

## **PRELIMINARY**

Pursuant to notice duly given, a meeting of the NEPOOL Participants Committee was held via teleconference beginning at 9:30 a.m. on Thursday, April 15, 2021. Attachment 1 identifies the members, alternates and temporary alternates who participated in the teleconference meeting.

Mr. David Cavanaugh, Chair, presided and Mr. Sebastian Lombardi, Acting Secretary, recorded. Mr. Cavanaugh welcomed everyone to the third meeting of Pathways to the Future Grid evaluation process. He thanked those who provided written comments following the March 18 meeting.

## **APPROVAL OF FEBRUARY 18, 2021 AND MARCH 18, 2021 MEETING MINUTES**

Mr. Cavanaugh referred the Committee to the preliminary minutes of the February 18, 2021 and March 18, 2021 Pathways meetings, as circulated and posted in advance of the meeting. Following motion duly made and seconded, the Committee unanimously approved the preliminary minutes of the February 18, 2021 as circulated but with the addition of the identification of Mr. Peter Fuller's company, Autumn Lane Energy Consulting, and the preliminary minutes of the March 18, 2021 meetings as circulated.

## **ISO PRESENTATION**

### ***Interaction with Existing State Policy***

On behalf of the ISO, Dr. Chris Geissler reviewed materials that had been circulated and posted in advance of the meeting that included material on existing state policies and the role of storage, along with a response to additional stakeholder comments. He noted that, following the ISO's presentation, the Analysis Group (AG) would join the call to kick off discussions on the

modeling approach and the assumptions they intend to use to evaluate the straw Forward Clean Energy Market (FCEM) and net carbon pricing frameworks.

Dr. Geissler then turned the presentation over to Mr. Steven Otto, who provided an overview of the potential modeling approaches for consideration and reviewed the anticipated interactions between the alternative market frameworks being discussed and the existing state clean energy programs. He then presented six cases that demonstrated total payments to resources under the different approaches with different relationships between the demands for clean energy certificates (CECs) and renewable energy certificates (RECs). Referencing the ISO's presentation materials, Mr. Otto explained that the cases considered a stakeholder concern where, under Approach 1, resources that can sell both CECs and RECs may see increased payments relative to Approach 2.

In response to questions during his presentation, Mr. Otto confirmed that modeling efforts were expected to include some competitiveness assumptions with respect to the CEC and REC markets. He responded to comments noting that the new CEC and FCEM framework could provide a broader, more expansive regional market that could potentially benefit current state programs. Mr. Otto stated that the models anticipated that various stakeholders, including corporations or municipalities, would have the opportunity to purchase CECs. ~~He clarified the difference between RECs and CECs, noting that RECs are awarded based on production and represent actual generation; CECs would be awarded based on the type of energy produced and the level of carbon output.~~ He clarified that RECs and CECs both represent MWhs of energy produced – RECs for MWh produced by a particular type of renewable resource; CECs for MWh produced in a way that doesn't produce carbon emissions. Throughout the presentation many questions and comments were provided by stakeholders about the relationship of RECs and

CECs and how they might be handled in the potential frameworks during the modeling process. Additionally, Mr. Otto took note of concerns with potential double counting of CECs and RECs. Concluding his presentation, Mr. Otto stated that the ISO planned to propose that the Analysis Group assume Approach 1 for modeling purposes, noting that Approach 1 appeared relatively simple to model, would avoid the “double payment” concern identified by stakeholders, and would allow for the continuation of existing state programs.

***Role of Storage in FCEM and Net Carbon Pricing Frameworks***

Dr. Geissler proceeded to review the portion of the presentation about the potential role of storage in the FCEM and net carbon pricing frameworks, noting the memos addressing these issues that had also been circulated and posted in advance of the meeting, and which used a series of numerical examples to examine the treatment of storage under both frameworks.

Under an FCEM framework, Dr. Geisler noted that clean energy resources could reduce their energy market offer price to reflect the value of CECs received. In this case, the FCEM would increase energy market revenues for storage resources that increase clean energy production by charging when the marginal supplier is clean, and discharging when the marginal supplier is not clean. In response to a question, Dr. Geissler reinforced the importance of appropriately identifying the overarching, expected end product for each framework. Regarding the value of storage, Dr. Geissler noted the importance of modeling in an effort to identify pricing structures that are in line with financing methods. After much stakeholder comment, Dr. Geisler reinforced the importance of keeping within the confines of the design stage of these pathways discussions, noting the other efforts underway that address many of the comments/issues being raised.

