

2022 Market Project Updates, Costs & Stakeholder Survey

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Agenda

- **Project Prioritization Phases, Milestones, and Timeline**
- **Scoring Examples**
- **Stakeholder Survey**
- **Project Descriptions**
- **2022 Market Project Candidates – Updates, Costs, and Deliverables**
- **Next Steps**

Project Prioritization Phases, Milestones, and Timeline

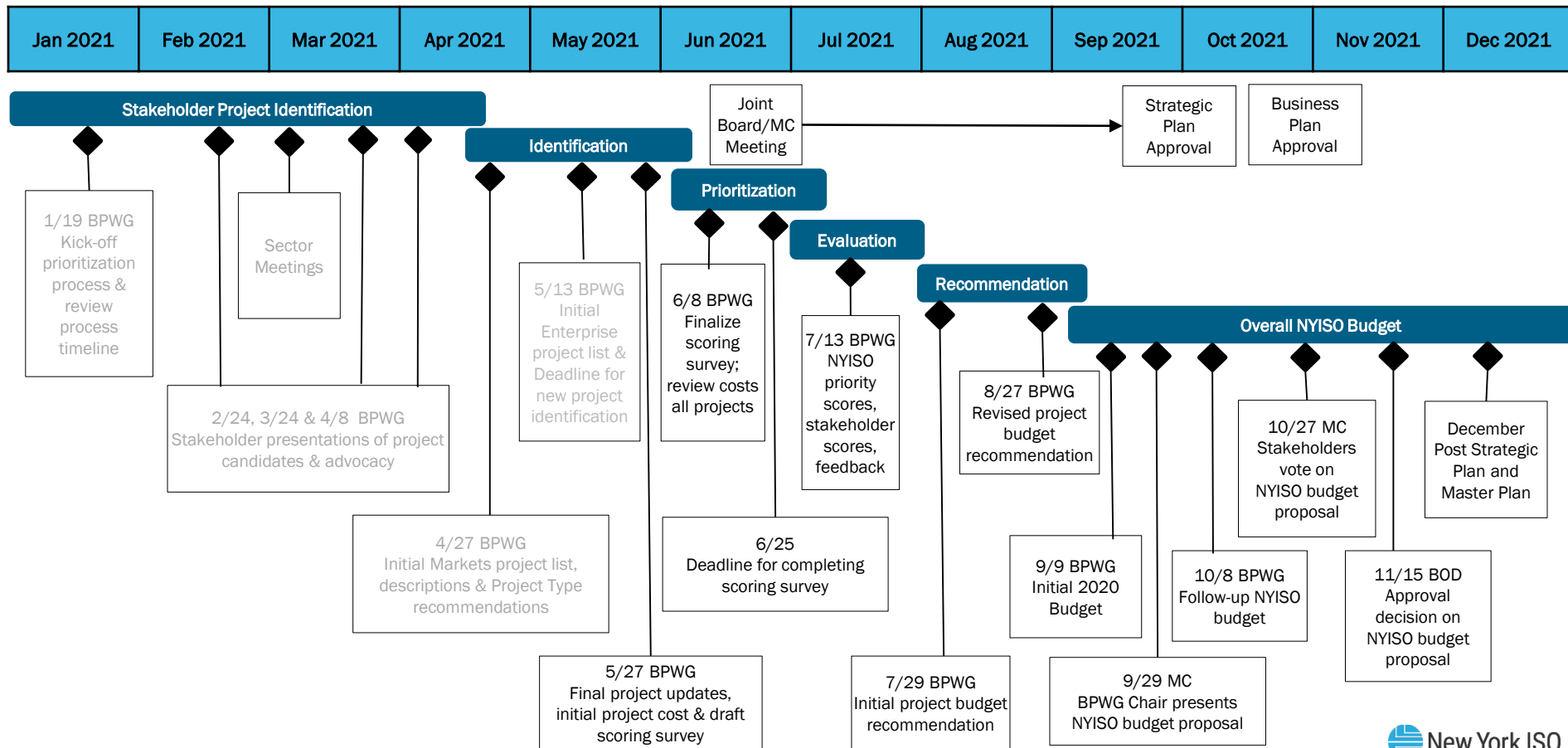
Project Prioritization Process

Phase	Description
Stakeholder Project Identification	Stakeholders may present project ideas at stakeholder meetings and sector meetings, receive feedback, and refine their proposal during this phase before the NYISO provides a comprehensive list of candidate projects for consideration.
Identification	The NYISO develops a Markets and Enterprise project candidate lists based on regulatory obligations, strategic initiatives, State of the Market recommendations, infrastructure enhancements, product plans, and stakeholder proposals. These project candidates are presented and further refined with stakeholder input during this phase.
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 reflect 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 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 scored by the NYISO depending on their Project Type, 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 scored by the NYISO and included in the stakeholder survey depending on their Project Type.

