SOLAR ENERGY ASSOCIATION OF MAINE

Testimony in Opposition to LD 1778

An Act to Ensure a Sustainable Electric Grid

Steven L. Weems, Board Member, Solar Energy Association of Maine

President, Dirigo Community Solar Group

To the Joint Standing Committee on Energy, Utilities, and Technology

May 18, 2023

Senator Lawrence, Representative Zeigler, and other distinguished members of the Joint Standing Committee on Energy, Utilities, and Technology: my name is Steve Weems, Board Member of the Solar Energy Association of Maine (SEAM); also founder and President of Dirigo Community Solar Group (Dirigo CSG), a nonprofit association of 14 small, member-owned community solar farms. SEAM and Dirigo CSG are opposed to all aspects of LD 1778, for similar reasons we testified in opposition to LD 442, LD 683, LD 1347, and LD 1531. Eliminating net energy billing and curtailing energy efficiency and beneficial electrification programs of the Efficiency Maine Trust (EMT) are not in the best interests of Maine people and businesses.

We are advocates of reforming the existing distributed generation (DG) program, which includes net energy billing (NEB), so it is beneficial to all Maine people and electricity ratepayers. We are on record about this. NEB is an essential component of Maine's drive to decarbonize its many uses of energy. Eliminating it would be disastrous in many ways. Similarly, it would be unwise in the extreme to further limit the energy efficiency activities of Efficient Maine Trust. Reducing our use of energy wherever possible is the best approach to a sustainable future. And the trust is eminently successful in its work.

Our further comments are focused primarily on net energy billing: first a few overview observations, then more detailed explanatory information, some of which we have provided previously.

The criticism being voiced about NEB is a one-dimensional, exaggerated story rather than good. As an antidote, we advocate, forward-looking solutions based on rigorous full economic analysis. If there is a crisis, it is the inability of the grid to accommodate distributed energy resources and take advantage of two-way energy flows. To arrive at a good place, it is necessary to consider all the things that determine the health and well-being of "the public." In short:

1. The problem of a rate shift is real but wildly exaggerated (check the actual rate filings of the utilities – for example, see the CMP explanation at Appendix A).
2. A moratorium, ban, elimination, or retroactive adjustments of NEB would show bad faith, and hurt about 25,000 existing customers.
3. The 130th Legislature established an orderly process (including performance deadlines and a tariff reduction) to curtail and improve the distributed energy program (Including NEB), with an timetable for analysis and restructuring.
4. Great progress is being made in accordance with this process – the DG Stakeholder Group work produced a recommendation that would take over 90% of future distributed generation out of the NEB program and make it beneficial to all ratepayers (see charts at Appendix B and Appendix C).
5. The key is evaluating all the benefits and costs of any energy program, large or small, including NEB, and structuring the program so that it provides net benefits to all Maine people, including electricity ratepayers.
6. Regarding NEB itself, since CMP and Versant are not in the energy production business and do not pay the generators for any of the NEB energy put on their grids, these generators should be viewed as another type of competitive energy supplier, selected by the customer. This indicates a dual focus on (i) all the cost-benefit factors, and (ii) a subset of these affecting the utilities and therefore ratepayers, in accordance with # 5 above, is necessary to reform the NEB program for the benefit of all.

Appendix A

Actual Numbers Instead of Scary Numbers

April 18, 2023

The Office of the Public Advocate (OPA) keeps talking about an NEB ratepayer impact of $220 million per year. This is a fiction. It is a scary, hypothetical, worst-imaginable-case scenario. For a more accurate context, consider the actual rate case filed by Central Maine Power (CMP) with the Public Utilities Commission (PUC). Ironically this is the same rate case the OPA may be able to negotiate down! In this rate case, CMP is asking for about a $50 million increase spread over three year, purportedly for NEB costs. This is significant, and is cause for distributed generation program reform, but it is not a crisis.

According to CMP, the company is seeking a total rate increase of $ 94.9 million over 3 years, for both (i) investment in a stronger, smarter, more resilient grid (an ongoing CMP responsibility), and (ii) to support Maine energy policy objectives (including NEB). Allocating half of this amount to each purpose, this means $ 47.5 million for distributed generation and other clean energy incentives (including NEB). The average CMP residential bill is $ 153.84/month. Per CMP, this would result in an increase of $ 4.90 (only 3.2 % of the current total bill) over three years. If the energy part of the bill decreases even one cent it would wipe out the impact of this clean energy cost.

