

2022 Initial Project Budget Recommendation

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Agenda

- **Project Prioritization Phases, Milestones, Survey, and Timeline**
- **Project Updates**
- **Historic Budgets**
- **Stakeholder Scored Projects**
- **Initial Market Project Budget Recommendation**
- **Initial Enterprise Project Budget Recommendation**
- **Next Steps**

Project Prioritization Phases, Milestones, Survey, 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.

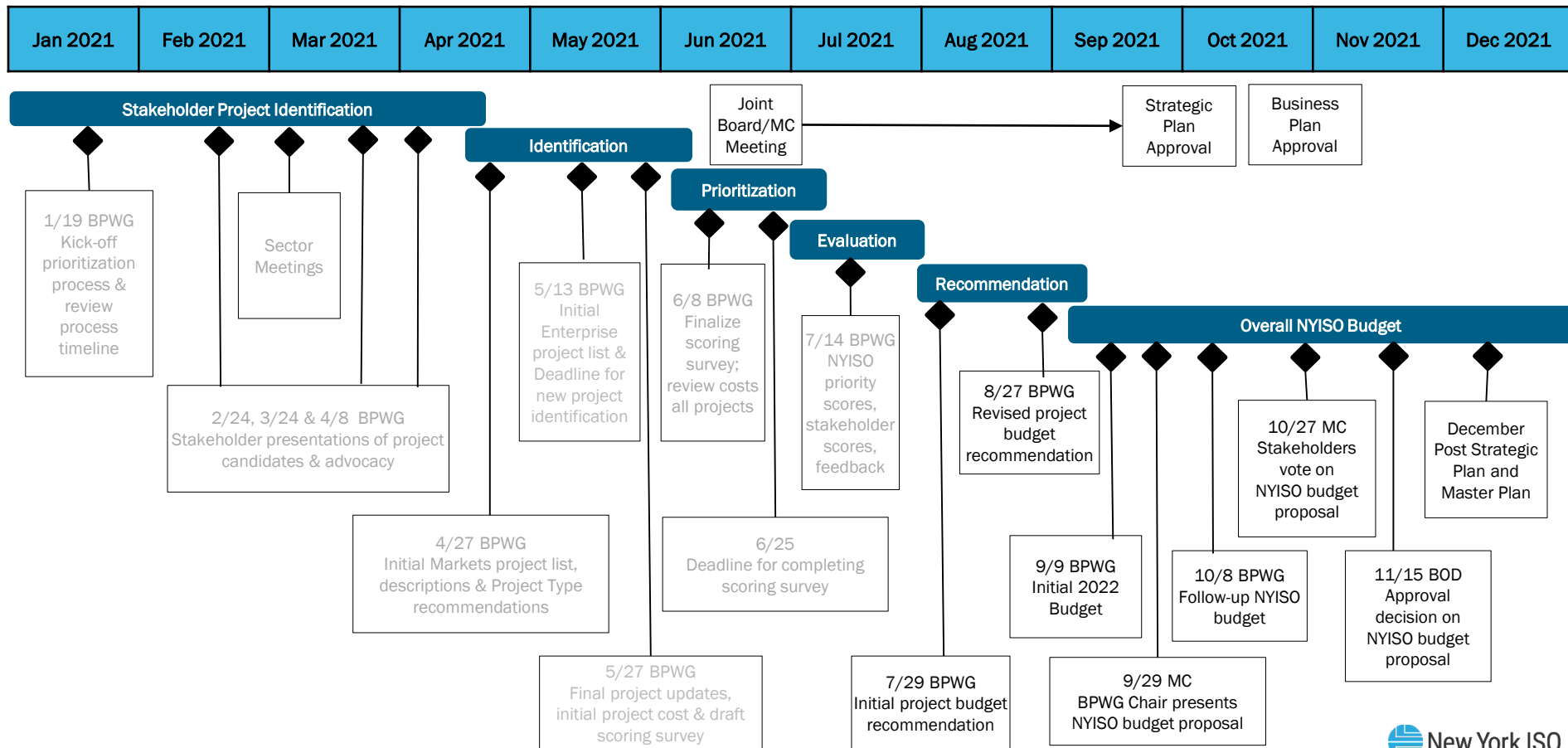
Project Type

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.

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.

