

**Straw Proposal for a  
Market-based Approach to New England's Clean Energy Future**

**by**

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**on behalf of**

**NRG Energy, Inc.**

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## Introduction

The current regional wholesale electricity markets in New England provide a well understood foundation for adding an effective and efficient mechanism to achieve the carbon reduction goals of the New England states. Indeed, leveraging the principles of those markets will enable the region to achieve those goals less expensively and more rapidly than continued and exclusive reliance on the multiplicity of individual state clean energy programs and procurements now in use.

This document presents a proposal for a market-based approach to achieving the clean energy and de-carbonization objectives of the New England states. It is intended to facilitate the dialogue, negotiation and the consensus building that is needed to enable the creation and implementation of such a market framework.

It has been authored by Peter Fuller and David O'Connor working on behalf of NRG Energy, Inc. It is a "Straw Proposal" that reflects the impressions of the authors and NRG. The authors recognize that there are any number of design and implementation decisions to be made beyond what is presented in this proposal.<sup>1</sup>

It has been developed in the course of the authors' investigation of the potential for implementation of a so-called "forward clean energy market" in the New England region<sup>2</sup> and NEPOOL's recent 'Future Grid Pathways' study effort.<sup>3</sup> Their investigation has included periodic consultations with a diverse group of stakeholders from across the New England region who have an interest in the potential for a regional clean energy market to help the region achieve its clean energy goals.<sup>4</sup> While heavily influenced by those consultations, this straw proposal has not been authored or endorsed by those stakeholders.

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<sup>1</sup> In December of 2020, Fuller and O'Connor authored a document on behalf of NRG that presented recommendations on design parameters for creation of a forward clean energy market in New England. Many of the comments included in that document support and inform the comments presented in this one. *See*, pages 26-37, 49-58 at [https://nepool.com/wp-content/uploads/2021/02/NPC\\_FG\\_20210218\\_Composite5c.pdf](https://nepool.com/wp-content/uploads/2021/02/NPC_FG_20210218_Composite5c.pdf)

<sup>2</sup> *See, for example*, Kathleen Spees, et al, How States, Cities, and Customers Can Harness Competitive Markets to Meet Ambitious Carbon Goals Through a Forward Market for Clean Energy Attributes, September 2019, [https://www.brattle.com/wp-content/uploads/2021/05/17063\\_how\\_states\\_cities\\_and\\_customers\\_can\\_harness\\_competitive\\_markets\\_to\\_meet\\_ambitious\\_carbon\\_goals\\_-\\_through\\_a\\_forward\\_market\\_for\\_clean\\_energy\\_attributes.pdf](https://www.brattle.com/wp-content/uploads/2021/05/17063_how_states_cities_and_customers_can_harness_competitive_markets_to_meet_ambitious_carbon_goals_-_through_a_forward_market_for_clean_energy_attributes.pdf)

<sup>3</sup> [https://nepool.com/wp-content/uploads/2022/02/NPC\\_20220426\\_Pathways\\_FULL\\_REPORT\\_FINAL.pdf](https://nepool.com/wp-content/uploads/2022/02/NPC_20220426_Pathways_FULL_REPORT_FINAL.pdf)

<sup>4</sup> Those consultations have been enabled by regular meetings over the last two years with a group of stakeholders from across the region representing governmental agencies, non-governmental environmental, consumer and business organizations, as well as a wide range of current participants in the ISO-NE wholesale markets.

## Overall Market Design

1. The market design is based on a ‘hybrid’ concept, combining structural elements of net carbon pricing (NCP) with structural elements of a forward clean energy market (FCEM). A version of a hybrid market was studied in the NEPOOL Pathways process.

*Rationale: FCEM is particularly well suited to supporting new resource investment while net carbon pricing provides increased energy market price support for existing and new non-emitting resources and encourages efficiency and innovation. The combination diversifies the methods used to achieve de-carbonization and has been shown in the Pathways Study to be comparable in overall cost to relying on either FCEM or NCP alone.*

