2023 ANNUAL COMPLIANCE REPORT

Executive Summary

Massachusetts Department of Energy Resources

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Acronyms

ACP	Alternative Compliance Payment
AEC	Alternative Energy Certificate
APS	Alternative Energy Portfolio Standard
CEC	Clean Energy Certificate
CES	Clean Energy Standard
CES-E	Clean Energy Standard Existing
CHP	Clean Heat and Power
CPEC	Clean Peak Energy Certificate
CPS	Clean Peak Energy Standard
DOER	Massachusetts Department of Energy Resources
MassDEP	Massachusetts Department of Environmental Protection
MW	Megawatt
MWH	Megawatt Hour
RPS	Renewable Energy Portfolio Standard
SCO	Solar Carve-Out
SCO II	Solar Carve-Out II
SREC	Solar Renewable Energy Certificate
SREC II	Solar Renewable Energy Certificate II

Executive Summary

The Commonwealth's different renewable portfolio standard regulations require the Massachusetts Department of Energy Resources (DOER) to prepare an annual report on the status of compliance with each standard. DOER oversees both the implementation of and compliance with all the Commonwealth's renewable portfolio standards. This Executive Summary of the 2023 Annual Compliance Report is accompanied by an Excel workbook that includes the required data associated with compliance.

The Commonwealth's different renewable portfolio standard regulations require Massachusetts retail electricity suppliers to obtain, each year, a certain percentage of their retail customers' electricity supply from resources qualified under each portfolio standard. These requirements do not apply to municipal light plants.

The Renewable Energy Portfolio Standard (RPS) is a statutory obligation created by the Electricity Restructuring Act of 1997 and initiated by regulations in 2002. The statute was first revised by the Green Communities Act of 2008, which identified the original RPS as Class I, added a second class of RPS, Class II, and created the Alternative Energy Portfolio Standard (APS). The RPS and APS statutes were further modified by the Competitively Priced Electricity Act of 2012,[1] the Renewable Thermal Act of 2014,[2] the Energy Diversity Act of 2016,[3] the Act to Advance Clean Energy of 2018,[4] and Chapter 8 of the Acts of 2021.[5]

The Clean Peak Energy Standard (CPS) was created in August 2018 under An Act to Advance Clean Energy[6] and provides incentives to clean energy technologies that can supply electricity or reduce demand during seasonal peak demand periods.

The Clean Energy Standard (CES), also introduced in 2018, complements the other portfolio standards to ensure that the greenhouse gas emission reductions set by the Commonwealth can be achieved. While DOER administers the RPS, APS, and CPS, the

[1] Chapter 209 of the Acts of 2012
[2] Chapter 251 of the Acts of 2014
[3] Chapter 188 of the Acts of 2016
[4] Chapter 227 of the Acts of 2018
[5] Chapter 8 of the Acts of 2021 increased the RPS Class I Minimum Standard from 2% to 3% annually for the years 2025 through 2029.
[6] Chapter 227 of the Acts of 2018

CES is administered by the Massachusetts Department of Environmental Protection (MassDEP).[7]

The Clean Energy Standard for Clean Existing Generation Units (CES-E) was added to the CES program beginning in 2021 to maintain the contribution of existing clean energy generation units to Massachusetts clean energy supply. The CES regulation required MassDEP to complete a review in 2017 of options for addressing clean generators that were in operation before 2011. In early 2019, MassDEP released a detailed discussion document of a "CES-E" requirement to maintain the clean energy supply from pre-2011 nuclear and large hydroelectric generators. Following the subsequent stakeholder process, the regulation was amended to include a CES-E in July 2020.

Overall, the RPS, APS, CPS and CES portfolio standard programs operated successfully in 2023. Most retail electricity suppliers met their compliance obligations, while two suppliers were non-compliant. The load obligation represented by the non-compliant suppliers was 0.01% of the overall RPS Class I load obligation.

