



October 30, 2019

Via email to: DOER.CPS@mass.gov

Commissioner Judith Judson
Massachusetts Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston, MA 02114

Re: National Grid and Unitil Comments on DOER's Proposed Clean Peak Energy Standard Regulations

Dear Ms. Judson:

On September 27, 2019, the Massachusetts Department of Energy Resources ("DOER" or "Department") issued draft regulations as part of the development and design of the Clean Peak Energy Standard ("CPES") program, required by "An Act to Advance Clean Energy," St. 2018, c. 227, s. 13, which was signed into law by Governor Baker on August 9, 2018. Fitchburg Gas and Electric Light Company d/b/a Unitil ("Unitil") and Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid ("National Grid") (together, the "EDCs"), are pleased to offer these comments to the DOER in response to the Department's Procedural Notice and Request for Public Comments ("Request") on the DOER's proposed regulations.

The EDCs support the DOER's mission to develop and implement policies and programs aimed at ensuring a clean, affordable, and resilient energy future, and applaud the Department's efforts to design and implement a first-in-the-nation mechanism to incentivize resources to lower greenhouse gas ("GHG") emissions during peak load periods. In particular, the CPES is a market mechanism designed to shift clean energy to peak and reduce demand at peak, thereby reducing GHG emissions and energy costs, and has the potential to provide benefits to our customers, the Commonwealth, and the region. However, the EDCs are concerned that with the current draft regulations, the CPES program, as currently designed, will not significantly drive new deployments of resources, nor sufficiently reduce GHG emission levels in a cost-effective manner.

In our comments below, the EDCs address three main concerns and provide recommendations to: (1) reduce the overall cost of the CPES program; (2) ensure that incentives drive eligible resources to effectively reduce GHG emissions at peak; and (3) provide flexibility in the design of any procurement program to ensure greater benefits to customers.

I. Reduce the Overall Cost of the CPES Program for Customers

Proposed Cost Cap & Total Compliance Costs

The EDCs support the concept of a cost cap for the CPES program. The DOER has proposed to set the annual obligation and ACP rate to keep ratepayer costs under \$0.005/kWh, or a half-cent per kWh. While this may appear to be a small amount, in fact, it could be quite substantial. Therefore, the EDCs are concerned about the total lifetime costs of the CPES program and the impact on Massachusetts customers.

Massachusetts retail electricity suppliers typically deliver more than 47 billion kWh to customers in a given year. Over the period 2020 to 2051, maximum compliance costs for the CPES program under the proposed design are estimated to be over \$5 billion. The cost cap that the DOER suggests would equate to approximately \$235 million annually in additional costs that Massachusetts ratepayers would have to bear in their electric bills.¹ Furthermore, the cost cap of a half-cent per kWh appears to be exceeded in several years under National Grid's current load forecast.

While the program cost may be contained by a variety of other measures including open market trading of and competitive procurements for Clean Peak Energy Certificates ("CPEC"), the EDCs would recommend that the DOER consider a program cost structure that would both limit the total amount of ratepayer funding required, and focus these funds on the hours and resources that are most effective in reducing GHG emissions and energy costs at peak. *See* section on Multipliers for more details.

Potential Bill Impacts

National Grid performed a bill impact analysis to demonstrate the potential impact of the CPES to customers. *See* Table 1. Bill Impact Analysis for Massachusetts Electric Residential Customer. The table below is an illustrative bill for residential blended basic service bill based on November 2019 rates for Massachusetts Electric (pending the Department of Public Utilities' approval of the compliance filing in D.P.U. 18-150).

In 2020, the first year of the CPES program, customers would experience a monthly increase of \$0.28 on their electric bill. The CPES, along with the additional costs related to the Renewable Energy Portfolio Standard I and II ("RPS"), Alternative Energy Portfolio Standard ("APS"), and Clean Energy Standard ("CES"), comprise 19% of the customers' supply rate or approximately 10% of the total bill, which equates to nearly an additional \$190 per year. By 2035, an average residential customer would experience a monthly cost of \$3.33 on their electric bill, which would represent more than 2% of the bill at current rates.

¹ For National Grid customers, based on 19 billion kWh in deliveries, maximum compliance costs are estimated to be \$1.9 billion over the 2020 to 2051 period, which will add approximately \$100 million annually in additional costs to ratepayer electric bills.

