MAINE GOVERNOR'S ENERGY OFFICE

2022 ANNUAL REPORT

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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 2022.

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INTRODUCTION

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 office for the state, the GEO works on a wide range of energy issues and is responsible for several activities such as providing policy leadership and technical assistance, energy programs, monitoring energy markets, and reporting on heating fuel and energy prices.

The GEO works in partnership with various state agencies, federal and local officials, industry, nonprofit interests, and academia on energy issues. The Director sits on the Board of Efficiency Maine Trust, per statute, and in 2022 was a Board member of the National Association of State Energy Officials in addition to other Boards and Advisory Groups.

Over the course of the last year, the GEO continued to advance several energy initiatives supporting Maine's goals and policies set in place to deliver affordable and clean energy to Maine people. The office's capacity has grown with the addition of new staff members supported by federal, state, and private grant funds.

During the past several years, the COVID pandemic has had unprecedented impacts on the way we live and work in Maine, including the energy sector. In 2022, global fossil fuel markets experienced significant volatility following the Russian invasion of Ukraine which has led to increased prices of fuels and electricity in Maine and the region. As a result, the Governor proposed an Emergency Winter Energy Relief Plan in December of 2022 to provide direct financial relief to Maine families and help them stay warm, safe, and secure this winter amid near record high energy prices. The Maine Legislature approved this plan with strong bipartisan support and the Governor signed into law on January 4, 2023.

This past year, the GEO published several reports and led and participated in a variety of stakeholder driven processes in different settings. The GEO published the 2022 Maine Energy Summary and Assessment as required by statute[1] which builds upon prior Energy Plans developed by the GEO in 2009 and 2015.

This report and up to date information on the GEO's work, as well as energy information, can be found at www.maine.gov/energy.

[1] https://www.mainelegislature.org/legis/statutes/2/title2sec9.html

HEATING & EFFICIENCY RESOURCES FOR CONSUMERS

Maine has long been a national outlier for reliance on home heating oil and is currently the most heating oil dependent state for home heating in the nation with more than 58 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 a regional dependence on natural gas for electricity generation, natural gas price increases also increase Maine's electricity costs.

The GEO works in several different ways 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 but not limited to

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

HEATING FUEL PRICE SURVEY AND WINTER HEATING RESOURCES

Throughout 2022, the GEO continued its weekly heating fuel price survey. This survey collects data from fuel retailers statewide on average cash prices for heating oil and kerosene, and credit prices for propane. Prices through 2022 are provided in the chart below and are also published on the GEO website in an interactive dashboard format.[2] The figure below reflects the unprecedented volatility in heating oil and kerosene prices throughout 2022.

For the 2022-23 heating season, as a result of several global events impacting 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. This winter heating resource guide can be found here: https://www.maine.gov/energy/winter-heating-resources. The winter heating season extends from October through March.

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

Figure: Average cash prices for heating oil, kerosene, and propane (2012 – 2022)

Historical heating fuel prices from 1/1/2012 through 12/19/2022. Source: Governor's Energy Office Heating Fuel Prices.

ENERGY EFFICIENCY

The GEO works closely with both Efficiency Maine Trust and Maine State Housing Authority (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 (i.e., 35-A MRSA § 10119) 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. To date, through the programs of Efficiency Maine Trust and MaineHousing, over 80,000 new heat pumps have been installed, with 29,000 installed between July 2021 and June 2022, surpassing the record year the state had achieved the prior year. 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 2022, over 2,400 homes were weatherized through the combined efforts of Efficiency Maine and MaineHousing for a total of almost 9,100 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). The 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). The MUBEC are currently

being reviewed by the Board for rulemaking and adoption. The edition of the Codes being reviewed are the 2021 editions. This process is expected to be completed in spring or summer of 2023. The Office of the State Fire Marshall is currently training building officials to the newer editions of the codes to prepare them for the transition.

RENEWABLE ENERGY: OVERVIEW & POLICY UPDATES

RENEWABLE PORTFOLIO STANDARD

Passed and signed into law in 2019, Public Law 2019 Chapter 477 (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. Maine's progress towards these targets continued throughout 2022. Maine reached 48% clean energy use by the end of 2022. Information on Maine's progress towards clean energy goals can be found on the Maine Climate Council Clean Energy Dashboard. In February of 2021, the GEO released a ten-year Renewable Energy Goals Market Assessment (REGMA), as required by L.D. 1494. This study provides important information and assesses the renewable energy market and its ability to meet the state's clean energy requirements. The GEO retained E3 and Applied Economics Clinic (AEC) to develop this assessment. The study found that Maine has multiple pathways to meet its RPS and is currently on track to meet its near-term requirement through 2026, after which point new resources will need to be online to meet increasing goals beyond 2026. The assessment highlighted that transmission will be a key driver of renewable development, as will storage paired with solar and a technologically diverse portfolio. Regional coordination on building transmission is identified as a way to 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.

In addition to increasing Maine's RPS, L.D. 1494 also directed the Public Utilities Commission (PUC) to procure 14% of Maine's electricity load via long-term contracts. The legislation directed the PUC to review the bids through a weighted cost-benefit analysis scheme, with 70% consideration to ratepayer benefits or overall cost and 30% consideration towards the economic benefits that the project would provide the state and host community. 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. In July 2022, the PUC approved a suite of changes (Dockets 2022-00041, 2022-00042 and 2022-00102) resulting in a 5.5% decrease in electricity delivery rates for Central Maine Power (CMP) residential customers, and between 3.5 - 3.8%

decrease for Versant residential customers.[3] The GEO continues to monitor the procurement process and project selection outcomes and the corresponding impact on ratepayers.

