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February 17, 2023

Via email to joanna.k.troy@mass.gov

Joanna Troy
Director, Energy Policy and Planning
Department of Energy Resources
Commonwealth of Massachusetts
100 Cambridge St.
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Subject: Forward Clean Energy Market Design Proposal

Director Troy:

Avangrid, Inc. ("Avangrid") submits these comments and suggestions to the Massachusetts Department of Energy Resources ("DOER") in response to its January 4, 2023 Forward Clean Energy Market design proposal ("FCEM Proposal"). Avangrid appreciates the effort of DOER to begin a formal process by which stakeholders can publicly comment on the specifics of an FCEM concept and looks forward to collaborating with all stakeholders on this important issue.

Avangrid is a leading, sustainable energy company with $40 billion in assets and operations in 24 U.S. states. Avangrid is part of the Iberdrola Group. Iberdrola, S.A. is an energy pioneer with one of the largest renewable asset bases of any company in the world. Avangrid has two primary lines of business, Avangrid Networks, Inc. ("Avangrid Networks") and Avangrid Renewables, LLC ("Avangrid Renewables"). Avangrid Networks owns eight electric and natural gas utilities, serving 3.3 million customers in New York and New England. It provides interconnection services to generators in its service territories, constructs and owns transmission facilities subject to formula rates in New England, and participates in regional electric transmission planning in New York and in New England. Avangrid Renewables owns and operates a portfolio of approximately 8,300 MW of renewable energy generation facilities across the U.S. Through a 50-50 joint venture, Avangrid Renewables is partnering in the construction of an 800 MW offshore wind project, Vineyard Wind 1. In addition, Avangrid Renewables is developing two offshore wind projects – Commonwealth Wind (1,200 MW) and Park City Wind (800 MW).

In providing these comments and suggestions in response to the FCEM Proposal, Avangrid, with its focus on renewable energy development and reliable and effective electric transmission infrastructure, can

provide the DOER with a unique and balanced view that considers the implications of regional clean energy procurement policy from both the generation developer and transmission owner perspectives. As such, Avangrid hopes that DOER and other stakeholders find these comments and suggestions helpful in developing and navigating the issues at hand.

Avangrid has been active in, and values, the conversations that have been taking place on this subject over the last several years among stakeholders, such as DOER, the New England States Committee on Electricity ("NESCOE"), the Brattle Group, Sustainable Energy Advantage, ISO-NE, New England Power Pool, and many others. Avangrid is in full agreement with DOER that, "[t]he existing market structure in New England cannot fully support states pursuit of clean energy and associated legal requirements."[1] However, developing a common understanding of what is meant by "markets" and "market structure" in this discussion is vital to a productive process. As such, Avangrid presents the following perspective on what is being proposed and where it fits into the current market structure.

Market Overview

There are several related yet distinct markets and functions within the New England regional electricity market structure that should be considered when seeking structural improvements in the hopes of achieving clean energy goals. The following three segments are, perhaps, the simplest way of understanding the "markets."

- **"Energy Markets" -** This is the original and core function of a power pool, to centrally dispatch the available electric resources in an economically efficient and reliable manner to meet the electrical demand of consumers in real-time. All the organizational and legal structures (e.g., Independent System Operator and Regional Transmission Organization) and market mechanics (e.g., Location Marginal Pricing, Day-Ahead, Forward Capacity Market, etc.) were developed over time with the goal of achieving that economic and reliable dispatch of system resources. All of these ISO-NE-administered products will be considered "Energy Markets."
- **"Carbon-Free Markets" -** Over time, government agencies, and eventually end-use customers, began to seek electric resources with or without certain environmental characteristics. The means by which these goals were attained ranged from state-mandated "cap-and-trade" mechanisms (e.g., the Regional Greenhouse Gas Initiative ("RGGI")), state-mandated Renewable Portfolio Standards ("RPS") that often require load serving entities to demonstrate certain percentages of types of generation via Renewable Energy Credits ("RECs"), and the self-imposed buying requirements of large end-users. For simplicity Avangrid will refer to all state and end-user-mandated environmental attribute requirements as "Carbon-Free Markets."
- **"Forward Bilateral Markets**" **-** Market participants, from the original New England Power Pool utilities to today's diverse mix of end users, independent power producers, load response

[1] January 4, 2023 Letter from DOER Commissioner Patrick C. Woodcock to DOER Stakeholders re FCEM Proposal https://www.mass.gov/doc/letter-from-the-commissionerfcem/download (Woodcock Letter).

providers, financial traders, and investor-owned and public power utilities, have used forward bilateral transactions of the Energy Markets products referenced above to manage their risks. Many of these same Energy Markets participants also utilize forward bilateral markets to manage their risks around the state-mandated or self-imposed environmental criteria in the Carbon-Free Markets. These bilateral markets for both the Energy Markets and Carbon-Free Markets usually take the form of either liquid over-the-counter markets ("OTC Market") or long-term, unit-specific power purchase agreements ("Long-Term PPA").

The Energy Markets and the Carbon-Free Markets have unavoidable influence on each other, such as (i) RGGI cost being reflected in generators' marginal cost to determine order of dispatch, (ii) mandated clean generation criteria providing financial incentive for the development and building of new types of electric generation resources that will impact the supply side of the Energy Markets, (iii) Energy Markets rule changes alter expected revenue streams of investors and buyers of generation resources, clean or otherwise. There have been some notable conflicts arising already due to the interaction between the Energy Markets and Carbon-Free Markets, such as the lengthy stakeholder discussions on the Minimum Offer Price Rule. This is inevitable given that these two markets, while influential to each other, are not designed to achieve the same goals. The Energy Markets are not designed to include carbon-free status among its economic and reliable solution determinants. The Carbon-Free Markets cause a demand for technological innovation and capital investment which need long-term price signals outside of the Energy Markets, in order to secure financing.

It is the dichotomous purposes of these two markets that cause Avangrid to agree with DOER. The Energy Markets are not designed to add a carbon-efficient production status into its optimization of economics and reliability – meaning resources are dispatched and paid based upon those two criteria alone – price and reliability needs. Assets operating in the Carbon-Free Markets require far greater revenue certainty to attract necessary capital than the Energy Markets alone can produce. Adding a carbon cost component to the dispatch function of the Energy Markets would be a bridge between these markets. The FCEM Proposal does not include this bridge.

Proposal

The FCEM Proposal seeks the formation of a voluntary, centralized clearing market for clean electricity products, with four initial regional products and any state-defined products to be introduced by participating states. This market would be managed by a new non-profit entity, FCEM-NE, which would be governed equally by the six New England states. The markets would be under FERC jurisdiction.

Avangrid views the FCEM Proposal as a suggested approach to improving the Forward Bilateral Markets for the Carbon-Free Markets and as a "conversation starter" to debate the pros and cons of all the details and approaches that can address the disconnect between the current Carbon-Free Markets and Energy Markets designs. Avangrid does not view the FCEM Proposal as an attempt "…to integrate clean energy within the regional wholesale market design"[2] because it does not solve the fundamental

[2] Woodcock Letter, pg. 1.

challenge of integrating bankable clean energy incentives into the Energy Markets. Avangrid also understands the FCEM Proposal is not meant as near-future replacement for the current RPS laws in the region or as a replacement for the Long-Term PPA mechanisms that are in place for offshore wind procurement.

While the FCEM Proposal creates some additional linkages to the Energy Markets, it does not attempt to create an integrated market design that optimizes the existing goals of the Energy Markets (Economics and Reliability) along with Carbon-Free Markets. The Energy Markets will certainly need to significantly adapt to be able to continue to balance cost and reliability but will need to do so largely with the portfolio of resources chosen via the Carbon-Free Markets. Avangrid intends to continue to be an integral participant in that discussion.

There has been substantial progress in Carbon-Free Markets due to state actions over the past 20 years, driven in large part by RPS laws and, more recently, in offshore wind mandates. RPS requirements are usually fulfilled by existing carbon-free resources trading via liquid OTC Markets and offshore wind mandates are being fulfilled via long-term PPAs. Any potential impact to Forward Bilateral Markets from the FCEM Proposal must be carefully evaluated so the objective of "…supporting the financing of new and existing clean energy resources"[3] continues.

Suggestions

Understanding the FCEM Proposal is the start of a conversation, Avangrid offers the following "high-level" suggestions:

I. Minimize Complexity

As described in the FCEM Proposal there are numerous possible FCEM products, with varying terms, and various options, such as a different demand curve for each customer class and flexible online dates. This complexity of permutations will (i) make it mathematically difficult to determine a simultaneous, co-optimized solution for all the products and (ii) make it difficult for potential competitors and investors to model the fundamental supply/demand balance and predict clearing prices. This uncertainty will reduce the volume of trading, or liquidity, of the products and negatively impact the financing of both new and existing resources.

RPS products are usually traded among existing clean resources and buyers in OTC markets with varying degrees of liquidity. The more uniformity states can give their respective RPS product requirements, the larger the pool of buyers and sellers and more efficient and competitive the pricing of those products become. An example of this in RPS markets are "PJM RECs". While the PJM Interconnection has nothing to do with defining the REC requirements, the states of Pennsylvania, Ney Jersey, and Maryland have defined their Tier 1 RPS products so similarly that they are traded as one product, referred to in the

[3] Woodcock Letter, pg. 1.

market as “PJM RECs” or sometimes as “Tri-quals” because of the ability to qualify for the three states’ RPS requirements.

Another aspect of the need to minimize complexity in the hope of maximizing liquidity and understanding is the component of the FCEM Proposal to have annual reviews of the market design. While improving products and procurement mechanisms are always important, constant change in a centralized market structure does not promote confidence in stable returns to those who will provide the long-term investments. This is a practical concern that has been raised by many stakeholders in recent years with the ISO-NE and PJM forward capacity markets.

II. Incent Capital Investment

Even if the FCEM Proposal is intended as a possible market structure that complements or acts in parallel to long term, large scale clean energy resource procurements via Long-Term PPAs, it will need to incent the future capital investment that will be necessary for the steady state financing of new and existing clean resources. Focusing on the investment in new resources, any FCEM design should consider, along with the complexity and liquidity concerns discussed above, the following factors that are essential to financing new clean energy resources.

Term

Investors seek as much revenue certainty, relative to their costs, as possible. Current Long-Term PPAs for offshore wind are for 20-25-year terms, which are minimum terms investors would be seeking for multi-billion dollar clean energy projects. The FCEM Proposal discusses a possible 15-year fixed-price term declining to 7 years over time. If the FCEM product being procured with those shorter terms requires significant capital investment, the incentive for the investors may not be sufficient, especially relative to competing opportunities in other regions.

Although the 7-15-year terms in the FCEM Proposal aren’t long enough to generate significant capital investment, they could possibly be a benefit to existing resources that do not have a Long-Term PPA. This is because these proposed terms are significantly longer than the current liquid term for the OTC Markets that are used by existing resource to trade RPS products. If the 7-15-year terms generate enough volume and liquidity, it could provide more competition for RPS products.

Supply Chain and Inflation Risk

The past few years have made clear to investors, buyers, developers, and regulators that the supply chain and cost inflation risks associated with large capital renewable generation projects are material and potential a barrier to achievement of the region’s clean energy goals. Several regions, including New York and New Jersey, have already responded to these lessons and modified their offshore wind procurement mechanisms to share such risks between buyers and sellers. By taking such steps, these states ensure they are offering investors competitive options and giving themselves the best hope of achieving their clean energy goals within their planned timelines. If FCEM plans to solicit large scale renewable generation projects, it would be reasonable to provide risk-sharing arrangements that are

tailored to the issue at hand. For instance, in defining offshore wind project inflation risk, the price volatility of the project components is too specific to the industry to utilize a generic consumer price index inflation adjustment. Something more specialized needs to be incorporated into the procurement mechanism, which likely creates too much complexity for a centralized clearing market, like FCEM, but would be more appropriate for a Long-Term PPA approach.

III. Account for Industry Practice of Environmental Attribute Ownership When Creating Products

Almost all renewable generator offtake agreements consider four products from the generation resource to be divided between the buyer and seller: 1) energy, 2) capacity, 3) ancillary services, and 4) environmental attributes. From just about the beginning of the trading of environmental attributes, they have been considered as, and treated as, a singular product, with only one owner at any given time. In Avangrid's experience, most offtake agreements in the ISO/RTO markets of the eastern US, which do not necessarily have to be Long-Term PPAs, are arranged so that the buyer owns the energy and environmental attributes, while the seller retains the rights to capacity and ancillary services. Other combinations are executed but this separation of products is the most common.

In the FCEM Proposal, there are four FCEM-defined certificates considered, three of which are energy-based (NE-REC, NE-CEAC, and NE-GHG) and one capacity-based (NE-CCC). In the most common offtake situation mentioned above, when the buyer only has the rights to the energy and clean attributes, the buyer would be able to submit offers for the three energy-related certificates but not the NE-CCC because the buyer has no rights to the ISO-NE capacity product. Nor would the seller be able to offer the NE-CCC from the unit because the seller has rights to the capacity but not the clean attribute, both of which are needed for "clean capacity". As such, the NE-CCC will likely have trouble finding a significant volume of supply offers.

IV. Consider Revising Section 205 Right Proposal

Avangrid opposes granting an additional entity, or group of entities (i.e. states), Section 205 rights over regional markets. To the extent that an FCEM becomes a FERC-jurisdictional market, it would need to be a market under the ISO-NE tariff with ISO-NE holding Section 205 filing rights. Section 205 tariff filing rights are the domain of "public utilities," and not sovereigns. The February 1, 2005 Transmission Operating Agreement between ISO New England and the transmission owners in New England granted ISO-NE Section 205 filing rights over regional power markets. Adding Section 205 rights to other parties other than ISO-NE and public utilities would create jurisdictional confusion and create potential conflicts and seams between market rules under the ISO-NE tariff and other tariffs.

V. Regional Transmission Planning

While the FCEM Proposal focuses on a market mechanism for procurement of clean resources, the New England states must coordinate on the planning for and building of a robust and modern transmission grid that is required to enhance the economic viability of any market solutions that are implemented.

Without significant investment in a well-designed regional transmission system for both offshore and onshore generation resources, the investment in these resources could be hampered by significant curtailment and the inability for the desired clean energy to even reach the load it was meant to serve.

Conclusion

Avangrid respectfully submits these initial comments and suggestions on the most strategic concerns with the FCEM Proposal in the hope they will advance the discussion and lead to further refinement of a potential detailed solution. More holistically, Avangrid is eager to continue the effort of finding the most economic, reliable, and timely methods for achieving the clean energy goals of the region through the development of new generation, storage, and demand response resources and the robust transmission investment that will be necessary to optimize the overall solution.

Respectfully submitted,

Kimberly Harriman

BUSINESS NETWORK for OFFSHORE WIND

Joanna K Troy
MA Department of Energy Resources
joanna.k.troy@mass.gov

Re: Forward Clean Energy Market Design Proposal

Dear Ms. Troy:

We write to you on behalf of the members of the Business Network for Offshore Wind (the Network) and we appreciate the opportunity to provide comments on the Forward Clean Energy Market Design Proposal.

The Network is the largest nonprofit organization solely focused on the development of the offshore wind industry and its supply chain. Since 2013, the Network has brought together business and government, both domestically and internationally, to educate and to prepare companies and small businesses to enter the offshore wind market. The Network uses the voice of its members to educate and support federal, state, and local policies to advance the development of the U.S. offshore wind industry. The Network empowers its members with the education, tools, and connections necessary to participate in this booming industry.

Long term commitments to the development of offshore wind make the industry possible, make important contributions towards national and state clean energy goals, and help to establish a local supply chain. Advancement of this important source of renewable energy is in the declared public interests of the United States and Massachusetts. Massachusetts has a statutory goal of getting 5,600 MW of our electricity from offshore wind, and the Commonwealth's own decarbonization roadmap says "Offshore wind is critically important to net-zero carbon energy systems for Massachusetts. A minimum of 15 GW of offshore wind is installed in Massachusetts by 2050 in all pathways, except where constrained by potential caps."[i]. The governor recently pointed in a speech to a goal of 11 GW of offshore wind power coming into MA, and the Massachusetts Clean Energy and Climate Plan for 2050 pointed to the Commonwealth requiring at least 23 gigawatts (GW) of offshore wind to meet the emissions reduction goals. Which means that no matter which number you take, we will need to build a lot of offshore wind regionally in the next few decades.

Prior procurements have already resulted in significant benefits and sizable investments. With the market signals sent from the MA procurements that have happened so far, we've seen a little over **$1.016 billion** invested into Massachusetts alone for offshore wind-specific (or -adjacent) supply chain projects. For New England (MA, CT, ME, NH, RI, and VT) as a whole, those investments come out to about **$2.36 billion**. While a sizable chunk of the investment in MA these come from lease sales, this also includes the recent round of MA Offshore Wind Ports Infrastructure Investment Challenge awards as well as Prysmian's investment commitment for its Brayton Point cable facility.

We've seen this investment lead to Massachusetts companies getting work in the industry. We've tracked **169 contracts** going to **59 companies** with Massachusetts addresses. The top three sectors that have secured these contracts were consultants and service providers (71 contracts, or 42%), engineering (36 contracts, or 21%), and marine services (15 contracts, or 9%). A couple notable highlights include Gladding-Hearn Shipbuilding building a CTV for Vineyard Wind, Anbaric contributing transmission assets to SouthCoast Wind, and Wood Thilsted Quincy's office being tapped for project design for Commonwealth Wind and Park City Wind. Broadly across New England, **263 contracts** went to **101 companies** with addresses in MA, CT, ME, NH, RI, and VT. Our contract data is pulled from our Market Dashboard and self-reporting in our Supply Chain Connect platform, as well as publicly available sources.

Finally, developers have committed to nearly $185m in economic development commitments via PPAs, a portion of which has already been captured by that +$1b figure cited above. Per the terms of solicitation 83C, Vineyard Wind has committed $30m to Massachusetts, while the second (83CII) and third rounds (83CIII) saw commitments totaling nearly $120m from SouthCoast Wind and $35m from Commonwealth Wind respectively.

In the face of growing global demand, sending clear market signals to attract investment to MA, New England, and the U.S. is critical to ensuring U.S. offshore wind deployment goals are met. The Demand for a Domestic Offshore Wind Energy Supply Chain, a report published by NREL, studied the capacity to fulfill the administration's deployment goal of 30 GW by 2030 and found "additional facilities will be required to achieve a fully domestic offshore wind supply chain."[1] This fact takes on increasing importance as the report notes it is "unlikely that international suppliers will have sufficient throughput to support the construction of both European and U.S. offshore wind energy projects." A follow-up report released earlier in 2023 found that the U.S. market would require $22 billion in new investments in factories, ports, vessels, etc., to ensure the nation matches its 30. GW buildout.

Key to all this growth has been state policy and procurements to drive the market forward. If Massachusetts continues to drive demand and steer investments via a procurement process, we can expect to see the Commonwealth's role in building out this industry continue to grow.

A concern regarding the proposed structure is that in moving to the proposed FCEM model, which seems to focus on price, the structure risks ignoring the substantial benefits that flow from the existing procurement process and long-term agreements for offshore wind. Ensuring the appropriate renewable energy mix is obviously important for a variety of reasons, including

[1] The Business Network for Offshore Wind contributed to the report.

reliability and winter demand, but it is not clear what the intended mix is for this structure. From a reading of the proposal, it was unclear whether there is intention to allocate specific parts of the market, ie to create carveouts, for specific types of renewable energy resources, including offshore wind. Not having this potentially creates a disconnect between Governor Healey's stated goals on offshore wind and the reality of what will end up being built.

Building this new Offshore Wind industry in Massachusetts, New England, and across the country will benefit us all. Actions that create market uncertainly and delay projects and investments must be avoided to the greatest extent possible. Project investments are ongoing and demand for materials, skilled labor, and critical equipment is dependent upon timely implementation. We look forward to learning more about the Administration's plans for clean energy and decarbonization as this process moves forward.

Very truly yours,

/s/ Carol Oldham

Carol Oldham
Northeast Director
Business Network for Offshore Wind

[i] Massachusetts Executive Office of Energy and Environmental Affairs, MA Decarbonization Roadmap: Energy Pathways to Deep Decarbonization, 2020

Letter to Massachusetts DOER, Joanna Troy (Joanna.k.troy@mass.gov)

Friday, February 17, 2023

These comments concern the proposed Forward Clean Energy Markets (FCEM) proposal released by Massachusetts Department of Energy Resources (DOER). We support DOER's initiative in thinking about how to incentivize and finance clean energy, which we urgently need to make progress on, in order to meet emissions reductions goals. We also applaud the state, as well as its partner states in New England, for making the strategic move to begin to research and plan future pathways that need not rely on ISO-New England and NEPOOL, whose support for clean energy, governance reform, and processes for public participation have been lacking to date.

We have six main points of consideration we would like to raise, each elaborated upon below: 1) There needs to be a more robust and inclusive proposal development process; 2) The proposal risks deprioritizing and defunding state public purposes and energy / environmental justice; 3) The state should not default to competition and market mechanisms without considering other options; 4) What would the relationship be between a REC capacity auction, REC production and purchase, real-time energy use, and transparency and accountability in these processes? 5) A REC capacity market linked to ISO-NE, NEPOOL and current REC markets would lack transparency and accountability; and 6) A broad proposal to incentivize a region-wide energy transition requires integrative analysis.

1) There needs to be a more robust and inclusive proposal development process

This complex proposal has important implications for many across the state and region, and we would like to see the MA DOER commit more time and effort to explaining future versions of this proposal to a diverse range of stakeholders, including citizens in EJ communities, those who live and work in locations where clean energy resources might be built or enlarged, and other potentially impacted populations traditionally with less access to input on policy decisions that ultimately impact them. We appreciated the webinar that the MA DOER held to elaborate upon the proposal, but were disappointed that time did not permit all questions to be answered (including our own), and that there were no other opportunities for input, engagement and feedback. We support the ideas developed on this point by the environmental NGO Joint Comment Letter submitted by CLF and others.

2) The proposal risks deprioritizing and defunding state public purposes and energy / environmental justice

This proposed market mechanism operates independently of state-mandated diversity, equity and inclusion initiatives; low-impact hydropower or other energy or local economic development initiatives; and broader public purpose criteria. We understand the

principle of separating out public purposes from a more competitive or “free” market design. However, a competitive market is not, even with the best intentions, an even-handed market. For participants trying to sell into a market like this, the pressure is on low cost, and individual generators will be incentivized to lower costs by externalizing onto the environment, workers, communities, and the future, as they are able, to make their bids more competitive.

Two examples. First, this proposal may open up many ways to provide additional revenue to a whole range of hydro projects and corporations, and therefore would incentivize more hydro. This includes incentivizing currently economically marginal and high-impact hydro to keep operating as well as incentivizing new kinds and developments of hydro to be built. The impacts on rivers and many of the communities that depend on them would likely be negative, eventually across a region far greater than New England, given the revenue streams we are sending to Hydro-Quebec and will soon be increasing. Currently Massachusetts’ REC II requirements for LIHI certification incentivize considerable environmental mitigation and community benefit. This incentive will be entirely absent under the new New England RECs, while the impacts will multiply.

Second, our research shows that local “clean energy” generators, including some hydropower owners, perpetually pressure local communities --which are often small municipalities in rural and deindustrialized areas--to lower their property value assessments so they will pay less property tax. The municipal governments do not have the fiscal income stream nor the lawyers to be able to contest it fully, so generally lose considerable fiscal revenue. This is only made worse by the fact that so many generators are now being purchased by investment companies as assets, companies that have no connection or accountability to local and regional communities, simply to participate in regional markets.

It is possible that a market like this might have a fee that not only pays to run the market, but also to fund some of these public purposes.These could be used for economic development and environmental mitigation. However, it is unlikely that there would be the political will to use this money to beef up the "sticks" of regulatory agency enforcement (for example meeting environmental requirements). In short, while this proposal might intend simply to remove public purposes from the goals of clean energy development and incorporate them elsewhere, that “elsewhere” needs to be addressed. Moving forward with this separation risks de-prioritizing and de-funding these goals in ways that run deeply counter to wider goals of energy and environmental justice.

Future considerations of this proposal should ask: Are there other possibilities for including environmental, equity, justice and other public priorities into the market design and products? If not, how can current incentives to shape energy development toward broader public purposes be retained in state policy and practice, along with the funding streams provided for environmental mitigation and economic development? If absent in this future energy financing system, what other aspects of state policy will be augmented to ensure

that the environments and communities affected by state-incentivized energy development will continue to benefit, rather than become sacrifice zones to this singular state mission ?

3) **The state should not default to competition and market mechanisms**

As Maura Healey showed in her work as Attorney General on retail choice and ISO-NE lack of transparency, many of the ways we have created competition in the energy markets turn out to raise costs for consumers, fail to meet other public purposes, and reduce transparency and accountability. To its credit, DOER has also at times considered non-market options. We wonder if the state has considered an equally ambitious alternative to the existing auction market model to incentivize clean energy, in light of what we know about the negative externalities generated by markets. Besides Healey's work, one of us, Eve Vogel, found in her article the legacies of electric restructuring in Massachusetts and New England that the tools and institutions we have built now create and buttress markets and competition as the default policy tools, at the same time that corporations are continually trying to find their way around competition and the risks that it entails. The result is often perverse and may well often prioritize guaranteed income streams to investors, while incentivizing choices that externalize costs to remote places, low income communities, ecosystems, and the future, without providing the fiscal or regulatory tools to regulate and mitigate those--all while the profit stream of energy companies is now black-boxed and unregulated.

In New England, electric restructuring reduced emissions to some extent due to the increase in natural gas generators; however, nearly thirty years after the mass conversion of regulated utility generators to merchant generators and the creation of ISO markets, we still have significant emissions, electric costs remain high, transmission challenges remain, and envisioned retail choice and competition has not worked or benefitted consumers in practice.

We invite the Massachusetts DOER to consider if market mechanisms are the best way to incentivize investment in clean power, and to consider alternatives that are not dependent on largely deregulated private capital. The current modeling relying on privatized generation lacks accountability (see below). We also would like more information on how much the new proposed markets are expected to cost to create and operate.Given these presumably significant costs, could that funding be used in other ways to incentivize clean energy financing and construction? We would welcome in particular consideration of options such as direct investment in clean energy by states to support publicly or cooperatively owned clean generation--state, municipal, or CCA-owned, or new REA-style cooperatives (like some of the community solar programs)--or state-regulated clean energy generation similar to the old utility model, in which the long experience of the DPU and other utility commissions could be brought to bear more directly; and other models for public and cooperative ownership that involve oversight and accountability to public purposes. We

have a history of these models in the United States and New England in the past and to this day.

4) **What is the relationship between a REC capacity auction, REC production and purchase, real-time energy use, and transparency and accountability in these processes?**

We would like more information on the relationship between the FCEM and projected real-time energy outcomes and effects. Our main question is: If we adopt a FCEM, does that actually translate to the use of clean energy in real time? For example, will those who participate in the FCEM be required to bid into REC markets, or the ISO day ahead market? If so, how will this be enforced and become transparent enough to be accountable to public stakeholders? Another question is how will storage, conservation and efficiency, demand response, and other new features and technologies be considered in an integrated fashion such that any new incentives to finance and generate clean energy will actually be realized in practice? Among the considerations are the existing and well-documented challenges of our grid, including challenges with ISO governance, transmission bottlenecks, and other obstacles.

Additionally, there are serious questions of sub-annual time frames. Winter reliability is a significant issue and concern in New England. How could an FCEM support winter reliability that could be less reliant on natural gas and oil? What benefits would there be from including these in FCEM design, in light of ISO reluctance to address these issues? How will daily peaking be considered in this proposal--will these new RECs be equally valuable at all times of day and season?

5) **A REC capacity market linked to ISO-NE, NEPOOL and current REC markets lacks transparency and accountability**

We are concerned with the possibility that the FCEM would be under FERC jurisdiction and more tightly tied to ISO-New England and NEPOOL. We agree with the environmental NGO Joint Comment Letter submitted by CLF and others about the challenges in this arena. FERC regulation of energy markets, and NEPOOL governance of markets and transmission, have prioritized competition and reliability over other purposes. Could this new proposed FCEM be accountable to the public without or in addition to FERC jurisdiction? Future proposals could elaborate on other options that would retain state control and independence while simultaneously maintaining public accountability and transparency.

The current existing REC markets do not offer a positive alternative. REC prices and volumes are much less transparent than in the ISO-NE system. In the ISO the public does not know what sellers and buyers use electricity, or who actually controls decisions on ISO

markets and rules, but there is information on what general categories of generation is being used, and there are robust 5-minute data on day ahead and realtime (as well as capacity and other markets) price. Relying on the REC market model is perhaps even more problematic to transparency and accountability.

6) **A broad proposal to incentivize a region-wide energy transition requires Integrative analysis**

We invite the MA DOER to engage in concrete scenarios and studies that would help citizens, communities, and other stakeholders understand the relationship between the FCEM as an incentive for clean energy financing and construction and actual effects in terms of provision of energy and impacts on communities, as well as financial flows to investors versus the ratepayers and taxpayers who will be footing the bills.

One example builds on the earlier discussion of hydropower. The FCEM would incentivize a wide range of new and incremental hydropower, from more large dams in Canada to new in-stream and tidal technologies, to greater hydropeaking at pumped storage and other large-storage projects. A modeling effort could show where, with an FCEM, new and incremental “clean” hydropower is likely to be built or how operations might change, where new major transmission lines might need to go, etc.. Tracing this out could allow potentially affected communities, and the advocates associated with these resources, to understand the repercussions of this proposed policy. Doing so would also force clean energy developers to acknowledge these impacts and communities before getting themselves into the kinds of cost overruns and delays that have plagued projects like the Northern Pass and the CMP line in Maine.

For these reasons, for any ambitious large-scale proposal based on the abstractions of percentages and markets, we urge a nuanced analysis of how FCEM incentives might play out over time with relation to particular environments, communities, and approval processes.

Many thanks in advance for your consideration of these comments, and for the efforts involved in this initiative

Eve Vogel, Associate Professor, Department of Earth, Geographical, and Climate Sciences, UMass Amherst and UMass Amherst Energy Geographies and Politics Project

Regine A. Spector, Associate Professor of Political Science, UMass Amherst and UMass Amherst Energy Geographies and Politics Project

Massachusetts Department of Energy Resources
Forward Clean Energy Market Design Proposal

Comments of Advanced Energy United

Advanced Energy United[1] appreciates the opportunity to weigh in on the Forward Clean Energy Market ("FCEM") Design Proposal[2] put forward by the Massachusetts Department of Energy Resources ("DOER"). Advanced Energy United supports efforts by Massachusetts and other New England states to identify regional or multi-state market-based approaches to meet state clean energy policies, and we appreciate DOER advancing the multi-year conversation about potential solutions by developing a specific proposal for consideration. Although Advanced Energy United is unable to offer formal support for the FCEM Design Proposal at this early stage, we applaud the DOER for taking steps to put forward a thoughtful and structured design for stakeholders to review. While we see opportunities for improvement to the design of the FCEM proposal to ensure it best meets state and regional objectives of clean, reliable, and affordable electricity, we emphasize that the most important next step is to first identify a process that will enable states to make their own participation decisions and move this initiative forward, while also resolving the open questions about governance of the FCEM. Once consensus has been reached

[1] Advanced Energy United (formerly Advanced Energy Economy) is a national association of businesses that are making the energy we use secure, clean, and affordable. Advanced Energy United is the only industry association in the United States that represents the full range of advanced energy technologies and services, both grid-scale and distributed. Advanced energy includes energy efficiency, demand response, energy storage, wind, solar, hydro, nuclear, electric vehicles, and more.

[2] Massachusetts Department of Energy Resources, *New England Forward Clean Energy Market: Proposed Market Rules, Version 1* (Jan. 2023), available at https://www.mass.gov/doc/ma-doer-fcem-design-proposal/download (hereafter "FCEM Design Proposal").

on these core issues of participation and governance, detailed design decisions should naturally follow. We therefore support efforts by the New England states and the New England States Committee on Electricity ("NESCOE") to identify areas of consensus, and we encourage collaboration with ISO New England ("ISO-NE") and the Federal Energy Regulatory Commission ("FERC") on governance considerations. We furthermore encourage a state-led public stakeholder process to facilitate additional discussion and consideration of the FCEM design.

I. Overview of Advanced Energy United Perspective on FCEM

Advanced Energy United sees many advantages of adopting a regional or multi-state market-based mechanism to meet state clean energy goals by facilitating cost-effective development of new advanced energy resources. A well-designed market mechanism can create competitive, durable, and robust market signals for investment and continued operation of a wide range of new and existing advanced energy technologies. Advanced Energy United understands from Commissioner Woodcock's letter accompanying the FCEM Design Proposal that DOER will be using stakeholder input submitted throughout this proceeding to support the Executive Office of Energy and Environmental Affairs ("EEA") as it develops a legislatively-mandated report describing "the advantages and disadvantages of using or participating in regional or multi-state market-based mechanisms, structures, systems, or competitive solicitations to facilitate the development of clean energy generation resources."[3] We emphasize that the design of such a market mechanism, structure, or system is paramount to its success. While we do not yet endorse the FCEM Design Proposal as initially introduced by DOER, we strongly urge Massachusetts to

[3] Letter from Massachusetts DOER Commissioner Woodcock (Jan. 4, 2023), available at https://www.mass.gov/doc/letter-from-the-commissionerfcem/download.

continue working with the rest of the New England states to explore and refine this regional market-based approach.

A well-designed and well-implemented regional market structure that is competitive and transparent will allow a wide range of clean energy developers to compete to deliver an optimal, least-cost, clean, and reliable electricity mix to the region. Importantly, adoption of a regional clean energy market does not preclude continuation or adoption of other state policies or procurements, including programs aimed at important, related goals such as economic development and environmental justice.

To maximize the advantages of a multi-state or regional market-based mechanism, Advanced Energy United believes that an FCEM or any other regional clean energy market must:

1. **Include all clean advanced energy technologies.** An FCEM or alternative market structure must allow all resources capable of contributing to the achievement of state clean energy goals to compete, including resources that do not generate clean electricity but that nevertheless contribute to achieving a clean generation mix, such as electric storage resources, demand response, and energy efficiency.

2. **Incentivize investment in new resources.** To serve as an effective tool for meeting state clean energy goals, a multi-state clean energy market must send long-term, stable market signals for new resource development while also supporting continued operation of existing clean resources. Otherwise, the market will offer little advantage over the status quo, and states will still find themselves searching for and negotiating scarce and sometimes sub-optimal bilateral contracts as the only means to facilitate development of new clean energy resources.

3. **Be aligned and compatible with existing regional wholesale markets.** To support achievement of the least-cost resource mix to meet state policy goals and regional reliability needs, a regional clean energy market must be compatible with the wholesale markets administered by ISO-NE. While this does not require that the FCEM be integrated directly into ISO-NE markets, harmonious design will contribute to selection of a least-cost and reliable resource mix, support the health of the regional markets, and leave open the option of integration in the future, should that be deemed advantageous.

4. **Be complementary and compatible with existing and future clean energy programs and other state policy objectives.** States will likely continue to rely on a variety of clean energy policies, programs, and procurements outside of the FCEM to meet their clean energy policy goals, which must be compatible with a future regional clean energy market mechanism. Furthermore, in addition to decarbonizing the electricity mix, state

clean energy policies and procurements often support other important policy goals, including environmental justice and equity, economic development, and diversity, equity, and inclusion. The FCEM need not directly incorporate these objectives if they are pursued through other regulations and incentives, but it must not mitigate or obstruct them.

5. **Be legally and politically durable.** A regional clean energy market will fail to attract a competitive mix of sellers and non-state buyers if such entities do not have confidence that the market will persist through shifts in state and federal administrations. Arriving at a legally and politically durable structure will require collaborative upfront discussions between all relevant stakeholders about different governance approaches and jurisdictional structures.

6. **Have a fair governance structure and stakeholder process.** A successful market must be both predictable and adaptable, and must avoid imposing undue barriers to participation for both buyers and sellers. A clear and fair governance structure and stakeholder process is critical to enable evolution without sudden or unpredictable market changes, and to enable buyers and sellers to seek recourse when necessary.

Advanced Energy United believes that a multi-state or regional market-based mechanism, structure, or competitive solicitation that fulfills these core principles will deliver cost, innovation, and reliability benefits relative to the status quo.

II. Recommendations on Next Steps

a. Advanced Energy United Encourages the New England States to Explore Governance and Jurisdictional Questions Upfront and in Collaboration with the Federal Energy Regulatory Commission and ISO New England

While the FCEM Design Proposal puts forward one option for FCEM governance, it acknowledges that the FCEM could be deployed under multiple governance arrangements. The report also notes that certain design choices would need to be adjusted depending on the governance approach, although Advanced Energy United emphasizes that certain design choices that are critical to the success of the FCEM—such as a price lock for new clean resources and differentiated products including clean capacity credits—must be preserved under any viable governance structure. The report indicates that the New England states "are undertaking legal

analysis to identify the most desirable institutional and governance arrangements for the FCEM."[4] Advanced Energy United strongly supports this effort, and urges the New England states to proactively involve ISO-NE and FERC in such exploration, and to share and seek input from regional stakeholders early and often. Doing so will garner trust and understanding between parties, ultimately increasing the success and durability of the preferred governance structure.

b. Advanced Energy United Urges the New England States to Establish a Stakeholder Process to Allow Further Refinement of the FCEM Proposal.

Advanced Energy United strongly supports further state-led actions to refine and explore the FCEM concept. We are encouraged that the other five New England states all participated in "several rounds of interviews, comments, and discussions"[5] during the development of DOER's FCEM Design Proposal, and we are further encouraged by Commissioner Woodcock's statement that "DOER is eager to discuss and refine the FCEM design with other New England states through NESCOE to identify additional areas of analyses, including a legal analysis, and eventually come to consensus on an FCEM design that can be implemented."[6] Advanced Energy United strongly supports such an effort among the New England states, and further urges the establishment of a clear and transparent stakeholder process open to public input, modeled after the successful "New England Energy Vision" stakeholder process that involved technical conferences and public comment opportunities.[7] As Commissioner Woodcock notes, discussions of the FCEM concept have been ongoing in various venues in New England for several years without clear direction or consensus to date. Advanced Energy United appreciates that DOER is committed to further

[4] FCEM Design Proposal at 3.

[5] FCEM Design Proposal at i.

[6] Letter from Massachusetts DOER Commissioner Woodcock (Jan. 4, 2023), available at https://www.mass.gov/doc/letter-from-the-commissionerfcem/download.

[7] *See* New England Energy Vision, available at https://newenglandenergyvision.com/.

regional engagement with NEPOOL, ISO-NE, and regional stakeholders.[8] A path forward and an open venue for stakeholders to provide input is paramount to ensuring that this next effort results in a final decision regarding whether and how to pursue implementation.

III. Responses to DOER Questions

At its public webinar on February 3, 2022, Massachusetts DOER issued seven questions for stakeholder input.[9] Advanced Energy United offers our perspective on each of these questions below.

a. Are there key aspects of the FCEM Design Proposal that have advantages or disadvantages over the status quo?

A multi-state or regional market-based approach could, if well designed, deliver several benefits. The regional scope and transparent, market-based approach of the FCEM should allow for more efficient and affordable decarbonization of the electric grid by leveraging competition and innovation to deliver the least-cost resource mix to meet states' needs, allowing private developers to take on risks in response to a clear, long-term market signal. Furthermore, because it is designed to be aligned with the regional wholesale markets, the FCEM Design Proposal should support efficient procurement of clean energy resources that contribute most efficiently to meeting both state policy goals (through the FCEM) and overall grid reliability (through ISO-NE markets). The FCEM Design Proposal also has the potential to incentivize resources such as energy storage and demand response that are left behind by clean energy contracting and REC programs.

[8] As discussed during the February 3, 2023 webinar hosted by Massachusetts DOER, available at https://www.mass.gov/info-details/clean-energy-markets.

[9] February 3, 2023 webinar hosted by Massachusetts DOER at slide 16, available at https://www.mass.gov/doc/ma-doer-fcem-webinar-slides/download.

Key to the success of the FCEM or any multi-state or regional approach as a viable alternative and/or complement to the continuation and expansion of bilateral contracting that would be needed for states to rely on contracting to meet their clean energy goals is its ability to facilitate long-term investment in new clean energy resources. Advanced Energy United offers some recommendations below regarding the market certainty and investment signal of the FCEM.

b. Are there design aspects that are key to financing a portfolio of new clean energy resources and supporting the Commonwealth meeting emission reduction targets?

Market stability and a long-term price lock are critical to facilitate investment in high capital cost, low operating cost resources such as renewable energy and battery storage resources. Market stability requires not only a durable commitment from buyers to participate in the market, but also legal, regulatory, and political certainty that the market will not be repealed or significantly amended without due process. The 10-year commitment for participating buyers is an important design element in this respect, and the governance structure selected for the FCEM must also stand up to scrutiny. Advanced Energy United emphasizes the importance of upfront dialogue about governance and jurisdiction between the New England States, ISO-NE, and FERC to uncover potential concerns and identify consensus solutions.

