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# Background Document on Proposed Amendments to:

# 310 CMR 7.75 *Clean Energy Standard*

October 2019

## Regulatory Authority:

**M.G.L. c. 21A, §§ 2, 8, and 16**
**M.G.L. c. 21N, §§ 2(a)(5), 3(c), 4, and 7 and**
**M.G.L. c. 111, §§ 2C and 142A – 142E**

## I. SUMMARY

The Massachusetts Executive Office of Energy and Environmental Affairs (EEA) and Department of Environmental Protection (MassDEP) are proposing two changes to 310 CMR 7.75: *Clean Energy Standard* (CES) that would:

- Increase the CES standard from 20% to 22% in 2020 (but leave all other annual standards unchanged).
- Create a "CES-E" requirement for retail electricity sellers to purchase electricity from existing (pre-2011) clean energy generators each year, beginning in 2020.

These changes would help to ensure compliance with the 2020 greenhouse gas (GHG) emissions limit developed under the Massachusetts Global Warming Solutions Act (GWSA). In the long term, the CES-E would retain existing clean generation resources' contribution to Massachusetts' electricity supply, thereby helping to ensure that Massachusetts' electricity supply is almost completely decarbonized in 2050.

## II. BACKGROUND

In August 2017, EEA and MassDEP finalized 310 CMR 7.75: *Clean Energy Standard* (CES Regulation) to require retail sellers of electricity to provide increasing quantities of clean electricity to their customers in Massachusetts.[1] The standard is defined as a percentage of electricity sales, and increases from 16% in 2018 to 80% in 2050, increasing by 2% each year. The CES Regulation includes specific eligibility requirements, including an emissions-based qualification threshold and a requirement that eligible generators must have commenced commercial operation after 2010.[2]

The CES Regulation also required MassDEP to complete a review in 2017 of options for addressing clean generators that were in operation before 2011 (referred to in this document as "existing"). Issues addressed in the review were documented in a discussion document and extensive written stakeholder comments. Comments received during the review informed

[1] See https://www.mass.gov/guides/clean-energy-standard-310-cmr-775 for more information about the CES, including rulemaking and stakeholder documents referenced in this document. Municipally owned retail electricity sellers are not currently required to comply with the CES requirement to procure increasing quantities of clean electricity. The CES regulation was closely modeled on the Department of Energy Resources (DOER) Class I Renewable Portfolio Standard (RPS) regulations at 225 CMR 14.00.

[2] As explained in the Electricity Sector Response to Comments published at https://www.mass.gov/doc/response-to-comment-1 in August 2017, "The final CES includes eligibility of resources that commenced commercial operation after 2010. . .this date reflects the intent to capture resources that came online after the December 2010 publication of the Massachusetts Clean Energy and Climate Plan for 2020 where the concept of a Massachusetts CES was first put forth as a GWSA strategy (referred to in the 2020 CECP as a Clean Energy Performance Standard)."

regulatory amendments that were finalized in December 2017 to address attributes associated with energy contracted pursuant to Chapter 188 of the Acts of 2016, *An Act to Promote Energy Diversity*. In early 2019, MassDEP released a second discussion document, which included a detailed CES-E discussion and consideration of increasing the CES standard in 2020 and 2021. This second stakeholder process, including a stakeholder meeting and written comments, was completed in early 2019, and informed development of the regulatory amendments proposed at this time. Both discussion documents and all stakeholder comments are available on MassDEP's CES web site.

To provide additional background on this stakeholder process, questions posed by MassDEP are listed below, along with a brief summary of stakeholder responses to the questions. See **DESCRIPTION OF THE PROPOSED AMENDMENTS** for how each question is approached in the proposed amendments, along with the rationale for the proposed approach.