Following legislation signed by Maine Governor Mills that established the Northern Maine Renewable Energy Development Program at the Maine PUC, the Commission selected a new 1,000 MW onshore wind and associated transmission project to deliver new clean energy from northern Maine into ISO New England. The GEO monitored these developments and engaged in conversations with Massachusetts following legislation there which authorized Massachusetts to partner with other New England states to contract for clean energy projects, which will bring low cost clean energy and hundreds of jobs to Maine. In December 2022, Massachusetts found that up to 40% of the project would be beneficial and that they would move forward with contracting for this project. According to this public finding by the Massachusetts Department of Energy Resources, the wind and associated transmission project is expected to provide power to thousands of homes while lowering energy costs for the region. With the participation of Massachusetts, the Maine Public Utilities Commission will now make a final determination on contracting for the project.

REGIONAL COORDINATION

As recommended by REGMA, anticipatory transmission planning and development is an important tool to support cost-effective renewable energy development. The GEO participated in regional and national transmission planning initiatives throughout 2022, including a transmission request for information (RFI) with several other New England States and review of federal transmission study assumptions and inputs.

Maine released a joint RFI in collaboration with the states of Connecticut, Massachusetts, New Hampshire, and Rhode Island, to solicit public comment on the upgrades to the regional electric transmission system needed to integrate renewable energy resources. The participating states additionally sought feedback on a multistate Modular Offshore Wind Integration Plan, as well as input on best means for accessing federal funding available under the Bipartisan Infrastructure Law.

In December of 2022, the GEO collaborated with other New England states, including Massachusetts Connecticut, and Rhode Island, to initiate the first steps in pursuit of federal funding available through the Grid Innovation Program (GIP) of the Bipartisan Infrastructure Law. GIP is described in additional detail in the Federal Funding section of this report.

In addition to the above efforts, the GEO participated in review and feedback on assumptions and inputs for a U.S. Department of Energy (DOE) National Transmission Planning (NTP) Study. The U.S. DOE is conducting the NTP study in support of the Building a Better Grid Initiative under the Bipartisan Infrastructure Law. The NTP study seeks to identify transmission that will provide broad-scale benefits to electric customers; inform regional and interregional transmission planning processes; and identify strategies to accelerate decarbonization while maintaining system reliability.[4]

[3] https://www.maine.gov/tools/whatsnew/index.php?topic=puc-pressreleases&id=8025065&v=article088
[4] https://www.energy.gov/gdo/national-transmission-planning-study

Study results are anticipated to help the U.S. DOE prioritize funding for transmission infrastructure support.

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) C&I tariff.

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 nine times in 2021 and eleven times in 2022. The GEO retained Synapse Energy Economics and Sustainable Energy Advantage to support the work of the Stakeholder Group in developing a successor program. The group delivered its initial report to the Legislature on December 31, 2021 and delivered a final report January 6, 2023. Opportunities for public comment were provided at each stakeholder group meeting and public input was reflected in the stakeholder group's interim and final reports.

190 MW of new solar capacity was installed through November 2022, comprised of 161 MW of new distributed solar and 29 MW of new utility scale solar. A total of 555 MW of solar is currently installed in Maine.

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 2022, there were about 50 MW of energy storage operating in the state and hundreds of megawatts of energy storage in the ISO-NE interconnection queue. 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.

L.D. 528 additionally required the GEO 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, was contracted to complete the study. E3, in collaboration with the Governor's Energy Office, delivered a report to the Energy, Utilities, and Technology Committee in March of 2022.[5]

The report reviews the opportunities and challenges faced by the state in achieving its energy storage goals. It evaluates current and emerging storage technologies, assesses the market and policy landscape and hurdles to deployment, and includes a cost-benefit analysis of certain storage applications. E3, with support from the GEO, engaged with more than 100 stakeholders representing utilities, industry, customers, state legislators, regulators, environmental groups, and other interested parties who participated through public webinars and by sharing feedback that informed study development.

The study shows that both grid-connected storage and customer-sited storage have the potential to provide many benefits to Maine's electric grid and customers, particularly through the ability to shift electricity from when it is generated to when customers need it most. Storage can help lower wholesale electricity costs, lower utility infrastructure costs, and lower electricity bills while increasing resiliency and helping integrate more renewable energy. It underlines energy storage as a vital complement to the state's broader climate and clean energy targets, particularly as Maine increases its use of renewable energy generation and electrifies transportation and buildings to support its decarbonization goals.[6] Key takeaways from the report note strong progress towards the state's storage targets as of 2022, but emphasize the need to address interconnection procedures, identify optimal grid locations for deployment, and increase access to alternative revenue streams to ensure storage is deployed to maximize benefits to Maine, among other policy considerations.

In December of 2022, the PUC approved new utility rates for business and residential electricity customers with battery storage, heat pumps, or electric vehicles. These rates encourage new usage patterns at times when demand is lower, and are designed to reduce customer bills. At the end of 2022, the PUC also opened a docket that seeks input on potential changes to the state's interconnection processes for small generators including energy storage systems. Additionally, the final report of the state's Distributed Generation Stakeholder Group, which over 18 months developed a proposal for a successor program for distributed generation in Maine, proposed a program which would require the pairing of distributed generation (primarily solar) with energy storage. These policy advancements will each contribute to progress towards Maine's energy storage goals as well as greater benefits from deployed storage.

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

The creation of a Maine Quarterly Energy Storage Forum was another recommendation of the study, and the first meeting of the forum was held in October 2022. The forum leverages the GEO's role as a convenor by organizing and hosting an ongoing venue for information sharing and policy discussion focused on the development of energy storage in Maine and across New England. This quarterly gathering will bring together storage developers, policymakers, utilities, municipalities, consumers, environmental groups, and other interested parties to facilitate discussion on how to encourage energy storage development and meet the state's energy storage goals in both an equitable and cost-effective manner. The forum will seek out information, case studies, and best practices from neighboring jurisdictions that may inform further development of storage policy in Maine.

MAINE OFFSHORE WIND INITIATIVE

Through the Maine Offshore Wind Initiative, the GEO is working to develop a sustainable and responsible offshore wind industry through strategic planning, research, and coordination with state agencies and 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 2022, the Initiative has continued 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 a responsible offshore wind industry that works for Maine's people, Maine's economy, and Maine's heritage.

