Power Generation in New England

Dan Dolan | NEPGA

New England's Electricity Market

Where We Are & Where We Are Going

Connecticut Business & Industry Association

Dan Dolan, President

June 6, 2024

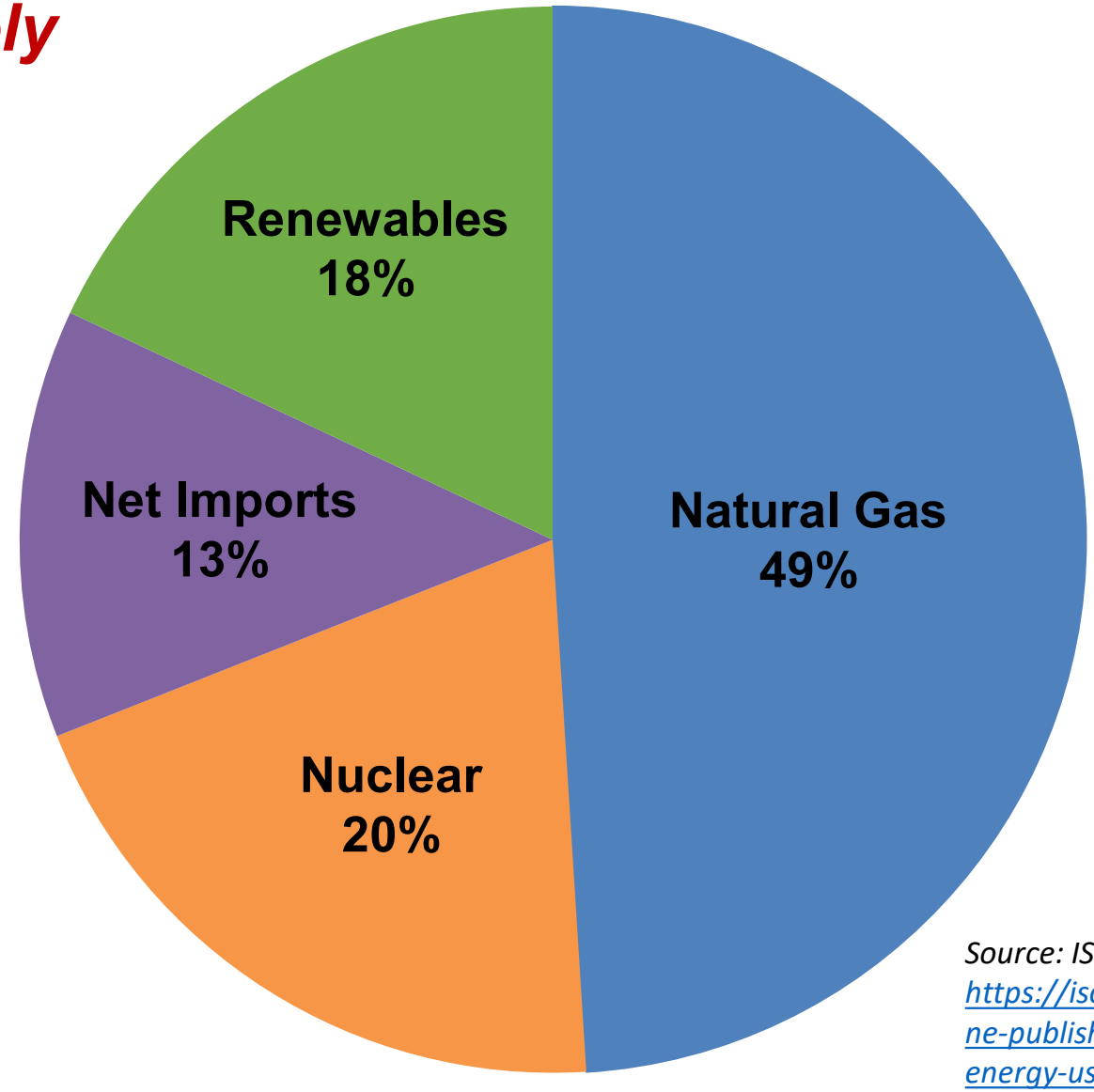
New England Power Generators Association

- **NEPGA members:**
  - **Employ** more than **4,000 people**
  - **Own** and **operate** more than **27,325 MW** of generation
    - Over **90% of the installed capacity** in the region
  - A fuel and technology diverse fleet including more than **8,150 MW** of non-emitting generation
    - ➢ *NEPGA is proud to represent more clean and renewable energy in New England than any other organization.*

- **NEPGA is the eyes, ears, and voice of the region's power generation industry**

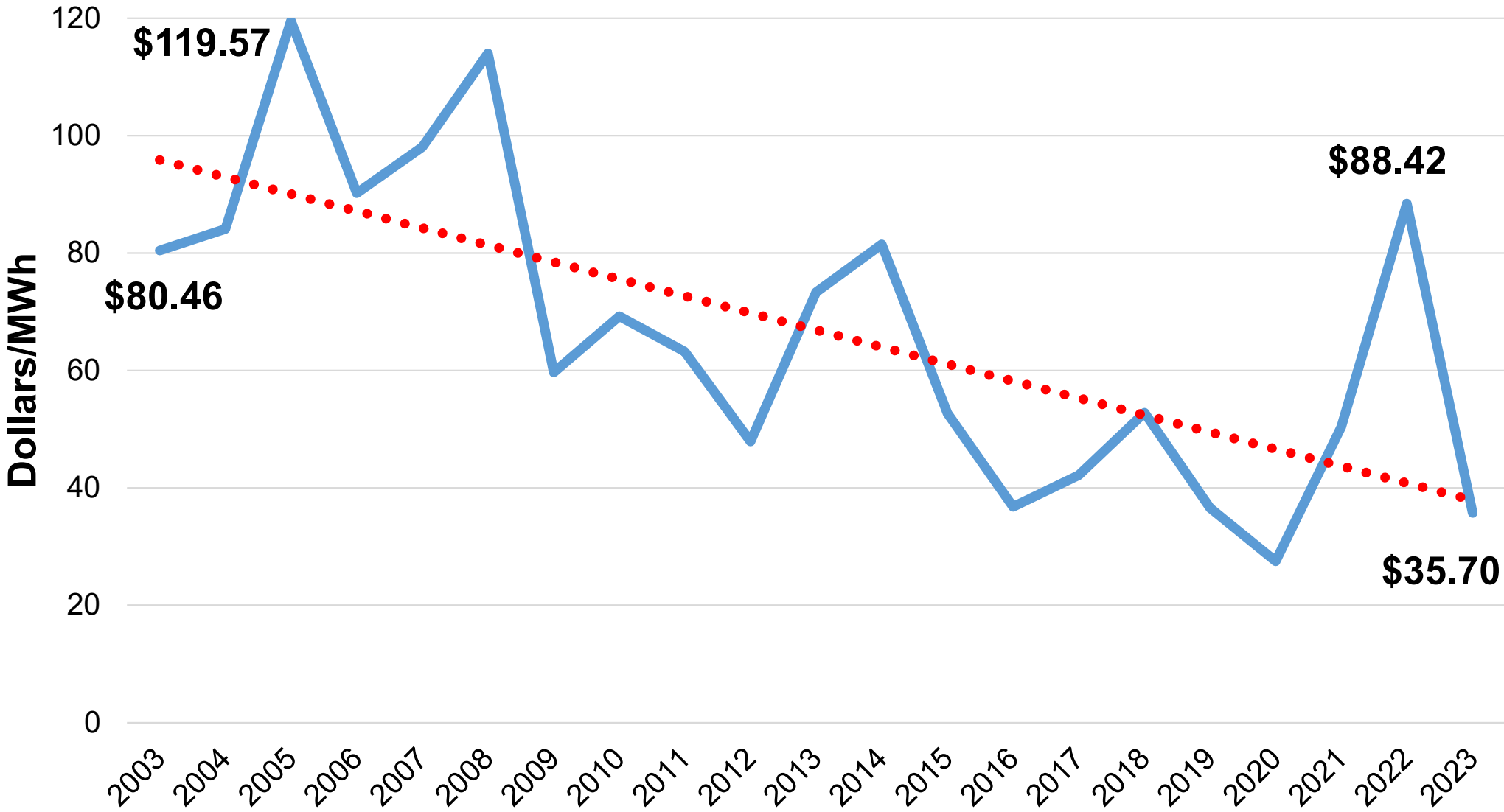
New England Electricity Fuel Mix

Energy Supply in 2023



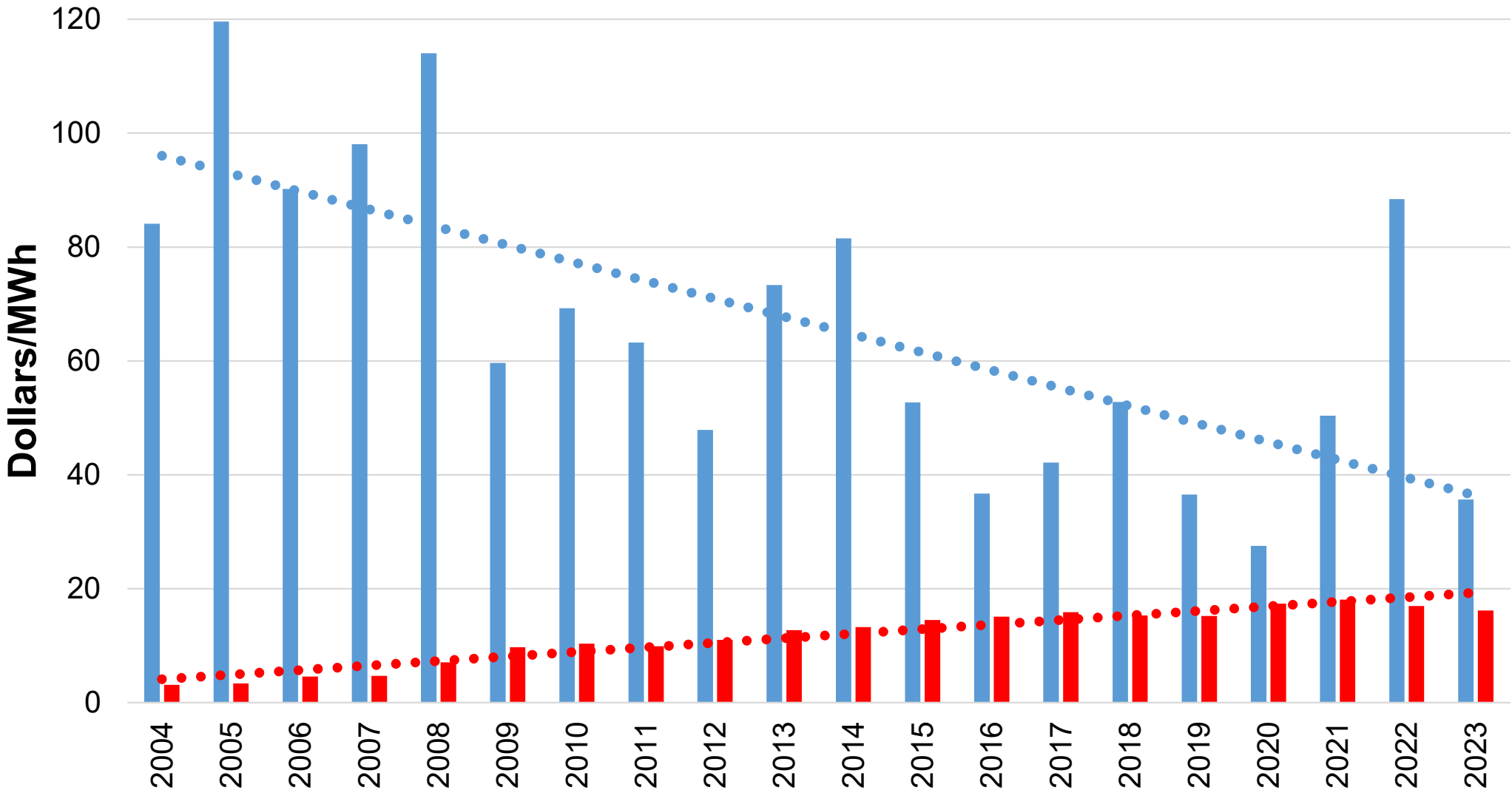
Source: ISO New England
https://isonewswire.com/2024/02/19/iso-ne-publishes-amounts-sources-of-electric-energy-used-to-meet-demand-in-2023/

New England Wholesale Energy Prices Since 2003



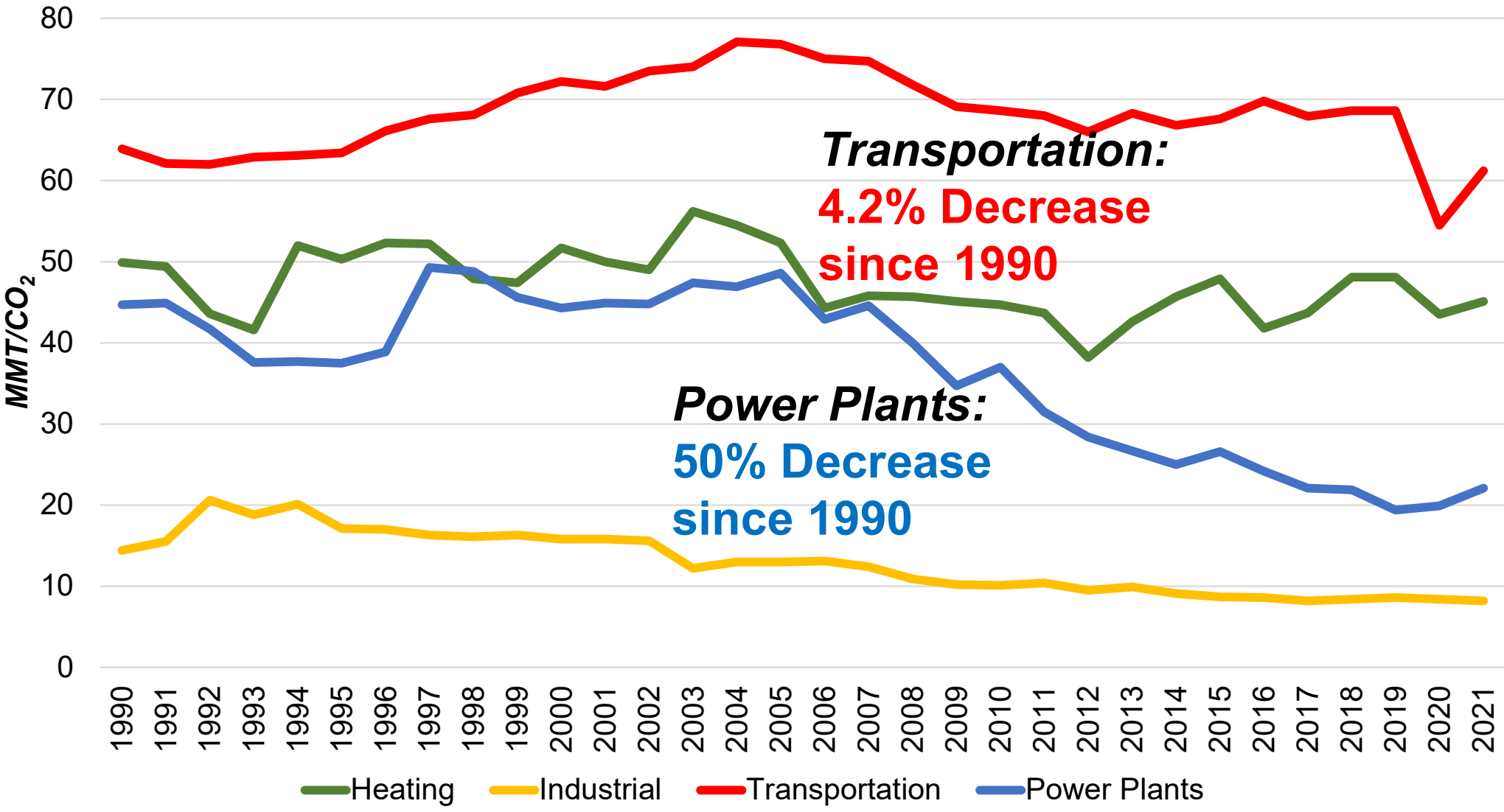
Source: https://www.iso-ne.com/about/key-stats/markets; Adjusted to 2023 dollars