- **Do you support increasing the stringency of the CES standard in 2020 and 2021? Is an increase of 1-2% appropriate?** Comments on increased CES stringency were mixed. While some comments were supportive, others expressed concern about the cost to ratepayers of purchasing additional clean energy. One commenter stated that the stringency increase should not be implemented unless it is needed to ensure compliance with the GWSA 2020 emissions limit. No stakeholder expressed support for an increase of an amount other than 1-2%.
- **How should existing electricity supply contracts be treated?** Several commenters expressed support for "grandfathering" of contracts to avoid costs.
- **Do you support implementing the CES-E concept?** Most commenters acknowledged the need to support existing clean energy generators in some way. While some of these commenters supported the specific "CES-E" approach, others recommend including existing generators in the CES along with new generators instead of creating a new "CES-E." Commenters opposed to the CES-E cited compliance costs, along with the complexity of complying with multiple clean and renewable energy programs. One commenter stated that the CES-E should not be implemented unless it is needed to ensure compliance with GWSA 2020 emissions limit.
- **Is a CES-E stringency of approximately 15% of current electricity sales reasonable?** Commenters that addressed this issue generally supported a standard of at least 15%. Several commenters noted that that a higher standard, such as 20% or more, would be more consistent with historical clean energy import data, as reflected in MassDEP's GHG inventory. Several commenters addressed the related question of what the appropriate alternative compliance payment (ACP) rate should be, with some commenters expressing concern that a rate of 15% of the RPS Class I rate could be too high, and others claiming that it is too low.
- **Should the CES-E standard be expressed as a percentage or in megawatt hours (MWh)?** Commenters that addressed this question acknowledged the need to keep the number of required MWh constant even if electricity demand changes, but also stated that expressing each annual standard as a percentage would simplify compliance planning.
- **Are the CES-E eligibility requirements presented reasonable with respect to location? How could smaller hydroelectric generators in New Hampshire and Massachusetts be included without encouraging certificate "shuffling?"** Several

commenters expressed support for including smaller hydroelectric generators, including generators located in jurisdictions that are not exporters of electricity on a net annual basis, and generators that already participate in RPS programs in Massachusetts or other states. However, none of these commenters explained how this could be accomplished without causing certificate "shuffling." Certificate shuffling would happen if the program caused a change in where certificates were counted toward compliance (i.e., crediting to Massachusetts clean energy that has historically been, and would otherwise be, credited to other states); such changes would not be consistent with the purpose of the "CES-E" program, which is to maintain, not increase, Massachusetts' historical clean energy supply. One commenter responded that there is no need to include these generators in the CES-E because the RPS Class II program already provides a mechanism to value them.

The reason that EEA and MassDEP are proposing amendments to the CES Regulation at this time is to better ensure compliance with the 2020 emissions limit that was set by EEA in 2010 under the authority of the GWSA, which requires Massachusetts to reduce statewide GHG emissions by 25% relative to a 1990 baseline. Specifically, the increase in the CES standard to 22% in 2020 would deliver additional clean energy to Massachusetts, thereby reducing emissions from generating electricity consumed in Massachusetts. The CES-E is important to "lock-in" the contribution of these existing resources to Massachusetts' clean energy supply in 2020 and beyond.[3] Implementing the CES-E could also be a useful step toward a more comprehensive and regionally coordinated effort to recognize the importance of these resources.[4]

The regulations are also consistent with statements in the Global Warming Solutions Act 10-Year Progress Report that the "Baker-Polito Administration recognizes the importance of sustaining aggressive efforts to reduce GHG emissions in the Commonwealth in order to meet the GWSA emissions limits for 2020 and ultimately for 2050" and "assuming existing clean resources such as regional nuclear power plants and pre-2020 imported hydropower remain on line, the 80% standard will be sufficient to ensure that Massachusetts' electricity supply is almost completely decarbonized in 2050."[5]

MassDEP continues to review the possibility of including Municipal Electric Departments and Municipal Light Boards in a Clean Energy Standard.

