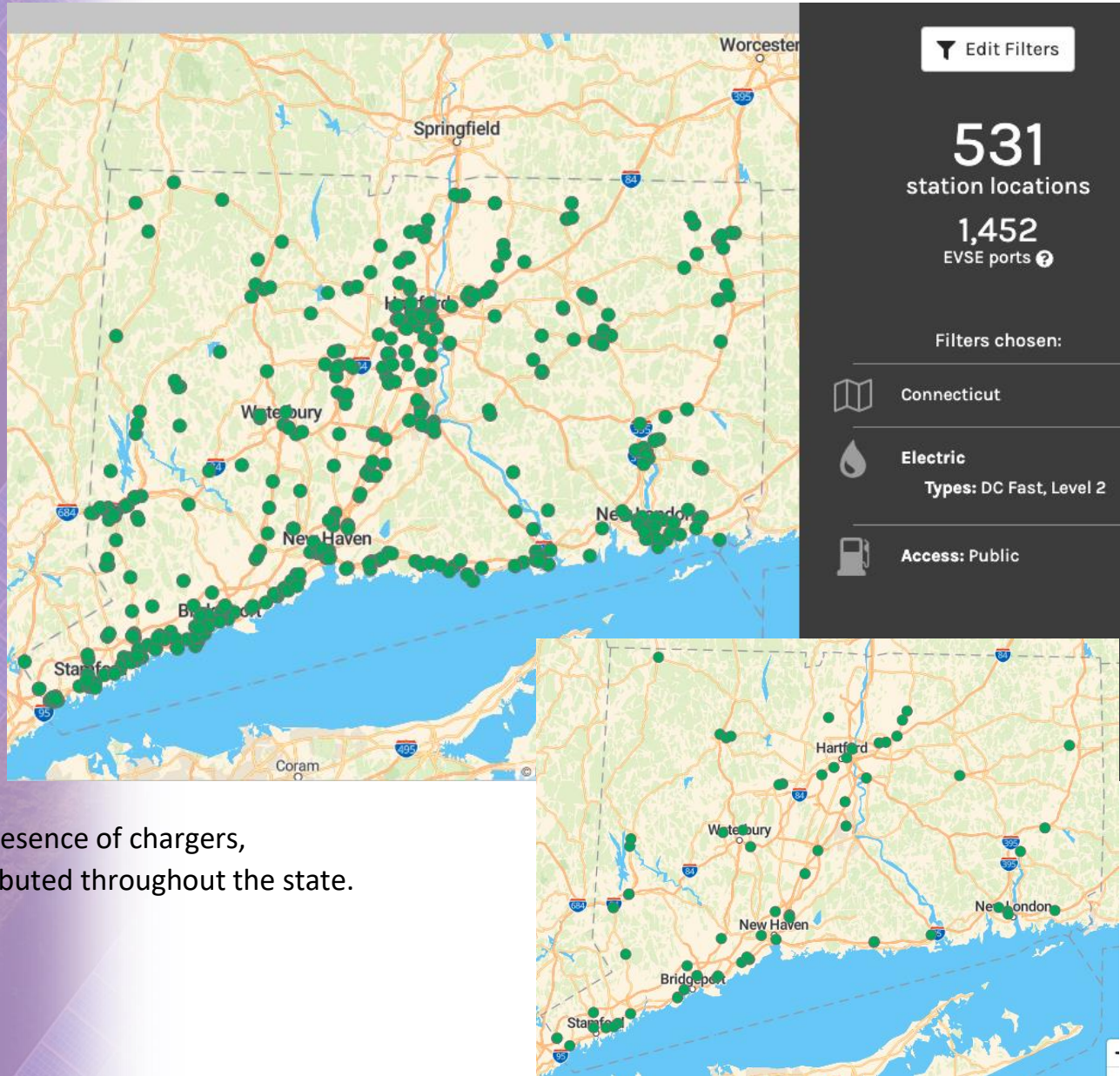
More information and resources on the EV Charging Program are available at PURA's [website](#), Eversource's [commercial and residential program websites](#), and UI's [commercial](#) and [residential](#) program websites and EVConnecticut's [website on vehicle and charging incentives](#).

The plots and tables<sup>87</sup> on the following pages (apart from the U.S. Department of Energy tool on the next page) highlight the application data and incentive structures for commercial and residential EV Charging Program participants, broken down by incentive type, from Year 1 of the EV Charging Program.



The U.S. Department of Energy (DOE) has an online tool which allows for the spatial visualization of EV chargers installed in the US and Canada. The tool allows for filtering by state, and then more advanced filtering by charger type (e.g., DC Fast, Level 1, Level 2), charger port type, and charger network. The results can be mapped or downloaded in a tabular format. The tool is available [here](#).

The plots on this page are taken from the DOE tool as of February 21, 2022, with the larger image showing the DC Fast and Level 2 chargers deployed in the state, and the smaller figure depicting only the DC Fast chargers. In total, there are 76 DC Fast charger locations, of which 28 are locations with Tesla chargers and 48 are locations with non-Tesla DC Fast chargers. Notably, the chargers are densest around high traffic roads cities (e.g., Hartford, Bridgeport, Stamford) and interstate highways (I-95, I-91, I-84). However, there is a growing presence of chargers, particularly Level 2 chargers, more widely distributed throughout the state.





**Table 1: EVSE Program Deployment Targets**

Program Area	Number of Ports (Statewide)			
	2022-2024	2025-2027	2028-2030	Total
Residential Single-Family (Level 2)	15,000	17,500	17,500	50,000
Multi-Unit Dwellings (Level 2)	1,213	To be revisited	To be revisited	To be revisited
DCFC	137	172	172	550
Destination Charging (Level 2)	789	1,654	1,654	4,868
Workplace & Light-Duty Fleets (Level 2)	2,314	2,521	2,521	7,356

**Table 2: EV Charging Program EVSE and Make-Ready Incentives**

	Residential Single-Family (Level 2)	Multi-Unit Dwellings (Level 2)	Public Destination (Level 2)	Workplace & Light-Duty Fleets (Level 2)	DCFC
<b>Incentive Structure</b>					
<b>EVSE and Make-Ready Incentives</b>	Up to \$500 EVSE rebate + a portion of necessary electrical upgrades	Up to 50% of EVSE cost + Up to 100% make-ready installation (≥ 2 ports)	Up to 50% of EVSE cost + Up to 100% make-ready installation (≥ 4 ports)	Up to 50% of EVSE cost + Up to 100% make-ready installation (≥ 2 ports)	Up to 50% of EVSE cost + Up to 100% make-ready installation (≥ 2 ports)
<b>Maximum Incentive per Site (Including make-ready costs covered by the Program)</b>					
<b>Baseline</b>	-	\$20,000			\$150,000
<b>Underserved Communities</b>	-	\$40,000			\$250,000

The EV Charging Program established the residential and commercial EVSE and electrical upgrade incentives, as seen in Tables 2 and 3, in order to meet the established EV charger deployment targets, as seen in Table 1.



**Table 3: 2022 Residential EV Charging Program Incentives**

	Amount
<b>Upfront Incentives</b>	
<b>New Networked Smart Charger Rebate</b>	Up to \$500
<b>Wiring Upgrade Rebate</b>	Up to \$500
<b>One-Time Managed Charging Enrollment Incentive (for eligible vehicles)</b>	\$100
<b>Ongoing Incentives</b>	
<b>Annual Managed Charging Incentive</b>	Up to \$200

**Table 4:**  
Residential Single-Family EVSE, Wiring & Enrollment  
Incentive Data (as of November 30, 2022)

CATEGORY	UTILITY	PARTICIPANTS
New Level 2 Charger Only Incentive	Eversource	897 <sup>88</sup>
	UI	16
	<b>Total</b>	<b>913</b>
Wiring Upgrade Only Incentive	Eversource	N/A
	UI	29
	<b>Total</b>	<b>29</b>
Wiring Upgrade and New Level 2 Charger Incentives	Eversource	N/A
	UI	94
	<b>Total</b>	<b>94</b>
Existing Equipment Enrollment Incentive	Eversource	40
	UI	6
	<b>Total</b>	<b>46</b>
Vehicle Telematics Enrollment Incentive	Eversource	442
	UI	25
	<b>Total</b>	<b>467</b>
Advanced Metering Infrastructure (AMI) Enrollment Incentive	Eversource	N/A
	UI	8
	<b>Total</b>	<b>8</b>
<b>STATEWIDE TOTAL</b>		<b>1,557</b>

**Table 5:**  
Residential Single-Family Managed Charging  
Participation Data (as of September 22, 2022)

CATEGORY	UTILITY	PARTICIPANTS ENROLLED
Networked Level 2 Charger	Eversource	505
	UI	90
	<b>Total</b>	<b>595</b>
Vehicle Telematics	Eversource	196
	UI	40
	<b>Total</b>	<b>236</b>
Advanced Metering Infrastructure (AMI)	Eversource	N/A
	UI	7
	<b>Total</b>	<b>7</b>
<b>Total</b>		<b>838</b>

As of September 22, 2022, Eversource and UI distributed \$820,473 and \$92,264, respectively, in residential rebate incentives for the EV Charging Program.

The EV Charging Program received and approved 1,557 residential applications for a combination of Level 2 charger, wiring upgrade, and managed charging enrollment rebates, as shown in Table 4. As of September 22, 2022, the residential managed charging program enrolled 838 customers, as shown in Table 5. This number includes participants who received an EVSE and/or wiring upgrade rebate and subsequently enrolled in the managed charging program and those who did not get a rebate but enrolled with an existing Level 2 EVSE, their vehicle telematics, or through UI's Advanced Metering Infrastructure..





**Table 6: EDCs' Commercial EVSE Incentive Data (as of August 1, 2022)**

Program Area	Utility	Average Total Incentive per Site	Average Incentive per Port
MUDs	Eversource	N/A	\$9,496
	UI	\$27,634	\$7,185
Destination	Eversource	N/A	\$6,262
	UI	\$27,601	\$13,801
Workplace	Eversource	N/A	\$5,305
	UI	\$44,513	\$8,560
DCFC	Eversource	N/A	\$70,972
	UI	\$134,091	\$57,467

Tables 6 and 7 highlight the most recently available commercial customer participation data by program area, including the average incentive per port. Eversource did not provide the data necessary to calculate an average incentive per site. Deployment in the program's first year exceeded expectations, reaching 100% and 93% of the three-year program cycle goal in the DCFC and MUDs program areas, respectively.