New England Wholesale Energy Price & Wholesale Transmission Rate Trends



Source: https://www.iso-ne.com/about/key-stats/markets & https://www.iso-ne.com/static-assets/documents/100007/section2_rate_summary_2024.xls Adjusted to 2023 dollars

New England economy-wide CO_2 emissions down 21% from 1990



Source: http://www.eia.gov/environment/emissions/state/, released July 12, 2023

Several Upcoming Plant Retirements

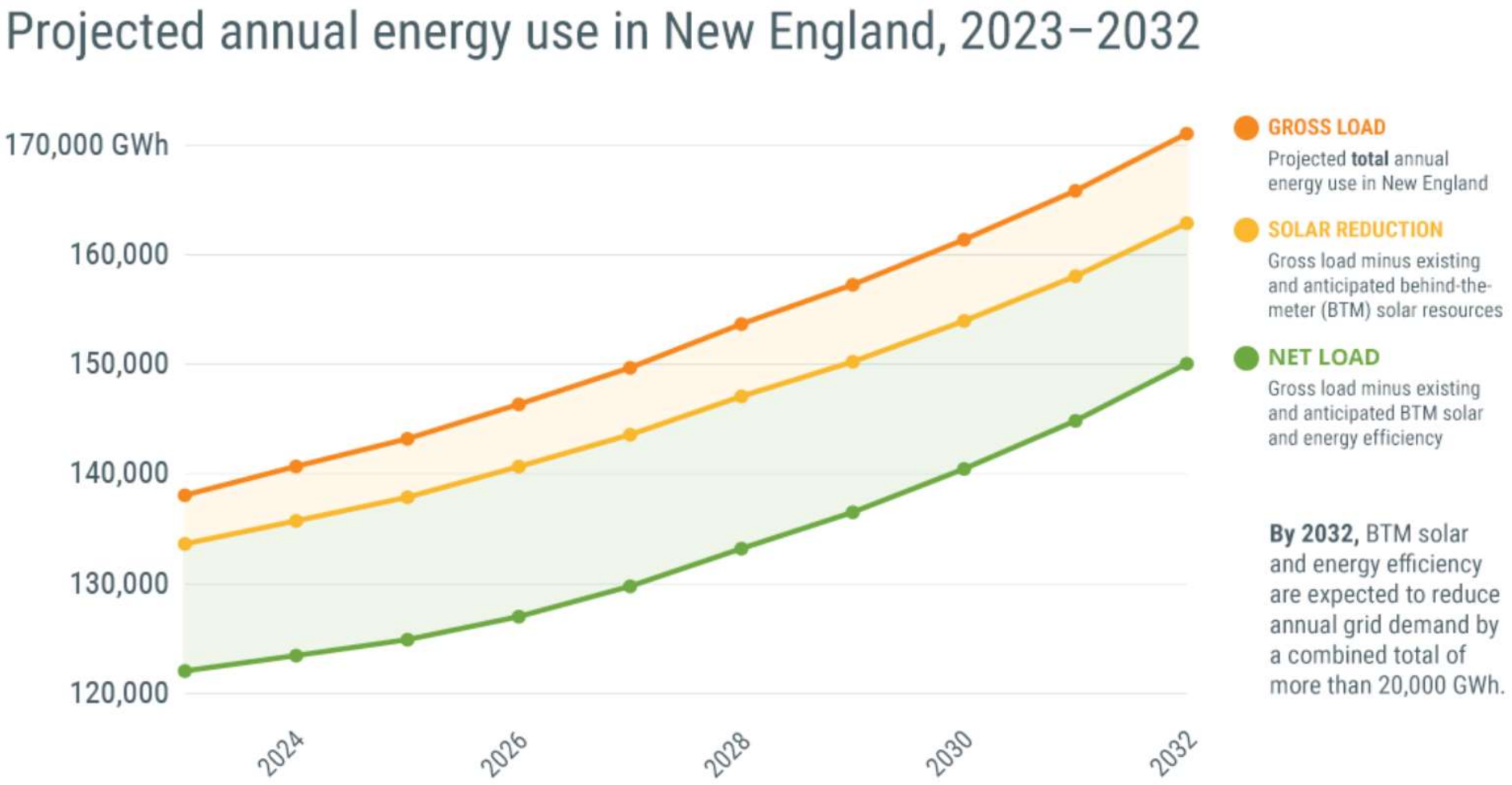
- **Mystic Power Station (Everett, MA)**
  - 1,400 MW – Natural Gas (co-located with LNG terminal)
  - Closure by May 31, 2024
- **Schiller Station, (Portsmouth, NH)**
  - 155 MW – Oil and biomass
  - Announced closure by 2025
- **Merrimack Station (Bow, NH)**
  - 480 MW – Coal (last coal plant in New England)
  - Announced closure by mid-2028
- **Middletown Power (Middletown, CT)**
  - 750 MW – Oil (largest oil storage tank in New England)
  - Announced closure by mid-2028

Clean Energy New Entry

- **Offshore Wind Wave Coming to New England. But When?**
  - Nearly 10,000 MW of offshore wind contracts are authorized across New England states.
    - CT/MA/RI now coordinating on RFPs for ~7,000 MW – selections in August.
  - 1,500 MW expected to be commercial in the next 18 months.
    - Vineyard Wind & Revolution.

- **Canadian Hydro & Beyond**
  - 1,000 MW Canadian hydro & transmission contract with Massachusetts seeking an additional $500 million.
    - Imports from Quebec have fundamentally changed.
    - Quebec now projecting capacity deficiencies by 2026.
  - 1,000 MW canceled Northern Maine onshore wind/transmission.
  - 6,000 MW of solar online today does make a difference.

New England electricity demand projected to rise 23% over the next 10 years



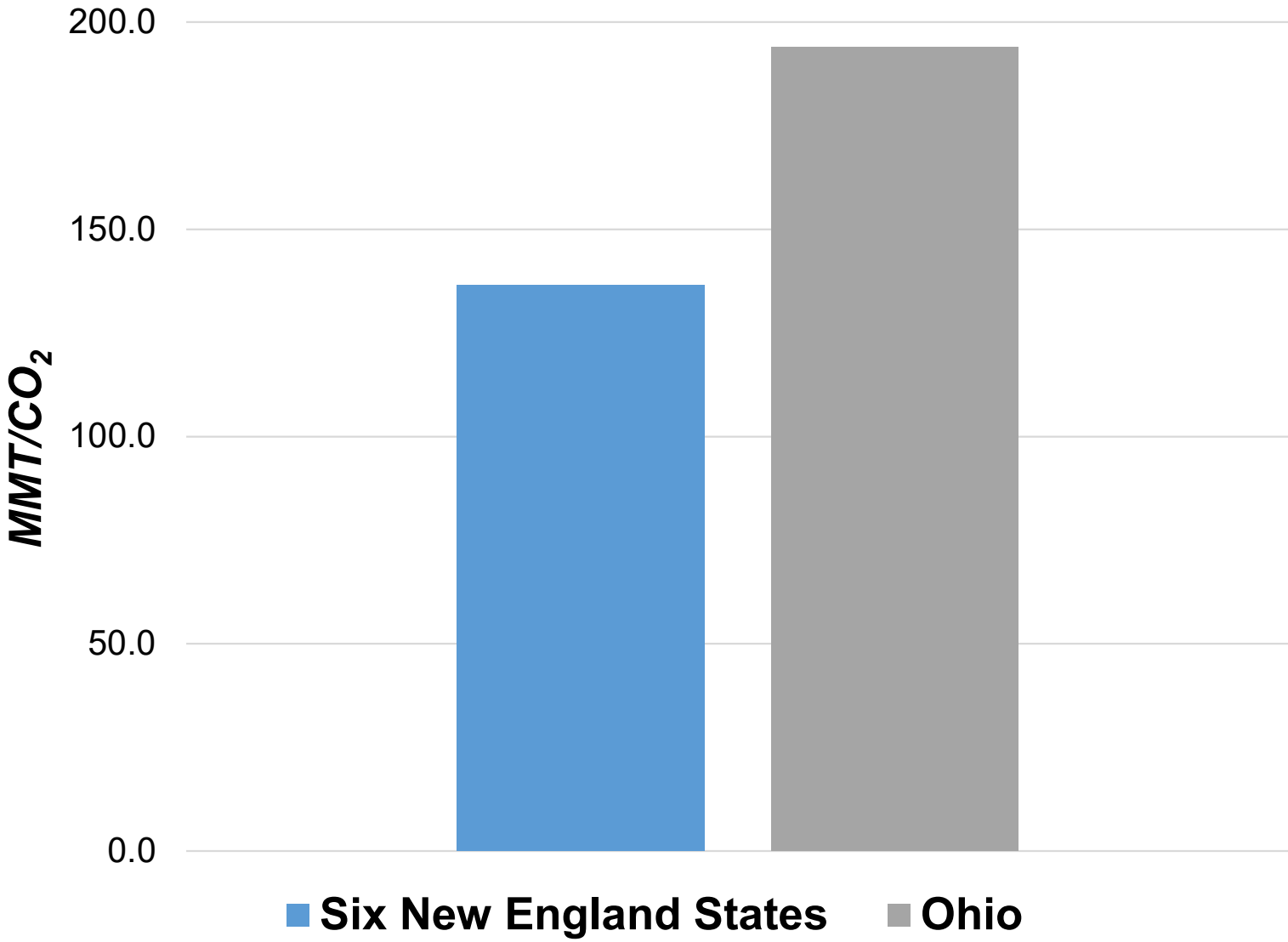
Source: https://isonewswire.com/2023/05/01/next-decade-will-see-steady-increase-in-new-englands-electricity-use-2023-celt-report-predicts/

New England Has An Opportunity & Responsibility

New England represents 70% of CO_2 of Ohio economy-wide

New England is responsible for 2.8% of all CO_2 in the U.S.

While being home to 4.5% of the population



Source: http://www.eia.gov/environment/emissions/state/, released July 12, 2023

www.NEPGA.org

@NEPowerGen

[Check out our blog, *Power Lines*]

BREAKOUT A

Investing in Renewable Energy & Resilience

Mackey Dykes
Connecticut Green Bank

Peter Ludwig
Connecticut Green Bank

Investing in Renewable Energy & Resiliency

June 6, 2024

CBIA Energy and Environment Conference

CONNECTICUT GREEN BANK®

Welcome & Agenda

1. About the Connecticut Green Bank
2. Value Stack for Renewables in Commercial Buildings
3. Renewable Energy Investment Tax Credits from the Inflation Reduction Act (IRA)
4. Solar: Benefits and Financing
   - 4.1 Renewable Energy Financing with C-PACE
   - 4.2 Customer Stories
   - 4.3 Solar Leasing Options
5. Resilience
6. Discussion

Mission & Vision

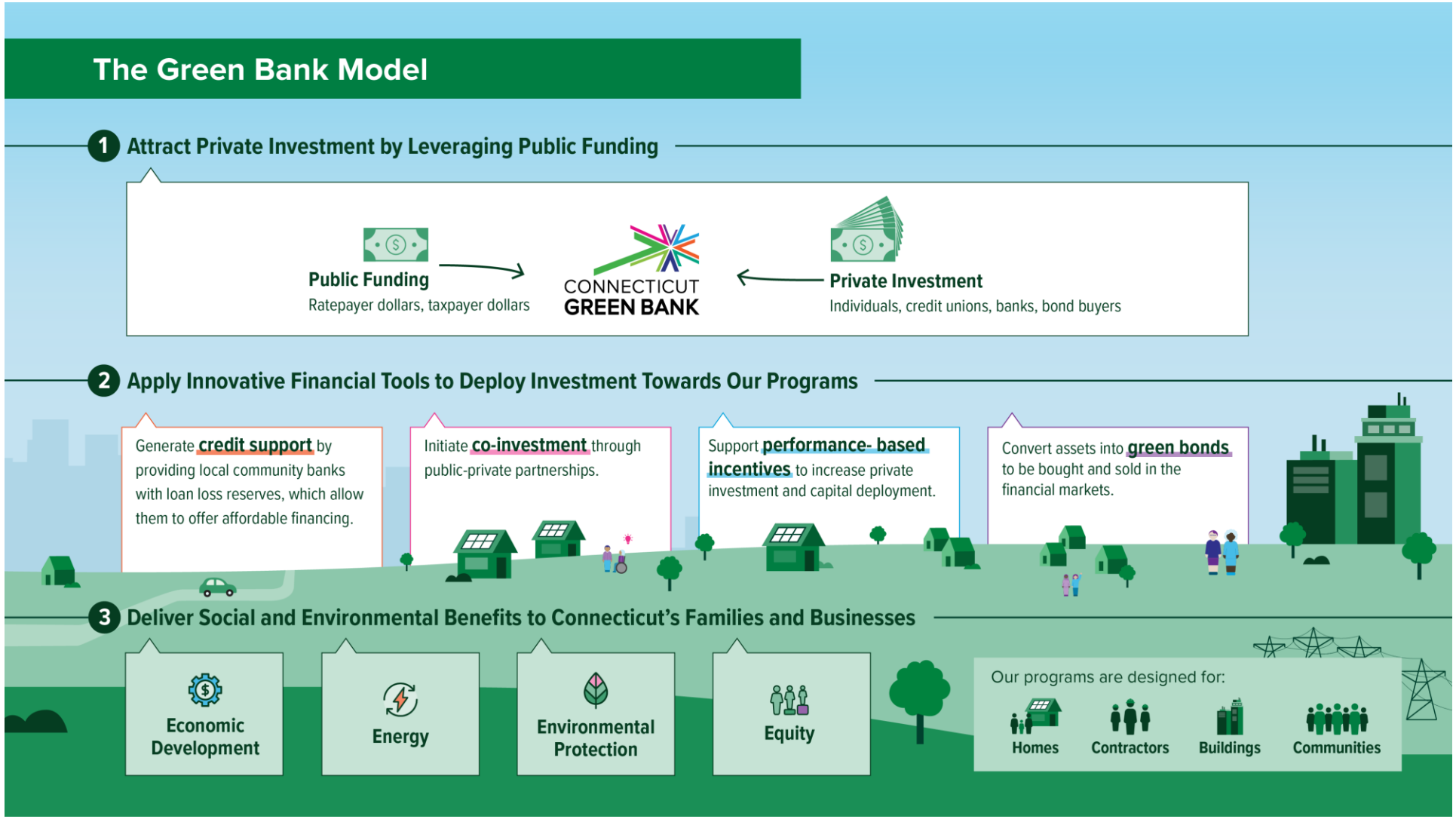
CONNECTICUT GREEN BANK®

Connecticut Green Bank is the nation's first state level green bank. Established in 2011 as a quasi-public agency, the Green Bank uses limited public dollars to attract private capital investment and offers green solutions that help people, businesses and all of Connecticut thrive.

Our mission is to confront climate change by increasing and accelerating investment into Connecticut's green economy to create more resilient, healthier, and equitable communities.

PLANET PROTECTED
BY THE LOVE OF HUMANITY

Our vision



Our Goals

CONNECTICUT GREEN BANK®

Leverage limited public resources to scale-up and mobilize private capital investment in the green economy of Connecticut.

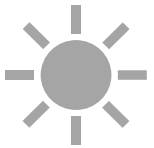
Pursue investment strategies that advance market transformation in green investing while supporting the organization's financial sustainability goals.

Strengthen Connecticut's communities, especially vulnerable communities, by making the benefits of the green economy inclusive and accessible to all individuals, families, and businesses.