Under a net carbon pricing framework, Dr. Geissler explained that storage would be compensated for its marginal contributions to clean energy production via increased energy market revenues. By awarding CECs, storage would be compensated at a rate that exceeds its contributions, which would be inconsistent with sound market design. Lastly under the net carbon pricing framework, storage would be compensated for its marginal contributions to reducing carbon emissions when it is not charged ~~for~~by carbon ~~emissions-emitting resources~~.

At the conclusion of the ISO's presentation, Dr. Geissler responded to stakeholder feedback with preliminary observations, ~~suggesting~~explaining that the ~~FCEM framework should award CECs to low-emitting resources and should~~ISO does not propose to model CECs ~~that are awarded to~~for carbon-emitting resources. He indicated that the ISO would seek to align design elements with three criteria: (i) consistency with stakeholder preferences; (ii) sound market design principles; and (iii) simplicity in modeling. Additionally, he referenced stakeholder feedback in regard to understanding an Integrated Clean Capacity Market (ICCM) construct further, noting the memo provided by the ISO at the March 18, 2021 meeting, which offered initial thoughts on a conceptual ICCM approach that could be considered in the modeling efforts. Lastly, he expressed his appreciation for the stakeholder comments to date and welcomed additional stakeholder feedback.

Following the presentation, some members asked about the prioritization of the analysis of an ICCM construct. Dr. Geissler noted that this construct, should it be analyzed further, would be considered under one of the current models. When asked about the ISO's plans for ongoing stakeholder engagement throughout the modeling process, he stated that the ISO intended to provide updates throughout the process.

## ANALYSIS GROUP: PATHWAYS STUDY

Mr. Cavanaugh introduced Mr. Todd Schatzki from the Analysis Group ~~(AG)~~<sub>2</sub>, who from materials that had been circulated and posted in advance of the meeting summarized: (i) AG's assignment, approach and process schedule; (ii) its proposed model structure and mechanics; and (iii) the potential inputs, assumptions, and scenarios to be analyzed. Mr. Schatzki explained that AG's assignment is to evaluate proposed alternative market approaches (not designed to be immediately implementable) to support a more decarbonized future grid and compare them to continuation of the current markets/existing rules. AG will quantitatively and qualitatively differentiate three approaches – the status quo, FCEM/ICCM and net carbon pricing, including market incentives and implied environmental and economic outcomes. He emphasized the desire for, and importance of, timely and interactive stakeholder feedback throughout the process, with identified milestones through 2021 and a final report to be delivered in February 2022.

In response to questions during his presentation on model components and mechanics, Mr. Schatzki acknowledged reliability considerations, while not a focus of AG's efforts, could be picked up in AG's efforts, in part, in the targets and assumptions agreed upon, but were likely to come more directly into play in the Future Grid ~~economiereliability~~ studies process.

Nonetheless, he encouraged members to share with AG any relevant information or guidance from NERC. Mr. Schatzki explained further the roles, rationale and interplay among capacity expansion (different under each approach) and the energy and ancillary services and FCM modules in the market simulation process. With respect to project finance feasibility, structures and assumptions under the models, Mr. Schatzki acknowledged the importance of those issues, the need for more information in this area, and because the information may not be captured in

the market simulations, the potential need to capture the information outside the models.

Members stressed the importance of addressing those issues to inform any decision on which model to pursue.

Mr. Schatzki then reviewed the modeling inputs and assumptions that need to be agreed upon prior to the analysis with respect to study parameters, electricity markets and capacity markets. He also summarized and requested feedback on approach inputs and assumptions, including state policies (including whether and/or how to include renewable portfolio standards), the status quo, net carbon pricing, and FCEM/ICCM.

In discussions, members offered suggestions for incorporating state policies in the modeling and the need for adjustments should outputs not align with specific state policies. Mr. Schatzki further confirmed the importance of sharing relevant details by state in the output of the model. He then reviewed potential scenarios for the model, noting he does not intend to represent a 100% carbon reduction target. When asked about how storage is intended to be represented in the models, Mr. Schatzki acknowledged the importance of storage and described the role it will play in modeling. Lastly, he reviewed the project timeline, noting modeling efforts will begin after June, with feedback to be provided and solicited throughout the process.

Mr. Cavanaugh concluded the meeting by urging Participants to submit any written feedback or comments by e-mail to him and Dr. Geissler.

