Comments of the Environmental Defense Fund

February 24, 2021

Environmental Defense Fund ("EDF") appreciates the opportunity to submit comments regarding the discussions that took place at the New England Energy Vision wholesale market technical forums. EDF recognizes that while individual States may have particular clean air mandates and clean energy goals, the States are working together to explore possible wholesale market constructs that will help to decarbonize the region's electricity sector in a responsible and equitable manner. In that light, EDF offers the following comments to help ensure that as next steps are contemplated, all necessary factors are taken into consideration.

I. Clarity of Principles by Which Each Market Construct Will be Evaluated

The States should provide clarity on the principles that should be included in evaluating selected market constructs. Without such clarity, a meaningful comparison of the various studied constructs may be compromised. By way of an example, on January 6, 2021 NEPOOL released its pathways to a future grid process report ("Report").[1] The Report was issued pursuant to a collaborative effort to develop a common understanding among a diverse group of stakeholders and State officials by clarifying issues, and discussing pathway elements and their implications. Although this is the stated goal, EDF notes that ISO-NE, NESCOE, and the Report seem to be approaching the issue from different perspectives or applying different principles. For example, the NESCOE vision statement lists the effective and efficient integration of distribution level resources as a key principle that must be reflected in any new regionally-based market framework.[2] However, the Report is silent on this principle. Similarly, the Report appropriately elevates the importance of balancing services in any future market design, yet the NESCOE principles are silent on this issue. After evaluating the information provided in the technical forums, an important next step is for the States to reaffirm the principles that must be included in any and all market constructs that may be evaluated.

Further, if the States determine that they would like to see an evaluation of market constructs that are different from the two that ISO-NE has decided to evaluate (FCEM and Net Carbon Pricing), the States should provide guidance regarding the interplay between such

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[1] The Report was prepared by Frank A. Felder, Ph.D. https://www.iso-ne.com/static-assets/documents/2021/01/npc_20210107_felder_report_on_pathways.pdf

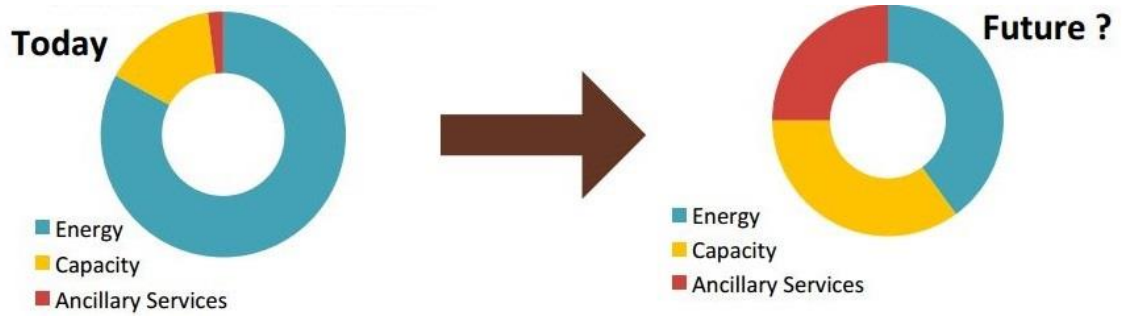
[2] http://nescoe.com/resource-center/vision-stmt-oct2020/

evaluations. This will be helpful for stakeholders to better understand where to concentrate their efforts and resources.

II. Flexibility Service Requirements Will Increase in Importance as the Share of Renewable Generation Grows

Various reports have highlighted the link between successful decarbonization and the need to have reliable balancing resources.[3] Balancing services will be a crucial component of the future decarbonized grid. Therefore, guidance is needed from the States as to how the required types, amounts, and timing of balancing services should be considered in evaluating market constructs.

