
NYISO Business Issues Committee Meeting Minutes
March 15, 2018
10:00 a.m. – 12:20 p.m.

1. Introductions, Meeting Objectives, and Chairman's Report

Mr. Andrew Antinori (NYPA) called the meeting to order at 10:00 a.m. by welcoming the members of the BIC. The members of the BIC identified themselves and attendance was recorded. A quorum was determined.

2. Market Operations Report and Broader Regional Markets Report

Mr. Robb Pike (NYISO) reviewed the Market Operations report posted with the meeting material. There were no questions or comments.

Mr. Pike reviewed the Broader Regional Markets report included with the meeting material. There were no questions or comments.

3. CRIS for External-to-ROS Transmission Investment

Mr. Ethan Avallone (NYISO) reviewed the presentation posted with the meeting material.

Mr. Kevin Lang (Couch White) sought confirmation that the proposed tariff revisions related to the deliverability study process essentially seek to treat External-to-ROS Deliverability Right (EDR) projects in a manner consistent with other projects seeking Capacity Resource Interconnection Service (CRIS). Ms. Sara Keegan (NYISO) stated that the proposed revisions are allow EDR projects to be studied for deliverability similar to UDR projects with EDRs being able to request CRIS up to the amount of incremental transfer capability being provided by the project.

Mr. Howard Fromer (PSEG) asked for clarification regarding the how the deliverability test will analyze deliverability throughout Rest of State (ROS) and how the projects will be studied for minimum electric interconnection requirements. Mr. Avallone confirmed that EDR projects, like other projects seeking CRIS in ROS, would be tested for deliverability through the ROS region. Ms. Keegan also noted that EDR projects would generally need to go through the full interconnection process for large facilities under Attachment X for minimum interconnection standard requirements; one exception is that Q430 project was tested for minimum interconnection study requirements under the transmission interconnection process (TIP) pursuant to transition rules proposed with the TIP.

Mr. Fromer asked for clarification regarding the annual election process that would apply to EDR projects. Mr. Zach T. Smith (NYISO) explained the annual process for return of EDRs does not impose an offer obligation for the capacity associated with any EDRs that are not returned. Ms. Gloria Kavanah (NYISO) stated that to the extent an election to return EDRs is made, the election is for 12 months.

Mr. Fromer asked if an EDR would be subject to review if it had the ability to offer capacity but does not offer it. Ms. Kavanah stated that EDRs would be subject to the same review by the NYISO as is done for all market transactions.

Mr. Chris LaRoe (Brookfield) asked what rules apply to CRIS expiration for EDRs. Mr. Zach T. Smith explained that EDRs would be subject to the same three year CRIS expiration rules that apply to other resources with CRIS rights.

Mr. Mark Younger (Hudson Energy Economics) raised concerns about the overall market design effort for this project. Mr. Pike noted that the NYISO developed a proposal to address the current project (Queue No. 430 - the Cedar Rapid Transmission project) seeking CRIS rights, and has indicated its willingness to submit a project proposal into the project prioritization process for further efforts related to this initiative.

Mr. Leuthauser read the following statement:

HQUS has been engaged over the last 8 years with the NYISO stakeholder community to achieve an acceptable set of rules to enable the provision of incremental capacity into the Rest-of-State region. HQUS would like to thank the NYISO, its staff, and the stakeholders for their time devoted to this important issue. We think that the EDR proposed rules resolve a significant issue with the ICAP market that an external supplier is currently unable to obtain CRIS rights from incremental capacity that it funds. While the EDR rules do not solve all of the issues in the ICAP market, it is clear progress towards a more efficient and fair marketplace. Furthermore, HQUS believes the EDR proposed rules are well aligned with the January 31, 2017 FERC Order granting HQUS' tariff waiver, where FERC recognized that the waiver addresses a "concrete problem that needs to be remedied". We are encouraged today to see the tariff changes proposed by the NYISO which encompass many years of discussion and efforts, and hope stakeholders will join HQUS and support this significant improvement.