There being no further business, the meeting adjourned at 4:20 p.m.

Respectfully submitted,

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Sebastian Lombardi, Acting Secretary



**PARTICIPANTS COMMITTEE MEMBERS AND ALTERNATES  
PARTICIPATING IN APRIL 15, 2021 TELECONFERENCE MEETING**

PARTICIPANT NAME	SECTOR/ GROUP	MEMBER NAME	ALTERNATE NAME	PROXY
Acadia Center	End User	Deborah Donovan		
Advanced Energy Economy	Fuels Industry Participant	Caitlin Marquis		
American Petroleum Institute	Fuels Industry Participant	Paul Powers		
AR Large Renewable Generation (RG) Group Member	AR-RG	Alex Worsley		
AR Small Load Response (LR) Group Member	AR-LR	Brad Swalwell		
AR Small RG Group Member	AR-RG	Erik Abend		
Ashburnham Municipal Light Plant	Publicly Owned Entity		Brian Thomson	
Associated Industries of Massachusetts (AIM)	End User			Roger Borghesani
AVANGRID: CMP/UI	Transmission		Alan Trotta	
Belmont Municipal Light Department	Publicly Owned Entity		Dave Cavanaugh	
Block Island Utility District	Publicly Owned Entity	Dave Cavanaugh		
Boston Energy Trading and Marketing	Supplier	Michael Kramek		
Boylston Municipal Light Department	Publicly Owned Entity		Brian Thomson	
BP Energy Company	Supplier			José Rotger
Braintree Electric Light Department	Publicly Owned Entity			Dave Cavanaugh
Brookfield Renewable Trading and Marketing	Supplier	Aleks Mitreski		
Brooks, Dick	End User	Dick Brooks		
Calpine Energy Services, LP	Supplier	Brett Kruse		Bill Fowler
Castleton Commodities Merchant Trading	Supplier			Bob Stein
Chester Municipal Light Department	Publicly Owned Entity		Dave Cavanaugh	
Chicopee Municipal Lighting Plant	Publicly Owned Entity		Brian Thomson	
Concord Municipal Light Plant	Publicly Owned Entity		Dave Cavanaugh	
Connecticut Municipal Electric Energy Coop.	Publicly Owned Entity	Brian Forshaw		
Conservation Law Foundation (CLF)	End User	Phelps Turner		
Cross-Sound Cable Company (CSC)	Supplier		José Rotger	
Danvers Electric Division	Publicly Owned Entity		Dave Cavanaugh	
DTE Energy Trading, Inc.	Supplier			José Rotger
Dynegy Marketing and Trade, LLC	Supplier	Andy Weinstein		Bill Fowler
Emera Energy Services	Supplier			Bill Fowler
Enel X North America, Inc.	AR-LR	Michael Macrae		
Environmental Defense Fund	End User	Jolette Westbrook		
Eversource Energy	Transmission	James Daly		Parker Littlehale; Jason Stark
Exelon Generation Company	Supplier	Steve Kirk	Bill Fowler	
FirstLight Power Management, LLC	Generation	Tom Kaslow		
Galt Power, Inc.	Supplier	José Rotger		
Generation Group Member	Generation	Dennis Duffy	Abby Krich	Alex Worsley
Georgetown Municipal Light Department	Publicly Owned Entity		Dave Cavanaugh	
Great River Hydro	AR-RG			Bill Fowler
Groton Electric Light Department	Publicly Owned Entity		Brian Thomson	
Groveland Electric Light Department	Publicly Owned Entity		Dave Cavanaugh	
H.Q. Energy Services (U.S.) Inc. (HQUS)	Supplier	Louis Guilbault	Bob Stein	
High Liner Foods (USA) Incorporated	End User		William P. Short III	
Hingham Municipal Lighting Plant	Publicly Owned Entity		Dave Cavanaugh	
Holden Municipal Light Department	Publicly Owned Entity		Brian Thomson	
Holyoke Gas & Electric Department	Publicly Owned Entity		Brian Thomson	
Hull Municipal Lighting Plant	Publicly Owned Entity		Brian Thomson	
Ipswich Municipal Light Department	Publicly Owned Entity		Brian Thomson	
Jericho Power LLC (Jericho)	AR-RG	Mark Spencer	Nancy Chafetz	



