



For a thriving New England

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**Testimony of Conservation Law Foundation in support of L.D. 1494,  
*An Act to Reform Maine's Renewable Portfolio Standard***

Conservation Law Foundation (CLF) supports LD 1494, which would implement an aggressive renewable resources policy, paving the way toward a clean energy future for Maine.

CLF is a public interest advocacy organization that works to solve the environmental problems that threaten the people, natural resources and communities of New England. Founded in 1966, CLF is a nonprofit, member-supported organization. CLF promotes clean, renewable and efficient energy production, and has a decades-long record of advocacy in support of renewable energy development throughout the region.

CLF recognizes climate change as the most pressing issue of our time and is guided by the global consensus of scientists set forth in the Intergovernmental Panel on Climate Change 2018 Special Report on Global Warming of 1.5°C, which advises that to avert the most devastating impacts of climate change, greenhouse gas emissions must be reduced to net zero by the year 2050.<sup>1</sup>

To decarbonize the region, CLF has long focused on reducing reliance on fossil fuels. Reducing emissions from the electricity generation sector through a robust renewable portfolio standard is a critical element of this strategy.

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<sup>1</sup> IPCC, 2018: Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. World Meteorological Organization, Geneva, Switzerland (“SPM”). Available at <https://tinyurl.com/y2jncrr3>.

## I. Forestalling the most devastating impacts of climate change requires reducing emissions from the power sector

In 2018, climate change exacerbated natural disasters that devastated the country, causing enormous losses—not only in terms of human lives, but in dollars spent on health care, personal property and public infrastructure maintenance and replacement, productivity losses, agricultural assets and more.<sup>2,3</sup> Superlative weather events are becoming the new normal—“2014 became the warmest year on record globally; 2015 surpassed 2014 by a wide margin; and 2016 surpassed 2015. Sixteen of the last 17 years have been the warmest ever recorded by human observations.”<sup>4</sup> And temperature changes are linked to innumerable “alterations to human and natural systems,”<sup>5</sup> including “melting glaciers and ice sheets, shrinking snow cover and sea ice, rising sea levels . . . and heavy precipitation events.”<sup>6</sup>

In this year of record-breaking weather extremes, multiple scientific reports underscored the importance of acting quickly and on a large scale to avoid the most severe impacts of climate change. These studies, produced at the global, national, and state-level, coalesce around important themes: we are already experiencing the impacts of human-caused climate change, which is costing us in terms of our health and welfare, our traditional industries, our natural resources, our infrastructure, and our property values, among other losses.<sup>7</sup> In the absence of

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<sup>2</sup> See, e.g., NOAA National Centers for Environmental Information (NCEI), *U.S. Billion-Dollar Weather and Climate Disasters* (2019), <https://www.ncdc.noaa.gov/billions/> (last visited April 16, 2019).

<sup>3</sup> Hoegh-Guldberg, O., D. Jacob, M. Taylor, M. Bindi, S. Brown, I. Camilloni, A. Diedhiou, R. Djalante, K.L. Ebi, F. Engelbrecht, J. Guiot, Y. Hijikata, S. Mehrotra, A. Payne, S.I. Seneviratne, A. Thomas, R. Warren, and G. Zhou, 2018: Impacts of 1.5°C Global Warming on Natural and Human Systems. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)], at 177. Available at [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15\\_Chapter3\\_Low\\_Res.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15_Chapter3_Low_Res.pdf).

<sup>4</sup> USGCRP, 2018: *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018, (“Fourth National Climate Assessment”), Chapter 2. Available at <https://nca2018.globalchange.gov/chapter/2/>.

<sup>5</sup> Allen, M.R., O.P. Dube, W. Solecki, F. Aragón-Durand, W. Cramer, S. Humphreys, M. Kainuma, J. Kala, N. Mahowald, Y. Mulugetta, R. Perez, M. Wairiu, and K. Zickfeld, 2018: Framing and Context. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)], at 53. Available at [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15\\_Chapter1\\_Low\\_Res.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15_Chapter1_Low_Res.pdf).

<sup>6</sup> Fourth National Climate Assessment, Chapter 2.

