

2023 Final Project Budget Recommendation

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Budget and Priorities Working Group

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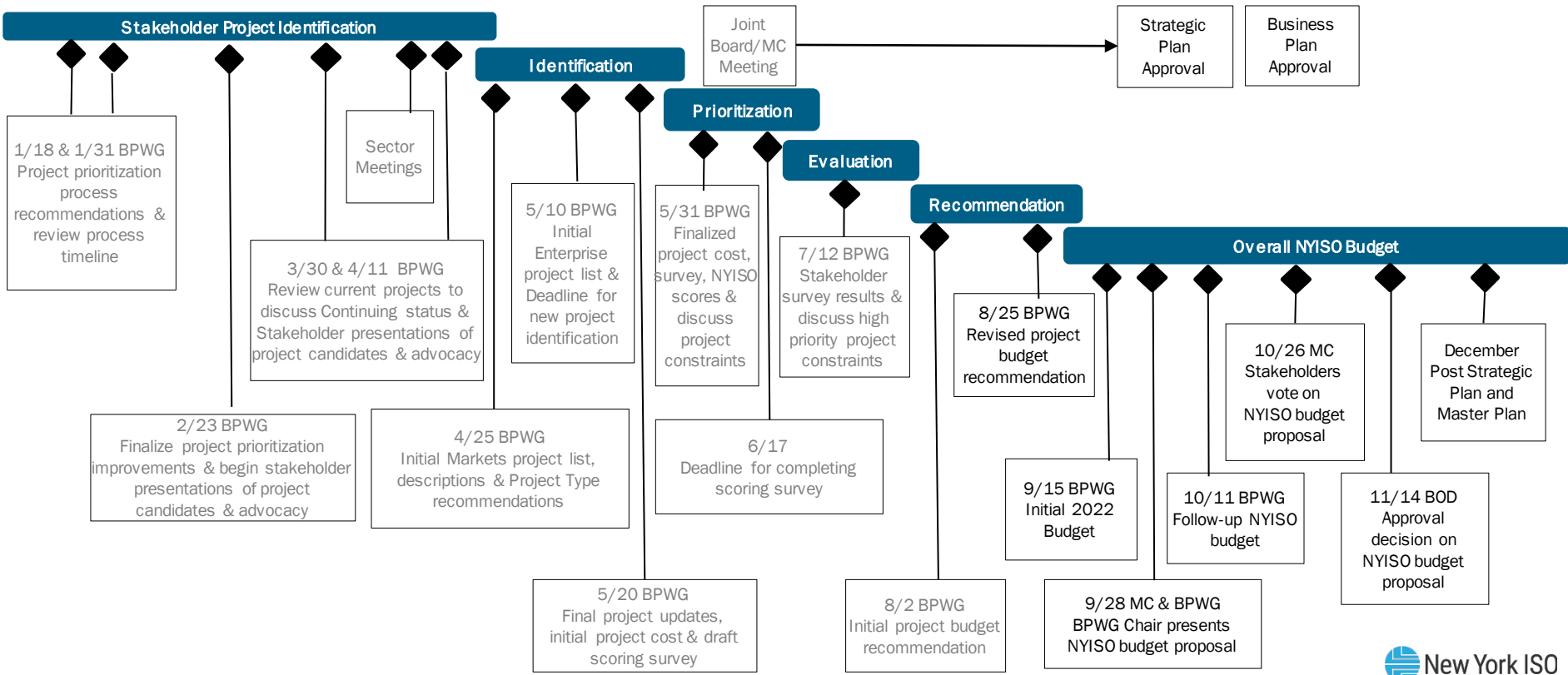
Agenda

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

Project Prioritization Timeline

2023 Proposed Project Prioritization Timeline

Jan 2022	Feb 2022	Mar 2022	Apr 2022	May 2022	Jun 2022	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022
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Project Updates

(No Project Changes from August 2nd BPWG)