2022 Proposed Project Prioritization Timeline



Project Type

Project Type	Description
Mandatory	Strategic Initiatives and FERC Orders. These projects will be included in the budget
Continuing	Projects approved in a prior year and that have progressed to either Software Design, Development Complete, or Deployment will generally be proposed as Continuing. 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.

Survey Scoring

Score Type	Description
Raw	Average of scores from each organization that has completed the stakeholder survey
Weighted	Scores from voting members only are averaged across the sector they are in and weighted based on governance voting weights
Sector	Number of sectors that supported a particular project. A sector is only counted if at least 25% or more of survey respondents from sector have allocated points and average across the survey respondents from the sector is 5 points or more.
Sum of Scores	The combined total of Raw, Weighted and Sector scores.

Survey Appeal Definition * Same as used in 2019

Criteria	Criteria Weight	HIGH	MEDIUM	LOW	NONE
		10	7	3	0
Appeal	15	<p>Broad Customer Support: Supported by 5 sectors; or either Raw or Weighted scores ≥ 5.00</p> <p>(5.00 is equivalent to 20% of survey respondents applying 25 points or more)</p>	<p>Moderate Customer Support: Supported by 4 sectors; or either Raw or Weighted scores ≥ 2.50</p> <p>(2.50 is equivalent to 10% of survey respondents applying 25 points or more)</p>	<p>Minimal Customer Support: Supported by 2 or 3 sectors; or either Raw or Weighted scores ≥ 1.25</p> <p>(1.25 is equivalent to 5% of survey respondents applying 25 points or more)</p>	<p>Little to No Customer Support</p>

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





Scoring Examples

Governance Weights from 2020 Stakeholder Survey

Sector	Sub-Sector	Eligible Percentage	Subsector Percentage	Num. Eligible Orgs.	Num. Responses	Score Weights
End Use		20.0%		15	13	
	Gov. Sm. Cons. & Retail Aggr.		1.8%	2	2	2.0%
	Gov. State-wide Cons. Advocate		2.7%	1	1	3.0%
	Governmental Agency		2.0%	1	0	0.0%
	Large Consumer		9.0%	5	4	10.0%
	Small Consumer		4.5%	6	6	5.0%
Generation Owner		21.5%		17	2	21.5%
Other Supplier		21.5%		33	12	21.5%
Public Power / Environmental		17.0%		20	13	
	Environmental		2.0%	7	2	2.0%
	Munis & Co-Ops		7.0%	11	9	7.0%
	State Power Authorities		8.0%	2	2	8.0%
Transmission Owner			20.0%	4	4	20.0%
Non-Voting		0.0%		62	11	0.0%





Survey Scoring & Appeal Determination from 2020 Stakeholder Survey

Proposed Projects	Raw Score (Avg.)	Weighted Score	Sector Count	Sum of Scores	Appeal Score
Time Differentiated TCCs – Requested by Calpine & Vitol	13.2	19.5	3.0	35.7	10
Engaging the Demand Side	10.1	8.5	4.0	22.6	10
Expanding Peak Hour Forecasts	9.6	7.7	3.0	20.2	10
Grid Services from Renewable Generators - Requested by NYSERDA	8.7	7.4	4.0	20.1	10
Tailored Availability Metric Enhancements – Requested by Central Hudson, Con Edison, National Grid, New York Power Authority, and O&R	8.2	7.2	3.0	18.4	10
Constraint Specific Transmission Shortage Pricing (SOM)	5.6	5.1	4.0	14.7	10
CRIS Expiration Evaluation – Requested by NYS Utility Intervention Unit	5.4	5.6	2.0	13.0	10
More Granular Operating Reserves (SOM)	5.8	5.2	2.0	13.0	10
Demand Curve Translation Enhancement (SOM)	6.4	4.3	2.0	12.7	10
5 Minute Transaction Scheduling - Requested by HQUS	5.5	5.1	2.0	12.7	10