Value Stack for Solar in Commercial Buildings

Federal Income Tax Credit

Modified Accelerated Depreciation on Solar Asset (MACRS)



Non-Renewable Energy Solutions Program (NRES, Tariff)

Financing (Debt, Lease)

Investment Tax Credit from Inflation Reduction Act

- Signed into law August 16, 2022.
- Many benefits for renewable energy (and energy efficiency) in CT.
- Increases and extends base Investment Tax Credit (ITC) to 30% through 2033.
  - Providing certainty and consistency for renewable project developers and investors
- Allows investors without tax liability (e.g. 501c3 organizations) to take ITC using new "direct pay" provision.
- ITC applies to solar, batteries, fuel cells, geothermal and other renewables.
- Provides ITC **"bonus" categories** for several categories:
  - Energy Community
  - Low Income Community
  - Domestic Content Minimums
  - Qualified Low-Income Residential Building or Economic Benefit

Sample Project with ITC Adders

Example Solar Project		
Initial Project Cost		$450,000
ITC Category	ITC Value	Project Subtotal
Standard 30% ITC	($135,000)	$315,000
10% Energy Community Siting Bonus	($45,000)	$270,000
10% Low Income Community Bonus	($45,000)	$225,000
10% Domestic Content Bonus	($45,000)	**$180,000**

- 150 kW rooftop solar PV array
- total cost: 450,000
- ITC and bonus adders cover 60% of total cost.

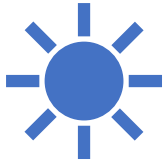
More resources about the IRA

- Inflation Reduction Act of 2022 | Internal Revenue Service (irs.gov)
- https://www.energy.gov/eere/solar/federal-solar-tax-credits-businesses
- Find resources breaking down the legislation here:
  - DOE IRA Low-Income Community Bonus Credit Map - Mapping Tool for 48e Low-Income Community Bonus Credit Program (arcgis.com)
  - DOE IRA Energy Community Tax Credit Bonus Map - IRA Energy Community Tax Credit Bonus (doe.gov)
  - Digestible summary of what is in the Act, from SEIA - https://www.seia.org/sites/default/files/Inflation%20Reduction%20Act%20Summary%20PDF.pdf
  - Longer form summary from law firm K&L Gates - https://marketingstorageragrs.blob.core.windows.net/webfiles/Inflation_Reduction_Act_Summary_of_Tax_Credits_for_Energy_Participants.pdf

MACRS Depreciation

- Allows business to recover investment via annual tax deductions
- Cost recovery period is 5 years
- MACRS helps businesses reduce tax liability and increase ROI

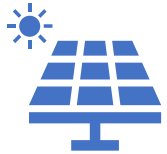
Non-Residential Energy Solutions



Eversource and UI/Avangrid support installation of renewable energy projects (e.g. solar)

Competitive auctions are held twice a year: February and August

Successful bidders can secure 20- year revenue stream to help increase solar ROI



Two ways to set up solar, behind or in-front of the meter

Bidding Project Size Categories:

Category	Project Size (AC)	Total MW/ Procurement Year	Eversource MW/Year	UI MW/Year
Low Emission	≤ 5,000 kW	10	8	2
Small Zero Emission	≤ 200 kW	30	24	6
Medium Zero Emission	>200 kW < 1,000 kW	33	25	8
Large Zero Emission	≥ 1,000 kW ≤ 5,000 kW	37	31	6
Total Zero Emission	≤ 5,000 kW	100	80	20

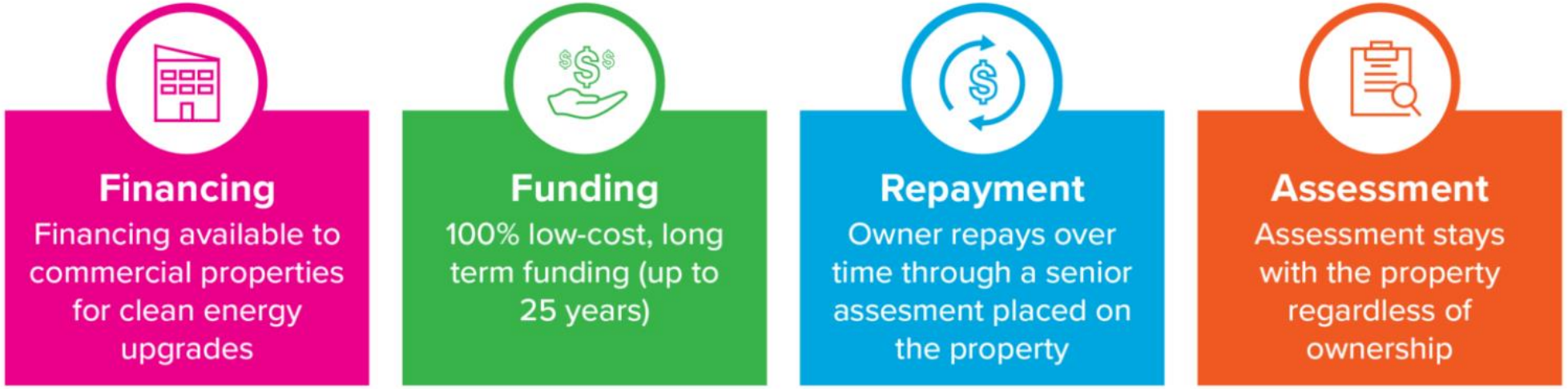
Bidding Caps per project size:

Size Category	Year 2 Price Cap ($/MWh)	Year 3 Proposed Price Cap ($/MWh)	Proposed Change Amount ($/MWh)
Small	$200.97	$199.82	-$1.15
Medium	$190.00	$188.90	-$1.10
Large	$159.00	$145.97	-$13.03
Low	$159.00	$159.00	$0.00

Renewable Energy Financing with C-PACE

Commercial Property Assessed Clean Energy (C-PACE)

CONNECTICUT GREEN BANK
BUILDING SOLUTIONS



C-PACE Addresses Key Barriers

Lack of funding?

Near term plan to sell?

Insufficient payback/ROI?

Split incentives?

Uncertain savings?

Deferred Maintenance?

100% financing up to 25 years

Repayment obligation transfers at sale

Positive cash flow in year 1

Assessment / savings pass to tenants

Technical underwriting / SIR > 1

Include related costs in C-PACE project (e.g. solar plus roof replacement)

C-PACE Eligibility

Must be in a town that participates in the C-PACE program
https://www.ctgreenbank.com/building-solutions/c-pace/participating-municipalities/

Building type:

- Any type of commercial building
- Municipal or state buildings are **not** eligible.

Project types:

- Retrofit of Existing Buildings
- Ground up new construction/Gut rehab/Repositioning
- Must be $30K or over

C-PACE Eligible Measures

Eligible Measures

- Energy Saving Measures that are affixed to the property (e.g. solar PV, lighting, HVAC)
- Related measures and cost (capital expenditures required such as new roof with solar)
- EV Charging Infrastructure (exempt from Savings to Investment Ratio (SIR) requirement

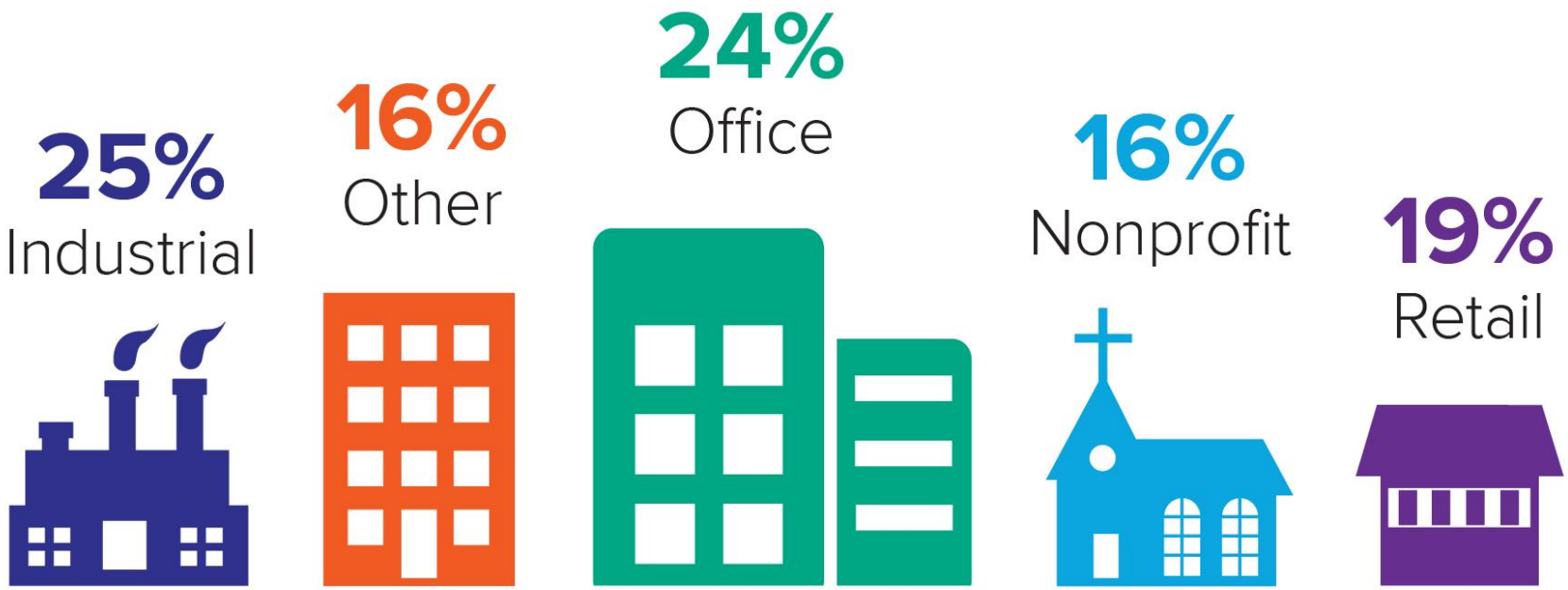
Ineligible Measures

- Appliances, plug load device, vending machine controls
- Measure packages that do not have an SIR >1
- Measures that can be easily removed or not permanently installed
- Measures that do not save energy or create renewable energy

https://ctgreenbank.com/wp-content/uploads/2018/05/Appendix-D-Technical-Standards.pdf
https://www.ctgreenbank.com/about-us/governance/c-pace-program-guidelines/

All Kinds of Properties are Using C-PACE

Q1
24



Customer Stories

DiMare Pastry

- **45 year-old, three generation family business**
- DiMare Pastry expanded to a second location in Stamford in 1997.
- As their business has grown, energy costs have continued to rise.
- In 2020, they decided to go solar using C-PACE financing, allowing the family business to reduce the burden of energy costs now and for many years to come.

Location
Stamford, CT

Energy Upgrade
75.8 kW roof mounted solar photovoltaic system

C-PACE Financing*
$246,000 over 20 years

Projected Energy Savings
More than $20,000 a year

"We are always so busy and focused on serving our customers. We don't have time to think about rising energy costs. Going green with our new solar system takes some of the pressure off our business by giving us lower energy costs. We're proud to be doing the right thing for the environment too. We want to keep baking, delighting our customers and continuing on as a long-standing partner with the towns we serve"

- *Maria DiMare*

Enko Chemical

Clean Energy Scope Installed
New and/or Retrofit Lighting and Lighting Occupancy Controls
High Efficiency LED Grow Lights
Upgrade Chillers to High Efficiency,
Insulation & Controls measures (5 measures)
Pump Variable Frequency Drives - Chilled water and hot water
Solar PV

Table 2. Savings Summary	
Financed amount (including closing costs)	$3,381,375
First year electric energy generation (kWh/yr.)	$364,047
Utility Incentives	$1,089,105
Modified Accelerated Depreciation	$129,013
Federal Income Tax Credit	$216,828
First year energy cost savings	$338,047

Enko Chemical-Investment Summary

Table 1. Financial Metrics	
Savings to Investment Ratio (SIR)	1.58
Project cost	$3,331,375
Amount financed	$3,381,375
Gross total cost savings over EUL	$7,989,517
Total PACE + O&M payments over EUL	$5,060,356
% financed	100%
Owner equity contribution	$0
Interest rate	5.500%
Finance term, years	15

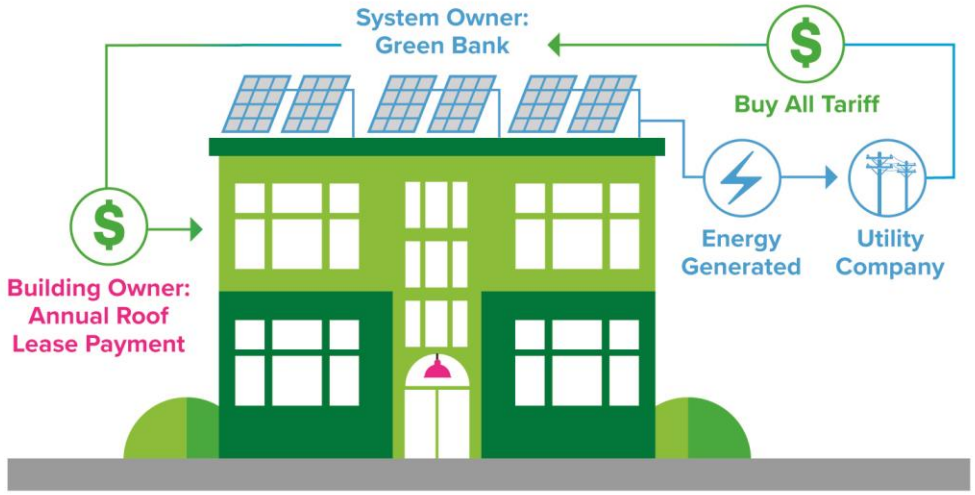
Enko- Keys to Project Success

- **Partners** sent Enko to us early in the process
- Enko engaged **mortgage lender** early to gain consent for C-PACE
- **Contractor** team was able to design project, and navigate technical requirements of C-PACE and Eversource
- **C-PACE was woven with other incentives** (e.g. ITC, utility incentives) to create cash flow.

Solar Leasing Options

How Does a Solar Roof Lease Work?

- Must be in Eversource or UI territory
- Minimum system size 50kW
- Available to commercial and municipal/state-owned properties, as well as multifamily properties of 5 units or greater
- No impact on utility bill – all solar energy is sold to the grid
- **Process:** Your contractor will submit a request for Solar Roof Lease pricing on your behalf.



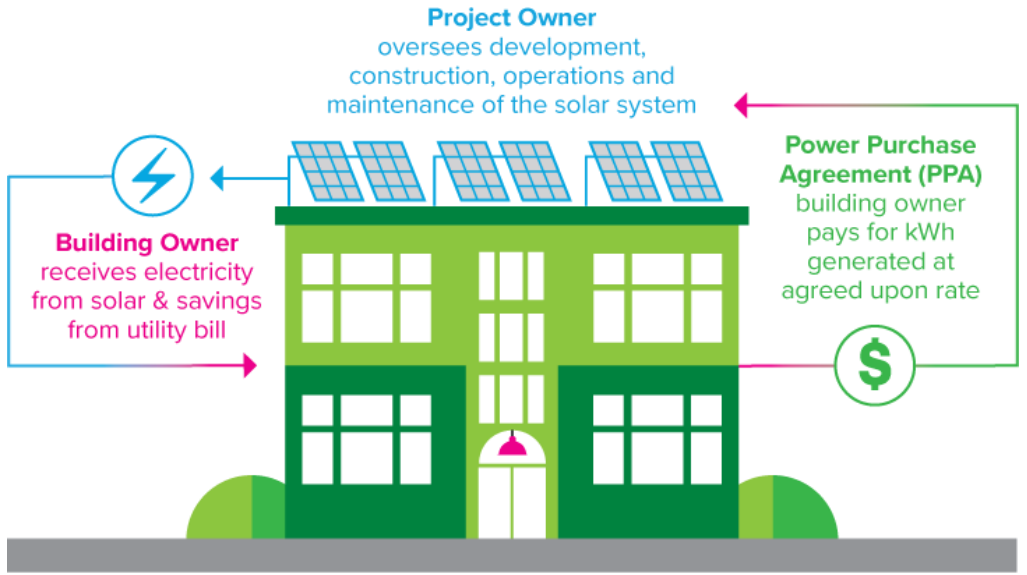
Roof lease between Green Bank and Property Owner

Green Bank (or financing partner) owns the solar: oversees development, construction, & asset management

Utility (under tariff) purchases electricity from solar installed on property. Green Bank makes lease payment to property owner

How Does a Power Purchase Agreement Work?