2022 Proposed Project Prioritization Timeline



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

Evaluation and Recommendation Phase

- **During the evaluation process, the NYISO evaluates whether a project should be included in the budget and the appropriate scope for the project in following year**
 - The NYISO considers feasibility of completing the set of projects based upon resource constraints and funding requirements
 - The NYISO seeks to select a set of projects that maximizes value to the markets
 - The NYISO will continue to pay special attention to the high appeal projects in recognition of the strong stakeholder support and prioritize resources to these initiatives
- **NYISO proposes an initial and, after consideration of feedback, a final set of projects to be included in 2022 budget**

High Appeal Projects Not Selected

- **The NYISO carefully reviewed all projects identified as high appeal and attempted to include as many as those projects as possible in the 2022 project budget recommendation**
 - The NYISO seeks stakeholder feedback on high appeal projects not included in the recommendation, and suggestions on projects to displace
 - Stakeholders can provide verbal feedback at BPWG and written feedback
 - Feedback will be provided to and discussed with NYISO executives
 - If desired, stakeholders may present to the NYISO CEO or his Senior delegate to communicate the value and stakeholder support for a high appeal project
 - The NYISO will present a final list of recommended projects at the BPWG on August 27

Project Updates

Proposed Project Updates

- In order to fit several high priority projects in the budget recommendation, some adjustments to the proposed commitments are recommended
- The proposed commitment for Internal Controllable Lines of Market Design Complete is being changed to Market Design Concept Proposed so that the project can be included in the initial budget recommendation along with other high appeal projects
- The proposed commitment for Improve Duct-Firing Modeling (SOM) of Market Design Complete is being changed to Market Design Concept Proposed so that the project can be included in the initial budget recommendation along with other high appeal projects
- The initial budget recommendation proposes adding 2 additional market design headcount to reduce some professional service on market design projects, include Hybrid aggregation in the initial budget recommendation and keep DER Participation Model on track for 2022 deployment

ACC Control Room Renovation Project

- The Carman Road Control Room was commissioned in 1969 as the primary control room for New York Power Pool and remained the primary control room for the NYISO through 2013.
- In 2013 the NYISO commissioned the Krey Boulevard Control Room (“KCC”), which features a large video wall providing significantly enhanced situational awareness capabilities for New York and neighboring areas
- The Carman Road Control Room became the Alternate Control Room (“ACC”) in 2013 and still utilizes a mosaic tile board & older technologies, which has resulted in situational awareness disparities between the primary and alternate control rooms

ACC Control Room Renovation Project

- **The enhanced situational awareness capabilities of the KCC are control room best practices based on:**
 - 2003 Northeast Blackout recommendations
 - Transmission System Operations Situational Awareness
 - Balancing Area Operations Situational Awareness
 - Intermittent Resource Situational Awareness
 - Gas-Electric Coordination Situational Awareness
- **The need and resulting benefit of the 2022 ACC Control Room Renovation Project is to align and enhance situational awareness with the best practice capabilities that have been available at the KCC since 2013.**