**Table 7: EDCs' Commercial Port Deployment Data (as of November 30, 2022)**

PROGRAM AREA	UTILITY	2022-2024 PORT DEPLOYMENT GOAL	ACTUAL PORTS APPROVED	PERCENT OF 2022-2024 PORT GOAL
Multi-Unit Dwellings (Level 2)	Eversource	970	972	100%
	UI	243	154	63%
	<b>Total</b>	<b>1,213</b>	<b>1,126</b>	<b>93%</b>
DCFC	Eversource	110	110	100%
	UI	27	26	100%
	<b>Total</b>	<b>137</b>	<b>136</b>	<b>100%</b>
Destination (Level 2)	Eversource	631	615	97%
	UI	158	46	29%
	<b>Total</b>	<b>789</b>	<b>661</b>	<b>84%</b>
Workplace & Light-Duty Fleets (Level 2)	Eversource	1,851	518	28%
	UI	463	54	12%
	<b>Total</b>	<b>2,314</b>	<b>572</b>	<b>25%</b>

## DEEP Procurements (i.e., Public Policy Contracts / PPAs)

To further the state's policy objectives, the EDCs enter into Power Purchase Agreements (PPAs) in accordance with statutory directives. Since 2011, several pieces of legislation have been enacted that grant authority to conduct requests for proposals (RFPs) for certain renewable and/or clean energy generation.<sup>89</sup> DEEP, in consultation with the Office of Consumer Counsel (OCC), the Office of the Attorney General (AG) (in most procurement statutes), PURA, and the EDCs, typically run the RFPs to procure power and associated environmental attributes from various clean and renewable energy sources as directed by the relevant legislation.



An evaluation team is set up by members of DEEP staff, along with the EDCs, the OCC, the AG, and PURA to conduct a review, evaluation, and selection process of the bid proposals submitted under each RFP. The bid proposals then go through a 2-stage evaluation and review process by a selection team that does not include the EDCs. There is a standard of conduct that assures separation between the evaluation team and selection team. The final selection of projects that bid in is made by the DEEP Commissioner. Once project selections have been made, the EDCs are required to submit the PPAs to the Authority for regulatory approval and to obtain authorization for cost recovery.

Any processes required to capture and implement the terms and conditions that are set forth in the PPAs are established prior to fully implementing the PPAs. The EDCs track the projects and contracts, and conduct various other as-needed administrative activities that may arise under the terms and conditions of the PPAs. Payment for any of the products delivered is established in the PPA and may either be fixed price or formula-based, dependent on the solicitation rules under which the project was selected. However, the interconnection process is separate and apart from the PPAs and all requirements for delivery are the responsibility of the seller.

It is important to note that the EDCs currently sell the energy and RECs produced from the PPA projects back into the markets, and the revenue is used to offset costs. The net costs then flow to ratepayers through the non-bypassable federally mandated congestion charge (NBFMCC). For additional relevant materials, see the analysis completed in the [DEEP Integrated Resources Plan \(IRP\)](#) issued October 7, 2021, including price information available on pages 88-93 and in Appendix A6.



## Past Procurements for Grid-Scale Renewable Resources

Between 2011 and the drafting of the 2020 Integrated Resources Plan (IRP), DEEP conducted nine procurements. Those nine procurements had resulted in the selection of a total of 10 MW of grid-scale solar, 1,108 MW of offshore wind, 34 MW of incremental energy efficiency to the energy efficiency programs, 52 MW of fuel cells, energy and environmental attributes from 10.9 million MWhs of nuclear power, and additional environmental attributes associated with 2.85 million MWhs of nuclear power.<sup>90</sup> By statute, DEEP has the authority to procure up to 110% of the total load associated with both CT EDCs from renewable and/or zero carbon sources. Per the Integrated Resources Plan (IRP), by 2020, DEEP had procured about 95% of the total load of both EDCs from renewable carbon sources. By 2025, contracted zero carbon sources will provide the equivalent of 91% of the EDCs load.<sup>91</sup> Such procurements will help offset the statewide electric greenhouse gas emissions and are highlighted on page 10.

In 2022, DEEP published a Procurement Plan Update to the 2020 IRP, noting that since publication 1.2%, or 170 MWs, of solar and land-based wind energy projects, have been terminated. Additionally, DEEP notes that 10 other renewable energy project schedules and status remain in flux, but further notes that it will exercise its authority to evaluate potential selection projects that could replace any lost resources. The Procurement Plan Update also points to challenges with transmission interconnection for offshore wind which the Federal Energy Regulatory Commission (FERC) is addressing by evaluating reforms to the transmission planning process to streamline interconnection. Last, DEEP notes the federal Infrastructure Investment and Jobs Act (IIJA) was enacted in November 2021, and introduced various funding opportunities that were not anticipated in the 2020 IRP but could advance Connecticut towards its 2040 goal.<sup>92</sup>



## Procurement Status by Technology

DEEP solicitations have resulted in a number of projects executing long-term PPAs with the EDCs.

Since 2011, ten (10) procurements, including nine DEEP-run procurements and the Project 150 Procurement<sup>94,95</sup> have been conducted resulting in a total of 17,590 projects in-service for a total deployment level 1,639.99 MWs of clean energy sources as of November 15, 2022.<sup>96</sup> The table on the right provides a summary and the table on the following page provides a comprehensive list of the clean energy procurements and current public policy contracts along with a summary of the number of projects, renewable energy source(s), duration of contract or tariff(s), and total current deployment levels for the PPAs under each procurement.

### 2022 DEEP Procurement by Technology

	Section 1(b)	Section 6	Section 8	Section 8 Amended	CEFRP	Zero Carbon	OSW	Total
<b>Solar</b>	59.161	20.000			84.041			163.202
<b>Solar &amp; Storage</b>								
<b>REC-only Biomass</b>			24.196					24.196
<b>Wind</b>					53.327			53.327
<b>Offshore Wind</b>								0
<b>Fuel Cells</b>				10.002				10.002
<b>REC-only Wind</b>	5.000							5.000
<b>Nuclear<sup>93</sup></b>						1261.051		1261.051
						-		-
						1368.981		1368.981



