



# GOVERNOR'S Energy Office

Dan Burgess, Director



An aerial photograph of a vast forest with trees in various shades of green, yellow, and orange, indicating autumn. In the background, a ridge of hills is visible, topped with several white wind turbines. The sky is a mix of blue and white clouds, suggesting a clear day. A semi-transparent white box is overlaid on the upper half of the image, containing text.

The GEO website includes information on key energy initiatives, heating fuel prices, latest news, upcoming public meetings, stakeholder group information, studies, a contact form, other relevant resources.

[www.maine.gov/energy](http://www.maine.gov/energy)

# Governor's Energy Office (GEO)

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## Funding

- **U.S. Department of Energy, State Energy Program (SEP)**
  - Funding and technical assistance to states, territories, and the District of Columbia to enhance energy security, advance state-led energy initiatives, and maximize the benefits of decreasing energy waste.
- **General Fund Appropriation**
- **Maine Jobs & Recovery Plan (ARPA)**
- **Efficiency Maine Trust**
- **Other Grants and Awards**



GOVERNOR'S  
Energy Office



Completed  
Studies, Working Groups and  
Analysis

A FOUR-YEAR PLAN FOR CLIMATE ACTION



**MAINE**

WON'T WAIT

DECEMBER 2020

MAINE CLIMATE COUNCIL

# Maine's 8 Climate Action Strategies



**A.** Embrace the Future of Transportation in Maine



**D.** Grow Maine's Clean Energy Economy and Good Jobs



**G.** Invest in Climate-Ready Infrastructure



**B.** Modernize Maine's Buildings



**E.** Protect Maine's Environment and Working Lands and Waters, Increase Carbon Sequestration



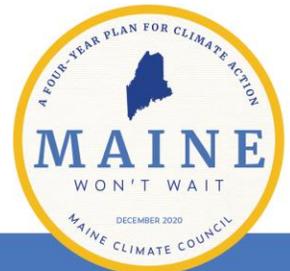
**H.** Engage People and Communities in Climate Impacts and Program Opportunities



**C.** Reduce Carbon Emissions the Energy and Industrial Sectors through Clean Energy Innovation

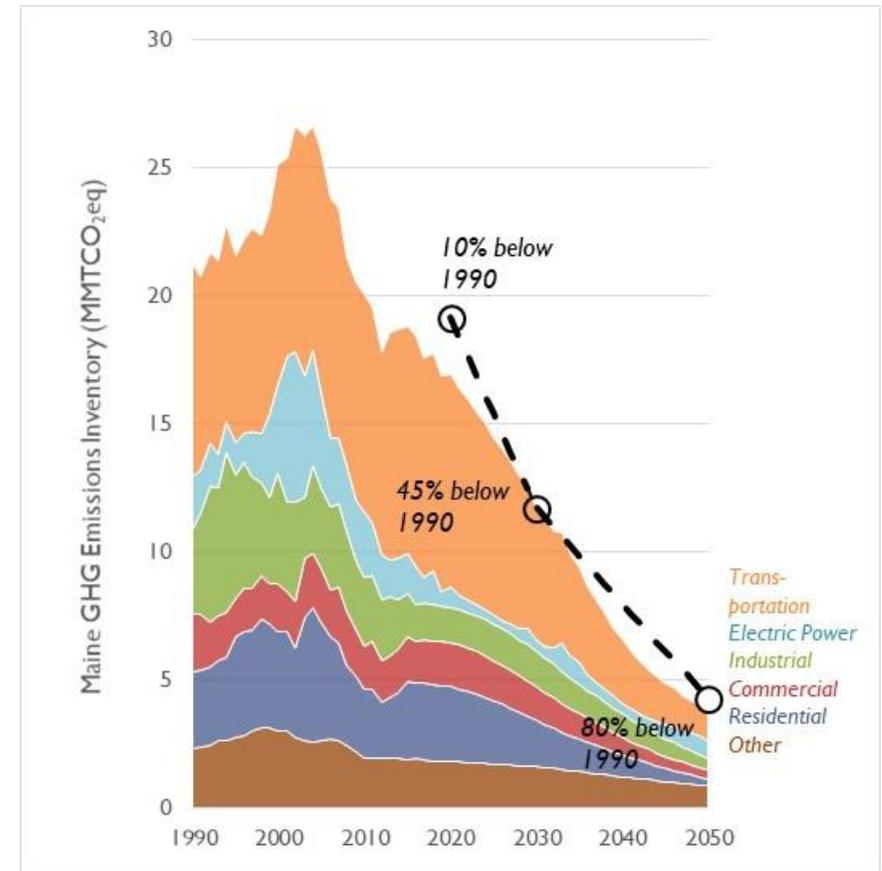


**F.** Build Healthy and Resilient Communities



# Potential Emission Reduction Pathway

Metric	2030 Outcome
Number of EVs or equivalent clean cars	219,271
EV Share of New Light-Duty Vehicle Sales	85%
Clean/EV Share of New Heavy-Duty Sales	4%
Renewable Energy on Maine's Electricity Grid	80%
Homes weatherized	40,000
Reduction in Light-Duty VMT per Vehicle	20%
Number of Households with Retrofit Heat Pumps (installed after 2018)	130,419
Number of Households with Whole Home Heat Pump Systems	115,636



# Maine Climate Council - Implementation

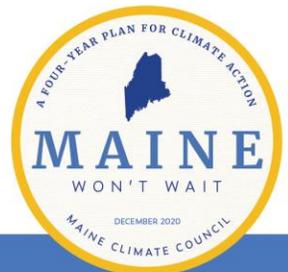
The Maine Climate Council continues to monitor progress and implementation of the recommendations from the *Climate Action Plan – Maine Won't Wait*, released in December 2020.