<sup>7</sup> For extensive discussion of impacts and costs of climate change to Maine, see generally Fernandez, I.J., C.V. Schmitt, S.D. Birkel, E. Stancioff, A.J. Pershing, J.T. Kelley, J.A. Runge, G.L. Jacobson, and P.A. Mayewski. 2015. *Maine’s Climate Future: 2015 Update*. Orono, ME: University of Maine. Available at <http://tinyurl.com/yyfl29u3>. For extensive discussion of impacts and costs of climate change globally, see generally the IPCC Special Report on Global Warming of 1.5°C, available at <https://www.ipcc.ch/sr15/>. For extensive discussion of impacts and costs of climate change to the United States, see generally the U.S. Fourth National Climate Assessment.

significant mitigation action, these impacts are projected to worsen, and dramatically.<sup>8</sup> On our current trajectory, the expected costs associated with climate change are staggering; by the turn of the century in the United States, climate change will cost some sectors more than hundreds of billions of dollars each year.<sup>9</sup> Yet, despite the alarming nature of these reports, perhaps their most important take-away is not how bad the consequences might be if we do nothing, but that we still have the opportunity to avoid the worst-case scenarios—*if we act now*.

For Maine to do its part to ward off the most devastating consequences of climate change will require, at a minimum, meeting the greenhouse gas emissions targets proposed by Governor Janet Mills and currently pending before the Legislature in LD 1679—80% reductions below 1990 levels by 2050; 45% below 1990 levels by 2030.<sup>10</sup> In 2017, the electricity generation sector contributed 29% of climate-warming greenhouse gas emissions nation-wide.<sup>11</sup> In Maine, the number is lower—9% as of 2015<sup>12</sup>—but still demands attention.

While emissions from the power sector in Maine have declined from peaks in the early 2000s,<sup>13</sup> it is important to consider projected increases in electricity demand that warrant continued focus on this sector. Today, New England’s transportation and buildings contribute an increasingly large percentage of overall climate change-causing emissions due to their continued reliance on petroleum-based fuels.<sup>14</sup> Mobile units have surpassed electricity generation as the primary source of greenhouse gas emissions in the United States.<sup>15</sup> In Maine, the contribution is strikingly high—53%.<sup>16</sup> Any strategy to forestall the worst impacts of climate change must incorporate plans for tackling emissions from buildings and transportation—and those plans will necessarily entail, amongst many other tactics, near-complete electrification. As increased electrification will lead to significant growth in load, it is critical that we decrease our reliance on fossil fuels for power generation.

## **II. CLF Supports the Portfolio Requirement and Long-term Procurement Components of LD 1494**

LD 1494 is projected to create an additional 1,200 MW of renewable energy in the region, with 500 MW of solar and 200 MW of wind development in Maine.<sup>17</sup> Accompanying that growth will be a host of benefits ranging from reductions in greenhouse gas emissions, to more jobs,

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<sup>8</sup> “Climate-related risks to health, livelihoods, food security, water supply, human security, and economic growth are projected to increase with global warming of 1.5°C and increase further with 2°C.” SPM.

<sup>9</sup> See generally U.S. Fourth National Climate Assessment.

<sup>10</sup> L.D. 1679, § 8 (129<sup>th</sup> Legislature, 2019).

<sup>11</sup> EPA Regulatory Impact Analysis for the Proposed Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to NewSource Review Program (August 2018), at 2-26.

<sup>12</sup> Maine Department of Environmental Protection, *Seventh Biennial Report on Progress toward Greenhouse Gas Reduction Goals* (Jan. 2018), at 8. Available at [https://www.eenews.net/assets/2018/04/16/document\\_pm\\_06.pdf](https://www.eenews.net/assets/2018/04/16/document_pm_06.pdf).

<sup>13</sup> *Id.*

<sup>14</sup> *Id.*

<sup>15</sup> See, e.g., *id.*

<sup>16</sup> Maine Department of Environmental Protection, *Seventh Biennial Report on Progress toward Greenhouse Gas Reduction Goals* (Jan. 2018), at 8. Available at [https://www.eenews.net/assets/2018/04/16/document\\_pm\\_06.pdf](https://www.eenews.net/assets/2018/04/16/document_pm_06.pdf).

<sup>17</sup> Synapse Energy Economics & Sustainable Energy Advantage, *Expanding Maine’s Renewable Portfolio Standard, Creating Economic and Environmental Benefits for Maine* (May 2019), at 2.

decreased reliance on fossil fuels, and less air pollution.<sup>18</sup> These benefits are attributable to the dual components of the bill: portfolio requirements for new renewable capacity resources and a competitive procurement.