The Roadmap is being developed by an advisory committee and four expert working groups with broad public input and data provided by globally experienced technical consultants, 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 and expert Working Groups have met 77 times since July 2021. 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.

Using EDA funds, numerous studies were completed by technical consultants as part of the roadmap process, including an opportunity assessment of Maine's offshore wind supply chain, a workforce analysis, and analyses of offshore wind markets, transmission, and socioeconomic impacts.

The Roadmap is expected to be completed in early 2023. Studies completed to date include the following:

- **State of the Offshore Wind Industry: Today through 2050.**This technical report produced with stakeholder input through the Maine Offshore Wind Roadmap provides a baseline of trends in the offshore wind industry and information on the growing competitiveness of deep-water turbines. It reviews market trends including technology development, cost projections, research and development progress and opportunities, and emerging innovations.
- **Offshore Wind Transmission Technical Review.** This offshore wind transmission technical review initial report aims to inform the Roadmap by assessing various options for development of grid integration, including policy options, such as coordinated onshore and offshore transmission infrastructure. This includes an analysis of offshore and onshore transmission technology and design options, identification of opportunities for cost-effective, strategic approaches (including regional coordination) to develop necessary transmission assets, and identification of transmission-related best practices to mitigate impacts on people and the environment.
- **Maine Offshore Wind Talent Analysis.** This Offshore Wind (OSW) Talent Analysis provides data-driven conclusions and recommendations to the Supply Chain, Workforce Development, Ports, and Marine Transportation Working Group, with a particular focus on the job creation potential and workforce needs of the sector.
- **Maine Offshore Wind Supply Chain Opportunity Assessment.** A report by XODUS Group for the Maine Offshore Wind Roadmap assessed Maine's offshore wind supply chain opportunity on a regional, national, and global scale. The assessment

identifies specific opportunities for Maine and categorizes recommendations to improve Maine's supply chain based on effort and impact.

- **Maine Offshore Wind Supply Chain Diversification and Attraction.** This report was prepared with stakeholder interviews as part of the Maine Offshore Wind Roadmap process and expands on the findings of the *Maine Offshore Wind Supply Chain Opportunity Assessment.* In particular, the report identifies strategies to support existing Maine OSW supply chain companies, encourage diversification, support new business development, and attract OSW companies to Maine. This report also includes a self-assessment capability audit to help existing companies evaluate their readiness for offshore wind.
- **Maine Offshore Wind Supply Chain Partnership Building.** This report was prepared with stakeholder interviews and feedback as part of the Maine Offshore Wind Roadmap process and expands on the findings of the Maine Offshore Wind Supply Chain Opportunity Assessment. In particular, the report identifies partnership building strategies for Maine companies interested in the offshore wind supply chain. The findings and recommendations aim to leverage the strengths of existing partnership building entities in Maine and includes timelines for key activities.
- **Offshore Wind Energy Needs Assessment.** This offshore wind energy needs assessment aims to inform the Roadmap by developing scenarios to estimate offshore wind development in the Gulf of Maine under different potential future electricity demand and renewable supply conditions. This includes an assessment of the long-term (through 2050) renewable needs for New England and how offshore wind from the Gulf of Maine could meet Maine's needs as well as the rest of New England. This report builds on targets set in statute for Maine such as the requirement to achieve 80% renewable energy by 2030 and a goal of 100% by 2050, as well as analyses already conducted in the state through the Renewable Energy Goals Market Assessment and the Maine Climate Council, providing a focused assessment of offshore wind.
- **Socioeconomic Analysis of Offshore Wind in the Gulf of Maine.** The objectives of this study were to identify potential benefits and costs of OSW development in the Gulf of Maine. This report estimates dollar values of quantifiable outcomes from economic development, avoided carbon emissions, and health outcomes from cleaner air. It discusses benefits and risks that are more difficult to monetize at this time, including effects on the commercial fishing industry, port development, leadership in research and development, effects on tourism and recreation, other effects on coastal communities, and ecological effects.
- **Market Deployment Strategies for Offshore Wind in Maine.** This Market Deployment Strategies for Offshore Wind in Maine report aims to inform the Roadmap about potential strategies the State of Maine can consider to participate in growing the regional and global offshore wind market. This report's objective is to identify a set of market strategies that will enable the cost-effective deployment of offshore wind energy in Maine with the goal of reducing dependence on fossil fuels and providing affordable, local energy sources for Maine.

BALANCED APPROACH TO OFFSHORE WIND

In July 2021, Governor Mills signed into law L.D. 1619, which prohibits new commercial 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 commercial offshore wind projects in federal waters in the Gulf of Maine. The law also reflects the Mills Administration's thoughtful 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 floating 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.

As part of a phased approach to offshore wind, 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 proposed 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. In 2022, the Biden-Harris Administration announced a plan to expand offshore wind energy to include 15 GW floating offshore wind, to power 5 million homes, and reduce costs by 70% by 2035.

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. This stakeholder process began in 2022.

The State of Maine has assembled an Offshore Wind Port Advisory Group (OSWPAG) to serve as an advisory to the Maine Department of Transportation, the GEO, and other state officials regarding the development of a wind port that will allow Maine to realize the environmental and economic benefits of the rapidly developing offshore wind market in a way that reflects community values and minimizes adverse impacts. This OSWPAG process will provide the structure for a robust stakeholder and public communication process with respect to wind port development.

In addition to the Searsport study, a companion study on broader offshore 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-Harris Administration announced a federal target of 30 gigawatts of offshore wind deployed by 2030. In October 2021, The U.S. Department of Interior announced plans to advance commercial-scale offshore wind through seven offshore lease sales, including in the Gulf of Maine, in coming years. The plans include an anticipated commercial offshore wind lease sale in the Gulf of Maine in mid-late 2024. As noted above, the Administration also announced a federal target of 15 GW of floating offshore wind by 2035.