The proposed increase in costs associated with the implementation of the CPES should not be viewed in isolation; rather it is appropriate to consider the other existing and proposed Massachusetts Department of Environmental Protection (“MassDEP”)² and DOER regulations that are borne by Massachusetts customers, who already pay some of the highest electric rates in the country. Accordingly, the EDCs strongly encourage the DOER to further reduce its proposed cost cap for the CPES as it finalizes its draft regulations. The EDCs would suggest first a reduction in the annual compliance amount to one that is at or close to the 0.25% compliance level established in the CPES statute. Second, the EDCs would suggest total maximum costs be reduced by at least two-thirds, to not more than \$1.5 billion over the lifetime of the program. Third, the EDCs would suggest limiting the number of years of the program from 2020-2051 to 2020-2035.

² MassDEP proposed amendments to the Clean Energy Standard regulations (310 C.M.R. 7.75) which would: (1) increase the CES standard from 20% to 22% in 2020; and (2) include existing generation in the CES (“CES-E”). The 2% increase in the CES standard in 2020 increases customers’ costs by \$41.2 million. The MassDEP estimates the CES-E may cost \$70 million annually.

Table 1. Bill Impact Analysis for Massachusetts Electric Company Residential Customer

Illustrative Bill 600kWh Residential Basic Service Customer Based on November 2019 MECo Rates			
<u>Per kWh Charge</u>	<u>Rate (1)</u>	<u>Nov-2019 Bill</u>	<u>% of Total Bill</u>
<u>Delivery</u>			
Customer Charge on per kWh basis	\$0.01167	\$7.00	4.3%
Base Distribution Charge	\$0.04583	\$27.50	17.0%
CapEx Factor	\$0.00000	\$0.00	0.0%
Basic Service Adjustment Factor	(\$0.00145)	(\$0.87)	-0.5%
Residential Assistance Adjustment Factor	\$0.00611	\$3.67	2.3%
Storm Fund Replenishment Factor	\$0.00301	\$1.81	1.1%
Pension/PBOP Factor	\$0.00193	\$1.16	0.7%
Revenue Decoupling Mechanism Adjustment Factor	\$0.00250	\$1.50	0.9%
Attorney General Consulting Expense Factor	\$0.00000	\$0.00	0.0%
Solar Cost Adjustment Factor	\$0.00014	\$0.08	0.0%
Smart Grid Distribution Adjustment Factor	\$0.00028	\$0.17	0.1%
Net Metering Recovery Surcharge	\$0.00859	\$5.15	3.2%
Renewable Energy Recovery Factor	\$0.00087	\$0.52	0.3%
<u>2017 Tax Act Credit Factor</u>	<u>(\$0.00066)</u>	<u>(\$0.40)</u>	<u>-0.2%</u>
Net Distribution	\$0.07882	\$47.29	29.3%
Transition Charge	(\$0.00103)	(\$0.62)	-0.4%
Transmission Charge	\$0.03164	\$18.98	11.8%
Distributed Solar Charge	\$0.00146	\$0.88	0.5%
Energy Efficiency Charge	\$0.01805	\$10.83	6.7%
Renewables Charge	\$0.00050	\$0.30	0.2%
Delivery Subtotal	\$0.12944	\$77.66	48.1%
<u>Supply</u>			
Base Basic Service Charge (Fixed)	\$0.11041	\$66.25	41.0%
Non-Solar Renewable Portfolio Standards (RPS) & Alternative Energy Portfolio Standard (APS)	\$0.00553	\$3.32	2.1%
Solar RPS	\$0.01868	\$11.21	6.9%
Clean Energy Standard (CES)	\$0.00134	\$0.80	0.5%
Basic Service Admin Cost Fact	\$0.00330	\$1.98	1.2%
Smart Grid Customer Cost Adjmt	\$0.00031	\$0.19	0.1%
Supply Subtotal	\$0.13957	\$83.75	51.9%
Total	\$0.26901	\$161.41	100.0%
2020 Clean Peak Standard (CPS) (2)	\$0.00047	\$0.28	0.2% of Total Bill
Total Bill with 2020 CPS		\$161.69	
Total Renewables Component (RPS, APS, CES, CPS)		\$15.61	9.7% of Total Bill
2035 Clean Peak Standard (CPS) (3)	\$0.00555	\$3.33	2.0% of Total Bill
Total Bill with 2035 CPS		\$164.74	
Total Renewables Component (RPS, APS, CES, CPS)		\$18.66	11.3% of Total Bill

