Recommendation—Energy Burden & Energy Access:

Decrease energy burdens for Mainers by reducing barriers to participating in the state's energy transformation.

Actions:

Better understand the burden across all energy energy burden in Maine by 2025 that considers all types of energy expenditures in its analysis, including those associated with electrification of buildings and transportation. Regularly reassess e

- Reassess energy budgets of highest burdened populations every three years to build understanding of energy disparities and inform targeted policy interventions that maximize benefits for low- and moderate-income households.
- Set a target for reducing energy burden of low- and moderate-income households based on an updated, comprehensive analysis of energyrelated costs.

Supporting Information:

Energy burden analyses can typically include electricity and heating fuels and exclude costs: Conduct a comprehensive assessment of transportation, water, and other energy-related costs. As Maine pursues significant building and transportation electrification goals, future energy burden analyses should include additional be inclusive of a broader range of energy expenditures including primary and secondary heating sources, fuels, electricity, and transportation costs. Regularly reassessing energy costs of Maine's highest burdened populations, as well as maintaining an understanding of the landscape of energy costs for all energy users, will help identify disparities and inform targeted program delivery that helps low- and moderate-income people reduce their reliance on the most expensive energy sources.

> A 2019 Home Energy Burden Study of low-income Maine households, prepared for the Maine Office of the Public Advocate (OPA), found that Maine's low-income residents face higher energy burdens than other residents. The average home energy burden for low-income households in 2018 was 19% while the average home energy burden for all Maine households was 6%. The OPA intends to update this analysis in 2024.

> The state should set a target for reducing energy burden of low- and moderate-income households based on an updated, comprehensive analysis of energy related costs.

Reduce capital and financial barriers: Develop and support the availability of expanded financing options and ownership models to reduce barriers to accessing the benefits of clean energy and energy efficiency investments should be implemented. for low- and moderate-income households, disadvantaged communities, and small businesses.

Seek additional state or federal funding sources to support clean energy and energy efficiency programs that will help lower energy burdens for low- and moderate-income households.

Clean energy investments—such as energy efficiency, weatherization, and renewable energy and storage—can deliver long-term, high-impact solutions to reducing energy burdens, lowering emissions, and increasing resilience. To minimize barriers and maximize program benefits in lowand moderate-income communities, best practices for program design, delivery, and evaluation

Some examples:

- A green bank or fund could leverage significant, low-cost private-sector capital to finance clean-energy projects, climate initiatives, and infrastructure over the long term. The Efficiency Maine Green Bank will receive \$15 million to support energy loans through a grant from the U.S. EPA's National Clean Investment Fund, an initiative created by the inflation Reduction Act.
- The Federal Justice 40 Initiative designates that at least 40% of the funding and benefits from the Inflation Reduction Act must be delivered to disadvantaged communities.
- Efficiency Maine offers heat pump rebates scaled by income and allows streamlined income verification if a household participates in MaineCare, HEAP, SNAP, or TANF. Efficiency Maine also offers no fee, low-interest rate home energy loans to help income-eligible homeowners pay for the upfront cost of energy upgrades.
- On April 22, 2024, the U.S. Environmental Protection Agency (EPA) selected Maine's proposal for a \$62 million grant award to provide financial and technical assistance enabling lowincome and disadvantaged households across the state to access solar and energy storage. The proposal puts forth a range of programs and financing options designed to ensure a pathway to solar participation is available to renters and homeowners, rural and urban households, and households that may not be well-suited for on-site solar. This program will be administered by the Governor's Energy Office and plans to serve X [to be updated] lowincome participants through the Solar for All program. Maine's Solar for All program should consider funding models that can sustain the program beyond EPA funding availability.
- In 2017, the Center for an Ecology-Based Economy in Norway, Maine started the first public solar cooperative in Maine with the aim of reducing energy costs for households in western Maine and keeping more energy dollars in the community. The scale of their communityowned projects allows for expedited grid interconnection and can contribute to increased regional energy resilience.

Assist Mainers in navigating government programs: Launch an energy navigator program to provide education and technical assistance related to available energy bill-cost assistance programs and state and federal funding opportunities (grants, rebates, and other incentives).