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.[7] The Task Force last met in May 2022 aligning with the agency's recently announced lease plans in the Gulf of Maine. Governor Mills sent a letter to BOEM encouraging the agency to follow Maine's lead and ensure Maine fishermen are meaningfully engaged in the process. The GEO will remain closely engaged with stakeholders, ocean users, BOEM, NH, and MA and other Task Force members as the process continues.

On May 19, 2022, the Gulf of Maine Task Force had its first meeting since the announcement of the anticipated lease sale in 2024. The Governor's Energy Office presented on behalf of the state. Following the Task Force Meeting, BOEM issued a Request for Information in August of 2022, which closed in in October, with 54 comments submitted. BOEM anticipates holding future in-person and virtual meetings as the process advances in early 2023.

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: The GEO is a Board member of 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 Consortium for Offshore Wind: In 2021, Maine joined the Regional Wildlife Science Consortium for Offshore Wind (RWSC) to collaborate on offshore wind research. RWSC[8] 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), RWSC creates 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 RWSC in July 2021. The GEO, DIFW, and DMR each participate on the RWSC State Caucus and did so throughout 2022.

Other partnerships: Maine continues to participate in a number of other key partnerships on offshore wind including with the United Kingdom to share renewable energy research, the

[7] https://www.boem.gov/renewable-energy/state-activities/maine/gulf-maine
[8] More information available here: https://www.northeastoceancouncil.org/wp-content/uploads/2021/07/RWSE-Announcement_July-2021.pdf.

Responsible Offshore Science Alliance, the U.S. Department of Energy Atlantic Offshore Wind Transmission Study as a technical review committee participant, and with the Business Network for Offshore Wind to create economic and investment opportunities for Maine businesses in offshore wind.

BUILDING A CLEAN ENERGY ECONOMY

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;
- $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.

CLEAN ENERGY PARTNERSHIP

The GEO received $6.5 million from the Maine Jobs and Recovery Plan to establish the Clean Energy Partnership. The Partnership aims to advance clean energy partnerships and initiatives to grow the workforce and increase innovation in Maine's clean energy sector, in support of Governor Mills' goal of 30,000 clean energy jobs in Maine by 2030.

The Clean Energy Partnership is led by the GEO and in partnership with the Governor's Office of Policy Innovation and the Future, Maine Department of Labor and Maine Department of Economic and Community Development. Other partners include the Maine Community College System, the University system, MaineHousing and Community Action Programs, the private sector, labor unions, nonprofits, municipalities, State and local chambers of commerce, among many others.

The Clean Energy Partnership program is comprised of the following work packages:

ADVISORY BOARD

The strength of the Clean Energy Partnership lies in the coordinated engagement of industry, support organizations, training and educational institutions, and state government. Accordingly, the Governor's Energy Office will establish an Advisory Group of public and private entities in the industry. The Advisory Group will help guide the program development and implementation of the programs established as a part of this initiative. This

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

will include defining needs, monitoring progress, advising on adjustments, and designing future program development.

WORKFORCE DEVELOPMENT

The GEO was awarded $2.9 million in funds from the Maine Jobs and Recovery Plan to support qualified individuals and entities in advancing workforce development and training for the clean energy and energy efficiency fields. The GEO will seek to advance initiatives to provide technical training, develop curriculum and/or training tools, provide experiential learning, job placement services to current and potential energy efficiency and clean technology employees, and/or other services related to Clean Energy & Energy Efficiency (CE&EE) workforce development and training.

In 2022, the GEO awarded approximately $2.5 million in grants to clean energy employers, educational institutions, industry associations, and nonprofit organizations to develop new curriculum, provide technical training and experiential learning, deploy new job placement services, and other activities related to workforce development and training. The awarded projects are anticipated to engage with over 1,600 individuals, thereby attracting new workers to the clean energy and energy efficiency workforce, providing career training and upskilling opportunities to existing workers, increasing diversity and representation in the clean energy workforce, and creating and expanding clean energy apprenticeship, pre-apprenticeship, and internship models to facilitate entry into rewarding and high-paying jobs.

INNOVATION

The GEO received $2.5 million from the Maine Jobs and Recovery Plan to fund programs that advance innovation in the clean energy sector, including but not limited to providing grants in coordination with the Maine Technology Institute, as well as supporting partnerships with the private sector, education intuitions and others. The programs will support innovation of advanced technologies and services that contribute to the achievement of the State's clean energy and climate goals. Funding may also be used for research and analysis of clean energy finance development tools.

WORKFORCE CLEARING HOUSE

The GEO received funding to design, procure, and implement an interactive website database for clean energy career information including internship and apprenticeship opportunities, training and educational programs, available career openings, and an outline of clean energy sector career pathways.

In addition to the Clean Energy Partnership, the GEO coordinated across state agencies and partners to advance numerous Maine Jobs & Recovery Plan priorities, including involvement with the Community Resilience Partnership and collaboration with the Department of Economic and Community Development on energy-related topics.

FEDERAL FUNDING

In November 2021, President Biden signed the federal Bipartisan Infrastructure Law (BIL), also known as the Infrastructure Investment and Jobs Act (IIJA), 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. The Inflation Reduction Act (IRA), signed into law in August 2022, additionally extended the federal tax credits for renewable energy development. BIL and IRA present funding opportunities to support Maine's continued progress towards Maine's energy and climate goals.

The GEO is actively engaged in BIL programs focused on a broad range of energy topics, including grid resilience, innovation, and clean hydrogen. The GEO is monitoring new opportunities under both BIL and IRA as they become available. The GEO may additionally consider multiple avenues of engagement with federal opportunities in the future, such as applying directly for funding to make funds available through state processes for eligible uses, or through partnership with or support of other eligible entities within the state.

