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Testimony in Support of LD 1895, An Act Regarding the Procurement of Energy from Offshore Wind Resources

To the Committee on Energy, Utilities and Technology
by Jack Shapiro, Climate and Clean Energy Program Director
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Senator Lawrence, Representative Zeigler, and members of the Energy, Utilities and Technology Committee, my name is Jack Shapiro, and I am the Climate and Clean Energy Director at the Natural Resources Council of Maine (NRCM) Today, on behalf of our 25,000 members and supporters, NRCM testifies in strong support of LD 1895, An Act Regarding the Procurement of Energy from Offshore Wind Resources [1]

Offshore wind is essential to meet Maine's Climate and Clean Energy Goals

NRCM has been working for more than 60 years to protect, restore, and conserve Maine's environment, and today, that means one of our central priorities is addressing the threat of climate change The impacts of climate change are already here The Gulf of Maine is warming faster than 99% of the world's oceans [2] Climate change is threatening coastal communities,[3] contributing to record rainfalls and flooding,[4] and affecting iconic industries in Maine like logging,[5] clamming,[6] and winter sports [7]

Maine has acted decisively in the past few years to address climate change and to protect Maine people from its impacts In 2019, bipartisan majorities of the Maine Legislature passed new climate laws to shift 80% of Maine's electricity supply to renewables by 2030 and 100% by 2050,[8] and reduce greenhouse gas emissions by 45% in 2030, and 80% in 2050 [9] Since then

[1] https //legislature maine gov/legis/bills/display_ps asp?PID=1456&snum=131&paper=&paperId=I&Id=1895
[2] https //gmri org/stories/gulf-maine-explained-warming-gulf-maine/
[3] https //www bangordailynews com/2023/01/25/news/portland/climate-change-flooding/
[4] https //www penbaypilot com/article/how-climate-change-affecting-river-flooding-maine/173520
[5] https //www bangordailynews com/2023/01/14/business/maine-loggers-struggling-warm-winter/
[6] https //www themainemonitor org/researchers-seek-statewide-changes-to-save-clam-fishery-from-climate-driven-collapse/
[7] https //www mainepublic org/climate/2023-01-13/january-warmth-takes-its-toll-on-winter-recreation-in-maine
[8] https //www mainelegislature org/legis/statutes/35-a/title35-Asec3210 html
[9] http //www mainelegislature org/legis/statutes/38/title38sec576-A html

Maine has also established a net-zero emissions target by 2045,[10] and Governor Mills has announced a goal of reaching 100% renewable energy by 2040 [11]

In December 2020, after months of work and input from hundreds of people from both parties and from every corner of the state – the Climate Council released *Maine Won't Wait*, Maine's comprehensive climate action plan [12] The Climate Action Plan is comprehensive, but the central strategy embodied in the plan is electrification, that is, switching the end uses of energy — how we fuel our cars and trucks, and how we heat our homes — away from fossil fuels, toward electricity Crucially, that electricity needs to come from affordable renewable energy sources This approach is reinforced through the 2022 Inflation Reduction Act, with its hundreds of billions of investments and incentives for renewable energy, electric vehicles, and home electrification.[13] This will require a substantial amount of new electricity Depending on the particular mix of technologies that are deployed, including efficiency, load management, and others, estimates are that we may need double the amount of electricity as we use today[14] — all of which will need to be renewable

Offshore wind (OSW) power from the Gulf of Maine will play an essential role in providing the renewable energy Maine needs to meet its climate and clean energy obligations The Gulf of Maine has some of the strongest and most consistent winds in the world That means locating offshore wind projects in the Gulf of Maine will come with high-capacity factors, or put another way, we will get more bang for our buck for every turbine in the water

Offshore wind will stabilize energy prices

Our dependence on natural gas for about half of the power generation in New England has driven eye-watering electricity price spikes Gas price volatility resulted in an 83% supply rate increase last year,[15] and a 49% supply rate increase this year [16] Offshore wind power has no fuel costs once it is built, bringing stable prices that are locked in for years through long-term contracts This will help insulate Maine people and businesses from the harmful price volatility that goes hand-in-hand with our dependence on fossil fuels A 2023 RENEW-NE study confirmed this, finding that "Long-term renewable contracts, which lock in steady prices for decades at a time, provide benefits that offer less price volatility and lower electricity market prices" as well as provide a hedge against volatile natural gas prices [17]

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[10] http //www mainelegislature org/legis/statutes/38/title38sec576-A html