2. The net carbon pricing mechanism would include creation by the Governing Body of a price on carbon emissions from power generation, either through a direct price or through an emissions cap and allowance trading system comparable to the system used by the Regional Greenhouse Gas Initiative (RGGI). (See p. 6 for discussion of the Governing Body.) The carbon price mechanism should be structured to ensure that the region does not experience a loss of clean energy generation sources in the transition to the new market framework, which would lead to increased need to procure new clean resources at potentially higher cost.
3. Carbon emitting generators would be charged the carbon price for each ton of emissions, and the resulting revenues would be rebated, with the exact recipients and applications of those revenues to be determined by the Governing Body.
4. The revenue from higher energy market prices created by the application of the carbon price on carbon-emitting generation would be retained by non-carbon emitting generators.
5. The FCEM mechanism would consist of an annual auction in which participating states and other voluntary buyers would purchase clean energy attributes to be delivered in a future period (for example, for a year of energy attributes delivered beginning three years in the future). Payments in FCEM would be based on actual deliveries, not on the promise of delivery. Consideration should also be given to the timing of actual FCEM deliveries such that the market does not merely result in FCEM clean energy displacing other clean energy production.
6. Each participating state would determine the amount of carbon-free electricity they want to obtain through the FCEM auction at a “not-to-exceed” price. Upon delivery three years in the future, Clean Energy Attribute Credit (CEAC) costs would be allocated to LSEs in the participating states, with appropriate adjustments for any self-supply by LSEs.

*Rationale: Each state has the authority to determine its de-carbonization and clean energy goals and to establish maximum prices that it will pay to meet those goals.*

7. The participating states would formalize their commitment to submit demand bids in the auction for a number of years (e.g. 10 years) so as to assure carbon-free generation suppliers of continuing demand.

*Rationale: As with any commercial market structure, participants need to have confidence that FCEM will remain in place and continue to be a viable marketplace to transact their clean energy attributes over time.*

8. Carbon-free generation that enters the market after the initial implementation of the FCEM would be eligible to offer its clean attributes to this portion of the market and, if cleared for the market price in that year, would be provided with a one-time “price lock” for their attributes for a fixed number of years (e.g. 7 to 12 years) to support financing.

*Rationale: Limiting eligibility to ‘new’ resources substantially simplifies the interaction of the FCEM with existing state clean energy programs. The ‘price lock’ is a reasonable mechanism to support investor confidence in the FCEM revenue stream as the non-emitting resource industry transitions from reliance on 20-year contracts to a market-based environment. However, the differential compensation that will be available to new versus existing clean energy resources needs to be recognized and factored into other market design decisions.*

### **Net Carbon Pricing:**

9. The Governing Body could establish a carbon price for the NCP mechanism in either of two ways: imposition of a limit on carbon emissions that required generators to purchase allowances to emit carbon within that limit (analogous to the operation of RGGI) or by imposition of a direct price for those emissions.
10. If the Governing Body elects to implement a carbon price through a volumetric cap mechanism, the states will have to establish a mechanism to administer the program as it applies to the emissions of carbon from the generation of electricity in the region. In this case the product could be an allowance to emit one ton of carbon.
11. RGGI could continue to operate as it does today. The NCP structure would impose an additional cost on emitting generators that would factor into their energy market offers.
12. Alternatively, if the Governing Body chooses to establish a direct price for carbon emissions to be applied in an NCP platform, it will need to develop the analytical and governance framework for developing and adjusting the price as appropriate. In this case there would be no product *per se*, only a \$/ton price to be applied to each ton of carbon emissions in the power sector.

13. The limit on emissions or ‘quantity’ approach would likely produce more certainty on the volume reductions in carbon emissions but do so with less certainty about the impact on electricity prices. The imposition of a direct price for carbon or the ‘price’ approach would provide more certainty as to the impact on electricity prices but do so with less certainty about volumes of emission reductions. In either case, implementation of the net carbon pricing mechanism would have to be structured to create high confidence of achieving the states’ statutory emission reduction objectives, including providing sufficient revenues to existing<sup>5</sup> clean energy resources to avoid net losses in de-carbonization through retirements.
14. The ‘netted’ carbon revenue (whether in the form of generator payments for carbon allowances or rebates of energy market payments to emitting generators attributed to the inclusion of the carbon price) would be retained by the states and could be used at their discretion.

### **Forward Clean Energy Market:**

15. The ideal characteristic of qualifying sources of supply in an FCEM is the simplest version: a MWh of electricity produced with no direct emissions of carbon would create one (CEAC).

*Rationale: This formulation would create the maximum level of competition and ensure the lowest cost non-emitting resources are deployed first.*

16. However, given the existence in states across the region of clean energy programs, such as Renewable Portfolio Standards (RPS) and similar programs, the regional FCEM product could be structured to enable simultaneous compliance with a range of those state programs as well. This will be a decision for the participating states to make, acting through the Governing Body.
17. More complex standards for eligibility could be developed, perhaps to encourage innovation for low but non-zero carbon emitting resources or to encourage particular resource types such as storage or demand response.
18. It is also possible to allow some segmentation of supply sources by technology. This would be necessary to accommodate non-emitting resource types not accounted for in RPS programs. It could also be used to enable a state to specify a particular technology from which it wants to obtain electricity in order to fulfill state-specific clean energy mandates, such as for offshore wind, while also meeting the requirements of the regional clean electricity attribute market.