GRID INNOVATION PROGRAM

On November 18, 2022, the DOE issued a Funding Opportunity Announcement (FOA) for the Grid Resilience and Innovation Partnerships (GRIP) Program under the BIL, which includes the Grid Innovation Program (GIP). The GIP is a funding mechanism under Section 40103(c) of the BIL that supports projects using innovative approaches to transmission, storage, and distribution infrastructure to enhance grid resilience and reliability. On December 19, 2022, the Maine Public Utilities Commission issued a Notice of Inquiry, Docket No. 2022-00360, to initiate a process in conjunction with the GEO that will request submission of Project Proposals to consider in preparing an application by the State of Maine for funds available through the GIP. The GEO is also exploring coordination with neighboring states to collaborate on this and related efforts.

GRID RESILIENCE FORMULA FUNDS – SECTION 40101(d)

Section 40101(d) of the Bipartisan Infrastructure Law (BIL) established the Grid Resilience Formula Fund Program, which will provide a total of $459 million each year for five years to states and federally recognized tribes. The funds available under this program are intended to improve the resilience of the electric grid against disruptive events, such as reducing shut offs due to extreme weather or natural disaster. Maine is currently scheduled to receive approximately $2.2 million for each of the next five years. Maine tribal nations will also separately be allocated their own funding amount.

To develop a program that is best suited for Maine, GEO led a planning process to help establish the objectives of the future funding program. Based on the preliminary program requirements, the program objectives are centered around resilience and energy justice concerns, such as reducing the frequency and duration of outages in disadvantaged communities. Following the grant award, GEO plans to stand up a competitive funding process to issue grants to eligible entities in the state. The

GEO anticipates holding a public hearing on the program objectives and metrics in early 2023 so as to submit a final plan for how Maine will allocate the funds to DOE in advance of the March 31, 2023 federal deadline.

REGIONAL CLEAN HYDROGEN HUBS

Maine has joined a multi-state Northeast consortium to explore funding opportunities through the Department of Energy's (DOE) Regional Clean Hydrogen Hubs initiative. Partners include the States of New York, Rhode Island, Connecticut, New Jersey, and Massachusetts, as well as a diverse set of public and private hydrogen ecosystem partners from across the region.

The coalition will focus on the integration of renewables into clean hydrogen production, and the evaluation of clean hydrogen for use in heavy transportation, heavy industry, and storage applications or other appropriate uses consistent with decarbonization efforts of each partner state in tandem with electrification.

DOE's $8 billion funding effort aims to spur investment in 6-10 regional hydrogen hubs that balance production and consumption, and which together will form a national clean hydrogen network in support of President Biden's net zero emissions goals. Matching the scale-up of clean hydrogen production to a growing regional demand is a key challenge for each regional hub, while also identifying a pathway to achieving scale and commercial viability.

STATE ENERGY PROGRAM – SECTION 40109

Section 40109 of the Bipartisan Infrastructure Law (BIL) provided an additional $500 million to State Energy Program (SEP) which will be made available to states, U.S. Territories, and the District of Columbia. This allocation will supplement the annual formula allocation of SEP funds made to eligible entities. The goals of the SEP program are to: increase energy efficiency of the U.S. economy; implement energy security, resilience, and emergency preparedness plans; reduce energy costs and energy waste; increase investments to expand the use of energy resources abundant in states; and to promote economic growth with improved environmental quality. Maine is allocated $3,694,530 under Section 40109, of which it has already received initial funding to update its State Energy Security Plan.

ENERGY SECURITY PLAN

The GEO is responsible for developing the State of Maine's Energy Security Plan (formerly known as the Energy Emergency Response Plan). This plan provides the federal government, the Governor, state and local government agencies, and the energy industry with 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.

This plan has had several names over the last ten years, each with different areas of focus. The process to update the state's 2012 Energy Assurance Plan, focusing on energy emergency response,

began in 2019, when the GEO collaborated with the Maine Emergency Management Agency to establish a stakeholder group comprised of state agency and industry members. With the assistance of consultant TRC, the GEO completed the stakeholder process, and during 2022 completed a concise energy emergency response plan, which was then reviewed by local emergency managers across the state. The plan describes the way the state would respond if an energy shortage of a substantial nature occurs or appears imminent.

The emergency response plan defines emergency conditions and how to monitor the indicators; identifies key players, as well as their roles and responsibilities; outlines the steps 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.

When the GEO completed its energy emergency response plan, the U.S. Department of Energy (DOE) issued new guidance which required all states to develop state energy security plans (SESP). The new requirements included energy emergency response, but also contained additional elements including a state energy profile; identification of threats and vulnerabilities; risk assessment; energy security roles and responsibilities; and energy resiliency and hazard mitigation. As a result, Maine's energy emergency response plan was folded into the new, developing energy security plan. A draft of this more comprehensive energy security plan was submitted to the U.S. DOE for review in September. Maine will continue development of this plan and complete the process during 2023.

ENERGY IMPROVEMENTS IN RURAL AREAS

Section 40103(c) under the BIL allocates $1 billion towards improving energy generation in rural or remote communities, managed by the Office of Clean Energy Demonstrations (OCED). The program will include support towards activities that improve the overall cost-effectiveness of energy generation, transmission, or distribution systems, reduce greenhouse gas emissions from electricity generation, among other priorities. OCED issue a Request for Information (RFI) seeking input on the program. The GEO submitted a response to the RFI on December 5, 2022, highlighting Maine's rural characteristics and encouraging the OCED to consider Maine's context when designing the program.

MAINE CLIMATE COUNCIL

Two years have passed since the release of Maine's four-year climate action plan, *Maine Won't Wait*, with demonstrated progress in Maine's fight against climate change.[10] In 2022, Maine's count of electric vehicles on the road grew to 8,594 (as of October 2022), while the number of public EV charging stations reached 389 (up from 184 in 2019).[11] Installations of high-efficiency heat pumps for heating and cooling increased by more than 29,000 between July 2021 and June 2022, reaching a

[10] 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.
[11] Maine Won't Wait Progress Report, December 2022, can be accessed at: https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MWWProgressReport_December2022_digital.pdf

cumulative total of over 82,000 installations total to date. 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. Maine achieved the renewable portfolio standard requirement of 48% in 2022.