Project Updates

- In order to fit several high priority projects in the budget recommendation, some adjustments to the proposed projects are recommended
- **DER Participation Model:** Project resourcing has been updated to reflect a later deployment in 2023. Net effect is DER Participation Model cost has increased and DER Operational Enhancements have been reduced
- **Storage as Transmission – Requested by Stakeholders:** Project could not fit in the budget as proposed. The NYISO recognizes that stakeholders highly valued this project. The NYISO proposes to change commitment to Issue Discovery, which resolves resource constraints and allows the project to be included in the proposed project list
- **Improve Duct Firing Modeling:** 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 2023 so that higher-priority stakeholder initiatives can be included in the proposed project list

Project Updates (continued)

- **CRIS Expiration Evaluation & CRIS Tracking:** In order to resolve resource constraints, the NYISO recommends deferring CRIS Tracking to 2024 and instead include CRIS Expiration Evaluation, which will develop requirement updates to be implemented with CRIS Tracking in 2024
- **FERC Order 2222 Compliance:** Scope of project has recently changed based on updated information from the FERC. Scope of project has increased and the NYISO recommends changing commitment from FRS to MDCP
- **Balancing Intermittency (SOM) & Dispatchability and Fast Response Product:** The NYISO believes the Dispatchability and Fast Response Product and the Balancing Intermittency efforts are very similar in scope. The NYISO proposes to revise project description of Balancing Intermittency to include some of the Dispatchability and Fast Response scope to combine into one project. Revised description **discussed at the August 2nd BPWG has been incorporated into the Market Project Descriptions and** included with today's posted materials
- **Unified Communications Platform:** The NYISO has determined equipment to be replaced with this project is not end-of-life in 2023 and recommends deferring this work till 2024

Final Market Project Budget Recommendation

(No Changes from August 2nd BPWG)

Prioritize 2023 Market Projects

Project	Project Type	2023 Proposed Deliverable	2022 Deliverable	Estimated Cost (in millions)			
				Labor	Capital	Prof. Serv.	Total
5 Minute Transaction Scheduling	Prioritize	Market Design Concept Proposed		0.07	0.00	0.74	0.81
Advancing NYISO Transparency – Requested by DC Energy	Prioritize	Deployment		0.09	0.00	0.40	0.49
Balancing Intermittency (SOM)	Prioritize	Market Design Concept Proposed		0.12	0.00	0.15	0.27
Constraint Specific Transmission Shortage Pricing (SOM)	Prioritize	Deployment	Functional Requirements	0.38	0.00	0.50	0.88
Coordinated Grid Planning Process (CGPP) Support - Requested by New York TOs	Prioritize	Issue Discovery		0.07	0.00	0.00	0.07
CRIS Expiration Evaluation	Prioritize	Functional Requirements	Market Design Complete	0.11	0.00	0.00	0.11
Dispatchability and Fast Response Product – Requested by NYPA	Prioritize	Market Design Concept Proposed		0.07	0.00	0.00	0.07

Prioritize 2023 Market Projects

Project	Project Type	2023 Proposed Deliverable	2022 Deliverable	Estimated Cost (in millions)			
				Labor	Capital	Prof. Serv.	Total
Dynamic Reserves (SOM)	Prioritize	Market Design Complete	Market Design Concept Proposed	0.20	0.00	0.40	0.60
Emissions Transparency (Requested by Stakeholders)	Prioritize	Functional Requirements		0.17	0.00	0.00	0.17
Engaging the Demand Side	Prioritize	Issue Discovery		0.13	0.00	0.00	0.13
Enhancing Fuel and Energy Security Refresh Study	Prioritize	Study Complete		0.11	0.00	0.45	0.56
Evolving Financial Transaction Capabilities - Bilateral Transactions - Requested by NY-Best and Bayonne Energy Center	Prioritize	Software Design		0.13	0.00	0.00	0.13
Hybrid Aggregation Model	Prioritize	Software Design	Functional Requirements	0.59	0.00	0.20	0.79
Improve Duct Firing Modeling (SOM)	Prioritize	Market Design Complete	Market Design Concept Proposed	0.07	0.00	0.60	0.67

