

## STATEMENT OF WORK ("SOW")

**SUBJECT: Clean Energy Market Design**

Pursuant to the Master Agreement for Consulting and Technical Services entered into on June 17, 2011, First Amendment entered into on April 29, 2015 ("Amendment") (collectively, the "**Master Agreement**"), between **The New York Independent System Operator, Inc.** ("**Client**" or the "**NYISO**") and **The Brattle Group, Inc.** ("**Consultant**"), and all subsequent amendments, Consultant shall perform the following Services (as hereinafter defined) for Client, with respect to Clean Energy Market Design (the "**Project**"), effective as of the date of the final signature below. Client and Consultant may be referred to herein, individually, as a "**Party**" and, collectively, as the "**Parties**". Capitalized terms used herein but not defined herein shall have the meanings given to them in the Master Agreement.

### 1. OBJECTIVE

Consultant shall support NYISO in developing a clean energy market design for achieving New York's de-carbonization goals and maintaining power system reliability at the least total cost.

### 2. SERVICES TO BE PERFORMED

Consultant shall be responsible for the following services (the "**Services**") to produce the Deliverables (as hereinafter defined). Such Services shall consist of the following tasks and activities:

- A. Task 1: Evaluate market design options for supporting de-carbonization goals, culminating in whitepaper and PowerPoint documents to be shared with stakeholders, subject to Client's requested and prior approval. Consultant will address the following issues in the performance of Services for Task 1:
  - a. Confer with NYISO, New York Department of Public Service (NYDPS), and New York State Energy Research and Development Authority (NYSERDA) and incorporate their input; listen in to the stakeholder working group meeting in December.
  - b. Establish options to consider, such as:
    - i. The current wholesale market design, without any complementary changes to support the state's Clean Energy Standard (CES).
    - ii. Adding a carbon charge to the dispatch to complement the goals and the already-established elements of the CES and Regional Greenhouse Gas Initiative (RGGI).
    - iii. Alternative/additional options to support the CES that may go beyond wholesale energy market design, including enhanced cap-and-trade and capacity market reforms such as PJM has proposed.
  - c. Identify lessons learned from other jurisdictions (e.g., CA, Ontario, ISO-NE)
  - d. Assess whether the options considered have any fatal flaws, considering potential complications such as pricing imports from neighboring systems.
  - e. Evaluate impacts on customer costs and total resource costs, both qualitatively and quantitatively, accounting for key factors such as:
    - i. Wholesale electricity price impacts (and the extent to which customers are exposed to them), the distribution of carbon charges to customers, impacts on future Renewable Energy Credit (REC) and Zero Emission Credit (ZEC) prices, effects on New York Power Authority (NYPA) hydro resources, etc.

- ii. Possible impacts on operational efficiency of the wholesale markets.
  - iii. Possible impacts that a carbon price signal could have on investment efficiency considering, among other items: opportunities to improve the mix of resources receiving RECs/ZECs, by recognizing the increased value of resources that generate at times and places that displace the most carbon; enabling cost-effective carbon abatement opportunities that are not covered under the CES tiers, such as repowering old generators in NYC.
  - iv. Ability to support a Reforming the Energy Vision (REV) future with more storage and demand responsiveness; providing price signals to that account for carbon abatement.
- f. Provide weekly updates to NYISO including summaries of any stakeholder discussions and status updates on the market design. These updates can be in the form of a conference call and/or electronic mail.
  - g. Develop a PowerPoint presentation capturing the above items, which will be provided to NYISO staff in draft format for NYISO's comments and feedback, which comments shall be incorporated into a revised draft for NYISO approval.
  - h. Incorporate the PowerPoint into a draft a whitepaper for NYISO review, comment, and approval.
- B. Task 2: Facilitate a stakeholder process to jointly develop a proposal that incorporates stakeholder input and that NYISO could implement.
- a. Release the whitepaper at NYISO's prior request.
  - b. Facilitate a minimum of 3-4 stakeholder meetings to solicit stakeholder input to further develop the concepts and/or alternatives. At each meeting, NYISO and Consultant shall present the full scope (with PowerPoint) and solicit feedback, subject to presenting revisions and requesting further feedback at subsequent meetings.
  - c. Meet separately with Department of Public Service (DPS) staff as requested by NYISO.
  - d. Develop a final PowerPoint summarizing conclusions from the stakeholder process. This PowerPoint will provide the basis for NYISO staff to gain stakeholder buy-in on the proposal.
- C. Task 3: Consult with NYISO staff as requested regarding the NYISO's in-house analyses to provide expert advice on analysis assumptions, findings, and how changes to New York's wholesale market design can help maintain grid reliability in a future system with high renewable penetration.

### 3. DELIVERABLES

Consultant's deliverables (the "Deliverables") under this SOW shall include:

- A. Draft whitepaper outline by November 11;
- B. Draft PowerPoint slides by December 9;
- C. Final whitepaper and PowerPoint slides by December 31;
- D. PowerPoint decks to accompany each subsequent stakeholder meeting, to be shared with stakeholders a few days before each meeting, through Q1 and possibly Q2 of 2017,
- E. Final PowerPoint summarizing conclusions from the stakeholder process in Q2 2017.

### 4. ACCEPTANCE OF DELIVERABLES

Client's acceptance of the Deliverables shall be deemed to occur as follows:

All Deliverables shall be deemed acceptable to Client upon Client's written confirmation that they have been completed to the Client's satisfaction, (i) under terms identified in Sections 2 (Services) and Section 3 (Deliverables) above, (ii) within the timeframe identified in Section 6 (Project Schedule) below, and (iii) before the expiration date of this Statement of Work. The Client will notify the Consultant of acceptance of each of the Deliverables via electronic mail.