- Must be in Eversource or UI territory
- Minimum system size 50kW
- Available to commercial and municipal/state-owned properties, as well as multifamily properties of 5 units or greater
- Solar offsets utility bill
- **Process:** Your contractor will submit a request for PPA pricing on your behalf



Green Bank (or financing partner) is seller oversees development, construction, and asset management

Customer is buyer: purchases electricity from solar installed on property

Contract between seller (generates electricity) and buyer (purchase electricity)

Solar Roof vs. PPA

Similarities

- Both allow you to go solar and help the environment.
- No upfront costs.
- Systems are maintained by the Green Bank or partner.
- A good option for any customer that does not want the burden of ownership.
- Roof repairs can be part of the process.
- Similar minimum system size.

Differences

- Lease creates a new passive income stream that is not based on system performance.
- Roof lease has no credit requirements or financial underwriting.
- CPACE not required for roof lease.
- Roof lease simpler and faster.
- PPA reduces electricity costs for property owner by locking in a lower purchase price for system's energy.

C-PACE and Resilience

- Resilience Improvements eligible for retrofit and new construction
- Exempt from the Savings to Investment Ratio (SIR) requirement
- "Resilience Improvement" "..improves the property's ability to prepare for and adapt to changing conditions and withstand and recover rapidly from deliberate attacks, accidents or naturally occurring threats or incidents including, but not limited to...the impacts of climate change.
    - Climate change adaptation (e.g. flood management, wind/fire/extreme heat)
    - Nature based solutions (e.g. stormwater management, healthy vegetation)
    - FORTIFIED Designations (voluntary resilience construction and re-reroofing standards

More information:

- https://www.ctgreenbank.com/wp-content/uploads/2024/02/CPACE-Program-Guidelines_031524.pdf
- https://www.ctgreenbank.com/wp-content/uploads/2024/02/APPENDIX-O_RESILIENCE-TECHNICAL-STANDARDS_031524.pdf

Stay in touch

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BREAKOUT B

Life After the Transfer Act: Release-Based Regulations

Sam Haydock
BL Companies

David Melycher
EKI Environment & Water

Emilee Mooney Scott
Robinson+Cole

Life After the Transfer Act: Release-Based Regulations

June 6, 2024

Sam Haydock, BL Companies
David Melycher, EKI Environment & Water, Inc.
Emilee Mooney Scott, Robinson+Cole

eki environment & water
Est. 1989 35 Years Making an Impact

BL Companies
Architecture
Engineering
Environmental
Land Surveying

Robinson+Cole

Context

- Public Act 20-09 was passed in 2020.
  - Sets in motion a pivot from the Transfer Act to a release-based regime.
  - Following the adoption of the release-based regulations, there will be no new “transfers of establishment” triggering the Transfer Act, though sites already in the Transfer Act process must complete such process.
- A Working Group was co-convened by DEEP and DECD to provide “advice and feedback” on the regulations.
- Initial draft regulations were circulated by DEEP at the end of 2023

Applicability

Transfer Act

- Applies to “establishments” i.e., specifically defined commercial and industrial properties
- Triggered by “transfer” of the establishment

Release-Based

- Applies to any/all property in the state
- Triggered by discovery/occurrence of a release
- Market or “event” Driven

Responsibility

Transfer Act

- "Certifying Party" (buyer, seller, or some other party associated with the transaction) takes on responsibility to investigate/remediate

Release-Based

- Responsibility rests with "creator" or "maintainer" of the release

Investigation

Transfer Act

- Requires site-wide investigation of "areas of concern" to determine whether a release has occurred

Release-Based

- Requires characterization and remediation of new and newly-discovered releases on a release-by-release basis

Oversight

Transfer Act

- Majority of projects are led by a licensed environmental professional (LEP)
- Small number of projects subject to direct DEEP oversight

Release-Based

- Tiers of oversight based on risk level of release
  - Tier 1A: Highest risk, DEEP oversight
  - Tier 1B-3: LEP led
- Emergent releases with limited impact - PEPs

Fees

Transfer Act

- Fee upon entry into the program (at closing), no annual fees

Release-Based

- Annual fees for releases not yet remediated
- No transaction-triggered fees
- Penalties for failure to timely complete certain milestones

Timelines

Transfer Act

- File form upon closing
- Following DEEP acknowledgement of Form III:
  - Complete investigation within 2 years
  - Initiate remediation within 3 years
  - Complete remediation within 8 years

Release-Based

- No transaction-triggered requirements
- Immediate Actions for emergent releases and SERs
- Within first year either achieve compliance with standards or enter oversight tier
  - Tier placement determines deadlines (e.g., tier 2 release must be closed within four years after tiering)

Audits

Transfer Act

- One-year deadline to commence audit of Verification
- No-audit stamps and letters are regularly provided

Release-Based

- Three levels of audits
- Any release record can be audited (i.e., final cleanup document and intermediate steps)
- If no audit is performed, no notice will be provided

Next Steps

- Second Draft and Public Notice – Some time this summer?
  - There will be an opportunity for public comment
  - Stakeholder groups like CBIA and EPOC will collect comments from members and submit together, and some will submit individual comments
- Additional statutory, regulatory, and program changes
- Effective Date – Next year?

Questions and Answers

BREAKOUT A

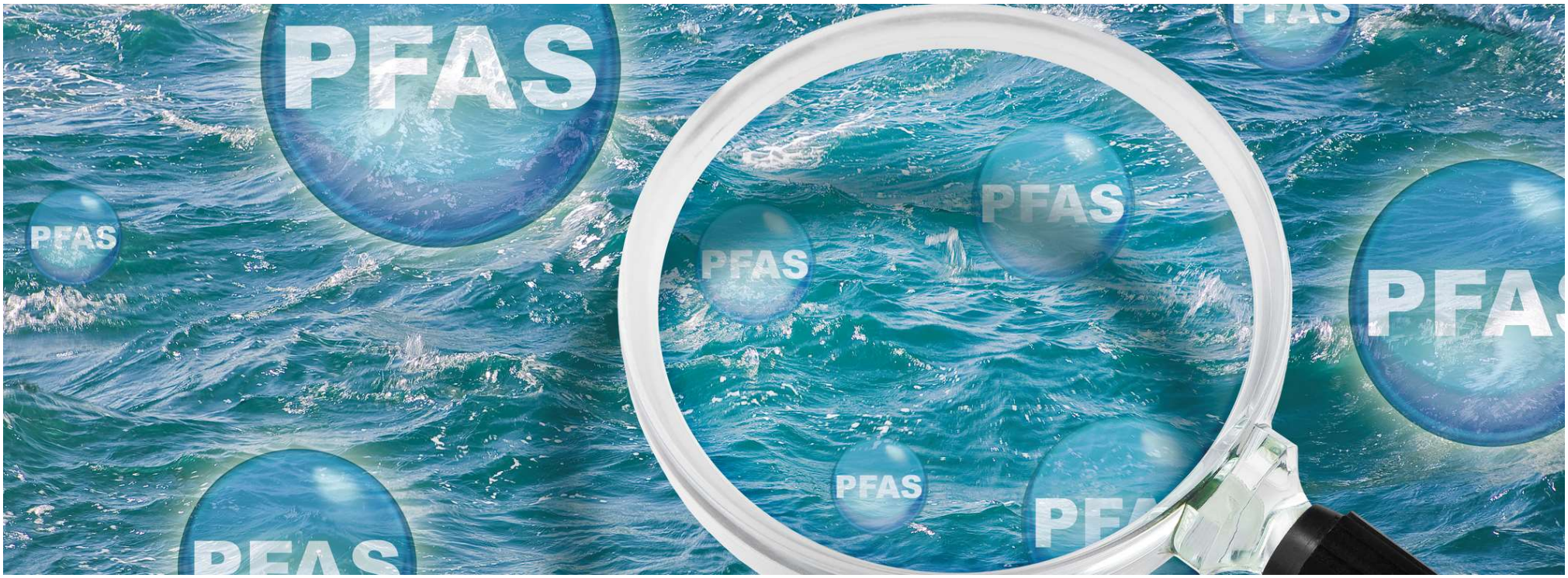
Navigating PFAS Regulatory Compliance

Alfredo Fernández
Shipman & Goodwin

Brent Henebry
Fuss & O'Neill

SHIPMAN

FUSS & O'NEILL
Solve better. Go further.



Navigating PFAS Regulatory Compliance

CBIA E2 Conference June 6, 2024

Alfredo Fernández & Brent Henebry

Presentation Agenda

- Introductions
- Why are PFAS such a challenge?
- Federal Regulatory Updates
- State Regulatory Updates
- Miscellaneous Topics
- Questions/Discussion

SHIPMAN

FUSS & O'NEILL

Why are PFAS so challenging?

Perfect Storm….

1. Widespread societal use
2. Limited natural degradation
3. Reported low toxicity – bioaccumulation

1 + 2 = Widespread Presence in Environment

3 = Parts Per Trillion Cleanup Standards

SHIPMAN

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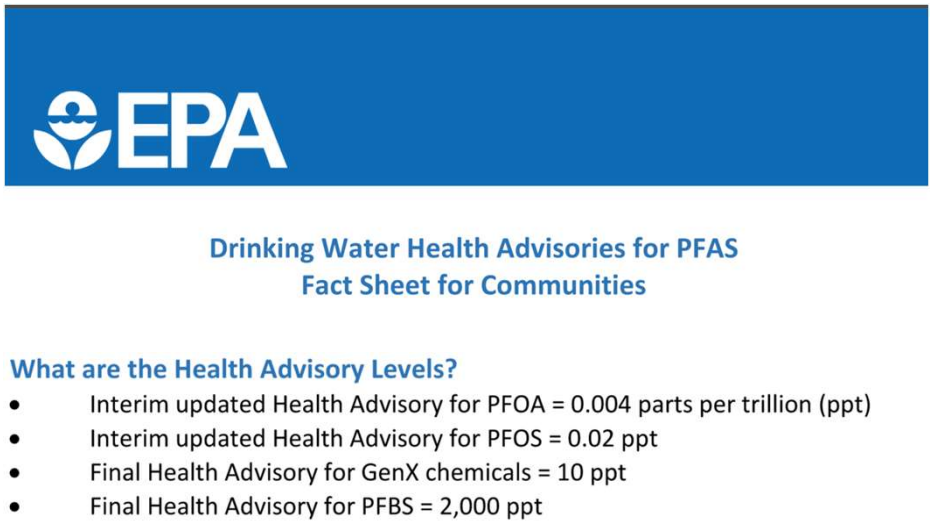
U.S. EPA Regulatory Activity: Drinking Water MCLs

Very low but not as low as 2022 Heath Advisory Parts per quadrillion!



2024 MCLs:

Requires public water systems to:

- Sample by 2027
- Start treatment by 2029

Uses hazard index approach

- 1st time used

Do not apply to private wells

- Regulated by the States

SHIPMAN

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U.S. EPA PFAS Maximum Contaminant Levels

Chemical	Maximum Contaminant Level Goal (MCLG)	Maximum Contaminant Level (MCL)
PFOA	0	4.0 ppt
PFOS	0	4.0 ppt
PFHxS	10 ppt	10 ppt
HFPO-DA (GenX chemicals)	10 ppt	10 ppt
PFNA	10 ppt	10 ppt
Mixture of two or more: PFHxS, PFNA, HFPO-DA, and PFBS	Hazard Index of 1 (unitless)	Hazard Index of 1 (unitless)

Hazard Index MCL Calculation Examples

HFPO-DA	PFBS	PFNA	PFHxS	Hazard Index	
$\left(\frac{[0\ ppt]}{[10\ ppt]}\right)$ +	$\left(\frac{[200\ ppt]}{[2000\ ppt]}\right)$ +	$\left(\frac{[4\ ppt]}{[10\ ppt]}\right)$ +	$\left(\frac{[4\ ppt]}{[10\ ppt]}\right)$ =	0.9	No exceedance of final Hazard Index MCL
$\left(\frac{[9\ ppt]}{[10\ ppt]}\right)$ +	$\left(\frac{[100\ ppt]}{[2000\ ppt]}\right)$ +	$\left(\frac{[4\ ppt]}{[10\ ppt]}\right)$ +	$\left(\frac{[3\ ppt]}{[10\ ppt]}\right)$ =	2	Exceedance of final Hazard Index MCL (no individual MCL exceedances)

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PFOS/PFOA - CERCLA Hazardous Substance Designation

- Basics
  - EPA designated PFOA and PFOS as CERCLA Hazardous Substances, effective July 8, 2024
  - Includes their salts and structural isomers (totaling 98 chemical listings)
- Major Impacts:
  - management of contaminated properties, real estate purchase and lease transactions, corporate M&A deals, environmental due diligence and insurance
- Superfund Sites
  - Increased costs of cleanups, new PRPs, new NPL sites, reopeners
  - Retroactive, joint and several, strict liability

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PFOS/PFOA - CERCLA Hazardous Substance Designation

- Reporting Requirements
  - Reportable Quantity -- Release of ≥ 1 lb. PFOA or PFOS in a 24-hour period
  - May trigger EPCRA Section 304 Emergency Notification
- CERCLA's Liability Protections (e.g., Bona Fide Prospective Purchaser) Requires:
  - All Appropriate Inquiry Rule, Phase I (ASTM E1527-21 Standard)

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PFOS/PFOA - CERCLA Hazardous Substance Designation

- **PFAS Enforcement Discretion and Settlement Policy Under CERCLA**
  - April 19, 2024 Memo from EPA HQ to Regional Administrators and Counsel
  - Enforcement focus is on significant contributors of PFAS contamination
    - Manufacturers of PFAS, federal facilities and other industrial parties that used/released PFAS
  - EPA will consider equitable factors for enforcement determination under CERCLA
    - Not trying to overburden:
      - Community water systems, publicly owned treatment works, municipal storm sewer systems, publicly owned/operated municipal solid waste landfills, publicly owned airports, local fire departments, and farms (with biosolids applied)
  - Just guidance, not law or regulation, can change any day
    - Doesn't bind state agency enforcement

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TSCA PFAS UPDATES

- TSCA Reporting Rule for Manufacturers and Importers (Effective November 12, 2023)
  - One-time reporting requirement (Reporting period is Nov 2024 - May 2025
- Significant report – start soon!
  - Each site, each year, each PFAS compound
  - Requires detailed reporting of PFAS compounds used (standalone or in other chemicals), purpose of their use, amounts, waste disposal and worker exposure information
  - Applies to manufacturers or importers of PFAS or PFAS-containing articles
  - Manufactured (or imported) from 1/1/2011 – 12/31/2022
    - Articles (traditionally excluded from TSCA reporting, but not for PFAS)
    - Expected to rope in many new manufacturers and importers
  - No new testing is required
    - *But* report must include information “known to” or “reasonably ascertainable by” the company (possession, control, etc.
    - Document due diligence!
  - No exceptions on company size or material used
  - Independent of EPCRA TRI requirements

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EPCRA PFAS UPDATES

EPCRA Section 313 TRI Reporting
(Proposed February 8, 2024)

- ~180 PFAS on TRI list (growing since 2019)
- Listed PFAS designated as Chemicals of Special Concern, resulting in a reporting shift between RY23 and RY24
  - Threshold is 100 lbs. (for each PFAS)
  - No *de minimis* exemption on concentration of PFAS (commonly ~1%) for PFAS starting in RY24 (due July 1, 2025)
  - Need Form R (can't use Form A or "range reporting")

