

# 2018 Project Prioritization and Budgeting Process

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**Budget and Priorities Working Group**

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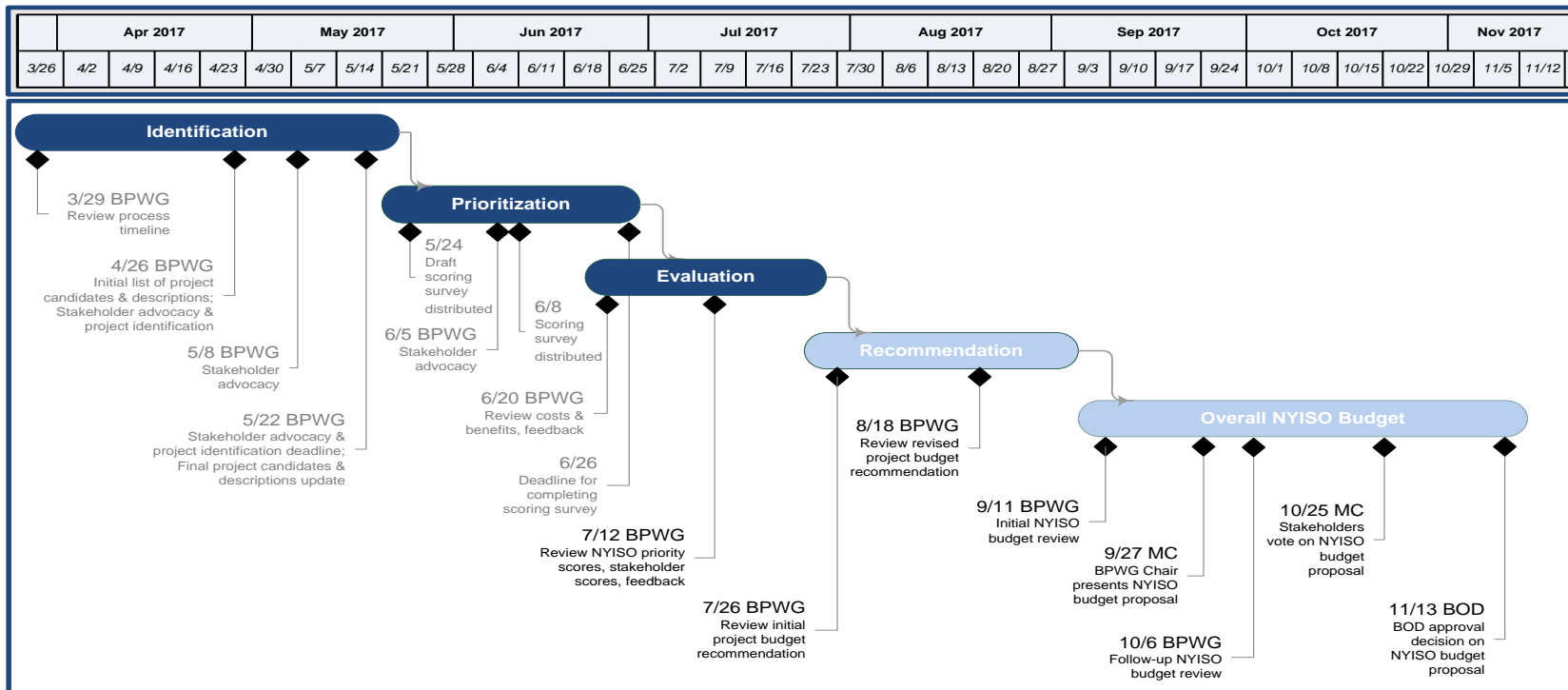
# Agenda

- 2018 Project Prioritization Process
- Project Prioritization Timeline
- Milestone Definitions
- Stakeholder Scoring Survey Summary
- Stakeholder Scoring Survey Comments
- 2018 Project Priority Scores and Estimated Costs
- Next Steps

# 2018 Project Prioritization Process

Phase	Description
Identification	This phase involves developing the list of project candidates taking into consideration regulatory obligations, strategic initiatives, State of the Market recommendations, necessary infrastructure enhancements, product plans, stakeholder feedback, etc.
Prioritization	The phase involves the NYISO and stakeholder scoring of projects. The NYISO scores projects using objective criteria that reflects strategic alignment, expected outcomes, risks, and ability to execute. Stakeholders score projects based on their organizational priorities via a survey mechanism.
Evaluation	This phase involves performing a feasibility assessment based on detailed cost and labor estimates, dependencies, priority scores, and stakeholder feedback.
Recommendation	This phase involves proposing a feasible set of project deliverables and related budget requirements. The proposal is refined as needed based on stakeholder feedback.