[11] "Rising power costs help fuel Gov Mills' plan to speed transition to renewable electricity" Portland Press Herald 2/15/2023

[12] https //www maine gov/future/climate/council

[13] https //www wri org/update/brief-summary-climate-and-energy-provisions-inflation-reduction-act-2022

[14] https //www maine gov/future/sites/maine gov future/files/inline-files/ERG MCC Vol3 MaineEmissionsAnalysisSynapse 11-9-2020 pdf Page 39

[15] https //www pressherald com/2021/11/17/supply-cost-spike-to-raise-average-homes-cmp-bill-by-30-in-2022/

[16] https //www mainepublic org/business-and-economy/2022-11-16/cmp-customers-will-see-rate-hikes-next-year

[17] https //renewne org/wp-content/uploads/2023/02/Wind-in-Winter-RENEW-FINAL-2023-02-01 pdf

Large-scale wind development will also have beneficial impacts on wholesale power market prices A 2022 NC State study that found that "[O]ffshore wind power could help lower wholesale electricity prices on average for six states in New England" by reducing the severity of price spikes during modeled cold snaps when demand is high [18] In December 2022, Daymark Advisors and American Clean Power (ACP) released a study on the proposed Northern Maine wind project While this study considered onshore wind, they found that roughly 1GW of wind would lower energy market prices and provide significant cost savings for consumers in New England states [19] The impacts of an offshore wind project would probably be similar or possibly greater, since offshore wind would be generating more power more of the time per turbine due to the better wind resource offshore

Offshore wind will likely bring other energy system benefits as well As Maine, and New England as a whole, transitions toward a grid powered by renewable energy, having a diverse supply of renewable energy will help reduce system costs Offshore wind is a great complement to very cheap solar for example, because it peaks at night and in the winter, whereas solar peaks during the day and in the summer The more those complement each other, the less expensive infrastructure and storage needs we have on top of those baselines to meet the peak moments when we have the most demand, which ultimately drive the costs of the grid

Offshore wind is a generational economic opportunity for Maine

Offshore wind presents Maine with a rare opportunity Not only is offshore wind essential to meeting Maine's climate and clean energy goals and to addressing the high costs of energy long-term, but according to the Maine Chamber of Commerce, it also represents one of the largest economic development opportunities Maine may see this century [20] Maine's 10-year Economic Development Strategy names offshore wind as a key opportunity for innovation, revenue, and economic development [21]

The potential for investment, job creation, and business development is significant A report prepared as part of Maine's offshore wind roadmap process found that developing the first 1,600 megawatts (MW) of offshore wind in Maine would generate between $114 and $362 million in economic activity from construction, and $36 - $133 million in economic activity every year from ongoing operations and maintenance According to the same report, Maine could experience up to 33,000 short-term and 13,000 long-term jobs from the offshore wind build out [22] The roadmap also found that 80 companies are already engaging in the U S 's offshore

[18] https //news ncsu edu/2022/04/study-finds-offshore-wind-could-drive-down-energy-costs-in-new-england/

[19] https //cleanpower org/news/new-report-study-finds-significant-benefits-for-new-england-region-from-clean-energy-deployment-in-northern-maine/

[20] https //www pressherald com/2023/03/01/commentary-offshore-wind-is-maines-opportunity-of-a-century/

[21] https //www maine gov/decd/sites/maine gov decd/files/inline-files/DECD 120919 sm pdf

[22] https //www maine gov/energy/sites/maine gov energy/files/inline-files/Maine%20OSW%20DNV%20Socioeconomic%20Analysis%20of%20Offshore%20Wind%20in%20the%20Gulf%20of%20Maine%20Final%20Report pdf This is the full jobs impact including direct manufacturing and installation jobs, but also indirect jobs in the supply chain, etc , as well as induced jobs created from investment and economic

wind industry, and that "[w]orkforce opportunities in offshore wind cover nearly 120 occupations in Maine, such as engineering, electricians, metalworkers, marine operations, surveying, boat building and maintenance, and research and development "[23]

LD 1895 builds on years of floating offshore wind work in Maine

The majority of offshore wind around the world uses "fixed-bottom" technology That is, the towers and turbines are mounted on foundations that are secured directly to the seafloor Due to the depth of the Gulf of Maine, offshore wind development here will need to be "floating" offshore wind, mounted on floating platforms anchored to the ocean floor with mooring cables