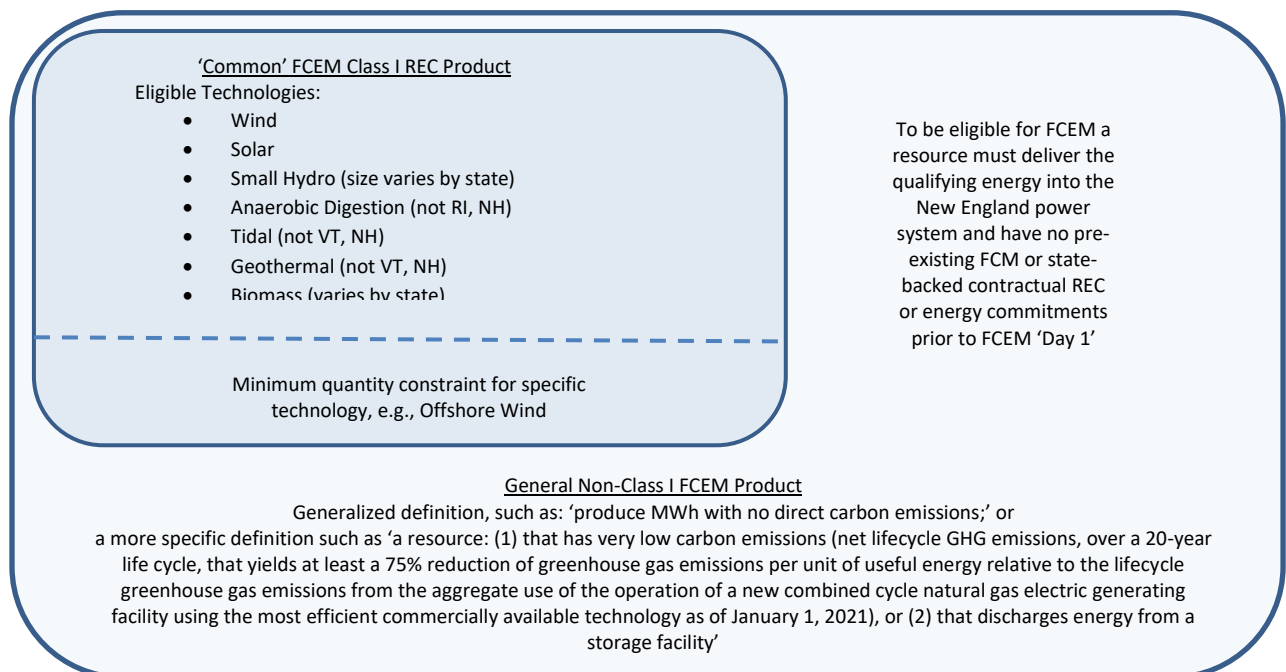
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<sup>5</sup> As described more fully below, ‘existing’ resources would be those that are participating in the markets prior to the start of the FCEM; ‘new’ resources are those that begin their market participation on or after ‘day 1’ of the FCEM.

*Rationale: This segmentation could be necessary to comply with existing laws that specify certain technologies such as offshore wind and could also be used to achieve diversity in the mix of new non-emitting resources if one technology has a significant cost advantage over others.*