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RCRA PFAS UPDATES

- RCRA: Hazardous Constituent Designation (*Proposed* February 8, 2024)
  - EPA Proposed Classifying 9 PFAS as Hazardous Constituents
    - A step closer to being RCRA Hazardous Wastes (and by extension CERCLA Hazardous Substances)
  - Does not yet impose the “Cradle to Grave” RCRA management controls
- RCRA Corrective Action Program (*Proposed* February 8, 2024)
  - Proposed change would facilitate the use of RCRA Corrective Action authority to address PFAS, as well as other substances, when they meet the statutory definition of hazardous waste at RCRA permitted TSDF
  - The RCRA Corrective Action Program requires facilities that treat, store or dispose of hazardous wastes to investigate and clean up contaminated soil, groundwater, and surface water

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Connecticut Statutory PFAS Ban

- *An Act Concerning the Use of PFAS in Certain Products* (Public Act 24-59)
- Modeled after bills from Maine and Minnesota
  - Was comprehensive but slimmed down to certain specific product categories
- Eventual PFAS ban for several product categories
  - Complete ban of PFAS-containing biosolids or wastewater sludge as of 10/1/24
  - Other PFAS-containing consumer items are phased out
    - Labeling, notification and/or reporting may be required in 2026 until full ban takes effect January 1, 2028
- Supplements CT's existing AFFF and Food Packaging Prohibitions

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Consumer Products

- apparel;
- carpet or rug;
- cleaning product;
- cookware;
- cosmetic product;
- dental floss;
- fabric treatment;
- children's product;
- menstruation product;
- textile furnishing;
- ski wax; or
- upholstered furniture

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Severe Conditions Products

- Outdoor apparel for severe wet conditions
- Firefighter turnout gear

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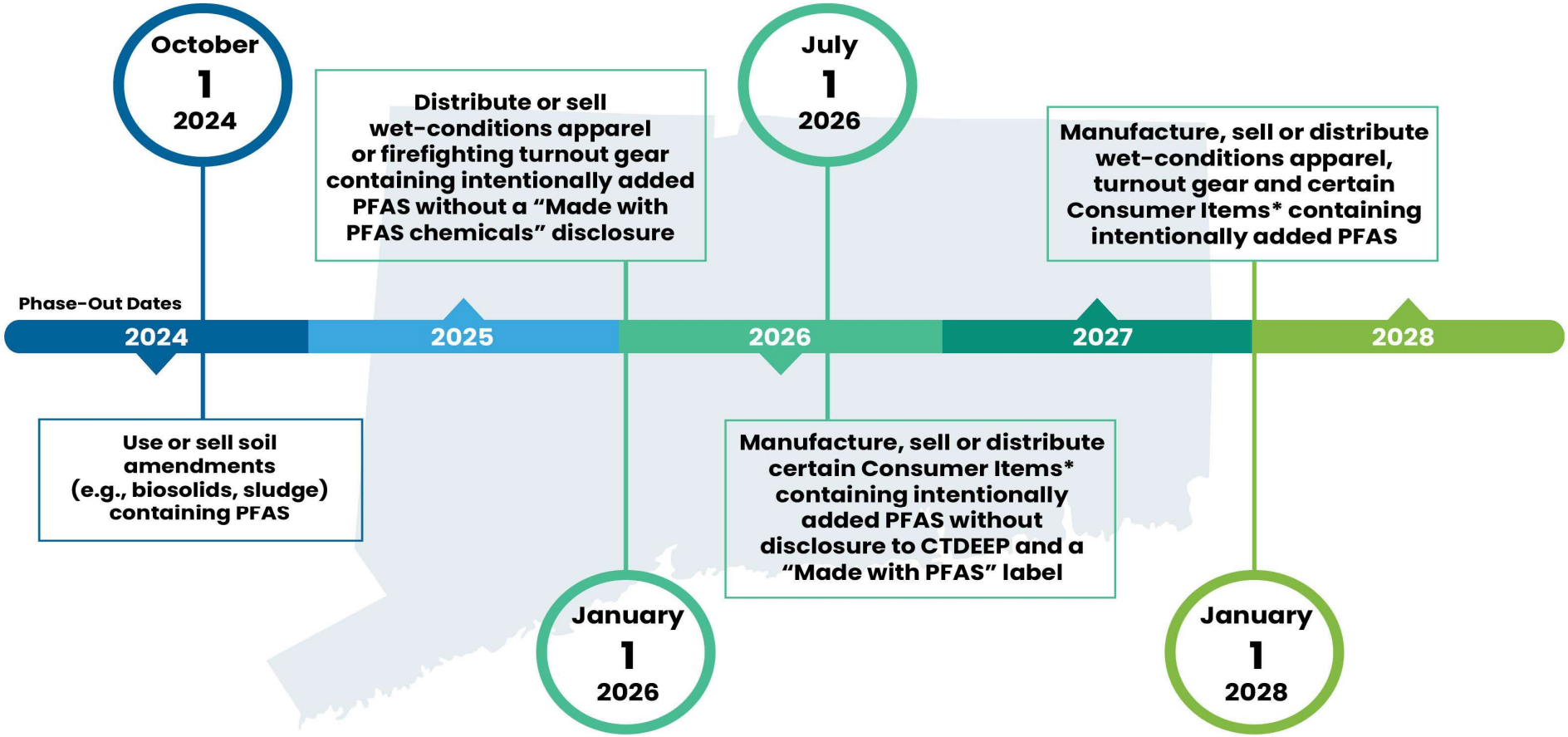
Phasing Out PFAS in Connecticut by 2028 - Upcoming Key Dates



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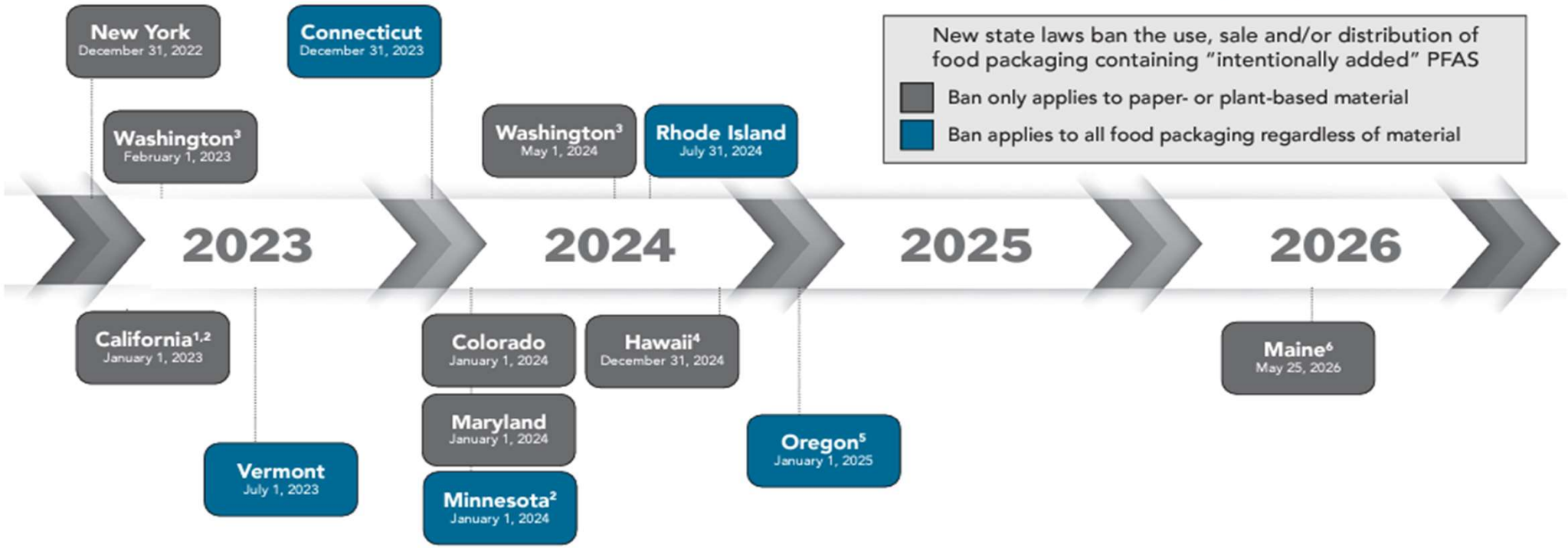
State Prohibitions on Food Packaging with Intentionally Added PFAS

Current as of May 1, 2024



1 In CA, the ban also sets a limit of 100 parts per million of total organic fluorine.
2 In CA and MN, bans apply to more than just materials intended for direct contact with any food or beverage.
3 In WA, as of May 1, 2024, the ban applies to wraps, plates, food boars, bags, sleeves, bowls, flat serviceware, open top container and closed containers.
4 In HI, beginning December 31, 2024, the ban applies to wraps, liners, plates, food boats and pizza boxes.
5 In OR, beginning January 1, 2025, the ban applies to bowls, plates, cups, lids and clamshells.
6 In ME, beginning May 25, 2026, the ban applies to bags, sleeves, bowls, clamshells, trays, plates, food boats, cones, pizza boxes, wraps and liners. The ban does not apply to manufacturers with less than $1MM in total annual national sales.

This graphic is for informational purposes only, is not a substitute for state requirements, does not constitute legal advice and should not be relied upon for compliance purposes. Please consult applicable state requirements as necessary.

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PFAS Product Bans: PFail to Plan, Plan to PFail

- Regulations will keep coming
- Look at alternative products and technologies
- Communicate with suppliers and customers
- Prepare appropriate labeling and reporting disclosures across multi-state operations
- Obtain compliance letters
- Don’t forget PR!

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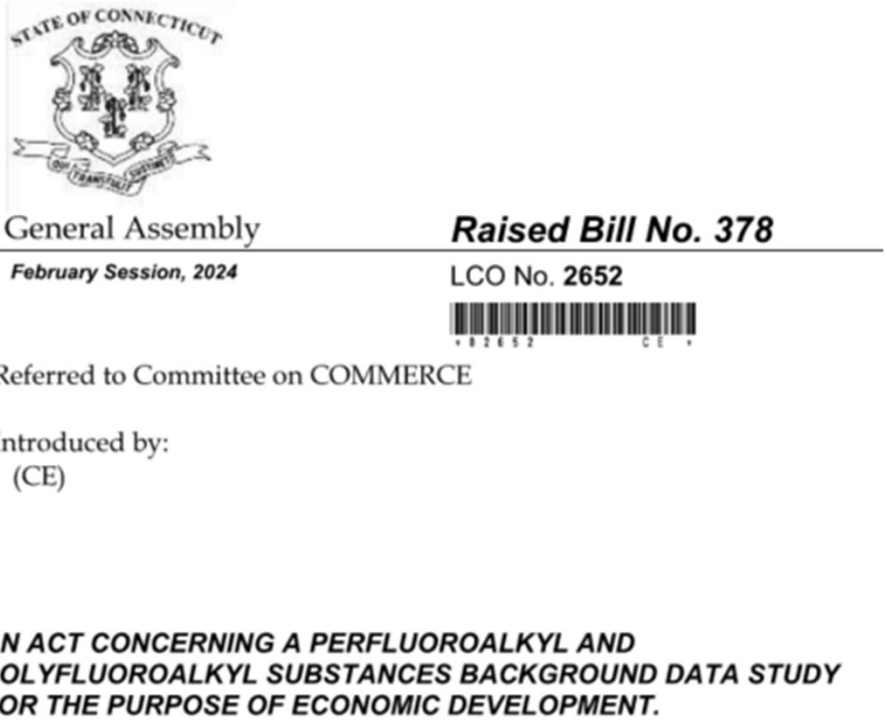
CT Regulatory Activity - CT Background Study Funding



STATE OF CONNECTICUT

General Assembly

Raised Bill No. 378

February Session, 2024

LCO No. **2652**

Referred to Committee on COMMERCE

Introduced by:
(CE)

AN ACT CONCERNING A PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES BACKGROUND DATA STUDY FOR THE PURPOSE OF ECONOMIC DEVELOPMENT.

EPOC Experts Group:

- Scope of study for state-wide PFAS background study
- $2 Million requested from legislature
- Basis for request:
  - PFAS uncertainty is impeding commerce in the State
- Commerce Committee wrote & approved bill
- Moved on to Appropriations Committee
  - Not acted on
- ARPA funding bill: $1 million allocated
- To be Administered by DECD

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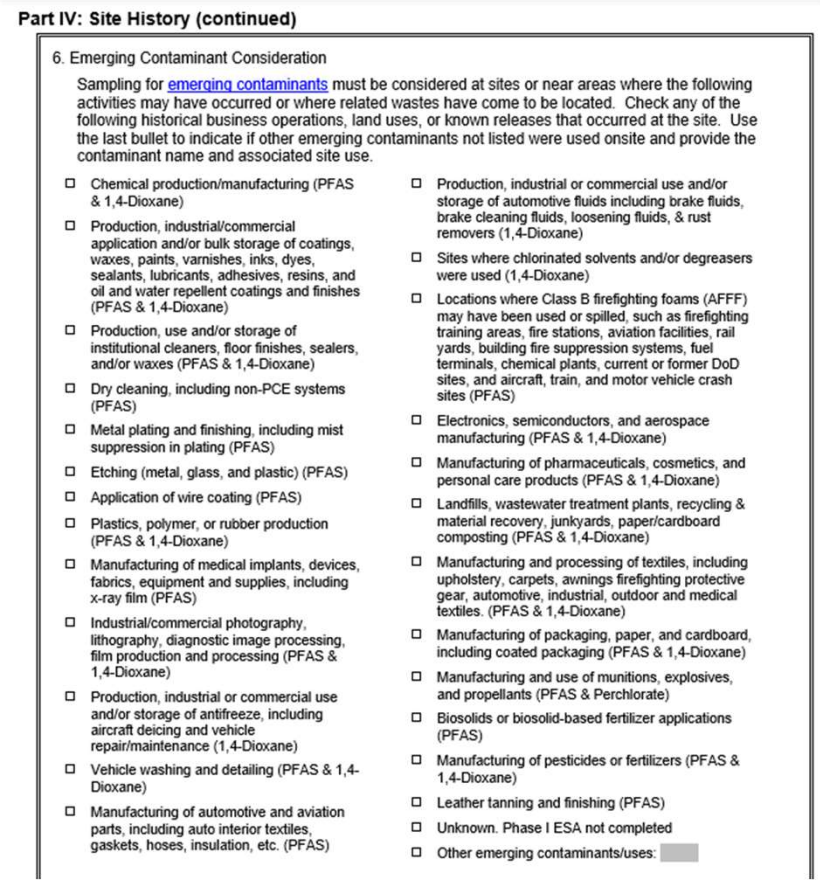
CT Regulatory Activity - DEEP Recent Activities



Part IV: Site History (continued)

6. Emerging Contaminant Consideration

Sampling for emerging contaminants must be considered at sites or near areas where the following activities may have occurred or where related wastes have come to be located. Check any of the following historical business operations, land uses, or known releases that occurred at the site. Use the last bullet to indicate if other emerging contaminants not listed were used onsite and provide the contaminant name and associated site use.

