UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

ISO New England Inc.	)	Docket No. EL20-54-000
	)	

INITIAL BRIEF OF RENEW NORTHEAST, INC.

Pursuant to Ordering Paragraph (B) of the Federal Energy Regulatory Commission's ("Commission" or "FERC") "Order on Remand, Instituting Section 206 Proceeding and Establishing Paper Hearing Procedure",[1] RENEW Northeast, Inc. ("RENEW")[2] respectfully submits this initial brief in the above-captioned proceeding. RENEW appreciates the opportunity to comment on the ISO New England ("ISO-NE" or "ISO") Tariff's Forward Capacity Market ("FCM") rate lock in which a new resource can lock in for seven years the capacity price it receives in its first Forward Capacity Auction ("FCA"). This brief explains how the price lock is unduly discriminatory and that alternatives to the price-lock should be investigated to remedy the discrimination.

[1] *ISO New England Inc.,* 172 FERC ¶ 61,005 (2020) [hereinafter July 1 Order].

[2] 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 has focused on highlighting the value of grid-scale renewable resources- specifically offshore and onshore wind, solar and hydropower- and energy storage systems and the benefits of transmission investment to deliver renewable energy to load centers in the Northeast. RENEW members own and/or are developing large-scale renewable energy projects, battery and pumped energy storage systems.

I. The Price Lock Is Unduly Discriminatory

While RENEW agrees with the Commission's preliminary finding that the ISO's new entrant rules may be unjust and unreasonable,[3] RENEW finds additional reasons exist for this conclusion. While the focus of the two complaints referenced in the July 1 Order was on the seven-year price lock as unduly discriminatory against existing capacity resources, it is also discriminatory between new capacity resources of different technology types, favoring the existing resource mix over resources that are needed to fulfill state legal requirements for clean energy and address the environmental, reliability and consumers cost issues for delivery of energy at times of peak demand.

While the original idea for the capacity market was to ensure reliability by providing additional revenue for generators in place of price spikes in the energy market, it has evolved in ISO-NE into a project financing system for natural gas-fired generators. The Commission found the original five-year price lock and associated zero-price offer requirement to be just and reasonable because it provided "predictable revenues and facilitates financing for new capacity."[4] The seven-year price lock was similarly found to be "an appropriate way to provide investor assurance".[5] As designed, the ISO-NE's FCM favors the development of gas generation with the timing of the capacity auction and commitment period built around the typical development cycle for a new build gas generator.[6] Though the seven-year price lock is available to all new capacity resources,[7]

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[3] July 1 Order at 1.
[4] *Devon Power*, 115 FERC ¶ 61,340 at P 16.
[5] *ISO New England Inc. and New England Power Pool Participants Committee*, 147 FERC ¶ 61,173 at P 56.
[6] ISO New England Inc., Tariff Filing, Docket No. ER14-1639-000, 9 (filed Apr. 1, 2014) [hereinafter April 1, 2014 ISO Filing].
[7] One exception is for resources that have utilized the Renewable Technology Resource Exemption ("RTR Exemption").

it provides far greater predictability in revenue streams to gas generators. This aspect of the FCM provides an unequal and unduly discriminatory advantage to those resource types which benefit from this greater revenue predictability, while simultaneously putting other new resources at a comparative disadvantage in the markets. Consequently, the states have had to adopt policies for the competitive procurement of clean energy resources to meet their respective laws.

The most recent Offer Review Trigger Price ("ORTP") update for FCA 15 (for the Capacity Commitment Period 2024-2025) illustrates the differing benefits gained by different new resource types from the seven-year price lock. The summary of the FCA 15 ORTPs is the table below.[8]

Summary of 2024-2025 ORTPs (2024$)

Reference Technology	Total Plant Capital Cost *($m)*	Installed Capacity *(MW)*	Qualified Capacity *(MW)*	Gross CONE *($/kW-mo) Installed*	Revenue Offsets *($/kW-mo) Installed*	Net CONE *($/kW-mo) Installed*	Net CONE *($/kW-mo) Qualified*	2024-2025 Final ORTP *($/kW-mo) Qualified*
Combustion Turbine	$295	338	338	$10.40	$3.24	$7.161	$7.161	**$7.161**
Combined Cycle	$572	533	533	$14.33	$5.36	$8.967	$8.967	**$8.967**
Onshore Wind	$123	52	16	$20.60	$22.17	$ (1.57)	$ (5.22)	**$0.000**
Energy Efficiency	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	**$0.000**
Demand Resource - C&I Load Management and Previously Installed Distributed Generation	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	**$1.008**
Demand Resource - Residential Load Management	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	**$7.559**

The hypothetical combustion turbine ("CT") evaluated in this ORTP calculation can expect a 20-year net present value of zero if it is able to earn $7.161/kW-month in capacity revenues.[9] Setting aside for a moment that the FCM has not cleared near

[8] https://www.iso-ne.com/static-assets/documents/2020/03/2024-2025-ccp-forward-capacity-auction-15-iso-offer-review-trigger-price-update.xlsx

[9] This is, by definition, what the ORTP is calculated to achieve. *See* Section III.A.21.1.2(b) of the ISO-NE Tariff.