The Climate Council is required to meet quarterly and working groups are required to meet twice per year.

**The next Maine Climate Council quarterly meeting is December 1<sup>st</sup>.**

**Learn More and Register for Meetings at:**

<https://www.maine.gov/future/initiatives/climate/climate-council>



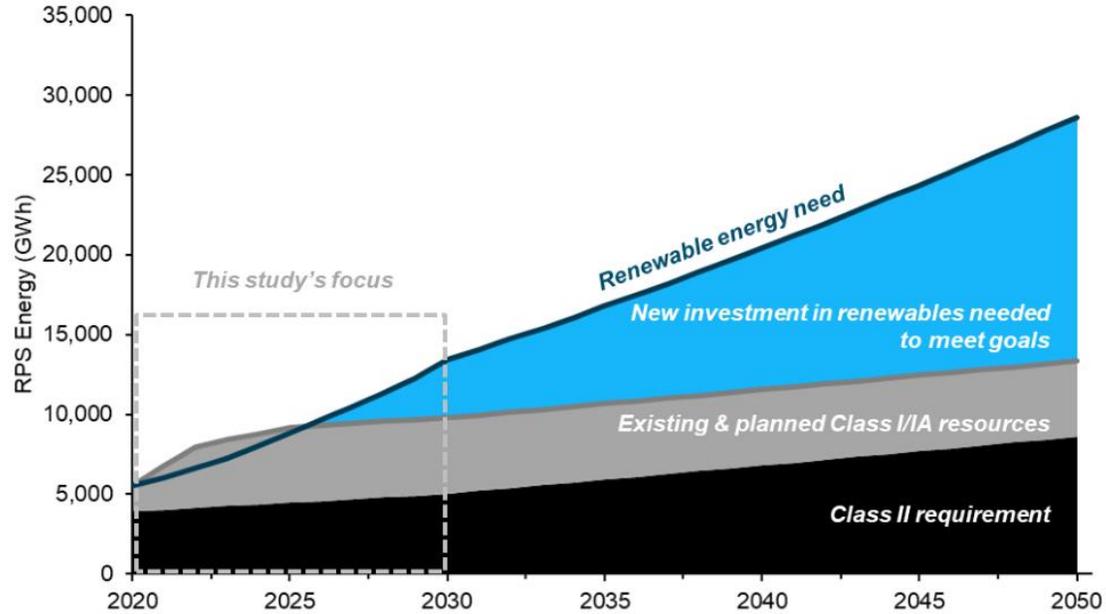
# Renewable Energy Market Assessment

Per Statute (P.L. 2019, Chapter 477) the GEO prepared a ten-year Renewable Energy Goals Market Assessment. This study, completed in 2021, provides information and assesses the renewable energy market and pathways for Maine to meet the state's clean energy requirements.

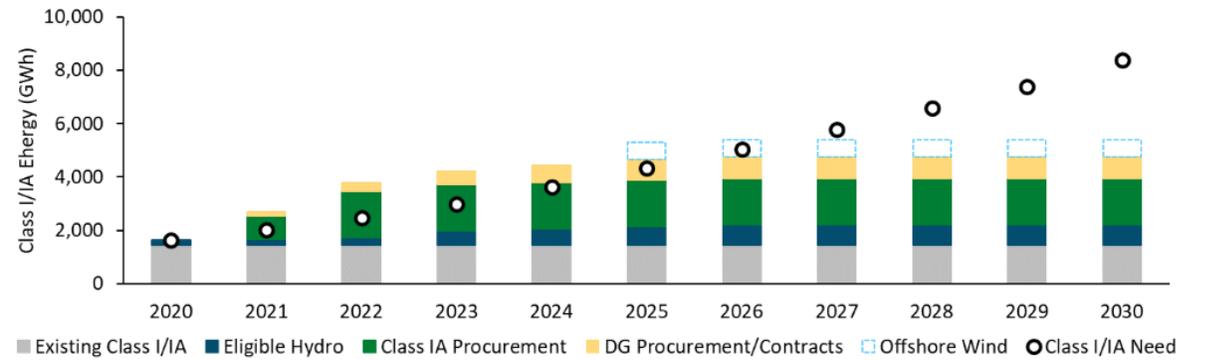
## Key Findings:

- Maine has multiple pathways to meet its RPS
- Maine is on track to meet its near-term RPS through 2026; new resources will need to be online to meet increasing goals thereafter
- Transmission will be a key driver of renewable development (2020 stakeholder report)
- Storage paired with solar provides value to Maine's grid
- A technology diverse portfolio helps lower risk
- Regional coordination on building transmission can help lower the costs of meeting Maine's RPS
- Energy equity considerations cut across four dimensions: resource diversity, customer-sited resources, geographic resource distribution, and cost.