Math Proof

Typical residential customer energy usage: 550 kWh/month
Standard Offer Energy Rate: $ 0.176310/kWh
Delivery Charge: $ 13.66 (fixed for first 50 kWh) + $ 0.086420/kWh (variable charge for remaining kWh used)

Current bill charge: $ 13.66 + ($ 0.086420 x 500 kWh) + ($ 0.176310 x 550 kWh) = $ 153.84

CMP Rate Filing Data (per CMP Customer Notification, March 2023)*

Year	Revenue Increase	CMP Estimate Ratepayer Impact
2023	$ 43.5 million	$ 4.65 per month
2024	$ 27.7 million	$ 2.78 per month
2025	$23.7 million	$ 2.37 per month

* Note this is the total CMP request for both regular, routine on-going investment and clean energy purposes.

Customer Bill Impact Related to NEB + Other State Clean Energy Policies*

Year	Clean Energy Portion (1/2 of the above)	% of Baseline Total Bill
2023	$ 2.32 per month	1.51 %
2024	$ 1.39 per month	0.90 %
2025	$ 1.19 per month	0.77 %
Total	$ 4.90 per month	3.18 %

$ 4.90 per month (the cumulative total over three years is 0.9 cents/kWh

* Note this is one-half the total rate increase for both regular, routine on-going investment and clean energy purposes.

This is an incomplete story because it does not include additional projects that may come on line. Nevertheless, it shows the limited impact of State energy policy initiatives in the current CMP rate filing. The impact of these policies on the typical residential customer is less than one cent per kWh. A decrease in the energy charge of one cent of more (considered probable), or any other charge category, would compensate for this negative impact in full. A copy of the CMP customer notice on which the foregoing analysis is based is attached.

CENTRAL MAINE POWER

An AVANGRID Company

March 2023

Dear Customer:

In August 2022, we submitted a request for a three-year rate plan to the Maine Public Utilities Commission ("Commission") in accordance with Maine law 35-A M.R.S. §§ 301, 307 & 3195 and Chapter 120 of the Commission's Rules. The request seeks increases in distribution revenues to support the Company's investment in a stronger, smarter, more resilient grid for Maine, while also supporting important energy policy objectives of the State of Maine. The last change in distribution revenues was approved by the Commission in 2020 and reflected in rates on March 1, 2020. Consideration of our request continues before the Commission.

As of today, the Company's proposed three-year rate plan, if approved, would increase the distribution component of the Company's revenues by $43.5 million effective in summer 2023, $27.7 million effective in summer 2024, and $23.7 million effective in summer 2025. As proposed, this translates to a total monthly delivery bill increase of $4.65 in 2023, an increase of $2.78 in 2024, and an increase of $2.37 in 2025 for the average residential customer using 550 kWh of electricity per month.

As part of our proposed rate plan, the Company also seeks approval for funding up to a cap for five additional programs to support (1) access to broadband in underserved communities, (2) installation of electric vehicle chargers, (3) development of two energy storage pilot projects, (4) implementation of active network management technology, and (5) the replacement of deficient utility poles owned by Consolidated Communications, Inc. If approved and funded to the cap, these additional programs would further increase the Company's revenues by $0.7 million effective in summer 2025, $8.3 million effective in summer 2026, $8.4 million effective in summer 2027, $7.8 million effective in summer 2028, and $3.4 million effective in summer 2029. This translates to a total monthly delivery bill increase of $0.07 in 2025, an increase of $0.74 in 2026, an increase of $0.76 in 2027, an increase of $0.70 in 2028, and an increase of $0.30 in 2029 for an average residential customer using 550 kWh of electricity per month.

Parties to the proceeding, including the Maine Office of Public Advocate, have opposed certain aspects of our proposed rate plan and additional program funding request. The procedural schedule for the proceeding calls for the Commission to hold evidentiary hearings in May and then decide our request in July 2023. Any eventual revenue increases approved by the Commission will be shared across customer classes and among customers in each class by an allocation method to be determined as a part of this proceeding.