# 2018 Proposed Project Prioritization Timeline



# Milestone Definitions

Milestone	Definition
Market Design Concept Proposed	NYISO has initiated, or furthered discussions with stakeholders that explore potential concepts to address opportunities for market efficiency or administration improvements.
Market Design Complete	NYISO has developed with stakeholders, a market design concept such that the proposal can be presented for a vote at the BIC or MC to define further action on the proposal.
Architectural Design	The architectural design document is complete and software development is ready to begin.
Functional Requirements	NYISO has completed documentation of the functional requirements and the Business Owner has approved.
Software Design	The software design document is complete and software development is ready to begin.
Development Complete	Development has been completed, packaged and approved by the Supervisor.
Deployment	Required software changes to support commitment have been integrated into the production environment.
Study Complete	Scope of work to be performed has been completed; results and recommendations have been presented to the appropriate Business Owners and stakeholders.

# Stakeholder Scoring Survey Summary

- **68 Customers Completed Survey** **out of 168 eligible**
  - 54 Voting & 14 Non-Voting
- **32 Projects Included in Survey**
- **17 Projects NYISO Scored Only**
- **19 Organizations Supplied Comments**
- **Stakeholder survey details and NYISO scoring details posted with today's materials**

# Stakeholder Scoring Survey Comments

Organization	Comments
NYS Dept. of State Utility Intervention Unit	<b>Performance Assurance</b> must be resource neutral and apply only to the hours that the system most needs the output. To be effective, the market rules must avoid vague measures of system conditions and under what circumstances performance would be measured. Regarding <b>On Ramps and Off Ramps</b> , the proposal should ensure that the rules for setting zones are fairly formulaic and transparent.
Alcoa	Multiple Interveners assigned 20 points to the <b>On Ramps and Off Ramps</b> project. This assignment should be interpreted as -1000 points to the On Ramps component and +980 points to the Off Ramps component.
Occidental	The points for the <b>On Ramps and Off Ramps</b> Project all relate to the Off Ramps aspect. The points for the <b>Explore Alternate LCR - Reliability Impact</b> project are intended to keep the project alive for the time being and are not intended to support such project above current NYISO efforts to improve the setting of LCRs, which is a higher priority for us.
Wegmans	Yea for off-ramps; boo to on-ramps. Support for Pallas' LCR concept is solely to keep the concept alive for some further study, provided such study does not interfere with ongoing NYISO efforts to improve the manner in which LCRs are calculated, which is a higher priority.
IBM	Once again, MI supports the development of off-ramps yesterday. New on-ramps are not needed. The manner in which LCRs are calculated also needs to be improved ASAP, and MI supports ongoing NYISO efforts in this regard. The points allocated to the MMU approach reflects the fact that such approach has not been fully vetted and, while perhaps not deserving of being implemented at this time, should not be discarded, either. Thanks.

# Stakeholder Scoring Survey Comments

Organization	Comments
1. American Sugar Refining, Inc.	<p><b>Performance Assurance</b> - We are concerned about the NYISO expending its limited resources on this project for the simple reason that no problems warranting such efforts are apparent. We are also concerned that similar investigations in ISO-NE and PJM have resulted in rules that have seriously harmed participation by new, small and innovative resources, in particular demand response. NYISO needs to be encouraging such resources, not looking for reasons to burden them with greater performance requirements in the absence of a good reason to do so. To the extent NYISO decides to pursue this effort, it must be with the goal firmly in mind that it addresses identified problems in the manner that least burdens innovation. <b>Payment for Locality Exports</b> – We oppose the NYISO using its limited resources to investigate a proposal that we believe is unreasonable on its face. New York should even consider paying in-state capacity resources for exporting their capacity out of the state. It may, arguably, be economically efficient to do so, but it is difficult to see how it might be beneficial to New York consumers. <b>DER Pilot Framework</b> – We are opposed to the NYISO committing resources to anything on the theory that if we “build it, they will come.” We believe that it is highly unlikely that DER providers will participate in technology pilots on a scale significant enough to provide meaningful results, when they will receive no compensation for doing so. To the extent NYISO decides to pursue this project anyway, we strongly recommend that the participants be enrolled in a utility or NYSERDA program that provides some compensation.</p> <p><b>Reinstitute Import Guarantees</b> - CPA believes that this issue warrants further investigation, but would suggest that focus first be put on addressing the factors that cause RTC-RTD divergence, rather than reinstitution something that amounts to a band-aid. We should treat the cause, not the symptom.</p>
2. Beth Israel Health Care System	
3. Fordham University	
4. Memorial Sloan Kettering Cancer Center	
5. New York University	