## III. DESCRIPTION OF THE PROPOSED AMENDMENTS

The proposed amendments would:

[3] Note that explicit accounting of existing clean generation is becoming more common in New England. For example, see https://www.masslive.com/news/2018/12/nuclear_solar_offshore_wind_wi.html.
[4] See https://www.coneg.org/wp-content/uploads/2019/03/New-England-Governors-Statement-of-Cooperation-on-Regional-Energy-3-15-19.pdf for more information about regional cooperation. The CES-E would utilize the existing regional NEPOOL-GIS certificate tracking system, which would also support regional coordination.
[5] Available at https://www.mass.gov/files/documents/2019/04/02/GWSA-10-Year-Progress-Report.pdf. The CES-E standard would be additional to the 80% standard; the combined effect of these two standards, along with the RPS Class II and APS standards, would be to require that approximately 100% of electricity come from clean resources in 2050.

- Increase the CES standard from 20% to 22% in 2020.
- Create a "CES-E" that would:
    - set a CES-E standard of 15% of 2018 electricity sales by requiring retail electricity sellers to annually purchase certificates from "clean existing generation units;"
    - allow pre-2011 nuclear and large hydroelectric generators in exporting jurisdictions to qualify as "clean existing generation units;"
    - allow for compliance using alternative compliance payments.

The proposed amendments are described in detail below. EEA and MassDEP welcome comment on all aspects of this proposal.

## A. CES and CES-E Standard Setting

As discussed above, EEA and MassDEP are proposing an increase in the 2020 CES standard from 20% to 22%. The agencies are not proposing to change the 2021 standard, because some stakeholders have raised concerns about the cost of increasing the standard and because increasing the 2021 standard is not necessary to achieve the purpose of helping to ensure compliance with the GWSA 2020 GHG emissions limit.

As explained in the 2019 stakeholder discussion document, the proposed new CES-E standard of 15% of 2018 electricity sales was selected to conservatively reflect the historical contribution of existing clean resources to MassDEP's GHG emissions inventory, and to ensure consistency with the purpose of maintaining (vs. increasing) the contribution of the resources to Massachusetts' electricity supply. However, EEA and MassDEP acknowledge that a higher standard could be supported by historical data, and welcome additional technical comment on this question.

The regulation also includes a mechanism to adjust the CES-E percentage standard to compensate for changes in electricity sales, so that the required number of MWh stays the same over time. For example, if annual electricity sales rise to 150% of 2018 sales in a future year, the percentage standard would decrease to 10% for that year (15%/150% = 10%). In order for that percentage standard to be known in advance of the relevant compliance year, the standard would be calculated based on electricity sales reported for the year three years prior to the year for which the standard is being established (i.e., the 2022 standard would be established based on 2019 sales), once the report published pursuant to 310 CMR 7.75(9)(b) for the earlier year is available.

Retail electricity sellers may exempt MWh associated with fixed price contracts with their customers, but only if the contracts were executed as of February 20, 2019. This date was chosen because it is the date that MassDEP notified retail electricity sellers of potential changes to the CES Regulation. Therefore, contracts executed after that date would have been executed with knowledge of the potential changes. Furthermore, using a later date would encourage the use of contracting for the purpose of avoiding anticipated regulatory changes, thereby setting an undesirable precedent. For the CES, grandfathering is limited to the incremental impact of the proposed amendments, and therefore is limited to 2% of 2020 sales only. For the CES-E, the

maximum grandfathering period would be limited to three years (i.e., 2020, 2021 and 2022) to ensure that the CES-E is fully effective when new contracted clean power becomes available in the mid-2020s.

## B. CES-E Eligible Generators

EEA and MassDEP are proposing to add a new defined term, "clean existing generation unit," to identify generators that qualify under the CES-E. This definition specifies that eligible generators must:

- utilize hydroelectric or nuclear energy; [6]
- have a commercial operation date before January 1, 2011;
- be located in Massachusetts or a jurisdiction that has consistently exported electricity to Massachusetts;[7] and
- have a nameplate capacity of more than 30 MW.

The technology, vintage, and location requirements follow directly from the CES-E goal, which is to support generators that contribute to Massachusetts' clean electricity supply but are not eligible for the CES because they commenced commercial operation before January 1, 2011.