$7.161/kW-month in many auction cycles, if this hypothetical CT were able to clear at this price in its first year and lock-in seven years of revenue at this price, it would secure a total guaranteed revenue stream equal to $203.3 million. Compared to its total plant capital cost of $295 million, this action of clearing in an FCA would allow it to guarantee 70 percent of its capital costs. With the lion's share of the project's capital costs covered by guaranteed, locked-in capacity revenue, the investment risk for this resource is significantly minimized.

The remaining revenue available to the CT from the energy and ancillary services ("E&AS") markets is estimated to equal $3.24/kW-month. This E&AS revenue, while expected to total about $92 million over seven years, which is 31 percent of the capital cost, would be fully subject to market risk. Should the generator need to procure a hedge for any of the non-guaranteed market revenue to obtain financing, it is only a small share of its revenue that would require hedging. Such hedges, when available, come at a non-trivial cost. Accordingly, this CT would only need to incur the cost of a relatively small hedge.

By contrast, the hypothetical onshore wind generator in the above ORTP calculation can expect a 20-year net present value of zero if it has a net loss of $5.22/kW-month in the capacity market. In other words, its expected non-capacity revenues are more than sufficient in comparison to its costs such that no capacity revenues are needed for this project to break even. It is clearly the more economically efficient choice when comparing the new capacity options. However, without capacity market revenues, the entirety of the wind plant's revenue would be subject to market risk and volatility making it near-impossible to obtain project financing. Even if this wind generator were able to

obtain $7.161/kW-month in capacity revenues, as was assumed in the earlier CT discussion, this would lock in $9.6 million of capacity revenue over seven years. This is just under 8 percent of the project's capital cost of $123 million, leaving the remaining 92 percent of capital cost recovery subject entirely to market volatility. Even at high capacity prices that far exceed the resource's revenue requirements, the price lock provides little market volatility risk reduction. The seven-year rate lock does little to nothing to provide predictable revenues and facilitate financing for this type of new capacity.

As this example illustrates, the seven-year rate lock in the capacity market strongly favors new resources with low capital costs and high operating costs over new resources with high capital costs and low operating costs, regardless of which project is the least cost alternative. Although ISO-NE has developed market mechanisms to accommodate state policy resources over the past several years, such as the RTR exemption under the Minimum Offer Price Rule ("MOPR") and the Competitive Auctions with Sponsored Policy Resources ("CASPR"), both remain bandages over the larger problem.

The clean energy procurement laws in place in most New England states are highly effective, successful market-based policies that incentivize growth of new renewable energy capacity to meet the region's energy needs. In addition to their environmental benefits, state policy resources provide reliability benefits unlike natural gas and oil-fired generation in that they are not dependent on access to or replenishment of the constrained fossil fuel supplies that form the basis for the ISO's concerns around fuel security. Today, the ISO-NE mission does not recognize these competitive clean energy procurements as equally market-based as any capacity auction despite the fact the

States have the authority to regulate facilities used for the generation of electric energy[10] and FERC has acknowledged that resource adequacy includes a state regulatory role in resource planning, FERC-jurisdictional rates, and the RTO's ability to ensure reliable service.[11]

State supported Power Purchase Agreements play a necessary role in mitigating financing risk among low operating cost resources that do not benefit from the seven-year rate lock, thereby allowing the system to achieve a closer-to-optimal equilibrium. These futures contracts play a similar role in the market for low operating cost resources as the FCM seven-year rate lock plays for high operating cost resources. They fill a gap that exists in the market design. Rather than embrace these state clean energy forward contracts, they impeded by the MOPR.

