

2021 Market Project Updates, Cost & Stakeholder Survey - Revised

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Budget and Priorities Working Group

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Agenda

- Project Prioritization Phases, Milestones, and Timeline
- Stakeholder Feedback
- Stakeholder Survey
- 2021 Market Project Candidates – Updates, Costs, and Deliverables
- **2021 Market Project Candidates Included in Stakeholder Survey**
- Next Steps

Project Prioritization Phases, Milestones, and Timeline

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	This phase involves a stakeholder survey and the NYISO prioritization of projects. The stakeholder survey will facilitate an assessment of the relative priority of the topic within the portfolio and is used to determine stakeholder appeal. The NYISO prioritization incorporates the stakeholder appeal into objective criteria that reflects strategic alignment, expected outcomes, risks, and ability to execute in development of a priority score for each Market project.
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.

Project Type

Project Type	Description
Mandatory	Strategic Initiatives and FERC Orders. These projects will be included in the budget
Continuing	Approved in a prior year and have progressed to either Software Design or Development Complete. Additional projects may be classified as Continuing based on stakeholder feedback. These projects will be included in the budget
Future	Consensus from stakeholder discussions of this projects priority relative to other projects has resulted in these projects NOT being prioritized and initiated in the coming budget year. Resources, time constraints, stakeholder feedback, and other project dependencies have been taken into consideration
Prioritize	Projects to be prioritized and included in the budget based on a feasibility assessment taking into consideration resources, time constraints, stakeholder feedback, priority score, and other project dependencies. Market projects are included in the stakeholder survey

Project Category

Project Category	Description
Enterprise	Includes internal-facing technology and back office support projects that have no market rule changes. This list includes projects that may be noticeable to Market Participants. These projects are NOT included in the stakeholder survey
Market	Projects associated with market rule(s) including market design and study projects as well as any project implementing market rule changes. These projects are included in the stakeholder survey unless they are Mandatory, Continuing, or Future

Project Scoring

Project Scoring	Description
NYISO Only	Enterprise projects that are not Mandatory, Continuing, or Future types are scored by the NYISO Only during the Prioritization phase. These projects are included in the budget based on a feasibility assessment taking into consideration resources, time constraints, priority score and other project dependencies.
Stakeholder Scored	Market projects that are not Mandatory, Continuing, or Future are included in the stakeholder survey and scored by the NYISO during the Prioritization phase. These projects are included in the budget based on a feasibility assessment taking into consideration resources, time constraints, stakeholder feedback, priority score, and other project dependencies.

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.
Study Defined	The scope of work for the study has been presented to stakeholders, including a discussion on the necessary input(s), assumption(s) and objective(s) of the study.
Issue Discovery	NYISO has facilitated education session(s) for stakeholder knowledge development of problem/issue, conducted stakeholder solicitation of potential solutions to address problem/issue, and summarized findings at a working group meeting for potential ranking and future project identification.