Some form of long-term contract or price lock is also critical for developers of new resources to secure financing and move forward with a project. Advanced Energy United members have generally found that contract lengths of 15 years or more facilitate financing, although this amount varies by technology, project size, and other criteria. A longer price-lock has tradeoffs, but would allow new resources to offer more favorable pricing terms, and may be critical to allow resources with higher upfront costs (such as offshore wind farms) to compete. We offer recommendations regarding the investment signal for new resources through the FCEM below.

c. Will there be sufficient interest from both buyers and sellers for an FCEM?

Interest from sellers and buyers will depend on the market design; a well-designed FCEM should garner sufficient interest to be a viable and durable market. In these comments, Advanced Energy United offers our initial perspective on the design elements that will matter most to prospective sellers in an FCEM. Additional regional dialogue in the form of a clearly defined, open stakeholder process is critical to gain consensus on what an FCEM must look like to ensure sufficient interest from both buyers and sellers.

d. What processes would help achieve effective implementation of a clean energy market design?

Currently, advanced energy resources face many barriers in the ISO-NE markets that must be overcome to ensure optimal success of the FCEM. These include, but are not limited to, capacity accreditation rules that treat clean energy resources differently from thermal resources; interconnection procedures that are severely backlogged; lack of opportunities for distributed energy resources to offer the services they are capable of providing through aggregation; lack of market products to address certain reliability needs and subsequent reliance on out-of-market compensation (almost exclusively to thermal resources) at the expense of other market participants; failures in long-term transmission planning that will make it harder for new clean resources to come online; and myriad smaller tariff rules and market practices that create barriers to participation for different advanced energy resources. Addressing these issues will allow clean resources to compete more fairly and earn more revenue in wholesale markets, reducing the burden on states to compensate such resources through an FCEM.

e. Are there other clean energy market reforms that could be considered as alternatives or operate with an FCEM?

One benefit of the FCEM is that it is compatible with many other clean energy policies and market reforms. Massachusetts can and should continue to pursue other clean energy policies, such as distribution system modernization, distributed energy resource programs and incentives, and clean energy workforce development—these will not interfere with the FCEM and will actually contribute to its success. Similarly, any reforms to the energy, ancillary services, and capacity markets overseen by ISO-NE that allow for better integration and use of clean energy resources will be complementary to and compatible with the FCEM, as will efforts to improve regional interconnection processes and transmission planning and investment. These reforms are necessary but not alternatives to the FCEM.

This compatibility is also very important to maintain momentum toward state clean energy goals. An FCEM, if adopted, will take time and significant effort to be established. In the meantime, states will need to continue to pursue clean energy via procurements and bilateral agreements so as not to lose ground on their decarbonization efforts. If compatible, the states can seamlessly transition their procurement activities to this market once the option becomes available and progress towards decarbonization will not be compromised.

The primary alternative clean energy market that was considered alongside an FCEM in the *Pathways Study* undertaken by ISO-NE, NEPOOL, and NESCOE was a carbon price.[10] A carbon price could be both a potential alternative to an FCEM and a complementary policy to be implemented alongside an FCEM. While a carbon price may deliver some advantages with respect to economic efficiency, it is a solution mired in complications, and the New England States have not, to date, demonstrated significant interest or support in adopting a carbon price. In addition,

[10] Analysis Group, *Pathways Study: Evaluation of Pathways to a Future Grid* (Apr. 2022), available at https://nepool.com/wp-content/uploads/2022/05/NPC_20220426_Pathways_FULL_REPORT_FINAL_v2.pdf.

several important questions would need to be considered prior to adoption, including how to address cost allocation among states that value decarbonization differently; how to set a carbon price such that it incentivizes adequate new resource development without providing a windfall to existing resources; and how to address the potential unintended consequences of an electricity sector carbon price as states seek to electrify other sectors of the economy, since the cost of carbon would not be embedded into heating or transportation fuel prices. The FCEM is not without any challenges, but it may provide the most viable policy pathway today, and importantly does not preclude adoption of a carbon price in the future.

f. Are there any other state policy goals that overlap with the FCEM Design Proposal?

Depending on its design, an FCEM will help to achieve several complementary state policy goals, while other important state policy goals that will not be achieved through the FCEM must be achieved through separate policies and incentives. An FCEM, if well designed and implemented, will support the goal of producing more of the region's electricity from non-emitting resources. If the FCEM Design Proposal contains sufficient incentives for non-generating resources such as demand response, energy efficiency, and energy storage, it will also support deployment of these important resources, promoting a resource mix that is both clean and reliable and facilitating the energy transition in a way that helps to maintain affordable rates for Massachusetts residents.

g. How should DOER proceed to engage with regional stakeholders to progress clean energy market reforms?

As noted above, Advanced Energy United strongly urges DOER to work with other New England states to establish a formal public stakeholder process to consider clean energy market reforms, including the FCEM Design Proposal. In addition to likely market participants, it is

important that stakeholders who will not be directly involved in the FCEM market—such as ratepayers, community groups, environmental justice advocates, and others—have a voice in its development. DOER should also continue to work with other New England states, NESCOE, ISO-NE, and FERC to gain alignment on priorities, key questions, and potential areas of conflict, and work toward resolution.

IV. Comments on the Proposed FCEM Design

a. The FCEM must support financing of new clean energy resources

Advanced Energy United appreciates the stated intent for the FCEM to support financing for new clean energy resources, and we acknowledge and support several elements of the design intended to achieve this goal. However, we remain concerned that the FCEM design may not facilitate sufficient investment in new clean resources, and encourage further analysis and discussion of this critical objective.

In particular, while we support the proposal to allow buyers to specify a need or preference for new resources and to include a price-lock for new clean resources, we are concerned that the duration and proposed decline of the price lock may limit the viability of the FCEM as a tool to incentivize development of new clean resources. Specifically, as noted above, Advanced Energy United members have generally found that 15 years is the *minimum* contract length required for new resources to secure financing to get built. However, this varies considerably according to resource type, location, size, offtaker, and other factors. The potential to earn FCEM market revenue after the price lock expires will be heavily discounted, especially in early years. Furthermore, developers will want *more* certainty when relying on a new and untested market rather than a bilateral contract, which is a well-understood and binding mechanism. We urge implementing *at least* a 15-year price lock, as proposed in the FCEM Design Proposal, and

encourage further analysis and discussion of the optimal duration of the price lock for new FCEM-eligible resources. This should include consideration of mechanisms that would allow sellers to offer alternative price/duration pairs (e.g., allowing a developer to offer one price for a 15-year price lock, and a lower price for a 20-year price lock). Finally, we urge against lowering the initial 15-year price lock until and unless the FCEM becomes a well-established, viable mechanism to facilitate timely entry of sufficient quantities of clean energy resources to meet state policy goals.

With respect to other design proposals intended to support financing for new clean resources, we support the phased entry bid option as a tool to allow developers of new resources to build some flexibility into their resource online date. We also support the requirement that state buyers must commit to a long-term participation to garner trust in the market among sellers and other non-state buyers.

b. Advanced Energy United supports the inclusion of the Clean Capacity Certificate and Greenhouse Gas Marginal Abatement Certificate products

The number of products sold in this market will undoubtedly be heavily debated. While Advanced Energy United generally believes that fewer distinct products will make implementation of the FCEM simpler, the inclusion of the Clean Capacity Certificate ("NE-CCC") and the Greenhouse Gas Marginal Abatement Certificate ("NE-GHG") is critical to ensure that non-generating resources such as demand response, energy efficiency, and battery storage—which will play a critical role in a reliable, decarbonized grid—are incentivized via the FCEM. These resources do not generate clean electricity and are not eligible to earn Renewable Energy Certificates or Clean Energy Attribute Certificates. Without the NE-CCC and NE-GHG products, these important technologies would not be eligible to participate in the FCEM, potentially narrowing the pool of resources that can participate and therefore limiting competition within the FCEM. Since these resources are all eligible to participate in ISO-NE administered wholesale

markets, and since they do contribute to the broader objective of achieving a reliable and affordable decarbonized electricity grid, it is logical and efficient to include them in any regional or multi-state clean energy market mechanism. Furthermore, inclusion of these resources in the FCEM will potentially decrease dependency on functionally analogous emitting resources that are procured through the ISO markets.

These two products also bring important benefits to participating buyers by allowing them to efficiently target policy goals that they cannot directly achieve through MWh-based products alone. The NE-CCC allows a state or other buyer to specify the portion of its capacity mix it wants to come from clean resources. Since the NE-CCC will be aligned with ISO-NE capacity market requirements, this product will enable a reliable transition to a cleaner capacity mix. The NE-GHG product likewise gives buyers an option to target maximum greenhouse gas abatement, which may differ in important ways from maximum clean energy production.

While the NE-CCC and NE-GHG products offer a pathway for demand response, energy efficiency, and energy storage to participate in an FCEM, Advanced Energy United emphasizes that careful design of these products will be critical, particularly for the more complex and novel NE-GHG product. We also warn that the incentive available through these products may be insufficient to drive optimal deployment of these resources because, unlike MWh-based products, they are not an evolution of existing, successful policies. States would need to clearly define these products to ensure they incentivize only clean resources like demand response and energy storage, and would need to commit to purchase significant volumes of these products in order to meaningfully drive deployment of resources like battery storage and demand response through the FCEM. Wtates would likely also need to pursue additional complementary policies, particularly in the near term, to ensure sufficient buildout of these resources, especially new capital-intensive

investments in battery storage, which will need to be deployed rapidly to meet state decarbonization targets while maintaining reliability.

V. Conclusion

Advanced Energy United appreciates the opportunity to weigh in on DOER's FCEM Design Proposal. We applaud DOER for taking an important step to enable a more focused, specific discussion about a potential regional or multi-state clean energy market for New England. Building upon this progress, we strongly urge Massachusetts and the rest of the New England states to work together to determine whether to pursue development of an FCEM, to work with ISO-NE and FERC to come to consensus on the advantages and disadvantages of various governance approaches, and to facilitate a public stakeholder process to continue discussion and debate about the design and implementation of an FCEM.

Respectfully submitted,

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By email to joanna.k.troy@mass.gov

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Subject: **Forward Clean Energy Market Design Proposal**

Director Troy:

RENEW Northeast, Inc. ("RENEW")[1] submits these comments in response to the Department of Energy Resources' ("DOER") request for comment on its Forward Clean Energy Market ("FCEM") design proposal ("Design Proposal") developed at the request of the General Court pursuant to Section 85 of Chapter 179 of the Acts of 2022, *An Act Driving Climate Policy Forward* (Section 85) that directs an investigation of the advantages and disadvantages of using regional markets to ensure clean energy generation development sufficient to meet the Commonwealth's climate laws. RENEW thanks DOER for its work to develop the Design Proposal and for giving the public an opportunity to comment.

Subsection (c) of Section 85 grants authority to the Secretary of Energy and Environmental Affairs ("EEA") to adopt regulations that implement a "market-based mechanism, structure, system or competitive solicitation" if she determines it would be beneficial to the Commonwealth. Appropriately, the Design Proposal acknowledges the need for Massachusetts to have "continued engagement with NESCOE and member states, as well as with other stakeholders and the public to refine and implement the FCEM."[2] Until other New England States express a commitment to work jointly on an FCEM proposal and a deliberative process involving the States, market participants, and the public produces a FCEM program design

[1] The comments expressed herein represent the views of RENEW and not necessarily those of any particular member of RENEW. RENEW is a non-profit association uniting environmental advocates and the renewable energy industry whose mission involves coordinating the ideas and resources of its members with the goal of increasing environmentally sustainable energy generation in the Northeast from the region's abundant, indigenous renewable resources. RENEW members own and/or are developing large-scale renewable energy projects, energy storage resources, and high-voltage transmission facilities across the Northeast. They are supported by members providing engineering, procurement, and construction services in the development of these projects and members that supply them with multi-megawatt class wind turbines. RENEW seeks to promote policies that will increase energy diversity, promote economic development, and achieve the policy goals including those found in state Renewable Portfolio Standards and Global Warming Solutions Acts.
[2] Design Proposal at i.

agreeable to the participating States, RENEW recommends the Secretary refrain from adopting regulations.

I. Background

Over the years, RENEW has strongly supported the States' commitment of using competitive-based approaches for achieving New England's clean energy and climate policies. RENEW has advanced solutions that would help States achieve their policies by modifying wholesale markets to price state policies under the goal of making them more cost-effective for consumers.

RENEW has had a longstanding engagement with EEA to assess different models for providing long-term financial commitments to new renewable energy developments. Our first collaboration dates to a conference RENEW hosted in 2011 with the Secretary to discuss models for the procurement of renewable energy including one called a Forward Renewable Capacity Market proposed by National Grid which is the forebearer of today's FCEM.

During the NEPOOL stakeholder process on Integrating Markets and Public Policy ("IMAPP") in 2016-2017, RENEW offered an FCEM proposal for achieving the collective clean energy goals of the States and stressed the importance of addressing associated transmission needs.[3] In addition to support for new resources, the RENEW FCEM proposal included assistance for existing non-carbon emitting resources to enable their continued viability to meet state policy objectives.

II. The Drivers for Implementing FCEM

The Design Proposal offers an alternative approach for the states collectively to meet some or all their clean energy procurement objectives. While it would employ a centralized auction format as opposed to today's contracting model, it would still provide a revenue commitment like the now sunset ISO New England ("ISO-NE") Forward Capacity Market ("FCM") seven-year price-lock that enables the financing of new renewable resources while also monetizing the contributions from existing non-emitting resources.

The FCM design has never worked to bring renewable energy resources into the market. It never contemplated the arrival of low-cost renewable resources on a massive scale. The FCM has always promoted a resource mix of low capital cost, high operating cost resources like combined cycle natural gas units as opposed to the high capital cost, low operating cost resources like wind and solar. It favors fossil fueled generators even when they are not the most economically efficient.

[3] RENEW Northeast, Integrating Markets and Public Policy (IMAPP): Solution Ideas Day (August 11, 2016), https://nepool.com/uploads/IMAPP_Presentaion_RENEW.pdf; and NextEra Energy and RENEW Northeast, A New IMAPP Proposal (January 25, 2017), https://nepool.com/uploads/IMAPP_20170125_NextEra_RENEW.pdf

Some of the drivers for FCEM have or will disappear. During the IMAPP process, FCEM was seen as one way to address the double capacity payment issue arising from ISO-NE excluding clean energy resources from the capacity market under its Minimum Offer Price Rule ("MOPR"). Some stakeholders envisioned a FCEM that co-optimized the forward procurement of clean energy resources with capacity needed for generation adequacy. However, beginning with Forward Capacity Auction ("FCA") 19, the MOPR will not exist. FCEM was also seen as providing a market-based system for giving revenue adequacy to nuclear resources. Connecticut has since the IMAPP process signed long-term contracts with the remaining two New England nuclear resources to ensure their revenue adequacy.

Despite the increased number of renewable energy procurements, the elimination of the MOPR, and the addition of state contracting for existing non-emitting resources like nuclear and pumped hydropower, reforms continue to be needed to enable clean energy investments to participate fully in the markets and eliminate embedded preferences for natural gas and other fossil resources in the FCM which was designed with the intention to be fuel neutral and to drive towards the most economically efficient means of achieving resource adequacy. The proposal for Resource Capacity Accreditation now being developed by ISO-NE to weight the capacity value of all resources- and not just renewables- for reliability could be one important step.

III. A Parallel Path Approach

RENEW encourages Massachusetts to continue exploring with the other New England States whether a new "administrative market" mechanism like FCEM could be superior to long-term contracts. "Any successful reconciliation is not likely to occur without broad agreement being reached among the New England States and NEPOOL stakeholders."[4] An alternative that meets the primary goal of assisting in the implementation of existing state initiatives could theoretically lay a foundation for displacing such contracts in the future. The appropriate role of any new design features should be for assisting in the implementation, and reducing the cost of, the programs that the States have put in place like PPAs have done.[5] Any new system must ensure that projects can be financed,[6] and it is not clear how the Design Proposal addresses project finance requirements.

A parallel path approach is necessary to ensure the States remain on course to achieve their policy commitments and do not lose valuable time while pursuing wholesale market reforms that may never occur. States must continue to utilize existing programs like clean energy

[4] Frank A. Felder, Ph.D., *NEPOOL's Pathways to the Future Grid Process* 6 (January 6, 2020).
[5] *See* The Brattle Group, *The Importance of Long-Term Contracting for Facilitating Renewable Energy Project Development* 14 (May 7, 2013) (PPAs by lowering the cost of capital lowers the levelized cost of energy).
[6] *See* Peregrine Energy Group, Inc., New Energy Opportunities, Inc., *Study on Long-Term Contracting Under Section 83 of the Green Communities Act* 29-30 (December 31, 2012) (Submitted to the Massachusetts Department of Energy Resources), http://www.mass.gov/eea/docs/doer/pub-info/long-term-contracting-section-83-green-communitiesa-act.pdf (creditworthy buyers are critical to their ability to finance and build new renewable energy project).

procurements based on electric distribution utility contracting to ensure development of new renewable resources, associated transmission, and energy storage remain on a trajectory to meet policy objectives. States, through the legislative process, have repeatedly and correctly determined that competitively selected long term power purchase agreements are a strong approach to ensure a sufficient revenue stream necessary for new resources to be financed. While the States explore alternatives, existing state laws and the ISO-NE markets are working to achieve policy goals.

Finding common ground among the states and stakeholders on markets reforms has proven challenging over the years. The previous IMAPP effort was focused on substantive solutions and attempting to "accommodate" state energy policies in the regional electricity markets—with disappointing results to states, consumer advocates, and clean energy businesses. Missing from the debate was a process for reform. How decision-making power is balanced between state and federal regulators determines whose goals are prioritized—state environmental and economic development policies, or generator revenue sufficiency and investor confidence in the regional electricity markets, among others. Resource adequacy implicates the state regulatory role in resource planning, FERC-jurisdictional rates, and ISO-NE's ability to ensure reliable service.[7] Until these issues can be resolved, RENEW recommends the Secretary hold off adopting FCEM regulations.

IV. Prioritizing Policies Requiring Regional Coordination

The New England States in the 2020 Vision Statement made a commitment to pursuing regional transmission upgrades to deliver clean energy resources to the grid. States have recently submitted proposals for major regional transmission upgrades pursuant to Topic Area 3 (Grid Innovation Program) of the Grid Resilience and Innovation Partnership (GRIP) under the Bipartisan Infrastructure Law (BIL) § 40103(b). New transmission infrastructure can unlock New England's renewable energy potential and significantly reduce curtailment of renewable energy resources. With reduced curtailment, less clean energy will be wasted, thus reducing the overbuild needed to meet reliability and emissions requirements. Minimizing transmission constraints could reduce overall consumer costs while unlocking access to the region's lowest cost renewable resources.

The conversation on the interplay between state policy goals and the wholesale markets often ignores the important role transmission and interconnection rules hold over the successful implementation of state renewable energy policies. Meeting state policy priorities through just and reasonable rates means not just reforming energy, ancillary services, and capacity markets but ensuring new projects are able to interconnect to the wholesale electric system at least cost and that transmission planning and interconnection rules facilitate network upgrades needed to enable state public policy projects and not just reinforce existing pathways between traditional

[7] *See e.g., California Independent System Operator Corporation*, 116 FERC ¶ 61,274, at P 1112 (2006). MISO, 122 FERC ¶ 61,283, at P 52, 54, 56 (2008).

generators and load. Regional pursuit of FCEM should not occur if it will distract or divert resources away from the States committing to transmission upgrades. Any discussion of FCEM should also consider the ability of transmission upgrades to unlock New England's renewable energy potential and enable the facilitation of bilateral retail transactions for renewable energy as it has done in other regional markets.

V. Conclusion

RENEW stands ready to contribute to future discussions with the Commonwealth and the other New England States on alternative competitive-based approaches for clean energy deployment. Thank you for the opportunity to offer these comments.

Sincerely,

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Executive Director

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By electronic delivery only: joanna.k.troy@mass.gov

Dear Director Troy;

Environmental Defense Fund (EDF) appreciates the opportunity to submit comments regarding the New England Forward Clean Energy Market (FCEM) design proposal released by the Massachusetts Department of Energy Resources (MA DOER) (Proposal).[1] Further, EDF appreciates that MA DOER considers the Proposal to be a starting point for discussion and that stakeholder engagement will continue as the proposed market framework is developed. A transparent stakeholder process will lead to a more efficient and equitable outcome.

FCEM and FCM Alignment

It is imperative that New England's wholesale market is reformed to ensure clean energy takes on a more prevalent and competitive role. In 2022, fossil gas comprised approximately 45% of the net energy load in New England.[2] During the December 2022 cold snap, New England burned over 31 million gallons of oil.[3] Such heavy reliance on fossil fuels must be reduced in light of the overwhelming scientific evidence that greenhouse gas (GHG) emissions from fossil fuels impact public health and are significant drivers of global warming and severe weather events.[4] States in New England have expressly recognized the need to reduce GHG emissions and enacted various policies and legislative initiatives to bring about emission reductions.[5] The Proposal suggests a framework designed to give New England States a

[1] New England Forward Clean Energy Market, Proposed Market Rules, Version 1, January 2023, https://www.mass.gov/doc/ma-doer-fcem-design-proposal/download [hereinafter *Proposal*]
[2] ISO-New England Resource Mix, https://www.iso-ne.com/about/key-stats/resource-mix/
[3] Laila Kearney, *New England Power Generators Replenish Oil Reserves After Winter Storm*, https://www.reuters.com/business/energy/new-england-power-generators-replenish-oil-reserves-after-winter-storm-2023-01-05/
[4] *See* Marc Lallanilla & Tiffany Means, *Greenhouse Gasses: Causes, Sources and Environmental Effects* (updated Feb. 16, 2022), https://www.livescience.com/37821-greenhouse-gases.html
[5] *See* Vermont Global Warming Solutions Act of 2020, https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/ACT%20153%20As%20Enacted.pdf (Creating legally binding reduction targets); and An Act creating a Next Generation Roadmap for Massachusetts Climate Policy, https://malegislature.gov/Laws/SessionLaws/Acts/2021/Chapter8

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potentially beneficial vehicle to procure clean energy to meet respective state climate and policy objectives.

As the Proposal takes the important first steps of outlining a possible new market construct for further stakeholder discussion, it is important to consider and address fundamental questions that will determine whether the Proposal can be effectively implemented so that its goals are realized, and it meets the need to drive equitable and efficient deployment of clean resources. One overarching question pertains to the interplay between the existing forward capacity market (FCM) and the FCEM. The Proposal suggests a construct whereby the FCEM auction would run first and then ISO-NE would procure any needed capacity resources through the FCM. [6] For an FCEM to operate in conjunction with an FCM, questions regarding the legal and practical interplay between these competitive markets must be thoroughly and completely answered. Legal questions include:

- Can an FCEM operate outside of FERC jurisdiction and if so, are there particular processes and criteria that would have to be implemented in the FCEM process so that ISO-NE will be able to "count" the procured resources in determining how much capacity to procure in the subsequent FCM auction?
- What, if anything, would need to change in the way ISO-NE runs the FCM to support an FCEM?
- If changes are necessary, how can they be expedited?
- How can we ensure confidence that what is being procured in the auctions will satisfy reliability needs while avoiding excess capacity and increased costs to ratepayers?
- Are there additional measures that must be taken to ensure that all resources that clear in the FCEM will then be included in the FCM?
- Are there safeguards that can be developed to mitigate the risk of over procurement of capacity?
- Would the mission statement of ISO-NE need to change?

While there is an urgent need to bring clean resources into the Northeast Region, we must develop a no regrets clean energy market. We must therefore examine the Proposal in light of other existing and proposed state policy initiatives which could affect the clean energy transition. To the extent possible, the FCEM should work harmoniously with other state policies to achieve the maximum possible benefits.

Requirements for participation in the FCEM auction should be clearly defined in guidance documents which are easily found and readily accessible; lack of clarity must not serve as a deterrent to participation in a new market construct. Similarly, all costs associated with implementing and operating the FCEM must be discussed and clearly described at the FCEM development stage to help avoid unintended consequences in later stages of market development. This is crucial as the costs suggested in the Proposal, while likely less than ISO-NE's proposed operating budget, will nevertheless be significant.[7] The Proposal states that "the costs of

[6] Proposal at 6

[7] ISO New England Proposed 2023 Operating and Capital Budgets, at 31 (Proposing an operating budget of $209 million) https://www.iso-ne.com/static-assets/documents/2022/08/7_isone_2023_proposed_op_cap_budget.pdf

administering the FCEM will be funded through a surcharge on transactions within the FCEM."[8] The Proposal states that such administrative costs will be assigned on a pro-rata basis allocated to the buyers participating in the FCEM.[9] Ultimately, these costs will be passed on to ratepayers. Therefore, transparent cost discussions must occur during FCEM development.

To avoid a siloed approach which could lead to inequities, costs associated with achieving state goals such as economic development, environmental justice, and diversity, equity and inclusion (DEIJ) must be examined while developing the FCEM framework. Energy justice considers how the costs and benefits of energy systems are distributed and what processes exist to reveal and reduce injustices in these systems.[10] If costs and benefits are not considered in the initial development of the FCEM framework, it could result in the implementation of less than robust energy justice measures. Adding measures after framework development may result in missed opportunities and perpetuate existing inequity. This approach is contrary to initiatives by several New England States that are seeking to embed equity and energy justice issues in the clean energy transition. MA DOER suggests that one rationale for examining these costs outside of the FCEM framework is that it may lead to better cost transparency in terms of what is spent on achieving these initiatives. While transparency is always important, achieving necessary state goals and policies such as DEIJ should not be an afterthought in establishing a market construct that may, especially in the short-term, have added costs for all ratepayers in the states that participate.

In addition, EDF supports several points made by the joint ENGOs in their comments.[11] We agree that MA DOER must do more in terms of stakeholder engagement to ensure a just, effective, and economical outcome. We should be willing to learn from past missteps and, from the outset, design a market that appropriately embeds equity. This will take time and will require a willingness to listen and engage with stakeholders who may not have been afforded the opportunity to previously participate. We can ill-afford to sacrifice inclusivity when the climate issues that we are trying to address by the institution of a new market design affects us all.

Further, we agree that conducting the FCEM design process in parallel with reforms of NEPOOL governance makes logical and administrative sense. Examining and making necessary changes to NEPOOL governance while developing the governance process for the FCEM will help ensure that the individual governance structures align rather than oppose each other.

Independent Market Monitor

The role of an Independent Market Monitor (IMM) is a crucial design element in any market. "It is like a protective screen or filter, crucial for rooting out any wrongdoing or anti-competitive behavior and also critical to ensuring that markets perform as intended."[12] The

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[8] Proposal at 9
[9] *Id*.at 54
[10] Kleinman Center for Energy Justice, https://kleinmanenergy.upenn.edu/research/publications/wholesale-electricity-justice/
[11] ENGOs Joint Comment Letter to Director Troy (February 17, 2023)
[12] Sarah Keay-Bright, *The Case for Market Monitoring—A Key to Successful Electricity Markets, Regulatory Assistance Project* (July 27, 2016) https://www.raponline.org/blog/case-for-market-

importance of this role cannot be overstated "given the very weak voice of consumers and new entrants relative to dominant incumbent power generators."[13] Aligned with the intent of the FCEM-NE to expedite on-lining new clean energy resources, it is vital that the IMM's role is designed, implemented, and resourced in such a way that the IMM can inform, avoid, investigate, and report out market flaws, inefficiencies, manipulation, and unethical practice in the marketplace. Appreciating the historic inequities in the energy system, the FCEM should help ensure that the market achieves a just transition. The IMM's remit should expressly include a requirement to evaluate and investigate the market's impact on low-income and disadvantaged communities, environmental justice, and energy justice communities.

When implemented, MA DOER's proposal for FCEM-NE would be a first of its kind marketplace. FCEM-NE must therefore take a careful and expansive approach in structuring the responsibilities of the IMM, to demonstrate to other jurisdictions that such a marketplace is not only useful, but a key component in expediting a just clean energy transition. The structure of the IMM must ensure that it is truly independent of any influence or bias from the FCEM itself. As a result, the structure must provide an airgap between the IMM and the FCEM, and the IMM must have automatic access to, and investigative authority to request information from any market participant. ISO-NE selects its IMM from existing consultant organizations which has the convenience of permitting ISO-NE to periodically reevaluate and ultimate switch consultants in order to best serve its purposes. However, this convenience is overshadowed by the risk of institutional conflicts, undue influence, and biases. To structure the role of the IMM in such a way as to preserve its independence, the IMM should be a newly established nonprofit entity, external to FCEM-NE, and expressly and solely dedicated to FCEM-NE.

The selection of the IMM and its principals must be done in such a way as to eliminate the perception of any bias or influence by the FCEM. As a preliminary matter, since the FCEM-NE board will be comprised of representatives from all six NE states, the IMM must be appointed by the board, and not by FCEM-NE staff, alongside advise and consent by stakeholders, and community organizations. IMM principals should only be removed by the board for cause. The IMM must have appropriate experiential and technical backgrounds, the precise requirements of which should be articulated by the FCEM-NE board in a public notice with a request for comment by stakeholders and the public. At minimum this should include experience working with local community organizations and conducting community outreach. The IMM staff must also adhere to diversity, equity, and inclusion requirements.

To further ensure that the IMM is not hampered by any real or perceived bias, there should be guidelines which prevent a "revolving door" between the IMM, FCEM staff, and any market participants. This includes prevention of the IMM hiring former FCEM staff or staff of a market participant until after a cooling off period. FCEM and market participants should also be precluded from hiring former IMM principals and should be required to institute a cooling off period of at least two years before hiring any IMM staff. Where the appearance of conflict arises in the work of the IMM, such as in responding to complaints, any impacted staff must recuse themselves from the process. The IMM should also have authority to hire staff or to enlist

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monitoring/#:~:text=Market%20monitoring%20provides%20continuous%20surveillance,that%20markets%20perform%20as%20intended

[13] *Id.*

consultants as appropriate. FERC imposes certain ethical obligations on independent market monitors within its jurisdiction. Therefore, where FCEM-NE is operating under FERC jurisdiction, the IMM will be subject to the minimum ethical requirements set forth in Order 719.[14] As these are minimum requirements, and as the FCEM-NE is intended not only to create a more competitive market, but a market that respects State and Federal climate goals, the IMM's ethical obligations should be broadened: duty-bound not only to rate payers, but generally to the citizenry of the New England States. Even if the FCEM-NE is not within FERC jurisdiction, it must nevertheless retain ethical obligations in line with the recommendations described, if not expanded upon further.

FCEM-NE must retain all files related to its work for a period of time the IMM later determines is sufficient to fulfill its duties, or as required by law. The IMM must have full access to all FCEM documents, including information from all market participants and related email correspondence. All final IMM reports and findings must be made public. FCEM-NE should not reserve any right to review prior to publication. To do otherwise, would limit the perceived independence of the IMM. All IMM reports and recommendations should be published on a dedicated stand-alone website run exclusively by and for the benefit of the IMM. The website should be user-friendly, intuitive and maintain digital records for all reports and data. The website should provide contact information for the IMM and be capable of responding to substantive questions posed in response to publicly provided data, notices, press releases, findings or recommendations issued to the FCEM.

Enumerated responsibilities of the IMM should be decided in consultation with stakeholders and community organizations. The FCEM-NE should convene workshops with stakeholder and community groups in order to define the contours of the IMM's remit, and then publish their recommendations and allow comment from the public before finalizing.
As a starting point, the IMM should be required to monitor (1) the competitiveness and efficiency of the market, including the identification of any market manipulation, or design flaws in products, governance or the timing and regularity of auctions, (2) the market's impact on state and regional clean energy and climate goals, particularly determining whether FCEM-NE is achieving the clean energy objectives of the market and if the FCEM needs to be restructured to better achieve such results, and (3) the market's impact on communities, including rates, property impacts, and environmental justice and equity concerns such as whether environmental

[14] Wholesale Competition in Regions with Organized Electric Markets, 125 FERC ¶ 61,071 (Oct. 17, 2008) ("(1) employees shall have no material affiliation (to be defined by the RTO or ISO) with any market participant or affiliate; (2) employees shall not serve as an officer, employee, or partner of a market participant; (3) employees shall have no material financial interest in any market participant or affiliate (allowing for such potential exceptions as mutual funds and non-directed investments); (4) employees shall not engage in any market transactions other than the performance of their duties under the tariff; (5) employees shall not be compensated, other than by the RTO or ISO, for any expert witness testimony or other commercial services to the RTO or ISO or to any other party in connection with any legal or regulatory proceeding or commercial transaction relating to the RTO or ISO or to the RTO or ISO markets; (6) employees may not accept anything of value from a market participant in excess of a de minimis amount, to be decided on by the RTO or ISO; and (7) employees must advise their supervisor (or, in the case of the MMU manager, advise the RTO or ISO board) in the event they seek employment with a market participant and must disqualify themselves from participating in any matter that would have an effect on the financial interest of such market participant.")

justice communities are benefiting equally from the FCEM, including the allocation of clean energy jobs.

The IMM must also be allowed to receive complaints, which, if necessary, may be made anonymously or as protected under applicable state laws. Complaints should be admissible to the IMM for a reasonable period of time after the participant has ended its relationship with the market, as determined by the IMM. Complaints may be filed with the IMM despite any other parallel proceedings. The IMM should also take measures to prevent retaliation by participants against complainants. Where it is found that an individual or market participant engaged in retaliatory conduct towards any complainant, the IMM should be permitted to make recommendations to the FCEM-NE board for the permanent ban, temporary suspension from participation in the marketplace, or any other appropriate action. To ensure effective use of this robust investigatory authority, the IMM must have access to market stakeholders in order to monitor and follow up on any complaints. The IMM should also conduct public outreach to inform stakeholders and the public of its presence and the process for communicating with the IMM. This outreach will also help to strengthen the IMM's relationship with community members who can provide the IMM with crucial information concerning community impacts of the market mechanism. Where relevant, the IMM must not be prevented from intervening in relevant State or Federal proceedings as it deems necessary in effectuating its purpose.

The IMM should provide regular publications, including an annual market report. The publication date for the annual report should take into consideration the time needed by the FCEM to implement any design changes prior to the upcoming annual auction. The IMM should also publish quarterly reports. The quarterly reports need not be as exhaustive or robust as the annual reports. Instead, each quarterly report should include an overview of the market and focus on a rotating topic area, not to repeat within a calendar year. Examples of rotating topics could include evaluating the market's impact on resource types or evaluating the impacts of the market on communities. During the initial three-year implementation period, the IMM should publish interim reports on the status of FCEM implementation and identify any design, or executive roadblocks which have slowed down or precluded effective remediation. The IMM should also be permitted to issue interim recommendations that it deems necessary to improving market processes. As with all IMM reports, such recommendations must be publicly available. The IMM's monitoring obligation should also look inward, and regularly review its own processes and progress to determine whether the IMM is efficiently and well-designed to achieve its purpose. The IMM should include such an analysis in its annual reports, along with recommendations for improvements.

The IMM must be funded appropriately so that it can successfully achieve its remit, including the hiring of any outside consultants with technical expertise relevant in investigating complaints. The IMM's budget and all funding decisions must be public and allow for public comments. Any decisions by the FCEM-NE board not to fund certain line items of the IMM must be supported by reasoning and appealable by the IMM or FCEM stakeholder. While MA DOER's forward thinking and ambitious proposal for a first of its kind FCEM should be celebrated, it should also encourage constructive criticism. Despite ambitious efforts by MA DOER and FCEM-NE staff, with a new market it will be incredibly difficult to predict all the pitfalls and design loopholes prior to implementation. There will undoubtedly be ways to make

the FCEM-NE a better marketplace. A strong role by the IMM is crucial to ensuring that in a rush to solve one problem, we don't create another.

Respectfully submitted,

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February 17, 2023

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Comments of Berkshire Environmental Action Team Regarding DOER's Forward Clean Energy Market Design Proposal

Thank you for the opportunity to comment on this flexible, comprehensive and highly complex proposal. The approach to the FCEM proposed by DOER is a welcome expansion to the currently restrictive markets offered by ISO New England, and hopefully will open up options for clean energy resources to be brought into the markets on a more equal footing compared with fossil fuel assets.

Our questions:

- Has DOER discussed the proposal with ISO New England and NEPOOL? Which committees will be involved if that's going to occur?

- Has DOER discussed the proposal with FERC? If so, what's the status of those discussions? We concur with Conservation Law Foundation's request that "the FCEM should be designed as a non-FERC-jurisdictional market implemented under state authority." That independence is key to ensuring the market's success.

Process Suggestions:

- As new versions of the FCEM market rules proposal come with updates, have a comment period of at least six weeks after each. Such an impactful proposal needs ample opportunity for public input. With such a complex proposal, ample time is needed for communities to fully understand further developments.

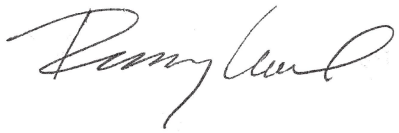
- Webinars to introduce each round of changes should be held early, within a week or two after publishing, and should come in pairs - one during “work-week” hours and one on an evening or weekend - to allow access to a wider cross-section of the public.

- Since online access is not universal, and may be difficult for members of the most vulnerable communities, opportunities for engagement with community members should also include direct conversations, consultant office hours, and meetings with clean energy stakeholders.

Thank you again for the opportunity to comment on this potentially highly impactful proposal.

Respectfully submitted,

Jane Winn, *Executive Director*
Berkshire Environmental Action Team



Rosemary Wessel, *Program Director*
No Fracked Gas in Mass, A Program of Berkshire Environmental Action Team

Cc:
Secretary of Energy and Environmental Affairs, Rebecca Tepper
Climate Chief, Melissa Hoffer
Governor of Massachusetts, Maura Healey

Feb. 9, 2023

Comments on New England Forward Clean Energy Market Proposed Market Rules, Version 1

Frank A. Felder[1]

Summary

The Massachusetts Department of Energy Resources (MA DOER) issued its *New England Forward Clean Energy Market: Proposed Market Rules, Version 1* (FCEM Proposal) in January 2023 with contributions from The Brattle Group and Sustainable Energy Advantage. The FCEM Proposal's aim is to be a trading platform for multiple regional and state clean energy and capacity certificates consistent with the region's wholesale electricity markets, governed by the six New England states, and administered by the ISO-NE or a new affiliate.

The FCEM Proposal is unlikely to fulfill its stated objectives, will take several years to implement even under favorable assumptions, and faces multiple challenges that may further delay or undercut its implementation. The Proposal has the following significant limitations:

- Its claims of enhancing efficiency and maintaining reliability are unsubstantiated and depend on having regional clean energy and capacity certificates that are broadly accepted by states, regionally traded, and linked to cost-effectively reducing greenhouse gas emissions, whereas the FCEM Proposal likely traded products are state-specific and indirectly connected to reducing greenhouse gas emissions.
- It creates a complex web of multiple clean energy and clean capacity certificates overlaid with existing markets for energy, capacity, and emission allowances, subject to federal and state legal and regulatory uncertainty, particularly in the initial years of implementation.
- Its governance structure has yet to be determined, let alone finalized.
- To be implemented, many other vital components must be specified, including the auction mechanism, organizational structure, funding source and budget, credit and market monitoring policies, product definitions, and associated market rules.

Achieving substantial reductions in greenhouse gas emissions reliably and cost-effectively is necessary for the health and welfare of New England residents and creating the broad base of necessary political support. Pursuing a FCEM may be a distraction and counterproductive to achieving these more general policy goals.

The FCEM Proposal is Unlikely to Achieve its Stated Goals

The FCEM proposal makes some strong but unsubstantiated claims regarding achieving its desired goals:

[1] These comments are prepared in response to the Massachusetts Department of Energy Resources request for written public comments on the design proposal by February 17**,** 2023 and only reflect my views and not those of any current or past affiliations. I can be contacted at frankafelder@gmail.com.

1. “The competitive FCEM platform will offer a robust financial commitment sufficient to attract large-scale investments in new clean energy projects, utilize a forward auction structure to drive competition and innovation, and secure clean energy supply at affordable prices” (p. 1).
2. “The FCEM will offer a more competitive and transparent platform for consumers and policymakers to procure their clean energy requirements at lower prices and in a fashion that shifts risks from consumers to producers” (p. 3).
3. “Because clean electricity incentives will be incorporated into a regional market structure, the FCEM will substantially harmonize the investment signals provided by the ISO-NE electricity markets with the investment signals needed to achieve state policy requirements” (p. 3).
4. “Further, the FCEM and new regional clean attribute products transacted through the FCEM will be designed to offer incentives that are in alignment with operational dispatch incentives that meet reliability and policy requirements at the lowest combined cost” (p. 2).

