New York ISO
Independent System Operator

Stakeholder Survey Results and NYISO Scoring of 2021 Proposed Market Projects

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Agenda

- Project Prioritization Phases, Milestones, and Timeline
- Stakeholder Feedback and NYSIO Response
- Stakeholder Survey Appeal
- Stakeholder Survey Comments
- NYISO Scoring
- 2021 Market Project Candidates
- 2021 Market Project Candidates Included in Stakeholder Survey
- Historic Budgets
- Next Steps

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Project Prioritization Phases, Milestones, and Timeline

Project Prioritization Process

Phase	Description
Identification	This phase involves developing the list of project candidates taking into consideration regulatory obligations, strategic initiatives, State of the Market recommendations, necessary infrastructure enhancements, product plans, stakeholder feedback, etc.
Prioritization	This phase involves a stakeholder survey and the NYISO prioritization of projects. The stakeholder survey will facilitate an assessment of the relative priority of the topic within the portfolio and is used to determine stakeholder appeal. The NYISO prioritization incorporates the stakeholder appeal into objective criteria that reflects strategic alignment, expected outcomes, risks, and ability to execute in development of a priority score for each Market project.
Evaluation	This phase involves performing a feasibility assessment based on detailed cost and labor estimates, dependencies, priority scores, and stakeholder feedback.
Recommendation	This phase involves proposing a feasible set of project deliverables and related budget requirements. The proposal is refined as needed based on stakeholder feedback.

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Project Type

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

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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

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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.

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Milestone Definitions

Milestone	Definition
Market Design Concept Proposed	NYISO has initiated, or furthered discussions with stakeholders that explore potential concepts to address opportunities for market efficiency or administration improvements.
Market Design Complete	NYISO has developed with stakeholders, a market design concept such that the proposal can be presented for a vote at the BIC or MC to define further action on the proposal.
Architectural Design	The architectural design document is complete and software development is ready to begin.
Functional Requirements	NYISO has completed documentation of the functional requirements and the Business Owner has approved.
Software Design	The software design document is complete and software development is ready to begin.
Development Complete	Development has been completed, packaged and approved by the Supervisor.
Deployment	Required software changes to support commitment have been integrated into the production environment.
Study Complete	Scope of work to be performed has been completed; results and recommendations have been presented to the appropriate Business Owners and stakeholders.
Study Defined	The scope of work for the study has been presented to stakeholders, including a discussion on the necessary input(s), assumption(s) and objective(s) of the study.
Issue Discovery	NYISO has facilitated education session(s) for stakeholder knowledge development of problem/issue, conducted stakeholder solicitation of potential solutions to address problem/issue, and summarized findings at a working group meeting for potential ranking and future project identification.

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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