# Renewable Energy Market Assessment



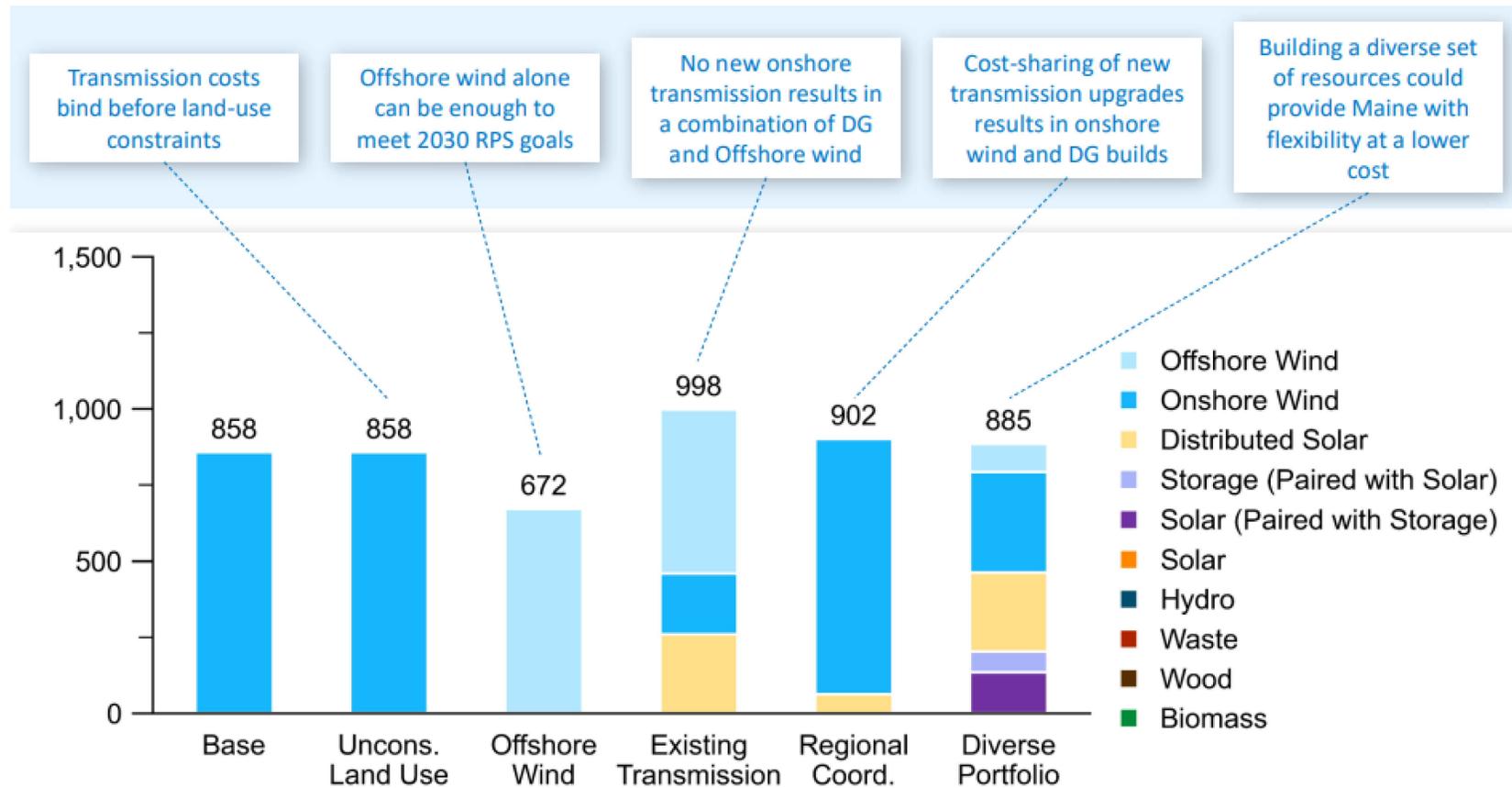
Class I/IA REC need through 2030



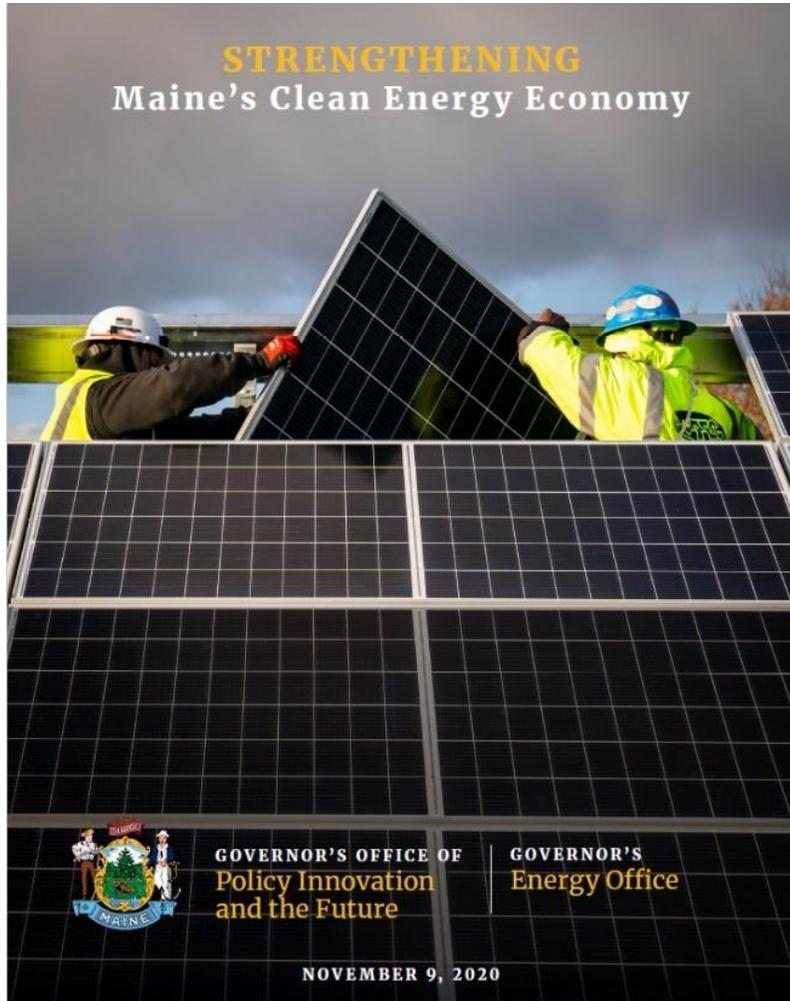
# Renewable Energy Market Assessment

## Portfolio Comparison: 2030 Resources

- The scenarios highlight a diversity of approaches to allow Maine to meet its renewable energy requirements by 2030



# Strengthening Maine's Clean Energy Economy



*Strengthening Maine's Clean Energy Economy*, published in November of 2020, is a detailed analysis of the momentum within Maine's clean energy economy, and how the sector is emerging as a source of economic growth and workforce opportunities

# Leading By Example

In November 2019, Governor Mills signed an Executive Order Directing State Government to Lead By Example in Embracing Energy Efficiency & Renewable Energy Measures.

- Investing in energy efficiency, renewable energy, and emissions reductions
- Promoting health and sustainability in the workplace
- Building resilient infrastructure
- Reduce waste
- Promote employee health
- Increase operational efficiency and seek cost efficiencies



State Government operations will strive to equal or exceed Maine's emission reduction targets and seek cost efficiencies.

Led by the Department of Administrative and Financial Services (DAFS) in coordination with a Committee convened by the GEO and GOPIF.

First report released in March 2021 and must be updated every two years.



Ongoing  
Studies, Working Groups and  
Analysis

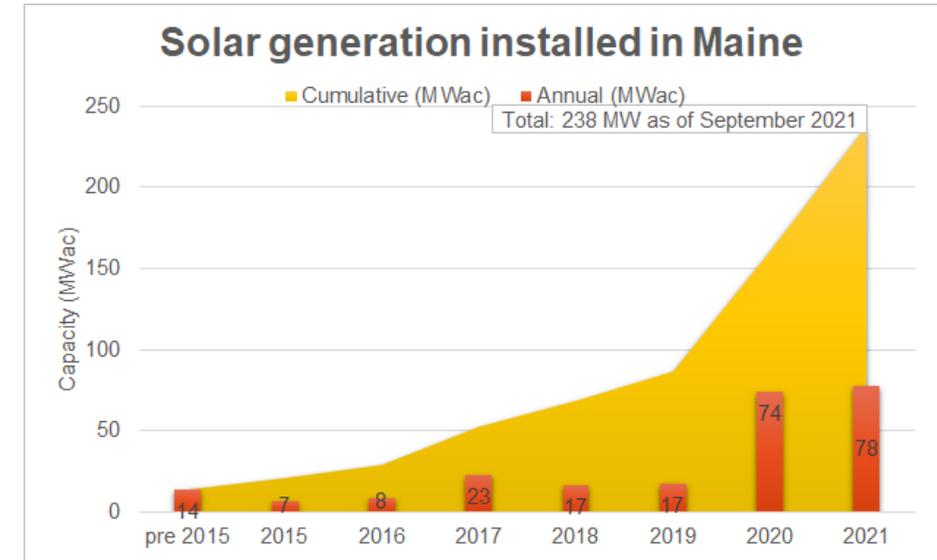