# Stakeholder Scoring Survey Comments

Organization	Comments
Stem, Inc.	Either as its own project or part of the DER Pilot, the NYISO should commit to learning as much as possible directly from the other ISOs on DER aggregation, especially the California ISO. The <b>DER Roadmap</b> and <b>DER Pilot</b> processes appear to be re-inventing the wheel, when the entire process could be accelerated by applying California's lessons to the NY market
Alliance for Clean Energy New York	Thank you NYISO
Con Edison Solutions	Comment on <b>Reinstitute Import Guarantees</b> - The points for this project is to provide temporary relief to cross boarder scheduling until other projects are implemented that reduce the costly charges to those scheduling energy across ISO's when RTD and RTD prices are significantly erroneous and mismatched. One solution would be to provide only a 50% guarantee, recognizing that the pricing errors are not caused by any participant.
New York Transco	NY Transco would focus only on making improvements to the Order 1000 Public Policy Planning Process. Specifically, steps that can be taken to improve that process so that it can be completed more quickly by the NYISO for the parts of the process for which the NYISO is responsible. Coordination with the reliability and economic planning processes is not critical and should take a much lower priority.
Citigroup Energy Inc.	Looks good to me

# Stakeholder Scoring Survey Comments

Organization	Comments
Direct Energy	We would like NYISO to work on the project we asked for last year – the ability to rebid the first increment regarding min gen. We had been told it was doable without being placed on this list but nothing has happened yet. Thank you.
XO Energy	Did not see project for "Linked Virtual Transaction". Would like to see this re-instated in survey.
New York Power Authority	NYISO did not provide the vast majority of the costs associated with each of the projects until less than a week ago. Project costs are a significant item that drives MPs decisions on whether to support a project. Hopefully NYISO can provide the projects costs earlier next year. We appreciate all the efforts to coordinate this market participant input and found this Siena link very useful.

# Stakeholder Scoring Survey Comments

Organization	Comments
Consolidated Edison Company of NY	<p><b>Transmission Planning Process Review:</b> This project should be limited to (1) accelerating the public policy planning process and (2) improving assumption coordination across the three planning processes. Acceleration of the multi-year public policy process would put greater certainty around subsequent planning analyses, and making base case inclusion ‘rules’ more flexible to deal with pending nuclear retirements and would produce more meaningful results. This project should not contemplate the reduction or removal of any right currently held with the LSEs to vote in favor of a proposed and studied economic project. <b>Performance Assurance:</b> As stated during the 2016 Demand Curve Reset, Con Edison believes that the NYISO should revise its Tariff to include a mandatory dual fuel requirement for new generators in the New York City and Lower Hudson Valley Localities. The cost of such capability is already included in the ICAP Demand Curves for these two Localities in recognition of the benefits of dual fuel, including: (1) enhances reliability; (2) can aid in mitigating prices spikes in times of high natural gas prices; and (3) is consistent with NYS's clean energy goals by providing greater assurance that needed quick-start units will be available for electric system needs regardless of whether natural gas infrastructure is available. However, while paying for such capability, customers may not necessarily receive these benefits because dual fuel is not a requirement for new generators.</p> <p><b>Treatment of Locality Exports and Imports:</b> Because the 2017 work on the “Locality Exchange Factor” should end this year and there are other aspects of capacity exports from Localities that are separate projects (e.g., whether exporting units should receive an additional payment), this project should focus on imports into Localities. This project should address whether capacity imports from neighboring regions (e.g., PJM or ISO-NE) can be used to meet requirements in Localities. Today they cannot, but imports can be used to meet Rest of State requirements (and they receive the Rest of State price). We received confirmation from the NYISO that this is the intent of this project.</p>