Maine has been working on floating offshore wind for years In 2013, the first grid-connected offshore wind turbine was installed on a floating platform off Castine The turbine was a 1 8 scale model of a floating platform design developed at the University of Maine [24] A full-scale single turbine demonstration project, also using the University of Maine's technology, is nearly at the construction phase, planned for a site south of Monhegan [25] The Governor's Energy Office has applied to lease a 15 2-square-mile site in the Gulf of Maine for a 12-turbine research array, and this project is currently in the initial stages of the federal permitting process [26] Work is also underway to evaluate potential sites for an Offshore Wind Port, crucial to garnering the economic benefits that will come with offshore wind development in the Gulf of Maine [27]

Most relevant to LD 1895, the Governor's Energy Office recently concluded the Maine Offshore Wind Roadmap process The Roadmap is "a stakeholder-driven comprehensive plan that offers detailed strategies for Maine to realize economic, energy, and climate benefits from offshore wind, in conjunction with communities, fisheries, and wildlife of the Gulf of Maine "[28] The Roadmap included nearly 100 working group members, more than 50 meetings, and multiple technical analyses Notably, a top recommendation from the Roadmap is to "Establish a responsible OSW procurement target and phased solicitation addressing a meaningful percentage of Maine's electricity needs "[29]

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activity Here's how the report describes it "Installation, manufacturing, and supply chain jobs are those needed to directly construct or operate the wind turbines, such as on-site construction crews, equipment manufacturers, consultative services and design firms, security crews, and maintenance personnel This category also includes indirect jobs such as legal services, natural resource suppliers, construction equipment suppliers, accounting services, and wholesalers Induced jobs are the additional jobs created in the economy by the spending of the people with manufacturing and supply chain jobs These include jobs from retailers, restaurants, health care providers, food providers, and housing markets "

[23] https //www maineoffshorewind org/mills-administration-releases-comprehensive-plan-to-responsibly-advance-offshore-wind-in-maine/

[24] https //www osti gov/servlets/purl/1375022

[25] https //newenglandaquaventus com/

[26] https //www maine gov/energy/initiatives/offshorewind/researcharray

[27] https //www maine gov/mdot/ofps/oswpag/

[28] https //www maine gov/energy/initiatives/offshorewind/roadmap

[29] https //www maine gov/energy/sites/maine gov energy/files/inline-files/Maine_Offshore_Wind_Roadmap_February_2023 pdf Page 12

LD 1895 builds off many recommendations in the Roadmap, including setting a procurement schedule, prioritizing development outside areas that represent the majority of fishing effort, collecting data, reducing wildlife conflicts and minimizing ecosystem impacts, emphasizing registered apprenticeships, and regional collaboration on procurement and transmission, among others

Offshore wind in the Gulf of Maine is moving forward and Maine must act

The federal government has set ambitious offshore wind goals In 2021, President Biden announced a goal of deploying 30 GW of offshore wind by 2030,[30] and in 2022, expanded that goal to include deploying an additional 15GW of floating offshore wind by 2035 [31] The federal Bureau of Ocean Energy Management (BOEM), part of the U S Department of Interior, has published a schedule for developing and offering leases for offshore wind development to support these goals, including a lease sale in the Gulf of Maine in late 2024 [32] The Gulf of Maine leasing process is well underway In August 2022, BOEM released a request for information (RFI) for the Gulf of Maine The RFI is "the first step in BOEM's commercial planning and leasing process to identify the offshore locations that appear most suitable for development, taking into consideration potential impacts to resources and ocean users " After receiving comments from the public and developers, they released a draft call area in January 2023, and a final call area in April 2023 [33]

Activities in other states show that engaging in the Gulf of Maine and on floating offshore wind will not wait for Maine Massachusetts is interested in floating offshore wind development as well, and at a recent BOEM Gulf of Maine task force meeting hosted in Bangor, Massachusetts officials stated that they would ultimately need 23 GW of offshore wind power overall to meet that state's offshore wind goals Some of that demand will undoubtedly be met with power from projects in the the Gulf of Maine BOEM offered the first federal floating offshore wind lease sale for sites off the California coast in December 2022 That lease sale resulted in 5 leases totaling 373,268 acres, which is estimated to support 4 6 GW of wind power [34]

The Biden Administration's ambitious offshore wind goals, new incentives from federal climate legislation, and strong demand for renewable energy from other New England states all mean that offshore wind development will happen in the Gulf of Maine Maine must act now to be able to shape the development of this industry in a way that works for Maine and ensures Maine

