MAINE GOVERNOR'S ENERGY OFFICE

2021 ANNUAL REPORT

January 27, 2022

GOVERNOR'S
Energy Office
www.maine.gov/energy

As required by Maine Revised Statutes Title 2, §9, 3C-1, the Governor's Energy Office (GEO) shall submit an annual report to the Energy, Utilities and Technologies Committee (EUT) that 'describes the activities of the office during the previous calendar year'. This report covers the requirements for calendar year 2021.

The GEO, established within the Executive Department and directly responsible to the Governor, is tasked with myriad activities relating to state energy policies, planning and development. As the lead energy policy office for the state, the GEO works on a wide range of energy issues and is responsible for several activities such as providing policy guidance and technical assistance, monitoring energy markets, and reporting on heating fuel prices.

The GEO works in partnership with various state agencies, federal and local officials, industry, nonprofit interests, and academia on energy issues. The Director also sits on the Board of Efficiency Maine Trust, per statute, and in 2021 was a Board member of the National Association of State Energy Officials as well as the National Offshore Wind Research and Development Consortium.

INTRODUCTION

Throughout 2021, the Covid-19 pandemic continued to challenge the way we live and work in Maine. The GEO continued to advance a number of energy initiatives, working largely remotely, and the office's capacity has grown with the addition of several new staff members supported by federal, state, and grant funds. Up to date information on the GEO's work, as well as energy information, can be found at www.maine.gov/energy. In 2021, the GEO was both a leader and participant in the numerous efforts described below.

MAINE CLIMATE COUNCIL

December 1, 2021 marked a year since the release of Maine's four-year climate action plan, *Maine Won't Wait*, and a year of progress by Maine people in the fight against climate change.[1] In 2021, Maine saw a record number of electric vehicle (EV) registrations (5,677) and sales rebates (1,220), public EV charging stations (246), and installations of high-efficiency heat pumps for heating and cooling (more than 28,000 in one year). These measures reduce Maine's reliance on fossil fuels and emissions from the state's two leading sources of greenhouse gas emissions: transportation and buildings. Additionally, Maine remains on track to comply with the Renewable Portfolio Standard requirement of 80 percent renewable electricity by 2030, one of the most aggressive targets in the country. Particularly as sectors pursue beneficial electrification strategies to decarbonize, Maine's Climate Action plan highlights the importance of ensuring the grid is providing low-and-zero carbon electricity.

The *Maine Won't Wait One-Year Progress Report*[2] contains detailed progress updates on each of the strategies outlined in the action plan and tracks numerical progress toward goals which can be used to inform the public about whether our climate policies are having the intended effects, and for evaluating whether evidence-based adjustments, enhancements or replacements to policies are needed in pursuit of near-term and long-term climate objectives.

Maine Won't Wait, led by the Governor's Office of Policy Innovation and the Future (GOPIF) and the Maine Department of Environmental Protection (DEP) with engagement from the GEO, was the product of significant public process, featuring contributions from more than 200 people serving on the Maine Climate Council (MCC) and its six expert working groups, in addition to both a Scientific and Technical Subcommittee and an Equity Subcommittee. This public engagement has continued over the last year as agencies work to implement the goals of the four-year plan.

The Energy Working Group, co-chaired by GEO Director Dan Burgess and Ken Colburn of Symbiotic Strategies, LLC, continued its work in 2021 to monitor progress of implementing the recommendations laid out in the Climate Action Plan and began to prepare to establish recommendations for the next iteration of the four-year plan. The Energy Working Group met

[1] Maine Won't Wait: A Four-Year Plan for Climate Action, can be accessed at: https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MaineWontWait_December2020.pdf.
[2] Available here: https://climatecouncil.maine.gov/future/sites/maine.gov.future/files/inline-files/MaineWontWait_OneYearProgressReport_SinglePgs.pdf.

twice in 2021 as required by statute. Additionally, Director Burgess remained engaged as a member of the Buildings, Infrastructure, and Housing Working Group, as well as the Transportation Working Group.

Additional areas of the GEO's engagement in the work of the Maine Climate Council are discussed below.

INDUSTRIAL INNOVATION TASK FORCE

Created by a recommendation of the Climate Action Plan, the Industrial Innovation Task Force was launched in September 2021. The task force is envisioned to help Maine's industrial sector meet the Climate Action Plan goal of managing industrial greenhouse gas emissions through 2030 and reducing total emissions by 2050, while encouraging continued economic growth. The Task Force 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, and will make recommendations to the Maine Climate Council for consideration for inclusion in the next state Climate Action Plan. The GEO will maintain engagement in this process, including through staff organization of the task force and the involvement of Director Burgess as a member of this task force.

EQUITY

Throughout 2021, equity has been an increasing focus of the work of the Maine Climate Council and other state energy programs more broadly. An Equity Subcommittee of the Maine Climate Council was formed in February of 2021 to support ongoing planning and implementation of Maine's climate strategies to ensure shared benefits across diverse populations of Maine people and to understand any concerns for implementation. The subcommittee was tasked with setting clear equity outcomes for proposed actions, monitoring progress, and making recommendations to ensure that programs and benefits reach the intended populations and communities. The subcommittee's work builds upon the Equity Assessment of Work Group Recommendations by the University of Maine's Senator George J. Mitchell Center for Sustainability Solutions which evaluated the recommendations of the MCC's six working groups from an equity lens. More information, including a draft report of the Equity Subcommittee's interim recommendations, is available here: https://www.maine.gov/future/initiatives/climate/climate-council/equity-subcommittee.