# Distributed Generation Stakeholder Group

The GEO, pursuant to LD 936 as enacted by the Legislature, is convening this stakeholder group to issue recommendations that support continued development of renewable energy in Maine through cost-effective distributed generation.

Per LD 936, the charge of this stakeholder group is to “consider various distributed generation project programs to be implemented between 2024 and 2028 and the need for improved grid planning.”

*“How the State should undertake the adoption and implementation of a forward looking, holistic grid planning process that allows for input from stakeholders and provides key actors with the ability to more strategically make system operations, planning and investment decisions;”*

**Initial Report - January 2022; Final Report - January 2023**



Public comments can be sent to GEO Energy Policy Analyst, Ethan Tremblay, [ethan.tremblay@maine.gov](mailto:ethan.tremblay@maine.gov)

# Agricultural Solar Stakeholder Group

The Agricultural Solar Stakeholder group was recommended by Maine Won't Wait, Maine's Four-Year Climate Action Plan. Consistent with this recommendation and acknowledging the rapid growth of solar energy taking place in the wake of other recent policy changes, the Agricultural Solar Stakeholder Group is specifically focused on assessing the potential impact of solar development on Maine's prime farmland and soils of statewide importance.

Beginning in June 2021, this stakeholder group has been meeting monthly to advance its purpose, with a target of delivering an initial report to the Department of Agriculture, Conservation and Forestry and the Governor's Energy Office by December.