Motion #1:

The Business Issues Committee (BIC) hereby recommends that the Management Committee approve revisions to the NYISO's Open Access Transmission Tariff and Market Administration and Control Area Services Tariff as described in the presentation entitled "CRIS for External-to-Rest of State Transmission Investment" and as discussed during the March 15, 2018 BIC meeting.

Motion passed unanimously with abstentions.

4. 2017 CARIS Phase 1 Report

Prior to reviewing the presentation included with the meeting material, Mr. Zach G. Smith (NYISO) provided a high-level overview of the Congestion Assessment and Resource Integration Study (CARIS) report and ongoing efforts to enhance the Comprehensive System Planning Process. Mr. Zach G. Smith highlighted the inclusion of scenarios in the CARIS study to address potential impacts related to future changes to the resource mix that may occur under the New York State Public Service Commission's Clean Energy Standard (*i.e.*, the "system resource shift" scenario). Mr. Zach G. Smith stated that the NYISO plans to utilize scenario analysis as part of planning studies to provide additional information to help inform the marketplace as to ongoing system changes. Mr. Zach G. Smith also noted that, in the coming months, the NYISO will commence a comprehensive review with stakeholders to identify enhancements and efficiency improvements to the current reliability, economic, and public policy planning processes.

Mr. Tim Duffy (NYISO) reviewed the presentation posted with the meeting material.

Mr. Lang asked about the timing assumed for retirement of Indian Point and coal units in the system resource shift scenario. Mr. Duffy stated retirement timing was based on publicly available information about the likely timing of these potential retirements.

Mr. Fromer asked why the system resource shift scenario does not address potential impacts of the "peaker rule" being contemplated by the New York State Department of Environmental Conservation. Mr. Duffy explained that the peaker rules was not included because the specifics of the rule were not known at the time the study assumption were finalized.

Mr. Lang raised questions regarding the resource mix assumptions utilized for the system resource shift scenario. Mr. Duffy explained that NYISO based its resource assumptions for achievement of the State's Clean Energy Standard (CES) on the information that was developed by the New York State Department of Public Service Staff as part of the CES proceeding.

Mr. Chris Wentlent (MEAU) asked whether the recently approved project selection in response to the Western New York Public Policy Transmission Planning Process (PPTPP) was included in the study. Mr. Duffy (NYISO) explained that because project selection had not been occurred at the time the assumptions for the Phase 1 CARIS analysis were finalized, the

project was not included. Mr. Duffy further noted that the project selected in response to the Western New York PPTP but would be reflected in any Phase 2 analysis.

Mr. Lang asked whether the calculated cost-to-benefit ratios for generic projects include any externality costs, such as carbon emissions costs/savings. Mr. Duffy stated that the cost-to-benefit ratios are based solely on production cost savings and do not reflect externality costs/savings.

Mr. Wentlent asked whether the high gas price scenario reflects higher gas prices in all areas or just certain areas. Mr. Duffy state that the high gas price scenario assumes higher gas prices throughout the State.

Mr. Chris Hall (NYSERDA) asked whether inclusion of the “variant 1” metric for ICAP savings would result in benefit-to-cost ratio values greater than 1.0 for any of the generic solutions studied. Mr. Duffy stated that including those savings would not increase the calculated benefit-to-cost ratios above 1.0.

Mr. Fromer asked whether the benefit-to-cost analysis for the system resource shift scenario reflects the cost of obtaining the resources to meet the CES goal. Mr. Duffy stated the costs do not reflect the costs to develop resources to achieve the CES goal of providing 50% of the State’s energy requirements with renewable resources by 2030; these resource development costs are assumed as a sunk cost in the analysis.

Motion #2:

The Business Issues Committee (BIC) recommends that the Management Committee recommend that the Board of Directors approve the NYISO 2017 Congestion Assessment and Resource Integration Study Phase 1 Report (2017 CARIS Phase 1 Report) as presented by the NYISO to the BIC at its March 15, 2018 meeting. The 2017 CARIS Phase 1 Report was prepared by the NYISO in consultation with and subject to review by the Electric System Planning Working Group and the Transmission Planning Advisory Subcommittee.

