

2024 Final Project Budget Recommendation

Kevin Pytel

Senior Manager, Product and Project Management

Budget and Priorities Working Group

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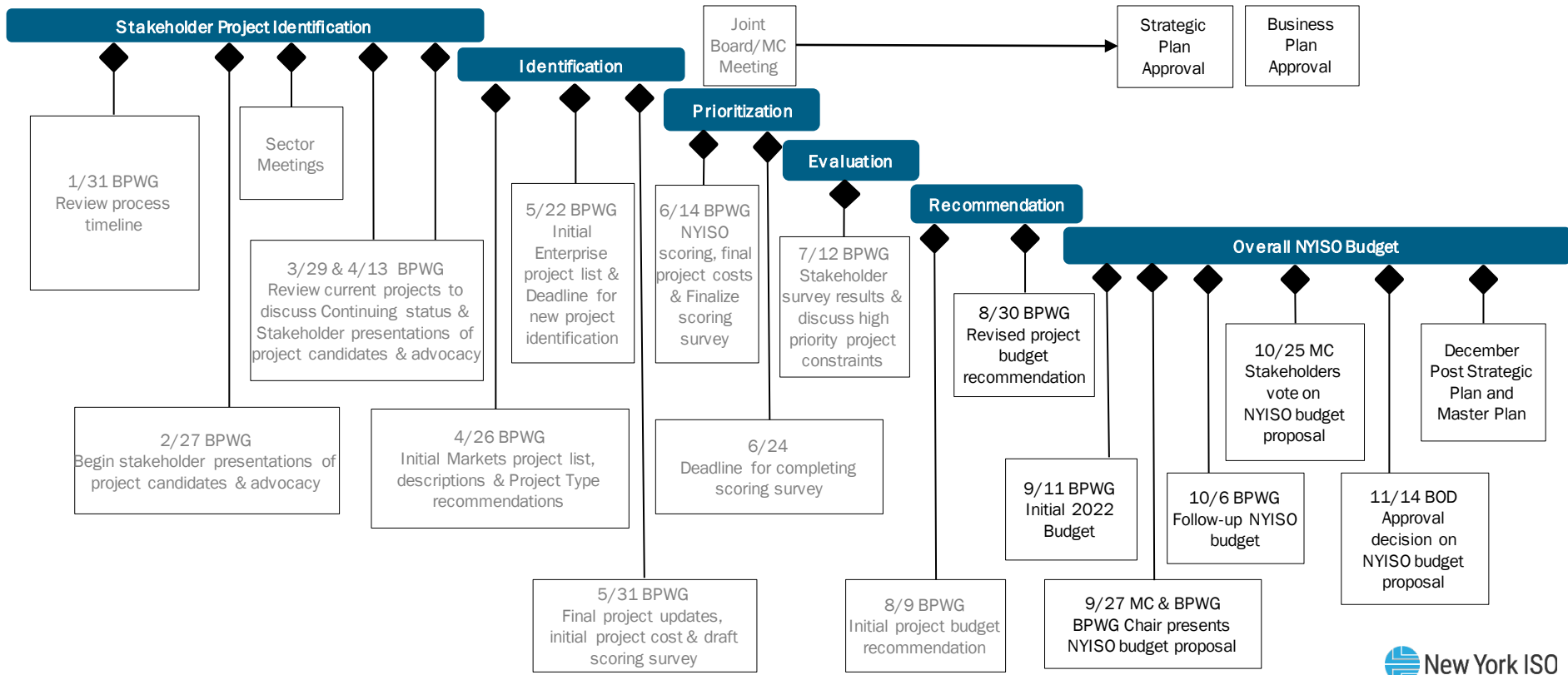
Agenda

- **Project Prioritization Timeline**
- **Project Updates**
- **Final Market Project Budget Recommendation**
- **Final Enterprise Project Budget Recommendation**
- **Historic Budgets**
- **Next Steps**
- **Appendix**

Project Prioritization Timeline

2024 Proposed Project Prioritization Timeline

Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023
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Project Updates

(Updates in red)