The FCEM Proposal asserts but does not substantiate these claims.[2] Perhaps the assumption is that these claims have already been demonstrated in the multiple FCEM reports and presentations that have been made over the last several years, some of which are identified below in the Reference section.

The underlying premises of these other documents are that regional clean energy and capacity certificates can be developed that are (a) broadly accepted by states and regionally traded and (b) linked to cost-effectively reducing greenhouse gas emissions. The economic value of a regional market for clean energy certificates is that they are accepted throughout the region and that they replace the fragmented and inconsistent, and perennial changing definitions of clean energy certificates among the six New England states. The FCEM Proposal does not, however, solve this underlying issue, and it retains the State-Defined Certificates (Table 2, p. 11) while proposing yet-to-be-defined regional certificates.

Specifically, neither of these assumptions (a) and (b) are valid per the FCEM Proposal. The FCEM effort has been underway for at least five years, and there is yet to be a definition of regional clean energy and capacity products that all six New England states agree upon. Although the Massachusetts DOER had “interviews, comments, and discussions" (p. i) with the other five New England states in developing the FCEM Proposal, it does not claim agreement and, in fact, acknowledges that the Proposal needs to be refined "into a comprehensive market structure" (p. i).

Regarding assumption (a), the FCEM Proposal further underscores just how undetermined these regional product definitions are for the four regional products (New England Renewable Energy Certificate, Clean Energy Attribute Certificate, GHG Marginal Abatement Certificate, and Clean Capacity Certificate).

> "Table 2 summarizes the general description and technologies eligible to sell each regionally-defined FCEM attribute product. The preliminary determination of eligible technologies under each product will be refined by representatives of New England states based on stakeholder input, consistent with

[2] Other elements of the asserted claims 1-4 above are not sufficiently described to understand the basis for the assertion, let alone their veracity. For instance, in claim (1), "robust financial commitment" is not described; in claim (2), how "a more competitive and transparent platform" will be accomplished and compared to what is not discussed; in claim (3), how state requirements are "harmonized" with the region's electricity markets beyond what is occurring now is not offered; and in claim (4) it is not clear which operating dispatch incentives are being referred to (although perhaps it is a reference to restricting the various regional energy-related certificates to non-negative locational marginal prices (LMP), Table 2, p. 11), and why this occurs both reliability and at the lowest combined cost is not stated.

the FCEM guiding principles to maximize the benefits that the FCEM can offer to the New England states" (p. 10).

Regarding assumption (b), the FCEM Proposal "does not include enhanced greenhouse gas (GHG) or carbon dioxide emission pricing but is designed to be forward-compatible with higher GHG pricing that may rise through other states, regional, or federal policies" (p. 2). Pricing GHG emissions is generally accepted (by economists at least) as the most cost-effective way to reduce them.[3] Putting aside what "forward-compatible" means or why it is the case, at best the FCEM does not conflict with efficient GHG pricing.

The FCEM Proposal does contain a GHG Marginal Abatement Certificate using a "pre-defined standardized abatement rate" to reflect the marginal GHG reduction (Table 2, p. 11), which is determined three years in advance to accommodate the timeline of the FCEM auction (p. 12). The accuracy and cost-effectiveness of abatement certificates depend on the locational marginal emission (LME) rate and the administratively determined abatement rate. Moreover, it needs to be established whether these certificates will reduce GHG emissions beyond what would occur under the Regional Greenhouse Gas Initiative (RGGI).

The FCEM Proposal creates a complex web of multiple clean energy, and clean capacity certificates overlaid with existing markets for energy, capacity, and emission allowances, subject to federal and state legal and regulatory uncertainty, particularly in the initial years of implementation. Besides creating four new clean energy certificates, the FCEM Proposal has substantial variations for many of these certificates, such as three possibilities regarding resources (any preference for new or new required) (Table 5, p. 29) and accommodating phased entry of new clean energy projects such as large-scale offshore wind (p. 33). Moreover, some products are for multiple years, such as the "new resource price lock-in (p. 4) and the "10-year demand volume commitments" (p. 4), and allow up to ten distinct demand bid segments for some certificates (p. 28). The availability and definitions of these certificates could change annually (p. 9), new ones could be proposed (p. 10), and there would also be the existing and potentially changing state-defined products. The auction would accommodate both buyers and sellers indifferent to buying or supplying several cross-products (p. 24, Figure 4 Notes; p. 42), requiring the auction mechanism to track these requests and the substitutability and non-substitutability of different products. Furthermore, sellers can specify whether their offers can be partially cleared, including within segments (p. 42) and whether their offer is contingent on receiving a multi-year price and volume lock-in (p. 36). The FCEM Proposal acknowledges that multiple runs of the auction may be needed, a "clearing run" and a "pricing run" to work (p. 48, footnote 31).

The result of all these market elements is potentially illiquid markets that result in volatile prices that are hard to interpret and not signal efficient future buying and selling behavior given the complex interaction among multiple certificates with the wholesale electricity markets and ever-changing products and definitions. The FCEM Proposal permits the banking of certificates, which would help reduce price volatility from "end price effects" (p. 21, footnote, 21), but would not completely address all the causes of

[3] The FCEM Proposal claims to maximize social surplus (p. 46 and Equation 3, p. 48) but, assuming that the auction mechanism is workable, it is doing so in a narrow sense of the term "social surplus" by maximizing the difference that buyers and sellers place on their transactions traders that participate in the auction. This is not the definition of "social surplus" or "social welfare" economist use that applies to the relevant market as a whole. It is from this broader definition of social surplus that the economic finding that pricing greenhouse gases at their social cost, colloquially the "social cost of carbon", maximizes social surplus or welfare.

illiquidity. Some of the desired features in the FCEM Proposal introduce mathematical difficulties, "non-convexities," into the problem that makes it difficult to solve in theory let alone in practice.

The FCEM Proposal Will Take Multiple Years to Implement and Faces Implementation Challenges

Since November 2017, the FCEM has been under discussion in New England (see date of Brattle et al. presentation in the Reference section). Assume that all six New England States agreed on January 1, 2024, the governance structure, certificate definitions, stakeholder processes, market monitoring, mitigation, and budgeting and administration; at best, the first 3-year forward auction would occur in 2025, with delivery in 2028. This schedule assumes a very optimistic one year to standup a board of directors, create an organization, workout the myriad of legal and jurisdictional issues between the states and the Federal Energy Regulatory Commission (FERC) and the FCEM and the ISO-NE, and test and validate its complicated auction mechanism.

This schedule is optimistic for several reasons. First, the most compelling one is that even after five years of discussions, the FCEM Proposal has major, open-ended questions about its governance, product definitions, and auction mechanism. The FCEM Proposal does not provide a reason to believe that in 2023, six states with different approaches to clean energy policy, different politics, and priorities will suddenly agree upon a meaningful regional solution that garners even some of the benefits the FCEM Proposal claims.

Second, the list of legal agreements that would need to be reviewed and potentially modified is extensive: the region's Open Access Transmission Tariff (OATT), the NEPOOL Participants Agreements, and the NESCOE Memorandum of Understanding (p. 8), the first two require FERC approval along with extensive procedural and time-consuming process requirements. "Through the market would be FERC-jurisdictional, state representatives would take the primary role in developing and approving new FCEM market rules through appointing the six members of the FCEM-NE Board of Directors" (p. 7). This approach is a significant reordering of the political power structure of the region's electricity markets. Regardless of what one thinks of this current governance structure, changing it to shift power from the FERC to the states and from NEPOOL to the states will take work.

Third, as noted in the prior section, the auction mechanism is complicated, given the multiple products and their variations. The FCEM Proposal provides a qualitative description of the FCEM Auction Clearing Optimization Formulation (Equation 3, p. 48). Until the actual mathematical formulation is provided (which requires finalizing certificate products and definitions), tested to demonstrate that it is both solvable under a wide range of market conditions and strategic offering and bidding behavior and scalable to being implemented, there is little reason to believe that this is auction is workable.

Fourth, the startup financing of the FCEM organization needs to be specified. The FCEM Proposal states that it "will be funded through a surcharge on transactions with the FCEM" (p. 9). Still, these transactions will not occur after at least four years, one year of organizational startup, and three years for the first forward capacity market to settle financially. Taking the annual cost of RGGI as a rough guide, which is $3.4 million for 2023[4], $13.6 million would be needed to start up the FCEM, assuming that everything goes to plan on a very tight schedule. The RGGI budget estimate may need to be higher, given the complexities of the FCEM auction design discussed above. The FCEM Proposal also envisions

[4] Regional Greenhouse Gas Initiative, Inc. Meeting of the Board of Directors, December 2, 2022, p. 33.

a trial phase "to serve modest volumes of demand in the initial years" (p. 2). Suppose there are insufficient FCEM transactions to recover the startup and ongoing expenditures. In that case, a vicious cycle could occur in which more and more costs are allocated to fewer transactions grinding them to a halt.

There are several other significant implementation challenges. The FCEM's Board of Directors would substantially influence the pricing and payments to many clean energy investments requiring extensive and transparent conflict of interest protections. Developing a Market Monitoring and Mitigation capability for many new products that interact in complex ways with each other and with wholesale electricity products would be a new endeavor. Cross-product market manipulation is a significant issue within wholesale electricity markets, and the FCEM would introduce more opportunities for such behavior. Credit policies, stakeholder engagement processes, and coordination with the ISO-NE must also be developed and honed.

The FECM Proposal characterizes itself as "draft rules" (p. 1), which is inaccurate. It is a framework with many open-ended issues to be agreed upon in principle, let alone finalized at the level of details needed to be market rules, such as NEPOOL's Market Rule 1, as the FCEM Proposal intends (p. 8).

Conclusion

The clean energy transition of New England's electricity and broader energy sector requires a comprehensive and workable policy so that it can be accomplished economically and reliability. The FCEM Proposal, while directed at these goals, falls short due to being incomplete, vague, and fluid while also being potentially unworkable and counterproductive. New England and the broader Northeast region have in place the appropriate policy framework consistent with the design of their wholesale electricity markets to achieve decarbonization goals efficiently and reliably by further reducing the regional cap on carbon dioxide emissions over time.

References

Brattle Group, Transition to New England's Future Grid, Forward Clean Energy Market: A Market-based Option for States to Achieve their Clean Electricity Goals, July 2020 (with links to full studies)

Brattle Group and Coalition Partners, A Dynamic Clear Energy Market in New England, November 2017

MA DOER, New England Forward Clean Energy Market: Proposed Market Rules, Version 1, January 2003

Regional Greenhouse Gas Initiative, Inc. Meeting of the Board of Directors, December 2, 2022

See also: https://www.iso-ne.com/committees/key-projects/new-englands-future-grid-initiative-key-project/

Comments on Forward Clean Energy Market Design Proposal

We appreciate the opportunity to submit comments on the Forward Clean Energy Market Design Proposal ("FCEM Proposal") released in January 2023 by the Massachusetts Department of Energy Resources ("DOER").[1] We have been extensively involved in the design and operation of the ISO New England ("ISO-NE") wholesale markets since their inception, with a focus on the ISO-NE capacity markets. We have over 40 years of combined professional experience.

We preface our remarks with an acknowledgment of the importance that the DOER has placed on turning worthy decarbonization goals into tangible action with the FCEM Proposal. The proposal recognizes the crucial role that wholesale power markets will play in the transition to a clean power grid and reflects a significant amount of time and effort in creating a new market that incentivizes low-carbon technologies. The region must make progress on tangible solutions if it is going to achieve its stated clean energy goals. The FCEM Proposal is an important step forward in that direction.

While the question of governance as it pertains to the proposed market is of utmost importance, our comments are focused on market design issues. The FCEM Proposal, as detailed in the January 2023 document, is described as "market rules." However, the document reflects more of a framework, and we recognize it is a starting point in designing effective market concepts. As such, many design elements require more clarity. To turn this framework into a market design that achieves its stated objectives, numerous details must be discussed and considered such that the market is implementable.

The development of the Forward Capacity Market ("FCM") in New England provides important lessons that should not be forgotten in future discussions. Those who were involved in the design of the FCM know that it took numerous meetings among dozens of stakeholders with different business interests and objectives over almost two years to arrive at a compromise that eventually became the FCM. Designing markets based on compromise is challenging. The results are typically a collection of accommodated stakeholder requests to achieve "buy-in."

The danger with this approach is that the market can become overly complicated, may not attract investment as a result, and may fail to meet its stated objectives. The FCM, as a result of negotiation and compromise, became a highly complex market, arguably more complicated than necessary to capture the majority of the benefits that a competitive market structure can offer. The FCEM Proposal appears to be headed down a similar path.

The proposed FCEM conceptual design is unnecessarily complex. The proposed design contemplates numerous types of "clean energy products" for new and existing resources, new resource price lock-in options, long-term demand volume commitments with partial clearing mechanisms, and phase-in

[1] The views expressed in these comments are solely the current views of Danielle Powers and Meredith Stone ("the Authors") and do not necessarily reflect the views of Concentric Energy Advisors, Inc., its affiliates, subsidiaries, and related companies, and the clients of Concentric Energy Advisors. The Authors' views are based upon information the Authors consider reliable at the time of publication.

flexibility over a resource's first year of operation. With dozens of permutations in the auction clearing, it is hard to imagine how auction optimization can be achieved.

In addition, hundreds of design details must be addressed, including: i) new versus existing capacity definitions; ii) treatment of capacity increases/decreases prior to the commitment period; iii) mechanisms to shed obligations; iv) default penalties; v) financial assurance requirements, etc. Underneath every design element are numerous design details that should be expected to take years, not months, to discuss and resolve.

Second, determining and verifying eligible capacity and energy to be provided via the clean product attributes is problematic. A forward market is inherently challenging because resources are "qualified" to sell products "x" years before delivery. This means that a new resource must submit a critical path schedule against which they will be monitored to ensure that they are operational in time for delivery at the start of the commitment period.

Monitoring progress against project milestones and determining the ability of a resource to meet its obligation, with genuine financial consequences for the resource owner and the market, has proven to be challenging in the current FCM (e.g., delays in the commercial operation date of Footprint Power) and will be equally challenging in the FCEM.

The interaction between the FCEM and the FCM is not addressed in the FCEM proposal and must be carefully considered. The link between these two markets introduces potentially significant challenges and will most certainly impact the functioning of the FCM as it currently exists. For example, the FCEM Proposal includes a provision that requires any resource that receives a clean capacity certificate to offer into the FCM at a $0/kW-month price to ensure it also receives an FCM capacity obligation. This will most certainly impact the efficiency of, and outcomes in, the FCM.

Numerous other questions regarding the interaction between the FCM and FCEM must be answered, e.g., will obligations taken on in the FCEM be netted from the Installed Capacity Requirement so that the FCM becomes a residual market? Are revenues from the FCEM netted from FCM revenues, or vice versa, when reviewing offers in the markets? What does Net CONE and Net Clean CONE now mean? How will participants know the FCM's clearing price when formulating their FCEM offers?

One of the biggest questions that must be answered is how to ensure the competitiveness of the FCEM. How will the market design ensure that self-scheduled resources don't suppress prices? How will net going forward costs and risk premiums be calculated across the ISO-administered markets and the FCEM? What mechanisms and price reviews will be put in place to ensure the market is competitive?

The proposed FCEM design, as envisioned, contains all of the most challenging elements of the FCM, with additional elements that may make the market so complicated that competition by developers and clean-energy resource suppliers will likely be substantially limited. The time and resources required to turn the FCEM Proposal into a workably competitive forward market design will require extensive resources, tens of millions of dollars in capital investment, and several years to come to fruition. If the DOER and the region's stakeholders want to pursue a clean energy market, we urge the parties involved to focus their efforts on designing a market that captures a majority of the

benefits of competition without adding so many market design elements that the efficacy of the market is significantly compromised. Keeping the design simple and limiting unnecessary complications will enhance the potential benefits of the proposed FCEM market for the region's consumers.

About Concentric Energy Advisors:

Concentric Energy Advisors specializes in management consulting and financial advisory services focusing on the North American energy and water industries. Through its subsidiaries, CE Capital Advisors and Concentric Advisors ULC, Concentric provides capital market advisory support and consulting services in Canada.

Dear Director Troy,

Thank you for the opportunity to provide comments on the Forward Clean Energy Market Proposal from the Massachusetts Department of Energy Resources. My name is Diane Keefe. I am a resident of Norwalk CT and an angel investor in climate solutions start ups through Ameerican sustainable Business Network. I am writing in the hope that the proposed Forward Clean Energy Market will incorporate less bias toward fossil fuel reliance and more innovative ways to incorporate demand response specialists, solar and wind plus storage and Community Choice Aggregators (CCA's). I am a member of the CT Clean Energy Network and the Fix the grid study group and believe that a regional regulatory framework like RGGI not FERC regulation has the best chance of moving us toward a just transition.

Having worked on Wall Street for over three decades I would like to see more internalization of costs in this new marketplace. For example defining reliability in the number of days the utility systems have outages favors supportin a centralized system that may be inefficient relative to meeting the state's EJ goals. As an example my sister who is a 70 year old Massachusetts homeowner sadly purchased a $15,000 diesel generator instead of investing in solar plus battery plus heat pumps because she fears a winter outage. We can and must do better since most people don't have $15,000 to buy a polluting diesel generator.

It is great that the State of Massachusetts has taken the initiative to reform NEPOOL and ISO's rules. However, I am concerned that states should not be allowed to provide energy efficiency promotional funding to local utilities. The merits of energy efficiency and investing in solar leases are hidden in the small print by utilities charged with promoting clean energy. I have a neighbor with a middle income family of three who recently paid $880 for a monthly Eversource utility bill. These costs (24 cents a kwh) are simply unsustainable. I hope the new marketplace can provide advantages to solar providers in microgrids that deliver energy reliably down to the neighborhood level. The frequency of storms might require that we no longer rely as much on centralized power delivery.

Thank you again for the opportunity to comment on the Forward Clean Energy Market proposal. I look forward to continuing to follow and engage with you all on the FCEM as this proposal evolves.

Sincerely,
Diane Keefe

Norwalk CT

917 312 4601 mobile

February 17, 2023

Joanna Troy
Director, Energy Policy and Planning at Commonwealth of Massachusetts
100 Cambridge St., 9th Floor,
Boston, MA 02114

RE: COMMENTS OF CENTER FOR RESOURCE SOLUTIONS (CRS) ON THE MASSACHUSETTS DEPARTMENT OF ENERGY RESOURCES (DOER) FORWARD CLEAN ENERGY MARKET (FCEM) DESIGN PROPOSAL

Dear Joanna Troy:

CRS appreciates this opportunity to provide feedback on the FCEM Design Proposal ("Proposal"). Our comments are primarily focused on Section 2 of the Proposal, "Product Definition." CRS has been deeply involved in renewable energy and greenhouse gas (GHG) accounting across the U.S. and we are concerned that future market design frameworks and elements could disrupt existing renewable energy markets and limit their growth. We understand that the Proposal is intended to secure clean energy supply. Our comments pertain to the overall viability and desirability of different certificates within the Proposal and their impacts on existing markets and programs.

BACKGROUND ON CRS AND GREEN-E®

CRS is a 501(c)(3) nonprofit organization that creates policy and market solutions to advance sustainable energy. CRS provides technical guidance to regulators, utilities, and others on renewable and clean energy policy and program design, accounting, tracking and verification, market and program interactions, and consumer protection. CRS also administers the Green-e® programs. For over 20 years, Green-e® has been the leading independent certification for voluntary renewable electricity products in North America. In 2021, Green-e® certified retail sales of over 110 million megawatt-hours (MWh), serving over 1.3 million retail purchasers of Green-e® certified renewable energy, including over 309,000 businesses and more than a million residential customers.[1] CRS recently launched the Clean Energy Accounting Project (CEAP), which develops standardized, stakeholder-reviewed clean energy and GHG emissions accounting guidance addressing outstanding questions in voluntary and regulatory markets.

[1] See the 2022 (2021 Data) Green-e® Verification Report here for more information: https://resource-solutions.org/g2022/

Concern with Creating Multiple Instruments

It is critical that markets for renewable energy be able to continue functioning under a new wholesale framework, which requires 1) maintaining verifiable and exclusive retail transactions and delivery of renewable energy, and 2) full aggregation of renewable generation attributes and exclusive retail delivery claims. The introduction of three new instruments (New England REC (NE-REC), New England Clean Energy Attribute Certificate (NE- CEAC), and New England Greenhouse Gas Marginal Abatement Certificate (NE-GHG))[2] raises concerns related to double counting of generation from renewable facilities and disaggregation of Renewable Energy Certificates (RECs), either of which could reduce overall regional demand for renewable energy. **We recommend preserving the aggregation of generation attributes in a single instrument, e.g., Generation Information System (GIS) certificates, to avoid double counting and protect the integrity of renewable energy markets.**

Avoiding Double-Counting

New England needs a clear and consistent mechanism for exclusive retail delivery of renewable energy. RECs and other GIS certificates were created to prevent double counting of renewable energy consumption by, or delivery or sale to, multiple consumers, or more than once by a particular consumer. If there are multiple retail instruments, then double counting (delivery to multiple customers) must be avoided—e.g., a single instrument for a given unit of generation. It's important that there be no double counting within each certificate type (each certificate is retired only once), but also that there be no double counting of each unit (MWh) of generation (the aggregated group of energy attributes) since the same unit of generation and all attributes can only be delivered/used once by a single party.

Using the existing New England Power Pool Generation Information System (NEEPOL-GIS) for tracking multiple instruments may mitigate some risks of double counting, but the details of issuance, transfer, and retirement of the proposed instruments will be important to ensure that retail claims remain clear and consistent. Under the Proposal, "[t]he NE-REC, NE-CEAC, NE-GHG, and state-defined REC products are all MWh-based clean electricity attribute products and are therefore mutually exclusive (i.e., 1 MWh of generation can be retired in satisfaction of consumer demand or state mandates under only one of these mutually exclusive products)."[3] The Proposal should clarify what is meant by "mutually exclusive." We understand this to mean that these instruments cannot be sold separately from one another for the same MWh of generation. **We recommend that different energy instruments issued for a single MWh not be able to be sold separately.**

[2] New England Forward Clean Energy Market PROPOSED MARKET RULES, VERSION. (pg. 12-14). Available at: https://www.mass.gov/doc/ma-doer-fcem-design-proposal/download
[3] New England Forward Clean Energy Market PROPOSED MARKET RULES, VERSION. (pg. 12). Available at: https://www.mass.gov/doc/ma-doer-fcem-design-proposal/download

Maintaining "Regulatory Surplus" for the Voluntary Market

Market design should avoid harm to voluntary renewable energy markets. It should maintain pathways to "regulatory surplus" for the voluntary market without significantly increasing the cost of voluntary renewable energy. Voluntary renewable energy—renewable generation purchased voluntarily by businesses and individuals to meet their own goals—has historically not been used to meet governmental targets, laws, or legal mandates. The voluntary market stands apart from and builds on compliance efforts. This separation enables the voluntary market to make an incremental difference often referred to as "regulatory surplus." Where renewable energy sold into the voluntary market does not have an effect beyond compliance, particularly compliance related to GHG emissions, this changes the effectiveness of voluntary renewable energy as a climate change solution for participating companies and individuals. Under the Proposal, the attributes of generation, specifically the avoided emissions value, are disaggregated, i.e., split into multiple instruments. Disaggregating the attributes of generation makes it more difficult to verify that generation is surplus to regulation, as instruments representing different attributes of the same MWh could be used to evaluate compliance under different programs. **If it is unclear that voluntary renewable energy has an effect beyond compliance, voluntary demand for renewable energy may decline.**

NE-REC, NE-CEAC Concerns

The proposed NE-REC, NE- CEAC, and certificates disaggregate attributes in ways that threaten the integrity of voluntary and compliance markets. Under the proposed rules "NE-RECs and NE-CEACs will not be issued for energy injections during real-time pricing intervals when the resource node has a negative locational marginal price (LMP)."[4] Sixteen[5] U.S. states, multiple federal organizations, as well as the NEEPOL-GIS[6] recognize that RECs represent one MWh of generation and can be used to track and transact renewable electricity on the grid. This is regardless of LMP at the time of energy injection. Certificates used for retail transactions and delivery/use claims should be issued for every MWh of generation.

NE-GHG Certificate Concerns

Several aspects of the NE-GHG certificate also pose risks to the integrity of renewable energy markets:

- Under the Proposal, NE-GHG certificates are not issued on a per MWh basis, but only issued when enough MWhs have been injected into the grid to cause a predetermined amount of

[4]New England Forward Clean Energy Market PROPOSED MARKET RULES, VERSION. (pg. 12). Available at: https://www.mass.gov/doc/ma-doer-fcem-design-proposal/download
[5] See Jones, T. et al. (2015). The Legal Basis of Renewable Energy Certificates. Center for Resource Solutions. https://resourcesolutions.org/wp-content/uploads/2015/07/The-Legal-Basis-for-RECs.pdf
[6] NEPOOL-GIS: NEPOOL-GIS 2015, Appendix 1.1 p. 1 http://www.nepoolgis.com/wpcontent/uploads/sites/3/2015/01/GIS-Operating-Rules-effective-1_1_15.doc

marginal avoided emission, called the "standard abatement rate."[7] Not issuing certificates for each MWh of generation creates uncertainty surrounding which MWhs receive certificates which may confuse market participants and have a chilling effect on renewable energy purchasing.

- It is unclear what claim the NE-GHG certificate will convey or for what purpose it can be used. As described, it cannot be used to convey a clean energy supply claim. It should not be used to change the reported emissions attributes of generation. While certificates are commonly used to define the attributes of delivered/consumed electricity, there is no history of certificate use to *change* the attributes of reported generation, since that can be directly measured. This Proposal should make explicit that, as currently defined, this certificate does not represent clean energy supply and elaborate on the intended use of this certificate.

- Under the Proposal, the NE-GHG certificate disaggregates the avoided emissions value of instruments that are currently used to substantiate renewable energy delivery claims. This puts the NE-GHG certificate in conflict with existing REC and GIS certificate definitions. The states served by ISO New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont)[8] all have REC and/or GIS certificate definitions which state that RECs represent one MWh of renewable generation. This definition de facto includes avoided GHG emissions, as avoided emissions are part of every unit of generation. The avoided emissions attribute of a certificate is especially important for states to achieve their respective GHG reduction goals with renewable energy programs. If multiple entities are making claims to the different attributes of the same unit of generation, it would unnecessarily complicate voluntary and compliance markets and slow GHG reduction efforts. The avoided emissions attribute of generation should not be split into a certificate that could be sold separately from other attributes of generation for the same MWh.

- There is further risk of the NE-GHG certificate being inappropriately used to convey an emissions reduction claim or conflated with carbon offsets. Since the NE-GHG certificate is an amount of avoided emissions awarded to non-emitting generators, storage, and demand response, it is not equivalent to reductions beyond a baseline scenario (which require proof by an additionality test)[9] and should not be used for net adjustments to reported emissions. The

[7] New England Forward Clean Energy Market PROPOSED MARKET RULES, VERSION 1. (pg. 12). Available at: https://www.mass.gov/doc/ma-doer-fcem-design-proposal/download
[8] See Jones, T. et al. (2015). The Legal Basis of Renewable Energy Certificates. Center for Resource Solutions. https://resourcesolutions.org/wp-content/uploads/2015/07/The-Legal-Basis-for-RECs.pdf.
[9] Environmental Protection Agency, Green Power Markets. Market Instruments. Available at: https://www.epa.gov/green-power-markets/market-instruments

Proposal should clarify that this instrument is not an offset and should not be used for carbon reduction claims.

Recommendation

To achieve the objectives of the Proposal and maintain clear and consistent retail delivery claims and avoid double counting, we recommend, as an alternative to the Proposal, that additional information be added to GIS certificates (such as avoided grid emissions or LMP at the time of injection) to incentivize and enable purchasing of attributes that align with buyer's preferences or new requirements.

Concerns with Clean Capacity Certificates (NE-CCCs)

Under the Proposal, NE-CCCs will "correspond to the unbundled attribute reflecting capacity delivered into the ISO-NE FCM and supplied by non-emitting resources. The new NE-CCC product will create an opportunity for states and consumers to dictate and certify that a particular share of their total resource adequacy requirements must be served by non-emitting clean electricity resources."[10] It is important that this certificate not be conflated with RECs/GIS certificates used for renewable energy delivery claims. Based on REC definitions used throughout New England, referring to capacity as an "attribute" could cause confusion with energy attributes included in RECs.

Recommendation

Add clarifying language that NE-CCCs are for use toward resource adequacy requirements and do not convey attributes of energy generation for retail delivery claims.

Please let me know if we can provide any further information.

Sincerely,

_____/s/_____
Lucas Grimes
Manager, Policy

[10] New England Forward Clean Energy Market PROPOSED MARKET RULES, VERSION. (pg. 12). Available at: https://www.mass.gov/doc/ma-doer-fcem-design-proposal/download

February 17, 2023

Joanna Troy
MA Department of Energy Resources
100 Cambridge Street #1020
Boston, MA 02114

RE: DOER Forward Clean Energy Market Design Proposal

Dear Ms. Troy,

On behalf of the undersigned organizations and our thousands of members and supporters across the Commonwealth, we appreciate the opportunity to submit comments in response to the Department of Energy Resources' (DOER) Forward Clean Energy Market (FCEM) Design Proposal.

We appreciate DOER's leadership on this issue. In recent years, we have been thrilled to see the New England states demonstrate coordinated leadership on regional issues through the New England Energy Vision process. This vision has led to important progress on critical regional initiatives such as this regional market reform and the Regional Transmission Initiative.

ELM and Mass Audubon submitted comments to this docket through the New England for Offshore Wind coalition specific to the market design proposal's potential implications for offshore wind. This comment letter is meant to be additional to those comments. We support the New England States Energy Vision's goal to collaborate regionally to design a market that appropriately values clean energy resources and that aligns with states' climate and clean energy requirements. However, we have some concerns about the FCEM proposal and its implications for renewable energy siting, specifically regarding solar energy.

With some of the nation's highest costs for electricity, New England must minimize energy costs as we push for decarbonization. Reforming our wholesale electricity markets so that they properly value and integrate clean energy could be an important tool to achieve that goal over the long term. However, a short-term and solely cost-driven approach could be problematic in the context of renewables. Clean energy resources have different benefits and attributes and are not easily comparable to one another by cost.

In the case of solar generation, ground-mounted utility-scale solar is typically cheaper than rooftop solar or solar built on disturbed lands. We recognize that we will need some deployment of utility-scale solar to reach our climate goals. However, we are concerned that an FCEM that only considers cost would over-emphasize ground-mounted solar and exacerbate acute siting challenges that are already hampering the success of our region's goals for clean energy deployment. Our region's natural and working lands provide valuable benefits including biodiversity, climate resilience, and sequestration – we must use them well. We urge DOER to consider how the FCEM would address this issue and consider mechanisms that would appropriately value the contributions of solar on already developed or degraded lands and align with guidelines from DOER's solar siting study.

Thank you for the opportunity to comment on this proposal for a regional Forward Clean Energy Market design. We commend Massachusetts' leadership in issuing an initial proposal and look forward to engaging in this conversation across the region with partners in other New England states. We look forward to working with you to ensure future regional wholesale market designs that appropriately value all clean energy resources.

Sincerely,

Susannah Hatch
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Steve Long
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EVERSOURCE ENERGY

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781-441-8258

February 17, 2023

Dear Ms. Troy:

Thank you for the opportunity to comment on the New England Forward Clean Energy Market (FCEM), Proposed Market Rules, Version 1 proposed by the Massachusetts Department of Energy Resources (DOER). Eversource is supportive of a market-based mechanism to incentivize the development of clean energy resources but offers the following points for consideration:

1. **The current approach is unsustainable.** As you know, clean energy laws today require that electric distribution companies (EDCs) hold competitive solicitations to facilitate the financing of new clean energy resources. While EDC balance sheets and attractive credit ratings enable the financing of these clean energy projects at lower costs, the resulting power purchase agreement (PPAs) place significant long-term financial obligations on the EDCs. This approach to incentivizing development of new clean energy resources is not sustainable for the long-term financial health of the EDCs absent compensation to the EDCs for the use of their balance sheets.

2. **FCEM has many open questions.** Eversource's evaluation of DOER's FCEM Proposed Market Rule—and other studies such as the Pathways Study: Evaluation of Pathways to a Future Grid (Analysis Group)—leaves several unaddressed questions:
    a. Will an FCEM produce adequate levels of firm revenues to support the financing of new large-scale clean energy resources?
    b. Will an FCEM replace PPAs and the Renewable Portfolio Standard as the Commonwealth's approach to facilitating the financing of new large-scale clean energy resources?
    c. Will there be enough demand for FCEM products to make the creation of a new market, establishment of a market administrator, and integration with existing enforcement mechanisms worthwhile?
    d. Are the potential cost increases associated with merchant finance outweighed by the benefits of an FCEM? For example, a "merchant" offshore wind project, assuming it could be financed, would result in a higher cost of capital financing which would then flow through to customers in the form of higher electric bills.

3. **Focus on winter reliability and affordability.** Eversource remains concerned that New England is dependent on natural gas and oil to meet our power needs during winter until the large-scale clean energy resources including offshore wind and hydropower under development reach commercial operation. In the event of a severe cold spell, there is a risk that New England will not have sufficient natural gas to meet power supply needs for the region. Moreover, consumers in New England are experiencing high electricity and gas costs given supply constraints and global price pressures. Eversource contends that collaboration among New England states to establish an energy bridge portfolio is the only path to lower energy costs during the transition to a clean energy future. An energy bridge portfolio would encompass a range of tools to alleviate supply and demand imbalances, including bringing a reserve of firm fuel supply to the region to remove the uncertainty that underlies the high and volatile energy prices. Would the FECM be directed to eliminate the reliability problem, or would some other mechanisms be needed?

4. **Resolve open questions regarding FCEM.** In conclusion, Eversource believes that additional analysis demonstrating an ability to facilitate financing absent a PPA and eliminate the reliability problems is necessary before adopting a FCEM.

Thank you for the opportunity to comment and we look forward to participating in the stakeholder process resulting from the release of DOER's FCEM Proposed Market Rules.

Sincerely,

James G. Daly
Vice President, Energy Supply

Leapfrog Power, Inc. (Leap) appreciates the ability to provide feedback on the New England Forward Clean Energy Market as proposed by Massachusetts Department of Energy Resources. Leap's platform connects distributed energy resources (DERs) to energy markets, making it easy for smart energy technologies of all kinds to support the grid and get paid for it. By aggregating across a wide array of flexible loads, Leap supplies zero-carbon virtual power plants to help balance the grid. Leap's software-only solution enables its technology partners to generate multiple new revenue streams while creating a more flexible, resilient grid powered by renewable resources.

Leap applauds the DOER's efforts to accelerate the clean energy transition through an innovative, market-based mechanism for clean energy resources. Stacking clean energy credits onto capacity, energy, and other products in ISO-NE's wholesale market will allow businesses like Leap to deliver more value from our resources while simultaneously encouraging investment and growth of clean energy assets, like demand response resources, in ISO-NE. Leap recently started participating in the DOER's Clean Peak Standard program as well, and is eager to be able to further contribute towards the clean energy transition in New England.

Leap believes that market-integrated demand response is an integral part of the clean energy transition, providing the flexibility required for a fully renewable future. Demand response resources or distributed energy resources, are quicker and less costly to integrate into the grid compared to large-scale renewable generation. As such, Leap encourages the DOER to include both products in the current proposal that demand response can provide, the Greenhouse Gas Abatement Certificate and the Clean Capacity Certificate. Leap views these products as more innovative and inclusive than the Renewable Energy Certificate or the Clean Energy Attribute Certificate as they allow for a wider variety of resources to participate and provide services necessary to combat climate change through the clean energy transition.

In reviewing the proposal, Leap has a few questions regarding the design of the market:

Implementation

- When is the proposed implementation of the FCEM?
- When would the 15-year price lock be reduced to 7?

Flexibility

- Given the three-year forward nature of the market, will there be incremental auctions that allow obligations to be added/shed?
- How much geographic specificity will be needed? Given the three-year forward nature of the market, Leap believes it is appropriate that little geographic specificity is needed to initially participate in the market.

- What is the minimum aggregation size or a demand response resource required to meet the GHG abatement certificate or clean capacity certificate? Leap supports a smaller aggregation size that would allow for residential and small commercial customers to participate.
- Can participants opt out of the 15 or seven year price lock and instead take an annual clearing price?
- Can participants submit bids of varying lengths?

Liquidity

- How will the FCEM ensure liquidity in the market? For example, will there be a minimum procurement requirement for some buyers for some products?

Leap answers to Stakeholder Questions

Are there key aspects of the FCEM Design Proposal that have advantages or disadvantages over the status quo?

Relative to closed-bid RFPs, a couple key advantages of the FCEM are access to a broad geographical area and an open, competitive marketplace. Additionally, similar to the Clean Peak Standard, the FCEM allows for the procurement of a deeper level of attributes, the clean capacity credits, that are necessary for the clean energy transition as intermittent renewable penetration increases.

Will there be sufficient interest from both buyers and sellers for an FCEM?

We have no doubt that there will be interest from sellers, as long as there is liquidity in the market and there are willing and active buyers. We believe having sufficient interest amongst buyers is crucial to the success of the FCEM.

Are there other clean energy market reforms that could be considered as alternatives or operate with an FCEM?

Leap believes the Clean Peak Standard (CPS) should operate alongside the FCEM. Although there is potential for CPS to be incorporated in the FCEM, we think it is appropriate that the FCEM stick with the current four proposed products for now.

How should DOER proceed to engage with regional stakeholders to progress clean energy market reforms?

It is imperative that DOER continues to engage with New England states and with ISO-NE. If States do not become significant buyers in the market or if ISO-NE decides to fold a similar clean energy credit system into its wholesale market, the likelihood of success of the FCEM will

diminish. In order to encourage market participation, States will need to be key buyers initially and the FCEM should be designed with their needs/concerns in mind. Similarly, the FCEM should provide additional value to the wholesale energy market and not infringe on ISO-NE market rules. Though we will be in a better position with the phase-out of Competitive Auctions for Sponsored Policy Resources (CASPR) in ISO-NE's Forward Capacity Market, we'd like to ensure we maintain that state. If participation in the FCEM were to infringe upon the ability to fairly compete in the wholesale market, that would be a deterrent to participation in the FCEM.

Troy, Joanna K (ENE)

From: Marya Axner <maryaaxner@gmail.com>
Sent: Friday, February 17, 2023 10:43 AM
To: Troy, Joanna K (ENE)
Subject: Comments on proposal of the Forward Clean Energy Market

Dear Director Troy,

Thank you for the opportunity to provide comments on the Forward Clean Energy Market Proposal from the Massachusetts Department of Energy Resources. My name is Marya Axner and I am an activist in the Fix-the-Grid Network and in Jewish Climate Action Network. I'm excited about the potential this new market holds for the regional transition to clean energy and am grateful for the DOER's initiative in providing a formal proposal for this new market.

I also have a few areas of concern.

I think the most important issue is that the New England States should have the authority to make the decisions about the FCEM rather than NEEPOOL or FERC. I believe that NEEPOOL and FERC are not transparent, are not genuinely open to public input, and are not democratic institutions. For example, the voting structure of NEEPOOL does not allow for the authentic representation of residents. The balance of decision making power lies largely in the hands of fossil fuel companies and other powerful interests rather than ratepayers.

I also think the DOER should allow more time for public education and feedback on this market before it is established. Most people know nothing or very little about the market and it would be helpful to hear from the public.

Lastly, I want mechanisms to ensure that environmental justice concerns are built into the decision making process of the FCEM and I've read that that is not the case.

Again, I appreciate the work of the Mass DOER on proposing the FCEM. With the input of clean energy advocates of various disciplines, energy developers, residents, and policy experts from the other New England states, I hope this effort can be a successful tool in bolstering the clean energy transition across the region.

Thank you so much,
Marya Axner
617 959-1323

Troy, Joanna K (ENE)

From: Elliott Place <elliott_place@yahoo.com>
Sent: Friday, February 17, 2023 3:16 PM
To: Troy, Joanna K (ENE)
Cc: John H Borger
Subject: DOER's FCEM Proposal

Dear Director Troy,
My name is Elliott Place, 91 Kimball Beach Road, Hingham, MA. I'm a member of a citizen group, Hingham Net Zero (HinghamNetZero.org) and Town of Hingham's Climate Action Planning Committee (Climate Action Planning Committee | Hingham, MA (hingham-ma.gov). The following are my own comments and do not represent my groups:

- The terms 'Clean' and 'Renewable' are ambiguous, allowing 'Greenwashing', and should be replaced with 'Carbon-free' if we are to be accurate, honest and diligent about reaching net-zero carbon emissions in Massachusetts.
- Any goals set by DOER, including DOER, FCEM, and any new Opt-in Specialized Stretch Codes should include: NO NEW FOSSIL-FUEL HVAC HOOKUPS, including natural gas, oil, and propane. Without this regulation, clearly articulated and enforced, we will not reach net-zero carbon emissions.