CLEAN TRANSPORTATION ROADMAP

The GEO and GOPIF released a new report in December, the Clean Transportation Roadmap, with recommended strategies to accelerate Maine's progress in reducing greenhouse gas emissions through electric vehicles, EV charging stations, and a wider variety of public transportation options for Maine. Required by Executive Order of Governor Mills, the Roadmap identifies policy options to support *Maine Won't Wait*. The Roadmap was developed by Cadmus, a strategic and technical consultant, in collaboration with several state agencies, Efficiency Maine Trust, and input from a broad group of public and industry stakeholders.

Reducing emissions from transportation – which is the source of more than half of all greenhouse gas emissions in Maine – is a key piece of Maine's overall effort to curb state emissions by 45 percent by 2030. Modeling that supports *Maine Won't Wait* estimates Maine needs 219,000 light-duty EVs on the road by 2030 to meet its emissions targets.

The Roadmap found that Maine has made strong progress to advance clean transportation in the past year and is well-positioned for continued results. Recommendations include further incentives and policies to support EV purchasing, particularly for low and moderate-income residents; continued expansion of EV charging in Maine; support for transportation options such as pedestrian and bicycle travel and shared commuting; and community planning that encourages downtown density and connections to public transit. The study and executive summary are available here: https://www.maine.gov/future/news/clean-transportation-roadmap.

AGRICULTURAL SOLAR STAKEHOLDER GROUP

The formation of an Agricultural Solar Stakeholder Group was a result of a recommendation of *Maine Won't Wait*. The group consisted of 13 stakeholders on the topic brought together jointly by the GEO and the Department of Agriculture, Conservation and Forestry (DACF). Strategy E from *Maine Won't Wait* is to "protect Maine's environment and working lands and waters." As part of this strategy, the plan calls for "develop[ing] policies by 2022 to ensure renewable energy project siting is streamlined and transparent while seeking to minimize impacts on natural and working lands and engaging key stakeholders."

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 was specifically focused on assessing the potential impact of solar development on Maine's prime farmland and soils of statewide importance.

Celina Cunningham, Deputy Director of the GEO, served as co-chair of the Agricultural Solar Stakeholder Group alongside Nancy McBrady, Director of the Bureau of Agriculture, Food and Rural Resources at DACF. The group issued a draft report in November 2021 for public comment, and considered public comments received in preparing its final report and recommendations. The final report was released on January 20, 2022. Based on its research and discussions, and additional input received from the public, the Stakeholder Group advanced seven consensus recommendations to the Department of Agriculture, Conservation and Forestry and the GEO. The Joint Standing Committee on Agriculture, Conservation and Forestry; the Joint Standing Committee on Energy, Utilities and Technology; and the Joint Standing Committee on Environment and Natural Resources received the report pursuant to Resolve 2021, Chapter 26.[3]

[3] Final report of the Agricultural Solar Stakeholder Group available here: https://www.maine.gov/energy/sites/maine.gov.energy/files/inline-files/FINAL%20Report%20of%20the%20Agricultural%20Solar%20Stakeholder%20Group_Jan%202022%20with%20Appendices.pdf.

MAINE OFFSHORE WIND INITIATIVE

The Maine Offshore Wind Initiative is working to develop all aspects of a sustainable and responsible offshore wind industry through strategic planning, research, and coordination with groups from Maine, the nation, and the world. In 2019, Governor Mills launched the Initiative to identify how to best benefit from an industry expected to generate more than $109 billion in private investment in the U.S. economy by 2030 and to explore opportunities for thoughtful development of offshore wind in the Gulf of Maine that would support job growth and renewable energy deployment in tandem with preserving and protecting Maine's maritime industries and marine environment.

In what is forecast to be a $1 trillion global market by 2040, Maine is uniquely positioned to lead domestic offshore wind development – particularly with its innovative floating technologies developed by the University of Maine – due to the work of the Maine Offshore Wind Initiative, which is already engaged in analyzing required port infrastructure, supply chains, a robust workforce, vigorous environmental monitoring, and continued stakeholder engagement.

In 2021, the Initiative has taken several important steps to further its leadership on offshore wind; each of these developments are discussed below.

MAINE OFFSHORE WIND ROADMAP

The Maine Offshore Wind Roadmap will create an economic development plan for the offshore wind industry in Maine by building on the state's record of planning, research and development, and innovation. The Roadmap is an 18-month, participatory initiative led by the GEO and supported by a $2.166 million grant from the U.S. Economic Development Administration (EDA). The GEO's objective for the Roadmap is to identify how to foster an offshore wind industry that works for Maine's people, Maine's economy, and Maine's heritage.

The Roadmap is being developed by an expert advisory committee and working groups with broad public input, focusing on energy markets, ports and infrastructure, socioeconomic impacts, equity, manufacturing and supply chains, workforce development, and ocean and environmental compatibility. This effort will identify how to support the growing offshore wind sector in a way that embraces the opportunity, while ensuring compatibility with our Maine coastal heritage and minimizing the impacts on fisheries and the environment.