This notice is provided in accordance with Chapter 110 § 8.A.1(c) of the Public Utility Commission's Rules of Practice and Procedure. You may participate in this proceeding in any of the following three ways:

1. If you wish to be notified when a filing is made in the case, you may add your name to the case notification list using the Commission's case management system (CMS). For information on how to register and use the Commission's CMS, please access this information at the following web address: http://www.maine.gov/mpuc/online/index.shtml.
2. You may petition to intervene. If your petition to intervene is granted, you will be a party with the right to participate formally in the hearings and in negotiations. Your petition must be submitted through the Commission's CMS and must state the name and docket number of this proceeding, and the manner in which you are affected by this proceeding. Your petition must also include a short and plain statement of the nature and extent of the participation you seek, and a statement of the nature of the evidence or argument you intend to submit. You may also submit your petition in writing via U.S. mail to the Commission's Administrative Director, Public Utilities Commission, 18 State House Station, Augusta, ME 04330-0018. Your petition should be filed with the Commission by March 31, 2023.
3. You may appear as a public witness at a hearing. The Commission has scheduled three public witness hearings to be held as follows:

April 4, 2023 – 6:00 p.m. (In-person) Ramada Inn 490 Pleasant Street Lewiston, Maine	April 6, 2023 – 4:00 p.m. (Virtual via Microsoft Teams Videoconferencing and In-person) Maine Public Utilities Commission Simpson Hearing room 26 Katherine Drive Hallowell, Maine	April 11, 2023 – 6:00 p.m. (In-person) Ramada Inn Conference Center 352 North Street Saco, Maine

If you would like more information about the proceeding or the public witness hearings you may contact the Administrative Director of the Commission (207.287.3831), the Maine Office of Public Advocate (207.624.3687) or Regulatory Services, Central Maine Power (207.245.0142).

Sincerely,
Peter Cohen
Vice President, Regulatory

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Appendix B

Accounting for the Benefits and Costs of Distributed Energy Resources (DER)

April 14, 2023

There are two basic, distinct types of economic analysis typically une=dertaken. Both are important to consider for a full and accurate understanding of the impact of distributed energy resources (DER), which is a category that includes but is not limited to net energy billing (NEB).

1. Benefit-Cost Analysis. This is a comprehensive analysis that looks at all the benefits and costs of a distributed energy resource (DER), including utility system and societal (general population) benefits and costs. The results typically are expressed in a Benefit/Cost Ratio (BCR). Benefits considered in the "Maine Test" by the economic consultants to the Governor's Energy Office (GEO) for the DG Stakeholder Group work include: (1) avoided capacity costs; (2) avoided environmental and RPS compliance costs; (3) avoided transmission costs, (4) avoided distribution costs; and (5) avoided greenhouse gas (GHG) and NOx emissions (Source: ***Distributed Generation Successor Program in Maine***, *An Economic Assessment*, January 5, 2023, pages 14-19.)
2. Rate Impact Analysis. The rate, bill, and participation analyses encompass only the benefits and costs of DER that affect the utility bills of both participant and nonparticipant ratepayers. This is a subset of the factors considered in an overall benefit-cost analysis, which exclude societal benefits, because these are not reflected in utility bills, even though they benefit participant and nonparticipant ratepayers equally. (Source: same as above, pages 22-23.)

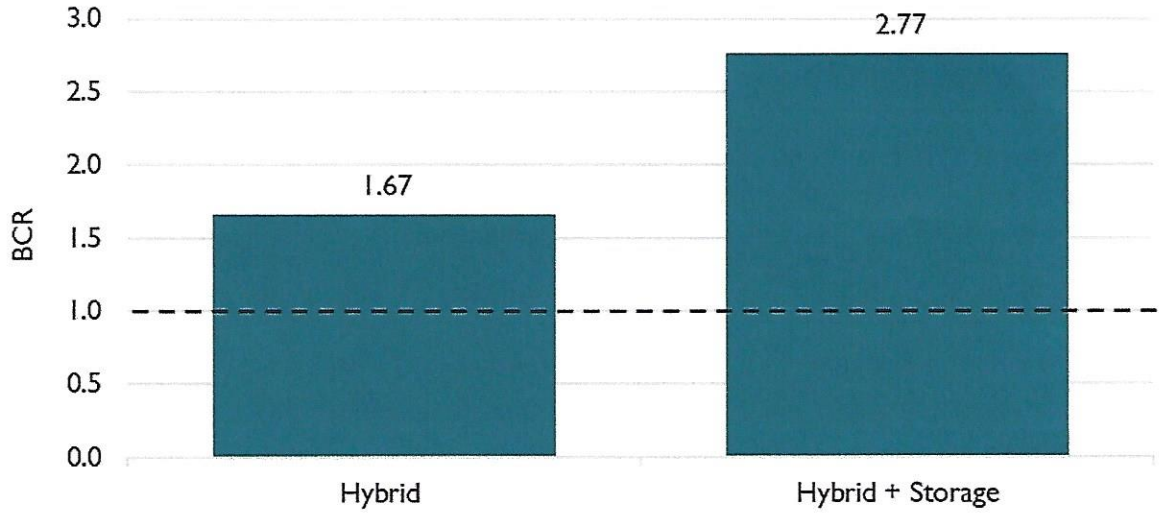
The foregoing was taken from the work of the economic consultants Synapse Energy Economics (Synapse) and Sustainable Energy Advantage (SEA) included in the Final Report of the Distributed Generation Stakeholder Group, dated January 6, 2023, as submitted to the EUT Committee. This is the latest and most