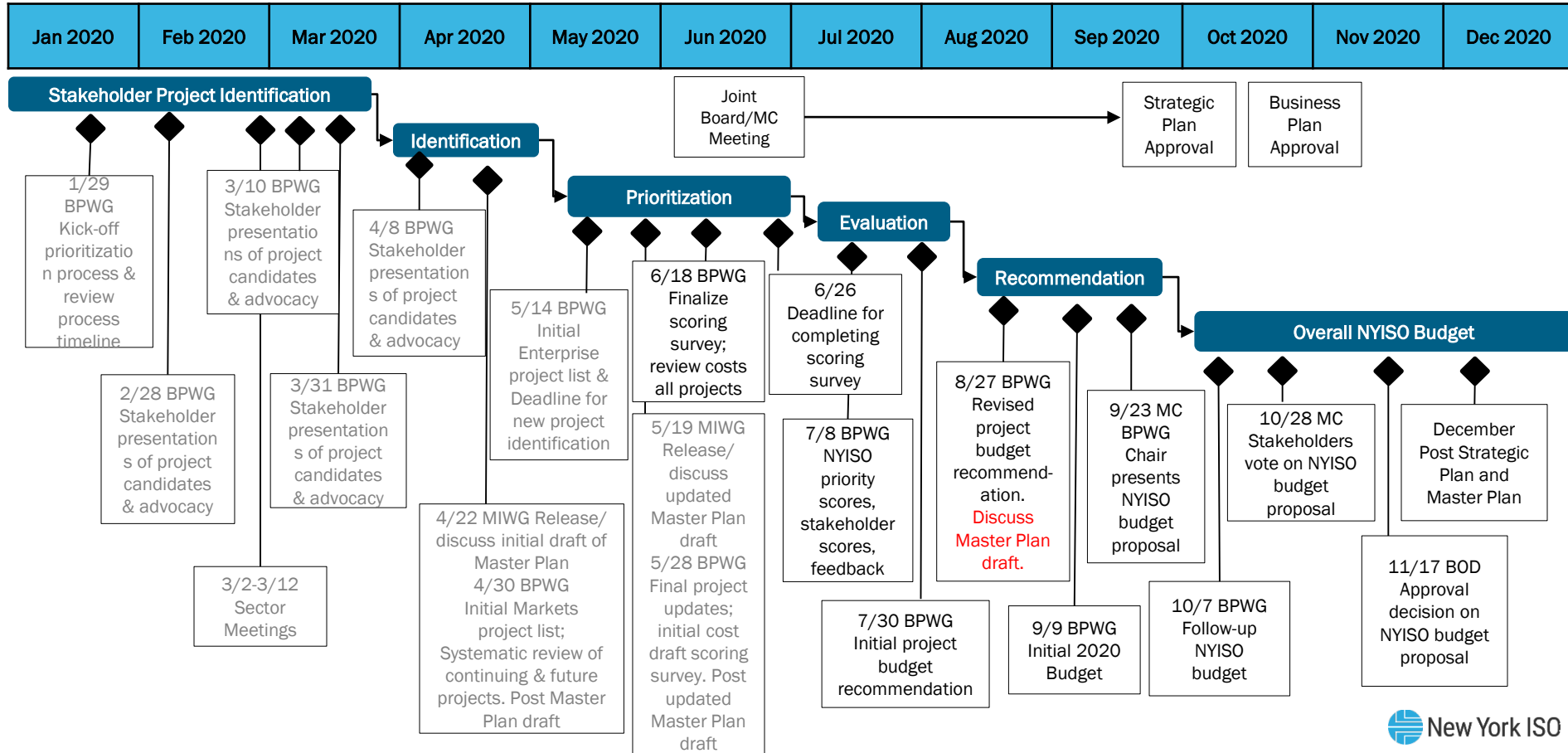
Project Prioritization Criteria * Same as used in 2019