A key finding from the Massachusetts Attorney General's wholesale market symposium report is that ancillary services will increase in importance as the share of intermittent generation grows, resulting in new specialized services that value flexibility, rather than traditional capacity needs.[4] Revenues received from new, specialized ancillary services will also be critical in resolving the missing money problem as energy market revenues decline. The following graphic compares the portion of revenues resources receive from the energy, capacity, and ancillary services markets today and in the future, as capacity factors diminish, and energy prices are reduced as a result of non-fossil supply:



Source: RENEW Northeast, Integrating Markets and Public Policy (IMAPP): Solution Ideas Day at slide 5 (August 11, 2016), *available at* http://www.nepool.com/uploads/IMAPP_Presentaion_RENEW.pdf.

Any future modeling of the need for, and revenues associated with, ancillary services must include a fair assessment of all technology types able to provide the services. This was a key deficiency of the Energy Security Improvements modeling assessment, which excluded

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[3] See for example, Massachusetts Decarbonization 2050 Roadmap at page 55; Report at page 6.

[4] Massachusetts Attorney General's Office and Regulatory Assistance Project, Wholesale Electric Market Design for a Low/No-Carbon Future – Report on the October 2019 Symposium & Proposed Next Steps at page 7 (March 2020), https://www.mass.gov/doc/wholesale-electric-market-design-for-a-lowno-carbon-future/download.

important resources, including battery resources.[5] A critical assessment of all technologies is needed given that the set of resources the system relies upon to provide these proposed ancillary services will likely change, as ISO-NE acknowledges: "as new storage-based technologies become more prevalent, and their economics and energy sustainability improves, the resources that prove most cost-effective to satisfy these same operational purposes may shift to make use of those technologies."[6]

Lessons learned from the Energy Security Improvements initiative demonstrate that any new proposed service must be appropriately tailored to a demonstrated reliability need in order to protect consumers against excessive costs.[7] This issue needs to be carefully considered against the backdrop of which resources currently provide the required balancing services and which resources will be needed to provide these types of services in the future, as increasing numbers of renewables come onto the grid. One critical issue includes consideration of the evolving role of gas generation going forward—transition from baseload provider to provider of balancing services. As explained in the Massachusetts' Decarbonization RoadMap (at page 66):

> Thermal generators that have traditionally operated by following electricity demand will need to shift to a "peaking" or "gap-filling" reliability role in the coming decades as they operate fewer and fewer hours and cease to be providers of bulk electricity. In the *Energy Pathways Report*, thermal generators operating 50% of the time today are projected to operate around 5% of the time in a decarbonized system.[8]

The following graphic shows the variability of renewables and the need for balancing resources, with a significantly different role for gas generation in meeting demand across two days in 2050:

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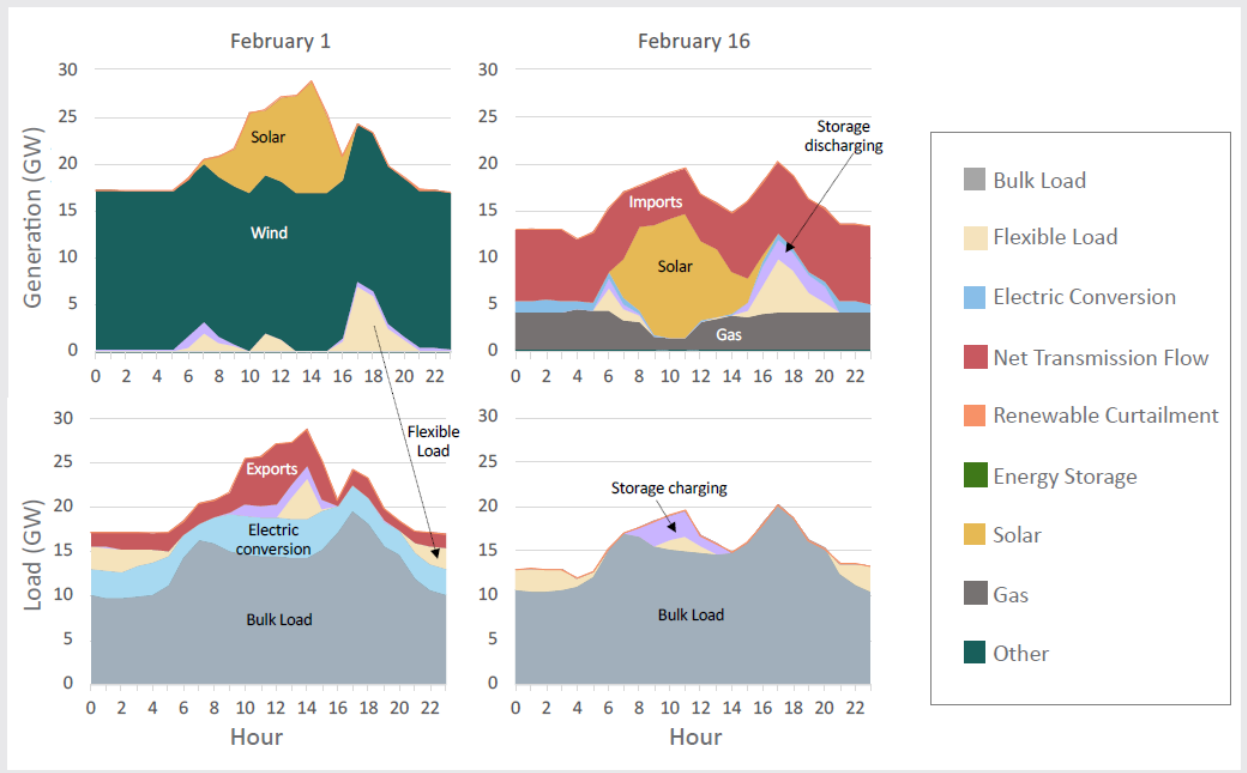
[5] ESI Filing, Attachment C – Impact Assessment, page 72, note 54 ("Table 26 to Table 28 do not include certain technology types, when our modeling of the resource dispatch is not sufficiently detailed to accurately characterize expected impacts. For example, output (and charging load) for battery and pumped storage reflect historical profiles, not economic offers, and thus may not accurately capture resource responses to ESI").

[6] ESI Filing, Attachment B (Energy Security Improvements White Paper) at page 30.

[7] *ISO New England Inc.*, 173 FERC ¶ 61,106 at P 22 (2020) (FERC rejecting the ESI proposal because, among other reasons, it would "impose substantial costs on consumers").

[8] https://www.mass.gov/doc/ma-decarbonization-roadmap-lower-resolution/download



As gas-fired electric generators' fuel supply needs become more intermittent and uncertain on both daily and sub-day levels, the need for just-in-time fuel delivery and varying, non-ratable takes from pipelines will increase, as concluded in a report commissioned by the INGAA Foundation.[9] This implies a commensurate change in the way that pipelines delineate and price the flexibility they provide to the grid,[10] with an emphasis on appropriately valuing non-ratable, just in time delivery service. Without addressing this key needed market refinement, the "unpriced" flexibility from the natural gas supply chain (embedded within the price for long-term pipeline capacity), muddles the market for participation by more dynamic, data-driven

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[9] Black & Veatch Management Consulting, LLC for the INGAA Foundation, Inc., The Role of Natural Gas in the Transition to a Lower-Carbon Economy at page 6 (May 2019), https://www.ingaa.org/File.aspx?id=36501.

[10] As one example, as part of the proposed Access Northeast project, Algonquin proposed Liquefied Natural Gas ("LNG") storage facility that would deliver on peak days up to 925,000 dekatherms per day. Algonquin Gas Transmission, LLC, Request for Approval of Pre-Filing Review – Access Northeast Project, Docket No. PF16-1 at 1 (November 3, 2015). This aspect of the proposal would have been particularly valuable to electric generators. As noted by Algonquin, "the service envisions several creative features including non-ratable takes from the LNG facility, as well as basically the ability to take deliveries without nominating a source of supply." Algonquin Gas Transmission, Technical Conference Transcript, Docket No. RP16-618 at page 38, lines 2-5 (May 9, 2016). However, none of these LNG-related services were priced on a stand-alone basis.

resources like batteries and demand response and will serve to hinder the region's progress towards its climate objectives.

EDF appreciates the opportunity to comment on the wholesale market technical forums and to provide perspectives on important considerations in evaluating potential new market constructs. EDF looks forward to working with the States and other stakeholders on these issues going forward.

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