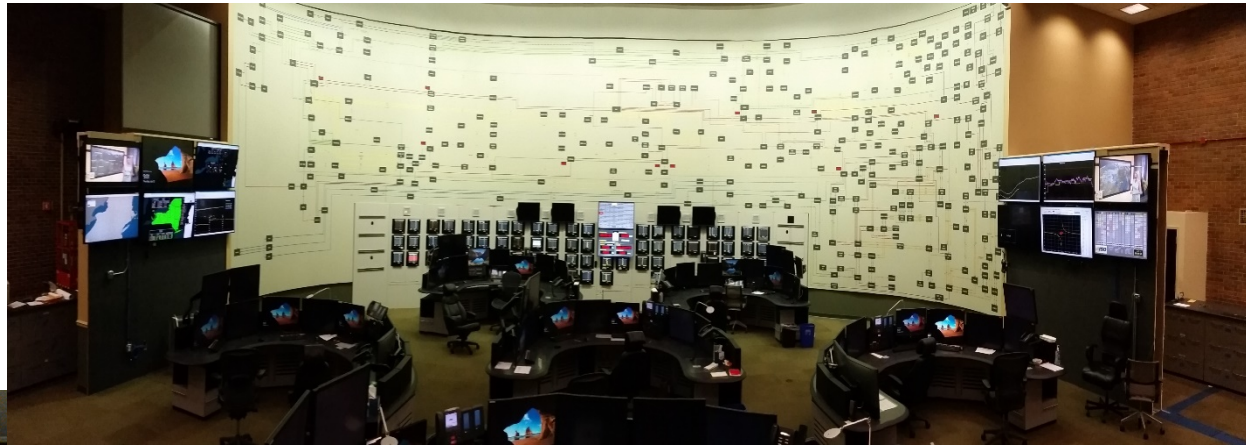
ACC Control Room Renovation Project

- **Situational Awareness differences between KCC and ACC Control Rooms :**
 - **2003 Northeast Blackout Recommendations**
 - Neighboring Control Area Transmission status outside NYISO
 - Neighboring Control Area Generator trips
 - Phasor Measurement Unit Situational Awareness
 - ACE/Frequency of external areas
 - Neighboring Control Area Reserve surplus information
 - Lake Erie Circulation trend
 - **Gas Electric Coordination**
 - Gas pipeline information (Operational Flow Orders)
 - **Intermittent Resource Situational Awareness**
 - Load forecast, solar forecast, wind forecast and error trends
 - Regional Weather displays
 - Lightning Strike displays

ACC Control Room Renovation Project

- **Situational Awareness differences between KCC and ACC Control Rooms :**
 - New York Transmission Operations / Balancing Area Operations Situational Awareness
 - System state change visual notification
 - Transmission Loading when approaching limits
 - External interface loadings
 - Reactive device status (capacitor/reactor/svc)
 - Substation Voltage over limits
 - PAR optimization status
 - Generator status (online/offline)
 - Generator output
 - Generator reserve status
 - Enhanced 115kv transmission system representation
 - PMU substation status
 - Operating Reserves Trend

ACC >>>



<<<KCC

Timing

- **NYISO Operations requires operational awareness enhancements be in place at the ACC prior to performing the critical replacement of the aging KCC Uninterruptible Power Supply (“UPS”) system, which is to begin in late 2022**
 - This will allow for sustained operations out of the ACC during the KCC UPS replacement and maintain continuity of grid monitoring
 - The NYISO has been notified that the UPS manufacturer will no longer be able to support these systems after March 2023

Historic Budgets

2022 Proposed Projects Compared to Historic Approved Budgets

Project Budget*	Estimated Cost (in millions)				Mandatory	Continuing
	Labor	Capital	Prof. Serv.	Total		
2022 Proposed Projects	16.82	12.65	18.65	48.12	12.39	17.23
2022 Initial Recommendation	13.36	12.48	11.35	37.20	11.56	16.95
2021 Approved	11.58	5.92	9.02	26.52	7.58	14.15
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

* Excludes EMS/BMS Upgrade project as it had separate financing

Markets & Enterprise Budget Breakdown

	Markets Estimated Cost (in millions)					
Project Budget*	Labor	Capital	Prof. Serv.	Total	Mandatory	Continuing
2022 Initial Recommendation	7.79	0.10	7.52	15.41	11.56	1.18
2021 Approved	6.45	0.10	5.54	12.09	5.80	4.58
2020 Approved	6.89	0.27	5.85	13.01	10.10	0.77

	Enterprise Estimated Cost (in millions)					
Project Budget*	Labor	Capital	Prof. Serv.	Total	Mandatory	Continuing
2022 Initial Recommendation	5.57	12.38	3.83	21.79	0.00	15.77
2021 Approved	5.13	5.82	3.49	14.44	1.77	9.57
2020 Approved	6.67	5.46	6.55	18.68	9.97	10.74

Note: The NYISO did not have separate Market and Enterprise categories prior to 2020