# 2018 Project Priority Scores and Estimated Costs

Project	NYISO	Stakeholder Average	Priority Scores			Deliverable	Estimated Cost (in millions)			
			Stakeholder Weighted Avg.	Org Count	Sector Count		Labor	Capital	Prof. Serv.	Total
<b>Business Intelligence Products</b>										
Enterprise Information Management - Data Integration Phase III			CONTINUING			Deploy	0.48	0.00	0.15	0.64
Enterprise Information Management - Analytics Environments – Phase II	189		NYISO SCORED			Deploy	0.04	0.36	0.02	0.43
Public Website Content Management Platform and Redesign			CONTINUING			Deploy	0.30	0.11	0.48	0.89
NAESB PKI Phase II			CONTINUING			Deploy	0.16	0.00	0.06	0.22
Mobile Functionality	101	0.7	0.6	3	1	Architecture Design	0.02	0.00	0.00	0.02
Intranet Redesign	179		NYISO SCORED			Architecture Design	0.05	0.00	0.00	0.05
Third-Party Test Environment	180	1.1	0.5	5	3	Deploy	0.14	0.00	0.00	0.14

# 2018 Project Priority Scores and Estimated Costs

Project	NYISO	Stakeholder Average	Priority Scores			Deliverable	Estimated Cost (in millions)			
			Stakeholder Weighted Avg.	Org Count	Sector Count		Labor	Capital	Prof. Serv.	Total
<b>Capacity Market Products</b>										
Automate ICAP Import Rights			CONTINUING			Deploy	0.20	0.00	0.00	0.20
RMR Cost Recovery Phase II			MANDATORY			Deploy	0.57	0.00	0.15	0.72
ICAP AMS Redesign & Test Improvements Phase II			CONTINUING			Deploy	0.38	0.00	0.09	0.47
ICAP AMS Redesign & Test Improvements Phase III			CONTINUING			Functional Requirements	0.13	0.00	0.03	0.16
Alternative Methods for LCRs (SOM)			CONTINUING			Market Design Complete	0.17	0.00	0.25	0.42
CRIS for External-ROS Transmission Investments			MANDATORY			Functional Requirements	0.12	0.00	0.00	0.12
Treatment of Locality Exports and Imports (SOM)	247	1.9	4.0	10	4	Concept Proposed	0.15	0.00	0.40	0.55
On Ramps and Off Ramps	657	4.6	8.0	26	5	Market Design Complete	0.21	0.00	0.35	0.56

# 2018 Project Priority Scores and Estimated Costs

Project	NYISO	Stakeholder Average	Priority Scores			Deliverable	Estimated Cost (in millions)			
			Stakeholder Weighted Avg.	Org Count	Sector Count		Labor	Capital	Prof. Serv.	Total
<b>Capacity Market Products</b>										
Performance Assurance	477	3.9	6.1	26	5	Concept Proposed	0.14	0.00	0.20	0.34
Competitive Entry Exemption for Increased CRIS	456	2.1	2.5	25	5	Concept Proposed	0.02	0.00	0.00	0.02
Enhanced BSM Mitigation Study Period	238	0.2	0.5	2	2	Concept Proposed	0.01	0.00	0.00	0.01
Review Capacity Physical Withholding Rules	159	0.8	1.1	6	2	Concept Proposed	0.01	0.00	0.00	0.01
Winter CRIS Enhancements	492	0.1	0.0	1	0	Deploy	0.09	0.00	0.00	0.09
Payment for Locality Exports	111	0.1	0.0	1	0	Concept Proposed	0.07	0.00	0.00	0.07
CRIS Treatment for Exports	226	0.4	0.4	3	1	Concept Proposed	0.04	0.00	0.00	0.04
BSM Repowering	347	7.9	5.8	25	4	Concept Proposed	0.01	0.00	0.00	0.01
Explore Alternate LCR – Reliability Impact	232	2.0	4.3	16	4	Concept Proposed	0.30	0.00	0.45	0.75
Aligning ECR Bilateral Deadlines	190	0.4	0.4	1	1	Concept Proposed	0.02	0.00	0.00	0.02

# 2018 Project Priority Scores and Estimated Costs

Project	NYISO	Stakeholder Average	Priority Scores			Deliverable	Estimated Cost (in millions)			
			Stakeholder Weighted Avg.	Org Count	Sector Count		Labor	Capital	Prof. Serv.	Total
<b>DER Products</b>										
FERC Order No. 745			MANDATORY			Deploy	0.22	0.00	0.00	0.22
DER Participation Model			MANDATORY			Market Design Complete	0.36	0.00	0.45	0.81
Granular Pricing & Market Price Delivery	373	3.8	4.7	27	4	Deploy	0.20	0.02	0.00	0.22
DER Pilot Framework	413	4.6	4.1	14	3	Deploy	0.26	0.00	0.25	0.51

