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# **MAINE PUBLIC UTILITIES COMMISSION**



## **ANNUAL REPORT ON NEW RENEWABLE RESOURCE PORTFOLIO REQUIREMENT**

**Report for 2020 Activity**

**Presented to the  
Joint Standing Committee on  
Energy, Utilities and Technology  
March 25, 2022**

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## I. INTRODUCTION

During its 2007 session, the Legislature enacted an Act to Stimulate Demand for Renewable Energy (2007 Act).<sup>1</sup> The 2007 Act requires that a minimum specific percentage of electricity that supplies Maine's consumers is derived from "new" renewable resources. Generally, new renewable resources are renewable facilities that have an in-service date, resumed operation or were refurbished after September 1, 2005. The percentage requirement began at one percent in 2008 and increased in annual one percentage point increments to ten percent in 2017 and remains at ten percent, unless the Commission suspends the requirement pursuant to the provisions of the 2007 Act.

The 2007 Act contains an annual reporting requirement on the status of Class I renewable resource development and compliance with the portfolio requirement. The reporting provision specifies:

Annual Reports. No later than March 31, 2008 and annually thereafter, the Commission shall submit a report regarding the status of new renewable capacity resources in the State and New England, and compliance with the portfolio requirement required by this section to the joint standing committee of the Legislature having jurisdiction over utilities and energy matters. The report shall include, but is not limited to, a description of new renewable capacity resources available to meet the portfolio requirement required by this section, documentation of the loss of any existing renewable generation capacity in the State, the status of implementation of the new renewable resource portfolio requirement, including any suspensions pursuant to subsection D, and recommendations to stimulate investment in new renewable resources.

Legislation enacted in 2019, P.L.2019, ch. 477, *inter alia*, created two new classes of renewable energy credits (RECs), Class IA and Thermal RECs, each with its own increasing requirement schedule. For Class IA, in 2020, a competitive electricity provider must demonstrate that 2.5% of its supply is from Class IA resources and by 2030, 40% of its supply must come from Class IA. The Legislature requires reporting on Class IA with identical wording to the existing Class I requirements. For thermal RECs, suppliers must demonstrate compliance with 0.4% in 2021 and 4.0% in 2030 and thereafter. This report covers activity prior to 2021, and therefore will not include any information on Thermal RECs.

The Commission hereby submits its report to the Joint Standing Commission on Energy, Utilities and Technology to describe the status of Maine's new renewable resource portfolio requirement. The Commission notes that this report is based on the most recently filed Competitive Electricity Provider (CEP) annual compliance reports, which were filed in July 2021 for calendar year 2020. Therefore, this report generally

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<sup>1</sup> P.L. 2007, Ch. 403 (codified at 35-A M.R.S. § 3210(3-A)).

presents information on implementation and compliance with the portfolio requirement for calendar year 2020.

## II. BACKGROUND

### A. New Renewable Resource Portfolio Requirement (Class I)

As stated above, the new renewable resource portfolio requirement, referred to as Class I<sup>2</sup> requires that a minimum specific percentage of electricity that supplies Maine's consumers is derived from "new" renewable resources.<sup>3</sup> The percentage requirement began at one percent in 2008 and increased in annual one percentage point increments to ten percent in 2017 and remains at ten percent. The 2007 Act specifies the resource type, capacity limit and the vintage requirements for the new renewable resource. As specified in the 2007 Act, a new renewable resource used to satisfy the Class I portfolio requirement must be of the following types:

- fuel cells;
- tidal power;
- solar arrays and installations;
- wind power installations;
- geothermal installations;
- hydroelectric generators that meet all state and federal fish passage requirement; or
- biomass generators, including generators fueled by landfill gas.

