The Clean Peak Standard in Massachusetts

March 2020

225 CMR 21.00 Clean Peak Energy Portfolio Standard

Status: Regulations Finalized, Sent to Legislature

What is a Clean Peak Standard?

- A clean peak standard (CPS) is a new regulatory tool to reduce the costs and environmental impact of periods when electricity demand is highest–and generation tends to be the most polluting.
- Like a renewable portfolio standard (RPS), a CPS requires a percentage of electricity delivered during peak hours to come from eligible clean peak resources.
- Even for areas with high percentage of renewables penetration, those resources do not generally produce energy during peak demand periods and therefore the grid may still require significant reliance on expensive and polluting generation resources.

How Will the Clean Peak Standard Work in Massachusetts?

- The CPS would require electric retailers to procure a minimum percentage of their annual electricity sales from renewable generation or energy storage.
- Starting in 2020, the Minimum Clean Peak Standard will be 1.5% of retail electricity sales and increase at least 1.5% each year to at least 16.5% by 2030, with mechanisms to accelerate the annual increases of the Minimums Standard in the event of market oversupply.
- Electric retailers will purchase Clean Peak Energy Certificates (CPECs) to meet the obligations.
- Different resource types have varying multipliers for CPECs, ranging 25x to 0.01x in value.

What's Driving the Clean Peak Standard in Massachusetts?

- Massachusetts is the first state to move forward with a clean peak standard.
- **Cost savings** and **reduced emissions** are the key drivers behind the CPS.
    - A Massachusetts report found that 10% of hours on average accounted for 40% of annual electricity spend (over $3 billion in costs to ratepayers/year).
    - The state estimates that the proposal will save ratepayers $710 million net and reduce CO_2 emissions by 560 thousand metric tons over ten years.

Regulatory Summary

Gov. Charlie Baker (R) first introduced Clean Peak Standard legislation in March 2018, which became An Act to Advance Clean Energy that was signed into law in August 2018. The bill requires the Department of Energy Resources (DOER) to develop this standard. On March 20, 2020, the DOER submitted the finalized standard to the Massachusetts legislature. Below is a summary of the key components of the regulations.

Qualified Peak Energy Resources

Eligible resources fall into four categories.

Category 1: New renewable resources that come online after January 1, 2019

Category 2: Existing renewable resources that add new energy storage capacity of at least 25% of the renewable nameplate capacity

Category 3: New energy storage that charges primarily from renewables

- DOER offers three pathways for qualification:
  - Co-location of energy storage with a renewable energy resource, where the renewable energy resource must have a nameplate capacity of at least 75% of the nameplate capacity of the energy storage resource; or
  - Operational or contractual pairing of energy storage with a non-co-located renewable energy resource; or
  - Charging an energy storage system from the grid during hours when renewables are at their highest percentage of the generation mix (overnight coincident with wind generation and during the morning and early afternoon when solar generation is high):

Charging Hours

	Winter	Spring	Summer	Fall
Overnight (wind)	12 am to 6 am	12 am to 6 am	12 am to 6 am	12 am to 6 am
Morning/early afternoon (solar)	10 am to 3 pm	8 am to 4 pm	7 am to 2 pm	9 am to 3 pm

Category 4: Demand response resources

Point of Interconnection

Resources must be interconnected with the distribution or transmission system in Massachusetts (transmission-interconnected resources must deliver energy in state).

Clean Peak Seasons and Daily Time Windows

DOER established the following seasons and daily time windows for each season, when net electricity demand is the highest:

Clean Peak Seasons and Daily Time Windows

	Winter	Spring	Summer	Fall
Seasonal Date Range	Dec 1 - Feb 28	Mar 1 – May 14	May 15 – Sept 14	Sept 15 – Nov 30
Daily Time Window	4 – 8 pm	5 – 9 pm	3 – 7 pm	4 – 8 pm

Calculation of Clean Peak Energy Certificates: A qualified resource will generate Clean Peak Energy Certificates (CPECs) according to its performance over the duration of the four hour peak period of a particular day. The multipliers discussed below would then be applied.