Motion passed unanimously.

5. Ancillary Services Manual Update: Automatic Fuel Swap Capability Testing

Mr. Harris Miller (NYISO) reviewed the presentation posted with the meeting material.

Mr. Fromer asked whether any of the affected units had raised concerns regarding the proposed testing requirements. Mr. Miller stated that a change to permit operator-initiated switches to satisfy the testing requirement was included in response to feedback received by the NYISO.

Motion #3:

The Business Issues Committee (BIC) hereby approves the revisions to the Ancillary Services Manual as presented and discussed at the March 15, 2018 meeting.

Motion passed unanimously with abstentions.

Working Group Updates

- **BACWG:** The group met on February 23, 2018 and reviewed the standard accounting/settlement reports, an update on the North Zone redistricting project, and an update regarding the Electronic Quarterly Reports (EQR) data available through the NYISO's Decision Support System (DSS).
- **ESPWG:** The group has met four times since the last BIC meeting. The group met on February 22, 2018 and reviewed the preliminary schedule and potential scenarios for the 2018 Reliability Needs Assessment (RNA), and the 2017 CARIS Phase 1 study report. On March 1, 2018, the group met and reviewed the 2017 CARIS Phase 1 study report. The group also met on March 8, 2018 to review the NYISO's proposed compliance filing in response to FERC's 2/15/18 order related to Order No. 1000. On March 13, 2018, the group met and reviewed the 2018 preliminary long term energy and peak load forecasts including an update regarding economic projections related thereto, the schedule and potential scenarios for the 2018 RNA, as well as the preliminary topology and modeling assumption to be used for the

2018 RNA, and an overview of the key study assumptions for the Selkirk Cogeneration Partners Generator Deactivation Assessment.

- ICAPWG: The group has met three times since the last BIC meeting. On February 21, 2018, the group met jointly with MIWG and reviewed the NYISO's Management Response to the Analysis Group Performance Assurance study, and the proposal to provide CRIS rights for external transmission upgrades that provide incremental transfer capability into the Rest of State (ROS) capacity region. The group met on February 22, 2018 and reviewed an update to the Consumer Impact Analysis for the alternative methodology for determining Locational Minimum Installed Capacity Requirements (LCRs) project. The group also met jointly with MIWG on March 7, 2018 and reviewed the proposal to provide CRIS rights for external transmission upgrades that provide incremental transfer capability into the ROS capacity region, and a presentation by GE Energy Consulting related to its analysis for the alternative Locality Exchange Factor calculation methodology proposed by the New York Transmission Owners.
- EGCWG: The group has not met since the last BIC meeting.
- LFTF: The group has not met since the last BIC meeting.
- MIWG: The group has met three times since the last BIC meeting. The group met jointly with ICAPWG on February 21, 2018 and reviewed an overview regarding proposed modeling enhancements for the Niagara Power Plant, the Securing 100+ kV Transmission Facilities in the Market Model project, proposed rules for energy storage resources to provide Ancillary Services, the NYISO's Management Response to the Analysis Group Performance Assurance study, and a presentation regarding transmission shortage pricing rules in other ISO/RTO markets. The group also met on March 6, 2018 and reviewed proposed rules of Distributed Energy Resource (DER) aggregations, an update regarding more granular pricing in connection with the DER Roadmap initiatives, and proposed revisions to the Ancillary Services Manual related to automatic fuel swap testing requirements. On March 7, 2018, the group met jointly with ICAPWG and reviewed a presentation related to the potential development of a flexible ramping product.
- PRLWG: The group met jointly with MIWG on March 6, 2018 and reviewed the DER-related agenda topics.

8. New Business

There was no new business.

Meeting adjourned at 12:20 p.m.

Business Issues Committee

March 15, 2018

Final Motions

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Motion passed unanimously with abstentions.