In addition, except for wind power installations, the generating resource must not have a nameplate capacity that exceeds 100 megawatts (MW). Moreover, the resource must satisfy one of four vintage requirements. These are:

- 1) Renewable capacity with an in-service date after September 1, 2005;
- 2) Renewable capacity that has been added to an existing facility after September 1, 2005;
- 3) Renewable capacity that has not operated for two years or was not recognized as a capacity resource by the New England Independent System Operator (ISO-NE) or the Northern Maine Independent System Administrator (NMISA) and has resumed operation or has been recognized by the ISO-NE or NMISA after September 1, 2005; and
- 4) Renewable capacity that has been refurbished after September 1, 2005 and

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<sup>2</sup> The "new" renewable resource requirement was designated as Class I in the Commission's implementing rules (Chapter 311) because the requirement is similar to portfolio requirements in other New England states that are referred to as "Class I." Maine's pre-existing "eligible" resource portfolio requirement is designated as Class II.

<sup>3</sup> Contracts or standard offer arrangements that pre-date the effective date of the Act, 35-A M.R.S. § 3210(3-A)(D), and sales to qualified Pine Tree Development Zone businesses, 35-A M.R.S. § 3210-B(4), are exempt from the portfolio requirement.

is operating beyond its useful life or employing an alternate technology that significantly increases the efficiency of the generation process.

B. Class I Implementing Rules

As required by the 2007 Act, the Commission modified its portfolio requirement rule (Chapter 311) to implement the “new” renewable resource requirement.<sup>4</sup> The implementing rules establish a certification process that requires generators to pre-certify facilities as a new renewable resource under the requirements of the rule and provide for a Commission determination of resource eligibility on a case-by-case basis.<sup>5</sup> The rule also specifies that the Commission may revoke a certification if there is a material change in circumstance that renders the generation facility ineligible as a new renewable resource. Under the rules, a generator does not have to be located in Maine to be eligible as long as its power is used to serve load in New England.

The 2007 Act also includes the authority for the Commission to adopt rules to establish an “alternative compliance mechanism” (ACM) that allows suppliers to pay specified amounts into the Energy Efficiency and Renewable Resource Fund in lieu of compliance with the new renewable resource portfolio requirement.<sup>6</sup> The alternative compliance payment rate in 2020 was \$50.00 per megawatt hour (MWh).

Finally, the implementing rules allow suppliers to satisfy or “cure” a compliance deficiency in one calendar year during the following calendar year. This cure provision only applies if the supplier has satisfied at least two-thirds of its calendar year requirement. In addition, a supplier may “bank” any excess renewable credits in a calendar year for use in the next calendar year. However, a supplier may not use banked credits to satisfy more than one-third of the requirement in any year.<sup>7</sup>

C. Class IA Implementing Rules.

In 2019, the legislature passed “An Act to Reform Maine’s Renewable Portfolio Standard” (2019 ACT)<sup>8</sup> which, inter alia, set new state goals for the consumption of electricity from renewable resources, created two new classes of renewable resources (Class IA and Thermal RECs), and required reporting on Class IA RECs. The 2019 Act sets out the following schedule of requirements for Class IA resources as follows:

- (1) Two and one-half percent for the period from January 1, 2020 to December 31, 2020;
- (2) Five percent for the period from January 1, 2021 to December 31, 2021;
- (3) Eight percent for the period from January 1, 2022 to December 31, 2022;
- (4) Eleven percent for the period from January 1, 2023 to December 31, 2023;
- (5) Fifteen percent for the period from January 1, 2024 to December 31, 2024;
- (6) Nineteen percent for the period from January 1, 2025 to December 31, 2025;

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<sup>4</sup> *Order Adopting Rule and Statement of Factual and Policy Basis*, Docket No. 2007-391 (Oct. 22, 2007).

<sup>5</sup> Chapter 311, § 3(B)(4).

<sup>6</sup> Chapter 311, § 3(C).

<sup>7</sup> Chapter 311, § 7(A) and (B).