Proposed Project Updates

- In order to fit several high priority projects in the budget recommendation, some adjustments to the proposed projects are recommended
- Ambient Adjusted Transmission Lines Rating: Project could not fit in budget. The NYISO proposes removal of project in 2024 which resolves resource and budget constraints.
- Co-located Steam and Storage: Synergies exist with the current Hybrid Aggregation Model Project. **The NYISO will combine the scope from this project into the Hybrid Aggregation Model project, as the NYISO believes the proposed scope will not delay the software being developed for the Hybrid Aggregation Model project. An updated project description is posted with the meeting materials.**
- Participation Opportunities for Small DER: While the NYISO ranked this project higher in the project list, in recognition of stakeholders not valuing this project as high as other initiatives, the NYISO agrees to defer this as a project effort for 2024 so that higher-priority stakeholder initiatives can be included in the proposed project list.
 - This scope is not in the Engaging the Demand Side project.
- 3rd Floor Data Center Migration (Krey): Modify deliverable from Deployment to Study Complete, which resolves budget constraints.
- **Expanding Peak Hour Definition will be included in the budget**

Final Market Project Budget Recommendation

(Updates in red)

Prioritize 2024 Market Projects

Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
5 Minute Transaction Scheduling	Energy Market	Prioritize	Market Design Concept Proposed		0.21	0.00	0.00	0.21
Advanced Storage Modeling and Operation	New Resource	Prioritize	Market Design Concept Proposed		0.36	0.00	0.20	0.56
Advancing NYISO Transparency – Requested by DC Energy	Energy Market	Prioritize	Deployment		0.22	0.00	0.42	0.64
Clean Hydrogen - Requested by NextEra	New Resource	Prioritize	Market Design Concept Proposed		0.20	0.00	0.05	0.25
Co-located Steam and Storage (Combined with Hybrid Aggregation Model)	New Resource	Prioritize	Development Complete		0.11	0.00	0.00	0.11
Coordinated Grid Planning Process (CGPP) Continuation	Planning	Mandatory	Study Defined		0.07	0.00	0.20	0.27
Dynamic Reserves - Phase 1	Energy Market	Prioritize	Functional Requirements	Market Design Complete	0.34	0.00	0.70	1.04

Prioritize 2024 Market Projects

Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
Eliminate Offline GT Pricing	Energy Market	Prioritize	Deployment		0.23	0.00	0.00	0.23
Engaging the Demand Side	New Resource	Prioritize	Market Design Concept Proposed	Issue Discovery	0.19	0.00	0.25	0.44
Evolving Resource Adequacy Model	Capacity Market	Prioritize	Study Complete		0.24	0.00	0.20	0.44
Expanding Peak Hour Definition - Requested by DPS	Capacity Market	Prioritize	Market Design Complete		0.13	0.00	0.00	0.13
Granular Capacity Market Pricing	Capacity Market	Prioritize	Issue Discovery		0.22	0.00	0.25	0.47
Improve Duct-Firing Modeling	Energy Market	Prioritize	Functional Requirements		0.19	0.00	0.60	0.79
Internal Controllable Lines	New Resource	Prioritize	Functional Requirements	Market Design Complete	0.39	0.00	0.20	0.59

Prioritize 2024 Market Projects

					Estimated Cost (in millions)			
Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
LCR Optimizer Enhancements	Capacity Market	Prioritize	Deployment	Market Design Complete	0.13	0.00	0.10	0.23
Long Island Reserve Constraint Pricing	Energy Market	Prioritize	Market Design Concept Proposed		0.11	0.00	0.10	0.21
Market Purchase Hub Transactions - Requested by LIPA	Energy Market	Prioritize	Market Design Concept Proposed		0.08	0.00	0.20	0.28
MDIWG Support	New Resource	Prioritize	Issue Discovery		0.04	0.00	0.00	0.04
Mitigation Threshold Review	Energy Market	Prioritize	Market Design Concept Proposed		0.04	0.00	0.00	0.04
Operating Reserves Performance	Energy Market	Prioritize	Market Design Complete		0.18	0.00	0.10	0.28
Participation Opportunities for Small DER	New Resource	Prioritize	Market Design Concept Proposed		0.12	0.00	0.25	0.37