The *Maine Won't Wait Two-Year Progress Report*[12] , published in December 2022, contains detailed progress updates on each of the strategies outlined in the action plan and tracks 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. Progress towards numerical Maine Won't Wait targets can be tracked on the new Maine Won't Wait Dashboard.

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 significant 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 (EWG), co-chaired by GEO Director Dan Burgess and Ken Colburn of Symbiotic Strategies, LLC, continued its work in 2022 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. Additionally, the EWG met to review, discuss, and provide technical feedback on recommendations of the Equity Subcommittee specifically relating to energy and procedural equity. In total, the EWG met four times in 2022.

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

EQUITY

Throughout 2022, equity has been an increasing focus of the work of the Maine Climate Council and other state energy initiatives 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

[12] Available here: https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MWWProgressReport_December2022_digital.pdf .

the recommendations of the MCC's six working groups from an equity lens. In January 2022, the Equity Subcommittee adopted interim recommendations for the Maine Climate Council.[13] A final report will be delivered to the Maine Climate Council in early 2023.

The GEO continues to work alongside other state agencies to understand the implementation of the Justice40 equity framework, particularly with regards to the millions of dollars that will be made available through the Bipartisan Infrastructure Law and other federal opportunities. Justice40, established by Executive Order 14008, is a whole-of-government approach to ensure at least 40 percent of benefits from federal investments in climate and clean energy flow to disadvantaged communities.[14] Members of the GEO staff participated in a staff-level working group on Justice40 facilitated by the GOPIF.

INDUSTRIAL INNOVATION TASK FORCE

Created by a recommendation of *Maine Won't Wait*, the Industrial Innovation Task Force was launched in September 2021. The task force is designed 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 serves 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 maintains 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.

Since September 2021, the Industrial Innovation Task Force has met quarterly to discuss relevant topics for industrial decarbonization including the Efficiency Maine Trust's Commercial and Industrial Custom and Prescriptive Program, Maine's emissions profile, national trends for industrial decarbonization, carbon sequestration, wasted heat and heat recovery, and federal funding opportunities. The GEO staff has also met with industrial representatives of the task force to elicit information on past, current, and future decarbonization initiatives, company goals related to decarbonization including energy efficiency, feedback on existing policies as they pertain to industrial facilities, and engagement strategies for future policy design.

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

[13] The interim report is available here: https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/MCC_EquitySubcommitteeInterimReport_Feb2022.pdf

[14] Link to Executive Order 14008: https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/

streamlined and transparent while seeking to minimize impacts on natural and working lands and engaging key stakeholders."

Consistent with this recommendation and acknowledging the growth of solar energy taking place as a result 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 met eight times in 2021. Meeting materials can be found here. The group issued a draft report in November 2021 for public comment, and considered public comments received in preparing its final report. The final report recommendations were delivered by the GEO and DACF in January 2022. 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 as well.

The final report summarizes information provided to the Stakeholder Group, outlines conclusions made as a result of the process, and advanced recommendations to the Department of Agriculture, Conservation, and Forestry and the Governor's Energy Office, which include improving availability of data, developing a "dual-use" pilot program, and increasing support for municipal planning capacity. The GEO, in response to the recommendations of the Stakeholder Group, has also begun the planning process for developing an adaptable toolkit to include several resources to support municipal planning for renewable energy development. These resources will help address several barriers faced by Maine communities associated with renewable energy development, including lack of expertise around energy issues; limited staff time and resources needed to develop and administer municipal requirements; and additional "soft costs" associated with the permitting and other non-hardware elements of deploying renewable energy. The GEO anticipates collaborating across several state agencies, with regional planning organizations, the U.S. Department of Energy, and with other national and state-based experts in developing these resources.

POWER SECTOR TRANSFORMATION

In support of carbon emission reduction in Maine's energy and industrial sectors, *Maine Won't Wait* recommended launching a stakeholder process to transform Maine's electric power sector. Modernization of current electric grid systems and infrastructure will be necessary to meet state renewable energy and climate goals through levers such as flexible demand management, integrated grid planning, utility structures, and beneficial electrification. The beneficial electrification of heating and transportation sectors – sectors with the highest contributing share of Maine's greenhouse gas emissions – will require coordinated and timely preparation in anticipation of necessary grid upgrades and system changes.

On May 2, 2022, Public Law 2022, Ch. 702 (L.D. 1959), An Act Regarding Utility Accountability and Grid Planning for Maine's Clean Energy Future was enacted with bipartisan support and signed

by the Governor. In addition to establishing minimum service standard reporting requirements for transmission and distribution utilities, the legislation required the PUC to launch a robust stakeholder process with the aim of identify grid planning priorities that will assist in the cost-effective transition to a clean, affordable, and reliable electric grid. The process was statutorily required to begin no later than November 1, 2022. Docket 2022-00290, "Commission Initiated Inquiry Into The Process To Identify Priorities For Grid Plan Filings" solicited information on how the Stakeholder Process required by S.P. 697 - L.D. 1959 should be structured. The GEO submitted comments and actively engaged with the PUC, utilities, environmental NGOs, and Lawrence Berkeley National Lab, to ensure this Stakeholder Process, which will be conducted every 5 years going forward, starts on a strong foot.