[30] https //www whitehouse gov/briefing-room/statements-releases/2021/03/29/fact-sheet-biden-administration-jumpstarts-offshore-wind-energy-projects-to-create-jobs/

[31] https //www whitehouse gov/briefing-room/statements-releases/2022/09/15/fact-sheet-biden-harris-administration-announces-new-actions-to-expand-u-s-offshore-wind-energy/

[32] https //www boem gov/sites/default/files/documents/renewable-energy/state-activities/Theuerkauf-Commercial-Wind-Energy-Leasing-Process-Gulf-of-Maine pdf Page 29

[33] https //www boem gov/renewable-energy/state-activities/maine/gulf-maine

[34] https //doi gov/pressreleases/biden-harris-administration-announces-winners-california-offshore-wind-energy-auction

people reap some of the benefits of the development of this new industry Acting now will create the certainty we need to meet other associated challenges, whether that's workforce development, transmission planning, building an offshore wind supply chain, or others

LD 1895's procurement provisions balance certainty with protecting ratepayers

Years of experience from other states and around the world show that the benefits of offshore wind begin with scheduling a competitive offshore wind procurement Procurement legislation provides certainty that there will be a market for floating offshore wind in Maine, acts as the catalyst for developer interest, supply chain investments, and workforce development, and is a proven mechanism to ensure that offshore wind is developed responsibly with high environmental and labor standards, with benefits shared widely and equitably

At the same time, we must allow our energy regulators to only purchase renewable energy that includes significant ratepayer benefits, as well as the enormous climate, equity, and economic benefits developing this industry will have LD 1895 strikes a balance by asking the Governor's Energy Office GEO) to set a schedule of procurements no more than two years apart, beginning in 2025 The procurements will be competitive, meaning developers will be competing to offer Maine the lowest costs they can Second, the bill gives the Public Utilities Commission (PUC) the flexibility to turn down bids if the costs are too high in any given round of procurement To provide a measure of certainty, the bill sets requirements to contract for 1,000 MW of offshore wind by 2030, and a total of 2,800 MW by 2035 [35] As costs for floating offshore wind are expected to continue to decline as the industry matures, this will result in increasingly advantageous contracts for Maine ratepayers [36]

Critically, as called for in the Roadmap recommendations, LD 1895 includes provisions for joint procurements with other states, letting us take advantage of economies of scale – and for the PUC to procure lower-cost offshore transmission solutions, which can reduce costs as well as environmental impacts Further, these prices do not account for provisions in the Inflation Reduction Act, which include federal tax credits that could lower the capital costs of projects built in the Gulf of Maine by at least 30%, and federal tax credits and incentives that are available to help build out Maine's supply chain and manufacturing of offshore wind components, invest in port infrastructure, and for transmission planning

[35] 2,800 MW is estimated to serve approximately 50% of Maine's electric load in 2040, accounting for beneficial electrification such as the growth of high-efficiency heat pumps and the electric vehicle transition

[36] While the costs of floating offshore wind projects are currently higher than fixed bottom projects, the costs are projected to be similar by 2035 The National Renewable Energy Lab (NREL) projects the costs for floating offshore wind to fall to $60-80/MWh by 2030 and $45-50/MWh by 2035 https //www energy gov/sites/default/files/2022-09/offshore-wind-market-report-2022-v2 pdf, The Biden administration has set a price target for floating offshore wind power at $45 per megawatt hour by 2035, which is lower than the natural gas generation we are dependent on now https //www whitehouse gov/briefing-room/statements-releases/2022/09/15/fact-sheet-biden-harris-administration-announces-new-actions-to-expand-u-s-offshore-wind-energy/ These costs are lower than current natural gas generation costs

LD 1895 sets strong standards to ensure offshore wind development leaves no one behind

As offshore wind has begun to develop in the United States, it has become common practice for states enacting offshore wind policies and procurements to use their authority to set standards for offshore wind development, whether that is to protect the environment or their state's fisheries, set high labor standards, ensure that the benefits of this new industry are distributed equitably, and that essential issues like transmission planning and regional collaboration are addressed [37] LD 1895 requires developers to submit plans outlining how they will address many of these issues as we develop this brand-new industry for Maine These plans include wildlife, fisheries, and environmental mitigation plans, diversity, equity, and inclusion plans, consultation, stakeholder engagement, and community benefits plans, workforce development and just transition plans, and fisheries communities investment plans These provisions, along with dedicated funding streams for research and monitoring around potential impacts in the Gulf of Maine, are essential to making sure that offshore wind is developed responsible, and the benefits from this industry leave no one behind