The specific regulatory threshold for exporting jurisdictions is that they must have "exported at least 2,000,000 MWh of electricity to Massachusetts every year from 2001 through 2016, on a net annual basis, as reflected in the state greenhouse gas emissions inventories published annually by the Department." This threshold is based on historical GHG inventory data to reflect the CES-E's purpose of maintaining historical clean energy contributions. New Hampshire and Quebec are the only jurisdictions that meet this threshold.[8] Any resources in Massachusetts that meet other eligibility requirements would also qualify because generators in Massachusetts are assumed to contribute to Massachusetts' energy supply if their generation is not used to comply with renewable energy requirements in other states.[9] EEA and MassDEP are seeking comment

[6] The CES Regulation uses an emission-based threshold instead of a list of eligible technologies to encourage the development of new low-emissions technologies, but the alternative approach of listing qualified technologies is appropriate for the CES-E because the purpose of developing new technologies does not apply to the CES-E, and because the listed technologies meet the emissions threshold in the CES Regulation.

[7] This reflects the GWSA definition of "statewide greenhouse gas emissions," which includes emissions from electricity generation "whether the electricity is generated in the commonwealth or imported."

[8] The Department's annual GHG emissions inventories are posted at https://www.mass.gov/lists/massdep-emissions-inventories. See Appendix D - Appendix S. Annual exports to Massachusetts are in Row 24 of the Imported Emissions tabs of the spreadsheets, in columns labeled "MA Share of Net Exports." All New England states (Vermont, Maine, Connecticut, and Rhode Island) and adjacent jurisdictions (New York, New Brunswick), other than New Hampshire and Quebec, fail to meet this threshold. This information is also presented on slide 11 of the 2017 Stakeholder Presentation available on the CES web page of the MassDEP website.

[9] Including Massachusetts is also consistent with the approach used in MassDEP's GHG inventory, which assigns emissions from generators in Massachusetts to Massachusetts, as long as their generation is not used to comply with renewable energy requirements in other states.

on this approach, including on the inclusion of resources in Massachusetts, and on the specific regulatory threshold for exporting jurisdictions.[10]

The agencies are also seeking comment on whether including Newfoundland and Labrador as additional exporting jurisdictions could be appropriate and desirable. Including these jurisdictions could be appropriate because they are only electrically interconnected to control areas that are adjacent to New England, reducing the risk of certificate shuffling, and because of the possibility that including hydropower resources located in these provinces could lower costs by increasing competition among eligible resources in Canada. This approach could also be consistent with the inclusion of out-of-region generators in the CES Regulation if they use a "dedicated transmission line," an option that was included in the CES to "potentially lower costs by increasing competition among Canadian generators able to deliver electricity to Massachusetts."[11]

Consistent with the current CES Regulation, the 30 MW minimum size threshold is being proposed to address stakeholder comments regarding smaller hydroelectric generators.[12] Specifically, one stakeholder suggested a generic exclusion for small hydroelectric generators because this category of generators is adequately addressed by various RPS programs in the region, an approach that would be generally consistent with the treatment of new small hydroelectric generators under the current CES regulation. None of the stakeholders that advocated for allowing small hydroelectric CES-E eligibility adequately explained how such generators could be included without encouraging "certificate shuffling" (i.e., assigning to Massachusetts clean energy that has been, and would otherwise be, assigned to other states). "Certificate shuffling" would not be consistent with the purpose of the CES-E, which is to maintain, not increase, Massachusetts' historical clean energy supply. For this reason regulatory language is proposed to expressly prevent participation by generators that have previously participated in clean energy crediting programs, as documented in the New England Power Pool Generation Information System (NEPOOL GIS) tracking system since 2010, regardless of whether they meet the other eligibility requirements. EEA and MassDEP are seeking comment on this issue, including whether a size threshold is an efficient and appropriate regulatory approach and, if so, whether 30 MW is an appropriate threshold. Commenters who wish to address this issue may wish to provide information about particular hydroelectric generators that may be affected.[13]

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[10] For example, the specific regulatory threshold could be revised to "exported at least 4,000,000 MWh of electricity to Massachusetts in at least two years from 2001 through 2016." Based on review of the most recent data, which was not available when the CES-E concept was originally shared with stakeholders, this would result in classification of Connecticut as an exporting jurisdiction in addition to New Hampshire and Quebec. Commenters who address this question may also wish to comment on whether a corresponding increase in the stringency of the proposed standard, for example to 20%, would be appropriate if the threshold for exporting jurisdictions is revised.