(1) Based on November 2019 rates pending approval of Compliance Filing in D.P.U. 18-150
(2) Cumulative Minimum Standard of 1.50% x ACP of \$30.00 per MWh adjusted for line losses
(3) Cumulative Minimum Standard of 24.00% x ACP of \$21.82 per MWh adjusted for line losses

II. Ensure CPES Program Reduces GHG Emissions at Peak

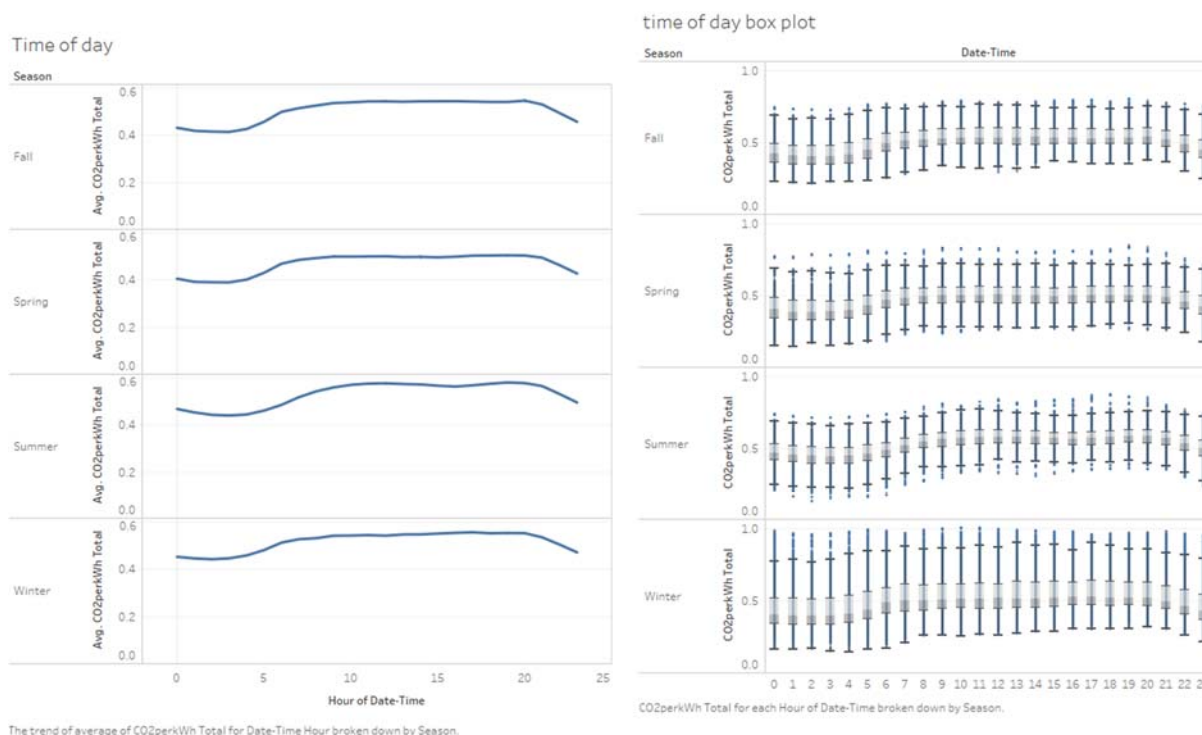
Emissions Profile of Energy Storage Charging Windows

As stated in Section 21.05(2) of the draft regulations, energy storage systems (“ESS”) charging coincident with periods of typically high renewable energy production as a percent of the grid generation mix as defined by specific energy storage charging windows, are deemed to be a qualified Clean Peak Resource. The EDCs challenge the notion that ESS charging during the Solar-Based Charging Hours and discharging during designated Seasonal Peak Periods on any business day, would automatically lead to GHG emissions reductions. Since the fuel mix of the ISO-NE generation portfolio³ and its associated GHG emissions are relatively flat during daytime hours (approximately from 6am to 9pm) during all seasons, incentivizing the charging and discharging of batteries during these daytime hours will not reduce GHG emissions and may even increase emissions. See Figure 1, Hourly Average Emissions Rate (CO2/kWh) of ISO-NE Generation Portfolio. According to a recent report issued by the ISO-NE,⁴ marginal emissions rates of marginal resources in the region show little difference between off-peak and on-peak periods. The report showed that GHG emission rates are only 7.2% higher during peak hours versus non-peak hours, and only when there are “High Energy Demand Days,” defined in the report as the top five days of load per year, do the differences become substantial at 34.3%. In effect, charging batteries from solar facilities on average demand days will reduce the amount of clean renewable energy that would be directly exported to the grid by the amount of roundtrip efficiency losses of batteries, which are estimated to be 15-20%. Charging batteries during the Solar-Based Charging Hours and discharging during Seasonal Peak Periods on any business day would essentially increase emissions without other mitigation.