<sup>8</sup> P.L.2019, Ch 477, (codified at 35-A MRSA §3210)

- (7) Twenty-three percent for the period from January 1, 2026 to December 31, 2026;
- (8) Twenty-seven percent for the period from January 1, 2027 to December 31, 2027;
- (9) Thirty-one percent for the period from January 1, 2028 to December 31, 2028;
- (10) Thirty-five percent for the period from January 1, 2029 to December 31, 2029; and
- (11) Forty percent for the period from January 1, 2030 to December 31, 2030 and each year thereafter.

As required by the 2019 Act, the rules establish an ACM that allows suppliers to make a payment in lieu of compliance with the new renewable resource portfolio requirement. The alternative compliance payment rate in 2020 was \$50.00 per MWh.<sup>9</sup>

D. Maine's Eligible Resource Portfolio Requirement (Class II)

Maine's original restructuring legislation, which became effective in March 2000, included a 30% eligible resource portfolio requirement.<sup>10</sup> The eligible resource portfolio requirement, now referred to as Class II, mandated that each retail competitive electricity supplier meet at least 30% of its retail load in Maine from "eligible resources." Eligible resources are defined in statute as either renewable resources or efficient resources. Renewable resources are defined in statute as fuel cells, tidal power, solar arrays, wind power, geothermal installations, hydroelectric generators, biomass generators, and municipal solid waste facilities. Renewable resources may not exceed a production capacity of 100 megawatts. "Efficient" resources are cogeneration facilities that were constructed prior to 1997, meet a statutory efficiency standard and may be fueled by fossil fuels.

E. Renewable Energy Credits

Most of the compliance with Maine's portfolio requirements occurs through the purchase of RECs. The New England Power Pool (NEPOOL) has established a REC trading and tracking mechanism referred to as the Generation Information System (GIS). This system allows for the trading of the renewable attribute of a MWh separately from the energy value of the MWh. The GIS serves to significantly simplify compliance by suppliers and verification by regulatory commissions and avoids double counting. Consistent with statutory direction,<sup>11</sup> the Commission requires suppliers in the ISO-NE to verify compliance with the portfolio requirement through the GIS. In Docket No. 2017-00050, the Northern Maine System Administrator (NMISA) requested and was granted to use a tracking and verification system in northern Maine (Docket No. 2017-00050).

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<sup>9</sup> Chapter 311, § 3(C).

<sup>10</sup> 35-A M.R.S. § 3210(3).

<sup>11</sup> The portfolio requirement statute states that the Commission shall allow competitive providers to satisfy the portfolio requirements through the use of RECs if it determines that a reliable system of electrical attribute trading exists. 35-A M.R.S. § 3210(8). The Commission has determined that the GIS is such a reliable system.