Prioritize 2024 Market Projects

					Estimated Cost (in millions)			
Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
Pivotal Supplier Calculation Change	Capacity Market	Prioritize	Market Design Concept Proposed		0.06	0.00	0.00	0.06
Reference Level Software Cleanup	Energy Market	Prioritize	Deployment		0.27	0.00	0.05	0.32
Reserving Capacity for TCC Balance of Period (BOP) Auctions	TCC	Prioritize	Software Design		0.22	0.00	0.00	0.22
Storage as Transmission	New Resource	Prioritize	Market Design Concept Proposed	Issue Discovery	0.18	0.00	0.00	0.18
SubAccounts for Reporting (requested by NRG)	Business & Finance	Prioritize	Market Design Complete		0.06	0.00	0.00	0.06
Time Differentiated TCCs	TCC	Prioritize	Market Design Complete		0.25	0.00	0.15	0.40
Valuing Transmission Security	Capacity Market	Prioritize	Issue Discovery		0.24	0.00	0.25	0.49

Prioritize 2024 Market Projects

						Estimated Cost (in millions)			
Item	Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
30	Winter Reliability Capacity Enhancements	Capacity Market	Prioritize	Issue Discovery		0.20	0.00	0.25	0.45

Mandatory 2024 Market Projects

Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
Ambient Adjusted Transmission Lines Rating	Energy Market	Mandatory	Development Complete	Functional Requirements	0.36	0.00	1.00	1.36
CRIS Expiration Evaluation	Capacity Market	Mandatory	Development Complete	Functional Requirements	0.25	0.00	0.25	0.50
Demand Curve Reset	Capacity Market	Mandatory	Study Complete	Study Defined	0.41	0.00	1.50	1.91
FERC Order 2222 Compliance	New Resource	Mandatory	Functional Requirements	Market Design Concept Proposed	1.01	0.00	0.25	1.26
Integrating Champlain Hudson Power Express (CHPE)	New Resource	Mandatory	Study Complete		0.11	0.00	0.40	0.51
Interconnection Process Enhancements	Planning	Mandatory	Deployment	Market Design Complete	0.22	0.05	0.40	0.67
Modeling Improvements for Capacity Accreditation	Capacity Market	Mandatory	Deployment	Functional Requirements	0.31	0.00	0.10	0.41

Continuing 2024 Market Projects

Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
Balancing Intermittency	Energy Market	Continuing	Market Design Complete	Market Design Concept Proposed	0.28	0.00	0.57	0.85
Emissions Transparency	Energy Market	Continuing	Deployment	Functional Requirements	0.20	0.00	0.00	0.20
Evolving Financial Transaction Capabilities - Bilateral Transactions	Energy Market	Continuing	Deployment	Software Design	0.34	0.00	0.00	0.34
Hybrid Aggregation Model & Co-located Steam and Storage	New Resource	Continuing	Deployment	Software Design	1.89	0.00	1.00	2.89

Future 2024 Market Projects

Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
Capacity Transfer Rights for Internal Transmission Upgrades	Capacity Market	Future						
Dynamic Reserves – Phase 2	Energy Market	Future						
Eliminate Fees for CTS Transactions with PJM	Energy Market	Future						
Locational Marginal Pricing of Capacity	Capacity Market	Future						
Long Island PAR Optimization and Financial Rights	Energy Market	Future						
M2M West PARs	Energy Market	Future						
More Granular Operating Reserves	Energy Market	Future						
Reserves for Congestion Management	Energy Market	Future						
Review of Real Time Market Structure	Energy Market	Future						
Separating Up and Down Regulation Service	Energy Market	Future						

Enterprise Project Budget Recommendation

(No Changes from August 9th BPWG)

Prioritize 2024 Enterprise Projects

					Estimated Cost (in millions)			
Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
3rd Floor Data Center Migration (Krey)	Enterprise	Prioritize	Deployment Study Complete		0.10	0.00	0.00	0.10
Access Management Program Enhancements	Enterprise	Prioritize	Deployment		0.62	0.00	0.10	0.72
Application Platform Upgrade	Enterprise	Prioritize	Deployment	Deployment	0.93	0.00	0.00	0.93
Automation of DMNC Validation	Operations & Reliability	Prioritize	Deployment		0.15	0.00	0.00	0.15
Bidding Upload Download Security Enhancements	Enterprise	Prioritize	Deployment		0.25	0.00	0.00	0.25
Block Storage Refresh	Enterprise	Prioritize	Deployment	Deployment	0.12	0.96	0.40	1.47
Budgeting Tool	Business & Finance	Prioritize	Deployment		0.16	0.15	0.08	0.38