Stakeholder Scored Projects

Budget Recommendations for Stakeholder Scored Projects

Projects excluded from initial recommendation are shown as strikethrough

Proposed Projects	Raw Score (Avg.)	Weighted Score	Sector Count	Sum of Scores	Appeal Score	Stakeholder Appeal
Internal Controllable Lines	● 12.8	● 12.2	● 5.0	30.0	10	High
Improving Capacity Accreditation (SOM)	● 9.2	● 12.1	● 3.0	24.3	10	High
Coordination of Interconnection and Transmission Expansion Study	● 9.8	● 10.9	● 4.0	24.8	10	High
Hybrid Aggregation Model	● 9.7	● 9.7	● 4.0	23.4	10	High
Engaging the Demand Side	● 9.3	● 8.5	● 3.0	20.8	10	High
Dynamic Reserves (SOM)	● 6.1	● 7.6	● 2.0	15.7	10	High
Grid Services from Renewable Generators	● 5.7	● 5.7	● 3.0	14.4	10	High
Time-Differentiated TCCs	● 4.9	● 4.7	● 1.0	10.6	7	Medium
CRIS Expiration Evaluation	● 3.0	● 3.8	● 2.0	8.8	7	Medium
Improved Duct-Firing Cycle Modeling (SOM)	● 3.7	● 2.9	● 1.0	7.6	7	Medium

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

Budget Recommendations for Stakeholder Scored Projects

Projects excluded from initial recommendation are shown as strikethrough

Proposed Projects	Raw Score (Avg.)	Weighted Score	Sector Count	Sum of Scores	Appeal Score	Stakeholder Appeal
Storage as Transmission	3.4	2.7	2.0	8.1	7	Medium
Demand Curve Translation Enhancement (SOM)	1.2	2.1	1.0	4.3	3	Low
Constraint Specific Transmission Shortage Pricing (SOM)	1.6	2.1	0.0	3.7	3	Low
5-Minute Transaction Scheduling	2.6	2.1	1.0	5.7	7	Medium
Capacity Demand Curve Adjustments	1.3	1.9	0.0	3.2	3	Low
Advancing NYISO Transparency	2.9	1.5	0.0	4.4	7	Medium
More Granular Operating Reserves (SOM)	2.5	1.4	0.0	3.9	3	Low
Expanding Application of Peak Hour Forecasts	0.5	1.2	1.0	2.7	0	None
Reserving Capacity for TCC Balance-of-Period (BoP)	1.3	1.2	0.0	2.5	3	Low
Eliminate Offline GT Pricing (SOM)	0.9	1.2	1.0	3.1	0	None

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

Budget Recommendations for Stakeholder Scored Projects

Projects excluded from initial recommendation are shown as strikethrough

Proposed Projects	Raw Score (Avg.)	Weighted Score	Sector Count	Sum of Scores	Appeal Score	Stakeholder Appeal
Multi-Level References-	● 0.6	● 0.9	● 0.0	1.5	0	None
Adjustment of Energy Offer/Bid Floor (SOM)	● 0.7	● 0.8	● 0.0	1.5	0	None
Transmission Security in the ICAP Market-	● 1.6	● 0.7	● 0.0	2.2	3	Low
15-Minute Transactions Enhancement-	● 1.0	● 0.6	● 0.0	1.7	0	None
Enhanced BSM Forecasts Assumptions (SOM)-	● 0.7	● 0.6	● 0.0	1.3	0	None
Eliminate Fees for CTS Transactions with PJM (SOM)	● 0.7	● 0.4	● 0.0	1.2	0	None
Long Island Reserve Constraint Pricing (SOM)-	● 0.8	● 0.4	● 0.0	1.2	0	None
Locational Marginal Pricing of Capacity (SOM)	● 1.1	● 0.1	● 0.0	1.1	0	None
Lines in Series Constraint Pricing-	● 0.1	● 0.0	● 0.0	0.1	0	None
Monthly Demand Curves (SOM)	● 0.2	● 0.0	● 0.0	0.2	0	None

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

Initial Market Project Budget Recommendation

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	0.17	0.00	0.00	0.17	
3	DER Participation Model	New Resource	Mandatory	Deployment	Deployment	4.67 5.47	0.10	6.50 4.87	11.27 10.44	Cost revised
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 0.19	0.00	0.60 0.40	0.76 0.59	Cost revised
6	Grid in Transition	New Resource	Continuing	Study Complete	Issue Discovery	0.17 0.19	0.00	0.50 0.40	0.67 0.59	Cost revised