Prioritize 2023 Market Projects

Project	Project Type	2023 Proposed Deliverable	2022 Deliverable	Estimated Cost (in millions)			
				Labor	Capital	Prof. Serv.	Total
Interconnection Process Enhancements - Requested by ACE-NY	Prioritize	Market Design Complete		0.13	0.00	0.00	0.13
LCR Optimizer Enhancements	Prioritize	Market Design Complete		0.18	0.00	0.30	0.48
M2M West PARs	Prioritize	Market Design Concept Proposed		0.05	0.00	0.00	0.05
Meter Data Management Modernization	Prioritize	Deployment		0.17	0.00	0.00	0.17
Mitigation Threshold Review	Prioritize	Market Design Concept Proposed		0.03	0.00	0.00	0.03
Multi-Level References	Prioritize	Software Design		0.09	0.00	0.10	0.19
Reserving Capacity for TCC Balance-of-Period (BOP) Auctions	Prioritize	Software Design		0.15	0.00	0.00	0.15

Prioritize 2023 Market Projects

Project	Project Type	2023 Proposed Deliverable	2022 Deliverable	Estimated Cost (in millions)			
				Labor	Capital	Prof. Serv.	Total
Review of Real-Time Market Structure (SOM)	Prioritize	Issue Discovery		0.10	0.00	0.05	0.15
Storage as Transmission - Requested by Stakeholders	Prioritize	Issue Discovery		0.20	0.00	0.05	0.25
Time Differentiated TCCs	Prioritize	Market Design Complete		0.11	0.00	0.20	0.31

Mandatory 2023 Market Projects

Project	Project Type	2023 Proposed Deliverable	2022 Deliverable	Estimated Cost (in millions)			
				Labor	Capital	Prof. Serv.	Total
Ambient Adjusted Transmission Lines Rating	Mandatory	Functional Requirements		0.17	0.00	0.00	0.17
Demand Curve Reset	Mandatory	Study Defined		0.21	0.00	0.50	0.71
DER Participation Model	Mandatory	Deployment	Deployment	1.98	0.00	0.93	2.91
FERC Order 2222 Compliance	Mandatory	Market Design Concept Proposed		0.55	0.00	0.25	0.80
Long Mountain PAR Operating Protocol with ISO-NE	Mandatory	Market Design Complete		0.08	0.00	0.00	0.08
Modeling Improvements for Capacity Accreditation (SOM)	Mandatory	Functional Requirements		0.45	0.00	0.46	0.91

Continuing 2023 Market Projects

Project	Project Type	2023 Proposed Deliverable	2022 Deliverable	Estimated Cost (in millions)			
				Labor	Capital	Prof. Serv.	Total
CRIS Tracking	Prioritize	Deployment	Development Complete	0.19	0.00	0.10	0.29
Improving Capacity Accreditation (SOM)	Continuing	Deployment	Market Design Complete	0.79	0.00	0.15	0.94
Internal Controllable Lines	Continuing	Market Design Complete	Market Design Concept Proposed	0.27	0.00	0.00	0.27

Future 2023 Market Projects

Project	Project Type	2023 Proposed Deliverable	2022 Deliverable	Estimated Cost (in millions)			
				Labor	Capital	Prof. Serv.	Total
Capacity Transfer Rights for Internal Transmission Upgrades (SOM)	Future						
Carbon Pricing	Future						
Eliminate Fees for CTS Transactions with PJM (SOM)	Future						
Eliminate Offline GT Pricing (SOM)	Future						
Locational Marginal Pricing of Capacity (SOM)	Future						
Long Island PAR Optimization and Financial Rights (SOM)	Future						
Long Island Reserve Constraint Pricing (SOM)	Future						
Monthly Demand Curves (SOM)	Future						
More Granular Operating Reserves (SOM)	Future						
Separating Up and Down Regulation Service	Future						

Enterprise Project Budget Recommendation

(No Changes from August 2nd BPWG)