### III. IMPLEMENTATION AND COMPLIANCE

#### A. Certified Generators

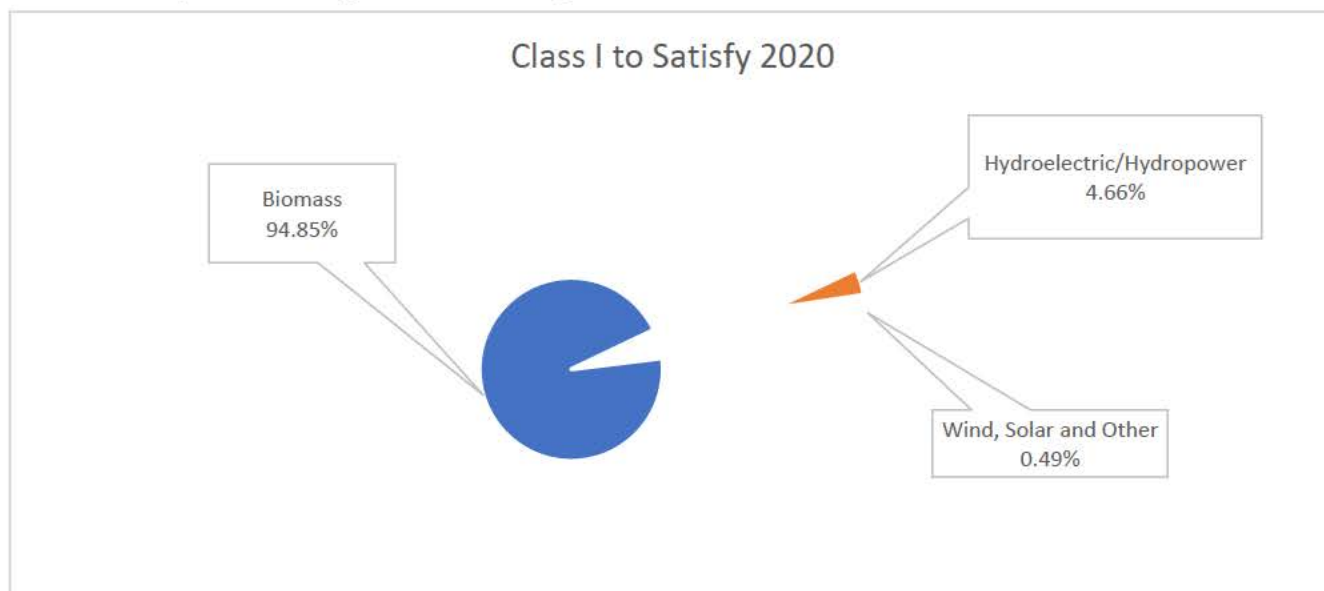
The implementing rules require generation facilities to be certified by the Commission as a Class I/IA renewable resource before such facilities can be used to satisfy Maine's renewable resource portfolio requirement. As of March 2022, there are over 240 certified facilities, with a total capacity of approximately 3,700 MW.<sup>12</sup> However, not all of the facilities that have been certified are in-service and many of the facilities are also eligible for portfolio requirements in other New England states. Additionally, there are Class I/IA facilities physically located in Maine that are not certified as Class I/IA facilities in Maine.<sup>13</sup>

#### B. Exempt Sales

Pursuant to certain statutory provisions, some sales are exempt from the RPS. During 2020, the total amount of sales that were exempt was 335,972 MWh or about 3% of Maine's total electricity sales. Of those exempt sales, 112,273 MWh were due to sales serving qualified Pine Tree Development Zone businesses established under Title 30-A. The balance, 223,699 MWh, were sales under contracts entered into prior to September 2007 for Class I and prior to September 2019 for Class IA.

#### C. New Renewable Portfolio Requirement (Class I); Resources and Cost Impacts

The following chart shows the mix of resources used to satisfy Maine's Class I resource portfolio requirement during 2020.<sup>14</sup>



<sup>12</sup> Information on the RPS Class I Renewable Resource Applications can be found at <http://www.maine.gov/mpuc/electricity/rps-class-i-list.shtml>

<sup>13</sup> Based on data from NEPOOL-GIS Regulator Reports, 64% of the NEW (since 1/1/2019) solar generation physically located in Maine that registered with NEPOOL GIS only registered their RECs for sale outside the State of Maine.

<sup>14</sup> "Other" is not easily visible in the pie chart because of the low percentage



As the table below shows, RECs from 35 facilities were used by suppliers to comply with the 2020 Class I resource requirement. 19 of the facilities are biomass, 12 are hydroelectric, one is other, one is solar, and one is wind. 32 of the facilities are located in Maine, two are located in New Hampshire, and 1 is located in Quebec. Of the 1,042,500 RECs purchased to meet the 2020 portfolio requirement, approximately 99% came from facilities located in Maine.