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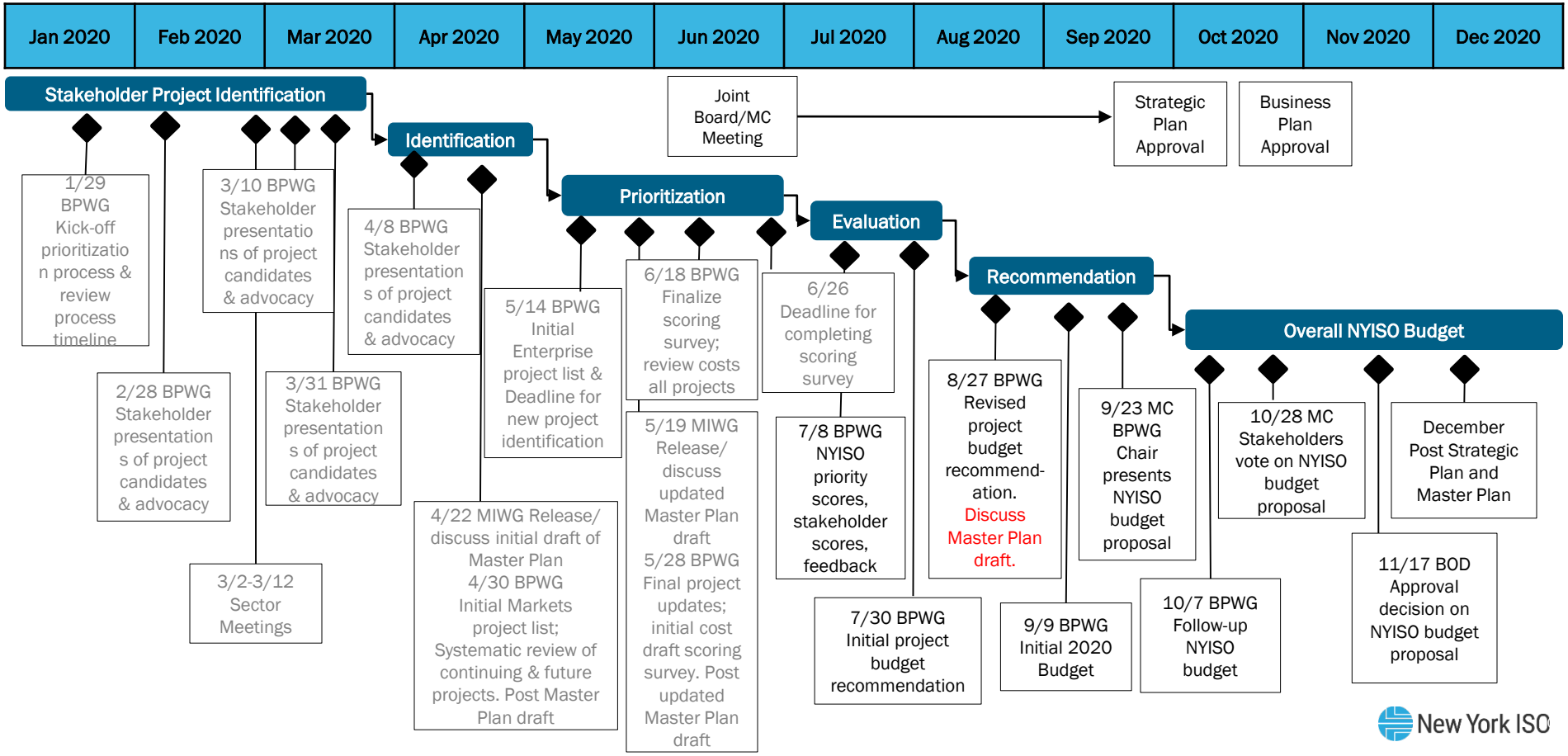
2021 Proposed Project Prioritization Timeline



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DRAFT – FOR DISCUSSION PURPOSES ONLY

Stakeholder Feedback and NYISO Response

Stakeholder Feedback and NYISO Response

Stakeholder Feedback	NYISO Response
Market Participants requested a table that identifies what Market Products Projects are in the survey	A Market Products Projects table identifying which are included in survey has been added
Market Participants requested an historical budget breakdown by Enterprise and Market Projects	An historic breakdown of Markets and Enterprise Projects has been provided in presentation

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Stakeholder Survey Appeal

Survey Appeal Definition* Same as used in 2019

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

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Survey Participation

		2020 Survey			2019 Survey			2018 Survey		
Sector	Sub Sector	Num. Eligible Orgs.	Num. Comp.	Percent Participation	Num. Eligible Orgs.	Num. Comp.	Percent Participation	Num. Eligible Orgs.	Num. Comp.	Percent Participation
End Use Consumer	Gov. Sm. Cons. & Retail Aggr.	2	2	100%	2	2	100%	2	2	100%
"	Gov. State-wide Cons. Advocate	1	1	100%	1	1	100%	1	1	100%
"	Large Cons. Gov. Agency	1	0	0%	1	0	0%	1	0	0%
"	Large Consumer	5	4	80%	5	4	80%	5	5	100%
"	Small Consumer	6	6	100%	7	6	86%	7	7	100%
Generation Owner		17	2	12%	15	5	33%	17	5	29%
Other Supplier		33	12	36%	35	13	37%	37	20	54%
Public/Environment	Environmental	7	2	29%	6	2	33%	6	2	33%
"	Munis & Co-Ops	11	9	82%	11	11	100%	11	11	100%
"	State Power Authorities	2	2	100%	2	2	100%	2	2	100%
Transmission Owner		4	4	100%	4	4	100%	4	4	100%
Non Voting Entity		62	11	18%	60	15	25%	63	10	16%
Total		**151**	**55**	**36%**	**149**	**65**	**44%**	**156**	**69**	**44%**