# 2018 Project Priority Scores and Estimated Costs

Project	NYISO	Stakeholder Average	Priority Scores			Deliverable	Estimated Cost (in millions)				
			Stakeholder Weighted Avg.	Org Count	Sector Count		Labor	Capital	Prof. Serv.	Total	
<b>Energy Market Products</b>											
Energy Storage Integration and Optimization	624	10.0	8.2	42	5	Market Design Complete	0.18	0.00	0.00	0.18	
RTC-RTD Convergence Improvements (SOM)	586	3.4	4.1	28	4	Concept Proposed	0.08	0.00	0.00	0.08	
5-minute Transaction Scheduling	232	1.5	1.3	7	2	Study Comp.	0.07	0.00	0.30	0.37	
15-minute Transaction Scheduling – IESO	147	0.4	0.2	3	1	Concept Proposed	0.05	0.00	0.00	0.05	
Model 100+kV Transmission Constraints (SOM)	645	16.5	9.3	39	5	Market Design Complete	0.09	0.00	0.00	0.09	
Constraint Specific Transmission Demand Curves (SOM)	370	1.2	1.2	4	2	Market Design Complete	0.07	0.00	0.00	0.07	



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Project	Priority Scores					Deliverable	Estimated Cost (in millions)			
	NYISO	Stakeholder Average	Stakeholder Weighted Avg.	Org Count	Sector Count		Labor	Capital	Prof. Serv.	Total
<b>Energy Market Products</b>										
FERC Order 831: Offer Caps	MANDATORY					Deploy	0.38	0.00	0.06	0.44
Large Solar Participation Model	601	5.6	4.1	37	5	Concept Proposed	0.05	0.00	0.00	0.05
Mitigation Bid Transparency	190	1.1	0.5	5	1	Deploy	0.06	0.00	0.00	0.06
Reinstitute Import Guarantees	190	1.3	1.2	4	1	Concept Proposed	0.06	0.00	0.00	0.06
Integrating Public Policy	CONTINUING					Concept Proposed	0.27	0.00	0.40	0.67

# 2018 Project Priority Scores and Estimated Costs

Project	NYISO	Stakeholder Average	Priority Scores			Deliverable	Estimated Cost (in millions)			
			Stakeholder Weighted Avg.	Org Count	Sector Count		Labor	Capital	Prof. Serv.	Total
<b>Enterprise Products</b>										
Database Platform Upgrades Phase II			CONTINUING			Deploy	0.25	0.40	0.09	0.74
Telephony System Upgrade			CONTINUING			Deploy	0.14	0.00	0.15	0.29
Application Platform Upgrade Phase V	346		NYISO SCORED			Deploy	0.83	1.12	0.15	2.10
Identity and Access Management (IAM) - 2018	261		NYISO SCORED			Deploy	0.33	0.12	0.20	0.64
Application Testing Improvements Phase II	224		NYISO SCORED			Deploy	0.28	0.06	0.25	0.59
Software AG Upgrade	377		NYISO SCORED			Deploy	0.23	0.00	0.00	0.23
Corporate Workstation Replacement	263		NYISO SCORED			Deploy	0.13	0.25	0.07	0.45
Laptop Refresh and Upgrade	262		NYISO SCORED			Deploy	0.16	0.59	0.08	0.83
Microsoft Systems Upgrade	275		NYISO SCORED			Deploy	0.38	3.00	0.00	3.38
Network Infrastructure Upgrade	214		NYISO SCORED			Deploy	0.20	2.34	0.00	2.54
Planning High Performance Computing (HPC) Platform Upgrade	304		NYISO SCORED			Deploy	0.13	0.40	0.00	0.53