Prioritize 2023 Enterprise Projects

Project	Project Type	2023 Proposed Deliverable	2022 Deliverable	Estimated Cost (in millions)			
				Labor	Capital	Prof. Serv.	Total
Access Management Platform Upgrade	Prioritize	Deployment		0.20	0.06	0.05	0.31
Block Storage Refresh	Prioritize	Deployment		0.10	2.29	0.23	2.61
BSS and Billsim Upgrade	Prioritize	Deployment		0.26	0.00	0.00	0.26
BTM Solar Demand Forecasting Product Enhancements	Prioritize	Deployment	Functional Requirements	0.23	0.00	0.02	0.25
Budgeting Tool	Prioritize	Functional Requirements		0.14	0.13	0.00	0.27
Building Management System (BMS) Controls Upgrade	Prioritize	Deployment		0.15	0.59	0.00	0.74
Carman Security Enhancements	Prioritize	Deployment		0.05	0.90	0.00	0.95

Prioritize 2023 Enterprise Projects

Project	Project Type	2023 Proposed Deliverable	2022 Deliverable	Estimated Cost (in millions)			
				Labor	Capital	Prof. Serv.	Total
CMS and ConInvoice Data Integration	Prioritize	Deployment	Functional Requirements	0.19	0.00	0.00	0.19
Contingency Analysis Results for Transmission Owner Situational Awareness	Prioritize	Deployment	Functional Requirements	0.16	0.00	0.20	0.36
Control Room Logging Replacement	Prioritize	Functional Requirements		0.10	0.00	0.00	0.10
Credit Price Spread Updates Virtual and External Transactions	Prioritize	Deployment	Functional Requirements	0.14	0.00	0.00	0.14
Demand Forecasting Operational Reporting Enhancements	Prioritize	Functional Requirements		0.11	0.00	0.00	0.11
DER Operational Enhancements	Prioritize	Deployment		0.35	0.05	0.25	0.65
Generator Modeling Database Enhancements	Prioritize	Deployment		0.08	0.05	0.25	0.38

Prioritize 2023 Enterprise Projects

Project	Project Type	2023 Proposed Deliverable	2022 Deliverable	Estimated Cost (in millions)			
				Labor	Capital	Prof. Serv.	Total
GFER Enhancements	Prioritize	Deployment		0.19	0.00	0.00	0.19
Grid Operations Web Forms Enhancements	Prioritize	Deployment		0.37	0.00	0.15	0.52
Gurobi Upgrade	Prioritize	Deployment		0.09	0.00	0.40	0.49
ICAP Supplier Status Enhancements	Prioritize	Functional Requirements		0.03	0.00	0.00	0.03
IT Development and Control of Compliance Reports	Prioritize	Deployment		0.12	0.00	0.00	0.12
Key Control Room A/V Replacement	Prioritize	Deployment	Study Complete	0.08	0.45	0.20	0.73
LFDR Upgrade and Enhancements	Prioritize	Deployment	Functional Requirements	0.35	0.00	0.00	0.35

Prioritize 2023 Enterprise Projects

Project	Project Type	2023 Proposed Deliverable	2022 Deliverable	Estimated Cost (in millions)			
				Labor	Capital	Prof. Serv.	Total
Machine Learning Research and Technology Pilot	Prioritize	Study Complete		0.05	0.05	0.10	0.20
Market Validation, Reporting and Penalty Enhancements	Prioritize	Software Design	Functional Requirements	0.16	0.00	0.00	0.16
Meter Services System	Prioritize	Deployment	Functional Requirements	0.18	0.00	0.00	0.18
Modernizing ASIS	Prioritize	Deployment		0.23	0.00	0.13	0.37
Natural Gas Notices Enhancement Project	Prioritize	Deployment	Functional Requirements	0.09	0.00	0.14	0.23
Network Manager Cisco Refresh	Prioritize	Development Complete		0.19	2.13	0.03	2.34
Next Gen Security Architecture	Prioritize	Study Complete		0.20	0.06	0.03	0.29