The fuel neutrality of capacity markets generally is being called into question. One paper co-authored by former Commission Chief Economic Advisor Richard O'Neill explains how the financial impact of a capacity market is to replace volatile energy scarcity rents with more regular revenues, akin to providing energy options contracts.[12] The seven-year rate lock would therefore be analogous to a seven-year options contract. Resources with higher operating costs such as CTs rely heavily on scarcity rents for their cost recovery. The introduction of an options contract (e.g., a capacity market) significantly reduces its market risk, particularly if the options contract is sufficiently

[10] 16 U. S. C. § 824(b); New York v. FERC, 535 U.S. 1, 22 (2002).
[11] Energy Policy Act of 1992, 106 Stat. 2776, 2796 (codified at 16 USC §§ 2602) (defining integrated resource planning and encouraging states to adopt the practice); Order No. 888, 61 Fed. Reg. 21540, 21626 n. 544 (1996) (state authority in traditional areas includes utility generation and resource portfolios). *California Independent System Operator*, 116 FERC ¶ 61,274 at P 1117 (2006) (Commission can defer to state and local authorities to set resource adequacy requirements).
[12] Mays, Jacob and Morton, David and O'Neill, Richard P., Asymmetric Risk and Fuel Neutrality in Capacity Markets (February 8, 2019). USAEE Working Paper No. 19-385, Available at SSRN: https://ssrn.com/abstract=3330932 or http://dx.doi.org/10.2139/ssrn.3330932 .

long (e.g., the seven-year rate lock). Introduction of a capacity market will inherently "tilt the technology mix arising in equilibrium towards resources with higher operating costs."[13]

Further, aside from skewing the resource mix away from the economic optimum, the long-term options contracts offered by the FCM seven-year rate lock have a secondary effect of inhibiting decarbonization of the power system. "The majority of energy in low-carbon systems is likely to be provided by some combination of hydroelectric, nuclear, wind, and solar resources, all of which are characterized by high capital costs and low operating costs. Accordingly, capacity markets as currently structured may work against efforts to decarbonize."[14]

At the time the seven-year rate lock was introduced, a new onshore wind generator was expected to be a costlier capacity option than a new gas-fired generator.[15] Given this expectation at the time, the discriminatory effect of the seven-year rate lock was less significant in magnitude than the underlying economics of the various technologies. The fact that the design of the FCM and the seven-year rate lock imparted an unequal benefit on the resource type that was expected at the time to be the most economically efficient new resource type was not of serious concern. This unequal benefit to the most economically attractive resources would not have been expected to result in an economically suboptimal market outcome. Rather, it would reinforce the expected optimal outcome.

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[13] *Id.* at 23.
[14] *Id.* at 24.
[15] *See* Testimony of Robert Ethier in April 1, 2014 ISO Filing, supra note 6, at 11 (a combined cycle is the most cost-effective technology that is likely to be built in New England with the only recent merchant entrant in New England being a combined cycle unit). In FCA 9, on-shore wind had a higher ORTP ($14.00/kW-mo) than either CT or CC gas generators ($10.00 and $11.00/kW-mo, respectively).

As clean energy technology costs continue to fall at a rapid pace, the underlying economic assumptions used at the time the seven-year rate lock were introduced are no longer appropriate. A new gas-fired generator is now expected to be the far costlier capacity option as compared with a new onshore wind generator.[16] As a result, the FCM seven-year rate lock now has the effect of unequally providing favorable financing conditions for an economically inefficient resource type while providing little to no financing benefit for the more efficient resource type. "The fuel neutrality of capacity markets relative to an ideal energy-only market relies on the assumption embedded in the classic optimization framework that the cost of capital is exogenous to the market design".[17] This fuel neutrality assumption underlying the capacity market and the seven-year rate lock is no longer just. It is no longer reasonable to ignore the asymmetric effect that the FCM seven-year rate lock has on reducing the cost of capital for only a small subset of resource types, the resulting undue discrimination against the remaining resource types, or the socially sub-optimal market outcome that it causes.

The reasonableness of the seven-year rate lock in the FCM has passed, absent additional risk trading mechanisms that provide a similar level of risk reduction for resources with low operating costs. Different technology types with different cost structures and sources of revenue risk cannot compete on equal footing in the market and achieve a socially optimal outcome where the very design of the market imparts a significant advantage to only a small subset of resources. "It is fairly obvious that treating

[16] As evidenced by on-shore wind having a lower ORTP ($0/kW-mo) than either CT or CC gas generators ($7.161 and $8.967/kW-mo, respectively) in FCA 15. https://www.iso-ne.com/static-assets/documents/2020/03/2024-2025-ccp-forward-capacity-auction-15-iso-offer-review-trigger-price-update.xlsx

[17] Mays, *supra* note 12, at 2.

different things the same way may generate as much inequality as treating the same things in different ways."[18]

II. An Alternative Is Needed to Eliminate the Asymmetric Risk of the Risk Profile Between New Gas Generation and New State Policy Generation

The current seven-year price-lock in the FCM does not enable financing of new entry of resources with high capital costs and low operating costs, which are nearly all the low- and no-carbon resources needed in a decarbonized system, even where those resources are the most economically efficient option. An alternate or additional mechanism to risk trading is needed to ensure the grid has the right resources to meet future resource adequacy needs at the lowest cost.