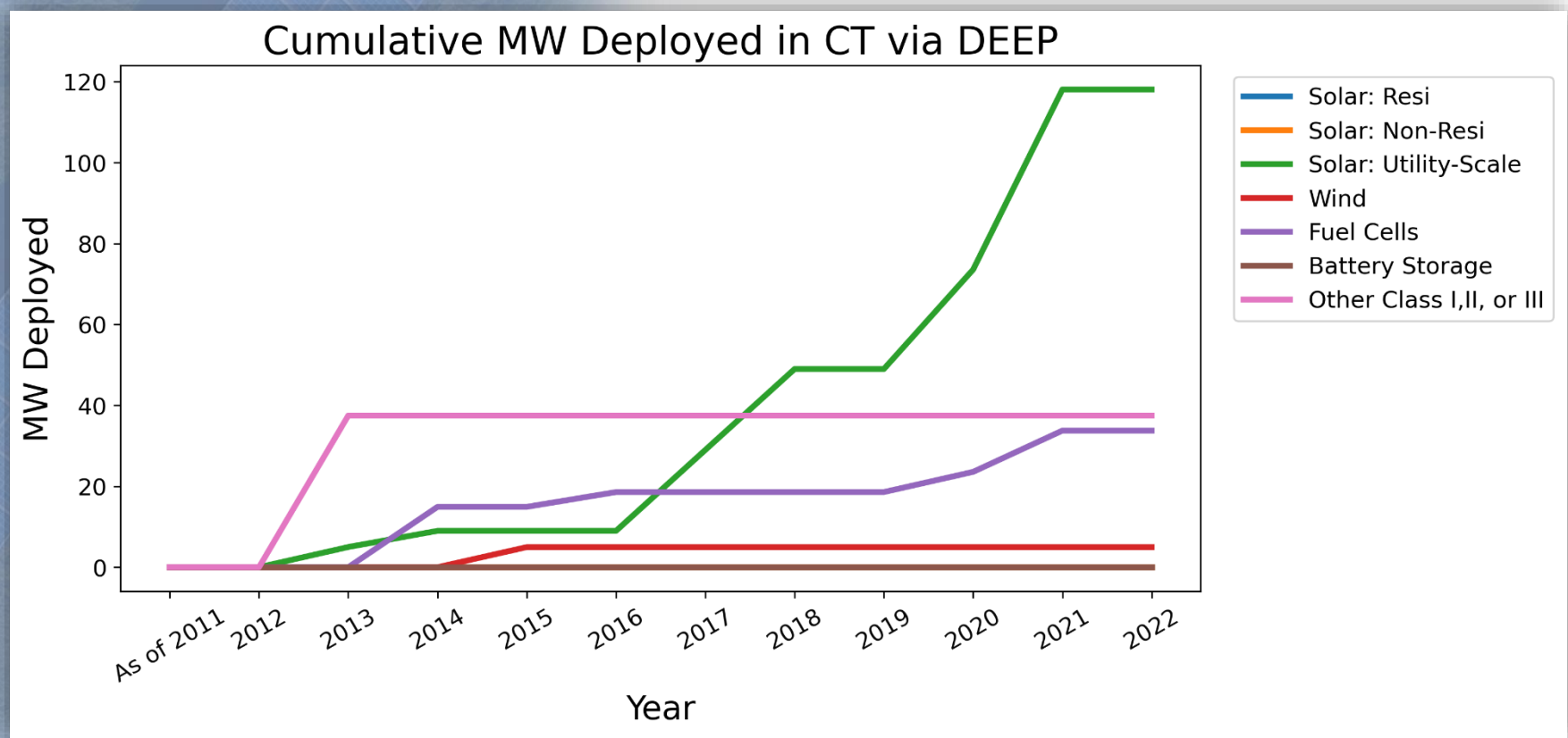


## DEEP Cumulative PPA Deployment

Public Policy Contracts / PPAs <sup>97</sup>	Public Act(s)	PURA Docket Nos.	Renewable Energy Source(s)	Deployment Levels <sup>98</sup>	As of 2022
Project 150 <sup>99</sup>	Amended by Section 124, PA 07-242	07-04-27; 08-03-03	Biomass, Fuel Cells	Total Deployment in MWs (AC)	<b>48.33</b>
				No. of Projects In-Service	<b>3</b>
Section 127 <sup>100</sup>	PA 11-80, Section 127	12-05-13; 13-01-32; 13-06-27RE01	Solar, Wind, Fuel Cells	Total Deployment in MWs (AC)	<b>19.98</b>
				No. of Projects In-Service	<b>4</b>
Section 6	PA 13-303, Section 6	13-09-19	Solar	Total Deployment in MWs (AC)	<b>20.00</b>
				No. of Projects In-Service	<b>1</b>
Clean Energy RFP (Large-Scale PPAs)	PA 15-107(c)	17-01-10	Solar, Wind	Total Deployment in MWs (AC)	<b>137.37</b>
				No. of Projects In-Service	<b>5</b>
Section 8	PA 13-303, Section 8	14-02-02	Biomass	Total Deployment in MWs (AC)	<b>24.20</b>
				No. of Projects In-Service	<b>3</b>
Amended Section 8	PA 13-303, Section 8, Amended by PA 17-144, Section 10	18-06-37	Fuel Cells, Offshore Wind, Fuels Cells w/ CHP	Total Deployment in MWs (AC)	<b>10.00</b>
				No. of Projects In-Service	<b>1</b>
Small-Scale PPAs	PA 15-107, Section 1(b)	17-01-11	Solar, Wind	Total Deployment in MWs (AC)	<b>103.56</b>
				No. of Projects In-Service	<b>17,555</b>
Zero Carbon PPAs <sup>101</sup>	PA 17-3, Section 1	18-05-04; 20-02-04	Nuclear, Solar, Offshore Wind, Solar w/ Storage	Total Deployment in MWs (AC)	<b>1269.05</b>
				No. of Projects In-Service	<b>2</b>
Section 3 <sup>102</sup>	PA 18-50, Section 3	18-07-02	Biomass	Total Deployment in MWs (AC)	<b>7.50</b>
				No. of Projects In-Service	<b>1</b>
Offshore Wind PPA (Vineyard Wind)	PA 19-71, Section 1	19-12-18	Offshore Wind	Total Deployment in MWs (AC)	<b>0.00</b>
				No. of Projects In-Service	<b>0</b>

The below plot shows the deployment of resources via DEEP PPAs and public policy contracts through September 2022. The plot is based on data submitted in response to Interrogatory CAE-33 in the EDCs compliance filings dated November 15, 2022.

While this plot shows the total deployment to date, the chart on the previous slide can be used to obtain information on the total selected project capacity by fuel type, which may not be deployed or operational yet.





# Clean Energy Options Program (CEOP) and Voluntary Renewable Option (VRO) Program

The Voluntary Renewable Option<sup>103</sup> (VRO) Program is a modification and continuation of the Clean Energy Options Program (CEOP) that establishes rules for power generation supply offers that market renewable energy attributes that exceed the annual minimum requirement for renewable portfolio standards (RPS). In general terms, the VRO establishes rules for electricity supply offers that encompass renewable energy attributes beyond the minimum requirement.

The modified CEOP will continue to provide customers who remain with their utility's Standard Service (SS) generation supply an option to support renewable energy through the purchase of incremental renewable energy certificates (RECs). The Authority established universal standards for the REC-only and VRO offers, including that the certificates that support such offers may only originate from the ISO-NE, New York, or PJM control areas and that the certificates must reflect resources defined as Class I in Conn. Gen. Stat. § 16-1.

The Authority further modified the Disclosure Label required for all supplier offerings to better explain to consumers how certificates support renewable energy and how their generation is supplied. These changes further Connecticut's energy policies by reducing local greenhouse gas emissions and supporting local, sustainable, renewable energy sources, and they offer a more transparent process for customers purchasing offers with renewable energy attributes that exceed the statutory requirements.

## **CEOP Background**

PURA established the CEOP, pursuant to Conn. Gen. Stat. § 16-244c, in 2005 to allow consumers to support renewable energy above the minimum RPS.<sup>104</sup> At the time of CEOP's inception, customers had limited options for supporting renewable resources in excess of the RPS. CEOP allowed customers, whether they received supply from SS or a third-party supplier, to participate in a REC-only program that was applied as an adder to their bill. The Authority modified and extended the program over time.<sup>105</sup>

## CEOP to VRO

Since 2005, nationwide REC markets have emerged and matured, and suppliers began marketing offers that exceeded Connecticut's RPS. Some supplier offers now include energy plus the RECs claimed by suppliers in excess of the RPS, creating a bundled product, commonly referred to as a voluntary renewable offer. Over time, the number of suppliers offering voluntary renewable offers has increased.

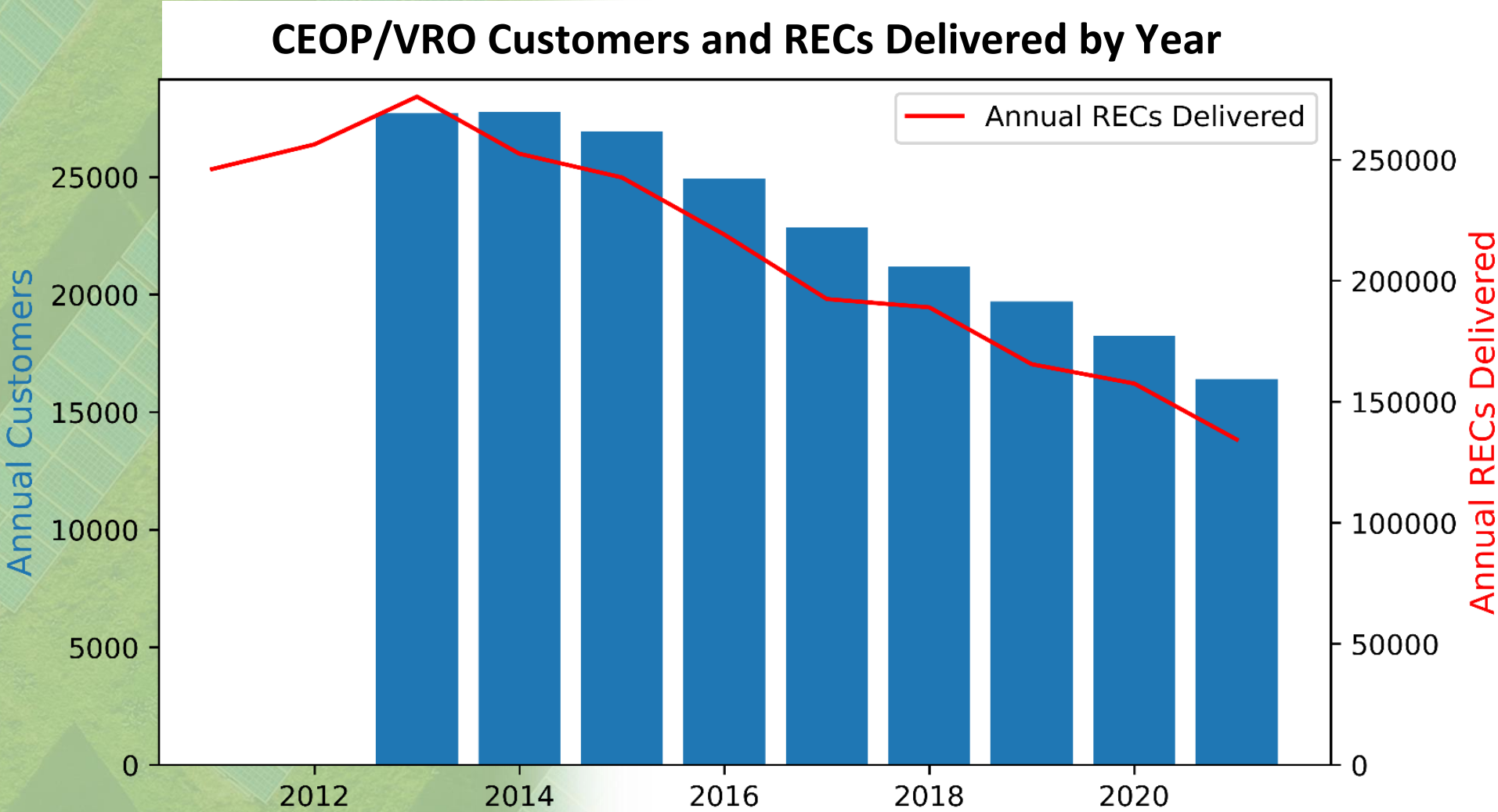
Due to the presence of voluntary renewable offers in the market, in 2016 the Authority announced it would develop and implement a new program in place of CEOP to advance Connecticut's voluntary renewable market and established a proceeding to do so.<sup>106</sup> Although the Authority indicated it was ending CEOP at the time, it continued the program pending approval of a successor program. See, Motion No. 5 Rulings, in Docket No. 16-12-29, dated [July 11, 2018](#) and [October 2, 2019](#). As noted above, the successor program to the CEOP is the VRO Program, which was approved through the Decision dated October 21, 2022 in Docket No. 16-12-29, PURA Development of Voluntary Renewable Options Program.

## Key Elements of VRO Program

- The VRO Program commenced January 2021
- Only 3 REC-only suppliers until 2025 (Sterling Planet; Community Power; 3 Degrees)
- 2 options for REC-only suppliers – 50% or 100% option
- PURA will monitor the program and participation through compliance filings under Docket No. 16-10-22 and under each individual CEOP supplier license dockets
- Current CEOP suppliers with existing customer contracts will be allowed to continue until January 2022
- Any new REC-only contracts entered into with customer as of January 1, 2021 must meet the new VRO program standards as revised in the VRO Decision
- RECs may originate only from ISO-NE, New York, and/or PJM control areas



The below plot shows annual RECs delivered and annual customer enrollment in the CEOP/VRO Program. Complete data for 2022 was not available at the time of creation of the report.<sup>107</sup> Also note, customer enrollment data in the CEOP Program was not available for all utilities for 2011 and 2012.