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Weighted Score Sector Percentages

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%

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Survey Appeal Score

* Stakeholder survey details posted with today's materials

- Projects are ordered by sum of the 3 scoring components

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

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Survey Appeal Score * Stakeholder survey details posted with today's materials

- Projects are ordered by sum of the 3 scoring components

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

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Stakeholder Survey Comments

Stakeholder Survey Comments

Project	Organization	Comment
TCC Credit Enhancements	NYS Department of State Utility Intervention Unit	This is a low cost, low risk effort that the ISO should do irrespective of the scoring and should not displace another project.
Enhanced BSM Forecasts Assumptions (SOM)	NYS Department of State Utility Intervention Unit	This project is described as part of the comprehensive mitigation review process and should not displace another project. Whether scored separately or not, it seems that the ISO will have to consider the internal consistency of all the rules that govern BSM going forward
Enhanced BSM Forecasts Assumptions (SOM)	Helix Ravenswood, LLC	As with all incremental changes to the capacity market, as part of the analysis of the change and before implementing such changes there needs to be a higher level and comprehensive evaluation that ensures the reliability product is appropriately defined, valued, attributed to resources properly and then compensated. Significant changes to the capacity market are currently pending and implicated in other continuing projects such that any additional capacity market changes should be approached cautiously.
Capacity Demand Curve Adjustments	NYS Department of State Utility Intervention Unit	Given the broader effort to determine what if any market design changes would be necessary and beneficial to address reliability and operational gaps as part of grid in transition and the RAM proceeding exploring mechanisms for maintaining adequacy, this project is premature.

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Stakeholder Survey Comments

Project	Organization	Comment
Capacity Demand Curve Adjustments	Helix Ravenswood, LLC	As with all incremental changes to the capacity market, as part of the analysis of the change and before implementing such changes there needs to be a higher level and comprehensive evaluation that ensures the reliability product is appropriately defined, valued, attributed to resources properly and then compensated. Significant changes to the capacity market are currently pending and implicated in other continuing projects such that any additional capacity market changes should be approached cautiously.
Expanding Peak Hour Forecasts	Helix Ravenswood, LLC	As with all incremental changes to the capacity market, as part of the analysis of the change and before implementing such changes there needs to be a higher level and comprehensive evaluation that ensures the reliability product is appropriately defined, valued, attributed to resources properly and then compensated. Significant changes to the capacity market are currently pending and implicated in other continuing projects such that any additional capacity market changes should be approached cautiously.
Demand Curve Translation Enhancement (SOM)	Helix Ravenswood, LLC	As with all incremental changes to the capacity market, as part of the analysis of the change and before implementing such changes there needs to be a higher level and comprehensive evaluation that ensures the reliability product is appropriately defined, valued, attributed to resources properly and then compensated. Significant changes to the capacity market are currently pending and implicated in other continuing projects such that any additional capacity market changes should be approached cautiously.