Thank you for your consideration,
Elliott Place

We grow and learn in circles: the inner circle, body and mind.
Our actions radiate out to the world, ripples in a pond.
Home: 781-875-1066 Cell: 781-367-5320
www.1on1Education.com
Elliott Place

Troy, Joanna K (ENE)

From: Elizabeth Bradt <docliz999@gmail.com>
Sent: Thursday, February 16, 2023 10:47 AM
To: Troy, Joanna K (ENE)
Subject: FCEM commet period on Energy policy

Dear Director Roy,

I have worked to understand the maze that is the energy industry in Mass. I urge you to do everything you can to stop the exclusion of clean energy sources from selling their clean energy to the energy grid. I understand this control of the industry is done by FERC, which works with NEPOOL, which is a privatized company of combined fossil fuel generators ,via MOPR's. My understanding is FERC was created by the Federal government and is privatized. My understanding is FERC has recently thrown up its hands and given up any semblance of controlling what NEPOOL does. That means the federal entity that is supposed to act in our best interest in the energy industry is allowing fossil fuel companies in NEPOOL to do what is best for their bottom line. There is no justice.

Hopefully you can do whatever you can to stop the MOPR from excluding clean energy sources from selling on the energy market. MCAN feels keeping states out of the negotiating process may prevent the usual MOPR problems from cropping up.

Here is the MCAN statement:

- The DOER reasons that state submitting buy offers directly cuts out the middleman of the utility and avoids impacting utilities' credit and therefore their ability to obtain low-cost financing. But having states directly participate in this auction could give reason to re-open the Minimum Offer Price Rule (MOPR) which heavily favors dirty resources. In theory MOPR only affects sellers, but direct state participation of any kind could have unforeseen consequences related to this sticky rule.

Your acronym sounds good. Hopefully FCEM will take on FERC and stop the greenwashing of fossil fuel and energy industries using fossil fuels.

Respectfully,

Liz Bradt DVM
978-979-5704

Troy, Joanna K (ENE)

From: Jane Dye <janehdye@gmail.com>
Sent: Friday, February 17, 2023 3:43 PM
To: Troy, Joanna K (ENE)
Subject: Comment on DOER's FCEM proposal

Dear Director Troy,

Thank you for the opportunity to provide comments on the Forward Clean Energy Market Proposal from the Massachusetts Department of Energy Resources. My name is Jane Dye and I am a citizen advocate in Holden, MA working to help my town and region to transition from fossil fuels to clean renewable energy in all sectors. I am a member of 350 Central Mass as well as a founding member of Citizens for Holden's Energy Future.

I am excited about the potential this new market holds for the regional transition to clean energy. But while I am generally in support of this proposal, I am concerned that the complexity of the energy market in NE and the expertise required to make meaningful contributions to the development of this proposal will mean that fossil fuel interests and old school insiders will have significant advantage in participating in the development of this market scheme. I base this on experience as a citizen clean energy advocate. Problems of lack of transparency and access are real.

It is critically important if we are to make renewable clean energy move forward quickly in New England that DOER engage with a wide variety of stakeholders and communities and consult with clean energy developers, experts and innovators as you move through this process.

I have high hopes for an effective outcome from this endeavor. Thank you.

--
Jane Dye
Holden, MA
774-232-0989
janehdye@gmail.com

Troy, Joanna K (ENE)

From: Angela Gregory <ajgregory@umass.edu>
Sent: Thursday, February 16, 2023 11:49 AM
To: Troy, Joanna K (ENE)
Subject: Comment on DOER's FCEM Proposal

Dear Director Troy,

Thank you for the opportunity to provide comments on the Forward Clean Energy Market Proposal from the Massachusetts Department of Energy Resources. My name is Angela Gregory and I am the Associate Director of the Energy Transition Institute at UMass Amherst. We are a research institute dedicated to accelerating an equitable energy transition through the thoughtful and intentional coupling of social science and STEM research in order to do so. I'm excited about the potential this new market holds for the regional transition to clean energy and am grateful for the DOER's initiative in providing a formal proposal for this new market. With the input of clean energy advocates of various disciplines, energy developers, residents, and policy experts from the other New England states, I hope this effort can be a successful tool in bolstering the clean energy transition across the region. However, after reading the proposal, I have a few questions and concerns I would like to submit.

CLARIFYING QUESTION
An area I would appreciate more clarity on is **public engagement**. This is important because the impact won't be equitable across all ratepayers. I would suggest you hold focused conversations with communities across the region who may be potentially impacted by the proposed FCEM. This should include impacted workers, heavily burdened Environmental Justice communities, and small-scale renewable companies. These conversations should inform future iterations of the market rules. I'm interested in hearing more about this aspect of the proposal.

SHOW SUPPORT
I want to emphasize the importance of including **giving a meaningful voice to state and consumer interests** as the current ISO-NE governance does not and lacks transparency, accountability, and public participation. in the proposal. Including it ensures. This is important, as the deregulation of the energy market in New England reduced federal oversight scrutiny. What we have seen in its place is some of the biggest fossil fuel entities and banks getting a seat at the table to set the priorities for ISO-NE and they should be accountable to the public, not private interests.

RAISE CONCERN
While I generally am in support of this proposal, I am concerned about DOER's reasoning that state submitting buy offers directly cuts out the middleman of the utility and avoids impacting utilities' credit and therefore their ability to obtain low-cost financing. However, having states directly participate in this auction could give reason to re-open the Minimum Offer Price Rule (MOPR) which heavily favors dirty resources. In theory MOPR only affects sellers, but direct state participation of any kind could have unforeseen consequences related to this sticky rule. I would like to see **innovative solutions out of the market mentality**, or we won't address the root causes of these problems. On the economic level, the **solutions should not be made by those profiting on our suffering**. It's not just a moral issue, energy insecurity is life or death, not to mention the existential threat of climate change. In future

versions of the proposal, I would like to see ways in which there is accountability to the public and massive reform of ISO-NE to democratize their access and ensure all interested members of the public can freely participate. **FERC under order 719 should pursue governance reform over ISO NE**.

Thank you again for the opportunity to comment on the Forward Clean Energy Market proposal. I look forward to continuing to follow and engage with you all on the FCEM as this proposal evolves.

Sincerely,
Angela Gregory
Associate Director, Energy Transition Institute at UMass Amherst
Northampton, MA

Join me in practicing the IDGs by incorporating them into your approach

Angie Gregory, M.S.
Associate Director

UMassAmherst
Energy Transition Institute
120d Marston Hall
130 Natural Resources Rd, Amherst, MA 01003
energytransitionumass.org
ajgregory@umass.edu
413-545-9196
(she/her)

Troy, Joanna K (ENE)

From: Jerry Halberstadt <jerry@cleanpowercoalition.org>
Sent: Friday, February 17, 2023 1:11 PM
To: Troy, Joanna K (ENE)
Subject: Comment on DOER's FCEM Proposal

Dear Ms. Troy,

Let us assume that the new FCEM market can provide a significant new resource of energy derived from non-emitting, renewable sources.

How will that energy enter the grid to be distributed?

Insofar as ISO-NE manages the entry of energy to the grid and controls the actual distribution, what will incentive and require ISO-NE to allow the new energy into the FCM auction?

The basic problem that has not been met, at least in my reading of the FCEM proposal, is that ISO-NE has rejected available renewable sources and kept them out of the grid.

Please address that challenge so as to enable the implementation of the FCEM market.

Thank you for your consideration.

--
All the best,

Jerry

Jerry Halberstadt
Coordinator, CleanPowerCoalition.org

email: Jerry@CleanPowerCoalition.org
20 Central St. #504
Peabody MA 01960
978.310.9739

Troy, Joanna K (ENE)

From: ROY HARVEY <royharvey@comcast.net>
Sent: Friday, February 17, 2023 3:27 PM
To: Troy, Joanna K (ENE)
Subject: Questions and edits regarding DOER FCEM proposal

Dear Ms Troy,

Thank you for DOER's efforts to develop a Forward Clean Energy Market. I signed on to the letter from Sierra Club and other ENGOs. I would also like to ask the following questions for clarification and suggest some typographical edits.

Thank you very much for your consideration.

Roy Harvey
Lincoln MA

Questions

1. Can NE-RECs or other products be used to help implement Community Choice Aggregations (CCAs)?
2. Why does the number (and hence total value) of certificates banked (rolled over to the next year) decrease?
3. Are the lists of eligible resources in Table 2 final, or could other technologies, for example hydrogen fuel cells or turbines, be made eligible when they are viable?
4. Please define “new resources”. Are they resources coming to market the first time, or younger than a certain age, e,g, 2 years?
5. How many participants might there be in the FCEM? How does this compare with the number of entities currently trading existing RECs, SRECs, etc.?
6. How much will the creation of the FCEM cost?
7. How much are the estimated costs to run the FCEM, e.g., in dollars per year or cents/MWh? How does this compare to the cost of running the ISO-NE FCM?
8. Could the FCEM be expanded to include secondary trading throughout the year?
9. Can FCEM work with just Massachusetts? Which other states are likely to adopt it and when?
10. Why are RECs not called REACs (A for Attribute), like CEACs?

Edits

- In bottom paragraph on page 10, change “principals” to “principles”.
- In top paragraph on page 11, change “that” to “than”.
- In top paragraph on page 16, add period (.) between “products” and “FCEM” to split run-on sentence into two sentences.

Troy, Joanna K (ENE)

From: David Heimann <heimann.david@gmail.com>
Sent: Thursday, February 16, 2023 7:26 PM
To: Troy, Joanna K (ENE)
Subject: My comments on the Forward Clean Energy Market proposal

Dear Director Troy,

Thank you for the opportunity to provide comments on the Forward Clean Energy Market Proposal from the Massachusetts Department of Energy Resources. My name is David Heimann and I am a member of the Sierra Club Massachusetts Chapter Energy Committee and the Fix The Grid committee (though I am writing in my individual capacity). I'm excited about the potential this new market holds for the regional transition to clean energy and am grateful for the DOER's initiative in providing a formal proposal for this new market. With the input of clean energy advocates of various disciplines, energy developers, residents, and policy experts from the other New England states, I hope this effort can be a successful tool in bolstering the clean energy transition across the region.

I have several further points to make:

1. I support DOER efforts, even if more work is needed to work through the details of the proposal. DOER's proposal for a Forward Clean Energy Market for New England (FCM-NE) is a welcome addition to the dialog on how to create a future grid that will address the goals of the NE states to reduce emissions and provide improvements to processes and governance. It addresses many of the goals of the NESCOE vision statement.

- For wholesale energy markets, the proposal opens up mechanisms for clean energy generators to enter the market utilizing competitive pricing and stability for those prices to encourage investment. This is a response to the state mandates for clean energy and decarbonization.
- With respect to governance, the proposal addresses the concern that current ISO-NE governance does not give a meaningful voice to state and consumer interests. Transparency, accountability, and public participation in ISO-NE has been woefully inadequate.

2. Given the challenges with governance and transparency within the existing ISO-NE institution and the NEPOOL stakeholder group, we would advocate for a market design in which states have autonomy of FERC authority and from NEPOOL.

3. We have a number of additional technical questions about market design, cost, and alternatives. They include:

A. Winter reliability is a significant issue and concern in New England. Why weren't seasonality and winter reliability considered and what benefits would there be from including them in the FCEM design in light of ISO reluctance to address this issue?
B. Can NE-RECs or other products be used to help implement Community Choice Aggregations (CCAs)?

C. Will ISO NE's determinations on capacity value for renewables, while potentially having an impact on the region's energy mix, affect the function or effectiveness of the FCEM?

Thank you again for the opportunity to comment on the Forward Clean Energy Market proposal. I look forward to continuing to follow and engage with you all on the FCEM as this proposal evolves.

Sincerely,

David Heimann
65 Cornwall St., #206
Jamaica Plain, MA 02130
(Member and Secretary of the Sierra Club Massachusetts Chapter Energy Committee -- organizational identification provided as personal information, not for speaking for the Chapter, which the Chapter is doing in other ways.)

--
"I Make Your Numbers Talk"

Troy, Joanna K (ENE)

From: Mary Klatt <mary@marymklatt.com>
Sent: Thursday, February 16, 2023 3:39 PM
To: Troy, Joanna K (ENE)
Subject: Comments on the DOER's Forward Clean Energy Proposal (FCEM)

Dear Director Troy,

Thank you for the opportunity to provide comments on the Forward Clean Energy Market Proposal (FCEM) from the Massachusetts Department of Energy Resources (DOER). My name is Mary Klatt, and I am a member of the 90-person Brookhaven Climate Change Committee and also a member of the 7-person Advocacy Subcommittee of that group. (Brookhaven, located in Lexington, is a continuing care retirement community). We have a very active committee here.

I'm excited about the potential this new market holds for the regional transition to clean energy. Because this effort involves clean energy advocates from various disciplines including energy developers, residents, and policy experts from other New England states, I am hopeful that this effort can be successful.

My concern: The 59-page proposal is very long and detailed. We were only informed yesterday about our opportunity to comment on this first version and will not have a chance to meet as a group to discuss it before tomorrow's deadline for receiving comments. Therefore, I will say now that draft number one is a step in the right direction! We definitely want to be informed about future versions and the changes suggested for this version. We will study all of this material and plan to comment on future drafts. I will follow this effort closely and share information with my group. Please use my email below for communications.

Thank you for all you do,
Mary M. Klatt
960 Waltham St. Apt. 470
Lexington, MA 02421-8075
mary@marymklatt.com

Troy, Joanna K (ENE)

From: Ian McDonald <mcdonaldstonemasonry@gmail.com>
Sent: Friday, February 17, 2023 1:04 PM
To: Troy, Joanna K (ENE)
Subject: FCEM comments by Ian McDonald

Dear director Troy,

I very much appreciate the work of DOER and other authors of the FCEM proposal to try to facilitate clean energy in our region. I am generally encouraged by this approach and this likely seems one of the best and most realistic options towards achieving state decarbonization goals. That being said, here are what I see would be some key points of examination, emphasis and possibly modification to the initial proposal.

1. It has been clear for a while now both through NESOCE's Vision Statement,their Advancing the Vision Document and comments before FERC that ISO NE's forward capacity market has not been an adequate vehicle for advancing the states' mandated climate goals. Partly, this is as a result of inadequate design of the ISO NE FCM both with the exclusionary nature of the MOPR and failure of the CASPER substitution auction. NESCOE has also expressed frustration with the voice of the states, and by extension their residents, being inadequately represented at both NEPOOL and ISO NE.
Because of this, it is critical that in this market states maintain robust control over the governance of the FCEM (both with regard to design and periodic modification).

2. One source of frustration with the ISO NE's forward capacity market is their inability to integrate any environmental justice/pollution considerations within their markets. While recognizing that the FCEM would be a market for non-emitting resources it is still important to see if there is any viable mechanism within the market for not only facilitating region wide decarbonization but for encouraging a lessening of pollutants in areas overburdened by affecting facilities. My concern stems in part from my experience as a resident of Killingly, CT a town with one 840MW power plant where another 650MW power plant was proposed less than a mile away in the same part of town where local children, including my own, attend the vast majority of their schooling. That ISO NE was not deterred in any way from awarding a Capacity Supply Obligation for a second large power plant in the same village of one lower income town was concerning. While ISO NE could possibly claim this was outside their purview, both CT DEEP and the CT siting council indicated they felt constrained in their decisions by the outcome of the regional market.

Understanding the dynamic is somewhat different with regard to the FCEM, it is still important to ensure the design of the FCEM does what it can to give states who would like them all available tools to address localized environmental justice/pollution concerns within the market. Could the state defined attribute REC's be a potential vehicle for integrating these and other social concerns within the market? Is there a danger that not having a sufficient mechanism within the market to address EJ/pollution/labor concerns could lead to an underutilized and less successful regional market. Also, to the extent it is not workable to address these concerns within the FCEM the authors must make it very clear exactly how states have the authority and mechanisms to address these concerns outside this market. It is important that this be made perfectly plain both to state authorities and the public to avoid any future confusion on this.

3. I am curious how ISO NE's evolving and possibly contentious approach to capacity accreditation could affect the functioning of the FCEM given that the proposal indicated the FCEM would default to ISO NE capacity values. These have been very much a point of contention and have potentially significant impact on our regional energy mix so this may be worth examining more closely or at least clarifying.

4. It was made very clear during the 2022 FERC Winter Gas-Electric Forum, particularly as we move toward greater electrification, that addressing winter reliability concerns ought to be a top priority within the region. I think to the extent that the FCEM can offer mechanisms for doing this it is preferable to leaving this problem to ISO NE, NEPOOL and other actors for whom commitment to clean energy has been less obvious.

Thank you again for all your important work here and I hope these suggestions may be helpful. Feel free to reach out with any questions, clarifications or information regarding this proposal.

Ian McDonald
Killingly,CT
(For transparency's sake I am listing my affiliations below though I am speaking here entirely on my own behalf)
Windham/Willimantic NAACP Environmental Justice committee member
CT Climate Crisis Mobilization steering committee
ISO NE Consumer Liaison Group co-ordinating committee CT
954-675-4106

Troy, Joanna K (ENE)

From: Edward Mcintyre <emcintyre1@comcast.net>
Sent: Friday, February 17, 2023 10:28 AM
To: Troy, Joanna K (ENE)
Subject: Comment on NE FCEM, Proposed Market Rules, Version 1

Dear Director Troy,

Thank you for the opportunity to provide comments on the Forward Clean Energy Market Proposal from the Massachusetts Department of Energy Resources. My name is Edward (Ted) McIntyre and I am a physicist, climate activist with some understanding of grid issues, and a podcaster on climate relevant topics.

I'm excited about the potential this new market holds for the regional transition to clean energy and am grateful for the DOER's initiative in providing a formal proposal for this new market. With the input of clean energy advocates of various disciplines, energy developers, residents, and policy experts from the other New England states, I hope this effort can be a successful tool in bolstering the clean energy transition across the region.

An area I would appreciate more clarity on is public engagement. This is important because of the abstract nature of mechanisms like a 'Forward Clean Energy Market.' Most average citizens, who will be directly impacted by the FCEM's results, will not grasp the concept without concerted effort on your part. You should actively reach out, in plain understandable language, to educate consumers on the implication of features of the market. This is doubly important for disadvantaged or non-English speaking communities. I'm interested in hearing more about this aspect of the proposal.

I want to emphasize the importance of including in the proposal the need for additional avenues for states to meet clean energy goals outside of existing markets and mechanisms. Including it ensures regional coordination between states to counterbalance the regional nature of ISO and the utilities.

While I generally am in support of this proposal, I am concerned about the FCEM as a FERC-jurisdictional market. Instead, I would like to see It overseen exclusively under state authorities, or as a middle-ground, under an inter-state compact similar to RGGI, administered by a third party. Please add this in future versions of the proposal.

Thank you again for the opportunity to comment on the Forward Clean Energy Market proposal. I look forward to continuing to follow and engage with you all on the FCEM as this proposal evolves.

Sincerely,

Edward McIntyre Ph.D.

Massachusetts Climate Action Network, Board of Directors

Franklin MA

Troy, Joanna K (ENE)

From: Robert Miller <brookline.teacher@gmail.com>
Sent: Friday, February 17, 2023 12:46 PM
To: Troy, Joanna K (ENE)
Cc: lilly@massclimateaction.net
Subject: DOER's FCEM Proposal

Dear Director Troy,

Thank you for the opportunity to provide comments on the Forward Clean Energy Market Proposal from the Massachusetts Department of Energy Resources. My name is Robert Miller and I am a resident of Brookline, actively involved in Town Politics, and a retired educator. I'm excited about the potential this new market holds for the regional transition to clean energy and am grateful for the DOER's initiative in providing a formal proposal for this new market. With the input of clean energy advocates of various disciplines, energy developers, residents, and policy experts from the other New England states, I hope this effort can be a successful tool in bolstering the clean energy transition across the region.

I would like to urge you to make this process known, transparent, and easily accessible by the public. Often the public is unaware of major issues that will affect our ability to address climate issues. Also, the timetable needs to be long enough for word to get out and for the public to be able to get involved. Often this may require various opportunities at different times/days.

Addressing climate issues is one of, if not the most, important issues we face. We can't move forward if we leave the community behind. Thank you again for the opportunity to comment on the Forward Clean Energy Market proposal. I look forward to continuing to follow and engage with you all on the FCEM as this proposal evolves.

Sincerely,
Robert (Bob) Miller
Brookline, MA

--

#AllEducatorsAreEssential
#BlackLivesMatter

Troy, Joanna K (ENE)

From: Gail Page <gailapage@gmail.com>
Sent: Thursday, February 16, 2023 9:25 AM
To: Troy, Joanna K (ENE)
Subject: Forward Clean Energy Market Proposal

Dear Director Troy,
I am excited about the new DOER proposal to promote the use and availability of clean energy within our region, which will make it more likely for Massachusetts to reach its must-be-attained targets to reduce greenhouse gas emissions. It has never been more clear that climate change is an emergency of drastic proportions. I am very grateful DOER is taking steps to tackle this problem head-on in a potentially very effective way.

I have been working as a climate activist, initially at the urging of my daughter, for the past half-decade. I led my church's climate group for 3 years. One of the initiatives I led was facilitating a group of concerned citizens to work with our local Municipal Light Plant in Reading (RMLD) to move their energy mix more quickly from fossil fuels to renewables. We made great progress during this time, including promoting the successful election of a green-focused commissioner. As RMLD's awareness of the impact of its procurement decisions on climate change and customer concerns, they hired a new manager of power purchasing who understood the need to transition quickly and who has done a great job moving the business to a greener model.

The most important action you can take for the success of the FCEM proposal is to provide formal, well-marketed, and thoughtful opportunities for input from clean energy advocates from diverse disciplines, energy developers, residents (consumers), and policy experts from the other New England states. This kind of input will make it more likely this effort can be a successful tool in bolstering the clean energy transition across the region.

An area I would appreciate more clarity on is how the revision process will proceed and how you will ensure the involvement of the groups mentioned above, including concerned citizens. Are you going

to have more, and longer, comment periods, to allow more time to wrap one's head around the plans? I'd love to see informational webinars created and widely distributed. This is important because it is an opportunity to show citizens of the region that DOER is aware, concerned, and most important, taking action to stave off a climate crisis. It also helps experts to gain more insight and opportunities to make effective contributions to the proposal. I'm interested in hearing more about this aspect of the proposal.

I want to emphasize my delight in the detailed description of all the ways buyers can participate in the FCEM, and that they can indicate the specific sources of energy they'd like to purchase. Having a clear process makes participation easier and more attractive to buyers.

I am concerned about the consideration of putting this market under FERC's jurisdiction. No one knows the needs and idiosyncrasies of regional markets than the states involved. I would like to see state authorities named as the overseers of this market in future versions of the proposal. If DOER intends to involved NEPOOL in any way, that entity must first reform its governance structure to improve transparency to all stakeholders, including citizens of the region, remove financial barriers to entry, and change voting percentages to give more weight to environmental and consumer interests.

Thank you again for this opportunity to comment on the Forward Clean Energy Market proposal. I look forward to continuing to follow and engage with you on the FCEM as this proposal evolves.

Sincerely,

Gail A. Page
Concerned consumer and climate activist
8 Washington Terrace
Woburn, MA 01801

Troy, Joanna K (ENE)

From: Bob Persons <rpersons@rcn.com>
Sent: Friday, February 17, 2023 11:37 AM
To: Troy, Joanna K (ENE)
Subject: Comment on FCEM Proposal

Dear Director Troy,

Thank you for the opportunity to provide comments on the Forward Clean Energy Market Proposal from the Massachusetts Department of Energy Resources. My name is Bob Persons and I am a Mass. registered professional engineer and member of 350 Newton, Mothers Out Front Newton, UU Mass Action, and Fix the Grid's Technical Committee. I believe the majority of New England residents now understand the urgency of mitigating climate change and wish to see rapid progress in decarbonization of our electricity supply. I'm excited about the potential this new market holds for the regional transition to clean energy and am grateful for DOER's initiative in providing a formal proposal for it. With the input of clean energy advocates of various disciplines, energy developers, residents, and policy and market experts from the other New England states, I hope this effort can be a successful tool in accelerating the clean energy transition across the region.

Given the challenges to innovation embedded in ISO-NE's and (especially) the NEPOOL stakeholder group's opaque governance and lack of transparency, how can the FCEM market design ensure that states have autonomy from FERC authority and from NEPOOL?

The proposal indicated the FCEM would use ISO NE's determinations on capacity accreditation for this market as well. As these determinations on capacity accreditation seem to be both evolving and at times contested within ISO-NE, how are these potentially changing capacity standards likely to affect the functionality of the FCEM? What will be the likely effect of evolving storage battery capabilities on capacity accreditation?

I am particularly impressed with and hope future drafts will retain:

- A fully detailed description of the many ways buyers could participate in the FCEM and specify specific resource desires like only new resources.
- Non-compliance clean energy buyers, like corporations and community aggregations, participating in this market.
- The importance and future centrality of bilateral markets.
- The need for additional avenues for states to meet clean energy goals outside of existing markets and mechanisms.

The seven year price-lock is concerning for renewable resource stakeholders outside of ground-mount solar. Longer financial security is needed to attract longer-payback resources such as offshore wind which will play a significant role in meeting 2050 climate goals.

In the view of the FTG Technical Committee, DOER's proposal for a Forward Clean Energy Market for New England is a welcome addition to the dialog on how to create a future grid that will address the goals of the NE states to reduce emissions and provide improvements to processes and governance.

Thank you again for the opportunity to comment on the Forward Clean Energy Market proposal. I look forward to continuing to follow and engage with DOER on the FCEM as this proposal evolves.

Sincerely,
Robert W. Persons, PE
Auburndale, MA

Troy, Joanna K (ENE)

From: Nathan Phillips <nathan@bu.edu>
Sent: Friday, February 17, 2023 9:27 AM
To: Troy, Joanna K (ENE)
Subject: Comment on Massachusetts DOER Forward Clean Energy Market proposal

Dear Director Troy,

I am writing as a Massachusetts electric ratepayer, and as a ratepayer advocate elected to the Coordinating Counsel of the ISO-New England Consumer Liaison Group.
I write to express my support for the DOER's initiative to develop a Forward Clean Energy Market, and offer the following comments:

1. I was pleased to hear on the webinar that the FCEM could allow ratepayers to aggregate/incorporate to form virtual power plants, storage batteries, and/or demand response resources. I emphasize that this is **distinct from community aggregation** operating at the municipal level, which other comments have discussed (and which I also support). Please provide further detail on any provisions which may enable and facilitate this form of ratepayer empowerment, and other market mechanisms enabling widespread and inclusive residential demand response. Please develop provisions that prevent harm or penalize vulnerable ratepayers who might not otherwise be able to participate in demand response.

2. Please develop a market that internalizes often externalized market costs or considerations, including fair wages and benefits for labor, promotion of women- and minority-owned businesses, environmental impacts on habitat of renewable energy facility siting, and costs of energy facilities borne by environmental justice host communities.

In conclusion, in a recent letter to US Senators*, ISO-NE President and CEO Gordon van Welie stated: "...there is currently a lack of sufficient state-regulated retail demand-side participation in the market. We believe there is significant potential for the states to further develop opportunities for demand resources...". This timely statement should provide wind in DOER's sails to move ahead aggressively and assertively on residential demand response, a powerful tool the best time for implementation of which was decades ago, and the second best time for implementation of which is now.

Thank you for considering this comment.

Nathan G. Phillips
Charles Street, Newton, MA
ISO- New England Consumer Liaison Group, Coordinating Counsel Member

*https://www.iso-ne.com/static-assets/documents/2023/02/combined_storm_elliott_op4_letters.pdf

--
Nathan Phillips (for identification purposes only):
Department of Earth and Environment
Boston University
685 Commonwealth Avenue
Boston, MA 02215
617-997-1057
www.bu.edu/earth

Troy, Joanna K (ENE)

From: Valessa Souter-Kline <vsouterkline@seia.org>
Sent: Friday, February 17, 2023 2:29 PM
To: Troy, Joanna K (ENE)
Cc: Jen Gorke; Jennifer Benson
Subject: Solar Energy Industries Association MA FCEM Comments

Hi Joanna,

The Solar Energy Industries Association (SEIA) appreciates the opportunity to review and comment on the MA Department of Energy Resources Forward Clean Energy Market (FCEM) proposal.

SEIA is the national trade association for the United States solar and storage industries. SEIA works with its 1,000 member companies and other strategic partners to fight for policies that create jobs in every community and shape fair market rules that promote competition and the growth of reliable, low-cost solar power.

The MA FCEM proposal has the potential to transform the northeastern state's clean energy markets, possibly streamlining disparate efforts to decarbonize and meet state climate targets efficiently and effectively. However, as noted during the DOER FCEM webinar, the FCEM is an initial proposal and there are a lot of unknowns. At this time SEIA and our membership companies have questions about the structure of the FCEM as well as the likelihood of multi-state participation. I have included a non-exhaustive list of our areas of concern below.

- We would like to better understand how the market will be staffed, funded and maintained alongside ISO NE
- More details are needed about how the FCEM capacity market would sync with the ISO NE FCM.
- Will the availability of multiple sub-markets undermine the overall market?
- What is the level of participation from other states?
- What is DOER's thinking around when the FCEM might begin?
- In the first year of FCEM implementation, the standard abatement rate will be 0.4 tonnes of CO2e/MWh – how was this value determined?

Thank you for seeking input and SEIA looks forward to continued engagement as this conversation continues!

Happy to answer any follow-up questions.

Sincerely,
Valessa

Valessa Souter-Kline

Northeast Regional Director

vsouterkline@seia.org
Twitter: @valessask
Direct: (215) 756-5200
1425 K Street, NW | Suite 1000
Washington, D.C. | 20005

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SEIA helped deliver the most transformational bill in clean energy history.
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Troy, Joanna K (ENE)

From: Charlie Tebbetts <charlieteb65@gmail.com>
Sent: Thursday, February 16, 2023 5:40 PM
To: Troy, Joanna K (ENE)
Subject: Clean Energy Market Proposal

Dear Director Troy,

Thank you for the opportunity to provide comments on the Forward Clean Energy Market Proposal from the Massachusetts Department of Energy Resources. My name is Charlie Tebbetts and I am a member of Climate Action Now of Western Massachusetts. I am also a high school teacher. I'm excited about the potential this new market holds for the regional transition to clean energy and am grateful for the DOER's initiative in providing a formal proposal for this new market. With the input of clean energy advocates of various disciplines, energy developers, residents, and policy experts from the other New England states, I hope this effort can be a successful tool in bolstering the clean energy transition across the region.

I want to emphasize the importance of including incentives that could significantly enhance the demand for clean energy and attract more clean energy projects to the region.
While I generally am in support of this proposal, I am concerned about holding focused conversations with communities across the region who may be potentially impacted by the proposed FCEM. This should include impacted workers, heavily burdened Environmental Justice communities, and small-scale renewable companies. These conversations should inform future iterations of the market rules.

Thank you again for the opportunity to comment on the Forward Clean Energy Market proposal. I look forward to continuing to follow and engage with you all on the FCEM as this proposal evolves.

Sincerely,

Charlie Tebbetts
Amherst, Mass
Climate Action Now of Western Massachusetts

Troy, Joanna K (ENE)

From: Nicole Irwin-Viet <nirwin@voltus.co>
Sent: Monday, January 23, 2023 8:28 PM
To: Troy, Joanna K (ENE)
Cc: Dana Guernsey; Allison Bates Wannop; Jianing Fan
Subject: Voltus comments on ISO-NE FCEM proposal

Thank you for the opportunity to submit comments on the Forward Clean Energy Market Proposal.

- Voltus supports the inclusion of demand response, energy storage, and distributed wind and solar generation resources in the FCEM construct.
- In the current proposal (Table 2), demand response is listed as eligible for GHG Marginal Abatement Certificates and Clean Capacity Certificates. This eligibility makes sense to us.
- We would like to know what the proposed timeline for further stakeholder process and eventual implementation looks like at this point.

--

Nicole Irwin-Viet - Director of Energy Markets
Voltus, Inc. | Boston, MA
857-321-0314 | nirwin@voltus.co | http://www.voltus.co/vlog

Troy, Joanna K (ENE)

From: Kent Wittenburg <kentwitt@gmail.com>
Sent: Friday, February 17, 2023 2:39 PM
To: Troy, Joanna K (ENE)
Subject: Comment on FCEM Market Proposal

Dear Director Troy,

I appreciate the opportunity to make comments on the FCEM proposal from DOER. My name is Kent Wittenburg. I am a former director (now retired) at Mitsubishi Electric Research Laboratories in Cambridge, MA. I am a Boston resident and am currently involved with the Fix-the-Grid Coalition as a founding member of the Fix-the-Grid Technical Committee. I also am a leader of the King's Chapel Environmental Action Initiative through King's Chapel Boston. At King's Chapel we have been organizing a series of talks on climate change and the energy transition, which you can access on our web page. In the Fix-the-Grid technical committee, I have been involved in advocacy around environmental justice and market rules at ISO-NE and am particularly concerned that the transition to clean energy is not happening fast enough in New England's electricity sector under the administration of ISO-NE. I have helped organize studies of technical documents such as the Future Grid Reliability Study and the Pathways Study coming out of ISO-NE. Our group has been organizing take-away documents from these studies directed to environmental advocates, which you can see examples of in this Google directory.

I strongly support DOER efforts, even if more work is needed to work through the details of the proposal. DOER's proposal for a Forward Clean Energy Market for New England (FCM-NE) is a welcome addition to the dialog on how to create a future grid that will address the goals of the NE states to reduce emissions and provide improvements to processes and governance. It addresses many of the goals of the NESCOE vision statement. Specifically,

- For wholesale energy markets, the proposal opens up mechanisms for clean energy generators to enter the market utilizing competitive pricing and stability for those prices to encourage investment. This is a response to the state mandates for clean energy and decarbonization.

- With respect to governance, the proposal addresses the concern that current ISO-NE governance does not give a meaningful voice to state and consumer interests. Transparency, accountability, and public participation in ISO-NE has been woefully inadequate.

Your proposal is an excellent starting point. Since I have studied the ISO-NE Pathways Study, I particularly appreciate that you address the issue of negative pricing in that study by eliminating the possibility. I also appreciate that you chose not to follow the recommendation to use direct carbon pricing. It is simply too easy for direct carbon pricing proposals to be vulnerable towards political attacks. It's therefore wise to choose other methods that reward clean energy offerings without the appearance of adding to the tax burdens of all our citizens.

I applaud your proposal for the governance of the new state-controlled body to control a forward clean energy market. I think it is vital to go around the roadblocks being put up by ISO-NE by having the states take control of their own destiny. In fact, I would hope that you would not allow the administration of a new FCEM to go to ISO-NE or NESCOE since the prospect of revising needed governance structures of both those organizations

is a thorny path. Much better to eliminate layers of bureaucracy with a board that directly represents state interests.

I have also signed on to the letter from Conservation Law Foundation and other NGOs and support the many detailed suggestions and questions raised there.

Thank you again for the opportunity to comment on the Forward Clean Energy Market proposal. I look forward to continuing to follow and engage with you all on the FCEM as this proposal evolves.

Sincerely,

Kent Wittenburg
Boston, MA

http://fix-the-grid.org

http://www.kings-chapel.org/environmentalaction.html

NEW ENGLAND FOR OFFSHORE WIND

February 17, 2023

Joanna Troy
MA Department of Energy Resources
100 Cambridge Street #1020
Boston, MA 02114

RE: DOER Forward Clean Energy Market Design Proposal

Dear Ms. Troy,

New England for Offshore Wind appreciates the opportunity to submit comments in response to the Department of Energy Resources' (DOER) Forward Clean Energy Market (FCEM) Design Proposal. New England for Offshore Wind is a broad-based coalition of environmental organizations, labor unions, academic institutions, businesses, and business associations that aims to drive regional collaboration and increased ambition on offshore wind across states and to ensure that projects come online in a timely and responsible way.

We appreciate DOER's leadership on this issue. Since the aim of this effort is to put forward a proposal for a regional market, we offer comments reflecting the perspectives of our coalition from across the region with a focus on offshore wind. We have shared our comments with policymakers from the other New England states and hope to see robust public engagement on this proposal in other states across the region in the coming months to inform this discussion. Regional collaboration on this initiative is critical to its successful design and implementation.

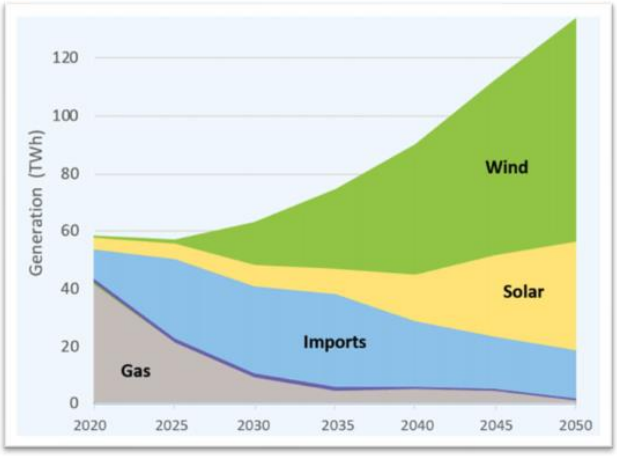
In recent years, we have been thrilled to see the New England states demonstrate coordinated leadership on regional issues and express a strong desire to see market reforms at the regional level in support of cost-effective decarbonization. We support the New England States Energy Vision's goal to collaborate regionally to design a market that appropriately values clean energy resources and that aligns with states' climate and clean energy requirements. We understand that in the long term, pursuing a centralized market-type approach for renewables may be necessary to rapidly secure a cost-effective clean energy transition. However, we have some concerns about the FCEM proposal and its implications for offshore wind, which we have outlined below.

Implications for Offshore Wind and Decarbonization

With some of the nation's highest costs for electricity, New England must minimize energy costs as we push for decarbonization. Residents and

Members (cont'd):

Cape Cod 5
Cape Cod Climate Change Collab.
Climate Action Now, Western MA
Climate Reality Project – MA Southcoast
CT Sustainable Business Council
E. Hampton Clean Energy Task Force
Eastern Bank
Eastern CT Green Action
Energy Efficiency Associates, LLC
Environment Council of RI
Faith Communities Enviro. Network
Flashover LLC
Green Newton
Greenwater Marine Sciences Offshore
Hollis Line Machine
IUPAT DC11
MA AFL-CIO
MassMEP
Mass. Climate Action Network
MOCA Westport
Mothers Out Front
Muggventures
New Hampshire Audubon
NH Businesses for Social Responsibility
NH Citizens for Progress
NH EEC Network
People's Action for Clean Energy
POWER-US | MA
Rhode Island Building Trades
Robert E Derecktor Inc.
Seacoast Anti-Pollution League
Self-Reliance
Skunk Works Fund
University of Maine
Vineyard Power Cooperative Inc.



2050 Decarbonization Roadmap: Electricity Generation by Source

businesses across New England are currently struggling with staggeringly high electricity bills as global markets, high costs for fuel due to the war in Ukraine, and other critical market factors have drastically driven up wholesale electricity prices.[1] However, a short-term and solely cost-driven approach may not achieve the most cost-effective long-term resource mix needed to achieve state policy goals, including Massachusetts' requirement to reach net-zero by 2050.

In a solely cost-driven short-term market for clean energy, e.g. 7 years FCEM procurement, offshore wind could be outcompeted by other clean energy resources with lower Levelized Cost of Energy (LCOE) such as onshore wind and utility-scale solar. A FCEM design should consider the entire amount of clean energy needed to achieve our 2050 climate goals utilizing the most cost-effective, long-term approach. With this in mind as well as resource availability in New England, a more holistic long-term lowest-cost approach will most certainly necessitate offshore wind.

Offshore wind is our region's best opportunity for new sources of energy and is likely to be the linchpin of our clean energy transition. According to the Massachusetts Clean Energy and Climate Plan for 2050 (CECP), the Commonwealth will require at least 23 gigawatts (GW) of offshore wind to reach net-zero emissions,[2] which implies that the entire New England region could require nearly 50 GW of offshore wind. In a market focused on driving lowest-cost resources, it might be difficult to reach those goals. The graph below from the Massachusetts 2050 Decarbonization Roadmap shows the critical role offshore wind will play in delivering power to our

[1] Monthly wholesale electricity prices and demand in New England, December 2022 (2023) ISO Newswire. https://isonewswire.com/2023/02/03/monthly-wholesale-electricity-prices-and-demand-in-new-england-december-2022/
[2] Massachusetts Clean Energy and Climate Plan for 2050, December 2022 Mass.gov. https://www.mass.gov/doc/2050-clean-energy-and-climate-plan/download

regional grid in a net-zero future. The FCEM must help facilitate this long-term, decarbonized future in which offshore wind will play an outsized role.