<b>RECs used by suppliers to comply with 2020 Class I requirements</b>			
	<b>Number of Generators</b>	<b>GIS Certificates</b>	<b>as % of Total</b>
<b>Biomass</b>			
MAINE	17	988,460	94.82%
NEW HAMPSHIRE	1	20	0.00%
QUEBEC	1	314	0.03%
<b>Hydroelectric/Hydropower</b>			
MAINE	11	41,294	3.96%
NEW HAMPSHIRE	1	7,313	0.70%
<b>Other</b>			
MAINE	1	1,589	0.15%
<b>Solar</b>			
MAINE	1	272	0.03%
<b>Wind</b>			
MAINE	2	3,238	0.31%
<b>Grand Total</b>	<b>35</b>	<b>1,042,500</b>	<b>100.00%</b>

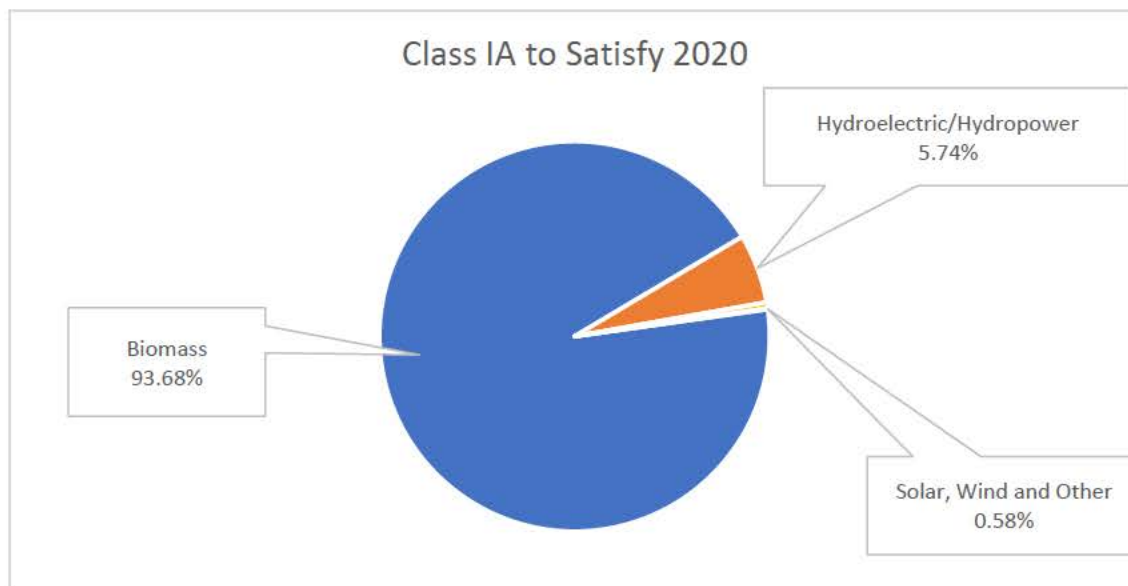
For calendar year 2020, approximately 26% of the Class 1 RPS requirement was satisfied using RECs obtained in 2019. The balance, approximately 74% was met through the purchase of RECs during 2020. Finally, 125,020 RECs were purchased in 2020 and identified as banked for future use. Zero RECs purchased in 2020 were used to satisfy the requirements for the 2019 Class 1 RECs purchased during the cure period.

The cost to ratepayers of Maine’s Class I resource portfolio requirement is estimated by the cost of compliance reported by suppliers, primarily through their purchase of RECs. During 2020, the cost of RECs used for compliance ranged from approximately \$0.00<sup>15</sup> per MWh to \$20.50 per MWh, with a weighted average cost of \$5.97 per MWh and a total cost of \$6,969,077. This is equivalent to about 30 cents per month for a typical residential customer who uses 500 kwh per month; about \$30.30 per month for a medium commercial customer that uses 50,000 kWh per month; and about \$303.00 per month for a large commercial/industrial customer that uses 500,000 kWh per month.

<sup>15</sup> CEPs sometimes procure energy and RECs as a bundle and report the REC cost as zero.