	= 10, High Stakeholder Appeal
	= 7, Medium Stakeholder Appeal
	= 3, Low Stakeholder Appeal
	= 0, Little to None Stakeholder Appeal

Survey Scoring & Appeal Determination from 2020 Stakeholder Survey

Proposed Projects	Raw Score (Avg.)	Weighted Score	Sector Count	Sum of Scores	Appeal Score
Reserve Enhancement for Constrained Areas (SOM)	3.4	7.2	2.0	12.6	10
Large Scale Solar on Dispatch	4.6	4.5	2.0	11.1	7
Reserving Capacity for TCC Balance-of-Period (BOP) Auctions	5.2	3.8	1.0	10.1	10
Enhanced BSM Forecasts Assumptions (SOM)	2.1	1.8	0.0	3.9	3
Mitigation Thresholds Review	1.1	1.7	1.0	3.8	3
Capacity Demand Curve Adjustments	2.2	0.9	0.0	3.2	3
Multi-Level References	1.2	1.6	0.0	2.8	3
Adjustment of Energy Offer/Bid Floor (SOM)	1.0	1.2	0.0	2.2	0
TCC Credit Enhancements	0.5	0.8	0.0	1.3	0
Long Island Reserve Constraint Pricing (SOM)	0.2	0.7	0.0	0.9	0

	= 10, High Stakeholder Appeal
	= 7, Medium Stakeholder Appeal
	= 3, Low Stakeholder Appeal
	= 0, Little to None Stakeholder Appeal

Stakeholder Survey

Stakeholder Scoring

- **Registered shared governance organizations including non-voting participants and affiliates will have an opportunity to score proposed Market projects in a stakeholder survey**
 - Only Market projects of type Prioritize are included in survey
 - Proposed Enterprise projects are not included in the stakeholder survey
- **Each organization may provide one survey response with 100 points available to assign to projects based on their priorities**
- **There is a comment section after each project as well as at the end of survey to supplement scoring information**
- **All survey results are public, including identifying organization that provided the scoring and any comments**
- **The NYISO uses the survey scores to calculate a stakeholder Appeal, which is one of the criteria used by the NYISO to rank projects**

Stakeholder Scoring Survey

- **A draft of the survey and contacts to receive survey are included with today's BPWG materials for review**
 - Designated alternative contacts to receive the survey link are shown in red
 - Contact Brian Hurysz or Member Relations for any survey related issues including any changes to contact survey is being sent to
- **Each organization will be provided a unique link to access their survey that will be included in email sent to the MC representative**
- **MC representative can provide others the ability to access survey by sharing the link**
- **Anyone with survey link can submit the survey**
- **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

Stakeholder Scoring Survey Timeline

- All project cost information to be posted with June 8th BPWG materials
- Official survey will be distributed June 8th after BPWG
 - If last minute updates to survey are made at June 8th BPWG, this may delay the survey distribution
- Deadline for completing stakeholder survey is June 25th
- Survey results and the NYISO scoring to be reviewed at the July 13th BPWG

Project Descriptions

Milestone Definitions

Milestone	Definition
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.
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.
Study Complete	Scope of work to be performed has been completed; results and recommendations have been presented to the appropriate Business Owners and stakeholders.
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.
Functional Requirements	NYISO has completed documentation of the functional requirements and the Business Owner has approved.
Architectural Design	The architectural design document is complete and software development is ready to begin.
Projects with the following Milestones will generally be proposed as Continuing in future years, subject to Stakeholder input	
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.

Project Descriptions

- The NYISO has developed project descriptions for **4140** proposed Market projects
 - 0 Business & Finance, ~~1413~~ Capacity Market, 7 New Resource, 18 Energy Markets, 1 Planning & 2 TCC Market
 - 4 Mandatory, 2 Continuing, 29 Prioritize & 5 Future
- Expanding Application of Peak Hour Forecasts project description has been added to today's posted meeting materials and is the only revision.