Different clean energy resources have different benefits and reliability attributes. As such, they should not be compared strictly by price. Working these attributes into the design will be important to ensure cost-effective decarbonization. For example, offshore wind has important reliability benefits in winter when winds are strongest and daylight is most limited.[3] This winter reliability benefit of offshore wind will be crucial to support the decarbonization of our built sector. As presented, we are concerned with a lack of detail and assessment on the interactions between FCEM as proposed and the Forward Capacity Market (FCM). We ask DOER to clarify: What are the risks of any interactions from FCEM-FCM resulting in continued overreliance on natural gas? In terms of FCEM and FCM interactions, is it possible that the expected savings of implementing a lowest-cost market-based approach to clean energy capacity in the FCEM are offset by an FCM clearing at high prices that result in continued reliance and incentives on gas generation units? Can an FCEM as proposed or with changes provide signals for the adequate portfolio of clean resources to ensure reliability needs and would that mitigate this potential scenario?

Driving cost-effective decarbonization that ensures a reliable electricity system requires pursuing a balanced portfolio of clean energy resources as demonstrated by the above graph. We understand that the FCEM proposal would allow buyers such as the states to submit preferences for how much of a specific resource they wish to procure, but how states plan to determine their preferred resource mix is unclear. We urge states to propose processes they would follow to determine their preferred resource mix and to indicate how far in advance they would establish this plan to ensure market certainty.

Finally, we would like to better understand the proposal to start with a 15-year price lock for clean energy resources bidding into the market that declines over time to 7 years and whether that could impact the financeability of offshore wind projects. The current practice of 20-year contracts has been the norm in the United States to ensure project financing and drive market certainty, and DOER's analyses have demonstrated contracted offshore wind projects will benefit ratepayers over the terms of their contracts. How does Brattle/SEA come to the conclusion that contract terms can start at 15 and go down to 7? We encourage the states to study how the declining price lock might impact the viability of offshore wind development in comparison to the current approach of long-term contracts.

Benefits of Procurements

State solicitations have been effective tools for the procurement of offshore wind and enable clean energy buyers to ensure additional benefits such as environmental and wildlife protection; diversity, equity, and inclusion; environmental justice; labor standards; local and domestic content utilization; and economic development.

We note that the FCEM concept as presented by ISO's Pathways Study and the report commissioned by DOER is predicated on debatable assumptions on the costs per megawatt and megawatt-hour of various resources in the years 2040 and 2050 in comparison with the cost of procurements, which have been

[3] Pullaro, F. (2023) Benefits of wind energy for New England. Renew Northeast. https://renewne.org/wp-content/uploads/2023/02/Wind-in-Winter-RENEW-FINAL-2023-02-01.pdf

demonstrated to benefit ratepayers over the duration of their contracts.[4] And of course, details matter for market design – it will be important to take the time necessary to ensure the best product to avoid launching a market that does not accomplish stated policy goals. As such, we support the states working together to carefully explore the potential paths forward on an FCEM design without rushing into it.

Given the scale of offshore wind needed for decarbonization and the urgency of climate change – and recognizing that creating a new regional clean energy market will be a lengthy process – moving forward on offshore wind cannot wait. As our region explores a potential new market design for clean energy, we urge states to continue to push offshore wind procurements forward and collaborate regionally to the extent possible to capture economies of scale as well as regional social, environmental, and economic benefits.

We appreciate that the proposed market design would allow states to pursue procurements of specific resources independent of the FCEM. However, we urge the New England states to explore ways that the FCEM could also value environmental, social, and economic benefits appropriately, whether by implementing baseline requirements or other means.

A presenter speaking on behalf of DOER stated in their February 3rd webinar on the FCEM design proposal that states could pursue these benefits and protections separate from the wholesale market, and that doing so may be more effective than incorporating them into procurements and contracts. What is DOER's vision for achieving these benefits? If the states are in agreement and decide to move forward with this approach, we urge the states to put forward a transparent plan for how these benefits would be pursued, and how important baseline requirements such as environmental protections and labor standards could be guaranteed separate from a wholesale market. We encourage states to pursue a robust and inclusive public engagement process for this proposed approach in advance of any shift away from procurements and towards a wholesale market-based approach for renewables.

Governance & Stakeholder Engagement

We appreciate the proposal to establish a role for states in overseeing an independent entity that would administer the FCEM and urge states to ensure that they can continue to retain that oversight over the long term. While there needs to be alignment between existing wholesale markets and the FCEM, we have concerns about another potential approach cited in the proposal regarding the FCEM falling under the purview of ISO-New England, which has not always aligned its own policies with the states' policies on integration of renewables into wholesale markets. State leadership in the governance of the FCEM is critical to ensuring that the wholesale market facilitates state policies and a clean energy future.

The states should also use this proposal for a new market design separate from ISO-NE as an opportunity to have an open and transparent stakeholder engagement process for the FCEM. The current proposal to incorporate FCEM governance into the existing New England Power Pool (NEPOOL) stakeholder engagement process is flawed, as it is closed to the public and members are required to pay to participate. States should prioritize a robust and inclusive stakeholder engagement

[4] (2019) Initial Brief of the Department of Energy, Commonwealth of Massachusetts Department of Public Utilities. https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/10322600
Dobbs, B. Petitions for Approval of Proposed Long-Term Contracts for Offshore Wind (2022), Commonwealth of Massachusetts Department of Energy Resources. https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/14998575

process for the FCEM that does not rely on the restrictive model of NEPOOL, which is closed to the public, depends on voting rights of all sectors, and is heavily weighted towards fossil fuel incumbents.

Conclusion

In conclusion, we appreciate DOER's leadership in putting forth a proposal for a wholesale market for clean energy in New England. We also have some concerns about the FCEM design proposal and its potential implications for offshore wind. Procurements are important tools for ensuring social, environmental, and economic benefits and protections, and we urge the states to have a clear process and strategy for how those protections and benefits will be pursued separate from a market framework. Additionally, we urge the states to detail how these protections and benefits could be pursued and guaranteed within a wholesale market framework. States should consider including certain requirements in the market structure to ensure environmental justice; diversity, equity and inclusion; high-road labor standards; and wildlife and environmental protection. Finally, since clean energy resources are not easily comparable to one another by cost, we urge states to define how they would determine the resource mix they would pursue in the FCEM and encourage states to be transparent and forward-looking by publishing plans and timelines to ensure market certainty for the clean energy industry.

Thank you for the opportunity to comment on this proposal for a regional Forward Clean Energy Market design. We commend Massachusetts' leadership in issuing an initial proposal and look forward to engaging in this conversation across the region in other New England states. We look forward to working with you to ensure future regional wholesale market designs that appropriately value all clean energy resources, including offshore wind.

Sincerely,

Susannah Hatch, Regional Lead
New England for Offshore Wind

Guillermo Pereira
Union of Concerned Scientists

Larry Chretien
Green Energy Consumers Alliance

Heather Takle
PowerOptions

Cc:

Chairman Philip L. Bartlett II, Maine Public Utilities Commission

Commissioner Jared Chicoine, New Hampshire Department of Energy

Commissioner Katie Dykes, Connecticut Department of Energy and Environmental Protection

Commissioner Christopher Kearns, Rhode Island Office of Energy Resources

Commissioner June Tierney, Vermont Department of Public Service

February 17, 2023

VIA ELECTRONIC FILING

Joanna Troy
Director, Energy Policy and Planning
Massachusetts Department of Energy Resources
100 Cambridge St., #1020
Boston, MA 02114
Email: joanna.k.troy@mass.gov

RE: Initial Comments on the Design Proposal for the Forward Clean Energy Market

Dear Ms. Troy:

I. Introduction

Ørsted Wind Power North America LLC (Ørsted) appreciates the opportunity to comment on the design proposal for the Forward Clean Energy Market (FCEM) put forth by the Massachusetts Department of Energy Resources (DOER).[1] Massachusetts is a national leader in climate policy and has been on the forefront of state efforts to transition to a low carbon future. In December 2022, the Commonwealth published its "Clean Energy and Climate Plan for 2050."[2] This ambitious plan lays the course to achieve net zero carbon emissions by 2050. A cornerstone of this plan is the need to develop 23GW of offshore wind to reduce carbon emissions from the electricity sector.

Ørsted, either directly or through its affiliates, develops, constructs, owns, and operates offshore and onshore wind resources, solar farms and offshore transmission facilities. This portfolio includes the world's first offshore wind farm (Vindeby, 1991); America's first offshore wind farm (Block Island); and the world's largest (Hornsea 2). Ørsted's current installed offshore wind capacity is 7.6GW with another 2.3GW under construction. Ørsted has been awarded about 5GW of offshore wind capacity on the east coast of the United States including Revolution Wind (704MW) with contracts in Rhode Island and Connecticut. Ørsted also has a total U.S. land-based capacity of 5 gigawatts across wind, solar, storage technologies and e-fuels. Thus, Ørsted provides a broad-based perspective on the issues raised in the design proposal for the FCEM.

[1] New England Forward Clean Energy Market, Market Rules Version 1, proposed by the Massachusetts Department of Energy Resources with support from the Brattle Group and Sustainable Energy Advantage (January 2023) (FCEM Proposal).

[2] *See* Clean Energy and Climate Plan for 2050 (mass.gov) (December 2022).

II. Comments

Ørsted looks forward to participating in the stakeholder discussions on the many complex components of the proposal. We appreciate that additional analysis will to be needed to refine and reach consensus on any final design. As discussed herein, Ørsted's fundamental concern with the proposed FCEM is that it may not incent all the types of generation needed to meet the Commonwealth's and the region's clean energy goals. Specifically, the focus on least-cost resources may hinder the ability of the Commonwealth to meet existing statutory offshore wind goals and the Clean Energy and Climate Plan for 2050's goal of 23GW of offshore wind. Ørsted is dedicated to working with the DOER on the issues discussed below and helping move the Commonwealth and region to a future run entirely on green energy.

The stated purpose of the FCEM is to "leverage competitive forces to select the lowest-cost combination of renewable and non-emitting resources to meet climate and clean energy goals of policy makers and consumers across the New England region."[3] To accomplish this goal the FCEM proposes a new trading platform for multiple regional and state clean energy and capacity certificates governed by the six New England states, and administered by the New England Independent System Operator (ISO-NE) or a new affiliate. Initially, the FCEM will offer four products: NE-RECs, NE-CEACs, NE-GHG, and NE-CCC. The proposal also provides a general concept for states to obtain "state-defined" attribute products[4] or use the "phased entry demand bid"[5] to pursue specific resource types. The current proposal does not provide specifics about governance, cost, how this market will interact with those administered by NE-ISO, or how the state-defined attribute products will interact with the market.

Ørsted shares the DOER's desire to develop effective mechanisms to help meet clean energy goals and enhance reliability of the grid. Without significant additional discussion and detail, the proposed FCEM is not likely to achieve the stated goal in the near future. Initially, as discussed below, Ørsted is concerned that the proposed design of the FCEM will result in the over-reliance on a single type of renewable resource and result in increased costs and complexity.

First, the primary focus of the FCEM is procuring the least-cost resource. Given the current state of technology, ground-mounted, utility-scale solar PV is the least expensive renewable resource.[6] Therefore, the FCEM is likely to primarily procure utility-scale solar PV. While utility-scale solar PV is now, and will continue to be, a vital piece of the clean energy future, there are significant reliability benefits from a diverse resource mix as all resources provide different attributes to the gird. The need for diversity is especially important given the concerns about lack of natural gas infrastructure in the region to transport natural gas for electric generation. A diversity of resources will help minimize the need for natural gas in the region. For example, offshore wind provides energy, when needed most, in the winter months and in the early evening, with more consistency due to stronger ocean

[3] FCEM Proposal at 1.

[4] *Id.* at 15.

[5] *Id.* at 33.

[6] *See e.g.* Lazard's levelized cost of energy analysis here: Lazard.com | Levelized Cost Of Energy, Levelized Cost Of Storage, and Levelized Cost Of Hydrogen

winds and larger turbines.[7] The consistency and complementary nature of offshore wind power to other renewable resources will enhance reliability. Any market should ensure that this diversity of resources can be easily procured and is appropriately valued.

While the FCEM tries to address these concerns by providing an option for states to implement "state-defined" attribute certificates[8] or use the "phased entry demand bid"[9] mechanism to pursue specific resource types. These mechanisms are not fully defined and lack clarity on how they would interact with the existing regional market construct or reduce time and efforts for states. For example, the FCEM proposal recognizes that states have unique climate and environmental objective and allows states to opt in and list one or more state defined attributes the qualifications and definition of which would be determined by the states regulatory and legislative processes.[10] It is unclear how this a more efficient process than the current state procurement processes which allow states to competitively procure desired resources while also achieving other state goals such as promoting economic growth and use specific labor agreements. Given the clean energy goals in Massachusetts and the other New England states, it is unclear how the proposed mechanism will enable states to more efficiently and cost-effectively meet their energy goals in the near term.

Second, the FCEM proposal creates a new administrative construct that will increase costs and regulatory burdens. Under an FCEM construct, developers would need to participate in both the FCEM (with its four new core products NE-RECs, NE-CEACs, NE-GHG, and NE-CCC as well as potential "state-defined" certificates or use the "phased entry demand bids") and participate in all of the ISO-NE markets (capacity, energy, ancillary services). The interaction of the new construct with existing markets is also unclear. This added level of complexity could increase costs for developers and potentially serve as a barrier to entry. In addition, the proposal does not contain any cost estimates for developing, implementing and staffing the new construct. While the proposal contemplates adding these administrative costs into the cost of the products, the cost associated with developing the mechanism could negatively impact the goal of procuring low-cost clean energy.

Third, additional information is needed on the proposed FCEM contract lengths intended to reduce risks to ratepayers.[11] The FCEM seeks to reduce the 20-year contracts commonly used in state procurement systems to a 15- year contract. The proposal does not explain why this change from 20 to 15-year contracts is beneficial or discuss the risks that it seeks to reduce with this change. There are a number of factors that are included in procurement bids for specific contract lengths including ability to get financing, capital costs, construction timelines among others. Additional discussion is needed with stakeholder to determine the appropriate length of contracts to be procured through the FCEM.

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[7] See e.g. RENEW's study: The Benefits of Wind in New England available here: PowerPoint Presentation (renewne.org)

[8] FCEM proposal at 15.

[9] *Id.* at 33.

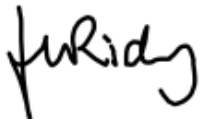
[10] *Id*. at 15.

[11] *Id.* at 41.

III. Conclusion

Ørsted looks forward to participating in the stakeholder discussions on the issues discussed herein and the other components of this proposal and looks forward to partnering with DOER to find solutions that will utilize competitive forces to lead to a world run completely on green energy.

Respectfully Submitted,



Thomas Riding
Head of Growth, North America
Orsted Wind Power North America LLC
399 Boylston St. Boston, MA 02116
thori@orsted.co

February 17, 2023

By email to joanna.k.troy@mass.gov

Joanna Troy
Director, Energy Policy and Planning
Department of Energy Resources
Commonwealth of Massachusetts
100 Cambridge Street
Boston, MA 02114

Subject: **Proposed Forward Clean Energy Market Design**

Director Troy:

FirstLight Power Inc. ("FirstLight") submits these comments in response to the Department of Energy Resources' ("DOER") request for comment on its proposed Forward Clean Energy Market ("FCEM") design. FirstLight appreciates the DOER effort with assistance from The Brattle Group and Sustainable Energy Advantage to advance the ball on a region-wide clean energy market. The January 2023 FCEM proposal is the most comprehensive Forward Clean Energy Market proposal put on the table so far in New England and will provide a valuable framework to focus discussions on a viable clean energy market that will efficiently shape the future generation mix consistent with the Commonwealth's and the region's decarbonization goals.[1] FirstLight offers the following feedback on aspects the proposed FCEM design and identifies opportunities to better capture electric storage facility potential now.

Company Overview

FirstLight Power Inc. ("FirstLight") is a leading clean power producer, developer, and energy storage company serving North America. With a diversified portfolio that includes over 1.6 GW of operating renewable energy and energy storage technologies and a development pipeline with 2,000+ MW of solar, battery, and offshore wind projects, FirstLight specializes in hybrid solutions that pair hydroelectric, pumped-hydro storage, utility-scale solar, large-scale battery, and offshore wind assets. The company's mission is to accelerate the decarbonization of the electric grid by supporting the development, operation, and integration of renewable energy and storage to meet the world's growing clean energy needs and deliver an electric system that is clean, reliable, affordable, and equitable. Based in Burlington, MA, with operating offices in Northfield, MA, and New Milford, CT, FirstLight is a steward of more than 14,000 acres and

[1] New England Forward Clean Energy Market – Proposed Market Rules Version 1, DOER, Sustainable Energy Advantage and The Brattle Group, January 2023. https://www.mass.gov/doc/ma-doer-fcem-design-proposal/download

hundreds of miles of shoreline along some of the most beautiful rivers and lakes in North America.

Background

Each New England state has implemented Renewable Portfolio Standards ("RPS") with multiple classes of Renewable Energy Credits ("RECs") consistent with their respective statutes. Some states also have additional mechanisms to send additional clean energy signals. Examples include the Massachusetts Clean Energy Standard ("CES") and offshore wind procurements in Rhode Island, Connecticut and Massachusetts. While helpful to initiate momentum toward clean energy goals, the myriad of state-specific, technology-specific and vintage-specific rules lacks the transparency and efficiency to make even greater strides. A transparent market for region-wide clean energy products that values the contributions by all renewable resources equally is needed to get that done. For example, in-region hydroelectric facilities are often excluded from individual state programs with preferences for vintage and size, yet virtually every analysis regarding pathways to decarbonizing the New England electric grid assumes that these local clean power resources are retained and necessary to hit the states' goals (including specifically Massachusetts). A regional market such as the FCEM proposal needs to be more inclusive to ensure these necessary resources aren't left out of the market and risk losing this important installed source of clean power. Further, electric storage offers the unique opportunity to achieve the region's goals faster and more efficiently; however, as discussed below, that element of a clean energy market requires more work.

The concept of a regional market to integrate clean energy resources has been under discussion since the 2016 New England Power Pool ("NEPOOL") Integrating Markets and Public Policy ("IMAPP") stakeholder process. Now, the instant DOER FCEM proposal offers a new opportunity to re-engage the states and regional stakeholders. We appreciate DOER's leadership to initiate this comprehensive proposal and provide an opportunity to regain momentum on the development of region-wide clean energy market signals. The key to affordable transformation of the New England resource mix is engagement now in order to make timely progress on implementing region-wide clean energy market signals.

Comment

There is an "urgent need to address the climate crisis and… to conceive of a future where the wholesale markets support a low/no-carbon generation fleet" and "identify a path toward this future grid that is clean, equitable, low-cost, and reliable."[2] With aggressive climate goals set and the need to accomplish them reliably at low cost, it is imperative that the Commonwealth and the region engage on an effective market mechanism(s) to make that possible. FirstLight agrees that "competitive markets [provide](as) the best way to achieve reliability at least cost."[3] The DOER FCEM proposal does advance the ball, yet more work remains. It raises important questions

[2] Wholesale Electric Market Design for a Low/No-Carbon Future - Report on the October 2019 Symposium & Proposed Next Steps, Massachusetts Attorney General's Office, March 2020, at 9. https://www.mass.gov/doc/wholesale-electric-market-design-for-a-lowno-carbon-future/download

[3] *Id.*

regarding jurisdiction, governance, and the interplay with the ISO-NE wholesale markets and its market administration. While the first two aspects remain important considerations, FirstLight focuses its comments on several aspects core to the market design as well as their interplay with the ISO-NE wholesale market operation.

It is Time to Treat New England Hydro Resources as Renewable Equals

FirstLight owns and operates a significant amount of hydro generation in the states of Massachusetts and Connecticut. These and other larger scale hydro generators contribute greatly to reliably displacing carbon emitting generation. Unlike Run-of-River (ROR) hydro generation and other renewable energy sources whose output is subject to changes in their energy input (e.g., sun or wind), pondage hydro energy can be dispatched to the periods of greatest value because it combines a renewable source of energy (hydro) with energy storage in the water stored behind its impoundments. Despite presenting premium reliability and emission reduction value to a clean energy dispatch, the premium FCEM product in the DOER proposal, the NE-REC product, is proposed to exclude pondage hydro and ROR hydro greater than 30MWs. After years of state Renewable Portfolio Standards ("RPS") distinctions relegating premium dispatchable hydro generation to lower Renewable Energy Credit ("REC") tiers, it is time to recognize the key role they play now, and the even more key role they will need to play in the transforming resource mix. Massachusetts own climate plans[4] assume that these resources are needed and remain in service, an assumption that cannot be guaranteed absent recognition and compensation for the clean energy and reliability attributes they provide. Any FCEM proposal or other region-wide clean energy market design should include all renewable resources, including hydro that is upward dispatchable (i.e., pondage hydro) and hydro greater than 30MWs, at least equivalent to other renewable resources (i.e., eligible as the NE-REC product within the DOER proposal).

It is Time to Treat Existing and New Renewable Resources as Equals

State legislated procurements have often been extended only to new renewable resources and some other state clean energy programs likewise have discounted the contributions of existing renewable resources. The true value of a region-wide clean energy market rests in its ability to capture best of efficiencies among new and existing resources through a competitive wholesale market. This can only occur by treating new and existing resources equivalently. It is inappropriate to lock in market prices for new resources for a multi-year term while relegating existing resources to year-to-year arrangements under varying market prices. Both provide the same clean energy and both require investment (and reinvestment). Efficient and fair market prices require symmetry in the treatment of existing and new resources. This has been corrected in the ISO-NE Forward Capacity Market where, after years of allowing multi-year Forward Capacity Auction ("FCA") price lock-in eligibility solely for new capacity resources, the Federal Energy Regulatory Commission ("FERC") subsequently found that:

[4] Massachusetts 2050 Decarbonization Roadmap, Massachusetts Executive Office of Energy and Environmental Affairs and The Cadmus Group, December 2020. https://www.mass.gov/info-details/ma-decarbonization-roadmap#final-reports-

> "the benefits provided by the price certainty afforded by the New Entrant Rules for new capacity resources no longer outweigh their price suppressive effects. …[5]
>
> Because new resources in ISO-NE now have greater certainty about their ability to earn revenues through energy and ancillary services markets, there is a reduced need for resource owners and investors to rely on the price certainty provided by the New Entrant Rules.[6]
>
> …we find that the New Entrant Rules are unjust and unreasonable and direct ISO-NE to eliminate the price lock."[7]

The objective of an efficient forward clean energy market is to value all renewable energy equivalently. If any renewable resources are eligible for a multi-year FCEM price commitment, all should be eligible. Similarly, FCEM demand bids should be for renewable energy, not for renewable energy from a "new" versus "existing" renewable resource. Vintage-agnostic demand bidding will produce an aggregate demand that determines when new resources are needed.

As Proposed, the NE-GHG Product Will Miss Significant GHG-Reductions of Electric Storage

The intuitive appeal of the proposal to measure the Green-House Gas (GHG) reduction performance of electric storage as the difference between the marginal generation resource's emission rate at the time of discharge of electric storage less the emission rate of the marginal generation resource at the time of charging (while accounting for round-trip storage losses) relative to some selected standard abatement rate is understandable; however, that method will not reflect the true GHG reductions delivered by the aggregate of electric storage transportation of renewable energy from the periods of low demand (denominated by lower Locational Marginal Prices for energy ("LMPs")) to periods of higher demand (denominated by higher LMPs). The proposed NE-GHG measurement method appears to be inconsistent with several realities of the ISO-NE unit scheduling and dispatch.

- **Much of the GHG emissions are committed (or not) through the Day Ahead Energy Market (DAEM) scheduling process** – The ISO-NE generation scheduling process begins in the DAEM where ISO-NE clears the bulk of GHG-emitting generation schedules to create the next day's reliable operating plan. With the exception of fast start[8] resources (e.g., electric storage) that can be physically committed in real-time dispatch, the day ahead scheduling of other generating resources (e.g., gas combined cycle, oil-fired steam plants) requires them to be online and generating the next day in the hours of their DAEM schedule. While those slower starting resources may have some range of operation that can be dispatched up or down from the DAEM schedule in the Real-Time Energy Market ("RTEM"), the portion of

[5] Order on Paper Hearing, FERC, Issued December 2, 2020, Docket No. EL20-54-000, at 24. https://www.iso-ne.com/static-assets/documents/2020/12/el20-54-000_12-2-20_order_new_entrant_rules.pdf

[6] *Id.* at 26.

[7] *Id.* at 28.

[8] Fast start resources can be started and synchronized to the grid within 30 minutes or less and cannot have a minimum run time greater than 60 minutes.

that schedule up to their Economic Minimum Limit is committed going into real-time dispatch. In the real-time dispatch, those resources generally may only be ramped-up above or ramped-down below their DAEM schedule at generation points above their Economic Minimum Limit.[9] Consequently, one of the biggest GHG reduction contributions of electric storage is their ability to reduce the number of such non-fast start units that will be committed in the DAEM and thereby avoids the multi-hour, must-take minimum generation that would otherwise result.[10] That value, by definition, will not be reflected in an emission rate for marginally priced generation that *is* dispatched in the DAEM or RTEM. The significant value electric storage facilities provide in avoiding the start of more fossil-fired generators cannot be captured by the proposed NE-GHG measurement method.

- **Emission rates of the marginally-priced generating resource may not be reflective of the GHG content of the energy used to charge electric storage** – With the DAEM commitment of non-fast start generators locking in the bulk of generation that will emit GHGs in-day, the RTEM only performs balancing between system conditions and energy prices anticipated day ahead and changes in system conditions (e.g., forced generation or transmission outages, loads above or below forecast, changes in neighboring systems) or energy prices (e.g., intraday increases or decreases in gas prices) intraday.

  In the ISO-NE DAEM, the unit commitment step solves to assure that the next-day forecasted consumer load plus operating reserve can be reliably met. So, from that standpoint, the commitment of fossil-fired generation (most of which is not fast start) is driven principally by the need to provide a reliable operating plan in support of consumer demand going into the dispatch day. It is in the second component of the DAEM solution of developing a least cost dispatch to clear the aggregate of day ahead demand bids that determines the mix of generation above the must-take level of slow start resources' minimum generation. Whether a given cleared day-ahead demand quantity causes a higher marginally priced dispatch depends on whether the given demand was the marginally cleared DAEM demand bid. The marginal demand bid could well be a Load Serving Entity's ("LSE") election to clear some its next day forecasted demand only if the DAEM energy price is below the price at which the LSE would prefer to wait and buy energy to back that demand in the RTEM. Even if the marginal demand bid was associated with charging at *an* electric storage facility, the DAEM scheduled charging demand of other electric storage charging participating essentially as price takers at that DAEM LMP is not. Further, it is likely that the aggregate of charging demand for all electric storage resources in that hour exceeds the size of the marginally-priced supply block.[11]

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[9] A slower starting resource may be decommitted in the RTEM to a schedule shorter than its DAEM; however, such real-time schedule must honor the resource's Minimum Run Time (i.e., a resource with an 8-hour Minimum Run Time cannot be decommitted until it completes at least 8-hours of generation).

[10] The DAEM solution involves a basic unit commitment step to assure there is enough fast start resources plus committed generation to reliably meet next day load plus operating reserve needs. Since fast start resources provide the ISO-NE with the physical option of waiting to dispatch in the operating day, their presence allows next day reliability to be assured without committing more non-fast start generating resources.

[11] For example, if the size of the marginally-priced resource is only 100MWh/h, it is incapable constituting the supply for 500MWh/h of storage charging in that period.

Further, the DAEM schedule for charging demand received by electric storage facilities is only a preliminary schedule, which is subject to redispatch in the RTEM. So, an electric storage resource with a day ahead schedule may ultimately elect not to charge if other changes on the system would now require a higher-priced marginal resource with higher emissions. In this case, the presence of the electric storage facility's day ahead charging schedule created space to accommodate the changed system conditions in the RTEM without increasing emissions (i.e., avoided new commitment of a fossil-fired generating resource or avoided higher dispatch of already committed fossil-fired generating resource). Its willingness to forgo charging in that period and release its DAEM scheduled energy avoided greater GHG emissions. The bottom line is that determining the proposed form of measuring GHG reductions under the proposed NE-GHG product would likely overstate the GHG content of the electric storage facilities' charging energy and understate their true GHG reductions.

- **Real-Time Energy Market (RTEM) prices, and if published, emission rates, of the marginally-priced resource in that interval may not reflect the full extent of the GHG content avoided by the energy discharge capability of electric storage** - With the ISO-NE commitment of fossil-generating resources that define the base GHG emissions for the next day in the DAEM, the RTEM only performs balancing to address departures of system conditions, energy prices and consumer demand from those anticipated day ahead. The existence of stored energy combined with fast start capability at electric storage facilities in the DAEM permits the ISO-NE to reliably meet next day energy demand without committing additional fossil-fired generating resources and their attendant GHG emissions. Since those GHG-emitting resources are never scheduled on line, their emission rates never show up as marginal emission rates in the RTEM (or the DAEM). As a practical matter, since ISO-NE requires balancing energy in every interval to operate the system, the marginally dispatched resources in most hours will be either gas-fired resources, oil-fired resources, electric storage or demand response.[12] Hence, despite displacing higher GHG-emitting resources, the proposed form of NE-GHG product would understate electric storage facility GHG reductions. Further, under the proposal, it is unclear how the calculation would be performed when electric storage is the marginally-priced energy resource.[13] Despite successful electric storage facility displacement of fossil-fired generation, if the emission rate of the marginal resource at electric storage discharge were equal to or lower than the marginal emission rate *calculated* at electric storage facility charging (despite avoiding a much higher marginal emission rate through electric storage facility discharge), the proposed form of measuring GHG reductions could ironically lead to a zero or negative NE-GHG credit in such circumstances.

[12] Where curtailment or reductions in renewable generation output are needed (generally for local area congestion), their energy offer prices can become the marginally priced energy at that location under the ISO-NE Do Not Exceed Dispatch ("DNE Dispatch") form of economically determined reductions or curtailments among the intermittent power resources operating during a congestion period.

[13] Calculating the marginal GHG emission rate to develop an imputed GHG-emission rate for electric storage seems to create a circular calculation in this instance.

RTEM-only scheduled charging demand may be more likely to be related to marginal real-time dispatched energy. However, in many instances, that real-time-only electric storage charging demand is scheduled to absorb a higher than forecasted quantity of renewable generation (e.g., higher than forecasted midday solar output). When this response to store that renewable energy occurs, the ISO-NE will likely still need a balancing resource (possibly fossil-fired) and that resource will set the marginal RTEM price, which, under the DOER FCEM proposal, would, in turn, set the marginal emission rate.[14] As a consequence, the FCEM proposal would assign GHG contributions to the electric storage operation that were not caused by the electric storage charging and, as proposed, its GHG-reductions would be understated. Further, it is likely that the aggregate of the real-time only charging demand for the electric storage resources in that hour would exceed the size of the marginally-priced supply block. The bottom line is that determining the GHG reductions based, in part, on the GHG emissions rate of the marginally-priced generator will likely overstate the GHG content of the charging energy, understate the GHG emissions avoided by its discharge and understate the electric storage facilities true GHG-reductions.

Conclusions

Electric storage and dispatchable hydro (i.e., pondage hydro) will be critical resources to achieve the best GHG-reduction possible from renewable energy both in the transition to the Commonwealth and the region's important renewable development goals as well as when those goals are achieved. Under any FCEM, pondage hydro should be considered at least as valuable as other renewable generation resources. Specifically, under the DOER FCEM proposal, pondage hydro should be eligible for the NE-REC product. Further, while well intended, the NE-GHG product as proposed is likely to send clean energy signals that undervalue the true contributions of electric storage. Carbon pricing may present similar challenges to capturing the emission reduction value of electric storage for some of the same reasons.[15] While the instant FCEM proposal or even carbon pricing may not sufficiently capture the electric storage facility GHG-reductions, it does make sense to value their clean energy contributions. Given that the Commonwealth now has legislation that would authorize the contracting of existing and new electric storage to capture this GHG-reduction value and the higher energy cost savings possible under a contract coordinating the operation of contracted electric storage with renewable energy output, it is well positioned to do so. Under that legislation, the DOER has been tasked to evaluate the economics of such contracting to determine that it is in the interest of consumers to enter into such contracts.[16] We believe this provides significant opportunity for consumers in the

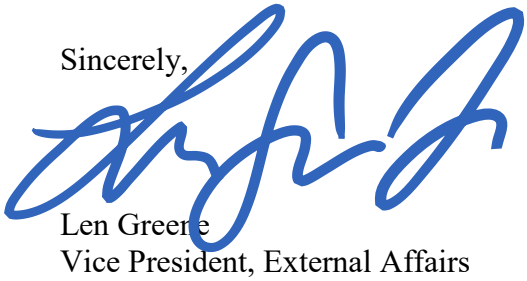
[14] If the electric storage charging did not occur in such circumstances, a renewable resource might set the RTEM LMP, but only because one or more renewable resources were required to reduce their output to avoid a generation surplus imbalance.

[15] Carbon pricing would also rely on the emission rates of the marginally priced energy resources and would not reflect the value of the emissions avoided by preventing the need for a fossil-fired resource to be committed online in the first place.

[16] An Act Driving Clean Energy and Offshore Wind, 2022 Mass. Acts Chapter 179, Section 80. ("(a) The department of energy resources, in consultation with the Massachusetts clean energy technology center, shall conduct a study (i) how to optimize the cost-effective deployment and utilization of both new and existing mid-duration and long-duration energy storage systems, as defined in section 83B of chapter 169 of the acts of 2008,

Commonwealth. FirstLight urges the DOER to complete the required economic analysis and then pursue contracts with existing and new electric storage as the most fruitful effort toward integrating electric storage value into the clean energy goals at this time. Beyond the instant benefits for consumers, such contracts would also give the DOER information through experience under the contracted operation to inspire future improvements in the electric storage valuation methods under an FCEM, carbon pricing or other form of clean energy market. FirstLight welcomes further discussion with DOER regarding our feedback on the proposed FCEM design and the evaluation of GHG reductions possible from electric storage in New England.

Sincerely,



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inserted by section 12 of chapter 188 of the acts of 2016, in the commonwealth and investigate the necessity, costs and benefits of requiring distribution companies, as defined in section 1 of chapter 164 of the General Laws, to jointly and competitively conduct energy storage systems solicitations and procurements of up to 4,800 gigawatt hours of stored energy from renewable generation delivered to periods of high demand each year;… (c) If the study finds it beneficial to the commonwealth, the department of energy resources shall require solicitations and procurements in accordance with the study recommendations;")

GREEN ENERGY CONSUMERS ALLIANCE

February 16, 2023

Joanna Troy, Director of Energy Policy & Planning
MA Department of Energy Resources
100 Cambridge Street #1020
Boston, MA 02114

Dear Ms. Troy,

On behalf of Green Energy Consumers Alliance, I am writing to comment on the proposed Forward Clean Energy Market (FCEM). Green Energy Consumers is a nonprofit organization based in Boston and Providence with a mission to speed the transition to a low-carbon future.

To begin, we respect the effort that has gone on to produce a framework worthy of public discussion. The team you have in place is well qualified and your work product is quite thorough. Nonetheless, the proposal is extraordinarily complex and stakeholders have many questions that remain unanswered. And frankly, the February 3rd webinar held by DOER did not clearly state why FCEM is something that New England needs in the near future.

In our view, if the New England states are going to work together on major decarbonization policy in 2023 and 2024, we would prefer that attention be focused on the review of the Regional Greenhouse Gas Initiative (RGGI). With some significant modifications, the RGGI has potential to equitably drive the electricity system to cleaner resources at a rapid rate. The 2022 Pathways study covered "Net Carbon Pricing" quite well (for example, reference the table below), but could have expounded more on the benefits of expanding and strengthening RGGI.

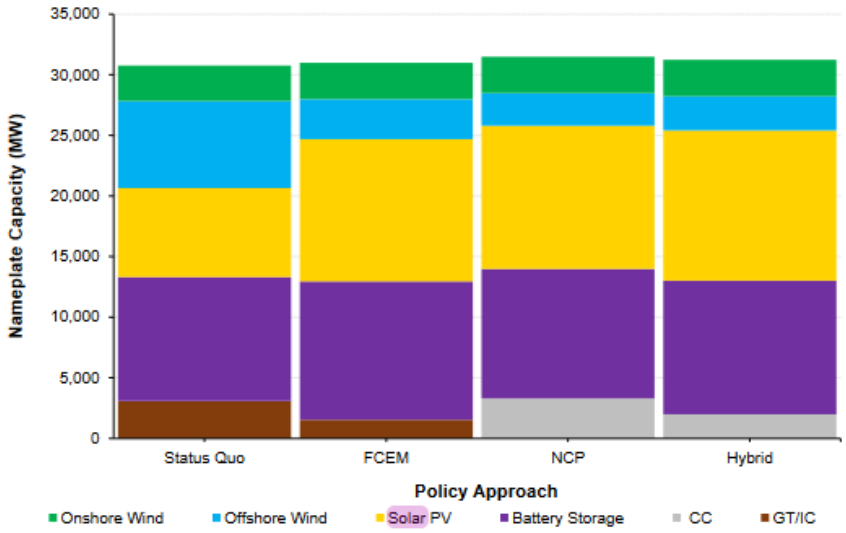
Table ES-1. Summary of Key Factors Differentiating Decarbonization Pathways Policy Approaches

Policy Factor	Status Quo	FCEM	Net Carbon Pricing	Hybrid Approach
Economic and Market Outcomes				
Cost-effective CO_2 Emission Reduction	Low	Moderate/High	High	Moderate/High
Cost-effective incentives for reductions in carbon-intensity	No	No	Yes (efficient)	Yes (but less than efficient level)
Cost-effective incentives for clean energy investment	NA (no in-market incentive, depends on administrative planning)	Partial (Incents clean energy generation, but not necessarily cost-effective choice among clean energy resources)	Yes (efficient)	Yes (mix of FCEM and carbon price)
Cost-effective incentives for investment across time	No (no in-market incentive, depends on administrative planning)	Yes (for clean energy investment)	Yes (efficient)	Yes (mix of FCEM and carbon price)
Transparent Price Signals	No	Yes (creates carbon or CEC price signal)		
Negative LMPs	Yes (potential storage "churning", inefficient battery use/investment)	Yes (potential storage "churning", inefficient battery use/investment)	No	Yes (potential storage "churning", inefficient battery use/investment, less than Status Quo and FCEM)
Price Discrimination	Yes (risk of inefficient entry/exit, capital turnover; need for additional out-of-market contracts)	No	No	Yes (risk of inefficient entry/exit, capital turnover)
Potential Distortions in Market Offers	Yes (*e.g.*, curtailment based on PPA price, not costs)	No	No	No

We also note that the Pathways report's Central Case, which is the basis for the FCEM proposal, leans too heavily on assumptions regarding various clean energy resource costs in the out years, past 2035. The Pathways report's "Alternative Capital Costs" scenario, which is based on a 2021 analysis by the National Renewable Energy Laboratory (NREL), produces results that are relatively more favorable than the Central Case to offshore wind (OSW). This is important because most analyses to date have shown that Massachusetts and New England as a whole must develop many gigawatts of OSW in order to reduce GHG emissions as required by 2030 and 2050.

We fear that an unintended consequence of FCEM would be slower development of OSW projects. In fact, Pathways indicates that OSW development would be reduced through a FCEM, with solar producing a greater amount of power by 2040 than under the Status Quo, as shown below.

Figure VI-2. New Resources (Incremental to Baseline State Policies) by Policy Approach, 2040 (MW)

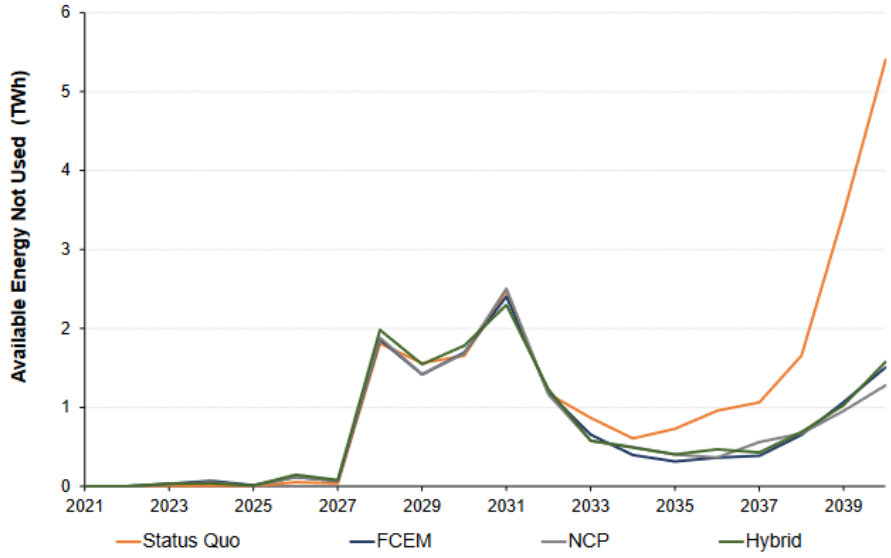


Perhaps that would be a good outcome in terms of economic efficiency, but it is predicated on the actual ability of solar to be sited at scale across the six New England states. This is a very debatable proposition.