Load Obligation

In 2023, the load obligation was 43,284,674 MWh, a 2.7% decrease from the 2022 load obligation of 44,507,592 MWh.

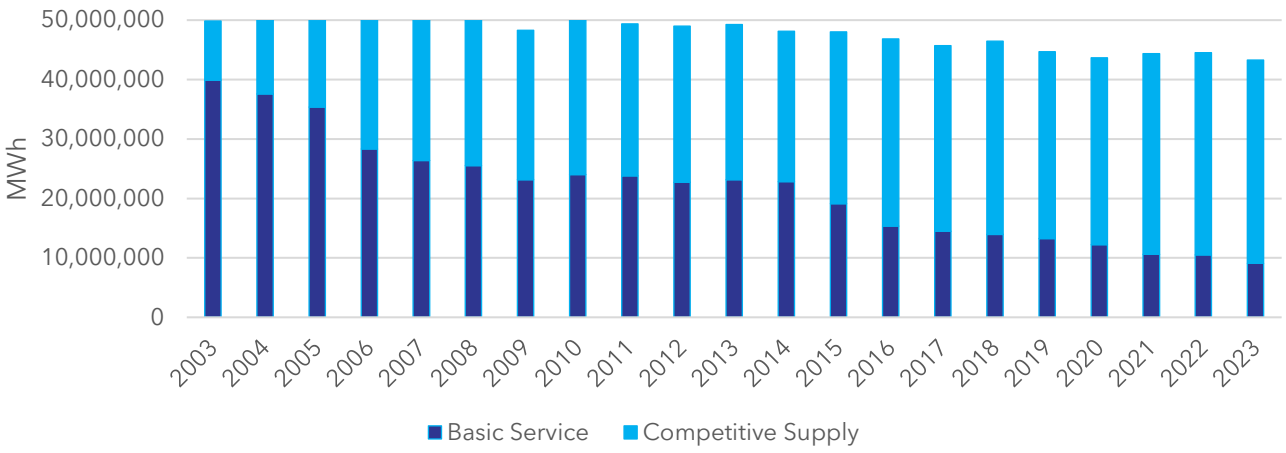
In accordance with MassDEP's Clean Energy Standard regulation[8], the reported 2023 load was equivalent to 93% of the reported 2018 load (46,409,960 MWh).

Figure 1 shows the breakdown of retail load served by Electric Distribution Companies' Basic Service compared to that served by competitive retail supply. The growth of municipal aggregation in the Commonwealth, which is served by competitive supply, has accelerated the shift away from load served by Basic Service in recent years.

[7] In agreement with the Massachusetts Department of Environmental Protection, DOER's annual report on RPS and APS will also serve as the Annual Clean Energy Resource Report as specified in 310 CMR 7.75(9)(b), Clean Energy Standard

[8] 310 CMR 7.75 (9)(b)4

Figure 1: Retail Load Comparison of Utilities' Basic Service vs. Competitive Supply, 2003 - 2023



Clean Energy Attributes

To achieve RPS, APS, CPS, and CES compliance, each Retail Electricity Supplier must obtain enough of the applicable types of clean energy attributes in the form of certificates (i.e., renewable energy certificates, alternative energy certificates, clean peak energy certificates, or clean energy certificates) or make an Alternative Compliance Payment (ACP) to satisfy the minimum standard obligation.

Each certificate represents the generation attributes of one MWh of electricity generated during the Compliance Year by a qualified Generation Unit. However, the MWh value of some Solar Carve-Out II (SREC II) generation is discounted by Solar Renewable Energy Certificate (SREC) factors related to project size or type of location,[9] and Clean Peak Energy Certificates may represent more or less than one MWh of generation because of locational, seasonal, or peak hour factors and the vintage of the generation unit.[10] Under the APS program, an Alternative Energy Certificate (AEC) represents either the MWh-equivalent of the fuel savings in thermal energy or the direct Useful Thermal Energy generated from APS-qualified facilities as determined by the APS regulations.[11] Each Generation Unit's generation of AECs may be further modified by technology-specific multipliers.[12]