D. New Renewable Portfolio Requirement (Class IA): Resources and Cost Impacts

The following chart shows the mix of resources used to satisfy Maine’s Class 1A resource portfolio requirement during 2020



As the table below shows, RECs from 25 facilities were used by suppliers to comply with the 2020 Class IA resource requirement. Thirteen of the facilities are biomass, four of the facilities are hydroelectric, two are other, five are solar and one is wind. 24 of the facilities used to generate Class IA RECs in 2020 are located in Maine.

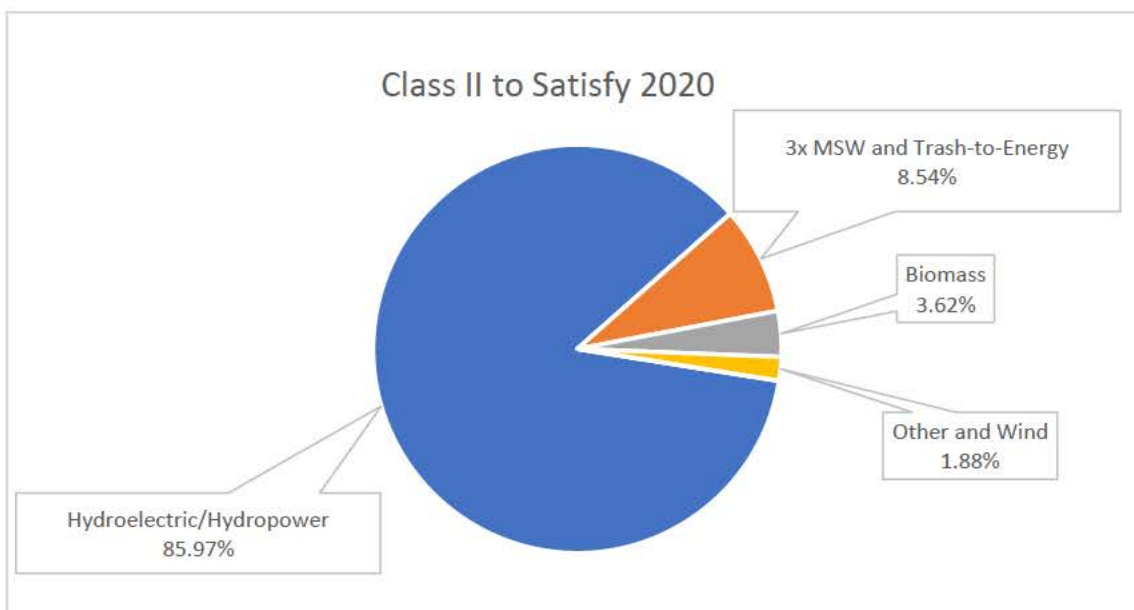
	Number of Generators GIS Certificates as % of Total		
<b>Biomass</b>			
MAINE	12	87,785	93.47%
QUEBEC	1	201	0.21%
<b>Hydroelectric/Hydropower</b>			
MAINE	4	5,387	5.74%
<b>Other</b>			
MAINE	2	13	0.01%
<b>Solar</b>			
MAINE	5	466	0.50%
<b>Wind</b>			
MAINE	1	66	0.07%
<b>Grand Total</b>	<b>25</b>	<b>93,918</b>	<b>100.00%</b>

Calendar year 2020 is the first year for the creation and use of Class IA RECs, thus 100% of the RECs used to satisfy 2020 requirements were purchased in 2020. Of the 143,938 RECs purchased in 2020, 50,020 were identified as banked for future use.

The cost to ratepayers of Maine’s Class IA resource portfolio requirement is estimated by the cost of compliance reported by suppliers, primarily through their purchase of RECs. During 2020, the cost of Class IA RECs used for compliance ranged from approximately \$0.00 per MWh to \$20.50 per MWh, with an average cost of \$ 4.64 per MWh and a total cost of \$668,051. This is equivalent to about 3 cents per month for a typical residential customer using 500 kWh; about \$2.90 per month for a medium commercial customer that uses 50,000 kWh per month; and about \$29.05 per month for a large commercial/industrial customer that uses 500,000 kWh per month.