# 2018 Project Priority Scores and Estimated Costs

Project	NYISO	Stakeholder Average	Priority Scores			Deliverable	Estimated Cost (in millions)			
			Stakeholder Weighted Avg.	Org Count	Sector Count		Labor	Capital	Prof. Serv.	Total
<b>Finance Products</b>										
North Subzone Redistricting			CONTINUING			Deploy	0.37	0.00	0.00	0.37
Transactions Modifications & Confirmation Tool	206		NYISO SCORED			Architecture Design	0.04	0.00	0.00	0.04
CMS/ ConInvoice Data Integration	206		NYISO SCORED			Functional Requirements	0.04	0.00	0.00	0.04
Expense Reports Automation			CONTINUING			Deploy	0.17	0.00	0.13	0.30
Rate Schedule 12 Settlement			CONTINUING			Deploy	0.42	0.00	0.00	0.42
CMS Projected True-up Exposure Enhancement	244	2.1	1.6	8	2	Deploy	0.19	0.00	0.00	0.19
FERC Form1 Redesign	253		NYISO SCORED			Deploy	0.10	0.00	0.00	0.10
Vendor Management Tool	229		NYISO SCORED			Functional Requirements	0.08	0.00	0.00	0.08
Electric Quarterly Report (EQR) DSS Report Update	252	1.7	1.7	9	3	Deploy	0.11	0.00	0.00	0.11

# 2018 Project Priority Scores and Estimated Costs

Project	NYISO	Stakeholder Average	Priority Scores			Deliverable	Estimated Cost (in millions)			
			Stakeholder Weighted Avg.	Org Count	Sector Count		Labor	Capital	Prof. Serv.	Total
<b>Operations &amp; Reliability Products</b>										
EMS/BMS System Upgrade			CONTINUING			Dev. Comp.	5.36	0.60	1.71	7.67
TOA Platform Upgrade Phase II			CONTINUING			Dev. Comp.	0.22	0.00	1.14	1.36
2017 Reference Level Software Enhancements			CONTINUING			Deploy	0.35	0.00	0.18	0.53
PI System Upgrade			CONTINUING			Dev. Comp.	0.11	0.00	0.00	0.11
EMS/BMS Workstation Upgrade			CONTINUING			Dev. Comp.	0.14	1.08	0.00	1.22
Gurobi (MIP) Hardware Refresh			CONTINUING			Dev. Comp.	0.03	0.30	0.00	0.33
Gurobi (MIP) Software Upgrade			CONTINUING			Dev. Comp.	0.11	0.00	0.00	0.11
Load Forecaster Upgrade & Buildout	400		NYISO SCORED			Dev. Comp.	0.21	0.06	0.08	0.35
EPG PMU Enhancements	312		NYISO SCORED			Deploy	0.12	0.47	0.00	0.59

# 2018 Project Priority Scores and Estimated Costs

Project	NYISO	Stakeholder Average	Priority Scores			Deliverable	Estimated Cost (in millions)			
			Stakeholder Weighted Avg.	Org Count	Sector Count		Labor	Capital	Prof. Serv.	Total
<b>Planning Products</b>										
Interconnection Project Queue (or Portal) Automation	258	2.6	3.4	20	5	Functional Requirements	0.17	0.00	0.20	0.37
Transmission Planning Process Review	303	5.2	5.8	20	3	Concept Proposed	0.08	0.00	0.10	0.18
Model on Demand Upgrade and Build-Out	375	0.9	0.4	5	2	Deploy	0.06	0.07	0.03	0.16
Interconnection Process Review	222	5.7	8.3	25	5	Concept Proposed	0.10	0.00	0.03	0.13

# 2018 Project Priority Scores and Estimated Costs

Project	NYISO	Stakeholder Average	Priority Scores			Deliverable	Estimated Cost (in millions)			
			Stakeholder Weighted Avg.	Org Count	Sector Count		Labor	Capital	Prof. Serv.	Total
<b>TCC Products</b>										
On-Peak/Off-Peak TCCs	192	4.0	3.6	12	2	Study Comp.	0.04	0.00	0.00	0.04

# Next Steps

- **Written feedback may be provided up till July 14th on any of the NYISO project category scores (see 2018 Project Prioritization Process – Scoring posted with today’s BPWG meeting materials) for consideration at the July 26th BPWG meeting**
- **Send to Leigh Bullock and Brian Hurysz**
  - **LBullock@nyiso.com : (518) 356-7503**
  - **BHurysz@nyiso.com : (518) 356-6126**
- **We will review an initial project budget recommendation at the July 26th BPWG meeting**
- **We will review a revised project budget recommendation at the August 18th BPWG meeting**

# Questions?



# The Mission of the New York Independent System Operator is to:

- Serve the public interest and
- Provide benefit to stakeholders by
  - Maintaining and enhancing regional reliability
  - Operating open, fair and competitive wholesale electricity markets
  - Planning the power system for the future
  - Providing factual information to policy makers, stakeholders and investors in the power system



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