Guidance products and/or community-based energy coaching programs could assist individuals and communities in understanding their options for funding and stacking available opportunities that meet their energy needs.

A navigator program will be most successful when trusted community partners who can assist in message delivery to priority populations are identified and coordinated with in the program design phase. Implementers should work with community-based organizations to assist in the design and delivery of a navigator program to ensure assistance and education opportunities effectively reach priority populations.

Increase funding to core assistance programs: Ensure adequate and sustainable funding for energy bill-cost assistance programs and streamline program enrollment to support delivery of funds to a greater portion of eligible households.

To be eligible to participate in Maine's Low Income Assistance Program (LIAP) household income must be at or below 150% of the Federal Poverty Limit. According to the Office of the Public Advocate, 122,000 households in Maine meet that threshold, but a large portion of eligible households don't enroll or receive a benefit for a variety of reasons.

Assistance programs should be sufficiently funded to serve those who need it, and where possible, automatic enrollment of eligible households should be implemented to reduce administrative and other barriers to entry.

Maine Climate Council Energy Working Group: Building Necessary Clean Energy Infrastructure – Draft text

Recommendation—Infrastructure:

Advance policies that support timely and cost-effective planning and buildout of necessary clean energy infrastructure to meet state goals and statutory requirements including 100% clean electricity by 2040.

Actions:

Establish a regular cadence of clean energy procurements to occur at least every two years to ensure timely deployment of projects to achieve emission reductions, meet state goals, serve expected growth in demand, meet demand = and maintain system reliability. Annually evaluate outcomes, technologies, and electricity market opportunities, and implement changes as needed to ensure success. GEO and the PUC should continue to e€ngage in and seek opportunities for regional policy coordination and costsharing of large-scale resource procurements and transmission infrastructure.

Supporting Information:

In 2019, Governor Mills signed legislation that increased Maine's Renewable Portfolio Standard (RPS)—the minimum portion of electricity sold in Maine supplied by renewable sources—to 80% by 2030. Maine's RPS is inclusive of a diverse set of existing and new renewable capacity resources (see latest compliance report here). A recent report commissioned by the GEO as required by the Legislature found that Maine's RPS has benefitted Maine's economy, supporting significant direct investments, job creation, and more than \$21 million in annual net electricity cost savings since 2011. The report also finds that in order to continue to meet that requirement, Maine will need to bring significantly more renewable energy projects online in the coming years. New competitive procurements of Maine-based renewables clean energy resources can deliver substantial additional value to host communities, bolstering local reliability and resilience to climate impacts, jobs, and tax revenues while reducing reliance on volatile, out-of-state fossil fuels.

The Maine Public Utilities Commission has existing authority to ensure compliance with Maine's RPS and to advance through its decisions and orders beneficial electrification. The PUC should develop standardized regulatory tools to evaluate costs and benefits to aid in identification and selection of cost-effective projects.

The Governor's Energy Office, through the Beneficial Electrification Policy Act also has the authority to petition the Commission to procure energy from renewable resources to achieve the emission reduction and renewable energy goals of the State to meet reasonably expected growth in electric demand. The GEO should continue to regularly evaluate and report on the status and impacts of Maine's RPS and clean energy targets on energy prices as well as assessment of benefits, including greenhouse gas emission reduction and economic benefits.

The legislature should provide implementing agencies with any additional statutory authorizations and guidance, while preserving agency discretion, to accomplish regular procurements in line with Maine's RPS policy, the Beneficial Electrification Policy Act, and that integrate statutory deployment targets for offshore wind, energy storage, and distributed energy resources. Continuing to support a diverse portfolio of existing and new resources can help manage costs and mitigate risks.