Prioritize 2024 Enterprise Projects

Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
Building Management System (BMS) Controls Upgrade	Enterprise	Prioritize	Deployment	Deployment	0.34	1.00	0.00	1.34
Capacity Analysis Commitment Tool (CACT)	Operations & Reliability	Prioritize	Deployment		0.23	0.00	0.75	0.98
Cisco Server Refresh - Linux	Enterprise	Prioritize	Deployment	Development Complete	0.12	0.94	0.00	1.06
CMS and ConInvoice Data Integration	Business & Finance	Prioritize	Deployment	Deployment	0.39	0.00	0.00	0.39
Conference Room Technology Upgrade	Enterprise	Prioritize	Deployment		0.06	0.32	0.06	0.44
ConInvoice Testability Improvements	Business & Finance	Prioritize	Deployment		0.19	0.00	0.00	0.19
Control Room Logging Replacement	Operations & Reliability	Prioritize	Functional Requirements		0.10	0.00	0.00	0.10

Prioritize 2024 Enterprise Projects

					Estimated Cost (in millions)			
Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
Demand Forecasting Operational Reporting Enhancements	Planning	Prioritize	Deployment	Functional Requirements	0.20	0.00	0.02	0.22
EMS/BMS Operational Enhancements	Operations & Reliability	Prioritize	Deployment	Deployment	0.09	0.00	0.38	0.46
EMS/BMS Technologies Upgrade	Operations & Reliability	Prioritize	Development Complete		0.74	0.00	1.63	2.37
Enhanced Exterior Security Profile (Carmen)	Enterprise	Prioritize	Deployment		0.04	1.20	0.00	1.24
Enterprise Project Collaboration	Enterprise	Prioritize	Study Complete		0.15	0.10	0.00	0.25
Fence Vibration System Replacement (Krey)	Enterprise	Prioritize	Deployment		0.02	0.15	0.15	0.32
Generator Data Reporting System	Capacity Market	Prioritize	Study Complete		0.32	0.15	0.00	0.47

Prioritize 2024 Enterprise Projects

					Estimated Cost (in millions)			
Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
Krey Control Room A/V Replacement	Enterprise	Prioritize	Deployment	Deployment	0.02	0.10	0.10	0.22
ICAP AMS Improved System Integrations, Customer Transitions and Offers Project	Capacity Market	Prioritize	Functional Requirements		0.13	0.00	0.00	0.13
ICAP Auction Simulator Enhancements	Capacity Market	Prioritize	Functional Requirements		0.16	0.00	0.00	0.16
ICAP Supplier Status Enhancements	Capacity Market	Prioritize	Functional Requirements		0.09	0.00	0.00	0.09
IT Development and Control of Compliance Reports	Operations & Reliability	Prioritize	Deployment		0.22	0.00	0.00	0.22
LDAP Upgrade	Enterprise	Prioritize	Deployment		0.31	0.03	0.00	0.34
LFDR Upgrade and Enhancements	Planning	Prioritize	Deployment	Deployment	0.53	0.00	0.00	0.53

Prioritize 2024 Enterprise Projects

					Estimated Cost (in millions)			
Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
Market Validation, Reporting and Penalty Enhancements	Capacity Market	Prioritize	Deployment	Software Design	0.29	0.00	0.25	0.54
Micro-Segmentation	Enterprise	Prioritize	Deployment	Study Complete	0.26	0.15	0.05	0.46
Microsoft 365	Enterprise	Prioritize	Deployment	Deployment	0.33	0.26	0.02	0.61
Midrange and Storage Upgrade	Enterprise	Prioritize	Study Complete		0.18	0.00	0.15	0.33
Network Infrastructure Upgrade	Enterprise	Prioritize	Deployment	Deployment	0.31	0.50	0.10	0.91
New Ties and Cons Management	Business & Finance	Prioritize	Functional Requirements		0.14	0.00	0.00	0.14
Office Mechanical Systems (Krey)	Enterprise	Prioritize	Deployment		0.08	1.95	0.00	2.03