And whether FCEM, through solar, would produce power at lower cost than OSW is also predicated on assumptions made in the Pathways report regarding curtailment. But as this graph in Pathways shows, most of the curtailment in the Status Quo scenario appears after 2037. Given that the only OSW project currently in operation is the small Block Island Wind Farm, the issue of curtailment does not seem to be an urgent matter.

GREEN ENERGY CONSUMERS ALLIANCE

Figure VI-6. Economic Curtailments of Variable Renewable Generation by Policy Approach, 2021-2040 (TWh)



Furthermore, with respect to the curtailment shown above, the implication is that the power will have to be stored in stationary batteries at costs assumed under the Central Case, not costs assumed by NREL. But perhaps more important is the first assumption – that power will have to flow into a stationary battery and be discharged with some efficiency loss. An alternative viewpoint is that by 2035, millions of electric vehicles (EVs) in New England will be able to charge during periods of low LMPs and discharge their batteries on either the road or into the grid when LMPs are high. In either case, EVs will play a role in balancing the grid and if EV drivers are able to shift their load to times when LMPs are low, that will be beneficial in terms of incenting EV adoption, which is another key pillar in every state's climate action plan. Neither Pathways nor DOER's proposal takes this concept into account.

Finally, the Pathways report is based upon a target level of electricity sector decarbonization that might not be sufficient to meet the region's overall GHG reduction requirements. The region has yet to show GHG reduction results in other sectors. FCEM therefore might only be "good enough" if it is supplemented or complemented by deliberate OSW procurements and carbon pricing (perhaps by strengthening RGGI).

Thank you for your attention. At Green Energy Consumers Alliance, we understand that the FCEM process may just be beginning, and we hope to be involved in any further discussions within the Commonwealth or regionally.

Sincerely,

Larry F Chretien

GREEN ENERGY CONSUMERS ALLIANCE

Larry Chretien, Executive Director

ENVIRONMENTAL &
ENERGY LAW PROGRAM
HARVARD LAW SCHOOL

February 17, 2023

Re: Forward Clean Energy Market Design Proposal

We commend the Massachusetts Department of Energy Resources for pursuing a regional clean energy market. The New England power sector has a long history of collaborative efforts.[1] Creating a new regional institution to facilitate clean energy procurement can reduce consumer costs and accelerate the clean energy transition.

This comment addresses governance of the proposed Forward Clean Energy Market (FCEM) and in particular whether the Administrator (FCEM-NE) should file the market rules at FERC for the Commission's approval. We argue that the FCEM should be regulated by states because: 1) sales of FCEM products are not FERC-jurisdictional, 2) the non-profit administrator (FCEM-NE) would not be a public utility under the Federal Power Act (FPA), and 3) the FCEM-NE would not be eligible to file FCEM auction rules under section 205 of the FPA. We suggest that the New England states pursue a non-FERC-jurisdictional FCEM.

The FCEM proposal envisions auction markets for various products representing environmental attributes of wholesale energy or capacity. FERC has repeatedly stated that it does not have jurisdiction over the sale of environmental attributes when they are sold separately, or unbundled, from wholesale power.[2] Federal courts have endorsed this conclusion.[3]

[1] *See NEPOOL Power Pool Agreement*, 48 FPC 538 (1972).
[2] FERC explained its jurisdiction over renewable energy credits in *WSPP Inc.*, 139 FERC ¶ 61,061 (2012) (citing *Edison Electric Institute*, 69 FERC ¶ 61,344 (1994) (finding no jurisdiction over cap-and-trade allowances)). In various contexts, FERC has said that it does not have jurisdiction over REC sales. *See, e.g., American Ref-Fuel Company*, 105 FERC ¶ 61,004 at P 24 (2003), *Morgantown Energy*, 139 FERC ¶ 61,066 at PP 46–47 (2012), *Windham Solar*, 156 FERC ¶ 61,042 at P 4 (2016), *Calpine, et al.*, 171 FERC ¶ 61,034 at P 67, n. 192 (2020).
[3] Coalition for Competitive Electricity v. Zibelman, 906 F. 3d 41 (2nd Cir. 2018), Electric Power Supply Association v. Star, 904 F.3d 518 (7th Cir. 2018), Wheelabrator Lisbon, Inc. v. Conn. Dep't of Pub. Util. Control, 531 F.3d 183 (2nd Cir. 2008).

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Although FCEM products may be distinguishable from existing renewable energy credits, those features should not bring FCEM product sales under FERC's jurisdiction. For instance, the price of certain FCEM attributes, such as GHG abatement certificates, may be contingent on wholesale market outcomes. But neither FERC nor federal courts have distinguished among unbundled environmental attributes based on their pricing mechanisms.[4] Instead, FERC has rested its jurisdictional finding on whether the attributes are sold with wholesale power in the same transaction.[5] The sale of other FCEM attributes, such as clean capacity certificates, would allow selling resources to automatically clear the FERC-jurisdictional ISO-NE capacity auction. This connection between the attribute sale and participation in the FERC-regulated auction should not trigger FERC jurisdiction over the attribute sale. Even where unbundled attributes are closely tied to wholesale market participation, FERC has not suggested that it has jurisdiction over attribute sales.[6]

Moreover, state regulation of clean capacity certificates should not be preempted. A state may not create clean energy subsidies that "condition payment of funds on capacity clearing the auction."[7] The FCEM does not propose such a condition. Instead, FERC will have the final say as to whether an attribute sale would allow a resource to automatically clear the ISO-NE capacity auction. Rules about which resources clear the auction are enshrined in ISO-NE's capacity auction rules, which must be approved by FERC. FERC can authorize automatic clearance of clean capacity certificate sellers in the ISO-NE capacity auction without asserting jurisdiction over the attribute sale.

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[4] Coalition for Competitive Electricity v. Zibelman, 906 F. 3d 41 (2nd Cir. 2018) (finding that although the prices of New York's zero-emission credits vary based on wholesale market projections, the state's program is not preempted), Electric Power Supply Association v. Star, 904 F.3d 518 (7th Cir. 2018) (same).
[5] *WSPP Inc.*, 139 FERC ¶ 61,061 (2012).
[6] FERC has approved California ISO rules that allow energy sellers to include costs of cap-and-trade allowances in their market offers and thereby signal whether they intend to deliver energy into California and be subject to California's cap-and-trade rules. Including an allowance price in the offer to the FERC-jurisdictional market is a pre-condition to delivering energy into California via the CAISO auction. *See CAISO*, 141 FERC ¶ 61,237 (2014); *CAISO*, 153 FERC ¶ 61,087 (2015).
[7] Hughes v. Talen, 578 U.S. 150, 166 (2016).

Because FCEM product sales are under state jurisdiction, FCEM-NE would not be a public utility under the FPA. Under section 201 of the FPA, a public utility is any person that "owns or operates" FERC-jurisdictional "facilities,"[8] a "widely inclusive term" that includes contracts "utilized in connection with" FERC-jurisdictional sales.[9] Since FCEM-NE auction rules would govern non-FERC-jurisdictional sales of unbundled attributes, its contracts would not be jurisdictional facilities. Put differently, FCEM-NE would not be operating under a FERC-jurisdictional tariff.

FCEM-NE would therefore not be eligible to file FCEM auction rules under section 205 of the FPA.[10] Section 205 sets procedures that allow public utilities to change their FERC-jurisdictional rates. As FCEM-NE would not be a public utility, would not be engaged in any FERC-jurisdictional sales, and would not administer a FERC-jurisdictional tariff, it could not file its rules under section 205.

However, a public utility could voluntarily share its own section 205 filing rights with FCEM-NE. Transmission operators, such as ISO-NE, share filing rights pursuant to agreements approved by FERC.[11] While FCEM-NE and ISO-NE could pursue such an approach, the filed rates could include only FERC-jurisdictional sales. As discussed, sales of unbundled attributes through FCEM-NE auctions would not be FERC-jurisdictional.

FCEM-NE might nonetheless argue that sales of its products "directly affect" FERC-jurisdictional rates, bringing them under FERC's authority.[12] We see two risks to this approach. First, asking FERC to revisit its jurisdictional determinations about unbundled attributes could have far-reaching and unpredictable consequences. FERC's

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[8] 16 USC 824(e).
[9] Hartford Electric Power & Light Co. v. Federal Power Commission, 131 F.2d 953, 961 (2nd Cir. 1942).
[10] Atlantic City Elec. Co. v. FERC, 295 F.3d 1, 11 (D.C. Cir. 2002) ("As FERC believes an ISO to be a public utility within the scope of the Federal Power Act, and thus entitled to make section 205 filings . . .").
[11] *See, e.g., ISO New England, et al.*, 106 FERC ¶ 61,280 at P 55 (2004) (approving ISO-NE governance rules that provide limited filing rights to NEPOOL); *MISO, et al.*, 143 FERC ¶ 61,165 at P 30 (2013) (approving MISO proposal to provide limited filing rights to a committee of state regulators).
[12] FERC v. Electric Power Supply Association, 577 U.S. 260 (2016).

finding that FCEM attribute sales "directly affect" wholesale energy or capacity rates might lead to FERC jurisdiction over *all* unbundled attributes. Second, giving FERC authority to approve and rewrite FCEM rules may harm states' interests. Ongoing controversies about capacity auction minimum offer price rules (MOPRs) illustrate that FERC can interfere with state clean energy policies. The FCEM proposal does not outline any countervailing benefits of FERC jurisdiction.

We urge the New England states to consider a state-regulated approach. ISO-NE could still play a prominent administrative role. Public utilities may engage in non-FERC-jurisdictional activities. For instance, a PJM subsidiary issues renewable energy credits, facilitates trading of those credits, and tracks generators' emissions. ISO-NE could follow this approach and create a non-FERC-jurisdictional subsidiary to administer FCEM auctions.

Sincerely,

/s
Ari Peskoe
Director
Electricity Law Initiative
Harvard Law School

LOW IMPACT HYDROPOWER INSTITUTE

1167 Massachusetts Avenue, Arlington, MA 02476 | www.lowimpacthydro.org

February 17, 2023

Joanna Troy, Energy Policy & Planning Division Director
Department of Energy Resources
100 Cambridge St. 9th Floor
Boston, MA 02114

RE: Forward Clean Energy Market Design Proposal Comments

Dear Director Troy,

Thank you for the opportunity to comment on the Forward Clean Energy Market (FCEM) Design Proposal. The Low Impact Hydropower Institute (LIHI) is a nonprofit organization dedicated to recognizing and supporting hydropower that prioritizes environmental, recreational, historical, and cultural resource protection. We look forward to seeing this design progress and offer the following comments in pursuit of that venture.

We appreciate the need for a more efficient way to buy and sell RECs and agree that more renewables must be brought online and acknowledge the thoughtful work that resulted in this innovative solution to an efficient REC market. We believe a few fundamental areas deserve more thorough analysis and consideration.

It is noted throughout the Proposal document that the FCEM will be designed in such a manner that it will integrate with existing state policy and regulations. However, the proposal lacks clarity on the mechanisms that will be implemented to ensure that the FCEM does not interfere with or undermine existing state policies. For example, none of the examples included throughout the document include a state RPS product. Without further clarification and analysis, the FCEM as presented does not seem supportive of the many interconnected, beneficial state climate policies and regulations.

This proposal prioritizes price. This will drive REC prices down in a manner that is not balanced between generating sources. As structured, it may create a race to the bottom which could undermine existing state markets, and their underlying policy priorities. For example, the NE-REC product, which includes a 30MW size restriction for hydropower, creates a product that is in direct competition with the MA Class I and Class II RECs, without the environmental requirements. As defined, this product would undermine aspects of the MA program and the environmental goals it seeks to achieve.

Further, we would like to better understand the 30 MW cap placed on hydroelectric generation in the NE-REC product. It is important to note that there is no correlation between size and the environmental impacts at hydropower facilities. Without understanding the reasoning behind this restriction, it is impossible to offer alternative solutions. Size is an unnecessary restriction on a resource that must be assessed on a case-by-case basis.

We acknowledge that this proposal is in early stages and that multiple rounds of rule makings will be needed to make the NE FCEM a reality. However, addressing climate change must include a sophisticated analysis of the interplay between energy and environmental policy goals. As it stands, the proposal would, in fact, undermine environmental policies that protect river systems, as an example. We look forward to further analysis and iterations of the proposal that demonstrate a greater understanding of this interplay.

Thank you for your consideration of these comments, please do not hesitate to reach out with questions.

Sincerely,

Shannon Ames,
Executive Director

To: Massachusetts Department of Energy Resources
From: LS Power
Topic: Comments on the FCEM Proposal Offered by the Department of Energy Resources
Date: February 17, 2023

LS Power thanks the Department of Energy Resources (DOER) and their consultants, the Brattle Group and Sustainable Energy Advantage, for their thorough and thoughtful work on a design proposal for a Forward Clean Energy Market (FCEM).[1] The proposed market rules offers nuanced analysis of different aspects of an FCEM market design and governance frameworks that would be needed to effectuate the significant expansion of clean energy in New England. LS Power is encouraged by this effort and we appreciate the opportunity to recommend next steps.

LS Power has direct knowledge of what it takes to capitalize the energy transition and has a stake in ensuring that New England develops high quality market mechanisms that facilitate decarbonization by incenting robust investment. Since 1990, we have developed, constructed, managed, and acquired competitive power generation and transmission infrastructure, for which we have raised over $47 billion in debt and equity financing. We have developed over 11,000 MW of power generation and acquired over 34,000 MW of power generation assets (both conventional and renewable). LS Power is on the leading edge of the industry's transition to low-carbon energy as it commercializes new technologies and develops new markets including large-scale renewables, battery storage, and high voltage transmission. On the demand side, LS Power is the majority shareholder of EVgo, the nation's largest public fast charging platform for electric vehicles and first platform to be 100% powered by renewable energy, as well as CPower Energy Management, one of the largest demand response providers in the country.

Our New England footprint is comprised of approximately 1,200 MW of generation that includes thirteen hydroelectric assets located in Massachusetts, New Hampshire and Vermont, two wind farms located in Maine and New Hampshire, one solar farm located in Vermont, two gas plants located in Rhode Island and Connecticut and approximately 500 MW of demand response resources located across New England. In addition, LS Power is actively developing transmission solutions nation-wide to enhance the transfer capability of the power grid, a critical component in grid transformation, and was recently awarded a 1,200 MW transmission project in Maine to facilitate the delivery of renewable power to consumers in Maine and Massachusetts.

Based on the market rules, and the questions asked by DOER during their webinar presentation on February 3, 2023, we have four suggestions for an enhanced FCEM:

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[1] MA Department of Energy Resources with The Brattle Group and Sustainable Energy Advantage, "New England Forward Clean Energy Market: Proposed Market Rules, Version 1" ("Design Proposal" or "Proposal") January 2023, https://www.mass.gov/doc/ma-doer-fcem-design-proposal/download

1) The FCEM should start small and focus on doing one thing well;
2) The FCEM does not need any formal governance relationships with FERC or ISO New England (ISO-NE) to be successful;
3) The FCEM does not require any formal linkages with the ISO-administered Forward Capacity Market (FCM); and,
4) Additional carbon pricing can enhance the FCEM.

We look forward to continued efforts to implement market design changes that set the region on a path that appropriately balances ratepayer interests, system reliability and public policy achievement.

1) The FCEM should start small and focus on doing one thing well

Enhancing Renewable Energy Credit (REC) markets using an FCEM or another tool would help the states double-down on market-based mechanisms to facilitate decarbonization. We observe, however, that the states do not need to re-invent the wheel here. The financial markets that have developed around RECs *already* offer developers a mechanism to sell their RECs forward on a multi-year basis. Forward sales are supported by state supported REC compliance programs that apply to load serving entities, as well as an ever-growing voluntary market supported by public and private corporations and load serving entities not subject to State REC compliance obligations. Continued state commitment to the REC markets is critical to continue the regulatory certainty necessary to support investment and hasten the decarbonization of the power sector. A FCEM could enhance existing REC markets by:

- Centralizing procurement using an auction rather than bilateral transactions between REC holders and state electric distribution companies, offering better price discovery and transparency of environmental attributes; and,
- Implementing a multi-year price-lock for new resources that could offer developers more revenue certainty, easier financing, and faster development.

The design proposal's contemplation of four distinct products and various sub-markets is an interesting idea.[2] Adding more products could streamline coordination between the FCEM and various state Renewable Portfolio Standards (RPS), Clean Energy Standards (CES), and other programs. Streamlining coordination between existing REC markets and the FCEM comes at a cost – reduced market efficiency and increased market complexity. An FCEM that mimics the existing state regime with dozens of distinct products will not offer much consumer or supplier benefit over the status quo. Consolidating and streamlining FCEM products, however, will increase competition and reduce consumer costs.

[2] Design Proposal at Section II: Product Definition, Table 2

Additionally, the FCEM design should allow new and existing resources to compete for regional needs on an equal footing. Equivalent treatment will increase competition, lower consumer costs, and allow for the continued reinvestment in older clean energy assets that have provided New England states with decades of clean energy. For example, LS Power recently acquired the hydroelectric power plant at Gardners Falls on the Deerfield River, an asset that has been providing energy since 1914. This sort of very-long term energy generation is essential for meeting and sustaining the Commonwealth's decarbonization efforts, but it is only possible through continued reinvestment in operating assets. An FCEM which favors new resources over existing will result in inefficient deployment of capital, excessive new construction, and higher consumer costs.

The simplest approach to streamlining the FCEM would be to start with a market that solely transacts the NE-REC product (a close analogue of the Class 1 RECs required by most states). This would allow the FCEM to build on existing REC markets, but with the coordination and price-lock advantages of the FCEM design. If the NE-REC market is a success, other products could be added in time. Instead of developing a "do-everything" market, it would be preferable for the novel FCEM concept to do one thing and do it well. A well-functioning market will bolster investor confidence and help activate billions of dollars of investment needed to meet the region's ambitious climate goals.

2) **The FCEM does not need any formal governance relationships with FERC or ISO-NE to be successful**

The Design Proposal is right to propose a new, standalone governance arrangement for the administration of the FCEM. The FCEM's market for environmental attributes is meaningfully different from the ISO-NE administered power markets and different from RGGI-administered carbon markets. We agree that the coordinated procurement of environmental attributes would be better achieved through a stand-alone entity, such as FCEM-NE.

We fail to see, however, why FCEM-NE needs a different relationship with ISO-NE and FERC than RGGI.[3] RGGI is not FERC jurisdictional. The DOER-sponsored procurements for clean energy and environmental attributes under Sections 83(C) and 83(D) are not FERC jurisdictional. FCEM-NE, which is just a coordinated, forward procurement of environmental attributes does not need to be FERC jurisdictional either. There is no need for FCEM-NE to be a public utility under the Federal Power Act and it does not need Section 205 filing rights.

Making FCEM-NE FERC jurisdictional will only hinder the state's ability to procure resource mixes that align with their public policy preferences. We observe that there have been repeated instances, such as the decade-long fight over Minimum Offer Price Rules (MOPR) in ISO-NE,

[3] Design Proposal at 7.

where FERC and the New England states have been at loggerheads. While the current FERC commissioners may be more deferential to state preferences than in years past, DOER should not assume that all future FERC commissions would share that deference. The road to decarbonization will be long and there will be many different federal administrations along the way.

Additionally, making FCEM-NE FERC jurisdictional opens it up to challenges under Section 206 of the Federal Power Act.[4] Section 206 complaints on FCEM-NE by third parties could force the states and FCEM-NE administrators to make changes to the FCEM construct contrary to their preferences. Section 206 complaints, while an important tool to ensure fair market rules, frequently come to the consternation of the ISO/RTOs and other entities at whom they are directed. It is entirely plausible that FCEM-NE would find itself subject to adversarial 206's as well, perhaps over product definitions, resource qualification, and other core market rules.

Designing FCEM-NE to avoid FERC jurisdiction (akin to RGGI) avoids all these issues and makes the FCEM more robust against any future, deleterious federal policy.

Similarly, we fail to see why FCEM-NE needs to "rely on formalized relationships with ISO-NE (to implement the majority of the operational and settlement functions of the FCEM)".[5] There might be narrow instances where a relationship might be needed and beneficial – such as the existing data-sharing arrangements between ISO-NE and NEPOOL-GIS for generation tracking. There may also be value in aligning auction schedules, credit requirements, and billing cycles between the complementary markets of ISO-NE and FCEM-NE.

The Proposal goes far further, though, and notes that while FCEM-NE "will take primary responsibility for managing FCEM" it will nevertheless require "substantial analytical and implementation support from ISO-NE and NEPOOL-GIS."[6] Of these various kinds of support, the Proposal suggests that ISO-NE would assist in the:

- Development of various offer parameters such as the Clean Net Cost of New Entry ("Clean Net CONE")[7];
- Qualification of supply (and eligible volumes) for the FCEM-NE auction[8];
- Monitoring of credit and development milestones of new resources[9]; and,
- Settlement of the FCEM auction itself.[10]

[4] Design Proposal at 8.
[5] Design Proposal at 8.
[6] Design Proposal at 45.
[7] Design Proposal at 30.
[8] Design Proposal at 38.
[9] Design Proposal at 40, 53.
[10] Design Proposal at 49.

These will be significant efforts and it is not obvious that ISO-NE's experience with the Forward Capacity Market will generate meaningful efficiencies over creating new administration mechanisms housed within FCEM-NE. For example, the development of a "Clean Net CONE" will largely rely on third party consultants that can be managed directly by FCEM-NE rather than with ISO-NE.[11] In the same vein, there are many organizations that already perform complex auctions and that can develop one for FCEM. The FCEM has a unique enough set of new products that any qualification process, credit monitoring, and settlement engine held by the ISO would need to be seriously reworked, expanded, or overhauled.

We worry that FCEM-NE's "substantial" reliance on ISO-NE will force the ISO to deprioritize its most critical work: ensuring regional reliability. ISO-NE is already busy and has an aggressive work plan for at least the next three years.[12] This proposed reliance on ISO-NE is all the more worrying given circumspect comments from both States and FERC about the ISO's ability to administer their core functions adequately.[13]

FCEM-NE would be better positioned for success if it were more self-reliant and stand-alone. The region would be better positioned for success if it let ISO-NE focus on its core reliability responsibilities.

3) <u>The FCEM does not require any formal linkages with the ISO-administered FCM</u>

The Proposal largely contemplates that the FCEM would be separate from the ISO-NE Forward Capacity Auction (unlike prior concepts including the Integrated Clean Capacity Market). This attenuated relationship makes sense. Clean attributes are distinct from energy and capacity. Most clean resources have modest capacity value but significant clean energy output, which suggests that close integration (or cooptimization) will not yield meaningfully different results than running the two auctions separately.

We note that there is one instance where the Design Proposal creates a formal linkage between the FCEM and FCM, namely "cleared clean capacity resources will be allowed to self-schedule FCM capacity commitments so as to ensure clearing [in the FCM]."[14] There is no need for this "self-scheduling" of this clean capacity in the FCM (i.e. a must-take offer).

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[11] ISO-NE's own CONE Reset process relied heavily on two consultants: Mott McDonald and Concentric Energy Advisors. A wide variety of technical and economic consultants offer similar expertise in other markets, including Brattle itself.

[12] Page 16 https://www.iso-ne.com/static-assets/documents/2022/10/2022-strategic-plan-vision-in-action.pdf

[13] E.g., NESCOE's 3-Aug-2022 letter to ISO-NE notes: "We remain very concerned that the long-known, significant structural issues contributing to winter reliability challenges remain unresolved." https://www.iso-ne.com/static-assets/documents/2022/08/iso_response_to_nescoe_aug_3_letter_on_winter_2022_2023_w_nescoe_original.pdf; FERC Commissioner Allison Clements noted just yesterday that "We cannot stand idly by as the region heads toward yet more winters for which it is not adequately prepared." (Concurrence in EL22-42).

[14] Design Proposal at 45.

In the short-run (before FCA 19 and the capacity commitment year running 2028-2029), on-shore wind, solar, and battery storage are effectively guaranteed to clear the capacity market if they wish. The Offer Review Trigger Price (ORTP) – the minimum price at which a resource's offer is presumed reasonable – for onshore wind and solar in FCA 16 is zero.[15] This means that these resources are totally unmitigated in the FCM so they can offer into the auction at any price they wish (including zero), and be guaranteed to clear in the auction if they wish to assume a reliability commitment, and the performance risk associated therewith. Battery storage has an ORTP of $0.789/kW-month which will effectively guarantee storage can clear the market too, because that $0.789/kW-month offer price is significantly lower than the FCA has ever cleared.[16] And, as part of the MOPR-elimination transition period, up to 700 MW of state-supported clean capacity — or roughly 2,000 MW of nameplate off-shore wind— can clear the market without threat of mitigation.[17]

In the long-run, the ISO will allow clean resources to participate (and clear) in the capacity market so long as they are state Sponsored Policy Resources – a broad catchall that would include resources "supported by a government-regulated rate", participating in a RPS or Clean Energy Standard, or a variety of other methods.[18] This could include nuclear, hydro, and other assets that might not qualify for a narrowly-tailored REC program.

The proposed "self scheduling" provisions for clean capacity are simply not needed.

One final observation: the FCEM was conceived originally as a method to ensure that sponsored policy resources could participate in ISO administered capacity markets.[19] With MOPR's elimination, that purpose is now moot. To that end, the Commonwealth should focus on developing high quality market mechanisms that efficiently incent investments, rather than focusing on developing rules that pass muster at FERC or those that can be shoe-horned into the ISO-NE tariff.

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[15] ISO-NE, FCA Parameters Table, https://www.iso-ne.com/static-assets/documents/2015/09/FCA_Parameters_Final_Table.xlsx

[16] Id.

[17] FERC Order in ER22-1528 at 58 https://www.iso-ne.com/static-assets/documents/2022/05/er22-1528-000_5-27-2022_order_accept_mopr_removal.pdf

[18] FERC Order in ER22-1528 at 22. A Sponsored Policy Resource is defined as "a New Capacity Resource that: receives a revenue source, other than revenues from ISO-administered markets, that is supported by a government-regulated rate, charge, or other regulated cost recovery mechanism, and; qualifies as a renewable, clean, zero-carbon, or alternative energy resource under a renewable energy portfolio standard, clean energy standard, decarbonization or net-zero carbon standard, alternative energy portfolio standard, renewable energy goal, clean energy goal, or decarbonization or net-zero carbon goal enacted by federal or New England state statute, regulation, or executive or administrative order and as a result of which the resource receives the revenue source." ISO-NE Tariff, § I.2, I.2 Rules of Construction; Definitions (146.0.0).

[19] Newell, Spees, and Pfeifenberger, "Forward Clean Energy Markets: A new solution to state-RTO conflicts", 27-January-2020.

4) Additional carbon pricing can enhance the FCEM

On the February 3rd webinar, DOER asked "Are there other clean energy market reforms that could be considered as alternatives or operate with an FCEM?" The answer is yes.
LS Power, like many regional stakeholders, is a long-time proponent of carbon pricing because it is the most efficient way for society to meet its climate goals.[20] An economy-wide carbon price is the "first best" solution to integrating a "clean" signal into power markets.

LS Power acknowledges the political difficulties in relying on stand-alone carbon pricing but encourages further investigation of some sort of hybrid approach. The ISO-NE Pathways Study[21] confirmed the value of carbon pricing when it found that meaningful carbon pricing is an element of *both* the most efficient decarbonization approach (Net Carbon Pricing) and the cheapest approach (an FCEM / carbon-pricing hybrid).

- The Net Carbon Pricing pathway offers significant efficiency gains over other approaches and these gains grow larger with time.[22] These new findings comport with prior analysis by NEPGA and a robust literature on the benefits of carbon pricing.[23]
- The "hybrid" pathway, combining elements of carbon pricing and a FCEM, offers the lowest costs for consumers. Even when carbon pricing is not the star of the show, its addition offers a meaningful enhancement to other designs. The study indicates that the carbon price embedded in the hybrid pathway mitigates many of the inefficiencies of a stand-alone FCEM such as inefficient buildout, storage churning, and negative LMPs.[24]

A recent paper from MIT acknowledges the value of hybrid mechanisms, noting that "by adopting modest carbon pricing, policy makers would accomplish a disproportionately large share of the cost savings of economically optimal carbon pricing." [25]

Modest carbon pricing, like that observed in the Hybrid pathway in the ISO's study (peaking at $52/ton in 2040 compared with $298/ton under the Net Carbon Pricing approach), could sharpen the value of the FCEM, reduce costs for consumers, and enhance the hour-to-hour efficiency of ISO-administered power markets.

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[20] LS Power, "2020 Sustainability Report", 2021, at 2. *See also* LS Power, "LS Power & Other Power Generators, Industry Groups, and Think Tanks Ask FERC to Examine Carbon Pricing to Reduce Emissions", 14-April-2020.
[21] Analysis Group. "Pathways Study: Evaluation of Pathways to a Future Grid", April 2022,
[22] Analysis Group. "Pathways Study: Evaluation of Pathways to a Future Grid", April 2022, at ES-11f.
[23] Analysis Group: "Carbon Pricing for New England: Context, Key Factors, and Impacts", June 2020.
[24] The carbon price in the hybrid can do all this because it better aligns clean energy production with high emissions periods. A common REC, defined as the environmental attributes associated with 1 MWh of clean energy output, does not distinguish the value between clean generation during high emissions or low emissions periods. Adding a carbon price, all else equal, provides additional incentive for that clean generation to align with higher priced (i.e., higher emissions) periods.
[25] Dimanchev & Knittel, "Trade-offs in Climate Policy: Combining Low-Carbon Standards with Modest Carbon Pricing", November 2020.

To be clear, we do not recommend carbon pricing be integrated *into* the FCEM. In line with our first recommendation that the FCEM should focus on doing one thing well, we suggest that enhancements to carbon pricing be pursued through existing state jurisdictional programs such as RGGI or the Commonwealth's 310 CMR 7.74 generator emissions limits, or a new regional carbon market that ensures open participation and transparent pricing. Conversely, the region would benefit from an FCEM design that does not interfere with the existing carbon markets. Duplicative markets, or markets offering countervailing incentives, will make it harder for the Commonwealth to achieve its broader aims.

Conclusion

LS Power supports the Commonwealth's efforts to explore market constructs to facilitate decarbonization and wean the region off long-term contracts. The region restructured itself 30 years ago precisely because the contracting arrangements of yore saddled captive ratepayers with significant risk and offered little recourse for bad bets taken by incumbent utilities. Sometimes it feels as through some market participants think *this time is different* and that new, extenuating circumstances require a return to long-term contracts. This time is *not* different. The lessons of restructuring should continue to inform decisions as we seek methods to activate billions of dollars of investment: contracting is expensive and all the risk is on the ratepayer, subsidies beget subsidies, and markets work.

The Massachusetts FCEM Proposal is an important step towards implementing a durable market construct for environmental attributes in New England. We encourage Massachusetts, and the broader community of New England stakeholders, to continue this work and we hope that these comments help clarify the issues. The region needs to find a way to build 40+ gigawatts of capacity over the next 20 years. This will be no small feat. To assist in this effort, LS Power is ready share its first-hand knowledge about capital deployment, REC markets, storage development, and the operational realities of merchant renewable resources.

Again, we thank DOER and their consultants, the Brattle Group and Sustainable Energy Advantage, for their hard work on this FCEM Design Proposal. We look forward to continuing this conversation.

February 17, 2023

Via Electronic Submission
Joanna K. Troy, Director, Energy Policy and Planning
Massachusetts Department of Energy Resources
100 Cambridge Street, 9th Floor
Boston, MA 02114

Subject: MA DOER Forward Clean Energy Market Proposal
Joint Comments of Environmental NGOs and MA Climate and Energy Advocates

Dear Director Troy,

Thank you for the opportunity to provide feedback on the Forward Clean Energy Market ("FCEM") Proposal[1] from the Massachusetts Department of Energy Resources ("MA DOER") (hereafter "FCEM Design Proposal"). The undersigned appreciate the significant undertaking that the FCEM Design Proposal represents and hope that with our comments, this effort can be a successful tool in pushing Massachusetts and our neighbors throughout New England toward meeting our respective state policies regarding climate change. The undersigned ENGOs have a significant history of advocacy regarding energy markets matters in New England and throughout the country, including advocacy before the Federal Energy Regulatory Commission ("FERC"), ISO-New England ("ISO-NE"), state and federal courts, state public utility commissions, and state and federal environmental and energy agencies. These comments are drafted by and with the support of advocates who have been following the development of FCEM concepts since their inception over a decade ago; we appreciate the opportunity to provide this feedback and look forward to continuing to engage with MA DOER, other New England states, the Brattle Group, Sustainable Energy Advantage, and others, as the FCEM Design Proposal evolves.

I. The FCEM Design Proposal Comes at a Pivotal Time in Massachusetts Climate and Energy Policy Development

In recent years, Massachusetts climate law and policy has been strengthened significantly, including the enactment of An Act to Create a Next-Generation Roadmap for Massachusetts Climate Policy ("Roadmap Law"), under which the Commonwealth is mandated to achieve net-zero GHG emissions, or an 85% reduction below 1990 emissions levels, by the year 2050.[2] The Roadmap Law requires the Department of Public Utilities ("DPU") to evaluate not only safety, security, reliability of service, and affordability, but adds consideration of equity and reductions in greenhouse gas ("GHG") emissions to meet statewide GHG emissions limits to the DPU's priorities.[3]

[1] Massachusetts Department of Energy Resources, *New England Forward Clean Energy Market: Proposed Market Rules, Version 1*, (Jan. 2023), available at: https://www.mass.gov/doc/ma-doer-fcem-design-proposal/download (hereafter "MA DOER FCEM Design Proposal").
[2] 2021 Mass. Acts Chapter 8.
[3] *Id.*

In December 2020, Massachusetts' Executive Office of Energy and Environmental Affairs ("EEA"), in collaboration with Massachusetts Department of Environmental Protection ("MassDEP") and Massachusetts Department of Energy Resources ("DOER") released its 2050 Decarbonization Roadmap,[4] as well as its Interim Clean Energy and Climate Plan ("CECP") for 2030.[5] A final Clean Energy and Climate Plan for 2025 and 2030 was released on June 30, 2022 and included sublimits by sector for the first time as required by the Roadmap Law.[6] In the summer of 2022, Massachusetts enacted *An Act Driving Clean Energy and Offshore Wind*, which is focused on developing wind and solar energy and, among other changes, requires the DPU to adjudicate before approving any utility actions proposed in DPU 20-80 under the aegis of the "future of gas".[7] Most recently, the Clean Heat Commission released its final report, which emphasizes that transitioning customers from the existing pipeline gas system to electric infrastructure is necessary to achieve Massachusetts' decarbonization goals.[8] Based on Massachusetts' aggressive climate policies, as well as increasingly ambitious climate laws throughout the region and nationally, it is clear that sufficient interest exists in pursuing clean energy solutions to continue with development of the FCEM Design Proposal on both the buyer and seller sides.

II. A Successful Forward Clean Energy Market Must Consider Massachusetts' Emissions Mandates and Environmental Justice Policies

Key principles for MA DOER, the Brattle Group, Sustainable Energy Advantage, and stakeholders to consider throughout discussions regarding the FCEM Design Proposal are the Massachusetts' Roadmap Law mandate to achieve net-zero greenhouse gas emissions by 2050 and the Commonwealth's laws and policies regarding environmental justice, including, as described in further detail below, state efforts to bolster its public engagement processes. As both these state policy goals overlap with the FCEM Design Proposal, it is imperative that the design process occur through the lens of achieving these principles.

III. The DOER Must Ramp Up Engagement with Stakeholders Throughout New England to Ensure Just, Effective, and Economical Outcomes from the FCEM Design Process

A. The Current Comment Period Lacked Sufficient Time and Information to be Truly Effective

To facilitate a more effective, efficient, and equitable outcome, we urge DOER to offer more time for public feedback and commit to a truly inclusive and iterative process by working with stakeholders to establish and set future rounds of feedback and outreach sessions. We

[4] Mass. Exec. Office of Energy and Env't. Affairs, Massachusetts's 2050 Decarbonization Roadmap (2020), available at https://www.mass.gov/doc/ma-2050-decarbonization-roadmap/download.
[5] Mass. Exec. Office of Energy and Env't. Affairs, Clean Energy and Climate Plan for 2030 (2020), available at https://www.mass.gov/doc/interim-clean-energy-and-climate-plan-for-2030-december-30-2020/download
[6] Mass. Exec. Office of Energy and Env't Affairs, Massachusetts Clean Energy and Climate Plan for 2025 and 2030 (Jun. 30, 2022); available at: https://www.mass.gov/doc/clean-energy-and-climate-plan-for-2025-and-2030/download.
[7] 2022 Mass. Acts. Chapter 179.
[8] Massachusetts Commission on Clean Heat, *Final Report*, at 19 (Nov. 30, 2022), available at: https://www.mass.gov/doc/massachusetts-commission-on-clean-heat-final-report-november-30-2022/download.

applaud DOER for starting the conversation on regional efforts to boost clean energy, but it should be more transparent about how it will engage a wide variety of stakeholders and communities as it moves forward with this proposal. While we recognize that the general idea of an FCEM has been in discussion for several years, most of these discussions were held at ISO New England and NEPOOL—forums that are closed to the public. Thus, the only true public dialogue has been the current comment period of six weeks, which is not enough time for many affected communities to constructively engage on this complex proposal.

Exacerbating the short comment period, we were disappointed that this proposal was presented for questions and discussion by PJM stakeholders before it was similarly presented to constituents in Massachusetts. This disparity highlights the lack of prioritization for stakeholder input. The DOER/Brattle presentation offered significant insight; however, such insight would have been more valuable if it had been provided more than two weeks before comments were due. Moreover, the number of questions in the queue that went unanswered due to time limitations indicates a need for more interactive educational opportunities.

We urge DOER to work with stakeholders to develop a more substantive process for public outreach, education, and engagement moving forward. Public outreach means putting the FCEM on a wide range of groups' radars, but it also means checking in with those groups to see what resources and procedural changes could enable their participation. Public education includes providing additional materials that range in their technical nature and that explain potential impacts of the proposal on communities, as well as having clear forums for the public to submit and receive answers to questions. Public engagement demands giving stakeholders more time to consider and draft their feedback, as well as DOER substantively addressing that feedback.

We believe that substantively addressing feedback will also take more time than is currently reflected in the process. While we understand that DOER has a statutory deadline to report back to the legislature by March 1, we are skeptical that 12 days is enough time for DOER to meaningfully incorporate this round of comments. We believe that DOER intends to value input from a wide range of stakeholders including affected communities, but are concerned that rushed incorporation of public participation could compromise this process and will make public engagement less valuable, stymieing productive collaboration potential. Future rounds of feedback should be considered more deeply, and we ask that this round of feedback continue to be analyzed after the legislative report for whatever DOER's next steps may be.

B. The FCEM Design Proposal Must Center on a Just Transition

We are deeply troubled by the lack of prioritization of equity and environmental justice issues in this round of the FCEM Design Proposal but look forward to working with DOER to ensure that these issues do not get cast aside. In its presentation to stakeholders, DOER noted that its FCEM Design Proposal would shift away from the current system, where long-term contracting "includes pursuit of other state goals like economic development, environmental justice, and diversity, equity and inclusion" and towards a system where "an energy market

would separate pursuit of these state goals from other state goals."[9] DOER suggests in its presentation materials that this change "could improve transparency and competition on the cost of economic development initiatives, ensure greater compliance and strengthen enforcement mechanisms, improve the equitable allocation of costs, and better target initiatives."[10] Meanwhile, the written FCEM Design Proposal did not mention equity considerations at all.

We are concerned about states giving up the ability to consider these critical elements of a just transition in the procurement process, and that the high-level nature of the alternative solutions currently being proposed do not provide a more concrete assurance that these issues will not be marginalized. It is critical that DOER come forward with detailed and concrete proposals illustrating how these objectives would be satisfied outside of procurement, and that it takes a realistic assessment of any logistical and political barriers that might apply to such measures *before* transitioning to a new procurement system. We appreciate that environmental permitting and reviews, economic development incentive programs, workforce development grants, and supplier certifications may hold the potential to do so, but we note that these same tools have always been available and have been historically underutilized. We also note that the listed policy mechanisms such as permitting reforms or grant money can achieve different outcomes than the criteria included in RFPs, which suggests that they will also yield different benefits. DOER should not unnecessarily limit the policy options at its disposal to ensure equity and other considerations are part of the clean energy transition. We urge DOER to make fulfilling its commitment to a just decarbonization framework a central part of its proposal, not an afterthought.