The Maine Offshore Wind Roadmap Advisory Committee was launched in July 2021, with Ret. Admiral Gregory Johnson and GEO Director Dan Burgess serving as co-chairs of the committee. There are also four working groups that support the efforts of the Advisory Committee with technical subject matter expertise provided by key stakeholders:

- **Energy Markets and Strategies Working Group;**
- **Environment and Wildlife Working Group;**
- **Fisheries Working Group; and**
- **Supply Chain, Workforce, Ports and Marine Transportation Working Group.**

The Advisory Committee has met five times to date, with an additional 28 meetings of the working groups. All meetings of the Offshore Wind Roadmap Advisory Committee and working groups are open to the public. Past meeting agendas, materials, and summaries for the Advisory Committee and all working group sessions can be accessed here: https://www.maine.gov/energy/initiatives/offshorewind/meetings-archive.

Several studies will be completed as part of the roadmap process, including a study on offshore wind supply chains and an analysis of offshore wind markets, transmission, and socioeconomic impacts. Utilizing EDA funds, the GEO has retained Xodus to conduct an opportunity assessment of Maine's supply chain and workforce to support offshore wind, and will identify strategies to support Maine communities and attract companies to the state to build a strong offshore wind industry. Xodus will engage closely with the working groups of the Maine Offshore Wind Advisory Committee. DNV is also under contract utilizing EDA funds to conduct an offshore wind energy needs assessment for the Gulf of Maine to support refining offshore wind targets from 2030 through 2050; to assess the socioeconomic costs, benefits, and equity implications of potential offshore wind targets; and to assess options for development of transmission and grid integration.

The Roadmap is expected to be completed in December 2022.

BALANCED APPROACH TO OFFSHORE WIND

In July 2021, Governor Mills signed into law L.D. 1619, which prohibits new offshore wind projects in State waters and was introduced in response to concerns from the fishing industry. The prohibition preserves State waters for recreation and fishing – where up to 75 percent of Maine's commercial lobster harvesting occurs – and cements into law Maine's priority of locating offshore wind projects in federal waters in the Gulf of Maine. The law also reflects the Mills Administration's careful approach to offshore wind and stems from extensive discussions among the GEO and Department of Marine Resources (DMR) with fishing, wildlife, and environmental organizations aimed at responsibly pursuing offshore wind in co-existence with Maine's maritime heritage.

L.D. 1619 also established the Offshore Wind Research Consortium to coordinate, support and arrange for the conduct of research on offshore wind in the Gulf of Maine.

GULF OF MAINE FLOATING OFFSHORE WIND RESEARCH ARRAY

After nearly a year of extensive stakeholder outreach and analysis, in October 2021 the GEO submitted an application to the Bureau of Ocean Energy Management (BOEM) to lease a 15.2-square-mile area nearly 30 miles offshore in the Gulf of Maine for the nation's first floating offshore wind research site in federal waters. This follows passage of L.D. 336, which declared the research array is in the public interest and authorized the Maine Public Utilities Commission (PUC) to negotiate a power purchase agreement with the University of Maine's offshore wind development partner, New England Aqua Ventus.

The State hopes to deploy a small-scale research array of 12 or fewer wind turbines on innovative floating hulls designed at the University of Maine. This project will advance UMaine's patented technology and will foster leading research into how floating offshore wind interacts with Maine's marine environment, fishing industry, shipping and navigation routes, and more.

The area of the research site is limited to 15.2 square miles, which is smaller than initial projections and which represents approximately .04 percent of the 36,000-square-mile Gulf of Maine. This limited site is 29 miles from the nearest mainland point of Cape Small in Sagadahoc County, 23 miles from Monhegan Island, and 45 miles from Portland. It was selected following an extensive public outreach process led by the GEO, which included an analysis by DMR that helped identify areas that minimized known potential impacts on the fishing industry.

The research site aligns with the trajectory of the emerging offshore wind industry in the U.S., as ambitious clean energy generation targets by the Federal government and many states increase demand for commercial-scale projects in deep federal waters, where floating platform technology will likely be required.

By addressing fundamental questions about how offshore wind can exist in the Gulf of Maine, the intent of the research array is to advance the development of Maine's offshore wind economy while informing the responsible growth of floating offshore wind in the United States and beyond.

PORT ASSESSMENT

In March 2020, Governor Mills identified the Port of Searsport as a leading site in Maine to support the transportation, assembly and fabrication of offshore wind turbines and called for a study to further analyze this opportunity.

The study was delivered by engineering firm Moffat & Nichol in November of 2021. It evaluated physical and technical characteristics of various locations in the Port of Searsport, identified multiple sites for consideration as part of a hub for offshore wind. The Port of Searsport, according to the study, is recommended for further environmental analyses, geotechnical assessment, and preliminary design work to gauge environmental impacts and evaluations of alternatives, as would be required by federal and state permitting.

Based on the study recommendations, the Mills Administration has informed the Town of Searsport about its intent to conduct further environmental and geotechnical surveys in the area. Governor Mills has also directed her administration to conduct a robust public process and engage with key stakeholders and community organizations about the Port of Searsport.

A companion study on broader wind port needs in Maine is also underway and will analyze how other Maine ports, including the Ports of Portland and Eastport, can play important roles supporting the offshore wind industry.

BOEM GULF OF MAINE TASK FORCE

In March of 2021, the Biden Administration announced a new federal target of 30 gigawatts of offshore wind deployed by 2030. The U.S. Department of Interior has also recently announced plans to advance commercial-scale offshore wind through seven offshore lease sales, including in the Gulf of Maine, in coming years.

The Gulf of Maine Intergovernmental Renewable Energy Task Force was established by BOEM in 2019 to oversee energy leasing and development offshore from Maine, Massachusetts, and New

Hampshire.[4] The Task Force last met in December of 2019. Governor Mills has requested to restart the Task Force in light of the agency's recently announced lease plans in the Gulf of Maine, which are likely to take place in 2024, to ensure Maine fishermen are engaged and heard in the process. The GEO will remain closely engaged with BOEM and the Task Force in advance of future task force meetings.