PRIORITIZATION CRITERIA						
Category	Criteria	Criteria Weight	HIGH	MEDIUM	LOW	NONE
			10	7	3	0
Strategy (If we do this project)	Leader in Reliability	10	Significantly improves NYISO ability to maintain NYCA Reliability	Moderately improves NYISO ability to maintain NYCA Reliability	Minimally improves NYISO ability to maintain NYCA Reliability	None
	Leader in Market Design	10	Significantly improves NYISO Market Design	Moderately improves NYISO Market Design	Minimally improves NYISO Market Design	None
	Leader in Technology Innovation	6	Significantly advances the IT strategy or technology improvement	Moderately advances the IT strategy or technology improvement	Minimally advances the IT strategy or technology improvement	None
	Sustain and Enhance Robust Planning Processes	9	Supports tariff, FERC, NPCC, or NYSERC compliance requirements for Planning Process	Supports reliability planning and/or Business Plan objectives	Required for SRP planning study efficiency or continuous improvement initiatives	None
Outcome (If we do this project)	NYISO Annual Cost Reduction	10	>\$500k savings-Direct and soft (labor)	>\$100k, <\$500k savings-Direct and soft (labor)	>\$10k, <\$100k savings - Direct and soft (labor)	<\$10k savings - Direct and soft (labor)
	Appeal	15	Broad Customer Support : Supported by 5 sectors with 25% or more of survey respondents per sector applying points and average across the survey respondents per sector of 5 points or more; or either raw or weighted scores equivalent to 20% of survey respondents applying 25 points or more	Moderate Customer Support: Supported by 4 sectors with 25% or more of survey respondents per sector applying points and average across the survey respondents per sector of 5 points or more; ; or either raw or weighted scores equivalent to 10% of survey respondents applying 25 points or more	Minimal Customer Support: Supported by 2 sectors with 25% or more of survey respondents per sector applying points and average across the survey respondents per sector of 5 points or more; ; or either raw or weighted scores equivalent to 5% of survey respondents applying 25 points or more	Little to No Customer Support
	Market Efficiency	10	Significant improvement	Moderate improvement	Minimal improvement	No impact
	Post Production Sustainability	5	Existing support structure and skills	Support structure exists but needs minimal modifications	Support structure exists but needs major modifications	No skills or support structure in place
Risk (If we do NOT do this project)	Compliance	10	Significant risk of compliance violation	Moderate risk of compliance violation	Minimal risk of compliance violation	None
	Business Process (inclusive of technology impact on business process)	5	Enterprise Wide and/or Bid to Bill Impact. The project impacts processes in most departments	Multiple Department Impact.	Department Wide Impact The project impacts many processes within a department	Only one or two processes impacted
	Reliability and Market	10	Mission-critical systems becoming non operational or above \$1 million market impact	Non mission-critical systems becoming non operational or \$100,000 - \$1 million market impact	Non mission-critical systems affected or \$10,000 - \$100,000 market impact	No or less than 10,000 impact
Execution (If we do this project)	Cost	4	Total project cost (current & future years) estimated <\$100k	Total project cost (current & future years) estimated >\$100k, <\$500k	Total project cost (current & future years) estimated >\$500, <\$1M	Total project cost (current & future years) estimated >\$1M
	Multi-Year Dependency	8	Continuation of a multi-year project - postponement significantly disrupts value of previous investments	Continuation of a multi-year project - postponement moderately disrupts value of previous investments	Continuation of a multi-year project - postponement minimally disrupts value of previous investments	None
	Complexity of Business and Technology	4	One area/technology	Cross-functional < 3 Areas/Technology	Highly Cross-functional/ Re-engineering	Complex, solution and impact unknown
	Compliance	8	Non-appealable, ordered by FERC / desired by NYISO and MP	Ordered by FERC, undesired by NYISO or MP	Potential order identified by FERC	No order identified by FERC

Survey Appeal Definition * Same as used in 2019

Criteria	Criteria Weight	HIGH	MEDIUM	LOW	NONE
		10	7	3	0
Appeal	15	Broad Customer Support: Supported by 5 sectors with 25% or more of survey respondents per sector applying points and average across the survey respondents per sector of 5 points or more; or either raw or weighted scores equivalent to 20% of survey respondents applying 25 points or more	Moderate Customer Support: Supported by 4 sectors with 25% or more of survey respondents per sector applying points and average across the survey respondents per sector of 5 points or more; or either raw or weighted scores equivalent to 10% of survey respondents applying 25 points or more	Minimal Customer Support: Supported by 2 sectors with 25% or more of survey respondents per sector applying points and average across the survey respondents per sector of 5 points or more; or either raw or weighted scores equivalent to 5% of survey respondents applying 25 points or more	Little to No Customer Support

2021 Proposed Project Prioritization Timeline



Stakeholder Feedback and NYISO Response

Stakeholder Feedback and NYISO Response

Stakeholder Feedback	NYISO Response
Market Participants requested historic project budget comparison	A comparison slide has been added
Project description changes for CRIS Expiration Evaluation – Requested by NYS Utility Intervention Unit along with proposed deliverable updated to Market Design Complete	Updates have been reflected in today’s presentation
Clarification requested on 5 Minute Transaction Scheduling - Requested by HQUS proposed deliverable	Presentation updated to Market Design Complete to match project description file
Project description changes requested for Grid Services from Renewable Generators - Requested by NYSERDA along with proposed deliverable updated to Study Complete	Updates have been reflected in today’s presentation