Announcements and future stakeholder meetings on the DACF and GEO websites.

**Goal of Initial Report Delivery to DACF & GEO by December 2021**

# Energy Storage

In June 2021, Governor Mills signed LD 528. The Act sets goals for energy storage in Maine and directs multiple important steps to advance its deployment to the benefit of Maine.

The State of Maine has established in statute the following goals for energy storage capacity installed within the state:

- 300 MW by 2025
- 400 MW by 2030

Requirement for GEO to update the state's energy storage goals beginning in 2031.

The GEO is also required to conduct a study, including opportunities for stakeholder input, to inform the achievement of the state's energy storage goals and related policy objectives. GEO is currently soliciting proposals for an expert contractor to support this work.

**Energy Storage Market Assessment due March 2022**

# Maine Offshore Wind Initiative

**Planning:** Maine's Offshore  
Wind Roadmap

**Ports:** Analysis of Maine ports to  
support Offshore Wind



**Research:** Gulf of Maine Floating  
Offshore Research Array

**Regional Collaboration:** Gulf of  
Maine Task Force  
(BOEM, ME, NH, MA), Regional  
Wildlife Science Entity

**Public/Private Partnerships:** UMaine, New England Aqua  
Ventus, United Kingdom, National Offshore Wind Research  
Development Consortium, Business Network for Offshore Wind

[maineoffshorewind.org](http://maineoffshorewind.org)



# ENERGY MARKETS AND STRATEGIES WORKING GROUP

Contractor Providing Technical  
Support:  
DNV

## State of Offshore Wind Industry

- OSW, including floating technology market and cost trends
- Anticipated R&D needs
- Maine opportunities in R&D and innovation

## Potential scenarios for offshore wind development in the Gulf of Maine

- Long term energy needs assessment, including multiple scenarios



# ENERGY MARKETS AND STRATEGIES WORKING GROUP

(continued)

## Socio-Economic Analysis of Offshore Wind Scenarios

- Identify economic benefits and costs with consideration of equity, just transition, and impacts to communities and existing ocean users.

## Market and deployment strategies for offshore wind

- Strategies to minimize cost, maximize economic benefits

## Transmission Study

- Strategies for prudent, efficient, environmentally sound development

**To be completed by Q1 2022**



# SUPPLY CHAIN, WORKFORCE DEVELOPMENT, PORTS AND MARINE TRANSPORTATION WORKING GROUP

**Contractors Providing Technical Support:  
Xodus Group, VHB (Portland), BW Research,  
Karp Strategies**

## **Maine OSW Supply Chain and Workforce Opportunity Assessment**

### **Maine's unique opportunities to participate in the offshore wind sector**

- Today's assets and strengths (supply chain, ports, marine transportation, workforce)
- Action plan to improve & maximize opportunities, including strategies to become a regional center for supply chain operations
- Data needed to inform decision-making
- Indicators to track progress

### **Standards / requirements for developers**

- Strategies to promote local content (mindful of market dynamics)

### **Preparing Maine's workforce to participate**

- Action plan for education, trainings, certifications, paid apprenticeships

**To be completed by Q1 2022**

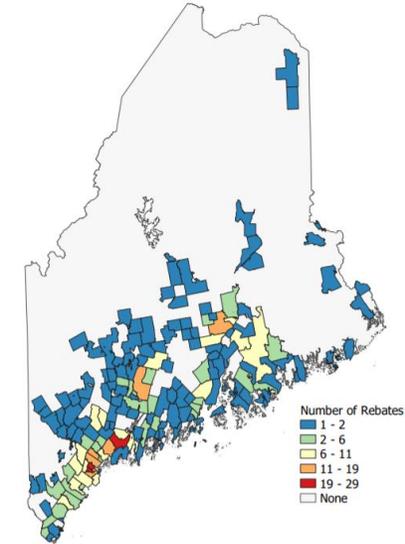
# Clean Transportation Roadmap

Governor Mills signed an executive order calling for a “clean transportation roadmap” to achieve the state’s climate plan goal of increasing the number of electric vehicles (EVs) on the road in Maine by 2030.

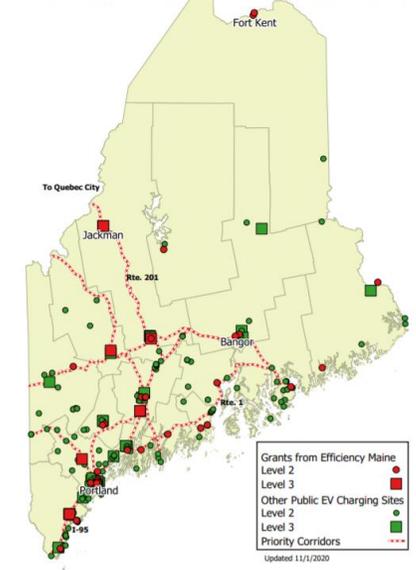
The Roadmap, done in coordination with GOPIF, EMT, DEP and DOT, will develop recommendations to enhance the EV market in Maine, expand charging infrastructure, evaluate effects on electric utilities and the grid, and ensure an equitable and affordable transition to clean transportation for all people in Maine.