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[9] 225 CMR 14.05(9)(l)
[10] 225 CMR 21.05(6)
[11] 225 CMR 16.00
[12] Guideline on Multipliers for Renewable Thermal Generation Units, 2017, https://www.mass.gov/doc/guideline-on-multipliers-for-renewable-thermal-generation-units-121517-final/download

Eligible Resources and Fuel Types

Eligible RPS Class I resources include post-1997 renewable generation units located in New England or in adjacent electricity control areas.[13] Eligible RPS Class II - Renewable resources include pre-1998 renewable generation units (primarily small hydropower) located in New England or in adjacent electricity control areas. The following fuel types are eligible for RPS Class I and RPS Class II:

- solar photovoltaic or solar thermal;
- wind;
- ocean thermal, wave or tidal energy;
- fuel cells using an eligible RPS Class I or II renewable fuel;
- landfill methane gas;
- hydroelectric;
- low-emission, advanced biomass power conversion technologies using an eligible biomass fuel such as manufactured biomass fuel, by-products or waste from animals or agricultural crops, food or vegetative material, algae, organic refuse derived fuel, anaerobic digester gas and other biogases that are derived from such resources;[14]
- marine or hydrokinetic energy; and
- geothermal energy.

Eligible Class II waste-to-energy generation units must be pre-1998 waste-to-energy plants located in Massachusetts that meet certain MassDEP recycling requirements.

Eligible APS resources include air and ground source heat pumps, solar thermal or solar thermal electric energy, woody biomass, liquid biofuels, biogas, fuel cells, and waste-to-energy thermal in addition to Combined Heat and Power (CHP).

Eligible CPS resources include RPS Class I resources qualified after January 1, 2019, qualified RPS resources paired with battery storage, stand-alone batteries, and demand response assets.

In 2023, no separate qualifying generators were eligible to produce stand-alone Clean Energy Credits (CECs). Therefore, RPS Class I RECs, which are eligible for CES, were used by some retail electricity suppliers for compliance with the CES obligation.

[13] These include New York (NYISO), New Brunswick, Nova Scotia, Prince Edward Island and Quebec.
[14] As of January 1, 2012, Woody biomass generation units may no longer apply for a Statement of Qualification under the Renewable Energy Portfolio Standard.

For CES-E, existing clean generation units include certain existing nuclear and hydroelectric plants with nameplate capacity greater than 30 MW and units which were in commercial operation before January 1, 2011.[15] The generation from qualified existing clean generation units create Existing Clean Generation Attributes (ECECs).

RPS Class I RECs Production

The total number of RPS Class I RECs generated in 2023 (net of SRECs and SREC IIs) equaled 12,320,182 MWh, which represents an increase of 3.0% over 2022 (11,959,668). Some of these RECs also qualified for portfolio standards in other jurisdictions and may have been used for compliance in other New England states (mostly Connecticut, New Hampshire, and Rhode Island). Some also may be used for voluntary green representation, especially by municipal light utilities.

RPS Class I RECs (27,857) were used to meet the incremental CES obligation.

Additionally, 307,366 RPS Class I RECs were used to meet voluntary green product requirements that exceeded RPS requirements.[16]

Compliance

RPS Class I

In 2023, suppliers utilized 7,208,731 RPS Class I RECs and 347,089 ACP credits to meet compliance. Suppliers also banked 1,022,752 RPS Class I RECs for future compliance years.

Solar accounted for 48% of the total RPS Class I RECs (including SRECs and SREC IIs) utilized for compliance while wind accounted for 42%.