Stakeholder Survey

Stakeholder Scoring Survey

- The survey will be conducted by Siena Research Institute
- Registered shared governance organizations including non-voting participants and affiliates will have an opportunity to score projects
- All survey results are public including, identifying organization that provided the scoring and any comments
- Survey link will be sent to the primary MC representative (unless written notification is provided to use different or additional contacts)
 - List of organizations and contacts to receive survey is included with today's posted materials
- Each organization may provide one survey response with 100 points available to assign to projects based on their priorities

Stakeholder Scoring Survey Enhancements

- Each organization will be **provided a link** to access their survey that will be included in email to MC representative
- MC representative can provide others the ability to access survey by sharing the **link**
- Anyone with survey **link** can submit the survey
- There will be a comment section after each project as well as at the end of survey to supplement scoring information
- **Once submitted, the link will no longer provide access the survey**
 - The survey link can be reset if there is a need to revise after submission
 - Contact Brian Hurysz or Member Relations for any survey related issues

Stakeholder Scoring Survey Timeline

- A draft of the survey is included with today's BPWG materials for review and finalization of project descriptions
- Official survey will be distributed June 18th after BPWG
 - If last minute updates to survey are made at June 18th BPWG, this may delay the survey distribution
- Surveys deadline is June 26th
- Survey results to be reviewed at July 8th BPWG

2021 Market Project Candidates - Updates, Costs, and Deliverables

2021 Market Project Candidates

Item	Project Name	Product Area	Project Type	Proposed Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
1	TCC Credit Enhancements	Business and Finance Products	Prioritize	Deployment	0.14	0.00	0.00	0.14
2	BSM Renewables Exemption Study	Capacity Market Products	Mandatory	Deployment	0.03	0.00	0.03	0.06
3	CRIS Tracking	Capacity Market Products	Mandatory	Software Design	0.12	0.00	0.00	0.12
4	Demand Curve Reset	Capacity Market Products	Mandatory	Deployment	0.09	0.00	0.10	0.19
5	Tailored Availability Metric	Capacity Market Products	Continuing	Deployment	0.05	0.00	0.00	0.05
6	Enhanced BSM Forecasts Assumptions (SOM)	Capacity Market Products	Prioritize	Market Design Concept Proposed	0.07	0.00	0.00	0.07
7	Comprehensive Mitigation Review	Capacity Market Products	Continuing	Market Design Complete	0.22	0.00	0.10	0.32

Note: Projects with revised descriptions or proposed deliverables are noted in red

2021 Market Project Candidates

Item	Project Name	Product Area	Project Type	Proposed Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
8	Capacity Demand Curve Adjustments	Capacity Market Products	Prioritize	Study Complete	0.18	0.00	0.25	0.43
9	Capacity Transfer Rights for Internal Transmission Upgrades (SOM)	Capacity Market Products	Future					
10	Locational Marginal Pricing of Capacity (SOM)	Capacity Market Products	Future					
11	Expanding Peak Hour Forecasts	Capacity Market Products	Prioritize	Market Design Concept Proposed	0.04	0.00	0.00	0.04
12	Demand Curve Translation Enhancement (SOM)	Capacity Market Products	Prioritize	Market Design Complete	0.04	0.00	0.00	0.04
13	Monthly Demand Curves (SOM)	Capacity Market Products	Future					
14	CRIS Expiration Evaluation – Requested by NYS Utility Intervention Unit	Capacity Market Products	Prioritize	Market Design Complete Market Design Concept Proposed	0.11	0.00	0.00	0.11

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2021 Market Project Candidates

Item	Project Name	Product Area	Project Type	Proposed Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
15	Tailored Availability Metric Enhancements – Requested by Central Hudson, Con Edison, National Grid, New York Power Authority, and O&R	Capacity Market Products	Prioritize	Market Design Concept Proposed	0.06	0.00	0.05	0.11
16	Climate Change Impact and Resilience Study	DER Products	Continuing	Market Design Concept Proposed	0.03	0.00	0.30	0.33
17	DER Participation Model	DER Products	Mandatory	Deployment	3.49	0.10	5.88	9.46
18	Expanding Capacity Eligibility	DER Products	Mandatory	Deployment	0.17	0.00	0.00	0.17
19	Engaging the Demand Side	DER Products	Prioritize	Issue Discovery	0.09	0.00	0.00	0.09
20	Grid in Transition	DER Products	Continuing	Issue Discovery	0.21	0.00	0.60	0.81
21	Hybrid Storage Model	DER Products	Continuing	Development Complete	0.30	0.00	0.36	0.66