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		0.13	0.00	0.25	0.38
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		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
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	Market Design Concept Proposed	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 0.29	0.00	0.30 0.00	0.53 0.29
24	Improve Duct-Firing Modeling (SOM)	Energy Market	Prioritize	Market Design Complete Market Design Concept Proposed		0.10 0.09	0.00	0.30 0.15	0.40 0.24
25	Improving Capacity Accreditation (SOM)	Capacity Market	Prioritize	Market Design Complete		0.32	0.00	0.40	0.72
26	Internal Controllable Lines	New Resource	Prioritize	Market Design Complete Market Design Concept Proposed		0.36	0.00	0.40 0.25	0.76 0.61
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	Market-Design Concept-Proposed		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						

Initial Enterprise Project Budget Recommendation

Continuing 2022 Enterprise Projects

Item	Project	Product Area	Project Type	2022 Proposed Deliverable	2021 Deliverable	Estimated Cost (in millions)				
						Labor	Capital	Prof. Serv.	Total	
1	ACC Control Room Renovations	Enterprise	Continuing	Deployment		0.49	5.66	0.00	6.15	
2	Application Platform Upgrade	Enterprise	Continuing	Deployment	Deployment	0.48	0.00	0.00	0.48	
3	Database Upgrade	Enterprise	Continuing	Deployment	Deployment	0.26 0.28	0.00	0.00	0.26 0.28	Cost revised
4	EMS/BMS Operational Enhancements	Operations & Reliability	Continuing	Deployment	Deployment	0.08	0.00	1.21	1.29	
5	IT Infrastructure Automation	Enterprise	Continuing	Deployment	Deployment	0.20	0.10	0.22 0.12	0.51 0.41	Cost revised
6	ITSM Security Enhancements	Enterprise	Continuing	Deployment	Deployment	0.44	0.34	0.31	1.09	
7	Network Infrastructure Upgrade	Enterprise	Continuing	Deployment	Deployment	0.19	1.56	0.00	1.75	

Continuing 2022 Enterprise Projects

Item	Project	Product Area	Project Type	2022 Proposed Deliverable	2021 Deliverable	Estimated Cost (in millions)				
						Labor	Capital	Prof. Serv.	Total	
8	Outage Management System (OMS)	Operations & Reliability	Continuing	Deployment	Development Complete	0.61	0.00	0.86 0.73	1.48 1.34	Cost revised
9	UPS Replacement	Enterprise	Continuing	Study Complete		0.08	0.65 0.85	0.00	0.74 0.93	Cost revised
10	Windows System Upgrade	Enterprise	Continuing	Deployment	Deployment	0.23	1.66	0.15	2.04	

Prioritize 2022 Enterprise Projects

Item	Project	Product Area	Project Type	2022 Proposed Deliverable	2021 Deliverable	Estimated Cost (in millions)			
						Labor	Capital	Prof. Serv.	Total
11	ASIS Rule for Re-write – Validating Exports	Energy Market	Prioritize	Deployment		0.08	0.00	0.00	0.08
12	BMS Performance Certification	Enterprise	Prioritize	Study Complete		0.08	0.00	1.00	1.08
13	BTM Solar Demand Forecasting Product Enhancements	Planning	Prioritize	Functional Requirements		0.10 0.13	0.00	0.00	0.10 0.13
14	Business Entity and Credit Questionnaire Enhancements	Business & Finance	Prioritize	Deployment		0.18	0.00	0.00	0.18
15	CMS and ConInvoice Data Integration	Business & Finance	Prioritize	Functional Requirements		0.08	0.00	0.00	0.08
16	Content Management and Collaboration Solution	Enterprise	Prioritize	Deployment		0.14	0.03	0.00	0.16
17	Contingency Analysis Results for Transmission Owner Situational Awareness	Operations & Reliability	Prioritize	Functional Requirements		0.09	0.00	0.00	0.09

Cost revised

Prioritize 2022 Enterprise Projects

Item	Project	Product Area	Project Type	2022 Proposed Deliverable	2021 Deliverable	Estimated Cost (in millions)			
						Labor	Capital	Prof. Serv.	Total
18	Control Room Logging Replacement	Operations & Reliability	Prioritize	Study Complete		0.14	0.21	0.00	0.35
19	Credit Price Spread Updates Virtual and External Transactions	Business & Finance	Prioritize	Functional Requirements		0.07	0.09	0.00	0.16
20	Demand Forecasting Operational Reporting Enhancements	Planning	Prioritize	Functional Requirements		0.09	0.00	0.00	0.09
21	Finance Systems Technology Upgrades	Enterprise	Prioritize	Deployment		0.14	0.00	0.00	0.14
22	ICAP Supplier Status Enhancements	Capacity Market	Prioritize	Functional Requirements		0.04	0.00	0.00	0.04
23	IT Development and Control of Compliance Reports	Operations & Reliability	Prioritize	Deployment		0.08	0.00	0.00	0.08
24	Krey Control Room A/V Replacement	Enterprise	Prioritize	Study Complete		0.03	0.00	0.05	0.08