Prioritize 2024 Enterprise Projects

					Estimated Cost (in millions)			
Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Labor	Capital	Prof. Serv.	Total
On-Boarding of New Resources	New Resource	Prioritize	Study Complete	Study Complete	0.07	0.00	0.00	0.07
Operations - NERC Audit Preparation	Operations & Reliability	Prioritize	Study Complete		0.11	0.00	0.09	0.20
Optimization Solver Upgrade (Gurobi)	Operations & Reliability	Prioritize	Deployment		0.15	0.50	0.32	0.97
Outage States Portal Dashboard	Capacity Market	Prioritize	Functional Requirements		0.09	0.00	0.00	0.09
Price Correction Report Modifications	Operations & Reliability	Prioritize	Deployment		0.14	0.00	0.00	0.14
Procurement and Implementation of PSCAD and E Tran	Planning	Prioritize	Deployment		0.09	0.25	0.25	0.60
Production Cost Software Upgrade	Planning	Prioritize	Software Design		0.22	0.00	0.30	0.52

Prioritize 2024 Enterprise Projects

Project	Product Area	Project Type	2024 Proposed Deliverable	2023 Deliverable	Estimated Cost (in millions)			
					Labor	Capital	Prof. Serv.	Total
Reliability Compliance Tools Enhancements	Operations & Reliability	Prioritize	Deployment		0.36	0.00	0.15	0.51
Renewable Energy Forecast Integration and Reporting Enhs	Planning	Prioritize	Issue Discovery		0.08	0.00	0.00	0.08
SDX Replacement	Business & Finance	Prioritize	Deployment		0.18	0.00	0.00	0.18
Secure Communication Channel with MPs	Energy Market	Prioritize	Deployment	Deployment	0.13	0.00	0.25	0.38
Telemetry Tone Gear Upgrade	Enterprise	Prioritize	Deployment		0.11	0.45	0.25	0.81
Thunderstorm Alert	Business & Finance	Prioritize	Functional Requirements		0.13	0.00	0.00	0.13
Watchlist for Rest of State Units	Energy Market	Prioritize	Deployment		0.10	0.00	0.00	0.10
Windows Server Hardware Upgrade	Enterprise	Prioritize	Deployment	Deployment	0.42	2.12	0.00	2.54

Historic Budgets

(Updates in red)

2024 Proposed Projects Compared to Historic Approved Budgets

Project Budget*	Estimated Cost (in millions)				Mandatory	Continuing
	Labor	Capital	Prof. Serv.	Total		
2024 Final Recommendation	18.03	9.70	13.89	41.62	5.82	4.16
2023 Approved	13.74	9.72	8.51	31.98	5.58	10.37
2022 Approved	13.36	12.48	11.35	37.20	11.56	1.18
2021 Approved	11.58	5.92	9.02	26.52	7.58	14.15

Markets & Enterprise Budget Breakdown

	Markets Estimated Cost (in millions)					
Project Budget*	Labor	Capital	Prof. Serv.	Total	Mandatory	Continuing
2024 Final Recommendation	8.62	0.05	8.12	16.79	5.53	4.16
2023 Approved	7.02	0.00	4.34	11.36	5.58	1.22
2022 Approved	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
	Enterprise Estimated Cost (in millions)					
Project Budget*	Labor	Capital	Prof. Serv.	Total	Mandatory	Continuing
2024 Initial Recommendation	9.40	9.65	5.77	24.83	0.29	0.00
2023 Approved	6.72	9.72	4.18	20.62	0.00	9.15
2022 Approved	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

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

Next Steps

Next Steps

- **Written feedback on the 2024 Project Budget Prioritization Process may be sent to:**
 - Send email to Kevin Pytel at kpytel@nyiso.com or call his cell at (518) 428-9528 for assistance
- **At the September 11th BPWG, the NYISO will present the initial NYISO budget**
- **On September 27th, the BPWG Chair will present the NYISO budget proposal at the Management Committee meeting**

Our Mission & Vision



Mission

Ensure power system reliability and competitive markets for New York in a clean energy future



Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

Questions?

Appendix

Milestones and Project Prioritization Phases

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 such that the proposal can be presented for a vote at the BIC, OC, 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 Type

Project Type	Description
Mandatory	Projects that are key to support Strategic Initiatives, FERC Orders, maintain reliable operations, or sustain the operation of the NYISO business. These projects will be included in the budget
Continuing	Approved in a prior year and have progressed to either Software Design, Development Complete, or Deployment. 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 Prioritization Process

Phase	Description
Stakeholder Project Identification	Stakeholders may present project ideas at stakeholder meetings, sector meetings, get 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 from regulatory obligations, strategic initiatives, State of the Market recommendations, infrastructure enhancements, product plans and stakeholder proposals. These 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 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 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.