# Renewable Portfolio Standards (RPS)

The RPS was designed and implemented at the beginning of electric deregulation to bring online renewable energy resources supporting state policy goals not otherwise supported in the regional markets.

Each year, electric suppliers in Connecticut must comply with the RPS<sup>108</sup> by procuring and properly settling the necessary amount of renewable energy certificates (RECs)<sup>109</sup> to meet the percentage targets for each RPS Class<sup>110,111,112</sup>, meaning that they must obtain environmental attributes on a one-to-one basis for the specified percentage of their retail load supplied from renewable resources within a calendar year, commonly referred to as the RPS compliance year.

Connecticut has adopted an RPS requirement for Class I energy which progressively increases the required number of Class I RECs procured from 17% of a supplier’s retail offering in 2018 to 40% by 2030, more than doubling the State’s commitment to Class I renewable resources over such time period.

In lieu of procuring and settling RECs, a load serving entity (LSE) can make an Alternative Compliance Payment (ACP) to satisfy all or a portion of their annual RPS obligation. In addition, an LSE can bank RECs for future use. However, banked RECs will expire if not timely applied to a future RPS Compliance Year.

The Connecticut RPS program is satisfied using the New England Power Pool (NEPOOL) Generation Information System (GIS) platform regarding the creation and settlement of all RECs.

Year	Class I	Class II or Class I (add'l)	Class III	Total
2018	17.0%	4.0%	4.0%	25.0%
2019	19.5%	4.0%	4.0%	27.5%
2020	21.0%	4.0%	4.0%	29.0%
2021	22.5%	4.0%	4.0%	30.5%
2022	24%	4.0%	5.0%	33.0%
2023	26%	4.0%	5.0%	35.0%
2024	28%	4.0%	5.0%	37.0%
2025	30%	4.0%	4.0%	38.0%
2026	32%	4.0%	4.0%	40.0%
2027	34%	4.0%	4.0%	42.0%
2028	36%	4.0%	4.0%	44.0%
2029	38%	4.0%	4.0%	46.0%
2030	40%	4.0%	4.0%	48.0%

**Above table:** Connecticut annual required percentages of Class I, Class II and Class III renewables sources for each RPS compliance year.



## Demonstrating RPS Compliance

Load serving entities (LSEs) demonstrate compliance with the RPS requirements by filing exhibits and supporting documents in dockets initiated by PURA. For the 2021 Compliance Year, Docket 22-06-01 is where entities were required to demonstrate that an appropriate amount of their retail load was supplied by renewable resources.

Generation Month	REC Trading Period	REC Quarter
Jan. - March	July 15 - Sept. 15	First (1)
April - June	Oct. 15 - Dec. 15	Second (2)
July - Sept.	Jan. 15 - March 15	Third (3)
Oct. - Dec.	April 15 - June 15	Fourth (4)

There is a lag in REC creation. For instance, Q4 2021 RECs were created April 15, 2022 and it is permissible for RECs to be transacted and settled for the 2021 Compliance Year through June 15, 2022. To allow additional time for the administrative work to be completed before filing, the annual filing deadline for the 2021 Compliance Year was not until October 15, 2022. This lag period is typical, as the end dates for the trading periods to transfer/settle RECs are approximately six (6) to nine (9) months after the calendar period dates, as seen in the table below.

## CT Banking Requirements for Excess RECs

Each LSE is allowed to bank excess Class I, II, and III RECs for up to two years. The number of banked RECs allowed in each class in any year cannot be more than 30% of the LSE's REC obligation in each respective class.<sup>113</sup> The allowance of banked RECs became available with the 2009 RPS requirements, as the amended regulation became effective on December 22, 2009.

## Alternative Compliance Payment (ACP) for Shortage of RECs

Any wholesale supplier of an EDC or any electric supplier that fails to meet the RPS requirements (shortage of RECs) for Class I is required to pay four cents per kilowatt hour (\$40 per MWh) and for Class II is required to pay two and one-half cents per kilowatt hour (\$25 per MWh), and such payment shall be refunded to ratepayers.<sup>114</sup> Previously, the statutes set the ACP at \$55 per MWh for both Class I and II; however, this was amended in 2017 to be effective in 2021.<sup>115</sup>

Any excess amount remaining shall be applied to reduce the costs collected through the Non-Bypassable Federally Mandated Congestion Charge (NBFMCC). Any ACP required of the LSE shall be made to the EDCs in proportion to the load the LSE served in each EDC's territory.

See the next page for a chart that describes the amount for each ACP based on resource class and year.

## Alternative Compliance Payment (ACP) for Shortage of RECs (Cont.)

Pursuant to Conn. Gen. Stat. § 16-243q(b) and Decisions in Docket Nos. 05-07-19 and 05-07-19RE02, any LSE that fails to meet the Class III requirements is subject to an ACP of \$31 per MWh, 25% of which shall go to the Clean Energy Fund (CEF) with the remainder being divided between the EDCs' Conservation and Load Management Funds in proportion to the load the LSE served in their respective territories.

Class I & II pursuant to Conn. Gen. Stat. §16-244c(h)(1).

Class III pursuant to Conn. Gen. Stat. §16-243q(b) and Decision in Docket No. 05-07-19.

**Class I, II and III ACP (note, there is no change to Class III ACP):**

<b>Alternative Compliance Payments (ACPs) for Class I, II &amp; III</b>		
<b>Up to Year 2017:</b>	<b>Class I</b>	<b>\$55 / REC</b>
	<b>Class II</b>	<b>\$55 / REC</b>
	<b>Class III</b>	<b>\$31 / REC</b>
<b>For Year 2018 up to 2020:</b>	<b>Class I</b>	<b>\$55 / REC</b>
	<b>Class II</b>	<b>\$25 / REC</b>
	<b>Class III</b>	<b>\$31 / REC</b>
<b>On or After Year 2021:</b>	<b>Class I</b>	<b>\$40 / REC</b>
	<b>Class II</b>	<b>\$25 / REC</b>
	<b>Class III</b>	<b>\$31 / REC</b>



## Report and Program Notes

This report will generally act as a framework for future annual reports; however, the Authority is committed to expanding and improving the type, quality, and presentation of the data included in this annual report, and will seek to make incremental improvements each year, to the extent possible. The Authority reserves the right to add, edit, or remove any part of the report, including the addition or removal of programs, as appropriate.

# Appendix 1:

## Additional Resources & Documents

### RRES

#### Eversource

- [Program Website](#)
- [Program Manual](#)
  - Note, a more recent version may be available on the EDC website
- [Key Program Changes](#)

#### UI

- [Program Website](#)
- [Program Manual with Attachment on Key Program Changes](#)
  - Note, a more recent version may be available on the EDC website

### NRES

#### Eversource

- [Key Program Resources](#)
- [Program Timelines](#)
- [Program Manual](#)
  - Note, a more recent version may be available on the EDC website

#### UI

- [Program Website](#)
- [Program Manual](#) with Attachments on Program Timeline and Key Links
  - Note, a more recent version may be available on the EDC website



## ESS

- [Program Website](#)
- [Program Manual](#)
  - Note, a more recent version may be available on the EDC website
- [Annual Program Review](#)

## EV Charging

- [Eversource Hyperlinks and Key Program Resources](#)
- [UI Commercial Website](#)
- [UI Residential Website](#)
- [Program Manual](#)
  - Note, a more recent version may be available on the EDC website
  - [UI version](#) with Program Timeline and Helpful links appended to the end

## PPAs

### **DEEP Integrated Resources Plan, dated October 2021:**

<https://portal.ct.gov/-/media/DEEP/energy/IRP/2020-IRP/2020-Connecticut-Integrated-Resources-Plan-10-7-2021.pdf>

### **DEEP draft Integrated Resources Plan, dated December 2020:**

<https://portal.ct.gov/-/media/DEEP/energy/IRP/2020-IRP/2020-CT-DEEP-Draft-Integrated-Resources-Plan-in-Accordance-with-CGS-16a-3a.pdf>

### **Enabling legislation:**

- P.A. 13-303, Section 6 – Class I resources up to 4% of the load of the CT EDCs
- P.A. 13-303, Section 8 – Energy and/or RECs from run-of-the-river hydropower, landfill methane gas, or biomass Class I resources up to 4% of CT’s load, (100-150 MW of capacity up to 10 years)
- P.A. 13-303, Sections 6 and 7 and P.A. 15-107, Section 1(c) – 3 State RFP (CT, MA, and RI) solicitation for clean energy and transmission procuring large-scale projects that no state could procure if it acted unilaterally
- P.A. 13-303, Section 8 *Amended* by P.A. 17-144, Section 10 – CT Class I resources from offshore wind, fuel cell, and anaerobic digestion up to 3.27% of the load of the 2 CT EDCs
- P.A. 15-107, Section 1(b) and 1(c) – Small-scale 2-20 MW – Class I & III resources, passive demand response, and energy storage systems to reduce electric demand and improve the state’s resiliency and grid reliability, especially during winter peak demand
- P.A. 17-3, Section 1 – Zero Carbon – solicited offers for zero carbon electricity generating resources that deliver power into the control area of the regional independent system operator, including, but not limited to, eligible nuclear power generating facility, eligible hydropower, zero carbon CT Class I renewable energy sources and energy storage systems that are co-located with qualifying zero carbon resources, in order to secure cost-effective zero carbon resources consistent with the state’s greenhouse gas emissions reduction goals and other energy and environmental goals and policies up to the statutory maximum of 12,000,000 MWh per year.
- P.A. 19-71, Section 1 – Offshore Wind – to solicit offers from providers of energy derived from offshore wind facilities that are Class I renewable energy sources for up to 2,000 MW AC in the aggregate.