Prioritize 2022 Enterprise Projects

Item	Project	Product Area	Project Type	2022 Proposed Deliverable	2021 Deliverable	Estimated Cost (in millions)			
						Labor	Capital	Prof. Serv.	Total
25	LFDR Upgrade and Enhancements	Planning	Prioritize	Functional Requirements		0.10	0.00	0.00	0.10
26	Market Validation, Reporting and Penalty Enhancements	Capacity Market	Prioritize	Functional Requirements		0.08	0.00	0.00	0.08
27	Meter Services System	Business & Finance	Prioritize	Functional Requirements		0.08	0.00	0.00	0.08
28	Microsoft 365	Enterprise	Prioritize	Deployment		0.47	0.28	0.55	1.30
29	Minimum Oil Burn Enhancements	Business & Finance	Prioritize	Deployment		0.18	0.00	0.00	0.18
30	Natural Gas Notices Enhancement Project	Operations & Reliability	Prioritize	Functional Requirements		0.06	0.00	0.14	0.20
31	NetBackup Appliance Refresh	Enterprise	Prioritize	Deployment		0.10	1.39	0.25	1.73

Prioritize 2022 Enterprise Projects

Item	Project	Product Area	Project Type	2022 Proposed Deliverable	2021 Deliverable	Estimated Cost (in millions)			
						Labor	Capital	Prof. Serv.	Total
32	Next Generation Test Environment Study	Enterprise	Prioritize	Study Complete		0.03	0.00	0.00	0.03
33	NYISO Hosted Siemens Cloud	Planning	Prioritize	Deployment		0.04 0.06	0.18	0.00	0.22 0.24
34	On-Boarding of New Resources	New Resource	Prioritize	Study Complete		0.15	0.00	0.00	0.15
35	Outage States Portal/Dashboard	Capacity Market	Prioritize	Functional Requirements		0.08	0.00	0.00	0.08
36	PI Tools Upgrade	Operations & Reliability	Prioritize	Deployment		0.16	0.00	0.11	0.27
37	Price Validation Technology Upgrades	Enterprise	Prioritize	Software Design		0.15	0.00	0.15	0.30
38	Privilege Access Management Upgrade and Enhancements	Enterprise	Prioritize	Deployment		0.15	0.00	0.05	0.20

Cost revised

Prioritize 2022 Enterprise Projects

Item	Project	Product Area	Project Type	2022 Proposed Deliverable	2021 Deliverable	Estimated Cost (in millions)			
						Labor	Capital	Prof. Serv.	Total
39	Salesforce CRM Optimization	Business & Finance	Prioritize	Deployment		0.19	0.08	0.23	0.49
40	SDDB Steady State Dynamics Database MP Portal	Planning	Prioritize	Deployment		0.24	0.00	0.04	0.28
41	System Demand End Use and Electrification Forecasting Enhancements	Planning	Prioritize	Study Complete		0.04	0.00	0.10	0.13
42	Transactions Modifications and Confirmation Tool	Business & Finance	Prioritize	Deployment		0.12 0.16	0.00	0.00	0.12 0.16
43	Unified Communications Platform	Enterprise	Prioritize	Deployment		0.07	0.35	0.00	0.41
44	Web Content Management System Upgrade	Enterprise	Prioritize	Deployment		0.10	0.00	0.13	0.23

Cost revised

Next Steps

Next Steps

- **NYISO is still evaluating the recommended projects and costs in consideration of the NYISO overall budget**
- **Written feedback on the 2022 Project Budget Recommendation may be provided until August 6th**
 - Send to Brian Hurysz at bhurysz@nyiso.com : (518) 461-6405
- **Review the NYISO's revised project budget recommendation at the August 27th BPWG meeting**

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?