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Stakeholder Survey Comments

Project	Organization	Comment
CRIS Expiration Evaluation – Requested by NYS Utility Intervention Unit	Helix Ravenswood, LLC	The proposed project is a major change to otherwise competitive interconnection rights. The NYISO markets can and do provide adequate paths for the exchange of headroom and interconnection rights without external intervention or changes to existing rules.
CRIS Expiration Evaluation – Requested by NYS Utility Intervention Unit	Long Island Power Authority	Need to distinguish grandfathered CRIS rights held on behalf of load.
Tailored Availability Metric Enhancements – Requested by Central Hudson, Con Edison, National Grid, New York Power Authority, and O&R	Helix Ravenswood, LLC	Availability is extremely important when resources are not dispatchable. Therefore, framing the issue as needing to incent performance during peak operating hours partly misses the issue. Energy price should incent performance but price spikes are not high enough. Operators need dispatchable resources to give them the confidence to rely on the markets to maintain reliability. Availability from a dispatchability perspective is how the service should be measured. System needs arise at all hours of the day and operators need dispatchable resources to provide the reliability needs necessary for a 24/7/365 system.
Tailored Availability Metric Enhancements – Requested by Central Hudson, Con Edison, National Grid, New York Power Authority, and O&R	Enel X North America, Inc.	Only if fossil generators get the same treatment

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Stakeholder Survey Comments

Project	Organization	Comment
Engaging the Demand Side	NYS Department of State Utility Intervention Unit	It seems unnecessary to have a dedicated project to think about ways to engage the demand-side; a large literature exists on the subject. Rather, UIU would prefer that market structures would allow demand to provide balancing services or reserves within the context of the grid in transition initiative.
Engaging the Demand Side	Helix Ravenswood, LLC	As with all incremental changes to the energy, capacity or ancillary service markets, before implementing them there needs to be a higher level comprehensive evaluation that ensures the various reliability products are appropriately defined, valued, attributed to resources properly and then compensated.
Constraint Specific Transmission Shortage Pricing (SOM)	NYS Department of State Utility Intervention Unit	Project numbers 10, 14, 18 all belong to a class of effort that addresses constraints, constraint representation, and penalty prices in the market software. UIU believes that project 14, while a long-term complex effort, will have the greatest benefit to the market and operators. Resolution of many of the issues required to successfully implement item 14 will address, at least in part, the issues identified for these other projects, at a minimum changing their scope.
Constraint Specific Transmission Shortage Pricing (SOM)	NYS Department of State Utility Intervention Unit	The goal of this project is functional specifications to implement changes that come out of a review that is not completed and stakeholders have not yet reviewed. Scoring this project seems premature, even if the changes that are ultimately recommended are reasonable.

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Stakeholder Survey Comments

Project	Organization	Comment
Mitigation Thresholds Review	NYS Department of State Utility Intervention Unit	The goal of this project is functional specifications to implement changes that come out of a review that is not completed and stakeholders have not yet reviewed. Scoring this project seems premature, even if the changes that are ultimately recommended are reasonable.
Mitigation Thresholds Review	Helix Ravenswood, LLC	It is important to ensure resources are not over or under mitigated. However, as with the other enhancements being considered, this will not be the change that ensures reliability via the markets during the transition. Again, all reliability products and services must be appropriately defined, valued, attributed to resources properly and then compensated.
Multi-Level References	NYS Department of State Utility Intervention Unit	There is no clear and present need established in the project description and the conditions that would give rise to the circumstances under which MMA would use this functionality are unclear.
Grid Services from Renewable Generators - Requested by NYSERDA	Helix Ravenswood, LLC	As with all incremental changes to the energy, capacity or ancillary service markets, before implementing them there needs to be a higher level comprehensive evaluation that ensures the reliability products and services are appropriately defined, valued, attributed to resources properly and then compensated. Greater operational experience within NY should be required before anything more than a pilot program is initiated.

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Stakeholder Survey Comments

Project	Organization	Comment
Long Island Reserve Constraint Pricing (SOM)	NYS Department of State Utility Intervention Unit	This effort seems more properly addressed under grid in transition as part of the broader effort to determine what if any market design changes, including changes to the reserve markets, would be necessary and beneficial to address reliability and operational gaps going forward. Additionally, addressing Reserve Enhancements for Constrained Areas prior to addressing Long Island pricing is a more logical sequence to send clear market signals.
More Granular Operating Reserves (SOM)	NYS Department of State Utility Intervention Unit	Project numbers 10, 14, 18 all belong to a class of effort that addresses constraints, constraint representation, and penalty prices in the market software. UIU believes that project 14, while a long-term complex effort will have the greatest benefit to the market and operators. Resolution of many of the issues required to successfully implement item 14 will address, at least in part, the issues identified for these other projects, at a minimum changing their scope.
Reserving Capacity for TCC Balance-of-Period (BOP) Auctions	NYS Department of State Utility Intervention Unit	These projects will likely improve the efficiency of the TCC markets and should be pursued, but not at the expense of the items we scored.