## RSIP

### **CGB Website:**

- <https://www.ctgreenbank.com/rsip-resources/>

### **CGB Memo on RSIP Program progress:**

- <https://www.ctgreenbank.com/wp-content/uploads/2021/02/RSIP-Legislative-Report-2019-2020.pdf>

### **GoSolarCT Website:**

- <https://www.gosolarct.com/rsip-status/>

## SCEF

### **PURA Docket(s):**

- Docket No. 19-07-01, Final Decision dated December 18, 2019.
- Docket No. 19-07-01RE01, Final Decision dated September 15, 2021.
- Docket No. 19-07-01RE02, Final Decision dated April 28, 2021.
- Docket No. 21-08-04, Final Decision dated November 17, 2021.
- Docket No. 22-08-04, Final Decision dated December 7, 2022.

### **EDCs' Email Addresses:**

Eversource = [SCEF@eversource.com](mailto:SCEF@eversource.com)

UI = [SCEF@uinet.com](mailto:SCEF@uinet.com)

### **Eversource**

- [Key Program Links](#)
- [Program Website](#)
- [Key Program Changes](#)
- [Program Manual](#)
- [Program Timeline](#)

### **UI**

- [Program Website](#)
- [Program Manual](#) with Key Program Changes, Program Timeline, and Key Links Appended

## LREC/ZREC

### **EDCs' Email Addresses:**

Eversource = [LREC.ZREC@eversource.com](mailto:LREC.ZREC@eversource.com)

UI = [lrec.zrec@uinet.com](mailto:lrec.zrec@uinet.com)

### **LREC/ZREC Websites:**

Eversource

<https://www.eversource.com/content/ct-c/residential/save-money-energy/explore-alternatives/renewable-energy-credits/resources-administration>

United Illuminating

[LRECZREC Program Information and Documents - UI \(uinet.com\)](#)

Docket No. 11-12-06, Final Decisions dated April 4, 2012; May 20, 2014; January 21, 2015; December 16, 2015; April 25, 2018; December 16, 2015

### **Other significant legislation:**

- Public Act 11-80 which authorized 5 years of LREC and up to 6 years of ZREC procurement;
- Public Act 16-196 which authorized LREC technology participation in Year 6 procurement with a 50/50 split of ZREC statutory budget of \$8M to LREC and ZREC technologies respectively, all under ZREC statute;
- Public Act 17-144 which authorized Year 7 procurement, same statutory budgets as year 6;
- Public Act 18-50 which authorized Year 8 procurement, same statutory budgets as year 6 with the exception of Small ZREC (combined year 7 and 8 small ZREC budgets in order to utilize funds before LREC/ZREC program expired at end of calendar year 2019);
- Public Act 19-35 which authorized year 9 and 10 procurements, same statutory budgets as year 6.



## VNM

### **PURA Docket(s):**

- DN 13-08-14, Final Decisions dated July 21, 2014; October 15, 2014; May 27, 2015; March 23, 2016
- Docket No. 13-08-14RE01, Decision dated December 17, 2014; Reopened to address implementation for “stand alone” VNM facilities and Established calculation of VNM credits for all Customer Host facilities.
- Docket No. 13-08-14RE02, Decision dated December 2, 2015; Eliminated Unassigned VNM Credits that were carried to end of year. All VNM credits now allocated each month to beneficial accounts without carrying over to following months.
- Docket No. 15-09-08, Decision dated February 3, 2016; Agriculture ownership structure of VNM facility
- Docket No. 13-08-14RE03, Decision dated October 26, 2016; Commercial Operation time period and Agriculture Host documentation
- Docket No. 13-08-14RE04, Decision dated July 20, 2018; Added Agriculture Anaerobic Digesters located at Dairy Farms
- Docket No. 13-08-14RE05, Decision dated October 21, 2019; Increased Annual VNM Caps

### **Eversource**

- [Program Timeline](#)
- [Program Website](#)

### **UI**

- [Key Program Info and Links](#)

## CEOP/VRO

### **PURA Docket(s):**

Docket No. 16-12-29, PURA Development of Voluntary Renewable Options Program, Final Decision dated October 21, 2020.

### **CEOP Providers Contact Information:**

- Sterling Planet –
- [Contact Us | Renewable Energy Benefits \(sterlingplanet.com\)](#)
- [Regional Energy Certificates for Your Home | Regional Green Power \(sterlingplanet.com\)](#)
- Community Power –
- [Connecticut - Clean Energy Options - Community Energy \(communityenergyinc.com\)](#)
- 3 Degrees –
- [Contact Us \(3degreesinc.com\)](#)

### **VRO Disclosure Label:**

- [DisclosureLabelElectricSupplierTemplatepdf.pdf](#)

## RPS

### **NEPOOL GIS website:**

<https://www.nepoolgis.com>

**Frequently asked questions, exhibits and guide to RPS Compliance** can be found under the following link on PURA's website:

<https://portal.ct.gov/PURA/Electric/Information-for-Electric-Suppliers>

**The following are links to PURA Annual RPS Compliance Exhibits A, B, C and D:**

<https://portal.ct.gov/-/media/PURA/RPS/RPS-Exhibit-A-2020---Final.xlsx>

<https://portal.ct.gov/-/media/PURA/electric/Exhibits-B-C-and-D.xlsx>

**A Review of Connecticut's Renewable Portfolio Standards:**

<http://ceeeep.rutgers.edu/wp-content/uploads/2013/11/CTRPSReview7202011.pdf>

**List of RPS Compliance Dockets and final Decision dates:**

- Year 2009 RPS - Docket No. 10-09-06, Final Decision dated October 31, 2012
- Year 2010 RPS - Docket No. 11-09-03, Final Decision dated November 21, 2013
- Year 2011 RPS - Docket No. 12-09-02, Final Decision dated June 4, 2013
- Year 2012 RPS - Docket No. 13-06-11, Final Decision dated February 11, 2015
- Year 2013 RPS - Docket No. 14-05-35, Final Decision dated December 23, 2015
- Year 2014 RPS - Docket No. 15-09-18, Final Decision dated September 28, 2016
- Year 2015 RPS - Docket No. 16-07-20, Final Decision dated November 8, 2017
- Year 2016 RPS - Docket No. 17-06-23, Final Decision dated January 23, 2019
- Year 2017 RPS - Docket No. 18-06-28, Final Decision dated July 1, 2020
- Year 2018 RPS - Docket No. 19-06-01, Final Decision dated March 3, 2021
- Year 2019 RPS - Docket No. 20-06-01, Final Decision dated May 19, 2021
- Year 2020 RPS - Docket No. 21-06-01, November 17, 2021
- Year 2021 RPS - Docket No. 22-06-01, Final Decision dated November 23, 2022



### **Program Costs**

- For more information on the costs associated with the programs included in this report, See, Eversource and UI's response to Interrogatories CAE-60 and CAE-61.
- Eversource's responses are available [here](#), as; UI's response are available [here](#). You can read more about CT's energy profile from the U.S. Energy Information Administration (EIA) Connecticut [Energy Profile Analysis](#).

## Appendix 2: Program Objectives

### **RRES Program:**

The Authority established the following five (5) objectives to guide the development, implementation, and administration of the RRES Program.

1. The sustained, orderly development of the state's solar industry, ensuring at a minimum that Connecticut's annual historical deployment of residential solar is maintained (i.e., approximately 50-60 MW per year);
2. Achieve a 100% zero carbon electric grid by 2040, including by promoting additional annual deployment of residential renewable energy as needed;
3. Balance participant costs and benefits with non-participant costs and benefits and electric system costs and benefits;
4. Ensure program accessibility for customers, by providing customer protections both explicitly through resources and disclosure forms, and also through simplified program and tariff designs;
5. Encourage increased inclusivity overall, as well as program participation by low and moderate-income (LMI) customers and customers in environmental justice communities.

### **NRES Program:**

The Authority established the following five (5) objectives to guide its development, implementation, and administration of the NRES Program.

1. Foster the sustained, orderly development of the state's Class I renewable energy industry;
2. Deploy the full megawatt capacity allowable under statute, to the extent possible (see Conn. Gen. Stat. § 16-244z(c)(1)(A));
3. Ensure least-cost outcomes through the annual solicitation process;
4. Enable program accessibility for customers through simplified program and tariff designs; and
5. Encourage increased inclusivity overall, as well as program participation by customers in underserved and environmental justice communities.



### **SCEF Program:**

The Authority established the following three (3) objectives to guide its development, implementation, and administration of the SCEF Program.

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.

### **ESS Program:**

The Authority adopted the following seven (7) objectives to guide the development and implementation of the ESS Program.

1. Provide positive net present value to all ratepayers, or a subset of ratepayers paying for the benefits that accrue to that subset of ratepayers;
2. Provide multiple types of benefits to the electric grid, including, but not limited to, customer, local, or community resilience, ancillary services, peak shaving, and avoiding or deferring distribution system upgrades or supporting the deployment of other distributed energy resources;
3. Foster the sustained, orderly development of a state-based electric energy storage industry;
4. Prioritize delivering increased resilience to: (1) low-to-moderate income (LMI) customers, customers in environmental justice or economically distressed communities, customers coded medical hardship, and public housing authorities as defined in Conn. Gen. Stat. § 8-39(b); (2) customers on the grid-edge who consistently experience more and/or longer than average outages during major storms; and (3) critical facilities as defined in Conn. Gen. Stat § 16-243y(a)(2);
5. Lower the barriers to entry, financial or otherwise, for electric storage deployment in Connecticut;
6. Maximize the long-term environmental benefits of electric storage by reducing emissions associated with fossil-based peaking generation; and
7. Maximize the benefits to ratepayers derived from the wholesale capacity market

## **EV Charging Program:**

The Authority established the following four (4) objectives to guide the development, implementation, and administration of the EV Charging Program.