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2021 Market Project Candidates

Item	Project Name	Product Area	Project Type	Proposed Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
22	Ongoing TSO and DSO Coordination	DER Products	Continuing	Issue Discovery	0.07	0.00	0.10	0.17
23	Ancillary Services Shortage Pricing (SOM)	Energy Market Products	Continuing	Development Complete	0.27	0.00	0.27	0.54
24	Reserves for Resource Flexibility	Energy Market Products	Continuing	Development Complete	0.23	0.00	0.27	0.50
25	5 Minute Transaction Scheduling - Requested by HQUS	Energy Market Products	Prioritize	Market Design Complete Market Design Concept Proposed	0.22	0.00	0.00	0.22
26	Carbon Pricing	Energy Market Products	Continuing	Software Design	0.39	0.00	0.00	0.39
27	Constraint Specific Transmission Shortage Pricing (SOM)	Energy Market Products	Prioritize	Development Complete	0.28	0.00	0.51	0.79
28	Large Scale Solar on Dispatch	Energy Market Products	Prioritize	Deployment	0.28	0.00	0.40	0.68

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2021 Market Project Candidates

Item	Project Name	Product Area	Project Type	Proposed Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
29	Mitigation Thresholds Review	Energy Market Products	Prioritize	Functional Requirements	0.08	0.00	0.00	0.08
30	Multi-Level References	Energy Market Products	Prioritize	Software Design	0.06	0.00	0.02	0.08
31	Reserve Enhancement for Constrained Areas (SOM)	Energy Market Products	Prioritize	Study Complete	0.07	0.00	0.20	0.27
32	Adjustment of Energy Offer/Bid Floor (SOM)	Energy Market Products	Prioritize	Market Design Complete	0.05	0.00	0.00	0.05
33	Grid Services from Renewable Generators - Requested by NYSERDA	Energy Market Products	Prioritize	Study Complete Market Design Complete	0.05	0.00	0.00	0.05
34	Long Island Reserve Constraint Pricing (SOM)	Energy Market Products	Prioritize	Market Design Complete	0.09	0.00	0.00	0.09
35	Eliminate Fees for CTS Transactions with PJM (SOM)	Energy Market Products	Future					

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2021 Market Project Candidates

Item	Project Name	Product Area	Project Type	Proposed Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
36	Enhanced PAR Modeling (SOM)	Energy Market Products	Future					
37	Long Island PAR Optimization and Financial Rights (SOM)	Energy Market Products	Future					
38	RTC-RTD Convergence Improvements (SOM)	Energy Market Products	Future					
39	More Granular Operating Reserves (SOM)	Energy Market Products	Prioritize	Development Complete	0.47	0.00	0.10	0.57
40	Reserving Capacity for TCC Balance-of-Period (BOP) Auctions	TCC Products	Prioritize	Functional Requirements	0.08	0.00	0.00	0.08
41	Time Differentiated TCCs – Requested by Calpine & Vitol	TCC Products	Prioritize	Market Design Concept Proposed	0.10	0.00	0.00	0.10

Note: Projects with revised descriptions or proposed deliverables are noted in red

Historic Project Budget Comparison

Project Budget*	Estimated Cost (in millions)				Mandatory	Continuing
	Labor	Capital	Prof. Serv.	Total		
2021 Candidate Projects	16.41	14.50	13.82	44.73	11.73	19.64
2020 Approved	13.57	5.73	12.40	31.69	10.48	10.74
2019 Approved	11.47	4.65	12.82	28.95	9.40	14.82
2018 Approved	11.01	7.96	4.64	23.61	2.15	8.80
2017 Approved	11.10	6.18	4.59	21.87	1.01	9.10
2016 Approved	11.50	6.32	3.78	21.60	4.17	12.06
2015 Approved	11.63	5.29	5.63	22.55	5.67	NA