Motion #2:

The Business Issues Committee (BIC) recommends that the Management Committee recommend that the Board of Directors approve the NYISO 2017 Congestion Assessment and Resource Integration Study Phase 1 Report (2017 CARIS Phase 1 Report) as presented by the NYISO to the BIC at its March 15, 2018 meeting. The 2017 CARIS Phase 1 Report was prepared by the NYISO in consultation with and subject to review by the Electric System Planning Working Group and the Transmission Planning Advisory Subcommittee.

Motion passed unanimously.

Motion #3:

The Business Issues Committee (BIC) hereby approves the revisions to the Ancillary Services Manual as presented and discussed at the March 15, 2018 meeting.

Motion passed unanimously with abstentions.

New York Independent System Operator - Committee Membership

Business Issues Committee - March 15, 2018 - NYISO - Parties Checked in Attendance

Organization	Sector	Representative	Alternate1	Alternate2	Alternate3	Alternate4	Alternate5	Alternate6	Alternate7	Proxy	Guest
Astoria Energy LLC	Generation Owners	McCall, Chuck	Browne, Scott	Habib , Phillipe	Singer, Leonard						
Bayonne Energy Center, LLC	Generation Owners	Allman , Ellen	Yang , Sue	Caplan , Stu							
CPV Valley LLC	Generation Owners	Litchfield , Matt	Rumsey , Tom								
Calpine	Generation Owners	Kruse, Brett	Reitmeyer , Jay	Flumerfelt, John	Schleimer , Steve						
Cricket Valley Energy Center	Generation Owners	Davis , Charles	Wallenstein , Arnold	Paryl , Ron							
EDP Renewables North America LLC	Generation Owners	Brodbeck , John	Kaplan , Seth	Nemeth , Jeffrey	High , Jeremy	Priemer , Dustin					
East Coast Power, LLC	Generation Owners	Shanker, Roy	Fogarty , Thomas	Lee , Tina	Franzetti , Paul						
Empire Generating Co, LLC	Generation Owners	Nuss, Kurt	✔ Argetsinger , Andrew	Willson , Darrell	Swenson , Nils						
Entergy Nuclear Northeast	Generation Owners	Dell Orto , Ken	✔ Saia, Doreen	Bergeron , John							
Helix Ravenswood LLC	Generation Owners	D'Andrea , James	Kline , Marc	DiBari , Dominic							
Howard Wind LLC	Generation Owners	Merich , Olivia	Rugh , Chris								
Indeck Energy Services, Inc.	Generation Owners	Ferguson, Mike	✔ Younger, Mark								
Innovative Energy Systems	Generation Owners	Zeliff, Peter	Henningham, Scott								
Invenergy Energy Management LLC	Generation Owners	✔ Pakula , Maggie	Goldstein , Michael	Orzel , Chris							
National Grid Generation LLC	Generation Owners	Kain , Terrence	McCabe , Brian								
Noble Environmental Power LLC	Generation Owners	Silton , Harry									
Selkirk Cogen Partners, LP	Generation Owners	Biittig, Timothy	Ryan , James								
Somerset Operating Company, LLC	Generation Owners	Gregson , Brian	Goodenough , Jeery	Evanoski , Dave							
BJ Energy LLC	Other Suppliers	Ni, Bing	Lee, George								
BP Energy Company	Other Suppliers	Chintapalli , Raj	Magruder , Kathy	✔ Ackerman, Alan							
BioUrja Power, LLC	Other Suppliers	Moore , Cody	Ward , Roxie								
BlueRock Energy, Inc.	Other Suppliers	Nichols , Jim	Yeager , Keith	VanHorne , Phil	Graham , Tammy						
Brookfield Energy Marketing L.P.	Other Suppliers	✔ LaRoe , Chris	Mitreski , Aleksandar	Mitelman , Rimma	Dallaire , Eric						
CPower	Other Suppliers	Dotson-Westphalen , Peter	Hourihan , Michael	Damaskos , Deno	Campbell , Bruce						