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Stakeholder Survey Comments

Project	Organization	Comment
Reserving Capacity for TCC Balance-of-Period (BOP) Auctions	Helix Ravenswood, LLC	Suppliers rely on transmission capacity released in multi-round Centralized TCC auctions to hedge exposure to congestion risk. 12-months and 6-months TCC products align well with tenors of energy revenue and fuel cost hedges available in bilateral and exchange traded markets. The reduction in transmission capacity sold in these auctions will diminish the ability to procure TCC hedges and protect against congestion risks. Monthly TCC auctions were designed to allow market participants to "reconfigure" their hedges in the event that they expect their supply to be unavailable due to an outage or other interruption. The prices in monthly TCC auctions are most likely to reflect the most up-to-date information on weather, transmission and generation outages, and other underlying congestion drivers. Just as if there were daily TCC products, their pricing would likely be very close, on average, to the Day-Ahead market outcome. At this point, their value as hedging instruments would be greatly diminished. Allowing suppliers to hedge their exposure to congestion risks is one of the fundamental goals of TCC market design. Centralized auctions are best suited for achieving this because suppliers can procure hedges against unexpected congestion events ahead of time, covering longer periods. Removing transmission capacity from the centralized auctions would diminish suppliers' ability to do so. In addition, under the current TCC survey-based procedure (only 16 respondents participated in the latest TCC auction survey), there is no way to ensure that a few responses would not dramatically change allocation of transmission capacity across the auctions. No analysis was shared with market participants to demonstrate what would happen with auction clearing prices under different levels of transmission capacity offered between different auction tenors.

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Stakeholder Survey Comments

Project	Organization	Comment
Time Differentiated TCCs – Requested by Calpine & Vitol	NYS Department of State Utility Intervention Unit	These projects will likely improve the efficiency of the TCC markets and should be pursued, but not at the expense of the items we scored.
Please enter any additional comments below:	Helix Ravenswood, LLC	As a general matter, reliability and how it is compensated via the capacity and other markets is the significant challenge facing the NYISO competitive markets during the transition of the grid to more intermittent resources. While energy market design changes are important, revenue adequacy for reliability service via the capacity/resource adequacy market is becoming more and more critical to maintaining dispatchable resources. Revenues from energy and ancillary service products, even with enhancements, are not expected to be sufficient to support reliability resources. Therefore, ensuring the resource adequacy reliability product is defined appropriately and that the reliability value is correctly measured and assigned to various resources is critical. Only then will the competitive markets provide efficient signals and compensation for the reliability products required. This needs to be one of the highest priorities for the NYISO. Otherwise, out-of-market reliability agreements will be necessary to maintain reliability. New resources that provide important environmental attributes will be added to the transmission grid going forward and appropriate compensation is necessary for these resources. Nevertheless, further proliferation of non-dispatchable capacity-lite resources that artificially suppress capacity markets while not providing the same reliability products create a real threat to reliability and potential need for out-of-market reliability agreements. Accordingly, any projects that move forward need to maintain this principle in mind.