Completed and pending state-sponsored procurements for grid-scale generation are expected to result in contracts for several gigawatts of clean energy resources. This significant new non-gas, carbon-free generating capacity will improve the reliability of the power system. ISO-NE has taken a hands-off approach to whether the New England states will achieve their statutorily-mandated Renewable Portfolio Standard (RPS) and carbon reduction requirements, though it has stated that an "agreed-upon mechanism" in the ISO markets could be implemented to attain the requirements of state clean energy laws.[19] Absent a significant directional turn, consumers will be forced to pay for the retention of uneconomic "zombie" generation even though states have already made- and

[18] Crenshaw, Kimberlé quoted in P.H. Collins, *Black feminist thought: Knowledge, consciousness, and the politics of empowerment* 23 (2nd ed. 2000).
[19] *See* ISO New England, Comments to the Connecticut Department of Energy and Environmental Protection, 1 (January 22, 2020), http://www.dpuc.state.ct.us/DEEPEnergy.nsf/c6c6d525f7cdd1168525797d0047c5bf/83a89dd7c3987c37852584fd004e3891/$FILE/CT%20DEEP%20tech%20conference-markets%20Jan%2022_2020_ISOcomments.pdf

will continue to make- contractual commitments to new clean energy resources that will meet the region's renewable energy and reliability needs.

The investment risk for baseload and variable resources (e.g., nuclear and wind) is reduced most effectively by the introduction of energy futures contracts and unit-contingent energy futures contracts, respectively, rather than by options contracts (i.e., capacity markets). "While investors in the peaking technology are only concerned about lower than expected demand [i.e., reduced energy scarcity pricing], investors in the baseload technology are concerned about lower than expected demand as well as lower than expected fuel cost [i.e., reduced average energy pricing]."[20] Incomplete risk trading, such as what exists in today's wholesale electricity markets in New England, it argues, leads to a "significant degradation in welfare. In order to achieve an equilibrium close to the complete trading ideal, both types of contracts must be available."[21] Mays et al. in their modeling found that introducing only one type of risk-trading mechanism (options, futures, or unit-contingent futures) resulted in a highly skewed and sub-optimal resource mix. It was only by introducing all three risk-trading mechanisms that their modeling produced an equilibrium in the vicinity of the social optimum.

There is nothing analogous to a futures contract (unit-contingent or not) that exists within the ISO-NE wholesale electricity markets, yet this is the risk reduction mechanism most suited to low operating cost technologies. Apart from state-supported power purchase agreements, there is little ability in New England to obtain such a contract outside of the wholesale electricity markets. "The struggles of U.S. nuclear units, which have been unable to find counterparties for long-term contracts without state support

[20] Mays, *supra* note 12, at 18.
[21] *Id.* at 17.

despite their potential role as a hedge against future increases in natural gas and carbon prices, suggests that the mechanism demonstrated in this paper may be at work in current markets."[22]

We may be moving to a new world where the Locational Marginal Price and the FCM can no longer be the cornerstone of financing new generation, not because of some harmful State action, but simply because of the increasing diversity of the generation fleet and the shift to lower marginal cost resources. The shift to differentiated markets that reward different characteristics like zero emissions, peaking capability, fuel security or stable pricing due is emerging already. Pay-for-performance during scarcity and the Massachusetts Clean Peak Standard represent such emerging constructs.

[22] *Id.* at 24.

III. Conclusion

Whether the seven-year price lock is unjust and reasonable goes beyond the issue of the offer floor. It is discriminatory and preferential by favoring the existing resource mix over resources that are needed to fulfill state legal requirements for clean energy. The markets must also evolve to meet state policies for (1) increasing new renewable energy resources, (2) retention of legacy non-emitting resources and (3) deployment of new clean technologies like energy storage needed for reliability. RENEW recommends alternatives to the price-lock be investigated to remedy the discrimination and preferential treatment. Thank you for the opportunity to other these comments.

Respectfully submitted:

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CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Madison, Connecticut, this 24th day of August 2020.

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