Solar Carve-Out (SCO)

The SREC market has gotten tighter as the program winds down. Suppliers utilized 361,128 SRECs for compliance including those banked from prior years. As a result of

[15] A list of CES-E qualified units is posted in the FAQ document on MassDEP's CES webpage at: https://www.mass.gov/doc/frequently-asked-questions-massdep-clean-energy-standard/download

[16] Class I RECs retired as "Voluntary Renewable Energy (VRE) purchases," will reduce the number of emissions allowances that can be sold in the RGGI Auction for a future year which will serve to reduce the regional emissions allowance cap for non-renewable thermal power plants. See 225 CMR 13.14, DOER CO2 budget trading program auction regulation. More information about RGGI can be found at http://www.rggi.org/

the tightening market, ACP credits in 2023 were 39,453, up from 36,060 in 2022. Suppliers banked 1,944 SRECs which can only be used in 2024, the final year of the Solar Carve-Out (SCO) Minimum Standard.

Solar Carve-Out II (SCO II)

After Compliance Year 2022, DOER corrected a misalignment between the calculation of the Minimum Standard and the actual number of SREC IIs generated by the market. Suppliers utilized 1,475,854 SREC IIs for compliance including those banked from prior years. As a result of the DOER correction, ACP credits fell from 208,174 in 2022 to 319 in 2023, approximately a 99% decrease. Suppliers banked 48,694 SREC IIs for future years up from 5,496 in 2022. The final year of the Solar Carve-Out II (SCO II) Minimum Standard will be 2027.[17]

RPS Class II Renewable

The RPS Class II Renewable Energy program consists mainly of hydroelectric dam Generation Units constructed prior to 1998. RPS Class II Renewable RECs increased from 1,424,565 in 2022 to 1,826,257 in 2023, a 28% increase.

Despite the increase in RPS Class II Renewable certificates, the 1,424,565 RPS Class II RECs minted were still short of the 1,502,873 MWh obligation. Due to this, ACP credits decreased from 331,584 in 2022 to 45,956 in 2023, an 86% decrease.

RPS Class II Waste-to-Energy

The RPS Class II Waste-to-Energy program remained mostly in balance in 2023. By regulations adopted in 2021, the RPS Class II Waste-to-Energy Minimum Standard rose from 3.5% to 3.7% for 2021 through 2025.[18] In addition, the RPS Class II Waste-to-Energy ACP was raised to be equal to the RPS Class II Renewable Minimum Standard for the same period.[19] In 2024, An Act promoting a clean energy grid, advancing equity and protecting ratepayers[20] fixed the RPS Class II Waste-to-Energy Minimum Standard at 3.7% and the RPS Class II Waste-to-Energy ACP equal to the RPS Class II Renewable Minimum Standard.

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[17] Compliance Year 2027 shall be the final Compliance Year of the Solar Carve- out II program. In the event that a Solar Credit Clearinghouse Auction-II is held for Compliance Year 2026 or 2027 and creates SREC IIs that can be used for Compliance Years after 2027, the Department shall extend the final Compliance Year by one additional Compliance Year to 2028, 225 CMR 14.07(2)(f).
[18] 225 CMR 15.07(2)
[19] 225 CMR 15.08(4)
[20] An Act promoting a clean energy grid, advancing equity and protecting ratepayers, https://malegislature.gov/Bills/193/S2967

Alternative Portfolio Standard (APS)

The APS market remained slightly over-supplied in 2023 with only 514 ACP credits used for compliance, down from 23,883 in 2022. Suppliers banked 526,510 AECs in 2023, up from 270,902 AECs in 2022.

Clean Peak Energy Standard (CPS)

The CPS program was under-supplied. However, the load obligation was reduced by approximately 10% due to exempt load.[21] ACP credits used were 1,921,079, an increase from the 1,393,380 ACP credits used in 2022.

Clean Energy Standard (CES)

All CECs used to meet the CES obligation were eligible RPS Class I RECs. However, most retail electricity suppliers opted to pay the CES ACP of $35.00 as opposed to utilizing RPS Class I certificates. RPS Class I Certificates have an ACP of $40.00. Due to this difference in value across the two programs, suppliers prefer to utilize all RPS Class I Certificates for RPS Class I compliance, banking surplus Class I certificates for future RPS Class I compliance and paying the CES ACP. Only 29,203 CECs were used against the net compliance obligation of 1,821,100, less than 2%.