comprehensive analysis of the net benefits and costs, and ratepayer impact, of distributed energy resources. A few important statements that can be made as a result are:

- This work was oriented toward the charge of the GEO and the DG Stakeholder Group to come up with a successor DER program, so virtually all the analysis relates to future program options. This corroborates the practicality and importance of such analysis.
- The limited analysis included about the existing NEB program (currently the only active DG program) did not take into account the limitation on the C&I Tariff enacted last year.
- Calculations about lost or foregone projected utility revenues are misleading, particularly if they are represented as negative ratepayer impact, because typically they are based on what might happen (undoubtedly an overstatement to some degree, for multiple reasons), and do not take into account the benefits of DER, including both avoided costs of the utilities (which reduce ratepayer impact) and benefits to all Maine people, including all ratepayers, which are not reflected in utility bills.
- It definitely is possible to quantify benefits, costs, and ratepayer impacts, despite the difficulty assigning a value to things like clean air and reduced climate change, especially when comparing the merits of future options.
- It appears eminently possible to structure a successor program that benefits all Maine people, and which reduces the rates paid by all investor-owned utility ratepayers. (See attached chart of the potential beneficial impact on ratepayers of the recommendation of the DG Stakeholder Group, as well as the net benefits available to all Maine people.) A second chart (attached to Appendix C) shows the existing total pipeline, and that less than 10% of this volume would qualify for the NEB program.

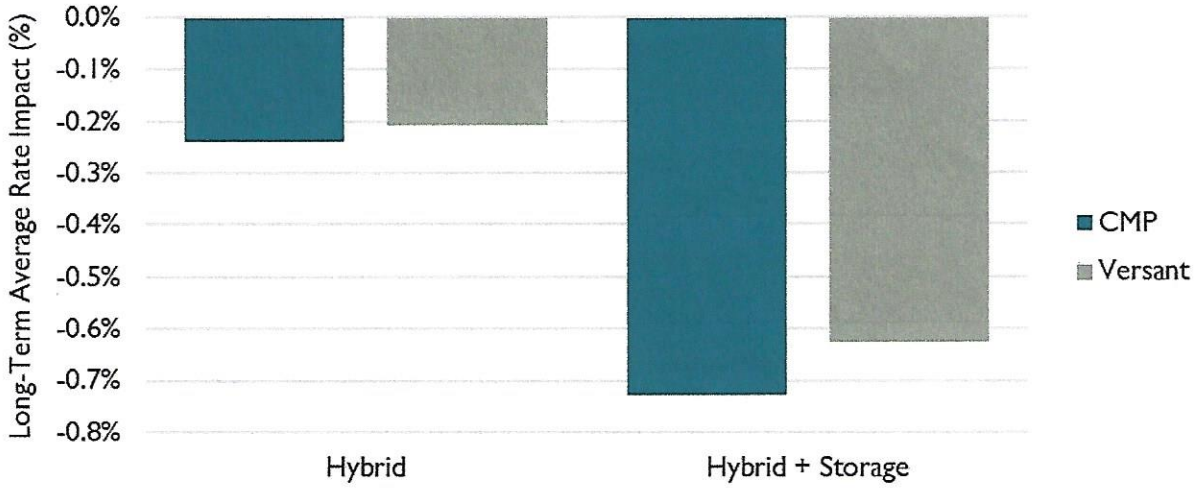
Consistent with the figure above, the increase in costs to deploy storage are sufficiently outweighed by the increase in benefits, demonstrated by the BCR's for the two options shown below.