Castleton Commodities Merchant Trading L.P.	Other Suppliers	Stuss , Gordon	Romine , Brad	Emmett , Robert							
Citigroup Energy Inc.	Other Suppliers	✔ Trayers, Barry									
Con Edison Solutions Inc.	Other Suppliers	✔ Mah, Norman	Dannels , Jeff								
Constellation New Energy	Other Suppliers	Barlette , Richard	Kirk , Steven								
Cross Sound Cable Company, LLC	Other Suppliers	Reinhart, Brian	Rotger, Jose								
DC Energy	Other Suppliers	✔ Bleiweis, Bruce	Stevens, Andrew	Tate, Matthew	Milberg, Sadao	Jeev , Kumar					
DTE Energy	Other Suppliers	Pakela, Gregory	Wieszczyk, Raymond	✔ German , Robert							
Direct Energy Business Marketing, LLC	Other Suppliers	✔ Galarneau , Kenneth	Philips , Marjorie	Comstock , Read							
Drift Marketplace, Inc.	Other Suppliers	Tilley , Alan	Robinson , Greg								
Dynegy Marketing and Trade	Other Suppliers	Roby , Rick	Ellis, Dean	Ziegler , Pete							
EDF Trading North America, LLC	Other Suppliers	Erbrick , Michael	LeForce , Randall								
Eastern Generation	Other Suppliers	✔ Baker, Liam	Reese, John	✔ Younger, Mark	Schwall , Matthew	Johnson , David	Wolcott , Tyler				
EnerNoc	Other Suppliers	Brewster, David	Geller , Greg								
Energy Spectrum	Other Suppliers	David, Gary	✔ Ahrens, David	Neiburg, David	Iskowitz, Aron	Brown, Ruben	Pentland , William	Villegas , Cristina	Cinadr , Matt		
Energy Technology Savings	Other Suppliers	Hendler , Jeff	Ross , Valerie								
Exelon Generating Co. LLC	Other Suppliers	Barlette , Richard	Kirk , Steven								
GDF Suez Energy NA, Inc.	Other Suppliers	Levine , Jeffrey	Hawkins , Darin	Campbell , Chad							
Galt Power	Other Suppliers	Fernands , Rochelle	✔ Ackerman, Alan								
HQ Energy Services US	Other Suppliers	✔ Plante , Matthieu	✔ Leuthauser, Scott	Guilbault , Louis	Bélangier , Frédéric						
Innoventive Power	Other Suppliers	Gruber , Craig	Halford , Steve								
Lyonsdale Biomass, LLC	Other Suppliers	Ralston , William	Hebel , Nathan	Carrigan , Kathleen							
Mercuria Energy America, Inc.	Other Suppliers	Davis , Andrew	✔ Younger, Mark	Frye , Samuel							
Morgan Stanley Capital Group, Inc.	Other Suppliers	Murray, Patrick	Kochonies, Karen	Ezickson, Doron							
NRG Power Marketing Inc.	Other Suppliers	✔ Joseph , Kelli	Fuller , Peter	Cona , Lisa							
New York Transco	Other Suppliers	Nachmias, Stuart	Hitti , Nabil	Caso , Rob	Carrigan , Kathleen	Dumais , Paul	McKinney , Jeff				
NextEra Energy	Other Suppliers	Applebaum, David	Gardner , Michelle	Gibelli , Stephen							
Ontario Power Generation, Inc.	Other Suppliers	Lacivita, Ken	Gell, Richard	Barr, David	Sheinfeld , Joel						
PSEG Energy Resource & Trade, LLC	Other Suppliers	✔ Fromer, Howard	DePillo , Raymond	Cimino , David	Murawski , James						
Riverbay Corporation	Other Suppliers	Merola , Peter	Ellison , Noel								
SESCO Enterprises, LLC	Other Suppliers	Schubiger, Michael	Thoresen, James								
Shell Energy North America, LLC	Other Suppliers	✔ Picardi, Matt									
Talen Energy	Other Suppliers	Hohenshilt , Jennifer	Labella , Julie	Raggio , Debra							
TransCanada Power Marketing, Ltd.	Other Suppliers	Cahill , Paul	Schuler , Richard	Murphy , Tonya							
Viridity Energy, Inc.	Other Suppliers	Freifeld , Allen									