- ☐ Chemical production/manufacturing (PFAS & 1,4-Dioxane)
- ☐ Production, industrial/commercial application and/or bulk storage of coatings, waxes, paints, varnishes, inks, dyes, sealants, lubricants, adhesives, resins, and oil and water repellent coatings and finishes (PFAS & 1,4-Dioxane)
- ☐ Production, use and/or storage of institutional cleaners, floor finishes, sealers, and/or waxes (PFAS & 1,4-Dioxane)
- ☐ Dry cleaning, including non-PCE systems (PFAS)
- ☐ Metal plating and finishing, including mist suppression in plating (PFAS)
- ☐ Etching (metal, glass, and plastic) (PFAS)
- ☐ Application of wire coating (PFAS)
- ☐ Plastics, polymer, or rubber production (PFAS & 1,4-Dioxane)
- ☐ Manufacturing of medical implants, devices, fabrics, equipment and supplies, including x-ray film (PFAS)
- ☐ Industrial/commercial photography, lithography, diagnostic image processing, film production and processing (PFAS & 1,4-Dioxane)
- ☐ Production, industrial or commercial use and/or storage of antifreeze, including aircraft deicing and vehicle repair/maintenance (1,4-Dioxane)
- ☐ Vehicle washing and detailing (PFAS & 1,4-Dioxane)
- ☐ Manufacturing of automotive and aviation parts, including auto interior textiles, gaskets, hoses, insulation, etc. (PFAS)
- ☐ Production, industrial or commercial use and/or storage of automotive fluids including brake fluids, brake cleaning fluids, loosening fluids, & rust removers (1,4-Dioxane)
- ☐ Sites where chlorinated solvents and/or degreasers were used (1,4-Dioxane)
- ☐ Locations where Class B firefighting foams (AFFF) may have been used or spilled, such as firefighting training areas, fire stations, aviation facilities, rail yards, building fire suppression systems, fuel terminals, chemical plants, current or former DoD sites, and aircraft, train, and motor vehicle crash sites (PFAS)
- ☐ Electronics, semiconductors, and aerospace manufacturing (PFAS & 1,4-Dioxane)
- ☐ Manufacturing of pharmaceuticals, cosmetics, and personal care products (PFAS & 1,4-Dioxane)
- ☐ Landfills, wastewater treatment plants, recycling & material recovery, junkyards, paper/cardboard composting (PFAS & 1,4-Dioxane)
- ☐ Manufacturing and processing of textiles, including upholstery, carpets, awnings firefighting protective gear, automotive, industrial, outdoor and medical textiles. (PFAS & 1,4-Dioxane)
- ☐ Manufacturing of packaging, paper, and cardboard, including coated packaging (PFAS & 1,4-Dioxane)
- ☐ Manufacturing and use of munitions, explosives, and propellants (PFAS & Perchlorate)
- ☐ Biosolids or biosolid-based fertilizer applications (PFAS)
- ☐ Manufacturing of pesticides or fertilizers (PFAS & 1,4-Dioxane)
- ☐ Leather tanning and finishing (PFAS)
- ☐ Unknown. Phase I ESA not completed
- ☐ Other emerging contaminants/uses:

Emerging contaminant sources (ECAF)

Verification Audits

- DEEP notified EPOC Summer 2023
- Site Reopeners

Additional polluting substances

- Still a work in progress

Willingness to meet

- Discuss site-specific circumstances

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CT Regulatory Activity - Department of Public Health

Chemical Contaminant	Abbreviation(s)	CT Action Level (ng/L, ppt)	Analytical Method	Date of Revision
6:2 chloropolyfluoroether sulfonic acid1	6:2 Cl-PFESA or F-53B major	2	EPA 533 or 537.1	2023
8:2 chloropolyfluoroether sulfonic acid1	8:2 Cl-PFESA or F-53B minor	5	EPA 533 or 537.1	2023
Hexafluoropropylene oxide-dimer acid	HFPO-DA; GenX	19	EPA 533 or 537.1	2023
Perfluorobutane sulfonic acid	PFBS	760	EPA 533 or 537.1	2023
Perfluorobutanoic acid	PFBA	1800	EPA 533	2023
Perfluorohexane sulfonic acid	PFHxS	49	EPA 533 or 537.1	2022
Perfluorohexanoic acid	PFHxA	240	EPA 533 or 537.1	2023
Perfluorooctane sulfonic acid	PFOS	10	EPA 533 or 537.1	2022
Perfluorooctanoic acid	PFOA	16	EPA 533 or 537.1	2022
Perfluorononanoic acid	PFNA	12	EPA 533 or 537.1	2022

Drinking Water Action Levels

- 4 in 2022, 6 in 2023
- Method 533 includes all 10
- Reconcile with MCLs

UCMR 5 Sampling:

- Underway
- To date, 22 systems complete
- 10 with PFAS > MCLs

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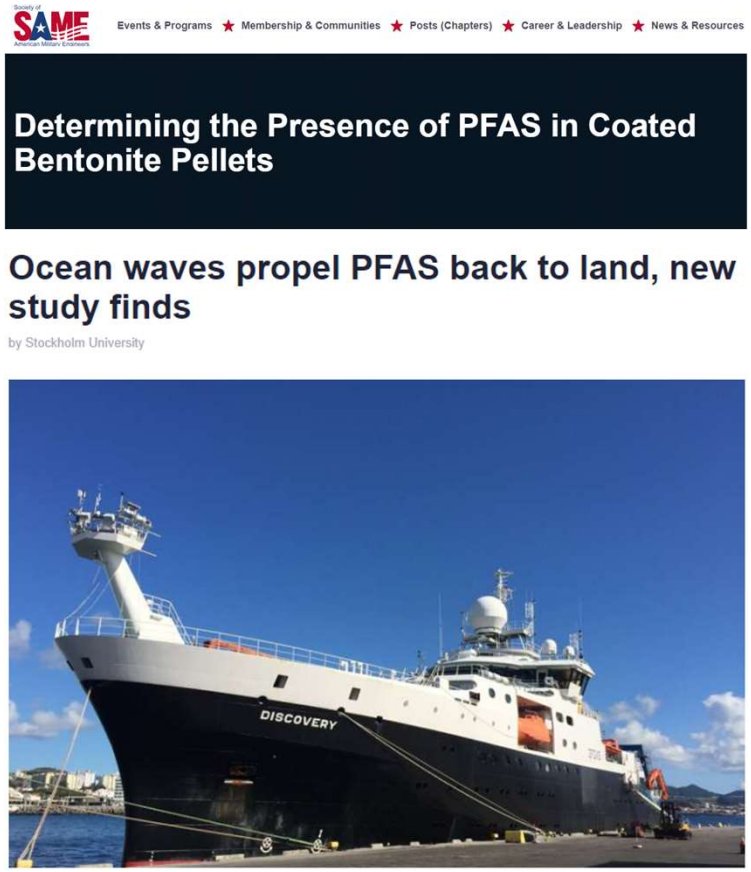
An LEP Perspective on PFAS



PFAS in bentonite?

- Bentonite used in monitoring well construction….
- Present but not at elevated concentrations

Fate & transport, look in capillary fringe!

- PFAS unique: one end likes water the other does not
- Source: Aeriation from wave action?

Is cross contamination an urban legend or real?

- Blank data suggests no, if precautions are taken

Impacts of turbidity

- Like metals?
- PFAS could bind to suspended sediment?

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A Legal Perspective on PFAS

- Definition of PFAS
  - Varies by regulatory program and agency
- Litigation risk/avoidance (non-compliance vs. negligence)
  - 3M & Dupont
  - Firefighter gear
  - Food products

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A Legal Perspective on PFAS

- Risk Management Assessments
  - Inputs and Outputs
    - Similar to a SWOT analysis to understand where can hurt the business and how to manage the ris
      - Soil/groundwater contamination, drinking water, product liability, worker exposure, customer contracts, brand damage

  - Insurance – customize environmental insurance to satisfy your needs
    - Pollution -- Cleanup (remediation) v. BI/PD, General Liability

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Example RMP - Partnering Consultant + Legal

- Multistate agricultural/food company
- Engaged specialized EH&S consultant through counsel
- Evaluated farming, transportation and manufacturing/processing operations
- Prepared robust technical and legal risk management plan to document client-specific PFAS risks by module
- Prepared responsive sampling plan to guide the client and its consultant in the event of an urgent need to sample products and/or raw materials for PFAS
- Prepared "holding statement" for potential PR issues
- "Living documents"
- Briefed the C-Suite
- Assisted with supply chain diligence and contract enhancements

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Thank You

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BREAKOUT B

New England Power Grid Outlook

Kerry Schlichting | ISO New England

JUNE 6, 2024 – ROCKY HILL, CT

ISO New England Power Grid Outlook

CBIA 2024 Energy & Environment Conference

Kerry Schlichting

LEAD STATE POLICY ADVISOR, EXTERNAL AFFAIRS

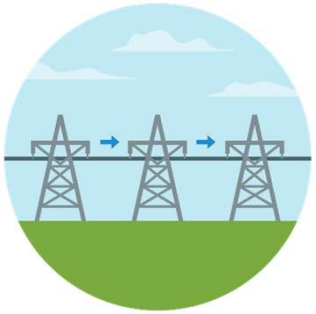
ISO New England (ISO) Has More Than Two Decades of Experience Overseeing the Region's Restructured Electric Power System

- **Regulated** by the Federal Energy Regulatory Commission
- **Reliability Coordinator** for New England under the North American Electric Reliability Corporation
- **Independent** of companies in the marketplace and **neutral** on technology

ISO New England Performs Three Critical Roles to Ensure Reliable Electricity at Competitive Prices

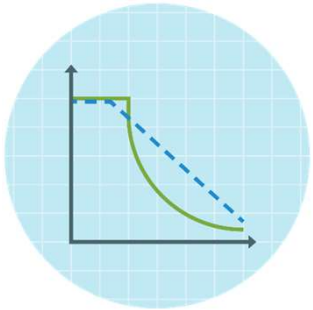
Grid Operation

Coordinate and direct the flow of electricity over the region's high-voltage transmission system



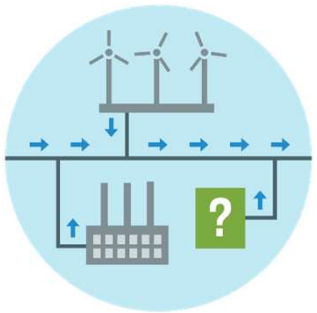
Market Administration

Design, run, and oversee the markets where wholesale electricity is bought and sold



Power System Planning

Study, analyze, and plan to make sure New England's electricity needs will be met over the next 10 years



Things We Don't Do

Handle retail electricity

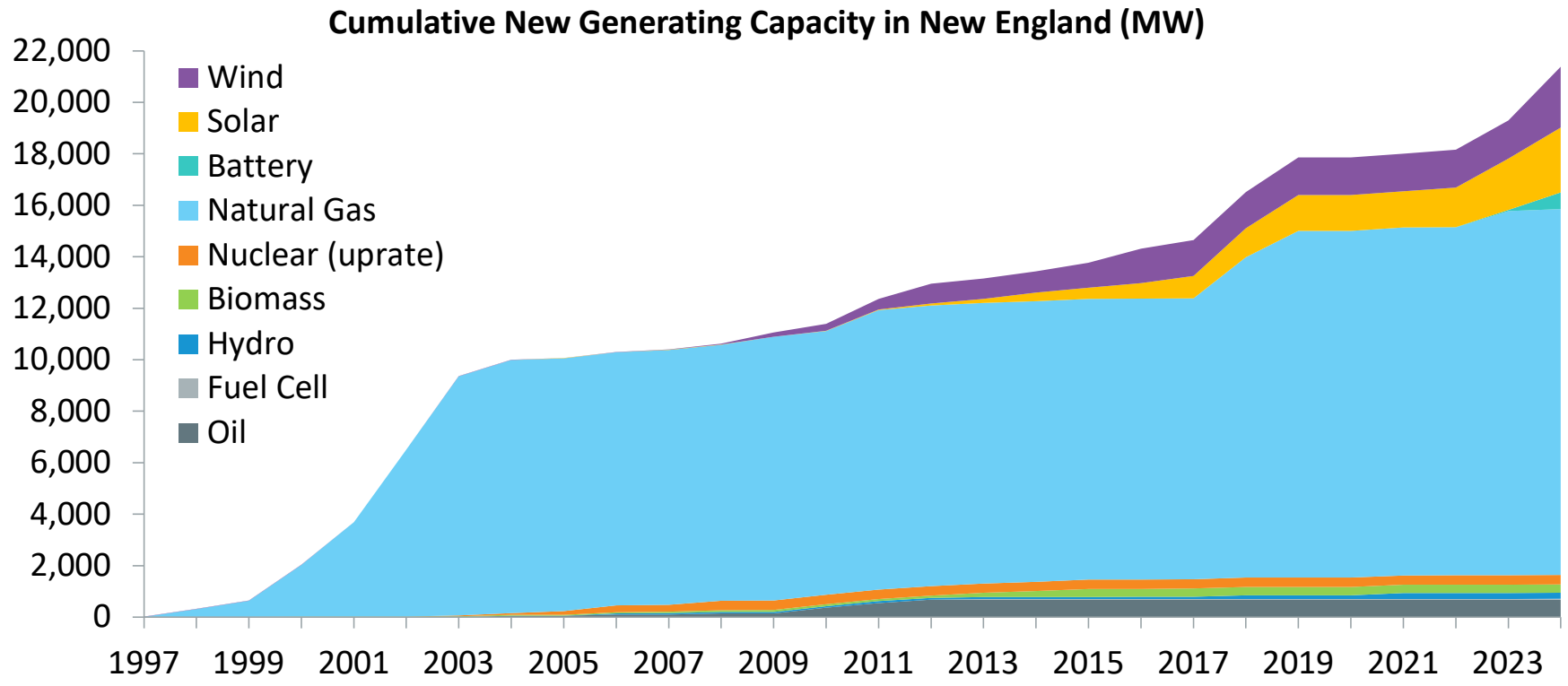
Own power grid infrastructure

Have a stake in companies that own grid infrastructure

Have jurisdiction over fuel infrastructure

Have control over siting decisions

Wind and Solar Have Emerged as the Most Recent Capacity Additions to the System

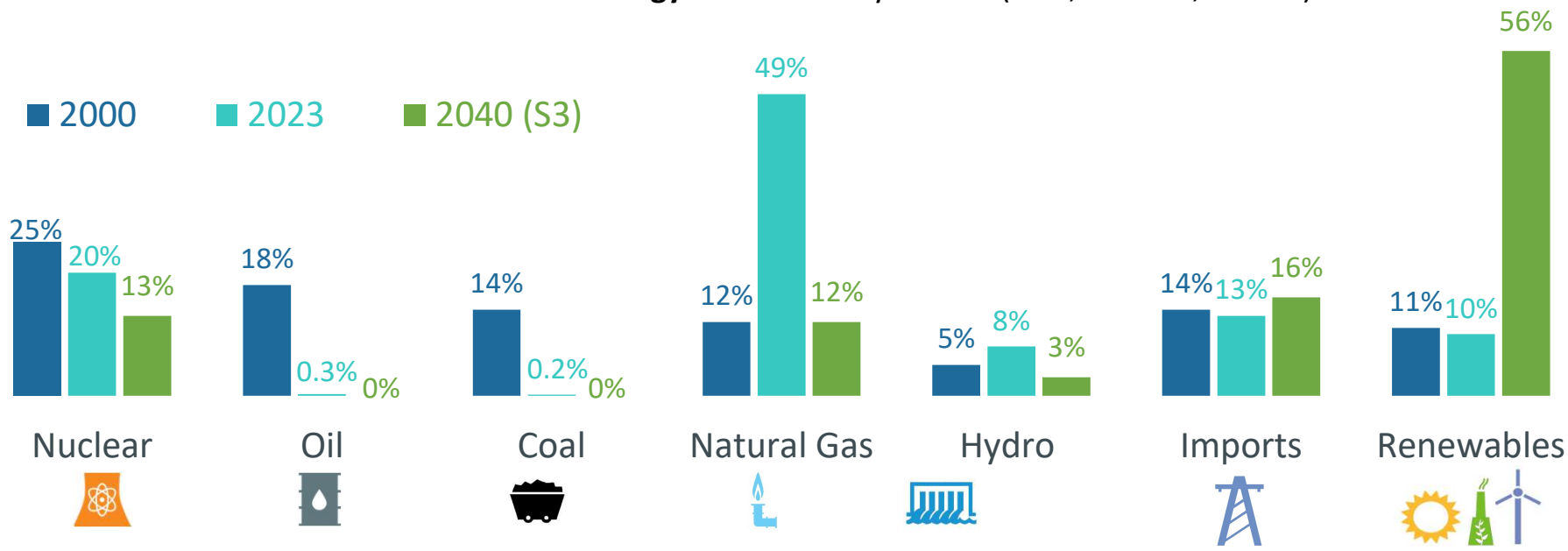


Note: New generating capacity for years 2021 – 2024 includes resources clearing in recent Forward Capacity Auctions.