Clean Energy Standard for Existing Clean Generation Units (CES-E)

The load exemption for CES-E expired in 2023.[22] In 2023, the CES-E program was slightly under-supplied with 10,393,858 ECECs available to meet the load obligation of 11,253,674 (net of non-compliant suppliers). 1,153,489 ACP credits were used to meet compliance. No banking is allowed for CES-E.

Supplier Compliance

Sixty-two (62) Retail Electricity Suppliers (including the three state-regulated investor-owned utilities) served Massachusetts retail customers in 2023. Sixty (60) suppliers fully discharged their compliance obligations through the purchase of the required number of certificates or by making ACP payments. Two suppliers were non-compliant as noted below.

[21] 225 CMR 21.09(2)(g)
[22] 310 CMR 7.75(5)(e)

Supplier Non-Compliance

In 2023, two retail electricity suppliers, Astral Energy, LLC and Mega Energy Holdings, LLC, failed to meet their 2023 compliance requirements. Astral Energy, LLC did provide financial security under 225 CMR 14.08(4), however DOER did not call on the financial security provided as the non-compliance value was determined to be not significant enough to pursue. Mega Energy Holdings, LLC was non-compliant in 2022 as well as in 2023. In 2022, DOER was able to call on the financial security provided and recover $1 million of compliance funds.[23] Mega Energy Holdings, LLC did not provide DOER with financial security in 2023 and had surrendered its competitive supplier license in Massachusetts pursuant to the terms of December 30, 2022, Settlement Agreement with the Department of Public Utilities (DPU 20-47).

Table 1: Retail Electricty Supplier Non-Compliance, 2023

Retail Electricity Supplier	RPS/APS/CPS*	CES/CES-E**	Total
Astral Energy, LLC	$4,777.32	$1,890.00	$6,667.32
Mega Energy Holdings, LLC	$33,804.08	$15,120.00	$48,924.08
Total	**$38,581.40**	**$17,010.00**	**$55,591.40**

*Owed to DOER

** Owned to MassDEP

[23] DOER was not able to recover the remaining $91,506.08 of Mega Energy Holdings, LLC 2022 compliance as 225 CMR 14.08(4) caps financial security at $1 million.

Summary of Compliance

Table 2: Summary of Compliance, 2023

Class	Net Minimum Standard	Total Obligation (MWh) *	Renewable Certificates Used to Meet Obligation **	ACP Credits Used Meet Obligation	Alternative Compliance Payments
RPS CLASS I	17.5%	7,556,074	6,448,134	347,089	$13,883,560
SCO ***	1.5%	400,595	361,128	39,453	$13,019,490
SCO II ***	3.4%	1,476,224	1,475,854	319	$86,449
RPS CLASS II – Renewable	3.5%	1,502,924	1,456,917	45,956	$1,519,305
RPS CLASS II - Waste-to-Energy	3.7%	1,601,573	1,601,562	378	$12,497
APS	5.75%	2,488,903	2,489,078	514	$13,600
CPS	5.3%	2,313,278	387,273	1,921,079	$86,448,555
TOTAL DOER	**$114,983,456**				
CES ****	4.2%	1,821,159	29,203	1,791,897	$62,716,395
CES-E	26.0%	11,254,052	10,100,185	1,153,489	$11,534,890
TOTAL DEP	**$74,251,285**				
GRAND TOTAL	**$189,237,741**				

* Total obligation including non-compliance

** Includes errant and banked certificates

*** Solar carve out requirements are carve-outs of the overall RPS Class I requirement

****CES total obligation is 26%. The RPS Class I obligation counts towards meeting the overall CES obligation. Results reflect Net Minimum Standard.