[11] This explanation was included in the Background Document published in December 2016 and available on the CES web page at https://www.mass.gov/doc/background-document-on-proposed-new-amended-regulations-december-2016.

[12] See 310 CMR 7.75(7)(a)1.b. for the 30MW threshold.

[13] A list of hydroelectric generators in New England and their eligibility for state energy crediting programs is available at https://www.nepoolgis.com/public-reports/.

The proposal also includes a requirement, applicable to generators located outside New England, to demonstrate the use of pre-2017 transmission capacity to transmit energy directly from Quebec to New England. The purpose of this requirement is to ensure that the CES-E maintains the clean energy supply vs. causing change. The regulatory provisions parallel the existing CES requirements to utilize new transmission capacity, but EEA and MassDEP are particularly interested in technical comment on how the provisions could be streamlined. For example, is there a way to maintain the transmission vintage requirement while simplifying the underlying regulatory provisions consistent with DOER's proposed amendments to RPS requirements for generators that are located outside ISO-NE?[14] Or can the transmission path documentation requirements be addressed after new transmission capacity comes online after 2020?

### C. Other CES-E Design Elements

To provide compliance flexibility, the proposed regulation includes an ACP option, with the value of the payment set at 15% of the Massachusetts RPS Class I ACP rate. This rate, which was judged too low by some stakeholders and too high by others, appears to strike a reasonable balance between the need to provide adequate support for existing resources and the need to control costs. Costs would be limited to approximately 1% of retail electricity prices, and would not increase significantly over time because the required number of MWh will not increase over time.[15] The ACP option is of particular importance to the CES-E because of the small number of eligible generators; the ACP option will protect against market power by allowing retail electricity sellers to bargain for certificate prices at or below the ACP rate.

Two aspects of the design of the CES-E were informed by the unique characteristics of the Seabrook nuclear power plant, which MassDEP estimates contributes approximately 5% of total electricity consumed in Massachusetts.[16] First, consistent with the CES-E purpose of maintaining (vs. increasing) the contributions of existing clean resources, the regulation limits the number of CES-E-eligible certificates generated by any single generation unit to approximately 5% of 2018 electricity sales (specifically, 2.5 million MWh per year).[17] Second, the decision, discussed above, to set the 15% standard at a level somewhat lower than historical levels allows for more flexibility to obtain CES-E certificates from other eligible generators, if Seabrook does not contribute the full 2.5 million MWh in a particular year.

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[14] See https://www.mass.gov/service-details/rps-class-i-ii-rulemaking. The relevant RPS requirements are at 225 CMR 14.05(5) and the relevant CES requirements are at 310 CMR 7.75(7)(b).

[15] The RPS Class I ACP rate for 2018 is approximately $70/MWh. The corresponding CES-E ACP rate would be 15% of $70/MWh, or $10.50/MWh. If the CES-E requirement were 15% of electricity sales, the per-MWh-of-sales cost would be 15% of $10.50, or approximately $1.60/MWh. This is equivalent to $0.0016/kWh, which is less than 1% of the average Massachusetts retail electricity price of approximately $0.17/kWh. (Average retail electricity prices are available at https://www.eia.gov/electricity/state/.)

[16] See the pie graph in the 2017 stakeholder discussion document for more information about this estimate.

[17] Seabrook is partly owned by municipally-owned Massachusetts retail electricity sellers (municipal electric departments (MEDs) and municipal light boards (MLBs)) that would not be subject to the proposed CES-E requirement. If these MEDs/MLBs were to choose to reflect their ownership of Seabrook in NEPOOL GIS, they would utilize certificates that are not CES-E-eligible, so any clean energy captured by the CES-E would be additional to MED/MLB ownership of Seabrook.