Figure 18. Benefit Cost Ratios of Hybrid and Hybrid + Storage Case



The same pattern can be seen for long-term rate and bill impacts. The Hybrid + Storage Case results in greater rate reductions than the Hybrid case due to the increased capacity benefits.

Figure 19: Long-term average rate impact for Hybrid and Hybrid + Storage



Similarly, the bill impacts for both non-participants and participants are also minimal.

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Appendix C

Limited Total Capacity of Small Distributed Generation Projects (1 MW max)

April 13, 2023

Net energy billing (NEB) gives all Maine people the ability to take direct action to help mitigate the worsening climate disaster. Some form of NEB is essential to allow individuals, businesses, and other entities of conscience to install clean energy equipment, or participate in projects doing this for them, and be charged on their utility bills only for any additional energy they need. The smallest distributed generation (DG) projects, structured according to NEB principles, are the foundation on which the dynamic, two-way grid of the future will operate. Good policy entails analyzing the benefits and costs of these projects rigorously and implementing refinements that will increase benefits and reduce costs.

In any case, data from Central Maine Power (CMP) and Versant (November 2022) shows that whatever positive or negative impact the smallest DG projects may have on nonparticipating ratepayers will be nominal, just because these projects account for such a small fraction of all DG projects. For example, the data shows that a mere 7% of the total projects in the pipeline are 1 MW in scale or less. Please note the attached chart to see this graphically.