1. Enable Connecticut's commitment to the ten state Memorandum of Understanding (MOU): to collectively deploy 3.3 million ZEVs among the participating states by 2025, and the deployment of approximately 125,000-150,000 EVs in Connecticut by 2025;
2. Facilitate the seamless integration of new and emerging ZEV-related technologies, to realize the potential electric system benefits of ZEVs, along with the economic, health, and environmental benefits they provide;
3. Deploy and integrate ZEVs into Connecticut's electric grid (i.e., the distribution system infrastructure) as a key component of meeting the objectives of the Authority's Framework for an Equitable Modern Grid, namely:
  - a. Support (or remove barriers to) the growth of Connecticut's green economy;
  - b. Enable a cost-effective economy-wide transition to a decarbonized future;
  - c. Enhance customer access to a more resilient, reliable, and secure commodity; and d. Advance the ongoing energy affordability dialogue in the State, particularly in underserved communities; and
4. Achieve an equitable transition to wide-scale EV deployment across all communities in Connecticut



## Appendix 3: Additional Tables

UI <sup>116</sup>		As of 2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total (2011-2022)
Solar Photovoltaic (AC)	Residential	0.00	0.19	0.91	1.52	7.27	11.04	10.12	12.47	16.56	11.58	6.97	6.33	84.96
	Non-Residential	0.05	0.31	3.19	3.33	2.51	7.9	5.68	5.91	8.53	5.48	6.17	4.28	53.34
	Utility	0	0	0	0	0	0	0	0	0	4.98	7.79	0	12.77
Wind		0	0	0	0	0	0	0	0	0	0	0	0	0.00
Fuel Cells		0	0	0.7	16.16	1.4	0.26	0.21	2.79	0.46	6.27	0	0.79	29.04
Battery Storage		0	0	0	0	0	0	0	0	0	0	0	0	0.00
Energy Efficiency/Demand Response		8.8	7	6	7.3	10.6	11.1	11.3	3.4	8.4	10.1	12.42	12.36	108.78
Other Class I, II, or III Resources		0	0	0	0	0	0	0	0.8	0.04	0	0.4	0	1.24

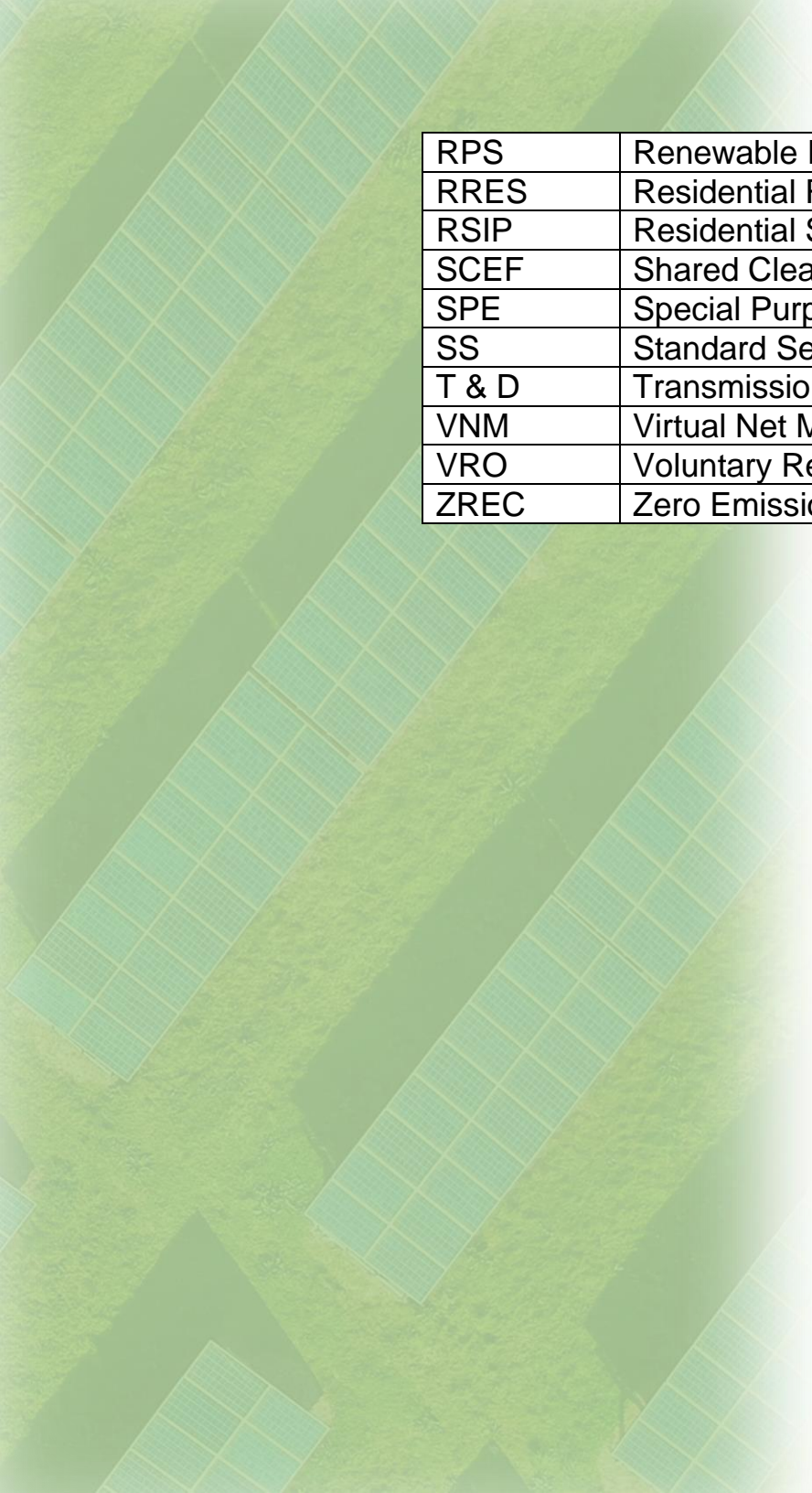
Eversource <sup>117</sup>		As of 2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total (2011-2022)
Solar Photovoltaic (PV)	Residential	11.14	3.32	6.96	18.71	40.37	41.84	27.36	30.44	41.84	47.15	67.08	47.28	383.49
	Non-Residential	14.25	3.18	14.6	14.75	18.3	24.24	33.57	37.26	40.58	39.89	26.85	11.37	278.84
	Utility	0	0	5	4	0	0	20	20	0	0	18.1	23.2	90.3
Wind		0.08	0.01	0	0.01	4.98	0	0	0	0	0	0	0	5.08
Fuel Cells		5	3	2.7	4.38	2.55	7.86	6.99	3.93	2.58	7.62	13.47	3.69	63.77
Battery Storage		0	0	0	0	0	0	0.02	0.46	1.65	1.73	4.71	3.51	12.08
Energy Efficiency/Demand Response		884.55	124.75	123.36	123.41	166.15	83.66	94.01	86.96	60.11	100.37	116.63	122.45	2086.41
Other Class I, II, or III Resources		129.54	0.62	42.81	1.34	3.64	5.2	2.91	0.18	1.21	0.63	1.59	0.33	190

The above tables highlight deployment data by energy type for each EDC, separated by year.

## Appendix 4: Glossary of Acronyms

Acronym	Meaning
ACP	Alternative Compliance Payment
CEF	Clean Energy Fund
CEOP	Clean Energy Options Program
CGB	Connecticut Green Bank
CIEC	Connecticut Industrial Energy Consumers
C&LM	Conservation and Load Management
DEEP	Department of Energy and Environmental Protection
DER	Distributed Energy Resource
EDC	Electric Distribution Company
ESS	Energy Storage Solutions
EV	Electric Vehicle
FERC	Federal Energy Regulatory Commission
GIS	Generation Information System
kWh	Kilowatt hour
LMI	Low to moderate income
LREC	Low Emission Renewable Energy Credit
LRS	Last Resort Service
LSE	Load Serving Entity
MAQ	Maximum Annual Quantity
MW	Megawatts
NBFMCC	Non-Bypassable Federally Mandated Congestion Charge
NECEC	Northeast Clean Energy Council
NEPOOL	New England Power Pool
NRES	Non-Residential Renewable Energy Solutions
PPA	Purchase Power Agreement
PURA	Public Utilities Regulatory Authority
PURPA	Public Utility Regulatory Policies Act
REC	Renewable Energy Credit
RGGI	Regional Greenhouse Gas Initiative





RPS	Renewable Portfolio Standards
RRES	Residential Renewable Energy Solutions
RSIP	Residential Solar Incentive Program
SCEF	Shared Clean Energy Facility
SPE	Special Purpose Entity
SS	Standard Service
T & D	Transmission and Distribution
VNM	Virtual Net Metering
VRO	Voluntary Renewable Option Program
ZREC	Zero Emission Renewable Energy Credit