**Roadmap will be released December 2021**

Efficiency Maine Electric Vehicle Rebates  
(8/28/2019 - 9/28/2020) by ZIP code



Maine's Expanding Network of Public EV Chargers



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# Industrial Innovation Task Force

Created by a recommendation in Maine Won't Wait the Industrial Innovation Task Force will help Maine's industrial sector meet the state's goal of holding industrial greenhouse gas emissions flat in Maine through 2030 and reducing them through 2050, while encouraging continued economic growth.

The Task Force, Chaired by EMT and DEP, will serve as a forum for members to learn about opportunities for increasing industrial efficiency and new technologies and processes for reducing greenhouse gas emissions.

Explore opportunities for innovation and pilot projects to reduce emissions, such as combined heat and power and other fuel switching applications, as well as associated funding opportunities.



TRANSPORTATION • RESIDENTIAL • COMMERCIAL • INDUSTRIAL • ELECTRIC POWER

**Launched in September 2021, the Task Force will make recommendations to the Maine Climate Council for consideration in the next state climate action plan.**



GOVERNOR'S  
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# Equity & Environmental Justice

As required by Public Law 2019, Chapter 279, The Governor's Office of Policy Innovation and the Future (GOPIF), in consultation with other state agencies, is required to:

1. Develop methods of incorporating equity considerations in decision making at the DEP, the PUC and other state agencies; and
2. Develop definitions for “environmental justice,” “environmental justice populations,” “frontline communities” and any other term determined by the office to be necessary for the incorporation of equity considerations in decision making at the department, the commission, and other state agencies.

**Report is due February 2022 to ENR and EUT Committees**

# Energy Assurance and Emergency Management

- Updating 2011-2012 Energy Assurance and Emergency Management Plan (EAP).
- Working to develop a document that can be utilized by all local, state, and federal agencies in the event of an energy emergency.
- The GEO partnered with the Maine Emergency Management Agency (MEMA) on this update and have contracted with TRC to shepherd agencies and stakeholders through the update process, as well as provide technical assistance and guidance on content.
- Meetings held prior to the COVID-19 pandemic, now working with consultant on next steps.

**Update to be released late 2021/early 2022**

# Weekly Fuel Price Survey



The GEO conducts a **weekly survey of heating fuel prices**, obtained from fuel retailers statewide. This survey, funded by US DOE, provides the current Maine cash prices for heating oil, kerosene, and propane. In addition: Driver Hour Waivers and Constituent issues.

## Heating Fuel Prices

### Weekly Heating Fuel Prices

The Governor's Energy Office (GEO) conducts a weekly survey of heating fuel prices, obtained from fuel retailers statewide. This survey provides the current Maine cash prices, in dollars, rounded to the nearest penny.

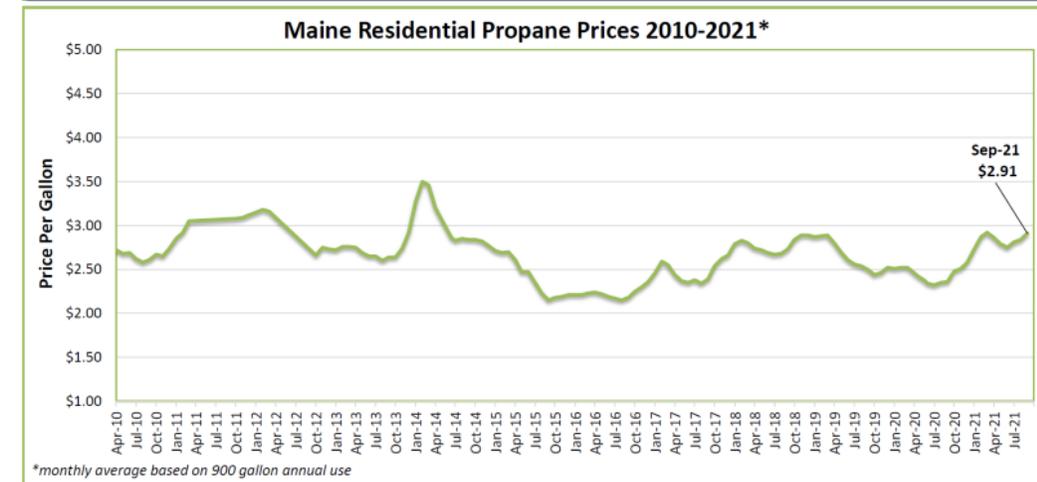
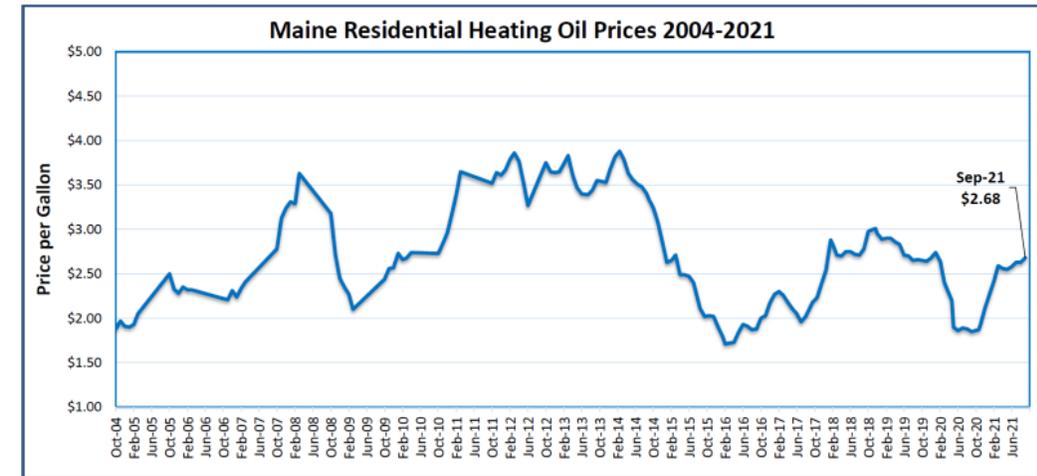
**Maine Retail Heating Fuel Prices, as of October 12, 2021\***