19. A conceptual diagram is shown below of a structure for nested products for an FCEM in the context of a hybrid model.

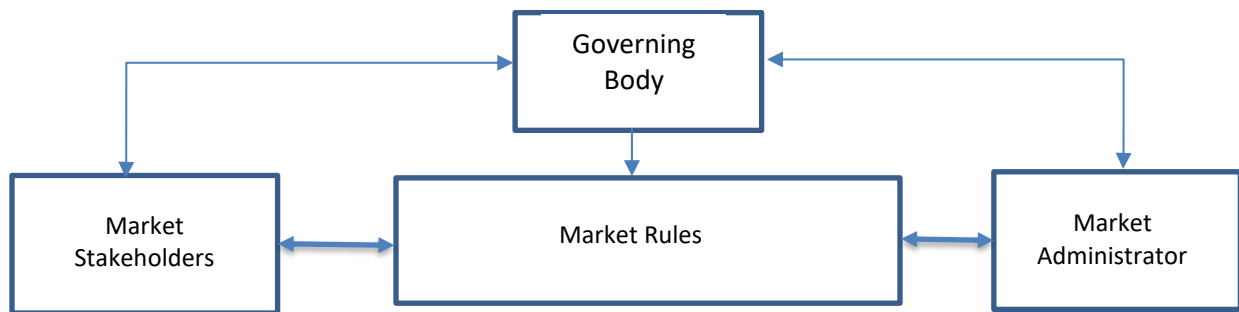
- a. In this diagram, the generalized FCEM product (the outer box) includes all non-carbon emitting generation technologies. This class could be defined as simply as ‘no direct carbon emissions’ or defined more broadly to provide eligibility to very low but non-zero emitting technologies.
- b. Within that larger category, there is substantial overlap in the technologies that are also eligible to earn Class 1 RECs in the New England states (the inner box). CEACs created by a generation source meeting this common definition could be used to comply with a state program’s requirements.
- c. The diagram also illustrates how this product class could be further divided to accommodate a particular technology mandate of a state, such as offshore wind. However, it should be noted that creating different categories of eligible emission characteristics and technologies will reduce the overall efficiency of the market
- d. However, it should be noted that creating different categories of eligible emission characteristics and technologies will reduce the overall efficiency of the market mechanism and likely increase overall costs. Moreover, different categories of product such as these could result in different clearing prices for each category.



## Governance Structure

20. The structure of a regional clean energy market for New England should be designed and operated in accordance with a well-defined and transparent set of market rules and procedures. These characteristics are illustrated in the diagram below.

- a. A critical element of the framework is the set of market rules (signified by the central box).
- b. Those rules would be developed and overseen by a Governing Body (upper box) that represents the interests of the region's states and is independent of any commercial interest in market outcomes.
- c. The Governing Body should have appropriate jurisdiction, authority, and expertise to oversee the design, implementation, and operation of the regional market mechanisms, guided by the objective of achieving the states' clean energy goals with maximum efficiency.
- d. All stakeholders, including commercial participants in the market as well as non-governmental organizations with a stake in energy and environmental policy, should have regular access to forums and processes that enable them to offer suggestions for improving those rules and to comment on rule change proposals advanced by the Governing Body (left-hand box).
- e. An independent Market Administrator(s),<sup>6</sup> with no commercial interest in market outcomes, should be charged with the responsibility to administer the market rules, enforce performance under the rules (including collateral, security, and delivery obligations), and provide settlement of market transactions (right-hand box).



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<sup>6</sup> As described more fully below, it is possible that different aspects of the market could be administered by different entities.

## **Market Rules**

21. The rules governing all aspects of the market should be codified in publicly available documents that clearly specify the rights and obligations of parties that voluntarily participate in the market as buyers or seller as well as the rights and obligations of the Market Administrator(s) and the Governing Body.

*Rationale: To obtain substantial participation in the hybrid FCEM market, both market buyers and sellers will need confidence that the market will be administered fairly and objectively based on clearly articulated rules and procedures.*

22. The Market Administrator(s) should be responsible for maintaining compliance with and enforcing the market rules as well as for working with the Governing Body and stakeholders to evaluate the efficiency and performance of the market structure in achieving the states' objectives.
23. Market rules should be adopted or amended by the Governing Body only after a public process that includes opportunities for market participants and other stakeholders to engage directly with the Governing Body and Market Administrator(s) and to submit comments. All proposed rule changes should be posted publicly and changed only through publicly noticed processes.

## **Governing Body**

24. The governance framework for a regional clean electricity market structure will need to respect and accommodate the legal and political authority of both the Federal Energy Regulatory Commission (FERC) and the New England States with regard to environmental policy, electricity generation, market transactions and ratemaking. The details of the regulatory framework should be developed collectively through negotiation among the States and in consultation with stakeholders and the FERC.

*Rationale: A market that operates across state boundaries and which involves new mechanisms to value and trade electricity attributes in close proximity to the existing wholesale electricity markets creates challenges in clearly identifying the boundaries between state and federal jurisdiction. These challenges and the novelty of this market structure mean that dialogue, negotiation, and consensus building will be needed between the states and the federal authorities to create a functional and sustainable regulatory and governance framework.*

25. Before this framework is developed and implemented, each participating state should enact legislation, if and where necessary, that sanctions the use of a regional market by that state to achieve its clean energy objectives.
26. If necessary, the framework and its implementation should receive formal approval by the FERC.