E. Eligible Resources Portfolio Requirement (Class II); Resources and Cost Impacts

The following chart shows the mix of resources used to satisfy Maine’s Class II renewable resource portfolio requirement during 2020.<sup>16</sup>



During 2020, the costs of RECs used to satisfy the Class II eligible resource portfolio requirement ranged from \$0.00 per MWh (some RECs were provided for free as part of an energy transaction) to \$4.07 per MWh, with an average cost of \$1.30 per MWh and a total cost of \$ 3,982,188. This is equivalent to about 17 cents, \$17.31 and \$173.14 per month for residential, medium and large commercial/industrial customers with the usage levels described above, respectively.

<sup>16</sup> In the 2019 Act, 35-A MRS §3210 (2)(D)(3), “300% multiplier is applied to the output of a generator fueled by municipal solid waste in conjunction with recycling that has obtained a solid waste facility license from the Department of Environmental Protection.” The RECS which resulted from this specific provision have been combined in this graph with waste-to-energy plants that are not claiming eligibility for this same provision.



F. Portfolio Requirement Percentage Suspension

Both Acts allow the Commission to suspend scheduled percentage increases in the Class I and Class IA portfolio requirements if it finds that investment in new renewable resources has not been sufficient for suppliers to satisfy the requirement, the requirement has burdened electricity customers without providing the benefits from new renewable resources or that there has been an over reliance on the ACM. As specified above, the vast majority of the compliance with the Class I and Class IA portfolio requirements occurred through the purchase of RECs at an average REC cost that is substantially less than the alternative compliance payment. Thus, it appears that renewable resource development and operation has been sufficient for suppliers to satisfy the Class I portfolio requirement without reliance on the ACM. Accordingly, the Commission did not act to suspend percentage increases in the portfolio requirement in 2020.

G. Status of Renewable Resource Development

Maine's portfolio requirement operates in conjunction with the portfolio requirements in the other New England states to promote the development of renewable resources in Maine and New England.<sup>17</sup> The ISO-NE interconnection queue, which includes proposed generation projects that have initiated the review process for interconnection to the regional grid, includes a significant number of renewable projects. As of March 2022, the ISO-NE queue includes renewable projects totaling 22,865 MW (wind-19,849 MW, biomass-0 MW, hydro- 99 MW, solar-2,916 MW, and landfill gas-0 MW). The proposed projects in Maine total 2,795 MW (wind-1,436 MW, biomass-0 MW, hydro-28 MW, and solar 1,330-MW).<sup>18</sup> Although all of the projects in the queue may not be developed, there appears to be adequate renewable resource development in the region to meet the requirements of the RPS. As of early March 2022, there was a total between 1800 and 2000 MW of distributed generation (DG) projects in CMP's interconnection queue and more than 525 MW in Versant Power queue.

Because existing requirements and mechanisms in the region appear to be providing sufficient incentives for the continued operation and development of renewable resources sufficient to meet Maine's portfolio requirement, the Commission, at this time, makes no recommendations regarding mechanisms to stimulate investment in renewable resources beyond those that already exist on the state, regional and federal levels.

#### IV. CONCLUSION

During 2020, Maine's electricity suppliers complied with the State's Class I/IA and Class II portfolio requirements. The total cost of compliance for the Class I

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<sup>17</sup> Generally, newly developed renewable resources located within or adjacent to New England can be used to satisfy the various New England state's portfolio requirements.

<sup>18</sup>MW are Net and derived from ISO New England Interconnection Request Tracking Tool at <https://www.iso-ne.com/system-planning/transmission-planning/interconnection-request-queue> In calculating these numbers, projects listed with an operational or withdrawn date before 3/10/2022 have been removed.

requirement was \$6,969,077. For Class IA, the total cost of compliance was \$668,051, and for Class II, the total cost of compliance was \$3,982,188.