Heating Oil	Statewide	Southwest/ West- Central	Southeast/ Greater Portland	Central	East/ Downeast	Northern
<b>Average</b>	\$3.02	\$3.01	\$3.00	\$3.00	\$3.04	\$3.04
<b>High</b>	\$3.75	\$3.75	\$3.52	\$3.41	\$3.41	\$3.20
<b>Low</b>	\$2.70	\$2.75	\$2.75	\$2.75	\$2.70	\$2.85
<b>Kerosene</b>	\$3.55	\$3.50	\$3.52	\$3.59	\$3.53	\$3.61
<b>Propane</b>	\$3.17	\$3.24	\$3.32	\$3.13	\$3.13	\$3.01

*\*Please Note:* The price for the various heating fuels are statewide averages, and prices in a given geographic region of the state may be considerably higher or lower than this average. These statewide averages are spot cash prices, and not 'pre-buy', introductory, or otherwise discounted prices. Average propane prices are 30-day cash/credit prices, based on consumption of at least 900 gallons a year. Households using propane just for cooking or hot water generally pay a higher per gallon price.

The Governor's Energy Office has developed a guide to assist consumers in obtaining the best propane price for their household and location. The guide can be accessed here - [Propane 101 Consumer Guide \(PDF\)](#).

Below is a table that compares various heating fuels, on a dollar per million Btu (heating unit). Consumers will then need to consider the efficiency of their heating system(s) to estimate their overall heating costs.



\*monthly average based on 900 gallon annual use

# Ongoing Regional Grid Planning



## **New England Governor's Joint Statement (October 2020)**

- Recognizing the critical role that New England's regional wholesale electricity market plays in addressing climate change and cost-effectively reducing economy-wide greenhouse gas emission, Governor Mills and four other New England Governor's issued a statement calling for reforms needed to achieve their states' respective goals for clean, affordable, and reliable electricity.
  - <https://www.maine.gov/governor/mills/news/governor-mills-new-england-governors-call-modernization-regional-electricity-system-2020-10-14>

## **NESCOE Vision Statement (October 2020)**

- The New England States' vision, expressed through the New England States Committee on Electricity (NESCOE), for a clean, affordable and reliable 21st century regional electricity grid necessitates significant changes in three core segments of our shared energy system: Wholesale Electricity Market Design, Transmission System Planning, and ISO New England (ISO-NE) Governance. The New England States initiated a public process, supported by NESCOE, to inform the development of any proposals related to the Vision.
  - <https://nescoe.com/resource-center/vision-stmt-oct2020/>

## **NESCOE Report to the Governors – Advancing the Vision (June 2021)**

- The dialogue around each Vision Statement element – market design, transmission, and ISO-NE governance – occurred at technical forums and through written comments. Since the Vision Statement's October 2020 release, significant progress has been made toward the frameworks and elements the New England state advanced jointly – progress that is described in this report.
  - <https://newenglandenergyvision.files.wordpress.com/2021/06/advancing-the-vision-report-to-governors-1.pdf>

# Ongoing Regional Grid Planning



## ISO-NE New England's Future Grid Reliability Study (Q1 of 2022 for Phase I)

- Stakeholder led assessment of the future state of New England's power system that includes: defining scenarios; studying whether the ISO can operate the grid reliably under status-quo market mechanisms; considering what products and attributes are missing (through gap analysis); and discussing what market changes could be developed in response to any identified gaps in reliability or resource needs. The ISO is undertaking Phase 1 as its 2021 Economic Study.

## ISO-NE Pathways to the Future Grid (Q1 of 2022)

- Regional identification, exploration, and evaluation of potential market frameworks that may help support the evolution of the power grid.

## 2050 Transmission Study (TBD)

- New England States' vision statement seeks a transmission study that can help states determine how to expand the system to incorporate wind, hydro, and distributed energy resources.

## ISO-NE Capacity, Energy, Loads, and Transmission (CELT) – Latest Report Released April 2021

- The CELT provides a snapshot of the New England power system, including:
  - A long-term forecast for energy consumption and peak demand, including 10-year forecasts of energy efficiency, solar facilities, light-duty electric vehicles (Evs), and air-source heat pumps;
  - The number of MW with capacity supply obligations, as well as the total generating capacity of resources in the region;
- The 10-year projections provided in the CELT Report are used in power system planning and reliability studies.