C. The FCEM Design Process Must be Conducted in Parallel with Reforms of NEPOOL Governance

Regardless of which jurisdictional model DOER pursues, the FCEM must not replicate the public participation and governance dysfunction that has plagued other regional entities like ISO-NE and NEPOOL. For the FCEM to successfully support state policy for a just transition to a carbon free economy, the FCEM must have accessible and meaningful public participation. The current FCEM Design Proposal envisions using NEPOOL as the stakeholder engagement forum, with the only change being a new breakdown of stakeholder voting shares.[11] While we deeply agree with the need for a stakeholder participation body to facilitate ongoing input into FCEM operations, NEPOOL is not adequate for this purpose. The FCEM should consider alternative stakeholder forum options unless NEPOOL is willing to amend its bylaws and enter a new memorandum of understanding that would address its severe accessibility and accountability barriers.

There are three main areas of reform needed, at minimum, before NEPOOL's process could be sufficient for the FCEM's stakeholder processes, or that should be considered as design principles for any alternative stakeholder body. After we provide a brief overview of each, we

[9] Massachusetts Dept. of Energy Res., "New England Forward Clean Energy Market," Presented at DOER Public Webinar, February 3, 2023, available at: https://www.mass.gov/doc/ma-doer-fcem-webinar-slides/download at 3, (hereafter "DOER Presentation").
[10] DOER Presentation at 3.
[11] FCEM Design Proposal at 9.

will discuss them in detail. First, NEPOOL must facilitate transparency to the press and the public. Second, NEPOOL must remove barriers to membership. Third, NEPOOL must ensure that participation is fairly incorporated into actual decision making. Additionally, more information about the intended role of the NEPOOL Generator Information System (NEPOOL-GIS) is needed, and greater discussion about measures needed to ensure accountability of this sub-entity as well.

First, transparency has long been an issue with NEPOOL stakeholder deliberations. Despite repeated complaints – formally and informally – ISO-NE remains the only ISO/RTO that does not allow public and press attendance at stakeholder meetings such as NEPOOL convenings.[12] While materials (e.g., PowerPoint presentations) from NEPOOL meetings are posted on ISO-NE'S website, they tend to be posted with far greater information redacted as Critical Energy Infrastructure Information ("CEII") than in other ISO/RTOs.[13] This lack of transparency has important implications that could interfere with state policy goals. One example is the secretive manipulation of the stakeholder process to extend the Minimum Offer Price Rule for state sponsored resources in ISO-NE for an additional two years[14]—a maneuver that drew significant opposition from the public and prominent New England political figures.[15]

Any entity that facilitates the FCEM's stakeholder process should have in its binding organizational documents a requirement to allow press attendance, and work with an independent auditor to review practices regarding CEII determinations. Although there have been limited improvements toward greater transparency made in response to external pressure – such as the Consumer Liaison Group and annual public ISO-NE board meetings – these efforts have been made within ISO-NE, not NEPOOL.[16] As proven via the activism that has occurred within those very limited forums, however, there is an appetite for greater public participation in these regional processes.[17] The FCEM facilitator and stakeholder body should also include educational materials; accessibility of materials to people with different experiences and educational backgrounds is an important extension of transparency.

Second, NEPOOL suffers from a convoluted process and financial barriers to potential membership. Entities who want to join NEPOOL as End Users – the section that contains consumers, government entities, or nonprofits representing consumers – must pay a $500 application fee.[18] This is in addition to navigating an application system that appears to require

[12] Rich Heidorn, "NEPOOL Alone in Support for Press, Public Ban," RTO Insider (Sept. 16, 2018), available at https://www.rtoinsider.com/articles/21303-nepool-alone-in-support-for-press-public-ban.
[13] Rich Heidorn, "ISO-NE and NEPOOL on Transparency," RTO Insider, (Nov. 7, 2015), available at https://www.rtoinsider.com/articles/24834-iso-ne-and-nepool-on-transparency.
[14] Ethan Howland, "ISO-NE plan to extend MOPR through 2024 faces uncertain fate at FERC, experts say," Utility Dive (Feb. 9, 2022), available at https://www.utilitydive.com/news/iso-ne-extend-mopr-uncertain-fate-ferc-new-england-renewable/618556/.
[15] *See, e.g.,* Sam Mintz, "Mass. Democrats Take on ISO-NE over MOPR," RTO Insider, (Apr. 18, 2022), available at https://www.rtoinsider.com/articles/29965-mass-democrats-take-on-isone-over-mopr.
[16] *See* ISO New England Consumer Liaison Group web page, https://www.iso-ne.com/committees/industry-collaborations/consumer-liaison/.
[17] *See* Sabrina Shankman, "Power to the people: how climate activists are working to change New England's grid operator from the inside," (Jan. 25, 2023), available at https://www.bostonglobe.com/2023/01/25/science/how-climate-activists-took-over-little-known-group-iso-new-england.
[18] Second Restated NEPOOL Agreement § 14.2.

various credit and financial verifications,[19] as well as any fees calculated annually based on demand and total participant costs according to the NEPOOL Agreement.[20] ISO-NE estimates that joining takes an average of three months.[21] Any entity that facilitates the FCEM's stakeholder process should grant free membership to governments and representatives of residential consumers and environmental interests. Additionally, the process to become a member for any type of applicant should be transparent and efficient.

Third, with greater transparency and lowered barriers to membership must come actual pathways for the public to affect decision-making outcomes. In some respects, the FCEM Design Proposal at least clarifies the influence that the public would have over decision-making by setting forth a simpler voting methodology than the weighted voting methodology and activation rules generally used at NEPOOL. On the other hand, we note that NEPOOL's current weighting most heavily favors buyers and sellers. While buyers may share many overlapping interests with the general public regarding keeping costs low, their interests can diverge when it comes to certain environmental and environmental justice issues—issues which, as previously discussed, we urge not be overlooked in designing the FCEM. We therefore recommend that the voting weight should be increased for "environmental" groups and be expanded to explicitly include environmental justice and community organizations.

We also recognize that even with lowered barriers to membership, some groups and individuals might want the ability to participate on a more case by case basis. An avenue should be created for this less regular sort of participation, which could resemble open hearing formats often used by state agencies and commissions. While input gathered in these open forums would not hold the decisional power that a member's vote does, the input should not be treated superficially. To that end, the entity that facilitates the FCEM's stakeholder process should be held responsible for substantively and publicly addressing comments, concerns, and inquiries raised by such commenters.

Finally, the role of NEPOOL-GIS should be carefully considered. It is clear that tracking the new certificate market products will require informational access and technical capacity. However, to the extent that either (a) the non-FERC jurisdictional alternative would be a better fit without NEPOOL involvement, or (b) in the currently proposed jurisdictional option, the governance issues previously discussed cannot be resolved, then we suggest exploration of a separate contractual arrangement with APX, who has administered NEPOOL GIS since 2001.[22] APX also has experience administering other REC markets.[23]

IV. The Current FCEM Design Proposal Includes Some Mechanisms that Would Help Achieve Effective Implementation of a Clean Energy Market Design

[19] We say "appears" because only on the ISO New England FAQ page – a separate web page than the application and application instructions – does it clarify that governance only participants do not have to go through the financial assurance process.
[20] Second Restated NEPOOL Agreement § 14.2. For "governance only" end users, the annual fee is a flat $500. For other end users, however, the base fee is calculated as a share of participant cost, based on load size. *See also* ISO NE Membership FAQ page, available at https://www.iso-ne.com/participate/support/faq/membership#b.
[21] ISO NE Membership FAQ page, available at https://www.iso-ne.com/participate/support/faq/membership#b.
[22] *See* https://nepoolgis.com/about/.
[23] *Id*.

The current FCEM Design Proposal contains multiple details which the undersigned believe will successfully contribute to the achievement of Massachusetts' and the region's climate goals. On the whole, this version of the FCEM Design Proposal thoroughly describes the opportunities for buyers to participate in the market and utilize the FCEM to satisfy their preferences for specific resource types and new resources. Further, the FCEM Design Proposal suggests a scenario under which non-compliance clean energy buyers (i.e. corporations) can participate in the market, which can potentially help to accelerate achievement of Massachusetts' climate goals by expanding clean energy demand more widely and quickly. One of the proposed products, the NE-GHG, will provide buyers an opportunity to procure clean energy from resources that can eliminate greater volumes of GHGs by operating at times and locations where higher-emitting resources would otherwise be needed, and will require ISO-NE to begin calculating and publishing locational marginal emissions data in five minute intervals—a long overdue measure.

Bilateral markets are likely to play an important and central role in energy market structures as the region moves toward a clean energy future. Allowing buyers and sellers to engage in bilateral transactions through the auction period up to the date of compliance[24] will enable both buyers and sellers to participate in the FCEM freely and reduce hesitation and inaction. Allowing buyers and sellers to engage in contract-for-difference and self-scheduled private arrangements that are settled and reported through FCEM auctions will also allow both parties to participate more freely and confidently in the energy transition.

Additionally, the FCEM Design Proposal succeeds in recognizing that the ability of project proponents to enter into longer-term commitments will alleviate a longstanding barrier to securing financing.[25] The assurance of long-term demand participation commitments will ensure market sustainability by ensuring continued future use of the product. Further, the slow and steady procedure outlined for states which opt to end participation in the FCEM to withdraw from the market ensures that the market remains steady and other market participants are not unduly harmed by any one state's choices, again ensuring free and confident participation in the market.[26]

Cost structures are also designed effectively insofar as described in the FCEM Design Proposal. Ensuring that only participant states are responsible for costs will be key to attracting interest in the FCEM, whereas a beneficiary pays structure may drive away more fiscally conservative states. Additionally, including the costs of administering the market in as a surcharge on transactions will help to ensure that such costs remain reasonable, spread out, and fair, as has been the case in the RGGI program. The FCEM can and should also be designed with the expectation that state policies remain in effect. Specifically, the FCEM should advance or otherwise align with state efforts around Renewable Portfolio Standards, procurements, and state climate laws.

[24] FCEM Design Proposal at 18.
[25] FCEM Design Proposal at 27.
[26] FCEM Design Proposal at 28.

V. The FCEM Should be Designed as Subject to State Jurisdiction and Not FERC Jurisdiction

The FCEM Design Proposal contemplates a regional market designed to be a viable policy tool for all states in the New England region.[27] Given the anticipated multi-state nature of the FCEM, the final market design will determine whether the states or FERC will have jurisdiction over the market. To better achieve the objectives of the proposed FCEM design, which include enabling state policymakers to reflect and achieve their decarbonization goals and providing a sound governance framework that reflects a proper level of state oversight,[28] and to ensure timely market implementation and amendments, the FCEM should be designed as a non-FERC-jurisdictional market implemented under state authority.

There are at least three alternative governance models for the FCEM, including (1) a FERC-jurisdictional market administered by FCEM-NE and implemented with coordination and support from ISO-NE, (2) a non-FERC-jurisdictional market implemented under state authority that is separated from ISO-NE activities, and (3) a FERC-jurisdictional market administered by ISO-NE or a new affiliate entity.[29] The initial proposal assumes the first of these governance models, but notes that most elements of the proposal are consistent with all three models, and acknowledges that certain elements would need to be revised if the second or third model are ultimately selected.[30] Because the goals of the FCEM will be better achieved under the second model, the proposal should be amended to assume that model and make the necessary changes.

The second model—a non-FERC-jurisdictional approach that is separated from ISO-NE— would give state representatives the primary role in developing and approving the new FCEM market rules. This will better enable states to achieve decarbonization goals.[31] Any administrative benefits associated with enlisting ISO-NE's support are minor compared to the significant risks to state authority over the market as a tool for advancing state energy policy.

FERC's jurisdiction is almost never concurrent and is instead exclusive. If FERC has jurisdiction over the FCEM, then FERC could override the preferences of the states comprising FCEM-NE, and possibly modify the governance structure in ways that would reduce state control over the marketplace.[32] FERC would have sole authority to determine whether the rates paid for the various products in the market were just and reasonable, an inquiry which would extend to all aspects of market design including product definition, or the formulation of demand

[27] FCEM Design Proposal at i.
[28] DOER Presentation at 5.
[29] FCEM Design Proposal at 7.
[30] FCEM Design Proposal at 7.
[31] FCEM Design Proposal at 1, 57.
[32] As a threshold matter, it is unclear whether the FERC-jurisdictional governance model assumed in the proposal could be approved, given that it calls for a state-directed board to exercise Section 205 rights, which under the Federal Power Act Congress has granted only to utilities. The proposal suggests that FCEM-NE would be defined as a utility, but nothing in the report cited in support of this assertion indicates any precedent for any state agency or state or multi-state entity possessing Section 205 rights. Current examples of states influencing a utility's exercise of its Section 205 filings, such as the ability of the Southwest Power Pool's Regional State Committee to direct SPP filings that implicate certain traditional regulatory prerogatives of states, were approved by FERC, suggesting that FERC would have authority to later revoke such a role for the states. *See Southwest Power Pool, Inc.*, 106 FERC ¶ 61,110 at P 220.

bids and supply offers. The proposal makes much of the fact that a state-constituted body, the FCEM-NE, would have Section 205 rights. While these rights are significant, they are far from an assurance that FERC would accept any particular filing made by FCEM-NE, or would not seek changes to the market design under Section 206 of the Federal Power Act. Further, FERC jurisdiction over the FCEM may open the door to federal jurisdiction over other state actions to advance clean energy policy, insofar as these directly affect the FCEM market that is within FERC's jurisdiction. Massachusetts and other states would be wise to heed the lessons of the last several decades with FERC and ISO-NE's aggrandizement of their own spheres of influence through the Forward Capacity Market.

To ensure a sufficient level of state oversight of the market, the proposal should be amended to be non-FERC-jurisdictional in the first instance. As examples of how a non-FERC-jurisdictional market might be structured, Massachusetts and other states developing the new market can and should draw on their experience with, among other things, the Regional Greenhouse Gas Initiative, the multi-state cap-and-invest program in which all six New England states participate and which is administered by a third-party entity, RGGI, Inc.

Though a balancing of interests indicates that the FCEM should be non-FERC-jurisdictional, care must be taken in the design of the FCEM to ensure that it does not unintentionally trigger FERC jurisdiction, Federal Power Act preemption, or raise concerns under the Compact Clause of the US Constitution.

The Federal Power Act creates a system of cooperative federalism in which states and FERC have "complementary and comprehensive" regulatory authority over electric power, and in which FERC has jurisdiction over—and states are preempted from implementing—programs that directly affect wholesale rates for interstate transmission of electricity, and states have jurisdiction over the remaining aspects of electricity markets.[33] Courts consider whether a program is "aimed at" affecting wholesale rates to decide whether the practice affects those rates directly or indirectly.[34] A program is "aimed at" affecting wholesale rates, and therefore within FERC jurisdiction, when it guarantees a market participant a rate other than the one that FERC has determined to be "just and reasonable" in a given auction.[35] However, programs that primarily regulate the sizes and types of generators, or incentivize clean electricity generation, are not within FERC jurisdiction because they affect wholesale rates only indirectly by affecting the supply of electricity in an auction.[36]

The FCEM-NE could operate the FCEM without bringing the market into FERC jurisdiction so long as the products transacted in that market are unbundled from a FERC-jurisdictional product, and participation in the FCEM is not predicated on also participating in a FERC-jurisdictional market. Most of the products are likely not within FERC's jurisdiction. States may regulate the "sizes and types of generators" that produce electricity in a state without overstepping into FERC's jurisdiction, and FERC does not have jurisdiction over unbundled

[33] 16 U.S.C. § 824(b); *see FERC. v. Elec. Power Supply Ass'n*, 577 U.S. 260, 289 (2016); *see also Hughes v. Talen Energy Marketing*, 136 S.Ct. 1288, 1292 (2016).
[34] *Hughes v. Talen Energy Marketing*, 136 S.Ct. 1288, 1298 (2016).
[35] *Hughes v. Talen Energy Marketing*, 136 S.Ct. 1288, 1298 (2016).
[36] *Allco Finance Ltd. v. Klee*, 861 F.3d 82, 101 (2d. Cir. 2017).

attribute credits because they are "state-created and state issued" instruments that regulate how electricity is produced, not a wholesale electric rate.[37] However, if states condition interaction in a wholesale market on the use of unbundled attribute credits, or condition acceptance of credits on participation in a wholesale market, then FERC may have jurisdiction.[38] As discussed further below, because the Clean Capacity Certificate (NE-CCC) is preliminarily designed to correspond to the unbundled attribute reflecting capacity delivered into the ISO-NE Forward Capacity Market, a wholesale market regulated by FERC, there are higher risks that this product will fall within FERC jurisdiction.

Besides the risks of Federal Power Act preemption, the FCEM could avoid constitutional problems under the Compact Clause by being designed similarly to RGGI, which has not faced serious judicial challenges,[39] likely because RGGI has no binding authority over states. The FCEM-NE could similarly administer an auction for specified FCEM products and leave it to states to make those products binding.

States should not be deterred from pursuing a non-FERC-jurisdictional FCEM on that basis that it would face challenges under the Compact Clause of the U.S. Constitution, which bars states from entering "into any Agreement or Compact with another State" without the consent of Congress.[40] The Supreme Court has held that the clause bars only agreements that aggrandize state power and encroach on the supremacy of the federal government.[41] The only Compact Clause challenges to RGGI ended in early stages of litigation.[42] Like RGGI and the multistate tax compact at issue in *United States Steel*, the FCEM would be a group of states coordinating lawfully-enacted state policy. And like RGGI and the multistate tax compact, the FCEM does not empower states to do anything that they could not do in the FCEM's absence.

To allow states to retain the level of oversight necessary to ensure that the market serves as a tool for satisfying their clean energy objectives, and to ensure that governance and decision making are transparent and democratic and that the market materializes in a timely manner, the FCEM should be designed as a non-FERC-jurisdictional market.

VI. The Proposed New England Clean Capacity Certificate Product Requires Significant Review and Refinement to Lead to Achievement of an Effective Clean Energy Market

The FCEM Design Proposal includes specifications for a New England Clean Capacity Credit ("NE-CCC") explaining that it will "will create an opportunity for states and consumers to dictate and certify that a particular share of their total resource adequacy requirements must be

[37] *Allco Finance Ltd. v. Klee*, 861 F.3d 82, 101 (2d. Cir. 2017); *WSPP Inc.*, 139 FERC ¶ 61061, 61426 (2012); see also *Coalition for Competitive Elec., Dynergy Inc. v. Zibelman*, 906 F.3d 41, 52 (2d. Cir. 2018).
[38] *Coalition for Competitive Elec., Dynergy Inc. v. Zibelman*, 906 F.3d 41, 52 (2d. Cir. 2018); *Hughes v. Talen Energy Marketing*, 136 S.Ct. 1288, 1299 (2016).
[39] RGGI has existed for nearly two decades without being subject to FERC jurisdiction and apparently has never been seriously challenged in court. *See United States v. California*, 2020 WL 4043034, at *9 n.15 (E.D. Cal. July 17, 2020) ("The court is unaware of any legal challenges to the RGGI"), appeal dismissed.
[40] U.S. Const. Art. I, § 10 cl.3.
[41] *See United States Steel Corp. v. Multistate Tax Comm.*, 434 U.S. 452, 472 (1978) (finding that a 21-state agreement to research and implement uniform tax systems did not require congressional approval).
[42] See *Consent Decree, Indeck Corinth, L.P. v. Paterson* (No. 5280-09) (settled); *Thrun v. Cuomo*, 976 N.Y.S.2d 320, 324 (N.Y. App. Div. 2013) (dismissed before trial).

served by non-emitting clean electricity resources, rather than fossil resources."[43] As long-standing advocates for market rules and designs that avoid perpetuating unnecessary reliance on fossil fuels for resource adequacy, the undersigned organizations agree with the need "to support graduated transition from present reliance on fossil resources for providing most grid reliability services."[44]

However, the NE-CCC product presents both practical and legal issues, which MA DOER should consider carefully before proceeding. The NE-CCC is born, in part, out of the recognition that some non-emitting resources that provide substantial reliability benefits, such as energy storage and demand response, are not eligible to sell renewable energy credits or CEACs. Yet, the FCEM Design Proposal's vision for the NE-CCC market does not seem designed to support the development of capital-intensive resources like energy storage in that it would not require long-term demand commitments for capacity-based products.[45] Just as the FCEM Design Proposal acknowledges the need for longer-term CEAC commitments to support the lower-cost financing of renewable energy resources, MA DOER and its partners should re-examine whether longer-term commitments may also be helpful for the NE-CCC product to support its stated objective.

A single resource producing both MWh-based and MW-based clean energy attributes could lead to double-counting if, for example, an LSE procures the NE-CCCs in order to assert that it meets a certain minimum quantity of non-emitting resources as part of its capacity mix, while another buyer retires the NE-CEACs associated with generation from the same resource to claim clean production. While this may not constitute double-counting in a narrow sense, because only one party is retiring RECs associated with the generation, it reflects duplication of the clean energy attributes from a common-sense perspective and could undermine confidence in REC markets.

The FCEM Design Proposal states that the clean capacity product would be "unbundled from both energy and capacity."[46] It also envisions that: "the NE-CCC product transacted in the forward FCEM auction will constitute an obligation to deliver the committed volume of NE-CCCs across twelve consecutive months in the delivery year,"[47] which significantly muddies the distinction between a clean capacity product and the existing capacity product. A NE-CCC is fundamentally different from a traditional REC transaction, which does not impose an obligation to produce electricity, only to sell RECs associated with any electricity that is generated. The NE-CCC sale appears to obligate the seller to deliver by offering into another market—the existing FCM.

The FCEM Design Proposal explains that the "[c]leared clean capacity resources will be allowed to self-schedule FCM capacity commitments so as to ensure clearing; these resources will earn separate payment streams for selling the unbundled NE-CCC certificate via FCEM and the ISO-NE-defined capacity."[48] We note that this statement presumes that ISO-NE will permit

[43] FCEM Design Proposal at 19.
[44] *Id.*
[45] *Id* at 20.
[46] *Id* at 7.
[47] *Id* at 19.
[48] *Id* at 49.

these resources to self-schedule into the FCM; thus, the workability of the NE-CCC construct depends on ISO-NE continuing its present course away from applying buyer-side market mitigation rules to resources needed to meet state policy goals. States and clean energy buyers should seek clarification from ISO-NE and NEPOOL to ensure that self-scheduling of NE-CCC sellers would not be viewed as problematic.

More fundamentally, the obligation that NE-CCC sellers assume to provide capacity, and the suggestion that such resources should self-schedule in order to guarantee that they will clear, may raise preemption risks in that such a structure conditions the ability to sell NE-CCCs on also clearing a FERC-jurisdictional capacity market.[49] Even if the NE-CCCs are sold via a FERC-jurisdictional market, as the FCEM Design Proposal envisions, this concern could still arise where the demand bids submitted into the FCEM are defined by state law, and given the heightened role envisioned for states in the governance of that market.

To avoid some of the legal and definitional complexities of a clean capacity product, it may be worth exploring other tools to shift the overall resource mix, given the recognition that simply procuring a high percentage of clean MWhs is insufficient. For example, the GHG marginal abatement certificate (NE-GHGs) described in the FCEM Design Proposal would have a similar effect of attracting investment in resources able to supply electricity when the system is currently most reliant on highly polluting fossil fuel plants.[50] The NE-GHGs market could create a similar investment incentive for resources that can supply electricity at times when wind and solar may not. Another option would be to explore updates to state policy that institute hourly matching that requires load-serving entities to procure RECs from a well-balanced and deliverable mix of resources that correspond to the entity's load profile.[51]

VII. Conclusion

In light of the present and looming climate crisis and in consideration of the ambitious climate laws and greenhouse gas emissions reductions mandates in Massachusetts and throughout New England, it is imperative that we take swift and sweeping action to limit warming and its impacts on our residents, communities, properties, and resources. Reforming the mechanisms by which energy is bought and sold to ensure that our homes and businesses are powered and heated by clean resources is a critical step in achievement of state and regional climate policy. We are appreciative of MA DOER's efforts to advance state and regional climate policy by means of an FCEM. As described herein, there remains a need for significant additional public engagement before the FCEM Design Proposal can be finalized. To ensure

[49] *Hughes v. Talen Energy Mktg., LLC*, 578 U.S. 150, 166 (2016) (noting that state programs that "do[] not condition payment of funds on capacity clearing the auction" would not suffer from the same defect as the Maryland program held to be preempted in that case).

[50] Comments filed by the New York University Institute for Policy Integrity in a recent New Jersey Board of Public Utilities proceeding made a similar observation: "For example, if marginal emissions rates at one location on the PJM grid are greatest during off-peak hours, indexing RECs or CEACs would incentivize investment in clean generation at the location that can displace fossil generation during those hours. If, in another location, emissions intensity is greatest during periods when reliability is a concern, indexing RECs or CEACs will guide investment in clean energy that can be produced during those periods in that location." Institute for Policy Integrity Comments, Investigation of Resource Adequacy Alternatives, BPU Docket No. EO20030203, at 8-9 (Oct. 27, 2022).

[51] *See, e.g.*, Comments of Constellation Energy Corporation, Investigation of Resource Adequacy AlternativesBPU Docket No. EO20030203 (Oct. 27, 2022).

achievement of state climate goals and provide for sufficient oversight, the FCEM should be state-jurisdictional, not FERC-jurisdictional. Finally, additional review and consideration are required to determine the best market tools to shift the overall resource mix to clean resources.

We appreciate the time and effort to date of MA DOER, the Brattle Group, and Sustainable Energy Advantage in compiling the FCEM Design Proposal. We look forward to continuing to engage on this matter over the coming months. Please do not hesitate to reach out with any comments or questions on the contents of this comment letter. Thank you for your time and consideration.

Respectfully submitted by:[52]

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Kelsey Wentling, Massachusetts River Steward
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Cathy Kristofferson, Co-Founder
Pipe Line Awareness Network for the Northeast (PLAN-NE)

Jeanne K. Krieger, Chair, Advocacy Committee
Lexington Climate Action Network (LexCAN)

Bob Armstrong, Co-Chair
FCCPR Climate Crisis Task Force

David Schreiber, Branch Manager
Greenvest

Lynn Nadeau, Treasurer
HealthLink

Jonathan Abe, CEO,
Sunwealth

James Michel, Co-Founder
Resist the Pipeline

[52] NEPOOL Members are designated with an asterisk (*).

Tenaya Taylor, Executive Director
Nonprofit Accountability Group

Rev. Cindy Davidson, Executive Director
Massachusetts Interfaith Power & Light, Inc.

John R. Cook, Jr., Convener
Trustees Collaborative for Parks & Open Space

Megan C. Amsler, Executive Director
Self-Reliance Corp.

David Schreiber, Vice President
Lynn Nadeau, Legs & Regs Committee
Jewish Climate Action Network

Haskell Werlin, Co-Founder
Mass Solar

Elena Weissmann, Northeast Director
Vote Solar

Susan Purser, Coordinator
350MA-Berkshires

With additional support from Massachusetts and New England based climate advocates, including:

Philip Q. Hanser, *individually*
Jackie Ammerman, *individually*
M.A. Swedlund, *individually*
Robert W. Persons, P.E., *individually*
Steven Botkin, *individually*
Mara Pentlarge, *individually*
Regine A. Spector, *individually*
Timothy Havel, *individually*
Jacqueline Royce, *individually*
Karen Kraut, *individually*
Claudia Allen, *individually*
Kendra Ford, *individually*
Amy Harris, *individually*
Christopher Spicer, *individually*
Melinda Tuhus, *individually*
Eve Vogel, *individually*
Jacob Powsner, *individually*
Ben Gordesky, *individually*
Ian McDonald, *individually*

Clay Colt, *individually*
Sandy Tosi, *individually*
Diane M. Keefe, *individually*
Alison Sanchirico, *individually*
Cory Alperstein, *individually*
Edward Woll, *individually*
Steven Marantz, *individually*
Robert Myles Miller, *individually*
Robert J. Kvaal, *individually*
T. Steven Jones, M.D., *individually*
Julia Fox, *individually*
Roy Harvey, Member, *Lincoln (MA) Green Energy Committee* and *MIT Alumni for Climate Action* (*signing individually*)
Nathan G. Phillips, *individually*
Martyn Roetter, *individually*
Kent Wittenburg, *individually*
Glenn Dansker, *individually*

Timothy J. Brennan
Director, Wholesale Markets Strategy
TIMOTHY.J.BRENNAN@nationalgrid.com

VIA ELECTRONIC MAIL ONLY: joanna.k.troy@mass.gov

February 17, 2023

Joanna K. Troy, Director, Energy Policy and Planning
Commonwealth of Massachusetts
Department of Energy Resources
100 Cambridge Street, 9th Floor
Boston, MA 02114

Re: Comments on Forward Clean Energy Market Design Proposal

Dear Ms. Troy:

National Grid appreciates the opportunity to provide comments on the Massachusetts Department of Energy Resources' ("DOER") New England Forward Clean Energy Market Proposed Market Rules, Version 1, issued January 2023 (the "FCEM proposal"). National Grid supports the FCEM because it is urgently needed, and it offers a suite of important benefits to electricity market participants and consumers, which is why it has long advocated this type of much-needed innovation. The DOER's proposal is a significant step toward integrating clean energy generation resources as competitive players the New England electricity markets.

I. Background

As proposed by the DOER, the FCEM is a forward auction where both demand-side and supply-side offers are submitted for a range of renewable and clean energy attribute ("EA") products to be supplied three years in the future. The EA products may include both regionally-defined EAs, and EAs defined by single or multiple states. The auction is open to a broad range of buyers and sellers, including demand response, and has flexibility to add new EA products when and if expansion becomes desirable. The FCEM is consistent with, and designed to work in tandem with, ISO-NE's existing markets, including its existing Forward Capacity Market ("FCM"). MA DOER's documentation describes both state-jurisdictional and FERC-jurisdictional FCEM options, which may be administered by a body comprising representatives from the six New England states, or by ISO-NE. The FCEM is a competitive, efficient clean energy procurement mechanism that will appropriately shift development risks away from electric customers.

II. National Grid Supports the DOER's Proposed FCEM Design

National Grid supports the DOER's FCEM market design, which shows a clear understanding of the challenges involved in facilitating clean energy generation at least cost to

customers, and the need to enhance the available tools for accomplishing that crucial goal. Despite the challenges, the FCEM offers numerous important benefits, which is why National Grid supports the DOER's proposal.

a. The Proposed FCEM Will Support Significant New Clean Energy Resource Investment

The FCEM will add a much-needed market-based mechanism capable of supporting significant, new, clean energy resource investment in New England. As proposed, FCEM will assure clean energy developers of a secure forward revenue stream by providing a 15-year clearing price lock-in at the time of FCEM rollout, decreasing to a minimum of seven years when the depth and maturity of the market permits. This lock-in of future revenues addresses the factor most often cited by developers as the main barrier to financing and building clean energy generation. The option for buyers to submit "phased-entry" demand bids can also ease burdens for developers by offering the opportunity for greater flexibility in construction scheduling and commissioning of generation.

While these features will support large volumes of clean energy investment on the developer side, the FCEM offers many benefits to buyers as well. The competitive nature of the FCEM assures customers of advantageous pricing, while the flexibility allowed for demand bids, e.g., options to specify that their demand be supplied by newly-constructed clean resources, and/or by resources with particular attributes, allows various states and customers to participate in ways best able to satisfy their respective clean energy requirements, policies and goals. In addition, the FCEM shifts project development risks back onto developers, consistent with the market restructuring policies adopted by the New England states, rather than saddling customers with these risks as long-term contracts can do.

b. Participation in the FCEM Will be Voluntary for Both Buyers and Sellers

The FCEM aims to attract a wide range of buyers with a wide range of interests, including state and local governments, utilities and other load-serving entities ("LSEs"), private companies, and environmental groups. The FCEM will provide buyers with the flexibility to serve their own specific clean energy goals: "All buyers participating in FCEM will be able to specify: the desired volume of certificates to procure; the FCEM-defined or state-defined products eligible to serve their demand; and the maximum price the buyer is willing to pay for each demand bid segment."[1] Products traded in the FCEM may be region-wide, as defined cooperatively by the six New England states, or state-specific.

At the same time, participation in the FCEM will be strictly voluntary for both buyers and sellers, and the FCEM includes safeguards ensuring that states and other entities that choose not to participate will not bear FCEM energy costs. State-specific EA products will be charged only to the customers of that state (unless other states voluntarily choose to participate). This will

[1] FCEM proposal at 23.

eliminate the potential for states to impose the costs of their own environmental policies on customers in other states.

c. The FCEM Ensures that State-Mandated Costs Are Allocated Fairly

The allocation of FCEM charges will appropriately follow existing responsibility for satisfying state renewable portfolio standards and energy requirements by allocating charges resulting from state-mandated demand bids to the LSEs serving the electric customers in that state. "Procurement costs to fulfill demand bids submitted at the direction of authorized state agencies will be recoverable from the relevant customers through the energy supply portion of the customer bill."[2]

In accordance with state requirements, these clean energy costs will be passed through to customers via the LSEs responsible for the energy supply on their bills, and "[o]n an ongoing basis throughout the delivery year, the procured certificates will be retired toward fulfillment of the relevant customers' state obligations through the FCEM-NE system, and associated settlements will be issued to the LSE."[3] The FCEM will ensure that cost allocation among LSEs will be made at the time payment becomes due (i.e., three years after the FCEM auction) to ensure that each LSE is only responsible for costs corresponding to its current customer base.

d. Market Monitoring Will Forestall Exercises of Market Power

The FCEM contains safeguards to ensure that its market prices result from competitive forces rather than exercises of market power on either the buyer or seller side. The open, competitive structure of the market itself (as well as the fact that it will be only one of several avenues through which clean energy can be bought or sold in New England) militates strongly against the exercise of market power, but MA DOER's FCEM design also includes an Independent Market Monitor ("IMM") to oversee the market and ensure competitiveness, fairness, and transparency.

> All market participants will be subject to the market monitoring and mitigation provisions under the FCEM, the goal of which is to prevent market participants from profitably engaging in the exercise of market power or other manipulative behaviors. . . . The IMM will conduct a pre-auction review of structural competitiveness for all markets and submarkets relevant to the FCEM. . . . In addition to these pre-auction screens, the IMM will issue post-auction reports and one combined annual report reviewing the competitiveness of each forward auction, spot auction, and bilateral market activities leading up to the compliance deadline.[4]

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2 FCEM proposal at 4.

3 FCEM proposal at 26.

4 FCEM proposal at 57.

The IMM will have the authority to impose significant strictures and remedies upon market participants who are found to possess or exercise market power.

III. New England Should Move Forward Expeditiously With the FCEM

As discussed above, the DOER's FCEM market design will represent a much-needed addition to New England's array of tools for combating climate change and environmental degradation, while minimizing customer costs. As such, the sooner it begins to operate, the better. Indeed, the DOER's FCEM proposal solicits suggestions on how to implement FCEM in a timely fashion.

One threshold issue that must be settled before the FCEM can be implemented is the question of how and by whom the FCEM will be administered. The DOER proposes several options, including both state-jurisdictional and FERC-jurisdictional, and state-administered and ISO-NE-administered structures. Whichever option is pursued, any approach should take advantage of ISO-NE's experience and expertise. Given ISO-NE's existing capabilities, proven track record, and long experience operating markets very similar to the FCEM (such as the FCM), the initial focus should be to achieve agreement (between the states, FERC, and ISO-NE) on having ISO-NE administer the market for the states and perform the associated market settlements.

Accessing ISO-NE's capabilities in this way would not prejudge or influence the issue of whether the FCEM should be a FERC-jurisdictional or a state-jurisdictional market, or who should have the ultimate governance authority over it. While, to date, ISO-NE has only operated FERC-jurisdictional markets, we believe that a way could be found to compensate and arrange for ISO-NE to separately operate the FCEM, whoever has jurisdiction and ultimate authority over it. This is especially so because of the close coordination and interplay that will take place between FCEM and ISO-NE's FERC-jurisdictional wholesale markets. National Grid believes ISO-NE's long experience and deep expertise operating very similar markets will be indispensable to a quick and smooth implementation of FCEM. Consequently, National Grid recommends that the New England states quickly agree that ISO-NE should be approached in this capacity.

IV. National Grid Has Advocated for a Forward Clean Energy Market for a Decade

National Grid's extensive research and analysis over the years led it to publicly advocate for forward renewable/clean energy markets on numerous occasions. The knowledge and expertise that it has gained through these activities inform National Grid's strong vote of support for the DOER's FCEM proposal, as discussed below.

In 2010, National Grid recommended this concept in comments filed with the New England States Committee on Electricity ("NESCOE"). In that filing, National Grid said:

> Alternatives to direct contracts between developers and EDCs should be explored as a means to facilitate the policy goals of the various states. One option may be to develop a

> mandate for ISO-NE to operate a central forward capacity market for renewable resources as driven by environmental and other policies. . . . As is the case with the existing Forward Capacity Market, resources would clear based on competitive offers indicating their required capacity revenues, . . . without the need for RFPs, negotiations and multi-year contracts between individual entities for renewable energy.[5]

National Grid advocated for a forward renewable/clean energy market in the following years, including after FERC's issuance of Order No. 1000. For example, a December 2011 article Platt's Megawatt Daily noted that:

> A federal order on transmission planning has revived an effort by a major New England utility to have a forward capacity market for renewables created in the region. National Grid wants to rally other stakeholders behind what would be the country's first capacity market dedicated to renewable sources . . . . [6]

Likewise, at a 2016 conference on "Integrating Markets and Public Policy," National Grid's presentation incorporated many ideas that are compatible with the DOER's FCEM proposal.[7] On September 19, 2017, National Grid representatives likewise testified at a Massachusetts Legislative Joint Committee on Telecommunication, Utilities and Energy hearing, again advocating a forward clean energy market. Subsequently, National Grid worked with other interested stakeholders on "Design Parameters for a Forward Clean Energy Market," a document transmitted to ISO-NE, NESCOE, and NEPOOL on December 29, 2020.[8] On March 21, 2021, National Grid submitted public comments on the Massachusetts Interim Clean Energy and Climate Plan for 2030 supporting the forward clean energy market concept.[9] At

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5 Letter, Rapp and Paravalos to Hunt, Sept. 15, 2010, p. 3, available at: https://nescoe.com/wp-content/uploads/2015/08/NationalGrid_CoordProc_15Sep2010.pdf.

6 Platt's Megawatt Daily, Dec. 9, 2011. As indicated in that article, National Grid's advocacy included: (1) a September 16, 2011 presentation by Peter Flynn, head of National Grid's FERC-regulated businesses, to the New England Electricity Restructuring Roundtable that included a pitch for a forward renewable capacity market (http://www.raabassociates.org/main/roundtable.asp?sel=108 (slide 4)); (2) a November 3, 2011 presentation by Timothy J. Brennan, National Grid's director of electric market policy and strategy, making the same case in a presentation to a conference hosted by the Northeast Energy and Commerce Association; and (3) an endorsement of a forward renewable capacity market by Marcy Reed, president of National Grid's Massachusetts business, while speaking at the Women in Power Forum, held November 30, 2011, in Washington, D.C..

7 Presentation of Timothy J. Brennan, "A Forward Clean Energy Market for New England?" (August 11, 2016) available at: https://nepool.com/uploads/IMAPP_20160811_Final_Notice.pdf

8 The document was posted for the Feb 18, 2021 Future Grid Pathways meeting See pages 49-58 of the PDF file, available at: https://nepool.com/wp-content/uploads/2021/02/NPC_FG_20210218_Composite5c.pdf.

9 Massachusetts Interim Clean Energy and Climate Plan for 2030 - Public Comments of Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid, Mar. 22, 2021, p. 25.

FERC's May 2021 Conference on Resource Adequacy in ISO-NE, National Grid also strongly urged that the region move forward with a design process for a forward clean energy market.[10] On July 23, 2021, National Grid likewise testified at a Massachusetts Legislative Joint Committee on Telecommunication, Utilities and Energy hearing in favor of "House Bill 3316 authorizing . . . regional competitive market mechanisms to facilitate the financing of clean energy generation resources," again advocating a forward clean energy market.[11]

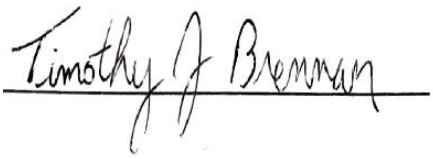
As evidenced by these past instances of public advocacy, National Grid has been a longtime supporter of forward renewable/clean energy markets. The knowledge and expertise that it has gained through these activities inform National Grid's strong vote of support for the DOER's FCEM proposal.

V. Conclusion

The DOER's FCEM proposal represents a welcome modernization of New England's clean energy markets along the lines of successful markets that have been operating in the region for a number of years: as such, National Grid supports it. FCEM will facilitate the creation of large volumes of clean energy generation through a voluntary, competitive, and efficient market that will remove substantial risks from customers and will fairly allocate costs. National Grid hopes that the New England states will promptly adopt and quickly implement FCEM for the good of the entire region.