³ The ISO-NE publishes the fuel mix of the generation portfolio in 15-minute intervals, which can be used to calculate the emissions rate (CO2/kWh) associated with electricity generation.

⁴ “2017 ISO New England Electric Generator Air Emissions Report,” April 2019. ISO New England Inc. System Planning.

Figure 1. Hourly Average Emissions Rate (CO₂/kWh) of ISO-NE Generation Portfolio (2006-2016)



To mitigate this issue, the EDCs suggest that the DOER maintain the Wind-Based Charging Hours, as the emission rate during this period is on average less polluting than the Solar-Based Charging Hours. In addition, the DOER should exclude storage that is separately metered from co-located solar (e.g., AC-coupled SMART solar plus ESS facilities) from charging and discharging on average demand days to create CPECs, as these systems will legally be charging from grid-supplied energy that has the system-mix emissions profile at the time of charge.

Additionally, if the intent is to guarantee a material reduction in GHG emissions from the CPES towards achievement of the goals of the *Global Warming Solutions Act* ("GWSA"), then the state or the generators could retire an equivalent amount of Regional Greenhouse Gas Initiative ("RGGI") allowances to match the marginal rate of GHG emissions being offset during peak hours. The DOER could use its authority under 225 CMR 13 to reduce the amount of allowances that the Commonwealth offers for auction each year to match an equivalent amount of CO₂ tonnes/MWh as required to be matched with CPECs. This would be a voluntary way of ensuring that there is a material GHG emissions reduction related to the requirements of the CPES.

III. Increase Flexibility of CPEC Procurement Program to Ensure Benefits to Customers

CPEC Procurement Program Should Be Tariff-Based, Voluntary and Focused on System Needs

The DOER has included in Section 21.05(8) a requirement for each Distribution Company to competitively procure and enter into long-term contracts for CPECs, designed to achieve a target of up to 30% of the total market obligation of Retail Electricity Suppliers in a given Compliance Year. The DOER has stated that the objective for such a procurement is to provide revenue certainty for projects, reduce financing costs of Clean Peak Resources, and increase market participation at a lower cost to ratepayers.⁵

The EDCs are opposed to such a requirement, which is not essential to comply with the statute and may not achieve the stated objectives. The EDCs prefer a voluntary and need-based procurement program to be paid through a tariff rather than long-term contracts because a tariff-based program would provide for public review and approval of the enrollment structure by the Massachusetts Department of Public Utilities (“DPU”) before it is placed in effect. DPU review and approval reduces the risks to the EDCs over the life of the procured resources because tariffs, unlike long-term contracts, are regulated and enforced by the DPU. Therefore, EDCs prefer that the DOER establish a procurement process that pays incentives to customers for environmental attributes of resources at a guaranteed price over a set period and ensure that it is governed by a DPU-approved tariff.

Mandating the procurements for CPECs at the level described also raises multiple potential issues. As drafted, the procurement target would be up to 30% of the total market obligation of all Retail Electricity Suppliers, which appears to be at a level that would nearly meet the current EDC obligations for served load related to Basic Service. This target would first and foremost be difficult to predict. With approximately one year to design and hold the long-term contract solicitation, and two to three years to develop, finance and construct a project, the first CPEC to be received through a long-term contract could be three to four years after the initial solicitation year. In a given Compliance Year, the total market obligation of all distribution customers, regardless of suppliers, is not known until approximately three to four months after the Compliance Year has ended. Running a solicitation and ultimately enrolling projects based on a moving target several years into the future has the potential for significant downsides to customers. For example, if a procurement resulted in prices well above the market price for CPECs due to a technological advancements or market forces, all customers would be required to pay the difference of above market costs. Further, if served load continues to decline as it has in recent years, the EDCs may be procuring CPECs that they would then need to sell into the spot market, incurring additional costs. Enabling the EDCs to procure CPECs from projects at a lower volume of their choosing, and in places where the projects may be able to serve other purposes, such as serving distribution

⁵ The Clean Peak Energy Standard, Draft Regulation Summary August 7, 2019 & August 9, 2019, page 35.

needs in a specific location such as a non-wires alternative (“NWA”), would ensure that any amounts paid would create additional benefits that will help to offset any over-market costs.