**5. CLIENT RESPONSIBILITIES**

Client shall be responsible for the following activities to support Consultant's performance pursuant to this SOW:

- A. Provide Consultant with timely feedback on any review of analysis and Deliverables.
- B. Provide Consultant with stakeholder engagement and support, including coordination of executive team meetings, market participant meetings, New York State Public Service Commission (NYSPSC), NYSEDA, and NYPA meetings.
- C. Notify Consultant of acceptance or rejection of Deliverables within five business days of receipt of said items.

**6. PROJECT SCHEDULE**

Consultant shall perform the Services required of it pursuant to this SOW in accordance with the schedule (the "Project Schedule") set forth below. Time is of the essence with respect to all Services performed pursuant to this SOW.

- November 2-5: project kickoff meeting
- November 11: deliver outline of whitepaper
- November 10-30: meetings/calls with NYS PSC, NYSEDA, and NYPA
- December 9: deliver draft PowerPoint slides, soliciting NYISO staff comment
- December 31: deliver final whitepaper and PowerPoint slides
- January 2017: initiate stakeholder discussions, through the Spring
- Q2 2017: deliver final PowerPoint summarizing results of the stakeholder process
- Throughout 2017: consult with NYISO staff as requested on Task 3

**7. PROJECT TEAM**

Consultant has assigned the following personnel (the "Project Team") to perform the Services, subject to Client's written approval, which shall not be unreasonably withheld:

Name	Title
	Principal
	Principal
	Principal
	Principal
	Associate
	Associate
	Research Analyst
	Research Analyst
Others as TBD	As needed and approved by Client in writing

Consultant shall not add, remove, or replace any member of the Project Team without the prior written approval of Client.

When on Client's premises, Consultant and its personnel shall at all times comply with all Client safety and security rules and procedures and the direction of Client security personnel.

**8. FEE SCHEDULE**

Client will compensate Consultant for the Services on a time and materials basis. Total fees and expenses payable to Consultant for the Services shall not exceed \$200,000 in 2016 for Task 1 and \$350,000 in 2017 for Tasks 2 and 3, for a total of **\$550,000** (the "**Maximum Fee and Expenses**"). Related and necessary travel expenses will be reimbursable at cost without a mark-up. Expenses in excess of \$25 shall be documented in a reasonably detailed invoice that is acceptable to the Client to be eligible for reimbursement.

Fees shall be based upon the following rate schedule:

Name	Title	Hourly Rate
	Principal	
	Principal	
	Principal	
	Principal	
	Associate	
	Associate	
	Associate	
	Research Analyst	
	Research Analyst	
Other Research Analysts (TBD)	Research Analyst	

**9. TERM and TERMINATION**

The term (the "Term") of this SOW shall commence upon the issuance of the related Purchase Order, and shall end on December 31, 2017, or at the time of Consultant's complete performance of the Services pursuant to this SOW to Client's satisfaction, whichever is earlier. Client and Consultant may terminate this SOW in accordance with the provisions of Article 3 of the Master Agreement.

**10. MISCELLANEOUS**

Client may, at any time, by written notice to Consultant, delivered in accordance with the provisions of the Master Agreement, make changes in, additions to, or deletions from the Services. Consultant may, by written notice to Client, delivered in accordance with the provisions of the Master Agreement, propose changes, additions or deletions to the Services. Consultant's proposed changes, additions or deletions shall require the prior written consent of Client. This SOW is subject to all of the terms and conditions of the Master Agreement. In the event of conflict between the provisions of the Master Agreement and the provisions of this SOW, the Master Agreement shall prevail.

Good Faith. By executing this SOW, each Party certifies that it has acted in accordance with its duty of good faith and fair dealing in negotiating the terms of this SOW and agrees to perform and

enforce the terms of this SOW, and the Master Agreement, in accordance with its duty of good faith and fair dealing.

**11. CONFLICTS OF INTEREST**

Consultant represents that as of the date of execution of this SOW, there are no known conflicts of interest under the NYISO's Code of Conduct for Consultant or any assigned Project Team personnel, or Consultant has obtained a waiver of any such conflict from Client's Compliance Officer or the Compliance Officer's designee. Consultant understands and agrees that it has a continuing obligation to notify Client of any actual or potential conflicts of interest as to Consultant and any of its assigned Project Team members for the duration of this SOW.

**12. COMPLIANCE WITH BEST BUSINESS AND CYBER SECURITY PRACTICES**

Consultant shall follow best business and cyber security practices to protect Client's data, including Confidential Information. Consultant shall work to ensure compliance with appropriate data protection and cyber security standards. Consultant shall demonstrate compliance with these standards and best practices as requested by Client.

IN WITNESS WHEREOF, the Parties have caused their duly authorized representatives to execute this SOW, effective as of the final signature date set forth below.

THE BRATTLE GROUP, INC.

THE NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

By: \_\_\_\_\_  
Name: Samuel A. NEWELL  
Title: Principal  
Date: 11/3/2016

By: \_\_\_\_\_  
Name: Rana Mukerji  
Title: Sr. VP-Market Structures  
Date: \_\_\_\_\_

THE BRATTLE GROUP, INC.

THE NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

By: \_\_\_\_\_  
Name: Richard Dewey  
Title: Exec. VP-Operations & Markets  
Date: \_\_\_\_\_