OFFSHORE WIND PARTNERSHIPS

The GEO works in close partnership with several regional, national, and international organizations to inform the state's offshore wind development process and to share Maine's own experiences more broadly. Those partnerships include:

The National Offshore Wind Research and Development Consortium: In February, the GEO announced that Maine had joined the National Offshore Wind Research and Development Consortium (NOWRDC), a non-profit public-private alliance that is dedicated to responsible, cost-effective offshore wind energy and technology research in the United States. As a Board member of the consortium, Maine has access to leading innovation, research and added resources for its offshore wind program, which will allow the state to benefit from experiences elsewhere in the country, while also sharing insights and information garnered from offshore wind research in Maine.

Maine's membership in the consortium includes the GEO and the University of Maine.

The Regional Wildlife Science Entity: In 2021, Maine joined the Regional Wildlife Science Entity (RWSE) to collaborate on offshore wind research. RWSE[4] is a new entity dedicated to regional planning, coordination, and collaboration on ocean wildlife research and monitoring in the development of offshore wind energy. Administered and directed by the Northeast Regional Ocean Council (NROC), Mid-Atlantic Regional Council on the Ocean (MARCO), and the Coastal States Stewardship Foundation (CSSF), RWSE aims to create a forum for sharing information, standardizing data collection and monitoring protocols, defining key scientific research needs at project and regional scales, and amplifying the results of existing and ongoing research.

The Maine Department of Inland Fisheries and Wildlife (DIFW) participated in the interim steering committee that helped launch RWSE in July 2021. The GEO, DIFW, and DMR each participate on the RWSE State Caucus.

Other partnerships: Maine continues to participate in a number of other key partnerships on offshore wind including with the United Kingdom to share offshore wind and research, and with the Business Network for Offshore Wind to create economic and investment opportunities for Maine businesses in offshore wind.

[4] More information available here: https://www.northeastoceancouncil.org/wp-content/uploads/2021/07/RWSE-Announcement_July-2021.pdf.

RENEWABLE ENERGY

DISTRIBUTED GENERATION STAKEHOLDER GROUP

In 2019, Maine law changed to encourage the development of renewable energy through distributed generation. At present, the primary mechanisms for developing distributed generation resources are two net energy billing (NEB) programs: (1) kilowatt-hour credit and (2) tariff rates.

In 2021, Public Law 2021 Chapter 390 (L.D. 936) established a goal of 750 megawatts (MW) of distributed generation under the net energy billing programs. The bill also set a limit on distributed generation resources between 2 and 5 MW eligible for enrollment in net energy billing and concludes the program for these resources on December 31, 2024. In addition, L.D. 936 established a stakeholder group to "consider various distributed generation project programs to be implemented between 2024 and 2028 and the need for improved grid planning."

Pursuant to L.D. 936, the GEO convened the Distributed Generation Stakeholder Group to issue recommendations that support continued development of renewable energy in Maine through cost-effective distributed generation. GEO Director Dan Burgess serves as the chair of this stakeholder group, which met eight times in 2021. The group delivered its initial report to the Legislature on December 31, 2021 and will deliver a final report by January of 2023.[5] Opportunities for public comment are provided at each stakeholder group meeting and public input was reflected in the stakeholder group's interim report.

ENERGY STORAGE MARKET ASSESSMENT

In June 2021, Governor Mills signed Public Law 2021 Chapter 298 (L.D. 528 - An Act To Advance Energy Storage in Maine). 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; and
- 400 MW by 2030.

A goal of 400 MW of energy storage represents about 20 percent of Maine's peak electric demand in 2020, making these goals some of the most ambitious in the nation. As of 2021, there are about 50 MW of energy storage operating in the state.

The legislation also requires the GEO to update the state's energy storage goals beginning in 2031 as needed to align with Maine's emissions reduction and renewable portfolio standard requirements.

[5] The interim report, meeting materials and public comments received, and more information about the activities of the Distributed Generation Stakeholder Group are available here: https://www.maine.gov/energy/studies-reports-working-groups/current-studies-working-groups/dg-stakeholder-group.

The GEO is additionally 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. Energy & Environmental Economics (E3), an economic consultancy focused on the clean energy transition, is contracted to complete the study. E3, in collaboration with the Governor's Energy Office, will deliver a report to the legislature in March of 2022.[6]

RENEWABLE PORTFOLIO STANDARD

Passed and signed into law in 2019, L.D. 1494, An Act To Reform Maine's Renewable Portfolio Standard, increased the share of Maine's electricity that must come from renewable resources, known as a Renewable Portfolio Standard (RPS), to 80 percent by 2030 and set a goal of 100 percent by 2050. This law required the Maine PUC to procure 14 percent of Maine load via long-term contracts.

The PUC held its first round of procurements in September of 2020 which resulted in a commitment of 546 MW of procured capacity generated by solar, wind, biomass, and hydro from 17 facilities. A second round of procurements was issued in January 2021 and resulted in an additional seven project approvals for long-term contracts announced in June 2021, including six solar projects and one wind project totaling 422 MW of committed capacity. The GEO continues to monitor the procurement process and project selection outcomes.