	In doing so, it is vital to integrate offshore wind, solar, energy storage, and distributed energy resources (DERs) for which the state has established specific deployment targets. The legislature should provide implementing agencies with clear statutory authorization and guidance, while preserving agency discretion, to accomplish regular procurements that keep deployment on pace with clean energy goals.
Maximize delivery of federal funds to priority infrastructure projects that contribute to meeting state goals.	The federal Bipartisan Infrastructure Law, Inflation Reduction Act, and CHIPs and Science Act have made available historic funding opportunities that can support critical investment in Maine's roads and bridges, public transportation systems, broadband, improve climate resilience, and build a clean energy future. In 2022, Governor Mills established the Governor's Infrastructure Implementation Committee. State agencies should continue to coordinate to maximize the delivery of federal funds to priority infrastructure projects that align with Maine's climate and clean energy goals.
Develop stakeholder-informed resources that provide fact-based information, model ordinance or zoning language, and community benefit information to assist Maine communities in supporting the	Maine has an abundance of high-quality clean energy resources available for development that positions the state well to achieve its goals. At the same time, Maine is a rural, aging, and densely forested state. Reaching Maine's policy requirements necessitates intentional action and thoughtful policy and program support to ensure that the clean energy transition is effective, affordable, and equitable, allowing communities across the state to participate and benefit from this transformation.
development of clean energy in a manner that meets local needs.	Few communities in Maine have ordinances or comprehensive plans that address renewable energy resources specifically. Some communities find they can regulate these resources under existing general development rules while others with limited zoning and land use regulations in place feel they lack adequate information to inform decision making. Model ordinances and other model tools such as community benefit plans can be tailored to meet local conditions and support local accommodation of clean energy systems by ensuring municipalities receive benefits and opportunities from infrastructure sited in their community.
Review and evaluate state policies for the permitting, siting and procurement of clean energy projects and transmission resources, with the intent of finding opportunities to enhance	Meeting Maine's clean energy goals will require significant additional buildout of energy generation, transmission, and distribution assets. Delays in siting and permitting processes can delay development and operation of clean energy projects and create uncertainty that increases costs. Timely, predictable permit review and dispute resolution processes can accelerate deployment and reduce development costs. In doing this policy review and evaluation:

efficiency, predictability, and transparency, while providing for meaningful public engagement and protection of natural resources.

- Maine should consider establishing a formal commission to provide recommendations for <u>potential</u> reforms to remove barriers to responsible clean energy infrastructure development, similar to the Commission on Energy Infrastructure Siting and Permitting established by Governor Healey of Massachusetts.
- Such a commission should provide recommendations on <u>potential</u> administrative, regulatory, and legislative changes to existing procedures and government structures that could enhance efficient and responsible clean energy development in line with state goals.
- Such a commission should assess project-level risk premiums and risk management strategies associated with existing and proposed policy reforms.
- The state <u>and such a commission</u> should proactively work with municipalities, landowners, developers, fishermen, and other important stakeholders to minimize conflicts and ensure benefits related to development.

Conduct proactive grid planning at multiple levelsboth the transmission and distribution level to ensure that Maine's electric grid will meet Maine's needs in the coming years, including addressing the challenges posed by climate change while creating a more reliable, resilient, equitable, modernflexible, clean, and affordable grid.

Effective grid planning will be a powerful tool to ensure all Maine people and businesses are afforded reliable and resilient cost-effective electric service as technological advances, economic changes, and policy objectives drive significant transformation across the energy landscape. The state, utilities, ISO-NE, the PUC, stakeholders, and advocates all have important roles in ensuring the implementation of such plans.

The PUC <u>has initiated hosted</u> a stakeholder process to identify priorities to be addressed in utility grid plans that will support improved system reliability and resiliency and enable the cost-effective achievement of the state's greenhouse gas reduction obligations and climate policies. <u>The first utility plans will be due within 18 months after the PUC issues its final order.</u>

As Maine electrifies, the distribution system will play a greater role in providing energy across the economy, in reducing emissions, and in doing so cost-effectively. The distribution system will likely need significant upgrades to serve peak demand across geographies. Proactive and granular planning can inform efficient upgrades to existing infrastructure and investments and targeted deployment of clean-new generation. Electric system planners and operators should:

- <u>Establish consensus around load forecasts that are Develop</u>_actionable and transparent, forecasting assumptions that are and temporally and geographically granular.
- Ensure load forecasts accommodate load growth and expected integration of distributed energy resources, and consider Maine's electrification goals and targets, including Efficiency Maine's programming, the state's climate action plan, analyses prepared for state agencies including the GEO, and other stakeholder priorities.