Prioritize 2023 Enterprise Projects

Project	Project Type	2023 Proposed Deliverable	2022 Deliverable	Estimated Cost (in millions)			
				Labor	Capital	Prof. Serv.	Total
OASIS Reliability Upgrade	Prioritize	Study Complete		0.19	0.03	0.00	0.22
OMS Enhancement	Prioritize	Deployment		0.08	0.00	0.03	0.11
On-Boarding of New Resources	Prioritize	Study Complete	Study Complete	0.17	0.00	0.00	0.17
Ongoing TCC Collateral Coverage Assessment Tool	Prioritize	Functional Requirements		0.07	0.05	0.15	0.27
Outage Status Portal Dashboard	Prioritize	Functional Requirements		0.04	0.00	0.00	0.04
Price Correction Report Modifications	Prioritize	Deployment		0.11	0.00	0.00	0.11
Redundant Wind Solar Forecast Feed – Independent Vendor	Prioritize	Issue Discovery		0.03	0.00	0.00	0.03

Prioritize 2023 Enterprise Projects

Project	Project Type	2023 Proposed Deliverable	2022 Deliverable	Estimated Cost (in millions)			
				Labor	Capital	Prof. Serv.	Total
Secure Communication Channel with MPs	Prioritize	Deployment		0.13	0.00	0.00	0.13
Settlement Systems Effective Dating and Filtering of Billing Entities	Prioritize	Software Design		0.10	0.00	0.00	0.10
Smart Grid Upgrade	Prioritize	Deployment		0.13	0.00	0.00	0.13
Transaction Modifications API	Prioritize	Functional Requirements		0.12	0.00	0.00	0.12
Watchlist for Rest of State Units	Prioritize	Deployment		0.04	0.00	0.00	0.04

Continuing 2023 Enterprise Projects

Project	Project Type	2023 Proposed Deliverable	2022 Deliverable	Estimated Cost (in millions)			
				Labor	Capital	Prof. Serv.	Total
Application Platform Upgrade	Continuing	Deployment	Deployment	0.87	0.00	0.43	1.30
Database Upgrade	Continuing	Deployment	Deployment	0.13	0.00	0.00	0.13
EMS/BMS Operational Enhancements	Continuing	Deployment	Deployment	0.14	0.00	0.60	0.74
IT Infrastructure Automation	Continuing	Deployment	Deployment	0.14	0.11	0.20	0.44
ITSM Security Enhancements	Continuing	Deployment	Deployment	0.39	0.00	0.63	1.02
Microsoft 365	Continuing	Deployment	Deployment	0.34	0.10	0.30	0.74
Network Infrastructure Upgrade	Continuing	Deployment	Deployment	0.30	2.32	0.35	2.97

Continuing 2023 Enterprise Projects

Project	Project Type	2023 Proposed Deliverable	2022 Deliverable	Estimated Cost (in millions)			
				Labor	Capital	Prof. Serv.	Total
Unified Communications Platform	Prioritize	Deployment	Deployment	0.05	0.45	0.15	0.65
UPS Replacement	Continuing	Deployment	Study Complete	0.09	1.15	0.00	1.24
Windows System Upgrade	Continuing	Deployment	Deployment	0.17	0.30	0.10	0.57

Historic Budgets

(No Changes from August 2nd BPWG)

2023 Proposed Projects Compared to Historic Approved Budgets

Project Budget*	Estimated Cost (in millions)				Mandatory	Continuing
	Labor	Capital	Prof. Serv.	Total		
2023 Final Recommendation	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
2020 Approved	13.57	5.73	12.40	31.69	10.48	10.74

Markets & Enterprise Budget Breakdown

	Markets Estimated Cost (in millions)					
Project Budget*	Labor	Capital	Prof. Serv.	Total	Mandatory	Continuing
2023 Final Recommendation	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
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
2023 Final Recommendation	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
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

Next Steps

Next Steps

- **Written feedback on the 2023 Project Budget Prioritization Process may be sent to:**
 - Send to Brian Hurysz at bhurysz@nyiso.com : (518) 461-6405
- **At the September 15th BPWG, the NYISO will present the initial NYISO budget**
- **On September 28th 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 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 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 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, 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 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.