# Additional Planning Efforts

## Maine PUC Grid Modernization Proceeding (Docket 2021-00039)

- PUC to investigate the future design and operation of the electric distribution system in Maine. The PUC will provide a comprehensive examination of the design and operation of the electric distribution system in Maine to accommodate the increasing integration and operation of Distributed Energy Resources (DER) and the potential for a substantial increase in load resulting from policies and initiatives that seek to encourage electrification in the heating and transportation sectors.
  - The investigation will also address information transparency issues such that developers and other entities can assess system needs and opportunities at a granular level.
- Upon the completion of consultant examination, a report will be submitted to the Commission containing their findings and recommendations. The Commission will then explore the issues and allow interested persons to examine the consultants report and provide input and recommendations regarding the issues presented.

## Power Sector Transformation

- Maine Climate Action Plan Recommendation to establish a stakeholder process to examine the transformation of Maine's electric sector and facilitate other recommendations of the Maine Climate Council. Areas for consideration may include: utility structure, load management, data and information access, grid modernization and expansion, non-wires alternatives, interconnection, distributed energy resources, aggregation, equitable cost allocation, and rate design, integrated grid planning, regional and load electricity markets, regional collaboration, reliability and resiliency, and changes in law and regulation.



# Additional Planning Efforts

## Northern Maine

- Stakeholder group to identify and develop strategies to address the transmission grid reliability and electric rate stability for the northern Maine service, to review: 1) the continued need to assess reliability in the northern Maine service territory; 2) the region's fuel security, competitive supply and rate volatility resulting from its reliance on generation resources in the region; and 3) opportunities for transmission and non-transmission alternatives to address the current and projected reliability and rate stability needs of the region.

## NECEC Stipulation Funding

### Transmission Evaluation (up to \$2 million)

- Engage one or more mutually agreed-upon transmission consultants to evaluate and report on a suite of potential transmission and non-wires solutions (including but not limited to large scale solar and storage) and their respective estimated costs, that would reduce existing and projected congestion at the Maine/ New Hampshire Interface and at the Surowiec-South interface.

### Regional Decarbonization Long-Term Planning (up to \$500,000)

- Hire a consultant to perform an analysis of the means by which the Northeast Region, and Maine in particular, may achieve economy-wide decarbonization of zero emissions by 2050. Research and develop a set of policies and actions, and state regulatory reforms, that can most effectively facilitate economy-wide decarbonization in the region, consistent with the analysis.

## Other State Planning Efforts

# Maine Energy Plan Update – Next Steps

- As required by Title 2, §9, and supported by U.S. DOE grant, the GEO is working to complete the required **Energy Plan update by end of 2021/early 2022.**
- Staff-led report, in consultation with EMT, will utilize information from completed/ongoing reports and newly updated data to meet ***statutory requirements of:***
  - Association between energy planning and meeting the greenhouse gas reduction goals in the state climate action plan;
  - Lower costs to consumers;
  - Facilitate development of new renewable energy including specifics on wind energy, including economic development and siting;
  - Oil dependence reduction targets and natural gas expansion updates.
  - ***GEO will include other relevant areas not included in statute***
- ***Opportunity for future advanced planning to reflect changing statutory requirements, existing state and regional efforts, and energy system transformation.***



A scenic view of a lighthouse and its associated buildings on a rocky cliffside under a blue sky with wispy clouds. The lighthouse is white with a black top, and there are several white buildings with red roofs. A red barn is visible in the foreground. The sky is a deep blue with light, wispy clouds. The text "ENGAGEMENT WITH PROVINCES" is overlaid on the right side of the image, with a thin yellow horizontal line passing through the middle of the text.

# ENGAGEMENT WITH PROVINCES

# Clean Power Planning Committee

In March 2019, the Atlantic Provinces and the federal government agreed to develop a Clean Power Roadmap for Atlantic Canada. The Roadmap is intended to outline a collective vision for how CA jurisdictions may collaborate over the coming decades to connect clean power across the region.

The development of the Roadmap is being overseen by an Atlantic Clean Power Planning Committee, consisting of senior officials from federal and provincial governments, as well as provincial utilities.

An Interim Report: Towards a Clean Power Roadmap for Atlantic Canada was released in August 2020. A final report has not been released.

The GEO will continue to monitor the progress of this planning effort.

# GEO Engagement with the Provinces

GEO Director, presented to the Planning Committee on April 21, 2021. During the presentation, the GEO outlined the state's climate and clean energy policy goals and requirements, and expressed interest in continuing to find ways to work together with our Canadian neighbors in accomplishing our shared goals

The co-chairs of the Atlantic Regional Clean Power Planning Committee sent a letter to the GEO on June 9, 2021, expressing their appreciation for the presentation and the opportunity to learn more about the State of Maine's plans to develop clean energy generation in an effort to meet the State's climate goals.

The GEO has engaged in outreach to a number of Canadian partners and organizations (on this and other issues) including with: Atlantica Center for Energy; Natural Resources Canada (NRCan); Provinces; CONEG; and other developers and utilities.

GEO Energy Policy Analyst, Melissa Winne, presented at the Maritimes Energy Association Annual Conference: The Power of Collaboration to discuss Maine's clean energy policies related to large-scale energy development as relates to community engagement, economic benefits, and workforce development.

A scenic landscape of a lake and forested hills under a cloudy sky. The foreground shows a large body of water surrounded by dense green forests. In the background, more hills and a distant shoreline are visible under a bright, overcast sky. A large, semi-transparent white box with a thin orange border is centered in the upper half of the image, containing the text.

# Thank You

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[www.maine.gov/energy](http://www.maine.gov/energy)