27. The governance framework should include formation of a Governing Board, a set of by-laws for the Board's functioning and a description of the market and its intended functioning.
28. The bylaws should include a description of the principles, standards, and criteria for maintaining transparent interactions with stakeholders and for decision-making by the Board.
29. The Governing Body should operate in a transparent manner and provide regular opportunities for all stakeholders to provide input regarding the design and performance of the market.
30. When making Market Rule changes, deciding Market Administration questions or disputes, or when declining to act on stakeholder suggestions, the Governing Body should be bound by its by-laws to provide reasoned responses to stakeholder input.

### **Market Administration**

31. The Governing Board would oversee the work of an independent administrator(s) of the market's various functions and resolve disputes related to market administration and participation. The NCP and FCEM portions of the market could be administered by different administrators.
32. The administrator(s) could be ISO-NE or a new entity created specifically for this purpose.

*Rationale: ISO-NE has expertise and capabilities that would be directly applicable to administering a regional clean electricity attribute market and the settlement of a net carbon pricing mechanism. A new or different entity may be able to develop the capabilities to administer such a market. However, securing reliable performance of the requisite capabilities from a new entity will likely take more time than making use of the existing capabilities at ISO-NE and may lead to duplicative capabilities in the region.*

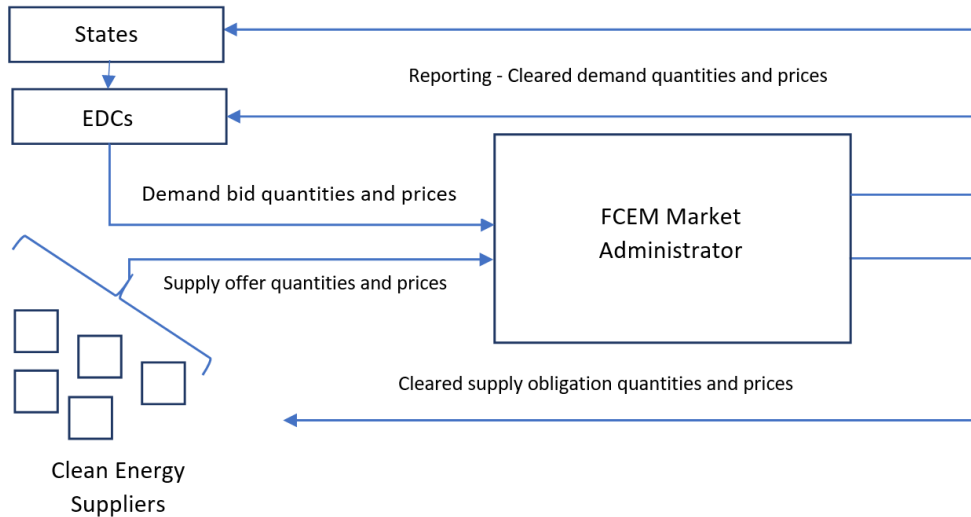
33. The operating budget of the market administrator(s) should be subject to approval by the Governing Body and its costs should be funded through fees paid by participants in the market.

### **Market Operations – FCEM Auction Timeframe: 3+ Years Prior to Delivery**

34. A conceptual process diagram is presented below for the forward aspect of the Hybrid market.
35. On the left, states specify their annual demand for clean energy attributes and any maximum price limits and communicate them to the Market Administrator, which may

be accomplished through their Electric Distribution Companies (EDC). Voluntary buyers, such as corporations and municipalities, could also submit demand bids.

36. In response to state demands, Clean Energy Suppliers offer the clean attributes associated with their new clean energy resources, along with their minimum price offers.
37. The Market Administrator clears the market according to the market rules and reports aggregate results publicly and participant-specific results directly to each affected participant, as well as to the states.



### Market Operations – Delivery in Real Time

38. The diagram below presents a conceptual process for the operational (real time) delivery aspect of energy, CEACs and the rebate by emitting suppliers in the Hybrid market design.
39. Clean Energy Suppliers with FCEM obligations produce clean energy for the real time (RT) energy market; emitting suppliers also provide energy into the market. In parallel, the clean energy attribute associated with each clean MWh generated is captured in the NEPOOL Generation Information System (GIS).
40. Load Serving Entities (LSE) receive energy from the wholesale market and CEACs from the GIS. In the upper right, LSEs use CEACs, along with other RPS credits, to manage their overall FCEM and state clean energy compliance obligations.
41. Along the bottom of the diagram, LSEs pay for energy and CEACs through the market settlement system(s) administered by ISO-NE (energy) and the Hybrid Market Administrator (CEACs). Clean Energy Suppliers receive payment for energy and

CEACs; Emitting Suppliers receive the energy payment and rebate the cost of the carbon price.

**Operational Timeframe**