Figure 7

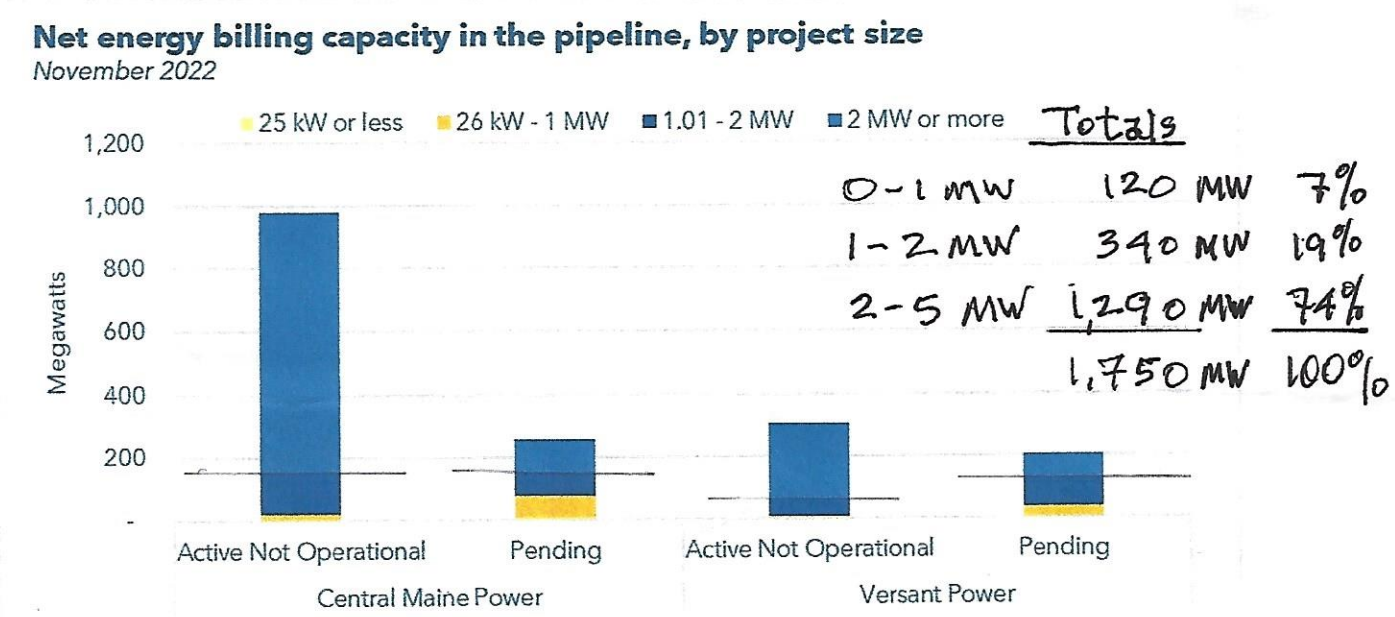
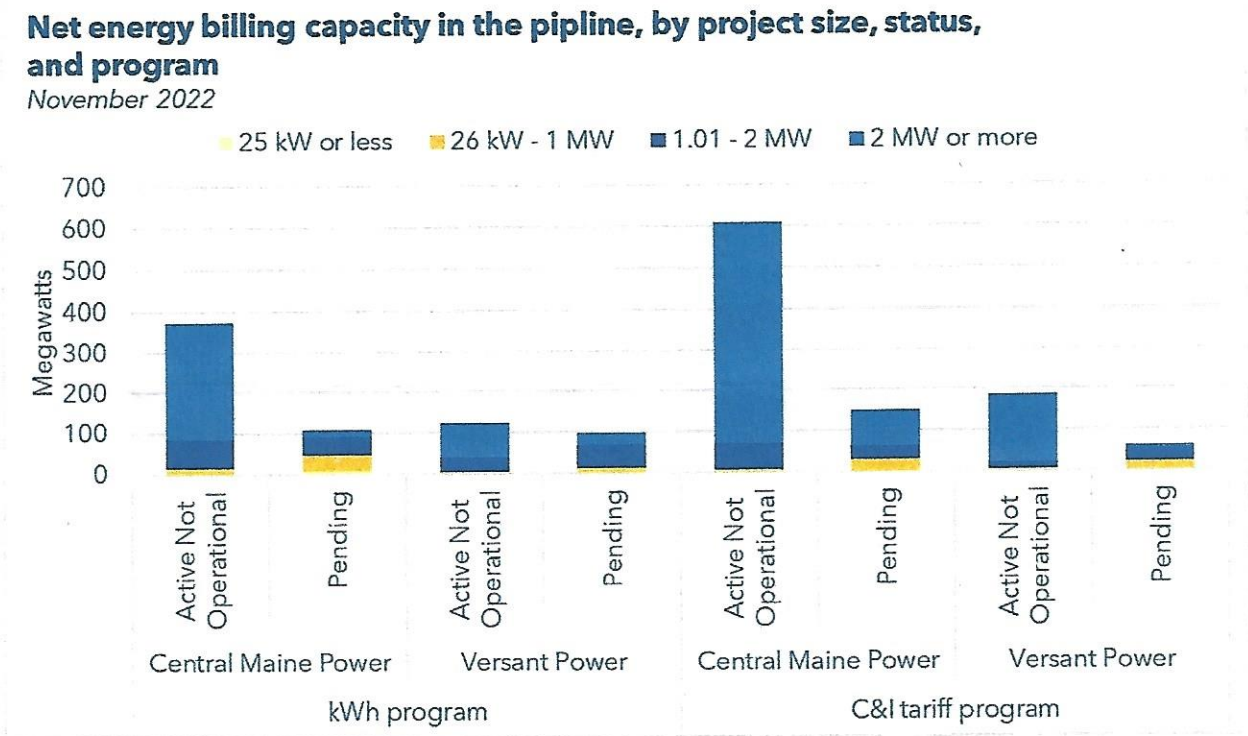


Figure 8



Based on the average offtaker capacity illustrated in Figure 5 and Figure 6, as well as the potential net energy billing capacity in the program pipeline illustrated in Figure 8, an estimated additional 82,000 –

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Table 7. Definitions of Benefits Included in the Maine Test