- <u>Incorporate comprehensive cost-benefit analyses that consider all costs and benefits of transmission and distribution grid investments.</u>
- Adapt to evolving end-uses, additional distributed energy resources, and greater load flexibility.
- Consider_Incentivize and implement grid enhancing technologies—_including hardware or software technologies that enable enhanced or more efficient flow of electricity across the existing electric transmission and distribution system—where they can reasonably reduce or defer the need for investments in grid infrastructure.
- Introduce and facilitate retail marketscompetitive markets, access, information, and compensation necessary to enable these new resources to effectively contribute to meeting grid needs, enhancing resilience, and reducing ratepayer costs.
- Establish grid planning performance metrics tied to financial incentives and disincentives where appropriate against which grid plans are publicly evaluated.
- Conduct robust engagement with both technical experts and the public.

Significant transmission and interconnection investments are also likely to be required to meet Maine's goals. Long-term transmission planning at the state and regional level should prioritize incorporation of realistic load growth projections and grid enhancing technologies, rather than only near-term reliability needs. Proactive planning particularly for the transmission and interconnection of 3 GW of offshore wind in the Gulf of Maine could reduce costs, uncertainty, and project risks.

Continue improving and modernizing the process for connecting clean energy projects to the grid to support certainty, timeliness, affordability, and improved utilization of resources on the grid.

Interconnection is a challenge facing proposed clean energy projects across the country, including in Maine. At the end of 20222023, there were more than 1,350-570 GW of generation and 680-1,030 GW of energy storage projects capacity in interconnection queues nationally, and aAccording to Lawrence Berkley National Laboratory, projects that reach construction took an average of five years from interconnection request to commercial operation.

At the state level, interconnection policy reforms would may be considered within the Maine Public Utilities Commission Small Generator Interconnection Procedures Rules (Chapter 324). "Flexible interconnection" is an emerging strategy which could reduce delays and costs, and increase the success rate for interconnection through implementation of software and hardware tools that allow for increased visibility and controllability of distributed energy resources.

Maine's Non-Wires Alternative (NWA) process is a second important regulatory program for advancing this goal at the state level. Policy makers should consider reforms to the NWA process to improve the program's effectiveness for connecting high value clean energy projects while reducing transmission and distribution capacity costs.

<u>Utilities</u> can additionally support a more efficient process by improving publicly available hosting capacity maps of grid conditions and capacity, and annually reporting on the number of pending projects and approval timelines in active cluster studies.

Implement the Maine Offshore Wind Roadmap, including near-term infrastructure investments—such as a dedicated Maine port—transmission and interconnection planning, and advancement of Maine-based innovations to meet the state's energy goals and to position the state as a competitor and beneficiary in the emerging national and international offshore wind industry.

Offshore wind presents a generational economic and energy opportunity for Maine. As an abundant source of clean and renewable energy, offshore wind has the potential to help free Maine from its reliance on fossil fuels, to lower energy costs and volatility, and to curb climate-altering emissions to protect our state's environment for future generations. As an industry, offshore wind is poised to grow significantly in the coming years. This growth will support existing and emerging Maine companies, create new jobs and career opportunities for Maine citizens, attract new workers and families to Maine, and deliver infrastructure investments in communities across the state. The Maine Offshore Wind Roadmap is a stakeholder-driven comprehensive plan that offers detailed strategies for Maine to realize the economic, energy, and climate benefits from offshore wind, in conjunction with communities, fisheries, and wildlife of the Gulf of Maine.

In addition to the Roadmap, Public Law 2023, Chapter 481, which was signed into law in July 2023, authorized the Governor's Energy Office to lead a process to procure at least 3,000 MW of offshore wind installed by 2040. Offshore wind procurements should be coordinated with others states or entities in the region to drive competition and reduce costs while securing phased development commitments to deliver a meaningful percentage of Maine's electricity needs by 2040.