Minimum Standard (MS): Sufficient CPECs will be required to meet a CPS MS of 1.5% of annual retail electricity sales in 2020, with the annual obligation increasing 1.5 percentage points each year, reaching 16.5% by 2030 and 46.5% by 2050. The rate of MS increase will accelerate under the following conditions:

- If the market supply (i.e., the ratio of CPECs generated to CPECs required to meet the MS) is greater than 100% in any year before 2030, the CPS MS will increase by 3 percentage points the following Compliance Year.
- If the market supply is greater than 120% in any year before 2030, the CPS MS will increase by 4.5 percentage points the following Compliance Year.

Long-term Contracting: Regulations call on 30% of the total compliance to be met each year with long-term contracting by electric distribution utilities. The March 2020 revision includes a mechanism to adjust that requirement upward or downward depending on the market response:

- Where market supply of is below 50% of CPS MS, DOER may increase the next year's long-term procurement requirement by up to 5 percentage points.
- Where market supply is greater than 70% CPS MS, DOER may decrease the next year's procurement target by up to 15 percentage points.

Alternative Compliance Payment (ACP): To keep ratepayer costs under $0.005/kWh, DOER proposes an Alternative Compliance rate set at $45 per MWh will remain in place until 2024, declining by $1.54 per MWh thereafter through 2050.

- If the market supply is greater than 100% in any compliance year, the ACP rate will decline by $3.08 per MWh the following compliance year.
- If the market supply is greater than 120%, the ACP rate shall decline by $4.62 per MWh the following Compliance Year.
- Once the ACP reaches $4.96 per MWh, it will remain at that price for remaining program duration.

Multipliers: DOER proposes using multipliers to increase the number of certificates awarded for each MWh of generation that provide certain additional benefits to the system.

- Resources delivering during Summer and Winter peaks are worth 4x those in Spring and Fall, and resource delivering during the highest hourly peak in a month earn a 25x multiplier.
- Resilient resources earn a 1.5x multiplier.
- Existing generation would receive a low multiplier of 0.1x to ensure the program is not saturating the market with existing resources (that are just operating as usual) and suppressing price signals to invest in storage.
- Contracted generation would receive a multiplier of 0.01x
- A SMART Energy Storage Resource would receive a multiplier of 0.2x.

DOER proposes reviews of the ACP rates and multipliers at least every five years, beginning in 2025.

Market Impact

While the final regulations include many improvements from the draft regulations, it remains unclear the extent to which the Clean Peak Standard will drive the deployment of new energy storage resources.

- A Clean Peak Standard minimum of 16.5% by 2030 is a good start. However, the overall supply and demand of the CPEC market is not well understood. DOER has changed its final regulations to address potential oversupply of the market for CPECs in several ways: reducing the multiplier for contracted resources (e.g., wind power) to 0.01x; reducing the reducing the multiplier for SMART projects to 0.2x; and a new mechanism to accelerate annual target increases in years

where there is oversupply of CPECs. It remains to be seen if these measures will create sufficient long-term certainty to drive additional storage deployments.

- The DOER's March 2020 revision of the regulations increased the ACP to $45/MWh (from $30/MWh in the draft rules). While a higher ACP theoretically should help drive greater deployment of new energy storage resources, the market adjustment mechanism to reduce the ACP value ahead of schedule could create greater uncertainty offsetting some of this value. An additional factor that contributes to the uncertainty about the CPS driving more energy storage deployment is FERC's recent orders that back pricing mechanisms to offset "out-of-market" payments of new energy storage resources; resources receiving CPEC revenues could see those economic benefits counteracted in their bidding into wholesale capacity markets.
- Long term contracting through competitive solicitations will be a key ingredient in making this market work. Regulations call on 30% of the total compliance to be met each year with long-term contracting, and the March 2020 revision includes mechanisms to adjust that requirement upward or downward depending on the market response. As the Clean Peak Standard is truly a first-of-a-kind program, reducing uncertainty associated with contracting may better support project financing.

Implementation Timeline

In October 2019, DOER released draft regulations implementing the program. The draft regulations were finalized on March 20, 2020 and sent to the Massachusetts state legislature for review within 30 days. DOER will then submit finalized regulations 30 days after that review to the Secretary of State. The program will be launched thereafter, although the timeline for RFPs from retail electricity suppliers will extend into future years.

For more information contact ESA at info@energystorage.org.