L.D. 1494 also required the GEO to prepare a ten-year Renewable Energy Goals Market Assessment (REGMA). This study, submitted in February 2021, provides important information and assesses the renewable energy market and its ability to meet the state's clean energy requirements. This includes analysis and review of the opportunities, potential, and challenges facing the state in reaching its 80 percent renewable portfolio standard by 2030. The GEO retained E3 and Applied Economics Clinic (AEC) to develop this assessment.

On February 17, 2021, the GEO and study consultants held a webinar, which was open to the public, to present an overview of the study, results, and key takeaways.[7] The final report was published in March of 2021. The GEO and consultants also presented this study to the EUT Committee.

Key findings from the study include:

- Maine has multiple pathways to meet its RPS;
- Maine is on track to meet its near-term RPS requirement through 2026; new resources will need to be online to meet increasing goals thereafter;
- Transmission will be a key driver of renewable development;
- Storage paired with solar provides value to Maine's grid;
- A technologically diverse portfolio helps lower risk;
- Regional coordination on building transmission can help lower the costs of meeting Maine's RPS; and

[6] More information available at: https://www.maine.gov/energy/studies-reports-working-groups/current-studies-working-groups/energy-storage-assessment.

[7] A recording of the webinar can be found here: https://www.youtube.com/watch?v=4clC_c5ZLPM.

- Energy equity considerations cut across four dimensions: resource diversity, customer-sited resources, geographic resource distribution, and cost.

HEATING & EFFICIENCY RESOURCES FOR CONSUMERS

Maine has long been a national outlier for reliance on oil and is currently the most heating oil dependent state for home heating in the nation with more than 60 percent of households using fuel oil for their primary home heating source. This high reliance on fossil fuels for home heating results in Maine people paying money for out-of-state fossil fuels, significant greenhouse gas emissions that contribute to climate change and cause public health concerns, and leaves Maine people and businesses susceptible to global market changes and price volatility.

As a region, New England relies heavily on natural gas for electricity generation. Due to a combination of factors including high petroleum consumption and relatively limited natural gas distribution capacity, Maine consumes a much smaller percentage of natural gas than its neighbors. However, due to regional dependence, natural gas price increases also impact Maine's electricity costs.

The GEO works in several different areas to provide resources to consumers about fuel prices, energy assistance programs, energy efficiency, and to reduce the state's overall reliance on fossil fuels, including:

- Weekly heating fuel price surveys;
- Oil dependence reduction targets; and
- Energy efficiency and weatherization partnerships.

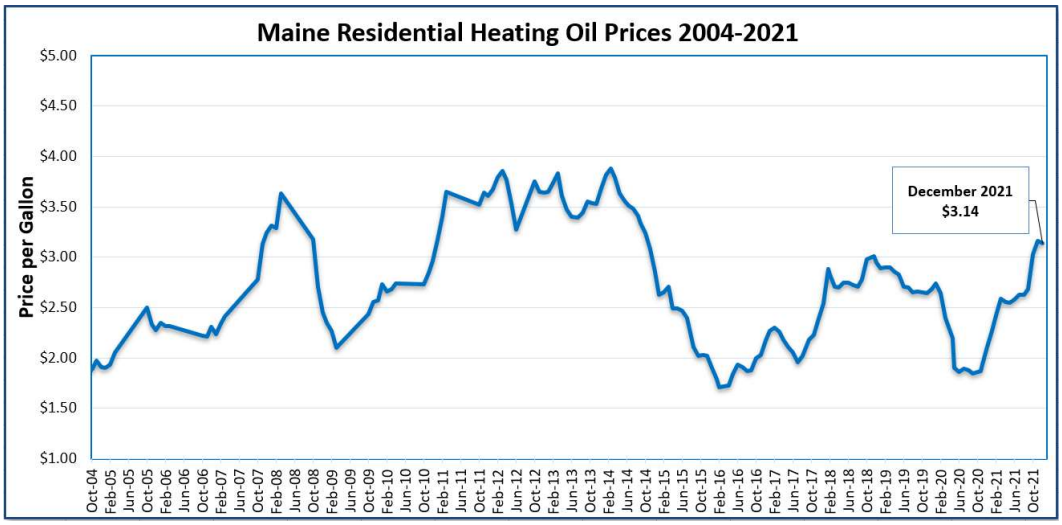
HEATING FUEL PRICE SURVEY

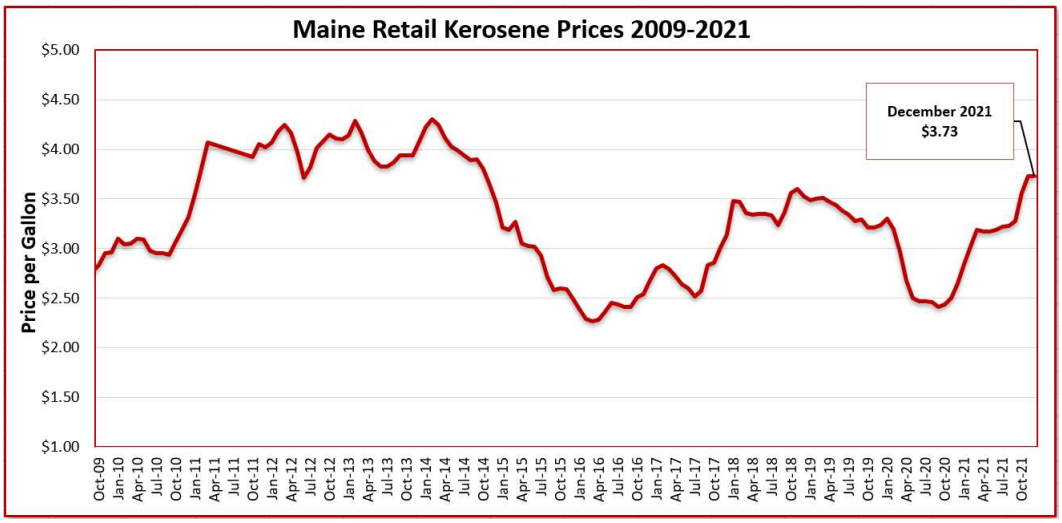
Throughout 2021, the GEO continued its weekly heating fuel price survey. This survey collects data from fuel retailers statewide on average cash prices for heating oil, kerosene, and propane. Prices through 2021 are provided in the following charts and are also published on the GEO website on a regular basis.[8]