## Appendix 5: Endnotes

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- <sup>1</sup> Excludes the Conservation and Load Management (C&LM) Plan. The C&LM plan was excluded to improve graph scale, as the deployed MW are higher than other programs.
- <sup>2</sup> Residential solar PV (“Solar: Resi”) is defined as solar deployed at a residential customer’s site behind the utility meter. Non-Residential solar PV (“Solar: Non-Resi”) is defined as solar deployed at a commercial or industrial customer’s site behind the utility meter. Utility-scale solar PV (“Solar: Utility-Scale”) is defined as solar connected directly to the distribution grid. Definitions from Docket No. 17-12-03RE09 CAE-1 Footnote 2, dated July 24, 2020.
- <sup>3</sup> The plots exclude the “Other” category of Class I, II and III renewable energy sources. Of the energy generated by the “Other” resource class, a large majority of the production is attributed to Public Act 05-01.
- <sup>4</sup> Plots based on data submitted in response to Interrogatories CAE-33 and CAE-35 in Docket No. 22-08-01 on November 15, 2022.
- <sup>5</sup> The Energy Efficiency value for 2022 for Eversource is the company goal for the year, as opposed to only data valid through September 30, 2022.
- <sup>6</sup> See, Eversource and UI Responses to CAE-33.
- <sup>7</sup> The storage values are AC behind the meter energy storage systems. The Company is uncertain if they are associated with a program.
- <sup>8</sup> General Statutes of Connecticut
- <sup>9</sup> For Public Acts related to each program, see the bottom of each relevant Statutory Authority section.
- <sup>10</sup> Or until the last month in 2022 where data was readily available.
- <sup>11</sup> See, EDC Responses to CAE-33 and CAE-38 for all program data except for ESS and EV data, as well as ESS annual deployment data. The data is approximate and is subject to the conditions outlined in each EDC response. For EV and ESS annual deployment data reference EDC responses to CAE-64.
- <sup>12</sup> Some residential solar deployments may be double counted with the LREC/ZREC Program or with Virtual Net Metering.
- <sup>13</sup> The number of projects deployed through the RSIP program as of October 2021 is 43,911, but this does not account for projects not deployed through RSIP.
- <sup>14</sup> See, EDC Compliance, dated November 14 and November 15, in Docket No. 22-08-02. Data for the RRES Program is through October 2022.
- <sup>15</sup> The VNM Program data excludes the subset of VNM deployment that is also counted in the LREC/ZREC Program.
- <sup>16</sup> UI customers enrolled data not available for 2011 and 2012.
- <sup>17</sup> See, EDC Compliance, CAE-38, dated November 14 and November 15, in Docket No. 22-08-02.
- <sup>18</sup> All ports installed as part of CT EV Charging Program authorized in PURA docket No. 17-12-03RE04
- <sup>19</sup> Assumes average capacity of port installed at 7.2 kW/port.
- <sup>20</sup> Assumes average capacity of Level 2 port installed at 7.2 kW/port of and DCFC port installed at 172 kW/port.
- <sup>21</sup> See, EDC Compliance, dated November 14 and November 15, in Docket No. 22-08-02. Data for the MW deployment of RRES projects is through October 2022.
- <sup>22</sup> See, EDC Compliance, dated November 14 and November 15, in Docket No. 22-08-02. Data for the number of RRES projects is through October 2022.
- <sup>23</sup> For the LREC/ZREC, NRES Program, and SCEF Programs, Annual Projects Deployed reflects the calendar year in which the Projects were energized.
- <sup>24</sup> The VNM Program data excludes VNM projects that are also participating in the LREC/ZREC Program.
- <sup>25</sup> For the CEOP/VRO Program, per the UI record retention policy, the Wholesale Power Group does not have the number of enrolled customers for the years 2011 and 2012 available at this time.
- <sup>26</sup> The majority of DEEP Procurements are project selections which are subsequently split with approximately 80% of the approved capacity allocated to Eversource, and the other 20% allocated to UI. As such, the number of projects reported as deployed by each EDC annually in the chart is the number reported by each EDC (e.g., for P.A. 15-107, Section 1(c), in 2020, 1 projects was reported as put into service by each EDC, and the number reported in this chart is also 1 project put into service, as opposed to summing the values to 2). There are several exceptions. For Project 150, only 1 EDC reported projects in service, as such the number of projects put into service is listed as the number provided by that utility (3). P.A. 13-303, Section 8 for 2015 and for P.A. 15-107, Section 1(c) for 2021 had different numbers of projects reported as deployed for each EDC, and as such, the maximum number between the two utilities was reported in this chart. For P.A. 15-107, Section 1(b), the annual number of projects reported as deployed by UI match the number of L/T PPA projects reported as deployed from Eversource, so these projects were treated as single procurements split between the two utilities (e.g., if each utility reported 2 projects deployed in a year, 2 projects were



reported in this chart, as opposed to 4). However, for each year, this number was summed with the number of PDR projects reported as deployed by Eversource to arrive at the total annual project deployments across the EDCs. This is the same methodology as used in the Docket No. 17-12-03RE09 Decision.

<sup>27</sup> C&LM projects include weatherization audits, projects, etc. Not included are customer retail rebates (i.e., lighting, HVAC).

<sup>28</sup> 2011 for C&LM includes YTD from 2000. Includes both Active and Passive Demand Resources that are customer sited.

<sup>29</sup> UI: C&LM Plan quantifies Energy Savings resulting from implemented Energy Efficiency measures. MW Load Savings per year are included in place of Annual Deployment in MWs and No. Projects in Service is not relevant to this program. Eversource: C&LM projects include weatherization audits, projects, etc. Not included are customer retail rebates (i.e., lighting, HVAC). As such, number of projects shown is data from Eversource only.

<sup>30</sup> All projects in service are residential projects (See, Eversource response to CAE-38).

<sup>31</sup> See, EDC Responses to CAE-33 and CAE-38 for all program data except for ESS and EV data, as well as ESS annual deployment data. The data is approximate and is subject to the conditions outlined in each EDC response. For EV and ESS annual deployment data reference EDC responses to CAE-64.

<sup>32</sup> The Authority assumes the end dates largely match the EDC responses to CAE-63.

<sup>33</sup> ISO-NE data was used to generate the graph. The ISO-NE data can be found at [ISO New England - Energy, Load, and Demand Reports \(iso-ne.com\)](https://www.iso-ne.com) under the data table labeled “Annual Generation and Load Data for ISO NE and the Six New England States.” Retail sales include data for customers within the service territory of the EDCs, as well as customers served by the other utilities in Connecticut.

<sup>34</sup> DEEP has developed a third model to calculate greenhouse gas emissions from the Connecticut power sector. This third model will be deployed in future DEEP reports. A description of DEEP’s new model can be found here: [ElectricSectorPublicMeetingPresentation-2021-1026-finalc.pdf](#).

<sup>35</sup> The data in the graph comes from ISO-NE and can be found here [ISO New England - Energy, Load, and Demand Reports \(iso-ne.com\)](https://www.iso-ne.com) under the data table labeled “Annual Generation and Load Data for ISO NE and the Six New England States.”

<sup>36</sup> See, [2018 DEEP Greenhouse Gas Emissions](#) Inventory, p. 5.

<sup>37</sup> For purposes of consistency, electricity generation from battery sources was excluded for all New England states when creating this graph. Like previous Connecticut-specific electricity generation graphs, the New England-wide electricity generation graph was created using EIA data ([US Electricity Profile 2021 - U.S. Energy Information Administration \(EIA\)](#)).

<sup>38</sup> The plots in this section are based on data submitted in CGB Response to CAE-82, pp. 12-13, 17. Additionally, the information found in the text of this section came from CGB Response to CAE-82, pp. 6-7, 9-10.

<sup>39</sup> See, Connecticut Clean Energy Industry Report, p. 7, [2021-CT-Clean-Energy-Industry-Report.pdf \(ctgreenbank.com\)](#).

<sup>40</sup> Plots based on data obtained from the 2021 Connecticut Clean Energy Industry Report. The most recently available report at the time this report was written, can be found here: <https://www.ctgreenbank.com/wp-content/uploads/2022/01/2021-CT-Clean-Energy-Industry-Report.pdf>.

<sup>41</sup> See, EDC Compliance, dated November 14 and November 15, in Docket No. 22-08-02 for RRES application data.

<sup>42</sup> Deployment data from CAE-64, through September 2022 for Eversource, and October 2022 for UI.

<sup>43</sup> The program was also updated substantively several other times, including in 2015 and 2016.

<sup>44</sup> See, Docket Nos. 17-12-03RE09 and 19-06-36, CGB Brief dated November 12, 2020, pp. 1-2.

<sup>45</sup> See, Docket No. 17-12-03RE09, CGB Exception dated January 21, 2022, pp. 1.

<sup>46</sup> See, Motion No. 18, dated September 17, 2020, CGB Residential Solar REC Aggregation.

<sup>47</sup> For 2022, the “No Program” solar data runs through 9/30/22 for Eversource and 11/10/22 for UI. The RSIP data is captured through 10/31/22. The RRES and LREC/ZREC data are captured through 9/30/22.

<sup>48</sup> EJ communities include: (a) Distressed municipalities as defined by the CT Department of Economic and Community Development (DECD); and (b) Census block groups that are not in distressed municipalities but in which 30% or more of the population lives below 200% of the federal poverty level (FPL).

<sup>49</sup> EJ community and distressed municipality shapefiles from CAE-76.

<sup>50</sup> Note, MW deployed in Georgetown, CT are assigned to the town of Wilton, CT, and MW deployed in Mystic, CT are assigned to Stonington, CT.

<sup>51</sup> The installed values shown in the plot are the cumulative values between Eversource and UI. Data from CAE-55.

<sup>52</sup> Towns with municipal utilities may have additional residential solar not captured in this plot. However, some municipal utility solar may be captured in cases where the CGB has agreements with municipal utilities to participate in RSIP.