Organization	Sector	Representative	Alternate1	Alternate2	Alternate3	Alternate4	Alternate5	Alternate6	Alternate7	Proxy	Guest
Vitol Inc.	Other Suppliers	Wadsworth , Joe	Viola , Bob	Kahn , Casey						✓Leuthauser, Scott	
XO Energy NY, LP	Other Suppliers	Drangula , Carey	Thompson , Matthew	Hughes , Adam							
Central Hudson Gas & Electric Corp.	Transmission Owners	✓Borchert , John	Chan, Ting	May , Jeff	Dittmann, David						
Consolidated Edison Co. of NY, Inc.	Transmission Owners	✓Quin , Jane	Nachmias, Stuart	Butler , Scott	Hargett , Chris	Butterklee, Neil					
National Grid	Transmission Owners	✓Janzen , Margaret	Lodemore , David	Carron , Benjamin							
New York State Electric & Gas (NYSEG)	Transmission Owners	✓Caletka, Patricia	Kinney, Ray	Brophy , Richard							
Orange & Rockland Utilities, Inc.	Transmission Owners										
Rochester Gas and Electric Corp.	Transmission Owners	✓Caletka, Patricia	Kinney, Ray	Brophy , Richard							
Alcoa, Inc.	Large Consumer	Mager, Michael	Loughney, Robert	Trinsey , Amanda	✓Lang, Kevin						
IBM Corporation	Large Consumer	Mager, Michael	Loughney, Robert	Trinsey , Amanda	✓Lang, Kevin						
Nucor Steel Auburn, Inc.	Large Consumer	✓Brew , James	Mackaronis , Chris								
Occidental Chemical Corp.	Large Consumer	Mager, Michael	Loughney, Robert	Trinsey , Amanda	✓Lang, Kevin						
Wegmans Food Markets	Large Consumer	Mager, Michael	Loughney, Robert	Trinsey , Amanda	✓Lang, Kevin						
Metropolitan Transportation Authority	Large Consumer Government Agency	Keller , David	Chou , Frances								
American Sugar Refining, Inc	Small Consumer	Luthin, Catherine	✓Breidenbaugh , Aaron	✓Lang, Kevin	Mager, Michael	Trinsey , Amanda					
Association for Energy Affordability	Small Consumer	Strauss , Valerie	Hepinstall, David	Farmer , Miles							
Beth Israel Health Care System	Small Consumer	Luthin, Catherine	✓Breidenbaugh , Aaron	✓Lang, Kevin	Mager, Michael	Trinsey , Amanda					
Fordham University	Small Consumer	Luthin, Catherine	✓Breidenbaugh , Aaron	✓Lang, Kevin	Mager, Michael	Trinsey , Amanda					
Memorial Sloan Kettering Cancer Center	Small Consumer	Luthin, Catherine	✓Breidenbaugh , Aaron	✓Lang, Kevin	Mager, Michael	Trinsey , Amanda					
Mount Sinai Medical Center	Small Consumer	Luthin, Catherine	✓Breidenbaugh , Aaron	✓Lang, Kevin	Mager, Michael	Trinsey , Amanda					
New York University	Small Consumer	Luthin, Catherine	✓Breidenbaugh , Aaron	✓Lang, Kevin	Mager, Michael	Trinsey , Amanda					
Utility Intervention Unit, Division of Consumer Protection, NY Dept. of State	Government Statewide Consumer Advocate	Hogan , Erin	✓Montalvo , Marc	Kordonis , Dimitrios	Zimmerman , Michael						
City of New York	Government Small Consumer and Retail Aggregate	✓Lang, Kevin	Mager, Michael	Trinsey , Amanda							
NYS Energy Research & Dev. Authority	Government Small Consumer and Retail Aggregate	Hall , Christopher	Coup, David	Mas , Carl	Wilcox , James	Matteson , Schuyler					
Long Island Power Authority	State Power Authorities	✓Clarke, Dave	Wilczek , Mariann								
New York Power Authority	State Power Authorities	✓Antinori , Andrew	✓Lundin , Tim	✓Mahoney , Daniel							