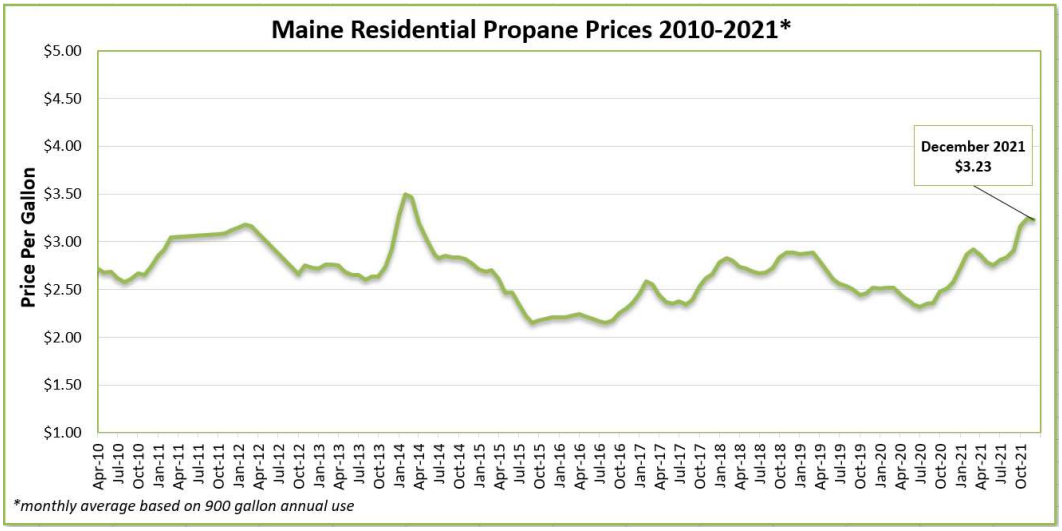
For the 2021-22 heating season, as a result of global energy markets, Maine is experiencing increases in the price of heating fuels and electricity this winter. In response, the GEO compiled a list of tips, resources and programs to help Maine people save money, improve their home's energy efficiency, and apply for heating assistance with a winter heating resource guide which can be found here: https://www.maine.gov/energy/winter-heating-resources. The winter heating season extends from October through March.

[8] Weekly heating fuel prices can be found here: https://www.maine.gov/energy/heating-fuel-prices.

Figures: Average cash prices for heating oil, kerosene, and propane.







ENERGY EFFICIENCY AND WEATHERIZATION

The GEO works closely with both Efficiency Maine Trust and MaineHousing to ensure robust coordinated efforts between the three entities for the deployment of energy efficient technologies in an equitable, economical, and efficient manner. In 2019, legislation put in place a goal for the installation of 100,000 new heat pumps by 2025 with at least 15,000 heat pumps being provided to income-eligible households. So far, through the efforts of Efficiency Maine Trust and MaineHousing, over 52,000 new heat pumps have been installed, with 28,000 installed between July 2020 and June 2021, more than doubling the pace of installations. At this rate, Maine is on target to achieve this ambitious goal.

Pursuant to 35-A MRSA § 10104 as amended in 2021, the state seeks to double the pace of home weatherization, achieving weatherization of 17,500 additional homes and businesses by 2025 and 35,000 by 2030, including 1,000 low-income residential units per year. In 2021, 2,043 homes were weatherized through the combined efforts of Efficiency Maine and MaineHousing for a total of over 6,600 since 2019. Governor Mills and the legislature have allocated $25 million from the Maine Jobs and Recovery Plan to Efficiency Maine Trust for home weatherization specifically targeted at low to moderate income dwellings in the state.

The GEO also continues to closely monitor building code adoption by the Maine Uniform Building and Energy Code (MUBEC). MUBEC is the statewide building and energy code that is comprised of codes from the International Code Council (ICC) and the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). In 2022, MUBEC will be required to adopt the ICC set of codes from 2018 or 2021.

BUILDING A CLEAN ENERGY ECONOMY

Due to the pandemic, Maine has faced a number of challenges over the last few years. However, as a component of Maine's economic recovery efforts supported by federal funds from the American Rescue Plan Act, and future funding from the Infrastructure and Jobs Act, funding is available to address climate impacts and create good-paying jobs across the state.

In July of 2021, the Legislature enacted the Maine Jobs & Recovery Plan[9], a plan Governor Mills put forward to invest nearly $1 billion in federal American Rescue Plan stimulus funds to achieve state goals for long-term stability and resilience. More than $300 million will go toward workforce investments through education and skills training programs, among others, aiming to make a measurable impact on Maine's workforce trends and build an economy poised for future growth.