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- <sup>53</sup> Municipal utility service territories do not correspond precisely with town lines (e.g. there are homes that are provided service from a municipal utility but are not located in that municipality and vice versa).
- <sup>54</sup> Town population data from [the Connecticut Department of Public Health \(2021 data\)](#)
- <sup>55</sup> “Solar MW Capacity Installed” data is also from SEIA and is current through Q2 2022.
- <sup>56</sup> Population data is from the [US Census Bureau](#) and is the estimated population by state as of July 2021.
- <sup>57</sup> Data on deployment since 2018 from [CAE-80](#).
- <sup>58</sup> Projected solar capacity growth is from [Solar Energy Industries Association \(SEIA\)](#) and may not reflect actual capacity growth over the next 5 years.
- <sup>59</sup> Data in Tables on this slide from the Final Decision in Docket No. 22-08-03, dated November 9, 2022, pp.5,8.
- <sup>60</sup> This value was updated based on EDC Written Exceptions, dated Feb. 10, 2023, p. 4.
- <sup>61</sup> Each time a renewable generation unit produces, the energy is considered “renewable.”
- LREC: Low emission RECs = e.g. Fuel Cells
  - ZREC: Zero emission RECs = e.g. Solar, Wind, Small Hydro
  - The environmental attributes of each megawatt hour of energy produced = 1 REC
  - ZREC resources may also be eligible as LREC projects in this program
- <sup>62</sup> Significant legislation associated with the LREC/ZREC Program can be found in *Appendix 2: Additional Resources & Documents*.
- <sup>63</sup> Maximum number of LRECs or ZRECs that the EDC is obligated to purchase in any Contract Year under the Agreement.
- <sup>64</sup> EJ communities include: (a) Distressed municipalities as defined by the CT Department of Economic and Community Development (DECD); and (b) Census block groups that are not in distressed municipalities but in which 30% or more of the population lives below 200% of the federal poverty level (FPL).
- <sup>65</sup> EJ community and distressed municipality shapefiles from CAE-76.
- <sup>66</sup> Municipal utility service territories do not correspond precisely with town lines (e.g. there are homes that are provided service from a municipal utility but are not located in that municipality and vice versa).
- <sup>67</sup> Plots based on data submitted in response to Interrogatories CAE-33 in Docket No. 17-12-03RE09 on December 3, 2021.
- <sup>68</sup> See, Eversource and UI Responses to CAE-39.
- <sup>69</sup> Municipal or State Customer Hosts fully own, lease or must be under long term contractual arrangement for receipt of power from a VNM facility.
- <sup>70</sup> Agricultural Customer Hosts fully own, or hold, an equity interest in a special purpose entity (SPE) that owns the VNM facility.
- <sup>71</sup> See, Appendix 1 for a definition of behind-the-meter generation.
- <sup>72</sup> A table of Final Decisions by PURA that enacted changes to the program over time can be found in *Appendix 2: Additional Resources and Documents*.
- <sup>73</sup> VNM credits pursuant to Conn. Gen. Stat. § 16-244u(6) – “VNM metering credit means a credit equal to the retail cost per kilowatt hour (kWh) the customer host may have otherwise been charged for each kilowatt hour produced by a VNM facility that exceeds the total amount of kWhs used during an EDC monthly billing period.”
- <sup>74</sup> PURA is currently contemplating limited modifications to the VNM program in Docket No. 13-08-14RE05 based on the petition filed as [Motion No. 5](#).
- <sup>75</sup> Beneficial Account pursuant to Conn. Gen. Stat. § 16-244u – “means an in-state retail end user of an EDC designated by a customer host or an agricultural customer host in the EDC’s service area to receive VNM credits.”
- <sup>76</sup> One project in the municipal sector was not able to receive its entire individual annual CAP award due to the sector CAP limits and was included in the count at the ratio of the actual CAP award to the applied for CAP
- <sup>77</sup> The partial project from the previous footnote, and one more project in the municipal sector have been awarded Provisional Program VNM caps.
- <sup>78</sup> Two projects in the municipal sector were not able to receive their entire individual CAP award due to sector CAP limits.
- <sup>79</sup> More details on SCEF Program eligibility can be found in *Appendix 1: Program Eligibility*.
- <sup>80</sup> Final Decision dated November 8, 2017, in Docket No. 17-06-28, [Application to Approve the Selected Projects Under the Shared Clean Energy Facility Pilot Program](#)
- <sup>81</sup> As shown in the plot, for SCEF (pilot and the full program) only the 1.62 MW facility from the pilot is currently deployed. Plot data from the EDCs’ response to CAE-33 as included in their compliance filings, dated November 15, 2022.
- <sup>82</sup> Data from Final Decision in Docket No. 22-08-04, dated December 7, 2022.



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<sup>83</sup> Data from Eversource compliance filing in Docket No. 21-08-02, dated August 24, 2022.

<sup>84</sup> Data from UI compliance filing in Docket No. 21-08-04, dated July 8, 2022.

<sup>85</sup> Data for plot, and quantitative information in page text, from CGB response to Interrogatory CAE-81, dated December 30, 2022.

<sup>86</sup> Data for plot, and quantitative information in page text, from CGB response to Interrogatory CAE-81, dated December 30, 2022.

<sup>87</sup> Data for EV Tables 1-3,5, and 6 from Final Decision in Docket No. 22-08-06, dated December 14, 2022. Data for EV Tables 4 and 7 from Eversource and UI responses to Interrogatory CAE-67, dated January 12, 2023. Data for EV Table 2 from

<sup>88</sup> Eversource's reported Residential Single-Family incentives did not clarify whether their Level 2 Charger incentive number reported incentives provided for only Level 2 chargers or if it also included incentives awarded for applications for both Level 2 charger and wiring upgrade rebates. UI provided a more detailed breakdown in their reported totals..

<sup>89</sup> A list of the enabling legislation can be found in *Appendix 2: Additional Resources & Documents*.

<sup>90</sup> [See](#), DEEP Response to CAE-79, p. 89.

<sup>91</sup> [See](#), DEEP Response to CAE-79, p. 89.

<sup>92</sup> [See](#), [DEEP Procurement Plan Update](#).

<sup>93</sup> Millstone purchase quantity, from the DEEP Procurement pursuant to P.A. 17-3, Section 1, is based on MWh/year; thus, due to refueling outages, the Contract Maximum Amount varies by year. Seabrook's Contract Maximum Amount of 184.874 is included for the applicable years.

<sup>94</sup> Project 150 was originally conducted by the Authority, formally known as the Department of Public Utility Control (DPUC), pursuant to Conn. Gen. Stat. §16-244c(j)(2), as amended by Section 124 of P.A. 07-242. By [Decision](#) dated October 20, 2004, in Docket No. 03-07-17, [DPUC Review of Long-Term Contracts](#), a 3-step review and selection process for the PPAs was created and led by the former DPUC, which included the Connecticut Clean Energy Fund and the EDCs. The other ten (10) selections were conducted by DEEP.

<sup>95</sup> The EDCs note in written exceptions that the Project 150 procurement was a Connecticut Clean Energy Fund procurement. EDC Written Exceptions, dated Feb. 10, 2023, p. 4. The Authority notes that for the purposes of this report, Project 150 is included in the DEEP procurements section.

<sup>96</sup> [See](#), *Report and Program Notes* section of the report for footnote details. The data in the table came from Eversource and UI's Response to CAE-44.

<sup>97</sup> The data in the table came from Eversource and UI's Response to CAE-38.

<sup>98</sup> The majority of DEEP Procurements are project selections which are subsequently split with approximately 80% of the approved capacity allocated to Eversource, and the other 20% allocated to UI. As such, the number of projects reported as deployed by each EDC annually in the chart is the number reported by each EDC (e.g., for P.A. 15-107, Section 1(c), in 2020, 1 projects was reported as put into service by each EDC, and the number reported in this chart is also 1 project put into service, as opposed to summing the values to 2). There are several exceptions. For Project 150, only 1 EDC reported projects in service, as such the number of projects put into service is listed as the number provided by that utility (3). P.A. 13-303, Section 8 for 2015 and for P.A. 15-107, Section 1(c) for 2021 had different numbers of projects reported as deployed for each EDC, and as such, the maximum number between the two utilities was reported in this chart. For P.A. 15-107, Section 1(b), the annual number of projects reported as deployed by UI match the number of L/T PPA projects reported as deployed from Eversource, so these projects were treated as single procurements split between the two utilities (e.g., if each utility reported 2 projects deployed in a year, 2 projects were reported in this chart, as opposed to 4). However, for each year, this number was summed with the number of PDR projects reported as deployed by Eversource to arrive at the total annual project deployments across the EDCs. This is the same methodology as used in the Docket No. 17-12-03RE09 Decision.

<sup>99</sup> Connecticut Light & Power administers the Project 150 contracts. The Authority directed costs to be shared between UI and CL&P in accordance with the cost allocation agreement approved in the Decision in Docket No. 03-07-17RE03.

<sup>100</sup> Connecticut Light & Power administers the P.A. 11-80, Section 127 projects. The United Illuminating Company has a Cost Sharing Agreement (CSA) with CL&P that was approved by PURA.

<sup>101</sup> The Millstone contract Buyer's Entitlement Percentage changes each year throughout the term and includes a Contract Maximum which is unique to this PPA. We included the Contract Maximum (MWh/hr) amount for 2021 from Exhibit C in the PPA.

<sup>102</sup> P.A. 18-50, Section 3 is not applicable to The United Illuminating Company.

<sup>103</sup> Final [Decision](#) dated October 21, 2020, in Docket No. 16-12-29, [PURA Development of Voluntary Renewable Options Program](#).

<sup>104</sup> [See](#), Decisions dated April 21 and October 20, 2004, and February 17 and April 21, 2005, in [Docket No. 03-07-16, Investigation of Alternative Transitional Standard Offer Services for United Illuminating and CL&P Customers](#).

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<sup>105</sup> See, [Decision](#) dated September 27, 2007, in Docket No. 07-01-09, [DPUC Consideration of the Connecticut Clean Energy Options Program for 2008](#); See also, [Decision](#) dated March 30, 2011, in Docket No. 10-05-07, [PURA Review of the Connecticut Clean Energy Options Program](#).

<sup>106</sup> [Decision](#) dated December 21, 2016, in Docket No. 10-05-07RE01, [PURA Review of the Connecticut Clean Energy Options Program](#).

<sup>107</sup> Data from UI Compliance dated November 15, 2022, Document 1a-CAE-038, and Eversource Compliance dated November 15, 2022, Document 1a-CAE-038; pursuant to Order No. 1 and Section II.B.1.a. of the Final Decision in Docket No. 17-12-03RE09.

<sup>108</sup> Pursuant to Conn. Gen. Stat. §§ 16-245a, 16-244c(h)(1), and 16-243q.

<sup>109</sup> One (1) megawatt hour (MWh) of renewable energy = one REC

<sup>110</sup> Class I: Solar, wind, fuel cell, geothermal, landfill methane gas, anaerobic digestion or other biogas derived from biological sources, run-of- river hydro, and sustainable biomass. Pursuant to Conn. Gen. Stat. §§ 16-1(a) (20).

<sup>111</sup> Class II: Trash-to-energy facility. Pursuant to Conn. Gen. Stat. §§ 16-1(a) (21).

<sup>112</sup> Class III: Combined heat and power systems, waste heat recovery and electric savings from conservation and load management programs or demand side management projects. Pursuant to Conn. Gen. Stat. §§ 16-1(a) (38). Note: After January 1, 2014, programs supported by ratepayers are not eligible for Class III.

<sup>113</sup> Pursuant to Conn. Agencies Regs. 16-245a-1(e).

<sup>114</sup> Pursuant to Conn. Gen. Stat. §§ 16-245(k) and 16-244c(h)(1).

<sup>115</sup> Amended per sections 4 and 5 of P.A. 17-144.

<sup>116</sup> See, UI Response to CAE-33.

<sup>117</sup> See, Eversource Response to CAE-33.