Market Project Descriptions

■ Problem / Opportunity

- This section describes the business problem to be addressed or opportunity to be studied by the proposed project. Supporting background information, prior work, and analysis to the extent it is available should be included.

■ Project Objective(s) & Anticipated Deliverable(s)

- This section describes what the project should do to address the business problem or opportunity. It summarizes the approach and desired outcome, and may build on project work in a prior year. It includes the expected deliverables to satisfy the project objective and is tied to the proposed project milestone. The NYISO will work with the stakeholder(s) proposing a project to formulate what may be feasibly delivered in a particular time frame based on resourcing estimated for the effort.

■ Project Justification

- This section provides reason(s) why the candidate project should be considered. Examples would include addressing a FERC Order, Tariff requirements, automate manual processes, mitigate risk, market enhancements, State of the Market recommendations.

2022 Market Project Candidates - Updates, Costs, and Deliverables

Mandatory 2022 Market Projects

Item	Project	Product Area	Project Type	2022 Proposed Deliverable	2021 Deliverable	Estimated Cost (in millions)			
						Labor	Capital	Prof. Serv.	Total
1	Capacity Value Study	Capacity Market	Mandatory	Study Defined		0.18	0.00	0.45	0.63
2	CRIS Tracking	Capacity Market	Mandatory	Development Complete	Software Design				
3	DER Participation Model	New Resource	Mandatory	Deployment	Deployment	4.67	0.10	6.50	11.27
4	Support TSO and DSO Coordination Efforts	New Resource	Mandatory	Issue Discovery	Issue Discovery	0.12	0.00	0.20	0.32

Continuing 2022 Market Projects

Item	Project	Product Area	Project Type	2022 Proposed Deliverable	2021 Deliverable	Estimated Cost (in millions)			
						Labor	Capital	Prof. Serv.	Total
5	Comprehensive Mitigation Review	Capacity Market	Continuing	Deployment	Market Design Complete	0.16	0.00	0.60	0.76
6	Grid in Transition	New Resource	Continuing	Study Complete	Issue Discovery	0.17	0.00	0.50	0.67

Prioritize 2022 Market Projects

Item	Project	Product Area	Project Type	2022 Proposed Deliverable	2021 Deliverable	Estimated Cost (in millions)			
						Labor	Capital	Prof. Serv.	Total
7	15-Minute Transactions Enhancement - Requested by HQUS	Energy Market	Prioritize	Market Design Complete		0.09	0.00	0.25	0.34
8	5 Minute Transaction Scheduling - Requested by HQUS	Energy Market	Prioritize	Market Design Concept Proposed		0.10	0.00	0.25	0.35
9	Adjustment of Energy Offer/Bid Floor (SOM)	Energy Market	Prioritize	Market Design Complete		0.06	0.00	0.00	0.06
10	Advancing NYISO Transparency - Requested by DC Energy	Energy Market	Prioritize	Deployment					
11	Capacity Demand Curve Adjustments	Capacity Market	Prioritize	Study Complete		0.13	0.00	0.35	0.48
12	Constraint Specific Transmission Shortage Pricing (SOM)	Energy Market	Prioritize	Functional Requirements	Market Design Complete	0.10	0.00	0.00	0.10
13	Coordination of Interconnection and Transmission Expansion Study	Planning	Prioritize	Market Design Complete					

Prioritize 2022 Market Projects

Item	Project	Product Area	Project Type	2022 Proposed Deliverable	2021 Deliverable	Estimated Cost (in millions)			
						Labor	Capital	Prof. Serv.	Total
14	CRIS Expiration Evaluation	Capacity Market	Prioritize	Market Design Complete	Market Design Concept Proposed	0.13	0.00	0.00	0.13
15	Demand Curve Translation Enhancement (SOM)	Capacity Market	Prioritize	Market Design Complete		0.06	0.00	0.00	0.06
16	Dynamic Reserves (SOM)	Energy Market	Prioritize	Market Design Concept Proposed	Study Complete	0.12	0.00	0.40	0.52
17	Eliminate Fees for CTS Transactions with PJM (SOM)	Energy Market	Prioritize	Market Design Concept Proposed		0.05	0.00	0.00	0.05
18	Eliminate Offline GT Pricing (SOM)	Energy Market	Prioritize	Market Design Complete		0.11	0.00	0.00	0.11
19	Engaging the Demand Side	New Resource	Prioritize	Study Complete	Issue Discovery	0.18	0.00	0.25	0.43
20	Enhanced BSM Forecasts Assumptions (SOM)	Capacity Market	Prioritize	Market Design Concept Proposed		0.12	0.00	0.00	0.12