OTHER INITIATIVES

NORTHERN MAINE

The Northern Maine Independent System Administrator (NMISA) territory, encompassing portions of Aroostook, Washington, and Penobscot counties, is unique to the rest of the United States in that it is the only territory physically located in the country but not directly connected to the United States grid. The NMISA territory is connected to the rest of ISO New England indirectly through transmission ties with New Brunswick, Canada. The area is home to 90,000 residents, making up approximately 42,000 utility accounts.[15]

The GEO completed the Northern Maine Reliability and Rate Stability Stakeholder Group Summary Report in March 2022, fulfilling the obligations required under L.D. 1796: Resolve, to Study Transmission Grid Reliability and Rate Stability in Northern Maine. GEO led a stakeholder process and compiled results from the stakeholder engagement. In April 2022, Governor Janet Mills approved L.D. 682: Resolve, to Monitor Northern and Rural Energy, which directs the Governor's Energy Office, in coordination with the Office of the Public Advocate and the Public Utilities Commission, to monitor factors directly affecting energy supply and costs in NMISA territory, as well is in other rural or geographically isolated communities in the State. The GEO will report the findings and recommendations to the Legislature by February 1, 2023.

The GEO attended the Maine Public District Planning Advisory Group (PAG) meeting in June 2022, where Versant initiated an integrated planning process utilizing the existing PAG process, which is established in Versant's guiding tariff. Additional meetings have yet to occur as of the writing of this report and the GEO anticipates future engagement in the PAG process in 2023.

TECHNICAL ADVISORY GROUP

The National Renewable Energy Laboratories (NREL) and the U.S. Department of Energy (DOE) established the Onsite Energy Systems at Critical Facilities Technology Action Group (TAG) as a

[15] https://www.nmisa.com/documents-2/

voluntary pilot opportunity for states to coordinate to develop plans for powering critical facilities during grid outages. Part of DOE's State Energy Program, this initiative came out of feedback and requests from State Energy Offices for greater technical assistance. The GEO has been participating in the TAG since the initiative began in 2021, and the work of the group is planned to continue until 2023. Through participation in the TAG process, the GEO seeks to pilot the viability of REopt, a resilience planning tool for facilities developed by the National Renewable Energy Laboratory, align with ongoing and emerging work in Maine, and communicate outcomes of the pilot.

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 2022, 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 non-wires alternatives. The GEO additionally engaged with the PUC on matters related to federal funding opportunities, discussed in the Federal Funding section of this report.

Major initiatives include involvement in rate case filings for both Central Maine Power (CMP) and Versant Power, the two investor-owned utilities in the state. The CMP rate case was filed on August 11, 2022 (Docket 2022-00152). The GEO filed a letter to intervene the same day.

The GEO retained Strategen Consulting, LLC and sponsored direct testimony by Strategen submitted December 2, 2022. Versant Power filed a Notice of Intent to file a Rate Case on August 4, 2022 and officially filed of October 3, 2022 in docket 2022-00255. The GEO filed a letter of intervention October 4, 2022. The GEO continues to monitor the case.

Additionally, the GEO actively reviewed CMP and Versant's proposed stipulations regarding rates for energy storage technologies, residential electric vehicles (EV) and heat pumps through Docket No. 2021-00325. This docket is a result of P.L. 2021 Ch. 402 (L.D. 347) and P.L. 2021 Ch. 298 (L.D. 528), which directed the Public Utilities Commission to investigate new electric rates designs that advance the deployment of beneficial electrification technologies including residential and nonresidential electric vehicle charging and energy storage. Versant submitted a stipulation on August 1, 2022, which GEO signed, as did the Office of the Public Advocate (OPA), Efficiency Maine Trust (EMT), Acadia Center, Conservation Law Foundation (CLF), Natural Resource Council of Maine (NRMC), and ChargePoint.

In total, Versant will implement 13 new or modified rates across both the Bangor Hydro and Maine Public service districts as a result of the stipulation. All rates are optional for customers to opt-in, and are designed to be revenue neutral for all other customers. The rates proposed in this stipulation are likely to support deployment of electric vehicle charging infrastructure and energy storage technologies and save money for homes and businesses heating with heat pumps. Versant will also maintain their existing residential home heating rate, which typically produces electric savings for

customers that heat with heat pumps. During the 2021-2022 heating season, Versant and Efficiency Maine worked together to promote this rate to customers with positive results. Versant will also expand eligibility for the rate to customers with heat pump water heaters, further supporting a beneficial electrification technology.

CMP submitted its stipulation on August 23, 2022. GEO signed along with OPA, EMT, Competitive Energy Services (CES), CLF, NRCM, Biddeford Saco Old Orchard Beach Transit (BSOOB), Greater Portland METRO, Casco Bay Lines, and ChargePoint. CMP proposes to implement three new or modified rates in this stipulation, all of which are also optional, opt-in, and revenue neutral. CMP will modify their existing Rate A-Super Saver to have a higher fixed monthly charge ($31.67 vs $13.73) and lower per-kWh charges ($.054 per kWh vs $0.088). For customers using more electricity – such as those who rely on heat pumps to heat their homes – such a rate will generate savings. Efficiency Maine Trust estimates the rate would save about 8% annually for a typical electrified home with two heat pumps and vehicle charging. The rate would be available for the 2022-2023 heating season and sunset in 2024. CMP will also implement a limited pilot Seasonal Heat Pump residential rate with per-kWh charges of $0.158 from May-October, but only $0.004 from November through April. For nonresidential customers, CMP will expand the coincident peak rate that they have offered as a pilot rate for DC fast chargers to all medium and larger nonresidential customers by July 1, 2023. This rate will assess transmission charges based on coincident peak usage, providing an opportunity for large customers to avoid significant costs by managing their usage through storage or behavioral changes to reduce load on the transmission system. Multiple parties have expressed that this rate is likely to generate significant benefits to all electric ratepayers, as well as enable more cost-effective deployment of charging infrastructure and battery storage.

All parties agree further conversations are needed on rate design to achieve Maine's affordability and climate goals, and several of the rates in the stipulation expire in October 2024 to ensure updates. GEO proposes that future rate design move toward rates that include dynamic pricing, including real time rates for those who want them; full valuation and compensation for the services distributed energy resources (DERs) provide to the grid; clear data standards that ensure consumers have rights to their own data in real-time and can provide that data with third party service providers; and rates that are technology-neutral and whole-house.