Bath Electric, Gas & Water Systems	Municipalities and Coops	Bonacci , Erin	✓Wentlent, Chris	Cordeiro, Mark							
Freeport Electric	Municipalities and Coops	Livingston , Al	Kimlingen, Ted	✓Rudebusch, Tom	Fiore , Chris						
Jamestown Board of Public Utilities	Municipalities and Coops	Sellstrom , Kris	Leathers, David	Allen , Cory	✓Rudebusch, Tom						
Lake Placid Village	Municipalities and Coops	Daby , Kimball	✓Wentlent, Chris	Cordeiro, Mark							
Municipal Commission of Boonville	Municipalities and Coops	Varner , Doug	✓Wentlent, Chris	Cordeiro, Mark							
Plattsburgh Municipal Lighting Dept	Municipalities and Coops	Treacy, William	✓Wentlent, Chris	Cordeiro, Mark							
Village of Arcade	Municipalities and Coops	Kilburn, Larry	✓Wentlent, Chris	Cordeiro, Mark							
Village of Fairport	Municipalities and Coops	Hegarty , Matt	✓Wentlent, Chris	Cordeiro, Mark							
Village of Rockville Centre	Municipalities and Coops	Andreas , Philip	Valenzano , Michael	✓Rudebusch, Tom							
Village of Solvay	Municipalities and Coops	Hawksby , Joe	✓Wentlent, Chris	Cordeiro, Mark							
Village of Westfield	Municipalities and Coops	Thompson , Andrew	✓Wentlent, Chris	Cordeiro, Mark							
American Wind Energy Association	Environmental	Reynolds , Anne	Reeder , Mark	Beck , Betsy	Goggin , Michael	Grace , Gene					
Environmental Advocates	Environmental	Bambrick , Conor	Farmer , Miles	Morris, Jackson							
Environmental Defense Fund	Environmental	Christian , Rory	Stein , Elizabeth								
Natural Resources Defense Council	Environmental	Farmer , Miles	Morris, Jackson	De Costanzo , Donna							
PACE Energy & Climate Center	Environmental	Musgrove , Sheryl	Taylor , Geordi	Farmer , Miles							
Riverkeeper	Environmental	Gallay , Paul	Jones , Abigail	Doran , Erin							
AEP On-Site Partners, LLC	Non Voting	Jansen , Joel	Kakodkar , Guatam								
AES ES Holdings LLC	Non Voting	Hillman , Sharon	Kumaraswamy , Kiran								
Acadia Center	Non Voting	Howland , Jamie	Howe , Cullen								
Acadia Energy Corporation	Non Voting	Rappaport , Jason	Bay , John								
Alliance for Clean Energy New York	Non Voting	Reynolds , Anne	Dufresne , Zach	Reeder , Mark							
Anbaric Northeast Transmission Development Co.	Non Voting	Sanderson , Barry	Kosel , Howard								
Appian Way Energy Partners East, LLC	Non Voting	Levy , Tal	Klein , Abram	Shen , Dong	Westlund , John	Laich , Marcus					
Ardor Energy LLC	Non Voting	Breen , Erika									
Boston Energy Marketing & Trading	Non Voting	✓Kramek , Mike									
Bruce Power	Non Voting	Jain , Anshul	Meyer , Sandra								
Caithness Energy LLC	Non Voting	Keevill , Gary	Alvarez , Asavari	Garber, Mitchell							
Calpine Energy Solutions	Non Voting	Sun , Jungsuk	Nakhonthap , Jade	✓Sunga , Leonard							
Canandaigua Power Partners, LLC	Non Voting	Keene , John	Gaddes , Caleb								
Cubit Power One Inc.	Non Voting	Powell , Alan	Powell , Leighton	Singer, Leonard							
Customized Energy Solutions	Non Voting	Mancini, Rick	Fernands, Stephen	Rexrode, Caryn	✓Ackerman, Alan						
Cypress Creek Renewables	Non Voting	Kohlstedt , Kevin	Kemp , Melissa	Salehian , Afshin							
Danskammer Energy, LLC	Non Voting	Reid , William	Cada , Eric								