The renewable portfolio requirement is a well-established mechanism for spurring development of these technologies. States effectively use this market-based tool to create demand for clean energy; nation-wide, similar standards are responsible for approximately half of growth in renewable generation and capacity since 2000.<sup>19</sup> While the need for and role of an RPS is declining in some states, it remains a critical driver in the Northeast region.<sup>20</sup>

To stimulate investment in renewables, a successful RPS depends upon an elementary principle of economics: the *demand* generated by the policy must surpass the *supply* (in the case of new renewables, the supply that would be developed in the absence of an RPS).<sup>21</sup> A flooded market decreases the value of the renewable energy credit and undermines the policy's effectiveness. Thus, an RPS with unambitious requirements fails to function as intended and stagnates, as Maine's has. Whereas, enhancing the target for new renewables will create a healthy marketplace, prompting growth and investment in renewable energy resources.

CLF also supports provisions of LD 1494 directing the Maine Public Utilities Commission to conduct competitive solicitations for renewable energy through long-term contracts. To reduce emissions from the electricity generation sector, procurements can be an effective mechanism for facilitating the financing of large-scale renewable resources.

To ensure fairness and transparency in the solicitation process, CLF urges the Legislature to include the services of an independent evaluator for monitoring and reporting. LD 1494 should also provide interested parties with an opportunity to review the draft competitive solicitation before it issues, and to participate in review of the contract with the selected renewable resources through an adjudicatory process.

The benefits of increased reliance on renewable energy instead of fossil fuels—in terms of cleaner air and therefore better health (and less health costs), decreased climate-warming greenhouse gas emissions, and job creation—come with minimal costs. Synapse Energy Economics (Synapse) and Sustainable Energy Advantage (SEA) have estimated that Maine residential, commercial and industrial ratepayers can expect an average increase of about 1.1% per month.<sup>22</sup> While renewable energy credits could, on their own, drive costs for ratepayers up, Synapse and SEA explained in their analysis of the Massachusetts Renewable Portfolio Standard completed in May, 2017, that “[a]s more renewables come online, the hourly cost to provide

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<sup>18</sup> See generally, *id.*

<sup>19</sup> G. Barbose, Lawrence Berkeley National Laboratory, *U.S. Renewables Portfolio Standards, 2017 Annual Status Report* (July 2017). Available at <http://eta-publications.lbl.gov/sites/default/files/2017-annual-rps-summary-report.pdf>.

<sup>20</sup> *Id.*

<sup>21</sup> See, e.g., Synapse Energy Economics, Inc. & Sustainable Energy Advantage, LLC, *An Analysis of the Massachusetts Renewable Portfolio Standard* (May 2017), at iii-iv. Available at <http://www.synapse-energy.com/sites/default/files/Analysis-MA-RPS-17-004.pdf>.

<sup>22</sup> Synapse Energy Economics & Sustainable Energy Advantage, *Expanding Maine's Renewable Portfolio Standard, Creating Economic and Environmental Benefits for Maine* (May 2019), at 3.

electricity decreases.”<sup>23</sup> Wholesale energy and capacity prices that are driven down by renewables can outweigh the price of RECs, leading to savings for ratepayers. Further, renewable energy generating facilities are uniquely situated to provide price and supply stability through long-term contracts without an associated cost premium for these benefits. Because renewable energy generating facilities do not rely on fossil fuels, their forward pricing of energy is largely tied to the amortization of initial capital infrastructure investment. Therefore, such procurements can offer significant savings to ratepayers.<sup>24</sup>

### III. Maine’s Renewable Portfolio Standard Should Contain an Efficiency Standard for Eligible Biomass Generators

CLF applauds and supports LD 1494’s bold targets for new renewable resources which are projected to add an estimated 700 MW of additional capacity in Maine: 500 MW of solar and 200 MW of wind.<sup>25</sup> CLF understands, additionally, that to the extent that “new” non-solar and wind facilities are incented by the RPS, Synapse and SEA expect those to be “largely made up of incremental capacity additions of biogas at existing generators.”<sup>26</sup> CLF is pleased that the RPS does not appear projected to result in expansions or development of new or expanded biomass facilities. However, as written, LD 1494 does maintain the possibility that such facilities be eligible renewable capacity resources—without imposing efficiency standards or requirements for forestry management practices.<sup>27</sup>

The RPS should impose minimum efficiency standards and provisions to phase out incentives for existing biomass facilities that fail to meet these standards. If poorly deployed, biomass can have a significant carbon footprint in addition to other damaging ecological impacts. “The atmospheric greenhouse gas implications of burning forest biomass for energy vary depending on the characteristics of the bioenergy combustion technology, the fossil fuel technology it replaces, and the biophysical and forest management characteristics of the forests from which the biomass is harvested.”<sup>28</sup> It is therefore a mistake to provide blanket eligibility to all “[b]iomass generators that are fueled by wood, wood waste or landfill gas”<sup>29</sup> particularly to the extent that

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<sup>23</sup> Synapse Energy Economics, Inc. & Sustainable Energy Advantage, LLC, *An Analysis of the Massachusetts Renewable Portfolio Standard* (May 2017), at v. Available at <http://www.synapse-energy.com/sites/default/files/Analysis-MA-RPS-17-004.pdf>.