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Stakeholder Survey Comments

Project	Organization	Comment
Please provide any recommendations you may have for future enhancements to the Project Prioritization Process:	Richard P. Felak	need to have a cost-benefit analysis done in a fashion consistent with the TO's VDER approach for all of these enhancements

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NYISO Scoring

Survey Appeal & NYISO Score

- Projects are ordered by sum of the 3 scoring components

Proposed Projects	Raw Score (Avg.)	Weighted Score	Sector Count	Sum of Scores	Appeal Score	NYISO Score w/o Appeal	NYISO Score inc. Appeal
Time Differentiated TCCs – Requested by Calpine & Vitol	13.2	19.5	3.0	35.7	10	250	370
Engaging the Demand Side	10.1	8.5	4.0	22.6	10	216	340
Expanding Peak Hour Forecasts	9.6	7.7	3.0	20.2	10	237	358
Grid Services from Renewable Generators - Requested by NYSERDA	8.7	7.4	4.0	20.1	10	262	380
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	210	335
Constraint Specific Transmission Shortage Pricing (SOM)	5.6	5.1	4.0	14.7	10	391	494
CRIS Expiration Evaluation – Requested by NYS Utility Intervention Unit	5.4	5.6	2.0	13.0	10	196	322
More Granular Operating Reserves (SOM)	5.8	5.2	2.0	13.0	10	437	534
Demand Curve Translation Enhancement (SOM)	6.4	4.3	2.0	12.7	10	202	328
5 Minute Transaction Scheduling - Requested by HQUS	5.5	5.1	2.0	12.7	10	239	360

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Survey Appeal & NYISO Score

- Projects are ordered by sum of the 3 scoring components

Proposed Projects	Raw Score (Avg.)	Weighted Score	Sector Count	Sum of Scores	Appeal Score	NYISO Score w/o Appeal	NYISO Score inc. Appeal
Reserve Enhancement for Constrained Areas (SOM)	3.4	7.2	2.0	12.6	10	421	520
Large Scale Solar on Dispatch	4.6	4.5	2.0	11.1	7	437	489
Reserving Capacity for TCC Balance-of-Period (BOP) Auctions	5.2	3.8	1.0	10.1	10	268	386
Enhanced BSM Forecasts Assumptions (SOM)	2.1	1.8	0.0	3.9	3	163	188
Mitigation Thresholds Review	1.1	1.7	1.0	3.8	3	232	249
Capacity Demand Curve Adjustments	2.2	0.9	0.0	3.2	3	176	200
Multi-Level References	1.2	1.6	0.0	2.8	3	199	220
Adjustment of Energy Offer/Bid Floor (SOM)	1.0	1.2	0.0	2.2	0	246	216
TCC Credit Enhancements	0.5	0.8	0.0	1.3	0	324	285
Long Island Reserve Constraint Pricing (SOM)	0.2	0.7	0.0	0.9	0	223	196

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NYISO Scoring

Product / Project	Leader in Reliability	Leader in Market Design	Leader in Technology Innovation	Sustain and Enhance Robust Planning Processes	NYISO Annual Cost Reduction	Appeal*	Market Efficiency	Post Production Sustainability	Compliance	Business Process (inclusive of technology impact on business process)	Reliability and Market	Cost	Multi-Year Dependency	Complexity of Business and Technology	Compliance	Score* (1-1240)
	10	10	6	9	10	15	10	5	10	5	10	4	8	4	8	
More Granular Operating Reserves (SOM)	7	7	0	0	0	10	10	7	0	3	3	3	3	7	0	534
Reserve Enhancement for Constrained Areas (SOM)	7	10	0	0	0	10	10	7	0	7	3	0	0	0	0	520
Constraint Specific Transmission Shortage Pricing (SOM)	0	10	0	0	0	10	10	7	0	3	3	3	3	7	0	494
Large Scale Solar on Dispatch	7	7	0	0	0	7	7	7	3	3	7	3	0	3	0	489
Reserving Capacity for TCC Balance-of-Period (BOP) Auctions	0	7	0	0	0	10	3	7	0	3	3	7	0	7	0	386
Grid Services from Renewable Generators - Requested by NYSERDA	3	7	0	0	0	10	3	3	0	3	3	3	0	7	0	380
Time Differentiated TCCs – Requested by Calpine & Vitol	0	7	0	0	0	10	3	7	0	3	3	3	0	7	0	370
5 Minute Transaction Scheduling - Requested by HQUS	3	7	0	0	0	10	3	3	0	7	3	0	0	0	0	360
Expanding Peak Hour Forecasts	3	3	0	3	0	10	3	7	0	0	0	7	0	7	0	358
Engaging the Demand Side	0	7	0	3	0	10	3	7	0	0	0	0	0	7	0	340
Tailored Availability Metric Enhancements – Requested by Central Hudson, Con Edison, National Grid, New York Power Authority, and O&R	3	3	0	0	0	10	3	3	0	0	0	7	3	7	0	335