Dramatic Changes in the Energy Mix

New England made a major shift from coal and oil to natural gas over the past two decades, and is shifting to renewable energy in the coming decades

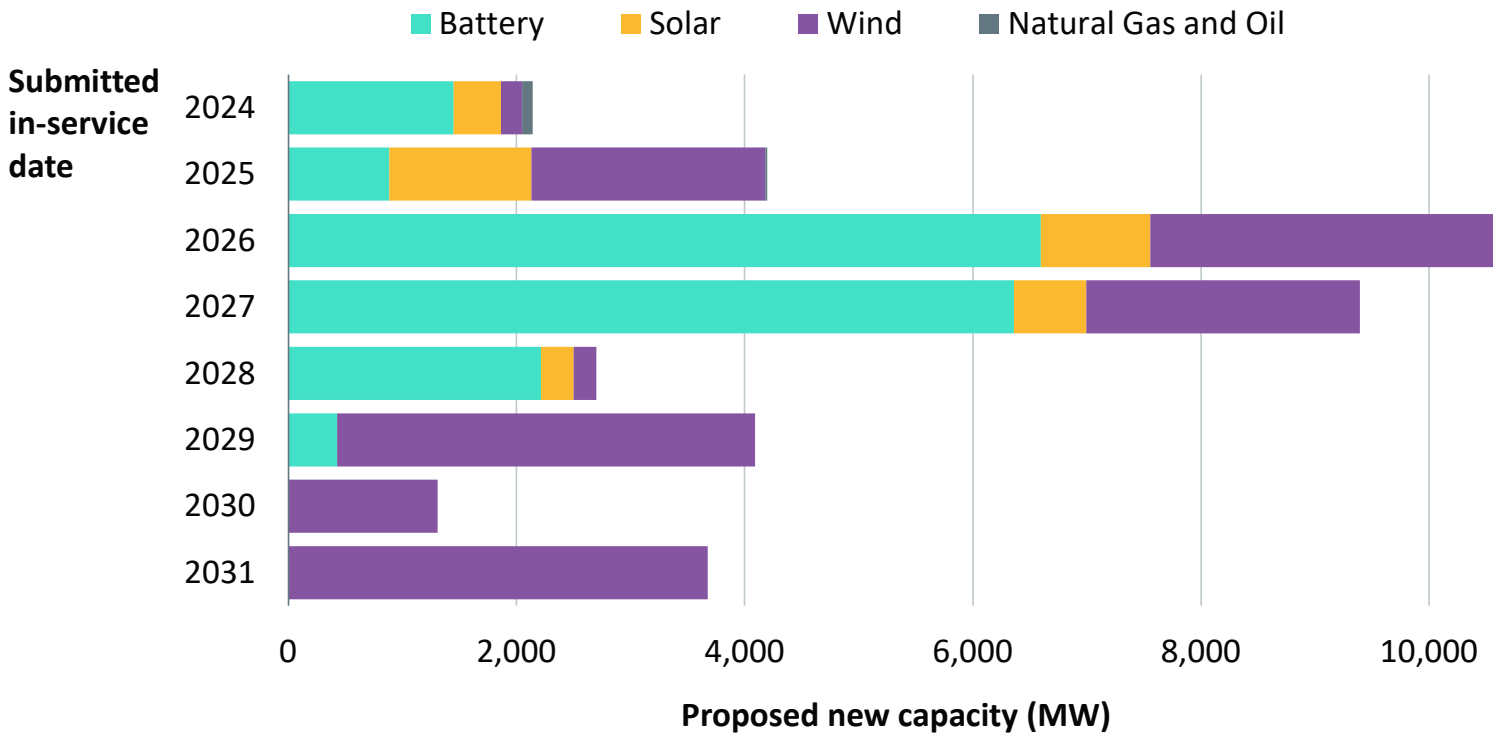
Percent of Total **Electric Energy** Production by Source (Past, Present, Future)



Source: ISO New England Net Energy and Peak Load by Source; data for 2023 is preliminary and subject to resettlement; data for 2040 is based on Scenario 3 of the ISO New England 2021 Economic Study: Future Grid Reliability Study Phase 1. Renewables include landfill gas, biomass, other biomass gas, wind, grid-scale solar, behind-the-meter solar, municipal solid waste, and miscellaneous fuels.

Batteries, Wind Dominate Interconnection Queue Requests

ISO's Queue reflects more than 200 proposed projects of which over 6,000 MWs have signed interconnection agreements but are not yet commercially operational



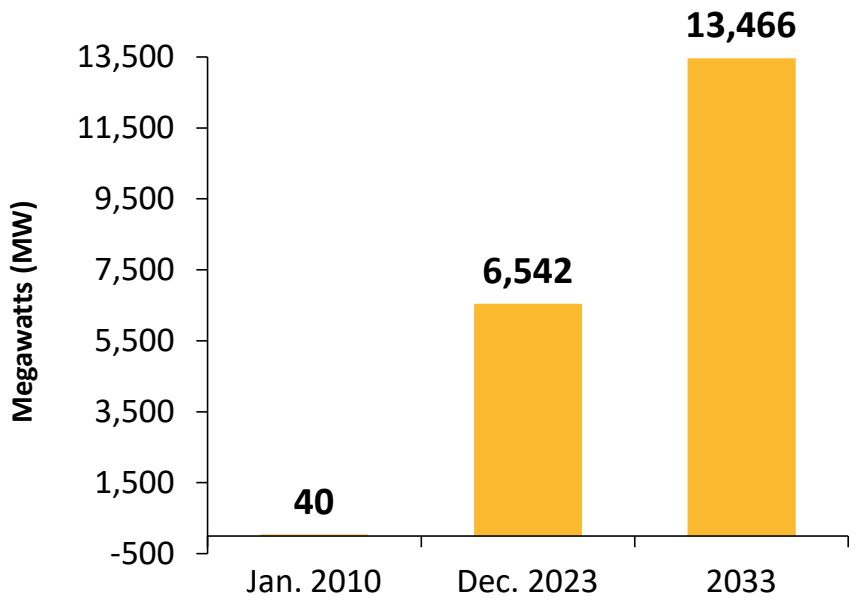
Source: ISO Generator Interconnection Queue, FERC Jurisdictional Proposals (updated May 2024)

ISO New England Forecasts Strong Growth in Solar Photovoltaic (PV) Resources

Dec. 2023 Solar PV Installed Capacity (MW_{ac})

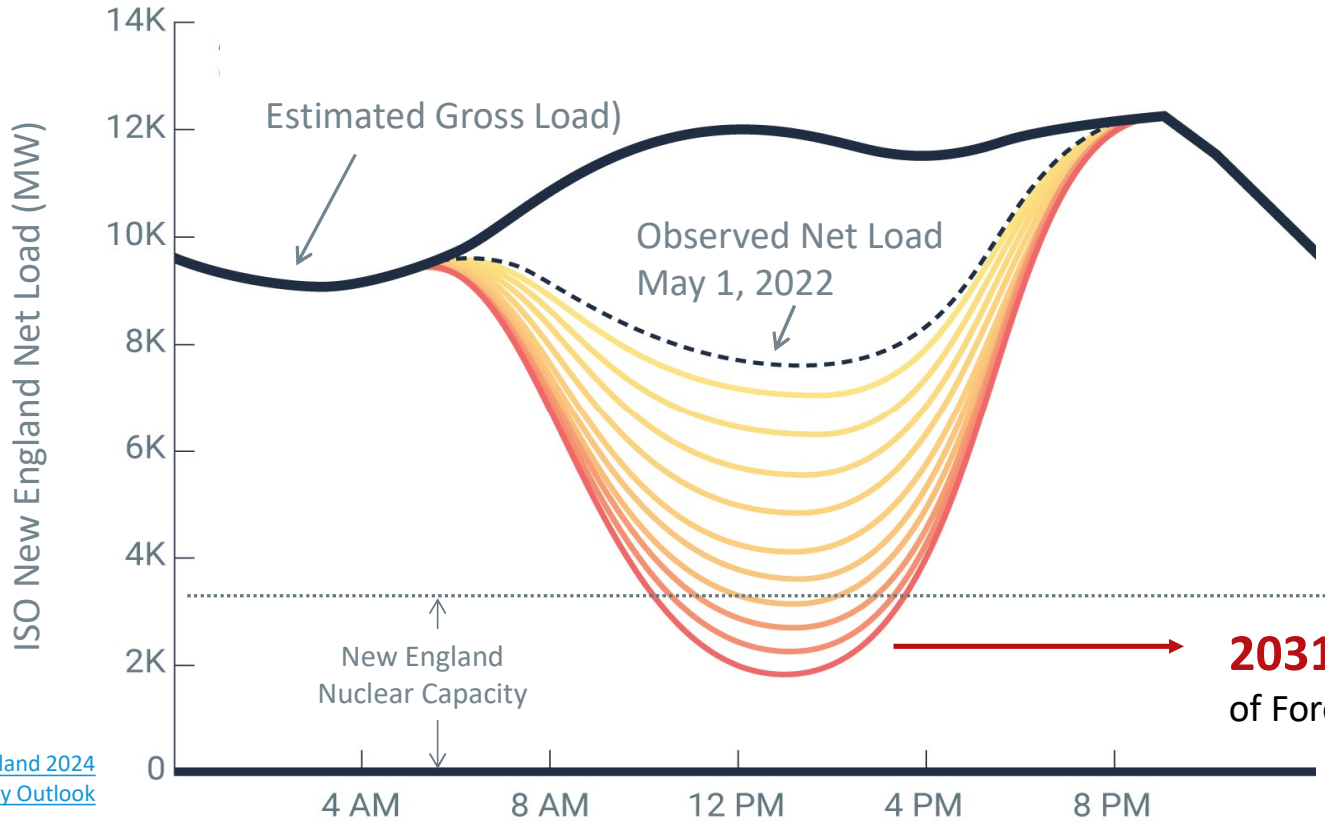
State	Installed Capacity (MW_{ac})	No. of Installations
Connecticut	1,091	91,290
Massachusetts	3,712	179,362
Maine	588	11,506
New Hampshire	244	21,234
Rhode Island	400	22,769
Vermont	507	21,179
New England	**6,542**	**347,341**

Cumulative Growth in Solar PV through 2033 (MW_{ac})



Note: The bar chart reflects the ISO's projections for nameplate capacity from PV resources participating in the region's wholesale electricity markets, as well as those connected "behind the meter." The forecast does not include forward-looking PV projects > 5 MW in nameplate capacity Source: ISO New England 2024-2033 Forecast Report of Capacity, Energy, Loads, and Transmission (CELT) Report and 2024 Photovoltaic (PV) Forecast

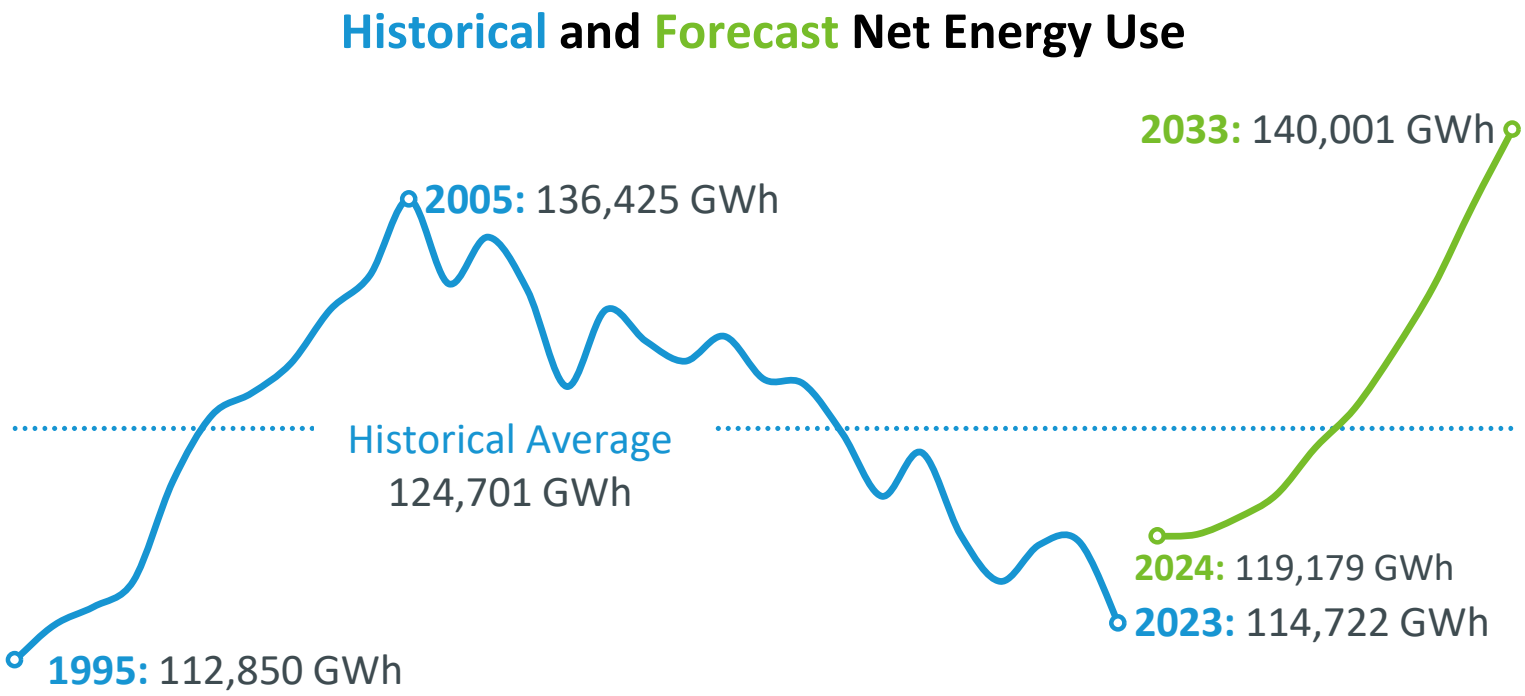
Lower Net Loads with Increasing Levels of Behind-the-Meter Solar and Distributed Energy Resources (DERs)



2031: 11,520 MW
of Forecasted DERs

Source: ISO New England 2024 Regional Electricity Outlook

Increased Electrification is Expected to Drive Steady Growth in Net Annual Energy Use



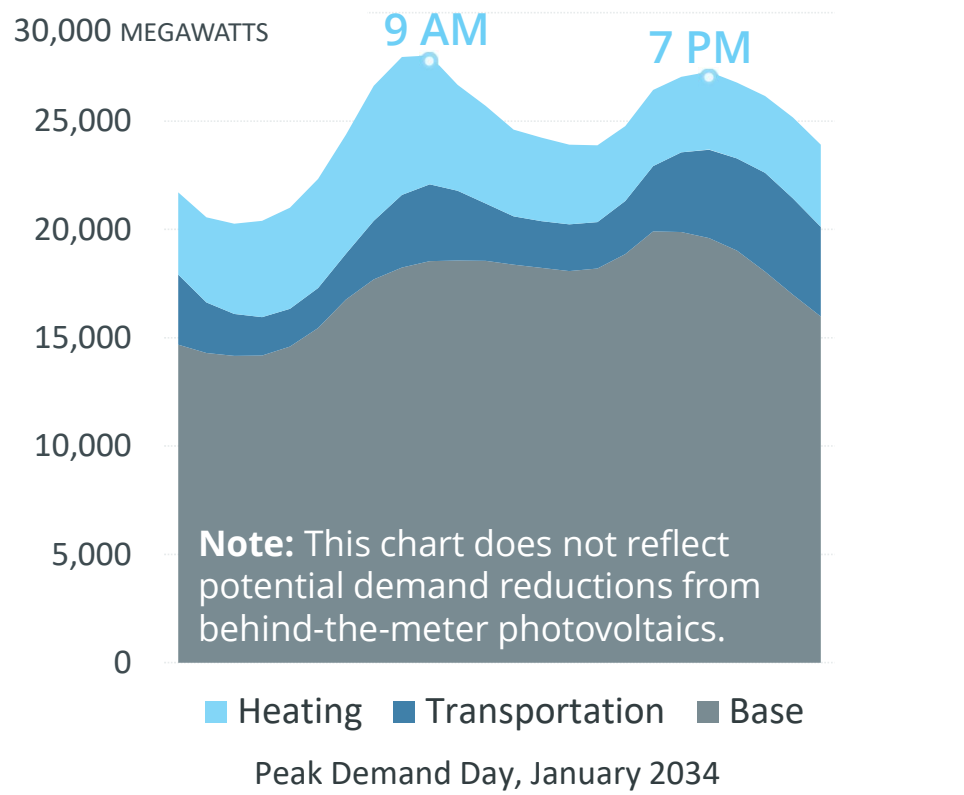
Source: ISO New England 2024-2033 Forecast Report of Capacity, Energy, Loads, and Transmission (2024 CELT) Report