Since the funds took effect in October 2021, Governor Mills has announced several initiatives from the Plan geared toward cutting energy costs for Maine families, reducing carbon emissions, and strengthening the clean energy workforce. The Maine Jobs & Recovery Plan plus the state's biennial budget include approvals for:

- $25 million to Efficiency Maine Trust to help more Maine people weatherize their homes;

[9] More information available at: https://www.maine.gov/covid19/maine-jobs-and-recovery-plan.

- $8 million to develop a clean energy workforce partnership;
- $50 million for efficient, affordable housing; and
- $25 million for local climate planning and infrastructure upgrades.

This funding allows for the creation of the Clean Energy Partnership, managed by the GEO and backed by $6.5 million from the Maine Jobs and Recovery Plan, to provide career training opportunities, like apprenticeships, that will equip Maine people with the skills to fill good-paying jobs in Maine's growing clean energy sector.

In November, President Biden signed the federal Infrastructure Investment and Jobs Act, which commits more than $2.4 billion to Maine for infrastructure improvements for climate resilience, low-income weatherization assistance, expanded EV charging, as well as multiple other areas of competitive funds including for electrifying school bus fleets, electrical grid modernization and more.

In 2021, Governor Mills also launched the "Maine Clean Energy Innovation Challenge", a joint initiative of the GEO and the Maine Technology Institute (MTI) to spark innovation, develop new companies, and create jobs in the state's burgeoning clean energy economy. Two Maine companies were each awarded $250,000 through the challenge to further their work to advance technology to support carbon-free agriculture and renewable energy storage. Farmhand Automation in Biddeford, Maine is developing low-cost electric farming robots to help local farmers across the state and nation transition to a carbon free future with a focus on helping rural farms scale operations to address food security pressures posed by climate change. Peregrine Turbine Technologies of Wiscasset, Maine is developing breakthrough turbine engine technology to store renewable power from solar and wind and make it available as power sources at any time of night or day with greater efficiency than lithium-ion batteries. Additionally, the GEO also worked with MTI and E2Tech to support a record number of Maine startups participating in the Cleantech Open Northeast – the oldest and largest cleantech accelerator in the country.

OTHER GEO INITIATIVES

ENERGY EMERGENCY RESPONSE PLAN

The Energy Emergency Response Plan (EERP) is a blueprint designed to address a potential or actual energy emergency caused by supply disruptions, a rapid and unsustainable increase in energy prices, or other energy emergency. It is a manual for state government leaders charged with the responsibility of ensuring the health, welfare, and safety of Maine citizens during these emergency events.

The plan describes the way the state would respond if an energy shortage of a substantial nature occurs or appears imminent. In the event of an energy crisis, the GEO is the lead agency for energy emergency planning. The Maine Emergency Management Agency (MEMA) Director is the primary advisor to the Governor in an emergency energy crisis. During an energy emergency shortage, the GEO and MEMA would work in close consultation with the Maine PUC.

The plan defines emergency conditions and how to monitor the indicators; identifies key players, as well as their roles and responsibilities; outlines steps the State of Maine should consider during escalating emergency conditions; and identifies the flow of information among agencies, private industry, and the public. The plan is organized around four emergency response phases that contain increasing levels of activity depending on the severity of the energy emergency.

The United States Department of Energy (U.S. DOE), through the State Energy Program, requires all states to develop and maintain an energy emergency plan. Maine last updated its plan in 2012. The GEO began the update process in 2019. Progress on the final plan was put on hold during 2020, as resources were shifted to COVID-19 response activities. Work resumed in early 2021, and the final plan is scheduled for completion in early 2022.

ENGAGEMENT WITH THE MAINE PUC

The Maine Public Utilities Commission regulates electric, natural gas, telecommunications, and water utilities to ensure that Maine consumers enjoy safe, adequate, and reliable services at rates that are just and reasonable for both consumers and utilities. Throughout 2021, the GEO monitored and engaged with the PUC and other stakeholders on several major matters, including grid modernization, rate design, renewable energy integration, transmission development and nonwires alternatives.

NATIONAL ASSOCIATION OF STATE ENERGY OFFICIALS – ANNUAL MEETING

In October of 2021, the National Association of State Energy Officials (NASEO) held their Annual Meeting in Portland, Maine. Director Burgess serves on the Board of NASEO as one of two representatives from New England. NASEO is the only national non-profit association for the governor-designated energy officials from each of the 56 states and territories. Formed by the states in 1986, NASEO facilitates peer learning among state energy officials, serves as a resource for and about State Energy Offices, and advocates for the interests of the State Energy Offices to Congress and federal agencies.

This Annual Meeting was rescheduled from the prior year as a result of the pandemic and was held with strict pandemic-related protocols. The meeting featured representatives of more than 35 energy offices from across the country, energy experts, officials from the Biden Administration including U.S. Department of Energy Secretary Jennifer Granholm speaking virtually, and other private and public entities.

NORTHERN MAINE

The GEO continued to monitor issues related to the Northern Maine Stakeholder Group, required by Public Law 2019 Chapter 71 (L.D. 1796), which directs the Governor's Energy Office to convene a stakeholder group to identify and develop strategies to address the transmission grid reliability and electric rate stability for the northern Maine service territory. This includes the passage of L.D. 1710 and the required request for proposals for renewable energy generation and transmission projects pursuant to the Northern Maine Renewable Energy Development Program, tracking energy

development and impacts, and responding to the EUT Committee's interest in potential projects in Canada, such as the Atlantic Loop. The GEO plans to further engage on these issues in 2022.