The GEO additionally monitored Docket Nos. 2022-00279 and 2022-00052, which adopt amendments to Chapter 320 on electric utility service standards, including bill error and call abandonment rates. In addition to initiating a new process for integrated grid planning, L.D. 1959 "An Act Regarding Utility Accountability and Grid Planning for Maine's Clean Energy Future" (discussed in the Power Sector Transformation section of this report) also requires the PUC to adopt metrics for electric utilities pertaining to service quality, customer service, field services, and distributed energy resources interconnection. The PUC indicated that its pre-existing docket 2022-00052 satisfies the new statute's requirements except that the Commission may or may not consider small generation interconnection procedures in a future rulemaking.

ENGAGEMENT WITH THE NATIONAL ASSOCIATION OF STATE ENERGY OFFICIALS (NASEO)

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.

Throughout 2022, staff engaged with NASEO to monitor and learn about Bipartisan Infrastructure Law funding opportunities as they become available.

OFFICE RESOURCES

At the end of 2022, the GEO operated with a staff of twelve individuals[16], each of whom helped meet the office's responsibilities as outlined above. These positions were funded through a combination of sources including competitive grants, state appropriations and leveraged federal funds. The GEO also worked closely with multiple state agencies and departments, including the Governor's Office of Policy Innovation and the Future.

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 energy requirements, in close coordination with legislators and other agencies. The following are key pieces of legislation that were passed during the Second Session of the 130th Maine Legislature; the list is not intended to be all-inclusive.

LD 682 – Resolve, To Monitor Northern and Rural Energy. GEO, in coordination with OPA and PUC, continue to monitor these issues.

LD 2017 – Resolve, Regarding Monitoring of and Reporting on Energy Use Data Standards and Online Energy Data Platforms. GEO monitor and report on efforts undertaken in other states.

LD 2030 – An Act To Provide for Reimbursement of the Sales Tax Paid on Certain Battery Energy Storage Systems. GEO engage stakeholders on tax incentives for energy storage, work with DAFS & PUC

LD 318 – Resolve, To Direct the Office of the Public Advocate To Study Reforming Maine's System of Retail Electricity Supply To Provide More Options to Maine Customers and Support Maine's Climate Goals. In conducting the study, the Public Advocate shall consult with the PUC, the Governor's Energy Office and stakeholders.

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

LD 1913 – An Act To Create the Electric Ratepayer Advisory Council. Electric Ratepayer Advisory Council includes the Director of the GEO. Five meetings held in 2022 starting by July 1, 2022. Report due December 1, 2022 from the OPA and annually thereafter

LD 2010 – Resolve, To Help Certain Businesses with Electricity Costs. GEO not explicitly included, but offer to coordinate between PUC and DECD.

LD 1959 – An Act Regarding Utility Accountability and Grid Planning for Maine's Clean Energy Future. Monitor all aspects, engage in Integrated Grid Planning.

LD 1579 – An Act To Transition State and Local Motor Vehicle Fleets to Plug-in Hybrid Vehicles and Zero-emission Vehicles. Participate in GOPIF interagency working group. Working group report due to Transportation Committee by December 7, 2022.

LD 634 – An Act To Reduce Volatility in the Net Energy Billing Program and To Define "Competitive Electricity Provider." Monitor implementation at PUC

LD 1202 – An Act To Establish a Wood-fired Combined Heat and Power Program. Monitor implementation and potential rulemaking at PUC. PUC report to EUT due January 15, 2023 and biennially thereafter.

LD 1847 – An Act To Prohibit a Public Utility from Terminating or Disconnecting Service to a Public Safety Facility without Advance Notice and Approval. Monitor implementation and potential rulemaking at PUC.

LD 1969 – An Act Concerning Equity in Renewable Energy Projects and Workforce Development. Monitor implementation at PUC & DOL.

LD 1554 – An Act To Provide Climate Change Transition Assistance for Maine's Energy-intensive Businesses. Monitor program at EMT, coordination with Industrial Innovation Task Force.

PUBLIC ANNOUNCEMENTS

A list of links to public announcements related to energy made by the Governor or the Governor's Energy Office from 2022 are below.

December 6, 2022: Governor Mills Announces Emergency Winter Energy Relief Plan

December 1, 2022: Governor Mills Announces $5.4 Million in Climate Investments to Protect Communities and Create Jobs

October 13, 2022: Governor's Energy Office releases updated guide to help Maine people save money and stay warm this winter

August 30, 2022: Governor Mills, Efficiency Maine Announce Maine Jobs & Recovery Plan Initiative to Cut Energy Costs in Public Buildings, Save Taxpayer Dollars

August 4, 2022: Letters to President (PDF) and Congressional Leaders (PDF) Regarding Reinvesting in Shoreline Economies and Ecosystems Act (RISEE) of 2021.

July 29, 2022: Governor Mills Presses for Increased Funding & Expanded Eligibility for Federal Heating Assistance Amid High Prices to Help Maine People Stay Warm This Winter

June 17, 2022: Governor Mills & Efficiency Maine Announce $15 Million Maine Jobs & Recovery Plan Initiative to Cut Energy Costs in Schools and Public Buildings

June 14, 2022: Mills Administration Statement on PUC's Electricity Rate Decrease Due to Renewable Energy

March 28, 2022: Governor's Energy Office releases Energy Storage Market Assessment

March 9, 2022: Governor's Energy Office encourages Maine people to explore programs that offer relief from rising energy prices

Feb. 17, 2022: Mills Administration, Public Advocate Applaud PUC Approval of Utility Bill Credit to 90,000 Low-Income Maine Households

Feb. 9, 2022: Mills Administration, Public Advocate Submit Plan to Offer Utility Bill Credit to 90,000 Low-Income Maine Households

Feb. 2, 2022: Governor Mills Unveils Legislation To Improve Maine's Electric Utilities, Enhance Accountability, and Protect Maine Ratepayers

Jan. 20, 2021: Letter to BOEM from Maine, Massachusetts and New Hampshire regarding support for offshore wind research

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

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