Heating Electrification Will Drive Higher Energy Use and Shift System Peak

By winter 2033/2034, heating will represent **13%** of the winter peak and **6%** of total annual energy use

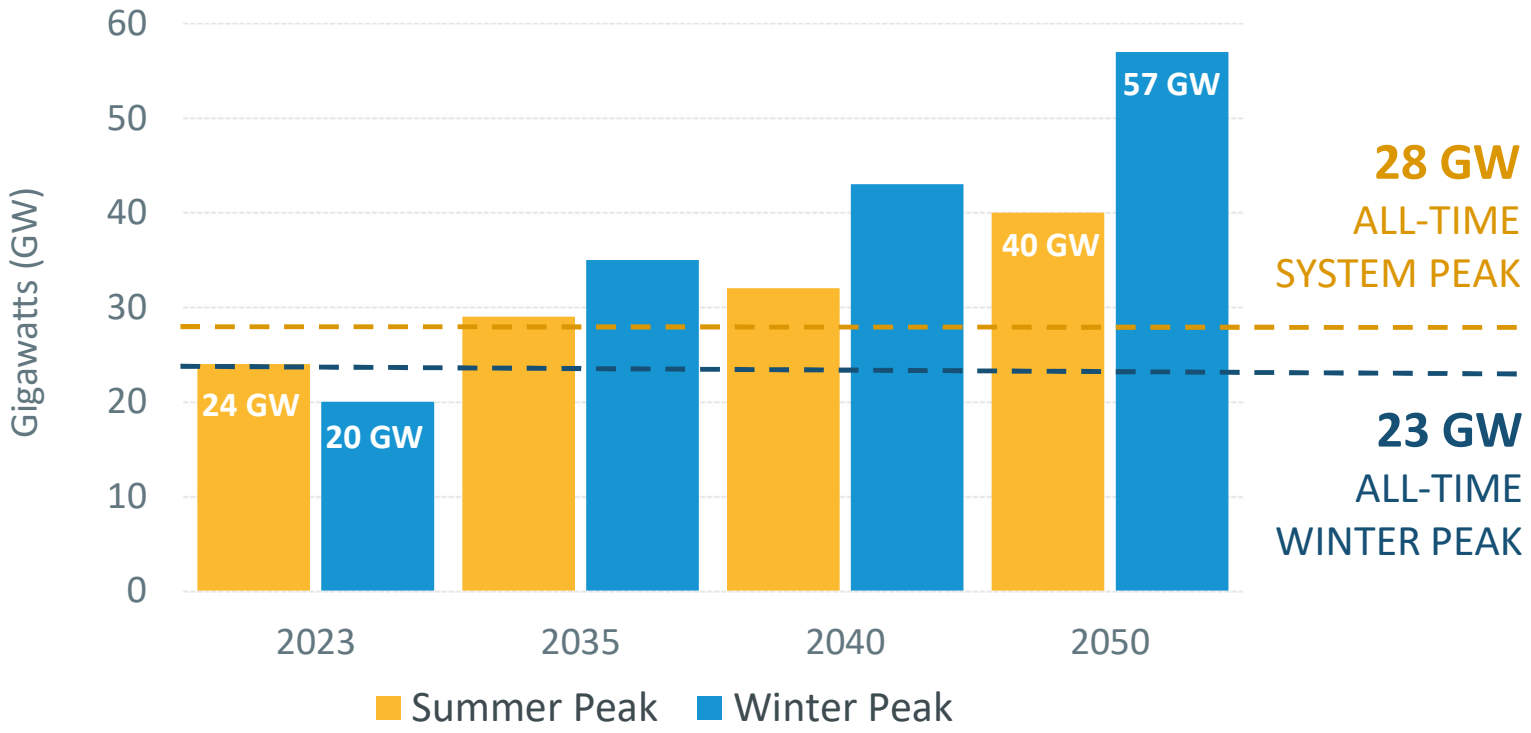
Heating electrification leads to a new morning peak **700 MW higher** than the evening peak

Impact of Electrification on Hourly Demand



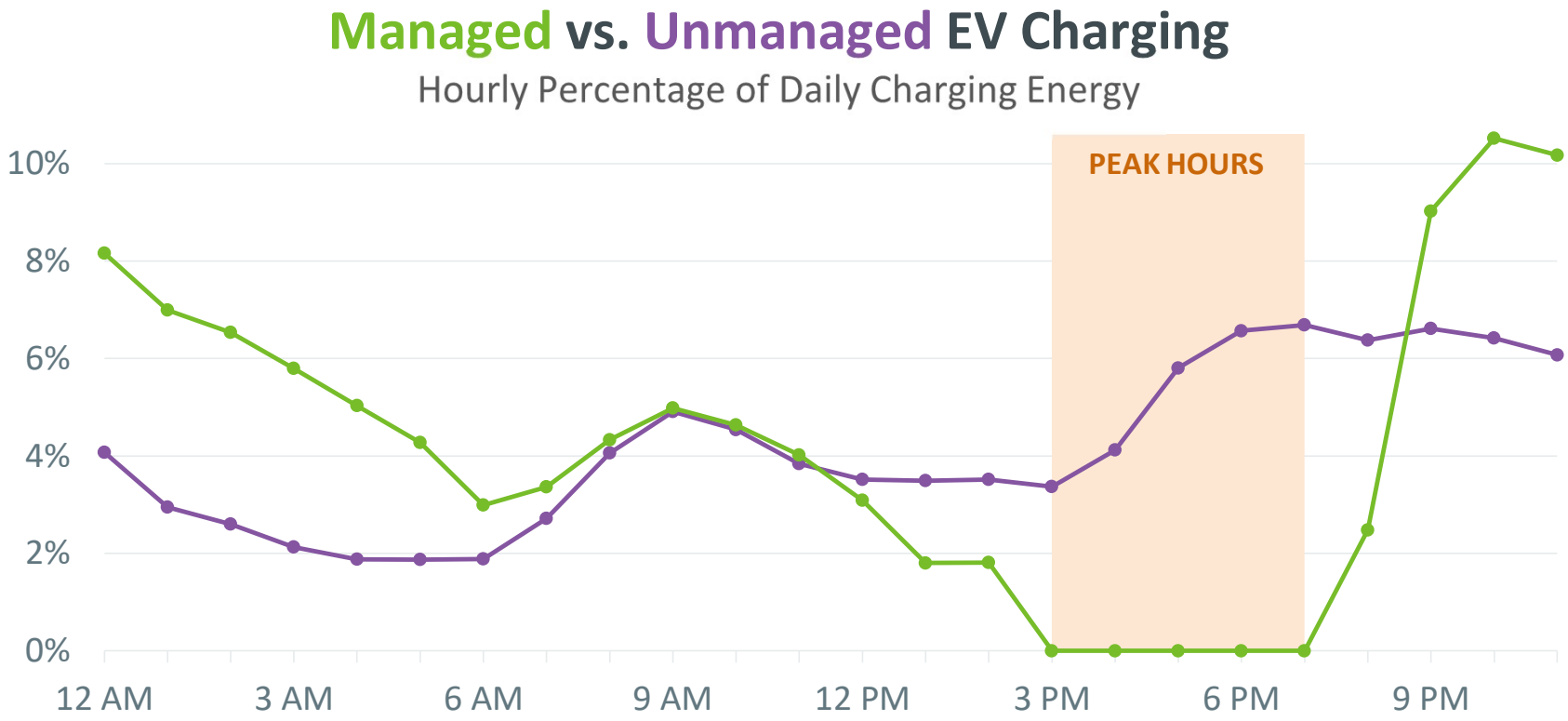
Source: ISO New England 2024-2033 Forecast Report of Capacity, Energy, Loads, and Transmission (2024 CELT) Report

Significant Demand Growth as System Peak Shifts to Winter



Source: Massachusetts Energy Pathways to Deep Decarbonization study and ISO New England 2050 Transmission Study

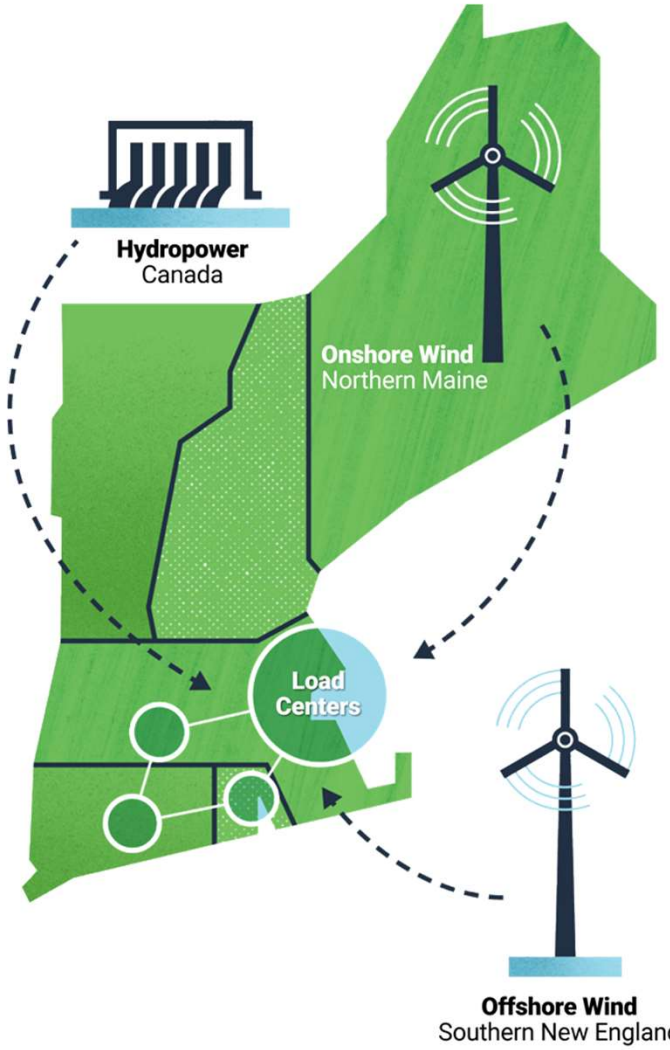
Managed EV Charging Can Shift Load to Times When Demand and Wholesale Prices are Lower



Source: [ISO New England 2024-2033 Forecast Report of Capacity, Energy, Loads, and Transmission (2024 CELT) Report]

Significant Investment in New and Existing Infrastructure will be Critical to Enabling the Clean Energy Transition

$620 million to **$1 billion** in transmission reliability investment will be needed **each year through 2050** to support the clean energy transition



Source: Massachusetts Energy Pathways to Deep Decarbonization study and ISO New England 2050 Transmission Study

There Are Four Pillars Necessary to Support a Successful Clean Energy Transition

PILLAR ONE

Clean Energy

Significant amounts of clean energy to power the economy with a greener grid

PILLAR TWO

Balancing Resources

Resources that can supply electricity, reduce demand, or provide other services to maintain power system equilibrium

PILLAR THREE

Energy Adequacy

A dependable energy supply chain and/or a robust energy reserve to manage through extended periods of severe weather or energy supply constraints

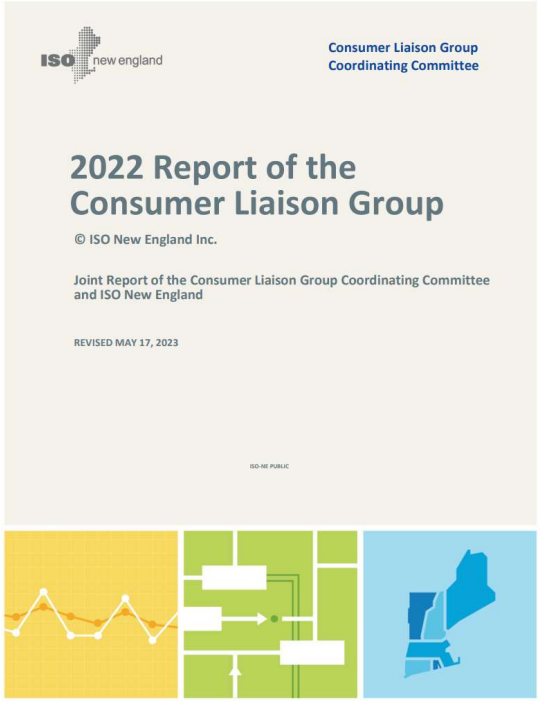
PILLAR FOUR

Robust Transmission

To integrate renewable resources and move clean energy to consumers across New England

Consumer Liaison Group Provides a Forum for Consumers to Learn about Regional Electricity Issues

- A forum for sharing information between the ISO and electricity consumers in New England
- The CLG Coordinating Committee consists of 12 members who represent various stakeholder groups
- Quarterly meetings are free and open to the public, with in-person and virtual options to participate
- Upcoming 2024 CLG Meeting Dates:
  - Thursday, September 12
  - Wednesday, December 4



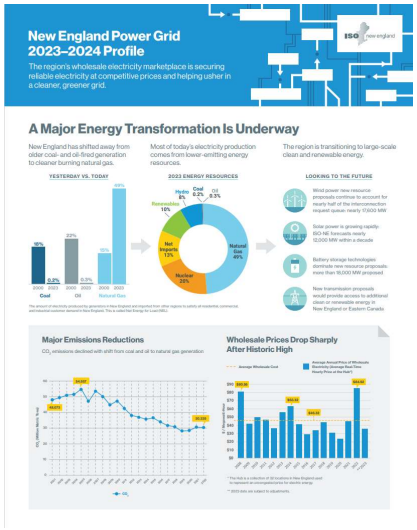
2022 CLG Annual Report

More information on the CLG is available at: https://www.iso-ne.com/committees/industry-collaborations/consumer-liaison/

ISO New England Releases Several Publications

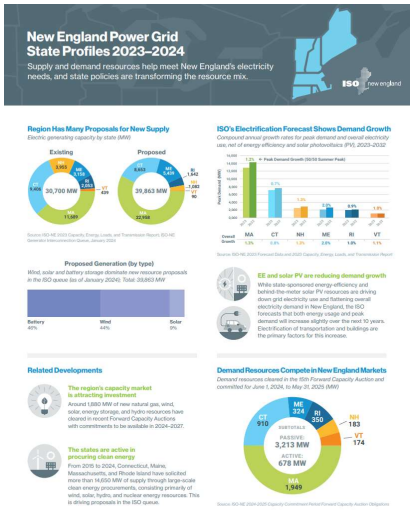
[2024 Regional Electricity Outlook]

Provides an in-depth look at New England's biggest challenges to power system reliability, the solutions the region is pursuing, and other ISO New England efforts to improve services and performance



[New England Power Grid Profile]

Provides key grid and market stats on how New England's wholesale electricity markets are securing reliable electricity at competitive prices and helping usher in a cleaner, greener grid



[New England State Profiles]

Provides state-specific facts and figures relating to supply and demand resources tied into the New England electric grid and state policies transforming the resource mix in the region

Questions