Thank you again for the opportunity to provide comments on the FCEM proposal.

Sincerely,



Timothy J. Brennan

Director, Wholesale Markets Strategy

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https://www.mass.gov/doc/interim-2030-ceep-public-comments-letter-attachments/download (pp. 310-353).

[10] Remarks of Timothy J. Brennan at FERC Tech. Conf. Modernizing Electricity Market Design, Docket No. AD12-10-000, May 25, 2021, conference transcript at 211-216 https://cms.ferc.gov/media/transcript-52521-resource-adequacy-updated

[11] See, e.g., https://malegislature.gov/Bills/192/H3316.

February 17, 2023

VIA EMAIL

Massachusetts Department of Energy Resources
Attn: Joanna Troy (joanna.k.troy@mass.gov)
100 Cambridge St., 9th Floor
Boston, MA 02114

RE: Forward Clean Energy Market Design Proposal

Dear Ms. Troy:

Please find attached the comments of NRG Energy, Inc. in response to the Massachusetts Department of Energy Resources' request for comments concerning the Forward Clean Energy Market Design Proposal published on January 4, 2023.

Please feel free to contact me with any questions. Thank you,

Sincerely,

Neal A. Fitch
Sr. Director, Regulatory Affairs
NRG Energy, Inc.

Comments of NRG Energy, Inc. on the

FCEM Proposal Offered by the Massachusetts Department of Energy Resources

February 17, 2023

NRG Energy, Inc. ('NRG') appreciates the opportunity to provide these comments in response to the Massachusetts Department of Energy Resources' ('MA DOER') recently released proposal entitled "New England Forward Clean Energy Market, Proposed Market Rules, Version 1" ('Proposal').[1] NRG has long been a proponent of finding a systematic approach to including the clean energy attributes needed to accomplish the necessary decarbonization of the economy into the competitive market frameworks that have proven so successful at supporting innovation and lowering costs in the nation's Regional Transmission Organizations ('RTO'). In the absence of a comprehensive, economy-wide carbon pricing mechanism, the Forward Clean Energy Market ('FCEM') concept has consistently risen to the top when RTOs and stakeholders have considered options for better integrating decarbonization policies into markets.[2]

Since the fall of 2020, NRG has regularly convened meetings of representatives of non-governmental environmental, consumer and business organizations, as well as a wide range of current participants in the ISO-NE wholesale markets, all of whom are stakeholders in the eventual outcome of efforts to create and implement an FCEM in New England. NRG's purpose in convening those meetings has been to inform and advance, through dialogue with diverse interests, the development of an FCEM that would serve the New England region most effectively. The organizations listed in Attachment 1 to these comments are among those that have participated in those meetings and discussions. The widely varying perspectives, experience, and goals of these organizations and others have produced shared insights into the challenges that must be met to enable the creation and implementation of an FCEM. NRG has prepared and is submitting these comments strictly on its own behalf, but the ongoing dialogue with these organizations has informed and refined NRG's views reflected herein. NRG is enormously grateful for the insights and suggestions they have shared so generously.[3]

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[1] Massachusetts Department of Energy Resources "New England Forward Clean Energy Market, Proposed Market Rules, Version 1." ("Proposal") January 2023. https://www.mass.gov/doc/ma-doer-fcem-design-proposal/download

[2] *See, e.g.*, Analysis Group, "Pathways Study: Evaluation of Pathways to a Future Grid," April, 2022, https://nepool.com/wp-content/uploads/2022/02/NPC_20220426_Pathways_FULL_REPORT_FINAL.pdf; PJM, "CAPSTF [Clean Attribute Procurement Senior Task Force] Analysis, Status Update," January 31, 2023, https://www.pjm.com/-/media/committees-groups/task-forces/capstf/2023/20230131/item-05---capstf-analysis-update.ashx; Rocky Mountain Institute, "Scaling Clean: Assessing Market Options for Clean Energy and Capacity in PJM," July 28, 2022, https://www2.pjm.com/-/media/committees-groups/task-forces/capstf/2022/20220728/item-06---rmi-presentation.ashx

[3] Inclusion on this list does not imply any endorsement of NRG's comments by these organizations.

NRG applauds Massachusetts for taking the initiative to put forward a thoughtful articulation of an FCEM that encourages and can accommodate all the New England states' participation, regardless of each individual state's stage of policy transition toward decarbonization. The Proposal provides a comprehensive and valuable basis for starting the detailed negotiations among relevant institutions and stakeholders that will be necessary to produce an implementable market design.

Now that Massachusetts has put forward a detailed proposal for the design and implementation of an FCEM framework, the New England states should promptly begin a structured process to discuss, debate, and develop an FCEM design, with associated implementation agreements and documents, that are acceptable to all the New England states. To this end, NRG recommends that the states promptly initiate appropriate discussions among the states, ISO New England, NEPOOL, and other stakeholders as appropriate. The goal of those discussions should be to reach agreements by the end of 2023 regarding each entity's rights and obligations in the governance and administration of an FCEM, informed by a common understanding of the legal basis for the jurisdiction and governance of the FCEM.

In the comments below, NRG expands on suggestions for structuring discussions in the coming year, responds to the questions posed by the MA DOER in its February 3, 2023 webinar, and identifies several high-level considerations regarding the ultimate design and implementation of an FCEM.

I. The FCEM Proposal Offered by Massachusetts is a Comprehensive and Thoughtful Basis for a Sustainable Clean Energy Future for the Region

The Massachusetts Proposal is an excellent step forward in the region's work on charting a sustainable path toward a low carbon electricity system. Massachusetts' effort to put forward a concrete proposal to implement a market-based platform for supporting the tremendous build-out of renewable and other non-emitting energy and capacity sources that will be needed to secure a reliable and affordable clean energy grid in the future provides a major impetus to regional development of a pathway to the urgently needed transformation of the region's energy supply.

The Proposal's Notice introducing the proposal captures the focus of Massachusetts on practical, implementable solutions. It says: "Throughout the development of this design proposal, Massachusetts DOER and its consultants have attempted to reflect and align [it] with the policy preferences, regulatory structures, and implementation mechanics that will make the FCEM a viable tool for all states and consumers across the New England region."[4]

This focus on a mechanism that is implementable and can effectively meet the objectives of the various states in the region is an important recognition that creation of an FCEM does not start with a

[4] Proposal at i.

'blank slate.' Advancing and accelerating the transition to a clean energy grid will require recognition and accommodation of the regulatory and policy frameworks that have been developed, state by state, during the early years of the transition.

Among the many positive aspects in the Proposal, NRG notes the following:

- In developing the Proposal, Massachusetts consulted with the other states in the region. The Notice refers to consultations with "staff and policymakers from the states of Connecticut, Maine, New Hampshire, Rhode Island, and Vermont."[5] Alignment and support from all states will be extremely important in securing committed engagement from all the region's stakeholders and in providing FERC with the confidence that an FCEM is truly a regional initiative for the benefit of all the region's states and consumers.
- The Proposal relies on leveraging existing 'institutional infrastructure' including existing regional markets and ISO-NE expertise in market administration, as well as existing NEPOOL qualifications as a representative body of interested stakeholders and its Generation Information System (GIS) for certificate creation and tracking. A proposal that would require the states to recreate these capabilities and infrastructure would be time-consuming, expensive, and fraught with operational uncertainty.
- The Proposal recognizes the need for states to commit to multi-year participation in the FCEM (once they opt in to use the platform) in the form of ten years of demand bids. FCEM buyers would need to honor their initial multi-year purchase commitments even if they otherwise reduce or cease their participation in future auctions. This is a necessary understanding to create confidence in resource developers and investors that the FCEM will be a durable marketplace.
- The Proposal would also offer multi-year 'price locks' for attributes produced by new generation, starting at 15 years, gradually reducing to 7 years. This recognizes the need to transition the renewable/non-emitting energy supply community from contract-based to market-based investment. While the phase-down of the new resource price lock from fifteen years to seven years over time provides a transparent transition mechanism, ideally it would be continued toward a single-year term for all sellers. That would be consistent with the current design of the FCM, and thereby provide a true 'merchant' model for all generation investments.
- While providing flexibility in the range of products procured in the FCEM, the Proposal recognizes that minimizing the number of products and creating more streamlined product definitions will ultimately produce the best results. These standardized products will provide

[5] Proposal at i.

more confidence for investors in resources and lower costs for consumers. With respect to including state-defined products, the Proposal says:

> "These state-defined rules need not match the rules applicable to similar regional FCEM-defined products. However, over time, the experience with innovative product offerings within the FCEM and across participating New England states may be mutually informative, improving the economic efficiency and efficacy of both state policies and the FCEM products."[6]

NRG fully expects that experience will show that the greatest efficiency and lowest cost can be achieved by minimizing the number of different products transacted through FCEM and maximizing the size of the market and the range of eligible suppliers that can provide non-emitting energy and power sources.

NRG applauds Massachusetts' leadership in putting forward a FCEM design and will continue to engage in regional discussions to refine the framework contained in the Proposal. NRG looks forward to more detailed discussion with relevant institutions and interested stakeholders of the individual design elements and how they work together as a comprehensive whole. NRG shares the goal of implementing a regional, market-based mechanism, one that works within the applicable federal and state statutory and regulatory frameworks, to provide a means to properly value the attributes of existing and new emission-free resources, and is confident that the FCEM framework can provide that mechanism successfully.

II. The States Should Promptly Convene Structured Discussions to Refine, Adopt, and Implement an FCEM

Consideration of FCEM and other potential options for valuing clean energy attributes in the wholesale markets began as far back as 2016[7] and discussions in the intervening years have continually pointed to FCEM as the most viable approach to incorporating states' clean energy and decarbonization goals into the region's competitive market structures in a systematic and sustainable way. Now that Massachusetts has put forward a specific proposal for an FCEM design and implementation framework, the region should promptly set up a structured process for relevant institutions to discuss, debate, and finalize an FCEM design and associated implementation agreements and documents.

The recently released Massachusetts Clean Energy and Climate Plan for 2050[8] indicates a desire to have the FCEM in place by 2026. To meet that target the region will have to move expeditiously and

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[6] Proposal at 15.

[7] NEPOOL initiated the "Integrating Markets and Public Policy" process in 2016. *See*, *https://nepool.com/zimapp/*

[8] https://www.mass.gov/info-details/massachusetts-clean-energy-and-climate-plan-for-2050

with a unified purpose to implement an FCEM. The sooner structured discussions toward that end begin, the better the chances of success.

The Massachusetts FCEM Proposal should serve as a starting point for a process that will lead to the development and eventual implementation of a fully functional FCEM. While the MA DOER consulted with other states and drew on other sources in developing it, the Proposal has not had the benefit of a full airing with the other five New England states, as well as other important institutions, such as ISO New England, NEPOOL and its members, and the many potential buyers and sellers and other stakeholders in a FCEM. From this perspective, it is encouraging that the Notice introducing the Proposal includes a commitment by the state of Massachusetts, namely, that it "looks forward to continued engagement with NESCOE and member states, as well as with other stakeholders and the public to refine and implement the FCEM."

With that commitment in mind, the Proposal should provide the impetus for the states to convene a formal and purposeful process that will lead to confirmation of the jurisdictional and governance structures of an FCEM, and initial agreements among the various parties defining their respective roles and responsibilities necessary to implement and operate an FCEM. That process should have several specific objectives.

The first objective should be to develop a solid legal grounding for the operation of the FCEM under the authority of the Federal Energy Regulatory Commission (FERC) and the Federal Power Act. Securing a common understanding among the relevant institutions that the FCEM can be structured through a FERC-jurisdictional tariff (as contemplated in the Proposal) is a prerequisite to finalizing governance agreements and other structural considerations for the FCEM. Confidence in such an understanding can be achieved through dialogue among and analysis by the legal experts from the relevant institutions and would be enhanced by obtaining an advisory ruling from the FERC (for example, through a Request for Declaratory Order).

At the same time, the second objective should be to reach agreement on the design and creation of a new entity to serve as the governing body for the FCEM (described in the Proposal as the FCEM-NE).[9] Whether the FCEM is structured as FERC-jurisdictional, or if an alternative jurisdictional model is determined to be superior, the FCEM-NE entity will be necessary for the states to centralize and formalize their oversight of the regional market. An agreement among the states on its structure, governance, and budget authority, early in the process, would be a powerful signal of the states' collective commitment to the use of the FCEM to advance the region's decarbonization efforts.

[9] NRG has previously discussed options for appropriate jurisdictional approaches in the whitepaper found here: https://www.nrg.com/assets/documents/white-papers/moving-forward-approaches-for-state-federal-cooperation-in-a-decarbonizing-electricity-sector.pdf

To organize and facilitate the accomplishment of these two objectives, the states should rely on NESCOE to convene and manage the discussions and analysis necessary to achieve them. NESCOE is well positioned to manage the process of obtaining clarity on the jurisdiction of the FERC by coordinating the necessary legal analysis and the potential request for FERC guidance. Likewise, it is well-positioned to manage the discussions among the states to reach agreement among them on the design and creation of the new FCEM-NE.

While performing these tasks, NESCOE can also help the states provide regular and ample opportunities for stakeholders and potential participants in the FCEM-NE's markets, including NEPOOL and its members, to provide input on the design and operation of those markets. These consultations should have specific and measurable milestones for decisions to ensure that these consultations are directed toward a tangible, implementable FCEM platform.

Thus, the goal of these efforts should be to confirm, by the end of 2023:

- that a regional FCEM would be FERC-jurisdictional;
- that the states will act through a newly formed FCEM-NE entity to oversee an FCEM market;
- that the roles and responsibilities of ISO-NE in administering the FCEM and of NEPOOL in advising FCEM-NE and ISO-NE on the design and operation of the market are fully defined in written agreements; and
- that a target date is established for filing tariff proposals at the FERC to implement the FCEM.

NRG anticipates that the details and specifics of the Proposal's market design will no doubt undergo revisions. Nevertheless, the states and relevant institutions should acknowledge from the outset that the market will be designed to accomplish the goals of the New England states and that, through the institution of the FCEM-NE, the states would retain significant decision-making authority with respect to the operation of the FCEM markets, subject to the oversight and approval of the FERC.

At the same time, the process should acknowledge that ISO-NE will retain all its existing authority and responsibilities with respect to the administration of the wholesale energy, capacity, and ancillary services markets and its mandate to ensure the reliability of the regional power grid. When completed, the agreements among the parties should include a process for promptly resolving any situation in which ISO-NE believes that a policy or action requested or approved by the FCEM-NE would put ISO-NE's authorities and responsibilities at risk of default or impairment.

While this process is underway, the region's stakeholders should recognize that some agreements will need to be negotiated on a bilateral basis without formal participation by market participants or other interested stakeholders. This is most obviously the case regarding agreements between the states and ISO New England on administration of the FCEM market. The parties to those bilateral negotiations should

enable the region's stakeholders, to the greatest extent practicable, to identify, understand and comment on the proposed rights and obligations of the parties to those agreements.

III. Elements of the Proposal Warranting Special Focus

While NRG is supportive of an FCEM framework and applauds Massachusetts for providing a concrete proposal, two issues in the Proposal stand out. There are undoubtedly other issues in the Proposal on which NRG will raise concerns or seek changes as the regional discussions progress, but these two warrant consideration at the outset.

Multiple Products and 'Sub-Markets'

First is the issue of multiple products. All parties that have discussed FCEM over the past several years understand the greatest efficiency in advancing emission-free energy production would be achieved through a single product defined simply as "energy produced with no direct GHG emissions." Adding further constraints or segmenting the market into multiple products will necessarily be less efficient at achieving the decarbonization objective.

The Proposal, however, consciously adopts a framework with four potential regional products and the potential to add further state defined products "with no maximum limit on the number." Designing the FCEM to include multiple products, potentially with no limitation on the number of such products and sub-markets, has the potential to introduce significant complexity and lead to increased costs for consumers relative to the ideal, single-product FCEM. If the FCEM platform is used simply as a centralized forward marketplace for the full suite of existing clean energy attribute products in the region, it will have far less impact on improving the region's pace and cost of decarbonization than if it leads to consolidation and streamlining of clean attribute product definition.

The goal of FCEM is to achieve the targets of the clean energy transition via investment in clean energy production and the displacement of carbon emissions from the power grid. The more constraints placed on how, and with what technologies, vintages, and characteristics suppliers provide that clean energy and emission displacement, the more it will cost.

The efficiency contribution of the FCEM can also be measured by the extent to which a single product will satisfy the requirements of multiple states. For competitive LSEs serving consumers and having RPS compliance obligations in multiple states, the ability to manage energy supplies and attribute certificates on a portfolio basis is extremely valuable. A primary consideration in the creation of new regional FCEM products should be to maximize their applicability to satisfy RPS and similar requirements in multiple states, or conversely, for states to confirm that the regional FCEM product(s) satisfy their individual state RPS requirements.

While the proposal to establish up to four new regional products creates some level of segmentation in the market, the policy objectives underlying them are clear and have an intuitive basis that may justify the potential loss of efficiency. The broadest interest in non-emitting energy is represented by the NE-CEAC, for which any non-emitting source could qualify. This single product would produce the greatest level of competition and the lowest costs to decarbonize. The NE-REC product would have a narrower focus specifically on renewable resources, which is a close analog to most states' Class 1 RECs and may be a useful proxy for buyers to obtain compliance with those RPS obligations. Including this product recognizes that state RPS laws still apply and the FCEM will provide a more efficient marketplace for compliance than currently exists. The NE-GHG product represents an understandable interest in the time-shifting capabilities of energy storage and demand response that can also contribute to emission reductions that are otherwise not captured in the two products denominated in energy terms of MWh. NRG is more skeptical of the NE-CCC clean capacity product. To our knowledge, no state or other entity in the New England region has decarbonization goals stated in capacity terms, so this product seems less applicable in the New England context, as well as being less obviously useful and relevant in producing actual emission reductions.

In addition to the regional products, states may determine that the individual policy objectives to be met through additional products and sub-markets in the FCEM are worth the extra cost. An important benefit of a market-based platform like FCEM is that the incremental cost of these extra constraints will be visible, enabling policy makers to fully assess the trade-offs involved.

The real risk of cost increases will arise if states do not adopt these regional products as meeting the compliance requirements of LSEs for one or more categories of existing RPS obligations. Some parties have estimated that the New England states currently have as many as 37 different categories of environmental attribute credits. Clearly, if states elect to 'list' all 37 of their requirements through FCEM, the market will be extremely fragmented and the benefits of a centralized market platform would be greatly diminished, especially if state-submitted demand for these 'niche' products reduces demand for the broader regional products, reducing the size and appeal of those products for potential sellers.

To address likely concerns about complexity and the potential proliferation of many products on the FCEM platform, NRG suggests the initial implementation of FCEM include only one or two of the regional products, the NE-REC and the NE-CEAC. The NE-REC represents a close analog for states' Class 1 RECs, and the NE-CEAC expands eligibility to non-emitting resources that do not meet current renewable definitions, such as nuclear. Defining demand and implementing a market for these products would be the most straightforward and least challenging approach, allowing the region to develop a foundation of experience in the least complex case. The NE-GHG product, which adds the dimension of temporal energy production and impact on system emissions, could then be added. Only after some initial

experience with the regional products should FCEM-NE entertain requests to add further products to the platform, and requests should be evaluated using lessons learned and projections of liquidity of the new product(s), to ensure the maximum efficiency and effectiveness of the overall suite of products.

The Role of Competitive Load Serving Entities

The Proposal describes how the costs of 'rate-authorized' demand bids by distribution utilities or state agencies would be allocated to competitive load serving entities (LSEs) serving customers within the affected territory, which presumes that LSEs would not have the primary role of managing their compliance.[10]

As one of the leading suppliers of competitive energy services to retail customers across the New England region, NRG strongly recommends that competitive LSEs should have control of their own compliance strategies and positions in an FCEM structure. Companies in any competitive endeavor, including retail electricity supply, pride themselves on their internal processes and strategies to minimize costs and maximize efficiency in providing their consumers with products and services. An LSE's customers may desire to over-comply via the LSE based on individual or corporate goals versus state mandated targets. Similarly, LSEs may wish to purchase and bank credits associated with FCEM products for utilization in particular retail products or future compliance efforts. If, as suggested in the Proposal, LSEs will, in the first instance, simply be allocated a share of the costs incurred by the states or their agents in procuring FCEM certificates, it eliminates a significant source of value and innovation that competitive markets are intended to foster.

NRG recommends that LSEs either be given primacy to procure and manage FCEM certificates to meet their obligations, or that LSEs be able to affirmatively opt out of the proposed cost allocation mechanism. While the Proposal describes a notional mechanism by which LSEs could hedge their positions through bilateral transactions outside of the FCEM, it would be far preferable and more efficient to empower LSEs to interact with the FCEM directly.

IV. DOER's Webinar Questions

In the webinar presentation on February 3, 2023, MA DOER presented several questions on which it requested specific commenter input. NRG offers the following responses.

Are there key aspects of the FCEM Design Proposal that have advantages or disadvantages over the status quo?

[10] Proposal at 26.

As described above, the FCEM framework, and many of the specifics of the MA DOER Proposal, are entirely aligned with increased efficiency, lower costs, and more rapid achievement of decarbonization of the power sector. The status quo is characterized by a complex set of portfolio standards that have significant variation from one state to another, and by an *ad hoc* contract-based procurement regime that recognizes that the portfolio standards alone cannot support investment in new clean resources. Consolidating the region's decarbonization objectives into a centralized platform will increase consistency and transparency in the RPS compliance marketplace, as well as provide an opportunity for government, commercial, and non-profit entities to also procure cost-effective clean energy in support of their own objectives.

As shown in the NEPOOL Pathways Study,[11] there are substantial economic benefits to be gained by standardizing and centralizing the procurement of clean energy, not to mention the reduced burden of designing, administering, and ultimately approving contracts secured through *ad hoc* procurements.

Are there design aspects that are key to financing a portfolio of new clean energy resources and supporting the Commonwealth meeting emission reduction targets?

As described above, NRG supports the initial use of a price lock at the outset of the FCEM as a bridge between the current use of long-term contracts and the ultimate goal of a merchant model for investment. At the beginning of the restructuring of the electricity markets more than two decades ago, the first combined cycle plants were built with long-term contracts due to the novelty of the technology and the wholesale markets. Over time, resource developers in multiple RTO markets – and their financial backers – have become comfortable investing on the basis of market revenues alone, and FERC recently eliminated the 7-year price lock in ISO-NE's Forward Capacity Market. It may take not take as long for the clean energy resource development and finance communities to adapt to reliance on the FCEM and the ISO-NE markets, but neither should anyone expect them to be able to adapt immediately. NRG suggests that the schedule should contemplate ultimately eliminating the price lock altogether, to make FCEM consistent with ISO-NE's FCM.

The Proposal is also sensitive to the need for confidence that the broader FCEM will be a durable platform and a reliable source of revenue into the future. Elements such as the commitment by a state to at least ten years of participation upon opting in to the FCEM and the explicit commitment to honor multi-year purchase obligations are vital to demonstrate to developers and financiers that they can invest with confidence.

[11] Analysis Group, "Final Pathways Study: Evaluation of Pathways to a Future Grid," April 28, 2022, https://www.iso-ne.com/static-assets/documents/2022/04/schatzki-et-al-pathways-final.pdf

Will there be sufficient interest from both buyers and sellers for an FCEM?

NRG is not aware of any empirical evidence to address this point, but certainly the on-going interest in the FCEM construct by parties representing both buyer and seller interests suggests that there will be sufficient liquidity on both sides of the market to sustain it. The question of demand interest is largely a question of whether the states, in their roles as the primary proponents of the clean energy transition, are able to develop and agree to an FCEM design that is sufficiently flexible to meet their individual needs and to recognize the efficiency benefits for their consumers of using a centralized and standardized market platform. Additionally, many corporations, municipalities and other organizations are actively seeking energy supplies that minimize or eliminate emissions and impacts on the climate. On the supply side, the tremendous interest of investors in all forms of clean energy resources is well documented, from the ISO-NE interconnection queue to popular press coverage.[12] As long as the FCEM is perceived to be governed according to economic principles that produce prices consistent with supply and demand dynamics, states should be confident that suppliers will show up to participate in the FCEM.

What processes would help achieve effective implementation of a clean energy market design?

NRG outlines above a recommended structure to begin the process of implementing a clean energy market, focused on NESCOE to convene and manage the discussions among the various parties. The first goal is to confirm that an FCEM can be constructed and administered as a FERC-jurisdictional market under the Federal Power Act. NRG recommends that the states engage with experts in the FPA and FERC practice to develop the legal path for establishing such jurisdiction, including informal or formal consultations with FERC to confirm the approach.

NESCOE should also coordinate and facilitate discussions among the states, ISO-NE, and NEPOOL to define roles and responsibilities, and develop agreements on an institutional level among the parties. At the same time, NESCOE should establish a regular schedule of stakeholder meetings to provide for open discussion and input on the institutional relationships as well as market design development.

NRG anticipates that these initial objectives and processes will set a solid foundation for finalizing and implementing a robust FCEM platform.

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[12] *See, for example,* ISO-NE COO Report to NEPOOL Participants Committee, February 2, 2023 (slides 50-54), https://www.iso-ne.com/static-assets/documents/2023/01/february-2023-coo-report.pdf; Bloomberg, 'Clean Energy Sets $1.1 Trillion Record That's Bound to Be Broken,' January 26, 2023, https://www.bloomberg.com/news/articles/2023-01-26/clean-energy-fossil-fuel-investment-tied-for-first-time-in-2022?leadSource=uverify%20wall.

Are there other clean energy market reforms that could be considered as alternatives or operate with an FCEM?

NRG agrees with the conventional wisdom that the most efficient way to achieve the necessary decarbonization of the economy is to adopt a comprehensive, economy-wide valuation for carbon emissions. Other than such a carbon pricing mechanism, NRG is not aware of other constructs that would function as a better option or as a complement to an FCEM. FCEM was first discussed as an option in 2016 and in the subsequent years no viable alternatives have been identified. NEPOOL undertook a comprehensive assessment of options for addressing the region's decarbonization challenge in 2020 which did not identify any options that were judged to be superior to FCEM at meeting both the state's decarbonization goals and the market's economic principles.[13]

Are there any other state policy goals that overlap with the FCEM Design Proposal?

While the states have a wide range of policy interests and objectives, NRG is focused on the key goals that an FCEM is intended to address and/or respect: producing the quantities of clean energy that are necessary to meet state requirements desired to address the climate challenge, doing so at the lowest reasonable cost, and maintaining reliable supplies of electric energy throughout the transition. FCEM is explicitly designed to achieve the former two goals, and by integrating its design and administration with ISO-NE's existing markets it will leave in place and respect the role of those markets in ensuring reliability.

How should DOER proceed to engage with regional stakeholders to progress clean energy market reforms?

As described above, NRG recommends that DOER work with the other states to organize their stakeholder engagement through NESCOE in order to leverage the existing organization that represents all the states in the region. Having alignment and support from all the states on NESCOE's role to advance the structure and design of an FCEM will be meaningful in demonstrating to the region's institutions, stakeholders, and FERC that the region is committed to working toward implementation of a centralized platform for achieving decarbonization. Nothing in that initial commitment should bind any state to use the platform, but agreement at the outset to develop and support the structures and detailed design that would be necessary to ultimately implement the FCEM is needed to bring forth committed engagement from all affected parties.

[13] Felder, "NEPOOL's Pathways to the Future Grid Process Project Report," January 6, 2021, https://nepool.com/wp-content/uploads/2021/01/NPC_20210107_Felder_Report_on_Pathways_rev1.pdf

V. Conclusion

The Massachusetts FCEM Proposal is a powerful and important step toward a sustainable clean energy future for the region. NRG encourages all stakeholders to engage constructively in its refinement and ultimate implementation, beginning with a process in 2023 to confirm regulatory jurisdiction and to define the institutional relationships that will be necessary to implement and administer a successful FCEM.

To initiate that engagement, NRG urges the states to act together, through NESCOE, to initiate discussions with ISO-NE and with NEPOOL that would address the legal, jurisdictional, and institutional dimensions of an FCEM. At the same time, NRG urges those entities to consult regularly and extensively with the region's stakeholders, ideally through a formal stakeholder engagement process, with defined objectives and timelines, to solicit and consider their concerns and suggestions regarding the development of an implementable FCEM design and governance structure that can effectively serve the region.

NRG expects that other parties filing comments in response to DOER's request will identify areas of concern and perhaps outright disagreement with elements of the Proposal. As we have seen in the region over recent decades, market design is not simple and must address critical tensions among a wide variety of stakeholders. This history has shown that balancing those tensions can ultimately produce a well-functioning competitive marketplace which more than justifies the efforts required to achieve it.

Attachment 1

Stakeholder Organizations Participating in Discussions on FCEM – Partial List

Acadia Center

Advanced Energy United

Connecticut Business & Industry Association

Connecticut Office of Consumer Counsel

Conservation Law Foundation

CPower Energy Management

Environmental Defense Fund

LS Power

Maine Office of the Public Advocate

Michaud Law Group CT

National Grid

Natural Resources Defense Council

New England Power Generators Association

New England Power Pool

New Leaf Energy

Northeast Clean Energy Council

Power Options

Union of Concerned Scientists

Cape Light Compact JPE
261 Whites Path, Unit 4, South Yarmouth, MA 02664
Energy Efficiency 1.800.797.6699 | Power Supply 1.800.381.9192
Fax: 774.330.3018 | capelightcompact.org

February 17, 2023

VIA ELECTRONIC MAIL ONLY

Ms. Joanna K. Troy (joanna.k.troy@mass.gov)
Massachusetts Department of Energy Resources
100 Cambridge St., 9th Floor
Boston, MA 02114

Subject: Public Comment on draft Forward Clean Energy Market Design Proposal

Dear Ms. Troy:

The towns of Aquinnah, Barnstable, Bourne, Brewster, Chatham, Chilmark, Dennis, Edgartown, Eastham, Falmouth, Harwich, Mashpee, Oak Bluffs, Orleans, Provincetown, Sandwich, Tisbury, Truro, West Tisbury, Wellfleet and Yarmouth, and Dukes County organized and operating collectively as the Cape Light Compact JPE, a joint powers entity organized pursuant to G.L. c. 40, §4A½ and G.L. c. 164, §134 (the Compact), respectfully submit these comments to the Department of Energy Resources (DOER) in response to its request for public comment on the draft Forward Clean Energy Market (FCEM) design proposal (Proposal). The Compact is a participant in the ISO-NE Forward Capacity Market ("FCM") and maintains a NEPOOL GIS Account for purposes of retiring renewable energy certificates associated with its municipal aggregation operations. The Compact appreciates the opportunity to provide three discrete comments regarding the Proposal.

Background on the Compact

The Compact is a governmental aggregator under G.L. c. 164, §134 that provides energy services to consumers on Cape Cod and Martha's Vineyard. The Compact operates a municipal aggregation competitive supply program pursuant to a municipal aggregation plan, which provides electric power supply on an opt-out basis to customers across all customer classes located on Cape Cod and Martha's Vineyard. The Compact's municipal aggregation plan (Plan) was originally approved in D.T.E. 00-47 on August 10, 2000 by the Department. At the request of the Department, the Compact filed an update to its original plan in 2014 for review and approval in D.P.U. 14-69, with an order issued on May 18, 2015. The Plan was also administratively updated in accordance with D.P.U. 17-95 and in D.P.U. 14-69-B, which was

approved by the Department on February 2, 2023. The Compact maintains a business office at 261 Whites Path, Unit 4, South Yarmouth, Massachusetts 02664.

As documented in its Plan, the Compact is governed by a Joint Powers Agreement (JPA).[1] The Compact is the only multi-municipality aggregator operating in Massachusetts. The Compact began providing default service in 2001 and has been offering power supply to all customer classes since 2005. The Compact is a green aggregation, matching Compact customers' annual usage above the mandated state requirements with voluntary Renewable Energy Certificates to provide a 100% renewable product.

In addition, the Compact also provides comprehensive energy efficiency services to Cape Cod and Martha's Vineyard as a Program Administrator of the Massachusetts Joint Statewide Three-Year Electric and Gas Energy Efficiency Plans, most recently approved in D.P.U. 22-126. The Compact's energy efficiency programs target the residential, income eligible, and commercial and industrial customer sectors. The Compact participates in the FCM as a Program Administrator of energy efficiency services.

Comment on the Proposal

Credit Requirements

The Compact must maintain a Letter of Credit to satisfy certain credit requirements established by ISO-NE for participation in the FCM. While this Proposal recognizes in several instances that credit requirements will be necessary for participation in the FCEM, it is not clear whether existing ISO-NE credit support utilized by the Compact as a seller in the FCM is sufficient for participation as a buyer or seller in the FCEM or whether additional credit support will be required, and if so, what form such support must take. If independent credit support is required for participation as a buyer or seller in the FCEM, it would also be helpful to understand whether the requirements will allow for such credit support to be provided by third parties (e.g., the Massachusetts Clean Energy Center, among others, may have authority to assist certain entities like the Compact in obtaining the necessary credit support.).

Delivery Period - Buyer's Receipt of Certificates

The process outlined in Figure 3 (FCEM Certificate Tracking and Settlements) for the delivery period states that Buyers will receive procured certificates in "equal monthly installments" in a delivery year. This delivery structure may not align well with actual system production that may vary throughout the year (e.g., solar resources may produce significantly more during the summer) such that sellers may only be willing to bid in at the quantity of their lowest projected production month in order to ensure a commitment to "equal monthly installments." If the Compact is interpreting this delivery period summary correctly and sellers do in fact adjust their

[1] The Compact's Joint Powers Agreement is available online at https://clcmain.wpenginepowered.com/wp-content/uploads/2021/09/Second-Amended-and-Restated-JPA-FINAL-9-1-21.pdf.

bids accordingly, then this may impact auction prices as sellers would have additional certificates they would be selling elsewhere.

Phased Entry Demand Bid Structure

The Proposal includes a 15-year price lock for new resources. Proposal at 4. The Compact wonders if this time frame is sufficient to enable developers to secure financing for projects whose resources are participating in the FCEM. If a longer price lock is not offered (e.g., 20 years), it may result in higher prices.

The Compact thanks DOER for the opportunity to submit comments on these important issues.

Very truly yours,

CAPE LIGHT COMPACT JPE

By: _____
Name: Margaret Downey
Title: Administrator

TEC

The Energy Consortium, Inc.

A non-profit Association of Industrial, Commercial, Institutional and Governmental Large Energy Users

Ms. Joanna Troy
Director – Energy and Policy Planning
MA Dept. of Energy Resources (DOER)

2/17/2023

Dear Ms. Troy

The Energy Consortium (TEC) welcomes the opportunity to provide comments on the Forward Clean Energy Market of New England (FCEM-NE) proposal. TEC is a non-profit association of commercial, industrial, institutional and municipal large energy users in Massachusetts and has participated in state and regional energy regulatory matters for forty years. It advocates positions and sponsors joint actions that promote fair cost-based energy rates, diversified supplies, retail market competition and reliable service for its member organizations, their employees and all Massachusetts ratepayers.

Broadly, TEC supports the objectives of the FCEM-NE to leverage competitive market forces to select the lowest-cost combination of renewable and non-emitting resources to meet the climate and clean energy goals of policymakers and consumers across the New England region. (Proposal p. 1)

FCEM Governance Must be Administratively Efficient

The initial design proposal contemplates the creation of a new independent non-profit entity, the Forward Clean Energy Market of New England (FCEM-NE) to administer the market and manage its governing documents. The FCEM-NE is proposed to have a board of directors comprised of representatives from the six New England states who will hold the rights to propose rule changes to the Federal Energy Regulatory Commission (FERC). (Proposal p. 3).

TEC is concerned about the administrative complexity and potential duplication of efforts and conflict with the Independent System Operator of New England (ISO-NE). The Proposal states that the New England states and the New England States Committee on Electricity (NESCOE) will conduct a legal analysis and implementation feasibility review of at least three alternative governance models (p. 7). TEC strongly recommends the third alternative option where a FERC jurisdictional FCEM is administered by ISO-NE with a new affiliate entity at ISO-NE. This option is likely to prove more efficient and more cost effective, given the expertise already in place at ISO-NE and the requirement for close cooperation with ISO-NE. In the Proposal document, ISO-NE is mentioned 81 times, with dozens of references to the need for coordination. The costs to ratepayers of a structure within ISO-NE or a closely related affiliate are likely to be less due to less duplication of administrative overhead, staffing, and overlapping expertise.

Stakeholders currently pay for two administrative bodies, ISO-NE and NESCOE. The structure proposed as Alternative three in the Proposal (p. 7) will allow the markets to operate more efficiently.

The proposal for each New England state to appoint a board member to the FCEM is a good one. Regional cooperation has been a challenge to clean energy deployment in New England. Representation of each state on an equal basis on the board of the FCEM entity should promote better integration of state clean energy goals within the regional ISO-NE wholesale power market.

The FCEM's Product Definitions are Expansive and Promote Flexibility

The inclusion of multiple product definitions, including renewable and non-emitting resources (Proposal p. 15) is important to ensure that each state and participant has the flexibility to achieve their Greenhouse Gas Reduction (GHG) goals. It is important that the FCEM be configured to support multiple product definitions as well as the addition of new ones as the market for clean and non-emitting energy evolves.

Large Customers Should Have the Ability to Pursue Self Directed Clean Energy Purchases without Risk of Paying Twice for Clean Energy

Most TEC members have ambitious organizational goals for clean energy procurement and GHG reduction. Several TEC members were early adopters of bilateral wholesale Power Purchase Agreements (PPA) for energy and RECs from grid scale wind and solar facilities.[1,2] These purchases helped fund the construction of new clean energy resources. TEC members have continued to pursue wholesale PPAs as a means to reduce wholesale energy cost volatility, self-manage Renewable Portfolio Standard (RPS) compliance obligations, or procure additional renewable energy to meet organizational sustainability targets. In most instances, clean energy resources contracted to TEC members are smaller wholesale generation facilities that may have difficulty competing state sponsored solicitations given the trend towards large scale state sponsored procurements. As a result, bilateral PPAs from corporate and institutional buyers represent an important sector in the competitive marketplace.

The table below provides a summary of aggregated current TEC member utility scale clean energy purchases. Several TEC members have made additional purchase commitments to facilities that are still in construction or development and therefore not reflected in the table.

Summary of Wholesale Non-Emitting and Renewable Purchases by TEC Members (Annual MWh)

Renewable Natural Gas (RNG)	Small Hydro	Solar	Wind	Total (Hydro/Wind/Solar)
30,082	23,358	48,915	126,367	238,717

[1] Press Release: Harvard to become largest institutional buyer of wind power in New England, 11/2/2009, Available at: https://news.harvard.edu/gazette/story/2009/11/harvard-to-become-largest-institutional-buyer-of-wind-power-in-new-england/

[2] Boston Business Journal, "Partners HealthCare invests in wind power" 4/14/2017 Available at https://www.bizjournals.com/boston/news/2017/04/14/partners-healthcare-invests-in-wind-power-to-go.html

Despite claims that participation in the FCEM is entirely voluntary, this isn't the case in the "Rate Authorized Demand Bids" scenario. (Proposal p. 25-26). Many TEC members would prefer a self-directed renewable energy procurement option. The FCEM could potentially facilitate that and replace the bilateral contracting methods used to date, but entities that desire to purchase additional renewable energy may be in the position of paying twice for renewable energy due to the costs of state sponsored procurements where shortfalls between market prices and PPA rates are recovered via non-bypassable distribution adjustments such as the Long-Term Renewable Energy Contract Adjustment (LTRCA).[3,4] This structure is a disincentive to the self directed procurement model that many large corporations and institutions would prefer to use.

TEC recommends that the FCEM include the capability to accommodate individual buyers and include the capability to transact for both certificates and commodity energy through the FCEM. Customers pursuing this option should have the ability to take distribution service under a modified version of the non-bypassable LTRCA so that large customers pursuing self-directed renewable energy procurements in excess of MA RPS requirements are not in a position of double paying for clean energy resources from state sponsored procurements. Enabling this capability through FCEM design and tariff modifications could catalyze additional wholesale PPAs between large end users and clean energy facilities and further animate clean energy markets in New England.

We look forward to participating in further discussions as the FCEM proposal evolves.

Bob Espindola

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Current TEC Members
Acushnet Company, Beth Israel Lahey Health, Brandeis University, Harvard University, Mass General Brigham, Massachusetts Water Resources Authority, Massachusetts Institute of Technology, P&G (Gillette), Tufts University, University of Massachusetts Chan Medical School

[3] Massachusetts Electric Company, Renewable Energy Recovery Provision, M.D.P.U. No. 1361, Available at https://www.nationalgridus.com/ma-business/Rates/Tariff-Provisions.aspx
[4] NStar Electric Company, Long-Term Renewable Energy Contract Adjustment, M.D.P.U No. 69E, Available at https://www.eversource.com/content/residential/account-billing/manage-bill/about-your-bill/rates-tariffs/electric-tariffs-rules