* 2015-2019 exclude EMS/BMS Upgrade project as it had separate financing

2021 Market Project Candidates Included in Stakeholder Survey

Projects Included in Stakeholder Survey

Item	Project Name	Product Area	Project Type	Proposed Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
1	TCC Credit Enhancements	Business and Finance Products	Prioritize	Deployment	0.14	0.00	0.00	0.14
2	Enhanced BSM Forecasts Assumptions (SOM)	Capacity Market Products	Prioritize	Market Design Concept Proposed	0.07	0.00	0.00	0.07
3	Capacity Demand Curve Adjustments	Capacity Market Products	Prioritize	Study Complete	0.18	0.00	0.25	0.43
4	Expanding Peak Hour Forecasts	Capacity Market Products	Prioritize	Market Design Concept Proposed	0.04	0.00	0.00	0.04
5	Demand Curve Translation Enhancement (SOM)	Capacity Market Products	Prioritize	Market Design Complete	0.04	0.00	0.00	0.04
6	CRIS Expiration Evaluation – Requested by NYS Utility Intervention Unit	Capacity Market Products	Prioritize	Market Design Complete Market Design Concept Proposed	0.11	0.00	0.00	0.11
7	Tailored Availability Metric Enhancements – Requested by Central Hudson, Con Edison, National Grid, New York Power Authority, and O&R	Capacity Market Products	Prioritize	Market Design Concept Proposed	0.06	0.00	0.05	0.11

Note: Projects with revised descriptions or proposed deliverables are noted in red

Projects Included in Stakeholder Survey

Item	Project Name	Product Area	Project Type	Proposed Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
8	Engaging the Demand Side	DER Products	Prioritize	Issue Discovery	0.09	0.00	0.00	0.09
9	5 Minute Transaction Scheduling - Requested by HQUS	Energy Market Products	Prioritize	Market Design Complete Market Design Concept Proposed	0.22	0.00	0.00	0.22
10	Constraint Specific Transmission Shortage Pricing (SOM)	Energy Market Products	Prioritize	Development Complete	0.28	0.00	0.51	0.79
11	Large Scale Solar on Dispatch	Energy Market Products	Prioritize	Deployment	0.28	0.00	0.40	0.68
12	Mitigation Thresholds Review	Energy Market Products	Prioritize	Functional Requirements	0.08	0.00	0.00	0.08
13	Multi-Level References	Energy Market Products	Prioritize	Software Design	0.06	0.00	0.02	0.08
14	Reserve Enhancement for Constrained Areas (SOM)	Energy Market Products	Prioritize	Study Complete	0.07	0.00	0.20	0.27

Note: Projects with revised descriptions or proposed deliverables are noted in red

Projects Included in Stakeholder Survey

Item	Project Name	Product Area	Project Type	Proposed Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
15	Adjustment of Energy Offer/Bid Floor (SOM)	Energy Market Products	Prioritize	Market Design Complete	0.05	0.00	0.00	0.05
16	Grid Services from Renewable Generators - Requested by NYSERDA	Energy Market Products	Prioritize	Study Complete Market Design Complete	0.05	0.00	0.00	0.05
17	Long Island Reserve Constraint Pricing (SOM)	Energy Market Products	Prioritize	Market Design Complete	0.09	0.00	0.00	0.09
18	More Granular Operating Reserves (SOM)	Energy Market Products	Prioritize	Development Complete	0.47	0.00	0.10	0.57
19	Reserving Capacity for TCC Balance-of-Period (BOP) Auctions	TCC Products	Prioritize	Functional Requirements	0.08	0.00	0.00	0.08
20	Time Differentiated TCCs – Requested by Calpine & Vitol	TCC Products	Prioritize	Market Design Concept Proposed	0.10	0.00	0.00	0.10

Note: Projects with revised descriptions or proposed deliverables are noted in red

Next Steps

Next Steps

- **Deadline for completing scoring survey will be June 26th**
- **Contact Brian Hurysz or Member Relations for any survey related issues**
 - Send to Brian Hurysz at bhurysz@nyiso.com or cell (518) 461-6405
- **Scoring results will be presented at the July 8th BPWG**

Our mission, in collaboration with our stakeholders, is to serve the public interest and provide benefit to consumers 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 policymakers, stakeholders and investors in the power system



Questions?