MAJOR LEGISLATIVE INITIATIVES

The GEO remains closely engaged in the work of the Maine State Legislature, working to ensure the passage of policies and development of programs that aid the state in meeting its climate and clean energy requirements, in close coordination with legislators and other agencies. The following are key pieces of legislation that were passed during the First Session of the 130th Maine Legislature; the list is not intended to be all-inclusive.

L.D. 336 – An Act To Encourage Research To Support the Maine Offshore Wind Industry

L.D. 340 – An Act To Allow for the Establishment of Commercial Property Assessed Clean Energy Programs

L.D. 347 – An Act To Facilitate Maine's Climate Goals by Encouraging Use of Electric Vehicles

L.D. 528 – An Act To Advance Energy Storage in Maine

L.D. 597 – An Act To Establish the Wood Energy Investment Program

L.D. 820 – Resolve, To Convene a Working Group To Develop Plans To Protect Maine's Agricultural Lands When Siting Solar Arrays

L.D. 936 – An Act To Amend State Laws Relating to Net Energy Billing and the Procurement of Distributed Generation

L.D. 940 – An Act to Establish Appliance Energy and Water Standards

L.D. 1053 – An Act To Allow Microgrids That Are in the Public Interest

L.D. 1619 – An Act To Establish a Moratorium on Offshore Wind Power Projects in Maine's Territorial Waters

L.D. 1659 – An Act To Create the Maine Clean Energy and Sustainability Accelerator

L.D. 1682 – An Act To Require Consideration of Climate and Equity Impacts by the Public Utilities Commission and To Incorporate Equity Considerations in Decision Making by State Agencies

L.D. 1710 – An Act To Require Prompt and Effective Use of the Renewable Energy Resources of Northern Maine

PUBLIC ANNOUNCEMENTS

A list of links to public announcements made by the Governor or the Governor's Energy Office from 2021 are below.

Dec. 15, 2021: 'Clean Transportation' plan offers strategies to accelerate electric vehicles and reduce greenhouse gas emissions in Maine

Dec. 7, 2021: To Mark One Year of Progress in Maine's Climate Plan, Governor Mills Unveils New Initiatives to Empower Communities in the Fight Against Climate Change

Nov. 23, 2021: Mills Administration Announces Steps to Prepare for Offshore Wind Investments at Maine's Ports

Nov. 5, 2021: Governor's Energy Office releases guide to help Maine people save money and stay warm this winter

Nov. 5, 2021: BOEM Urged to Involve Maine Fishermen in Federal Plans for Commercial Offshore Wind in Gulf of Maine

Nov. 4, 2021: Governor Mills Announces Initiatives to Cut Energy Costs for Maine Families and Strengthen Clean Energy Workforce

Oct. 1, 2021: Governor's Energy Office Submits Federal Lease Application for Floating Offshore Wind Research Site

Sept. 24, 2021: For Climate Week, Governor Mills Celebrates Maine's Progress Toward Installing 100,000 Heat Pumps by 2025

Sept. 22, 2021: William Harwood joins Governor's Energy Office as Senior Advisor for Regulatory Affairs

Sept. 20, 2021: Governor Mills Proclaims September 20-24 as Clean Energy Week in Maine

Aug. 16, 2021: Two Maine Technology Companies to Each Receive $250,000 in Maine Clean Energy Innovation Challenge

Aug. 9, 2021: Mills Administration Responds to Intergovernmental Panel on Climate Change Report

July 12, 2021: Gulf of Maine Floating Offshore Wind Research Array: Preferred Site

July 7, 2021: Governor Mills Signs Legislation Prohibiting Offshore Wind Projects in State Waters

April 28, 2021: Mills Administration Introduces Bill to Prohibit Offshore Wind in Maine's Heavily Fished Waters For 10 Years
April 22, 2021: Governor Mills Announces $500,000 Innovation Challenge to Spur Clean Energy Start-Ups, Create Jobs
April 2, 2021: Governor Mills accelerates 'clean transportation' plan to accomplish Maine's climate goals

March 30, 2021: Governor Mills welcomes plan for Maine state government to 'lead by example' on sustainability, energy efficiency

March 4, 2021: State leaders unite to support Maine clean-energy entrepreneurs

Feb. 25, 2021: Maine joins national offshore wind research consortium

Feb. 8, 2021: Letter from Governor Mills to the Maine Public Utilities Commission

Jan. 27, 2021: Mills Administration Welcomes President Biden's Climate Change Executive Orders

Jan. 25, 2021: Governor Mills Announces Actions to Advance Floating Offshore Wind Research Array in Gulf of Maine

Jan. 15, 2021: Governor Mills Welcomes PUC's Request for Proposals to Further Develop Clean Energy in Maine

OFFICE RESOURCES

At the end of 2021, the GEO operated with a staff of nine individuals[10], each of whom helped meet the office's responsibilities as outlined above. These positions were funded through a variety of sources including grant funding, state budget and federal funds. Throughout the year, GEO staff worked with Efficiency Maine Trust to coordinate initiatives and legislation, stakeholder engagement, and program development. Additionally, GEO Director Dan Burgess served as a member of the Efficiency Maine Trust Board of Directors, and as a Board member of the National Association of State Energy Officials. The GEO also worked very closely with multiple state agencies and departments, including the Governor's Office of Policy Innovation and the Future.

[10] https://www.maine.gov/energy/about

Governor's Energy Office
62 State House Station
Augusta, Maine 04333

www.maine.gov/energy/
Dan Burgess, Director
dan.burgess@maine.gov