As part of Maine's commitment to responsible offshore wind, Governor Mills established the Maine Offshore Wind Research Consortium to better understand the local and regional impacts of offshore wind power projects in the Gulf of Maine. To date, three projects representing priority research strategies have been funded, including: exploring approaches to fisheries coexistence with floating offshore wind; inventorying baseline data on socioeconomics of Maine fishing communities to help assess potential positive and negative impacts of floating offshore wind in the Gulf of Maine; and sonar seafloor mapping in key areas of the Gulf of Maine. The state should allocate additional funding to the Research Consortium to support work on the priority research strategies as identified by the group's Advisory Board.

Maine Climate Council Energy Working Group: Demand Management – Draft text

Recommendation—Demand Management: Develop and implement demand management and innovative load flexibility strategies and technologies to support energy reliability and resiliency, reduce electricity peaks and overall system costs, accelerate beneficial electrification, and reduce emissions.

Actions:	Supporting Information:
Support the adoption of Adopt software	Essential software and technologies should include:
and technologies that enable signals based	 Distributed energy resource management systems (DERMS) for a program administrator
on electricity grid conditions to manage	 Automated network sensing, management, and communications systems for distribution circuits,
demand and supply.	and cost-effective and timely interconnection of distributed resources based on their expected
	operating characteristics. Such systems and data should be made available to allow multiple different
	actors market access and the ability to innovate and play a role in meeting grid needs
	 For example, EMT's initiatives to manage EV charging and to dispatch home batteries offer
	aggregators the option to sign up to use their own proprietary DERMS platform, if they have one,
	or to use the open DERMS platform that is provided by EMT.
	Smart vehicle charging, grid-integrated devices (such as hot water heaters), and other consumer
	technologies to avoid creating lost opportunities
	 By way of illustration, residential customers in Maine may now enroll certain brands of EV
	chargers and EVs to receive a financial incentive through EMT's initiative to Manage Charging for
	Electric Vehicles, provided that the participating chargers or EVs have compatibility with data
	sharing, tracking and remote management.
	Robust data privacy and consumer protections
Support the adoption of policy, programs,	Specific areas of focus should include:
mechanisms, markets, and a regulatory	Scaling up demonstration projects
environment that facilitate customer	 <u>Pursuing through the Commission, advanced rate designs</u> that create customer savings
participation in demand management and	by aligning customer costs with electricity system costs (such as <u>time-varying rates that minimizing</u>
related strategies.	minimize peak demands on distribution and transmission infrastructure and maximizing maximize

- demand under low-load and high-renewable conditions). New rate design proposals should prioritize data collection and verification to ensure beneficial implementation.
- Transparent pelatforms, programs, policies and practices that promote competition between energy service providers and innovation on the grid edge, including open access opportunities that utilize standardized data, and enable-pay-for-performance incentives
 - o EMT's Demand Management Program was approved by the EMT Board and the Maine PUC Triennial Plan V in 2022. The program is small but expanding, and now comprises four initiatives: Small Battery Management to dispatch residential back-up batteries during peak periods; Large Battery Management, a pay-for-performance arrangement for batteries 20kW and larger that reduces the load of a commercial or institutional customer behind the meter during summer peak hours; Managed Charging for EVs, in which EV drivers are compensated with they allow EMT to shift their charging to off-pea hours; and Commercial Curtailment, a traditional demand response initiative where participants are paid a fixed incentive for each kilowatt reduced during a demand response event.
- Opportunities for aggregation and automation

as well as equitable distribution of benefits.

EMT, and other relevant entities, should track and annually report low- and moderate-income program participation in applicable demand management programs.

Ensure equitable access to programs/pilots Managing demand successfully can reduce overall system costs—which translates to lower costs, or avoided costs—for everyone, which is particularly important for Maine's most vulnerable customers. There are different-several components to considering the impact of demand management activities on low and moderate-income customers:

- Managing demand successfully reduces overall system costs, which translates to lower costs, or avoided costs, for everyone, which is particularly important for Maine's most vulnerable customers.
- Different initiatives will target different types of customers (based on customer class, etc.). Careful attention to the distribution of benefits and burdens of all programs is warranted.
- Programs targeting households should strive to be designed to be as inclusive as possible with diverse customers.
- Strategies and best practices should be identified to increase beneficial participation from low- and moderate-income households, which should include coordination with community-based

	organizations and utilities to and include effective ensure effective education and outreach to support beneficial participation.
Undertake education and communication around the opportunities and benefits of demand management initiatives with consumers, communities, policymakers, and regulators.	Effective communication of programs is critical to achieve program objectives and goals. Several entities with different audiences will play a role in robust communications, such as utilities, state agencies, the Commission, EMT, and community-based organizations. Immediate priority outreach needs include encouraging EV owners to participate in flexible charging by making available mechanisms such as time of use rates or managed charging programs like EMT's Managed Charging for Electric Vehicles initiative.