Organization	Sector	Representative	Alternate1	Alternate2	Alternate3	Alternate4	Alternate5	Alternate6	Alternate7	Proxy	Guest
Earth Networks	Non Voting	Crawford , Jaden									
Energya VM	Non Voting	Garcia , Francisco	Maeso , Manual	Lopez , Ana	Corvillo , Cristina						
Fluent Energy	Non Voting	Acampora , Peter	Doll , Ed								
GI Energy	Non Voting	Falcier , Peter	Robinson , James								
Hudson River Energy Group	Non Voting	Radigan, Frank	Canfield, Richard								
Hydro-Quebec TransEnergie	Non Voting	Prevost , Michel									
ITC Mid-Atlantic Development LLC	Non Voting	Wrenbeck , Tom	Benedict , Nathan								
Iberdrola Renewables Inc	Non Voting	Allen, Thresa									
Institute for Policy Integrity at NYU School of Law	Non Voting	Unel , Burcin	Noll , Bethany								
Key Capture Energy	Non Voting	Fitzgerald , Dan	Bishop , Jeff								
MAG Energy Solutions, Inc.	Non Voting	Pelletier , Simon	Vezina, Alexandre								
NRG Curtailment Solutions, Inc.	Non Voting	✓Popova , Julia	Ainspan , Malcolm	Pieniazek, Marie							
NY-BEST Consortium	Non Voting	Acker , William	Sheehan , Denise								
NYS Department of Public Service	Non Voting	✓Paynter , Thomas	✓Evans , Adam								
National Fuel Gas Distribution Corporation	Non Voting	Novak , Michael	Eck , Robert								
New Athens Generating Co. LLC	Non Voting	Tripp , Hank									
Northeast Clean Heat & Power Initiative	Non Voting	Venkataraman , Sree	Brown, Ruben	Cinadr , Matt	Dwyer , Herb						
Northline Utilities LLC	Non Voting	McKinney , Jeff	Danskin , Susan								
NuEnergen	Non Voting	Hamilton , Sandy	Korczykowski , Ryan								
Power Supply Services LLC	Non Voting	Phillips , Gabriel	Abend , Erik								
RBC Energy Services, LP	Non Voting	Burnham , Steve	Fraiture , Christian	Doolittle , Robin							
RENEW Northeast	Non Voting	Pullaro , Francis	Krich , Abigail								
RES Americas, Inc.	Non Voting	Fernandes , John	Boyd , Dan								
Red Wolf Energy Trading, LLC	Non Voting	Christian , Adam									
Richard P. Felak	Non Voting	Felak, Rich									
STEM, Inc.	Non Voting	Ko , Ted									
Saracen Energy East LP	Non Voting	Peebles , Andy									
Siemens Energy, Inc.	Non Voting	Feltes , James									
Stephentown Spindle, LLC	Non Voting	Hebert , Chris									
Taylor Biomass Energy, LLC	Non Voting	Taylor , Jim	Page , Allan								
Tesla Motors, Inc.	Non Voting	Burson , Kate	Van Cleve , Sarah	Watson , Betty							
TransAlta Energy Marketing (U.S.) Inc.	Non Voting	Nivolianitis , Ted									
Transmission Developers Inc.	Non Voting	Jessome , Donald	Helmer , William	Dave , Suresh							
Transource New York, LLC	Non Voting	Burkholder , Joshua									
William P. Short	Non Voting	Short, William	Schaefer, Marc		Savage, Paul	Verna, Jim					

NYISO Employees

Keegan, Sara

Bissell, Garrett

Smith, Zach T.

Smith, Zach

Avallone, Ethan

Duffy, Timothy

Dixon, Kirk

Pike, Robb

Eckels, Debbie