Impact	Definition
Utility system benefits	
Avoided energy costs	Avoided fuel and operating costs associated with producing or procuring energy.
Avoided capacity costs	Avoided cost of building or procuring capacity to meet the peak demand of the generation system.
Avoided environmental compliance costs	The avoided cost of complying with environmental requirements for air emissions or other environmental factors.
Avoided RPS compliance costs	The avoided cost of complying with a renewable portfolio standard (RPS) or similar policy such as clean energy standards (CES) or clean peak standards (CPS).
Market price effects/demand reduction induced price effects (DRIPE)	The price reduction effect in competitive wholesale electricity markets price impacts from reducing system demand or increasing low-cost supply.
Avoided transmission costs	The avoided (or increased) cost of upgrading the transmission system to safely and reliably transfer electricity between regions. This avoided cost applies if the DERs passively defers investments by reducing load during transmission peak periods or if the DER is strategically placed to avoid transmission investments and is operated for that purpose. Alternatively, DERs can increase costs on the transmission system by adding new load.
Avoided distribution costs	The avoided (or increased) cost of upgrading the distribution system (including substations) to transfer electricity in local electric grids. If peak demand exceeds capacity of a circuit, it will require investments to increase distribution capacity to a level that preserves safety and reliability. Similar to transmission avoided costs, DERs can passively or actively reduce strain on the distribution system. Alternatively, DERs can increase costs by adding new load.
REC revenue	Revenue from selling renewable energy certificates (RECs). RECs are credits designed to represent the clean energy attributes of renewable energy generation.
Societal benefits	
Greenhouse gas (GHG) emissions impacts	The benefit associated with reducing GHG emissions because of DERs. GHGs are created during fossil fuel-based energy production, transmission, and distribution. DERs that produce clean energy can avoid GHG emissions from other sources. In the BCA, this impact represents the avoided societal cost of GHG emissions.

Using the sources of data shown above, described in further detail in the ensuing subsections, we calculated the avoided costs (used interchangeably with "benefits") of each program by multiplying the estimated level of generation (in MWh) for aggregated time periods by the expected price or value (in $/MWh) in the applicable time period. We aggregated hourly time periods across each year for energy "peak" (8 am-11 pm) and "off-peak" hours (11 pm-7 am) for each season (winter and summer), according to designations of these periods by ISO-NE. Generation capacity, transmission, and distribution avoided costs were calculated by multiplying the maximum output (in kW per year) during

Appendix D

The Maine Distributed Generation Manifesto – Statement of Principles

May 12, 2023

1. **Decarbonize Maine life.**

2. **Install distributed energy resources.**

3. **Provide net benefits and reduce electricity rates.**

4. **Empower people to take direct action to reduce climate disruption.**

5. **Help lower income people participate.**

6. **Analyze the economic impact of all factors, on everyone**

7. **Maximize the economic values of distributed energy resources.**

8. **Simplify the net energy billing (NEB) program.**

9. **Honor prior legislative, regulatory, and contractual commitments.**

10. **Maximize energy reliability and grid resiliency.**

Brief explanations follow.

1. Decarbonize Maine life as required by Maine statute, or ahead of schedule, via conversion to electricity for all purposes requiring power, generated from renewable energy resources.

2. Create a network of distributed energy resources (defined as renewable energy projects up to 5 MW in scale) as the backbone of local micro grids and

an essential ingredient in the dynamic, two-way Maine grid system of the future.

3. Support a tier of distributed energy resources (DER) programs that as group provide more benefits than costs to Maine people, and reduce electricity rates for all utility ratepayers.

4. Empower individuals, businesses, schools, municipalities, and other institutions to take direct action to acquire their electricity from solar and other renewable distributed energy resources, up to a certain maximum project size (either 1 or 2 MW), through a successor net energy billing (NEB) program. Larger DER projects (up to 5 MW) would not be in the NEB program.

5. Look for ways to provide electricity produced from solar resources to people with low or moderate incomes, via maximization of the use of Federal funds or otherwise.

6. Ensure that all actions are based on an evaluation of (i) the full range of benefits (included avoided costs) and costs affecting Maine people, and (ii) the subset of these that affect electricity rates. Make these analyses explicit.

7. Maximum the value of distributed energy resources by incorporating technologies with synergy (e.g., battery storage, grid improvements) while relying on proven technology and known, predictable project costs.

8. Simplify the NEB program to create as much value as possible at the utility level and make it more understandable to everyone.

9. Fulfill the obligations made to Maine electricity customers (residential, commercial, and institutional) in existing statutes, regulations and agreements, by making changes that apply in the future in an orderly fashion.

10. Support efficient electrical system operation by utilizing an overall mix of electricity resources to provide system reliability in all seasons, under all weather conditions, at any time of day; and otherwise support the reliability and resiliency of the electrical system when stressed, for whatever reason.

Steven Weems
Solar Energy Association of Maine & Dirigo Community Solar Group
LD 1778

The Solar Energy Association of Maine thought this public hearing had been shifted to a later date. Therefore we were not present to testify in person and are submitting written testimony after the fact. We apologize for any inconvenience this may cause, and appreciate Committee consideration of this submission.