New York ISO

NYISO Scoring

Product / Project	Leader in Reliability	Leader in Market Design	Leader in Technology Innovation	Sustain and Enhance Robust Planning Processes	NYISO Annual Cost Reduction	Appeal*	Market Efficiency	Post Production Sustainability	Compliance	Business Process (inclusive of technology impact on business process)	Reliability and Market	Cost	Multi-Year Dependency	Complexity of Business and Technology	Compliance	Score* (1-1240)
	10	10	6	9	10	15	10	5	10	5	10	4	8	4	8	
Tailored Availability Metric Enhancements – Requested by Central Hudson, Con Edison, National Grid, New York Power Authority, and O&R	3	3	0	0	0	10	3	3	0	0	0	7	3	7	0	335
Demand Curve Translation Enhancement (SOM)	0	3	0	0	0	10	3	10	0	0	0	10	0	7	0	328
CRIS Expiration Evaluation – Requested by NYS Utility Intervention Unit	3	3	0	3	0	10	3	3	0	0	0	7	0	3	0	322
TCC Credit Enhancements	0	0	0	0	3	0	3	10	3	7	7	3	0	7	0	285
Mitigation Thresholds Review	0	3	0	0	0	3	3	7	0	3	3	3	3	7	0	249
Multi-Level References	0	7	0	0	0	3	7	7	0	0	0	0	0	0	0	220
Adjustment of Energy Offer/Bid Floor (SOM)	0	3	0	0	0	0	3	7	0	7	3	7	0	7	0	216
Capacity Demand Curve Adjustments	0	3	0	0	0	3	7	3	0	0	0	3	0	7	0	200
Long Island Reserve Constraint Pricing (SOM)	0	3	0	0	0	0	3	7	0	3	3	7	0	7	0	196
Enhanced BSM Forecasts Assumptions (SOM)	0	3	0	0	0	3	3	3	0	0	0	7	0	10	0	188

New York ISO

2021 Market Projects Candidates

(No Changes from June 18th BPWG posted materials)

2021 Market Project Candidates

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

New York ISO

2021 Market Project Candidates

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

New York ISO

2021 Market Project Candidates

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

New York ISO

2021 Market Project Candidates

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

New York ISO

2021 Market Project Candidates

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

New York ISO

2021 Market Project Candidates

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

New York ISO

2021 Market Project Candidates Included in Stakeholder Survey

(No Changes from revised June 18th BPWG posted materials)

Projects Included in Stakeholder Survey

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

New York ISO

Projects Included in Stakeholder Survey

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

New York ISO

Projects Included in Stakeholder Survey

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

New York ISO

Historic Budgets

Historic Project Budget Comparison

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

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

New York ISO

Historic Project Budget Comparison

	Markets Estimated Cost (in millions)					
Project Budget*	Labor	Capital	Prof. Serv.	Total	Mandatory	Continuing
2021 Candidate Projects	8.22	0.10	9.53	17.85	10.00	3.77
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
2021 Candidate Projects	8.19	14.40	4.28	26.88	1.73	15.87
2020 Approved	6.67	5.46	6.55	18.68	9.97	10.74

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

New York ISO

Next Steps

Next Steps

- Review the NYISO's initial project budget recommendation at the July 30th BPWG meeting
- Review the NYISO's revised project budget recommendation at the August 27th BPWG meeting
- Contact Brian Hurysz or Member Relations for any Project Prioritization related issues
  - Send to Brian Hurysz at bhurysz@nyiso.com or cell (518) 461-6405

New York ISO

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

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Questions?