Recommendation—Workforce:

Attract, prepare, and position people and businesses to participate in Maine's clean energy economy with a goal to support 30,000 clean energy jobs by 2030.

30,000 clean energy jobs by 2030.		
Actions:	Supporting Information:	
Continue to support state workforce initiatives with ongoing stakeholder coordination between industry, educational, and labor and training organizations to support current and future workforce needs.	In 2022, Maine's clean energy sector employed more than 15,020 people and contributed \$2.31 billion to Maine's economy. The 2023 Maine Clean Energy Industry Report found that the sector is poised for continued growth and that "the growth of the industry presents new and increasingly valuable career opportunities to Maine residents from many backgrounds and with a wide range of skills and knowledge."	
	The Clean Energy Partnership program was established to advance Maine's clean energy, climate, economic development, and workforce goals. The Partnership is led by the Governor's Energy Office (GEO), in close coordination with the Governor's Office of Policy Innovation and the Future (GOPIF), the Department of Labor (DOL), and the Department of Economic and Community Development (DECD).	
	GEO has awarded \$2.9 million in grants from the Maine Jobs and Recovery Plan to clean energy employers, educational institutions, industry associations, and nonprofit organizations to develop new curricula, provide technical training and experiential learning, deploy new job placement services, and other activities related to workforce development and training. This includes supporting apprenticeships, affordable and accessible trainings, and free credentialing.	
	To help guide the program, the Clean Energy Partnership has convened an Advisory Group to provide information and feedback as initiatives are designed and implemented. This includes defining needs, monitoring progress, advising on adjustments, and designing future programming.	
Continue to support programs and partnerships	In 2022, Maine had 2,500 clean energy businesses representing approximately 4% of total	
for clean-tech innovation support to encourage	businesses throughout the state.	
the creation of clean-energy and climate		
solutions.	Through the Clean Energy Partnership GEO has awarded \$1.3 million to partners working to develop business incubator and accelerator programs; facilitate market adoption of forward-looking technologies to expand the state's clean energy and climate leadership; encourage economic	

	development in rural areas through business advising and mentorship for small businesses and contractors; and create hubs for entrepreneurs, founders, and startups in the growing clean energy, climate tech, and sustainability fields.
·	In 2023 there were 130 registered apprenticeship sponsors in the state and 3,088 registered
	apprentices across all sectors. ~55% of registered apprenticeships are in the construction sector. 37%
	of all apprentices are electricians. [Still working to identify the number of apprenticeships specifically in the clean energy sector- will update].
Create a clearinghouse for clean energy	A one-stop-shop that connects jobs-seekers with Maine-based clean energy employers and
workforce development efforts, resources, and	workforce training programs will build understanding of and access to the breadth of clean energy
funds in the state.	jobs available in Maine.
	According to the 2023 Maine Clean Energy Industry Report, non-white workers, workers of Hispanic or Latino ethnicity, and veterans each make up a higher share of Maine's clean energy talent
	compared to the statewide labor force. On the other hand, workers aged 55 and over represent one-
seekers.	fifth of the clean energy workforce compared to approximately 28% in the state economy. Women,
	who make up more than half of the workers across the state, comprise only one-quarter of Maine's
	clean energy workers. <u>Develop and fund t</u> argeted recruitment and training strategies will be
	important to support entry of diverse and disadvantaged job seekers into the clean energy sector.
Identify workers and industries	Develop training and/or diversification opportunities that leverage unique skills and credentials of
disproportionately impacted by climate change	existing workers for new industries through workforce retraining initiatives offered to industries and
and identify pathways into clean energy and	communities most impacted by climate change.
climate friendly careers.	