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Littleton (MA) Electric Light and Water Department	Publicly Owned Entity		Dave Cavanaugh	
Long Island Power Authority (LIPA)	Supplier		Bill Killgoar	
Maine Public Advocate Office	End User	Drew Landry		
Mansfield Municipal Electric Department	Publicly Owned Entity		Brian Thomson	
Maple Energy LLC	AR-LR			Doug Hurley
Marble River, LLC	Supplier		John Brodbeck	
Marblehead Municipal Light Department	Publicly Owned Entity		Brian Thomson	
Mass. Attorney General's Office (MA AG)	End User	Tina Belew	Ben Griffiths	
Mass. Bay Transportation Authority	Publicly Owned Entity		Dave Cavanaugh	
Mass. Municipal Wholesale Electric Company	Publicly Owned Entity	Brian Thomson		
Mercuria Energy America, LLC	Supplier			José Rotger
Merrimac Municipal Light Department	Publicly Owned Entity		Dave Cavanaugh	
Middleborough Gas & Electric Department	Publicly Owned Entity		Dave Cavanaugh	
Middleton Municipal Electric Department	Publicly Owned Entity		Dave Cavanaugh	
National Grid	Transmission	Tim Brennan	Tim Martin	
Natural Resources Defense Council	End User	Bruce Ho		
Nautilus Power, LLC	Generation		Bill Fowler	
New Brunswick Energy Marketing	Supplier			Andrew Robinson
New Hampshire Electric Cooperative	Publicly Owned Entity	Steve Kaminski		Brian. Forshaw; Dave Cavanaugh; Brian Thomson
New Hampshire Office of Consumer Advocate (NHOCA)	End User			Jason Frost
NextEra Energy Resources, LLC	Generation	Michelle Gardner		
North Attleborough Electric Department	Publicly Owned Entity		Dave Cavanaugh	
Norwood Municipal Light Department	Publicly Owned Entity		Dave Cavanaugh	
NRG Power Marketing LLC	Generation		Pete Fuller	
Pascoag Utility District	Publicly Owned Entity		Dave Cavanaugh	
Paxton Municipal Light Department	Publicly Owned Entity		Brian Thomson	
Peabody Municipal Light Department	Publicly Owned Entity		Brian Thomson	
Princeton Municipal Light Department	Publicly Owned Entity		Brian Thomson	
PSEG Energy Resources & Trade LLC	Supplier		Eric Stallings	
Reading Municipal Light Department	Publicly Owned Entity		Dave Cavanaugh	
Rodan Energy Solutions (USA) Inc.	Provisional	Aaron Breidenbaugh		
Rowley Municipal Lighting Plant	Publicly Owned Entity		Dave Cavanaugh	
Russell Municipal Light Dept.	Publicly Owned Entity		Brian Thomson	
Shrewsbury Electric & Cable Operations	Publicly Owned Entity		Brian Thomson	
South Hadley Electric Light Department	Publicly Owned Entity		Brian Thomson	
Sterling Municipal Electric Light Department	Publicly Owned Entity		Brian Thomson	
Stowe Electric Department	Publicly Owned Entity		Dave Cavanaugh	
Sunrun Inc.	AR-DG			Pete Fuller
Taunton Municipal Lighting Plant	Publicly Owned Entity		Dave Cavanaugh	
Templeton Municipal Lighting Plant	Publicly Owned Entity		Brian Thomson	
The Energy Consortium	End User	Roger Borghesani	Mary Smith	
Union of Concerned Scientists	End User		Francis Pullaro	
Vermont Electric Power Company (VELCO)	Transmission	Frank Ettori	Karin Stamy	
Vermont Energy Investment Corp (VEIC)	AR-LR		Doug Hurley	
Vermont Public Power Supply Authority	Publicly Owned Entity			Brian Forshaw
Versant Power	Transmission	Lisa Martin		
Village of Hyde Park (VT) Electric Department	Publicly Owned Entity		Dave Cavanaugh	
Wakefield Municipal Gas & Light Department	Publicly Owned Entity		Brian Thomson	

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Wallingford DPU Electric Division	Publicly Owned Entity		Dave Cavanaugh	
Wellesley Municipal Light Plant	Publicly Owned Entity		Dave Cavanaugh	
West Boylston Municipal Lighting Plant	Publicly Owned Entity		Brian Thomson	
Westfield Gas & Electric Department	Publicly Owned Entity		Dave Cavanaugh	
Wheelabrator North Andover Inc.	AR-RG		Bill Fowler	