EEA and MassDEP are proposing that no banking of CES-E certificates from one year to the next is allowed. This approach is consistent with the CES-E purpose of maintaining clean energy over time because banking would allow retail electricity sellers to balance increased delivery of clean energy from existing generators in one year with decreases in other years.

EEA and MassDEP are not proposing any changes to the 2021 program review requirement in the CES Regulation, but the agencies are seeking comment on whether additional specificity would be desirable to ensure that some of the issues raised by stakeholders are adequately addressed during this program review. For example, one stakeholder referenced the potential for a regional clean energy program to be deployed in the mid-2020s. While EEA and MassDEP would expect to reconsider the need for the CES-E in light of such a program whether or not such reconsideration was required by regulation, the agencies would also consider adding specific regulatory requirements to address this possibility, if requested by commenters. Similarly, the program review provision could be amended to require consideration of transitioning to a "global" CES, as suggested by some commenters.

## IV. IMPACTS OF PROPOSED AMENDMENTS

### Economic Impacts

The economic impacts of the increase in the CES stringency in 2020 are expected to be small because the magnitude of the increase is small relative to the total standard (an increase of 10%), and because renewable energy certificate prices are projected to be moderate in 2020.[18]

One industry stakeholder with extensive expertise and experience studied the CES-E proposal and concluded that ratepayer costs could total as much as $70 million spread over applicable annual electricity sales of 45 TWh.[19] EEA and MassDEP appreciate this analysis, and the agencies generally concur that the estimate is reasonable and consistent with MassDEP's estimate of $0.0016/kWh or 1% of retail electricity prices, provided above.[20] Because this estimate was derived by assuming that the price of CES-E certificates would be set by the ACP price, it represents a maximum, and actual costs could be lower. EEA and MassDEP also note the cost of the CES-E will not increase significantly over time, because the standard remains constant. Furthermore, there could be long-term cost savings associated with the CES-E if it helps to retain existing low-cost generation that would otherwise need to be replaced with higher-cost new clean energy generators.

EEA and MassDEP intend to refine the estimate of the economic impacts of the regulatory amendments before finalizing the regulation, and welcome public comment on how best to estimate economic impacts.

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[18] Recent 2020 certificate futures prices posted on https://www.theice.com have been less than $25/MWh, which would be added to 2% of distribution company and competitive supplier electricity sales in one year. This compares to an ACP price of approximately $50/MWh in the existing CES Regulation for that year.

[19] This estimate is from Eversource Energy's comments, available on MassDEP's web site.

[20] 45 TWh = 45,000,000,000 kWh. $70,000,000/45,000,000,000 kWh = $0.0016/kWh.

Exemptions for existing contracts for retail electricity sales will also help to limit price impacts on Massachusetts electricity customers that have fixed-price contracts for electricity.

### Impacts on Massachusetts Municipalities

Pursuant to Executive Order 145, state agencies must assess the fiscal impact of new regulations on the Commonwealth's municipalities. The proposed amendments will not affect cities or towns because municipally-owned retail electricity sellers are not currently required to comply with the CES Regulation.

### Massachusetts Environmental Policy Act (MEPA)

Pursuant to 301 CMR 11.03(12) (MEPA Regulations), EEA and MassDEP are not required to file an Environmental Notification Form (ENF) regarding the proposed amendments. The proposed amendments will not reduce standards for environmental protection, nor do they reduce opportunities for public participation in review processes or public access to information generated or provided in accordance with these regulations.

## V. PUBLIC HEARING AND COMMENT

EEA and MassDEP will hold a public hearing on the proposed amendments in accordance with M.G.L c. 30A and will publish a notice of the hearing and comment period at least 30 days before the public hearing. EEA and MassDEP will accept written comments for 10 days after the public hearing. The public hearing notice and proposed amendments are available on MassDEP's website at: https://www.mass.gov/service-details/massdep-public-hearings-comment-opportunities. For further information, please contact William Space at 617-292-5610 or william.space@mass.gov.