IV. Other Program Design Issues

Eligible Resources - Energy Storage Enrolled in EDC Demand Response Programs

Under the Three-Year Energy Efficiency Plans, EDC-administered demand response programs, which are peak-shaving programs designed to reduce overbuilding of the distribution system and create Demand Reduction Induced Price Effects (“DRIPE”) savings, are not explicitly included in the definition of Demand Response Resource in Section 21.02 of the draft regulations. The EDCs recommend that the DOER more explicitly include these demand response programs in the definition of Demand Response Resource under the category of “incentive payments designed to lower electricity at times of high wholesale market prices or when system reliability is jeopardized.”

Multipliers

The EDCs recognize that the DOER has developed multipliers for resilience, seasonal peaks, monthly peaks, and existing and contracted resources to incentivize different resources to participate in the CPES program and create specific benefits to customers. The EDCs strongly suggest that the multipliers be used more judiciously to target resources that directly reduce GHG emissions reductions and focus CPES incentives on facilities that are incremental, reducing the amounts that would go towards those facilities already supported with other major state-sponsored revenue streams, such as the SMART program’s storage adder.

Actual Monthly Peak Multiplier & Seasonal Multiplier

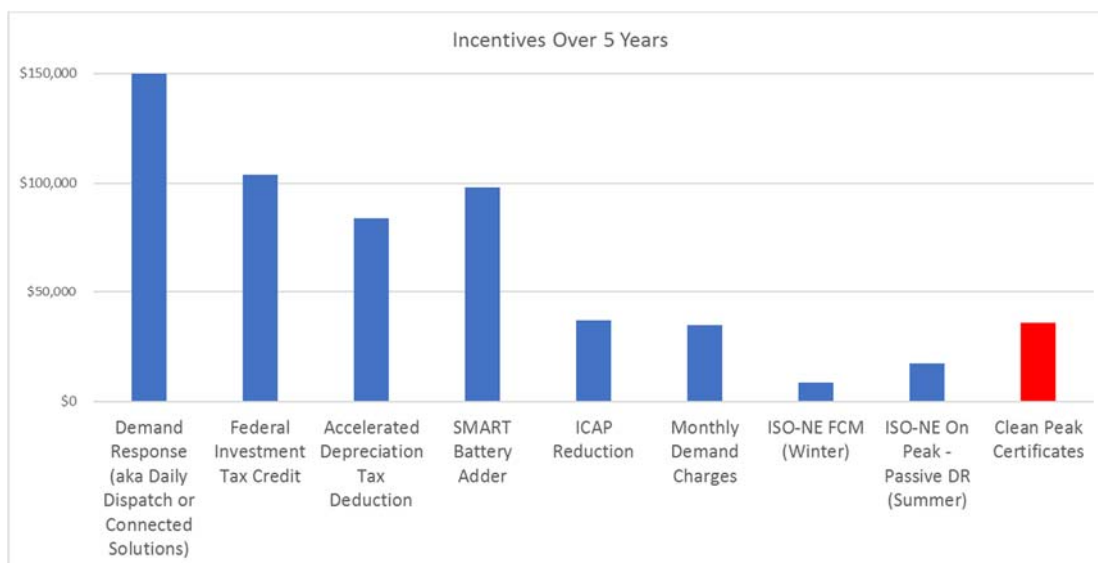
The EDCs recommend that the Actual Monthly System Peak Multiplier during Summer and Winter periods be significantly increased from 15x to encourage customers to focus their efforts on reducing peak energy use, and perhaps be expanded to multiple days in a month with high electric demand, which are often not significantly lower than the peak day during summer. The EDCs also recommend that the Seasonal Multiplier for Fall and Spring be reduced from 1x to 0.1x to discourage customers from routinely charging and discharging their batteries during those seasons to generate CPECs and to instead encourage customers to focus their efforts on actual system peak reduction in order to reduce long-term distribution, transmission, capacity, and DRIPE costs for all customers.