Shared transmission infrastructure can reduce costs and impacts

Bringing the power generated by offshore wind projects to the onshore grid is a complex undertaking, and it is widely accepted that the mode of interconnecting offshore wind projects in Southern New England and the New York Bight through individual project transmission lines is not ideal To address this issue, LD 1895 authorizes the PUC to procure shared transmission infrastructure to support offshore wind development Planned and shared regional offshore grid infrastructure can significantly lower costs and impacts associated with transmission development A 2023 Brattle Group study found that proactive offshore transmission planning could save U S consumers $20 billion and result in 60–70% fewer shore crossings and necessary onshore transmission upgrades [38] This authorization also supports work that the six New England states are doing to collaborate on a regional approach to transmission infrastructure [39]

Siting incentives reduce fishing conflicts and boost the long-term success of offshore wind

A key recommendation of the Maine Offshore Wind Roadmap Fisheries Working Group was to site offshore wind projects outside of federal Lobster Management Area 1 (LMA1) [40] As the

[37] States that address Environmental Protection Massachusetts, Rhode Island, California, Connecticut, Maryland, New Jersey, Louisiana, North Carolina, New York, Labor Standards Massachusetts, Rhode Island, California, Virginia, Connecticut, New York, Maryland, Illinois, New Jersey, Fisheries Rhode Island, California, Connecticut, Oregon, Diversity, Equity, and Inclusion (DEI) Virginia, Massachusetts, Rhode Island, New York, Maryland, Environmental Justice Massachusetts, Rhode Island, California, Virginia, New York, Maryland, New Jersey, Oregon, Regional Collaboration Massachusetts, Rhode Island, Connecticut, New York, Maryland, Oregon, Transmission Maryland, New Jersey

[38] https //www brattle com/wp-content/uploads/2023/01/Brattle-OSW-Transmission-Report Jan-24-2023 pdf

[39] https //newenglandenergyvision com/new-england-states-transmission-initiative/

[40] https //www maineoffshorewind org/wp-content/uploads/2023/02/Fisheries-Working-Group-Final-Recommendations pdf Page 10-11

working group recommendations point out, the "[s]cale of fishing effort inside this boundary, largely due to lobster fishery, is significantly greater than what is seen elsewhere on eastern seaboard Maine has approximately 1,260 federal lobster permit holders operating inside this line, who make approximately 260,000 trips annually All other federal permits combined (including vessels from Maine to North Carolina) operating in Gulf of Maine (inside and outside of this line) total 929 permits making 42,000 trips annually " Avoiding conflict with this heavily fished zone in the Gulf of Maine could have significant benefits in reducing conflict with Maine's iconic and economically important fishing industry and could in turn have benefits in facilitating the permitting, surveying, and construction work that is necessary to bring commercial-scale offshore wind development to fruition in the Gulf of Maine

Siting of projects, or more specifically, deciding which areas of federal waters in the Gulf of Maine will be offered for commercial leasing, is outside of Maine's state jurisdiction, residing with BOEM However, LD 1895 includes a tax incentive for projects that are sited outside of LMA1 This incentive is designed to encourage the siting of projects to avoid conflicts with Maine's fishing industry, to offset any additional transmission costs[41] related to these siting decisions, and to increase Maine's competitiveness in securing offshore wind projects and their myriad benefits

Conclusion

LD 1895 builds on the work of Maine's Offshore Wind Roadmap and represents months of work from a broad coalition of groups, including environment and conservation groups, organized labor, and the fishing industry This bill will jumpstart the development of offshore wind in the Gulf of Maine, strengthening Maine's economy by stabilizing energy costs and creating thousands of new family-supporting clean energy jobs The Committee has a chance to build a new home-grown clean energy source Maine can be proud of, one that addresses climate change, builds the clean energy future that Maine deserves, and protects our shared resources for future generations

We strongly urge the Committee to vote Ought to Pass on LD 1895 Thank you for your consideration

[41] A 2022 study analyzed project costs related to siting in the North Atlantic, and found that wind resource was the primary influence on project cost (I e , the better wind resource, the lower the final cost of energy), but distance from shore was a cost driver as well, linked mostly to transmission costs
https //www sciencedirect com/science/article/abs/pii/S1364032121011564