<sup>24</sup> See, e.g., Petitions for Approval by the Department of Public Utilities of two long-term contracts for procurement of Offshore Wind Energy Generation, pursuant to Section 83C of An Act Relative to Green Communities, St. 2008, c. 169, as amended by St. 2016, c.188, § 12, DPU 18-76, 18-75, and 18-78 (Apr. 12, 2019), Order at 48 (“In particular, the Companies have shown that the aggregate cost for energy and RECs under the PPAs are less than the forecasted market prices for energy and RECs by \$1.289 billion (nominal) over the life of the contracts (Exh. JU-1, at 20, 31).”).

<sup>25</sup> Synapse Energy Economics & Sustainable Energy Advantage, *Expanding Maine’s Renewable Portfolio Standard, Creating Economic and Environmental Benefits for Maine*, (May 2019), at 2.

<sup>26</sup> Synapse Energy Economics & Sustainable Energy Advantage, *Maine Renewable Portfolio Standard: Examination of the Benefits and Costs of a Proposed RPS Policy Reform, Technical Appendix*, (May 2019) at 9.

<sup>27</sup> LD 1494, § 1 (129<sup>th</sup> Legislature, 2019).

<sup>28</sup> T. Walker et al., Manomet Center for Conservation Sciences, *Biomass Sustainability and Carbon Policy Study* (June 2010), at 6.

<sup>29</sup> LD 1494, § 1 (129<sup>th</sup> Legislature, 2019).

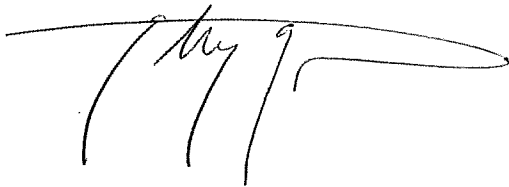
an enhanced RPS is intended to advance the State's goals for decarbonization. Indeed, "[f]orest biomass generally emits more greenhouse gases than fossil fuels per unit of energy produced."<sup>30</sup>

Any assertion that biomass combustion reduces CO2 emissions depends on an assessment of *net emissions*, in which emissions from a generation facility are presumed to be offset by plant matter regrowth elsewhere. It is important to note the critical role that Maine's forests play with regard to mitigating climate change.<sup>31</sup> The state has over 7 million hectares of forest.<sup>32</sup> Forest management practices influence the forest's carbon sequestration capabilities—and the forests store approximately 1.4 billion metric tons.<sup>33</sup> An RPS policy that could be utilized to incent biomass generation must account for the tremendous value that intact forests play in combating climate change and should include forest resource sustainability protections, at a minimum.<sup>34</sup>

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CLF thanks the committee for this opportunity to present testimony in support of LD 1494. Please do not hesitate to contact me with any questions or for further information.

Sincerely,

A handwritten signature in black ink, appearing to read "Emily K. Green", written over a horizontal line.

Emily K. Green

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<sup>30</sup> T. Walker et al., Manomet Center for Conservation Sciences, *Biomass Sustainability and Carbon Policy Study* (June 2010), at 6.

<sup>31</sup> U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2015* (April 2017). Available at [https://www.epa.gov/sites/production/files/2017-02/documents/2017\\_complete\\_report.pdf](https://www.epa.gov/sites/production/files/2017-02/documents/2017_complete_report.pdf).

<sup>32</sup> North East State Foresters Association, *The economic importance of Maine's forest-based economy*, (Fall 2013). Available at [http://www.nefainfo.org/uploads/2/7/4/5/27453461/nefa13\\_econ\\_importance\\_maine\\_aw\\_jan23.pdf](http://www.nefainfo.org/uploads/2/7/4/5/27453461/nefa13_econ_importance_maine_aw_jan23.pdf).

<sup>33</sup> As of 2013. McCaskill, G.L., et al., *Maine Forests 2013* (July, 2016), at 1. Available at [https://www.fs.fed.us/nrs/pubs/rb/rb\\_nrs103.pdf](https://www.fs.fed.us/nrs/pubs/rb/rb_nrs103.pdf).

<sup>34</sup> It is unclear to what extent LD 1494 would incent expansion or development of landfill gas generation facilities. CLF cautions that a priority for landfills should be to reduce the volume of stored waste that is compostable, rather than increasing production of methane and other gases.