Existing or Contracted Resource Multiplier

The EDCs calculated all the potential incentives available to a paired solar and storage system in Massachusetts over a five-year period. *See* Table 2. Comparison of Potential Incentives for Paired Solar and Storage Systems. Compared to other potential revenue or saving streams from battery

systems paired with solar, our findings indicate that the CPES incentive is relatively small, and that the relative effort to participate in the CPES program may be relatively high compared to the incentive rate, compared to other incentive programs, such as the EDC-administered demand response program or the SMART program. In particular, the CPES incentive alone may not be enough to materially impact a customer's decision to install battery storage absent these other more lucrative incentives, such as the SMART program storage adder.

**Table 2. Comparison of Potential Incentives for Paired Solar and Storage Systems
(over 5-year period)**



Note: All incentives calculated at the current or proposed incentive rates. Example of commercial 200kW/ 400kWh lithium ion battery sized within the 25% to 100% of the solar capacity. Calculations do not account for battery degradation from frequent dispatches.

The EDCs recommend limiting the CPES incentive to the hours and resources that are most effective in creating incremental customer benefits. The EDCs propose reducing the ability of ESS that benefit from other forms of grant/subsidy support from getting full value of incentives or be subject to a discount. For example, SMART-supported ESSs should be subject to a fractional multiplier, such as 0.25, to provide them some additional incentive to target peak periods, but that reduces the overall remuneration to them from the CPES that is not needed for them to be constructed. ESSs paired with solar that are already enrolled in the SMART program do not need additional support aside from that provided already by the SMART storage adder (in addition to federal tax benefits and market revenues), as they are already being installed. Instead, the EDCs

propose ESSs that are not otherwise receiving substantial ratepayer funds (e.g. standalone storage) receive the full value of the incentives.

Distribution Circuit Multiplier

In light of the increasing amounts of distributed energy resources ("DER") being added to the distribution system, the EDCs are supportive of the DOER's efforts to establish a Distribution Circuit Multiplier to account for distribution system specific locational value of the unique load profile and particular needs of each distribution circuit. The EDCs welcome the opportunity to work collaboratively with the DOER to establish and enable effective implementation of a circuit-specific multiplier to reflect distribution specific locational values.

The Distribution Circuit Multiplier will benefit from work underway at the EDCs to meet the requirements of recent Massachusetts energy legislation, *An Act to Advance Clean Energy*. The EDCs are developing a system data portal that will provide distribution system information at the feeder level, including distribution asset overview, heat maps, and DER hosting capacity that will help developers identify areas where DERs are in higher demand.

These requirements also dovetail with the EDC planning process for identifying NWAs. If a project passes the NWA criteria, a technical scope document is developed that is used as the basis to gage the market on more detailed NWA options. Promising NWA opportunities go through a Benefit Cost Analysis ("BCA") process that provide the EDC a way to evaluate NWAs against traditional capital investment projects. The Distribution Circuit Multiplier could provide an additional value stream for NWAs, further lowering the costs of these resources for customers. For this reason, the EDCs suggest that the DOER allow Clean Peak Resources, which are owned by a Distribution Company, to be eligible for this Multiplier, as savings from these projects would be passed on to customers.

Resilience Multiplier

The EDCs support the Resilience Multiplier, which would provide support to Clean Peak Resources that can provide electric power to a load during external outage conditions, provided that support is limited to critical public infrastructure and resources. Ratepayer funding should not be used to support the enhancement of resilience at private properties, where only private parties enjoy the benefits of that resilience.

V. Conclusion

National Grid and Unitil are committed to supporting the Commonwealth's policies and programs that help to achieve the goal of the GWSA, which requires statewide GHG emissions to be reduced by 25% below the 1990 baseline level by 2020 and an 80% reduction by 2050. With the modifications proposed by the EDCs, the CPES program has greater potential to further this goal. Above all, the EDCs are committed to working in partnership with the DOER and other

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stakeholders to ensure that the CPES program is beneficial to all customers and the environment, and creates cost-effective and flexible support for Clean Peak Resources.

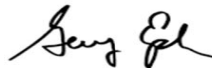
Very truly yours,

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**FITCHBURG GAS AND ELECTRIC
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