Prioritize 2022 Market Projects

Item	Project	Product Area	Project Type	2022 Proposed Deliverable	2021 Deliverable	Estimated Cost (in millions)			
						Labor	Capital	Prof. Serv.	Total
21	Expanding Application of Peak Hour Forecasts	Capacity Market	Prioritize	Market Design Complete		0.08	0.00	0.00	0.08
22	Grid Services from Renewable Generators - Requested by NYSERDA	Energy Market	Prioritize	Market Design Concept Proposed	Study Complete	0.10	0.00	0.15	0.25
23	Hybrid Aggregation Model	New Resource	Prioritize	Functional Requirements	Market Design Complete	0.23	0.00	0.30	0.53
24	Improve Duct-Firing Modeling (SOM)	Energy Market	Prioritize	Market Design Complete		0.10	0.00	0.30	0.40
25	Improving Capacity Accreditation (SOM)	Capacity Market	Prioritize	Market Design Concept Proposed		0.32	0.00	0.40	0.72
26	Internal Controllable Lines	New Resource	Prioritize	Market Design Complete		0.36	0.00	0.40	0.76
27	Lines in Series Constraint Pricing	Energy Market	Prioritize	Study Complete		0.06	0.00	0.00	0.06

Prioritize 2022 Market Projects

Item	Project	Product Area	Project Type	2022 Proposed Deliverable	2021 Deliverable	Estimated Cost (in millions)			
						Labor	Capital	Prof. Serv.	Total
28	Locational Marginal Pricing of Capacity (SOM)	Capacity Market	Prioritize	Market Design Concept Proposed		0.27	0.00	0.65	0.92
29	Long Island Reserve Constraint Pricing (SOM)	Energy Market	Prioritize	Market Design Complete		0.09	0.00	0.00	0.09
30	Monthly Demand Curves (SOM)	Capacity Market	Prioritize	Issue Discovery		0.11	0.00	0.00	0.11
31	More Granular Operating Reserves (SOM)	Energy Market	Prioritize	Market Design Concept Proposed		0.11	0.00	0.00	0.11
32	Multi-Level References	Energy Market	Prioritize	Functional Requirements		0.10	0.00	0.05	0.15
33	Reserving Capacity for TCC Balance-of-Period (BOP) Auctions	TCC	Prioritize	Software Design	Functional Requirements	0.25	0.00	0.00	0.25
34	Storage as Transmission - Requested by NYSERDA	New Resource	Prioritize	Market Design Concept Proposed		0.29	0.00	0.55	0.84

Prioritize 2022 Market Projects

Item	Project	Product Area	Project Type	2022 Proposed Deliverable	2021 Deliverable	Estimated Cost (in millions)			
						Labor	Capital	Prof. Serv.	Total
35	Time Differentiated TCCs – Requested by Calpine and Vitol	TCC	Prioritize	Market Design Complete	Market Design Concept Proposed	0.17	0.00	0.20	0.37
36	Transmission Security in the ICAP Market	Capacity Market	Prioritize	Deployment		0.25	0.00	0.13	0.38

Future 2022 Market Projects

Item	Project	Product Area	Project Type	2022 Proposed Deliverable	2021 Deliverable	Estimated Cost (in millions)			
						Labor	Capital	Prof. Serv.	Total
37	Capacity Transfer Rights for Internal Transmission Upgrades (SOM)	Capacity Market	Future						
38	Carbon Pricing	Energy Market	Future		Software Design				
39	Enhanced PAR Modeling (SOM)	Energy Market	Future						
40	Long Island PAR Optimization and Financial Rights (SOM)	Energy Market	Future						
41	Review of Real-Time Market Structure (SOM)	Energy Market	Future						

Next Steps

Next Steps

- **Cost review for all projects is scheduled for June 8th BPWG with stakeholder survey distribution after the meeting**
- **Deadline for completing scoring survey will be June 25th**
- **Scoring results will be presented at the July 13th 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?