

2015 Project Prioritization and Budgeting Process

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Krey Corporate Center

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Summary of Project Prioritization and Budgeting Process To Date

May BPWG

- *Overview of 2015 Project Prioritization and Budgeting Process*
- *Review of 2014-2016 Product Plan: NYISO Strategic Initiatives and FERC Orders*

June BPWG

- *Review of 2015 Project Prioritization Criteria and link to NYISO Strategic Plan*
- *Review of 2015 Preliminary Project Candidate List*

July BPWG

- *Proposed Project Descriptions for 2015 Preliminary Project Candidates*
- *Review of Prioritized 2015 Preliminary Project Candidate List and potential milestones*
- *Review of stakeholder comments and NYISO response since June BPWG*

August BPWG

- *Proposed Project Descriptions for 2015 Preliminary Project Candidates*
- *Review of Prioritized 2015 Preliminary Project Candidate List and potential milestones with cost/benefit analysis*

September 05 BPWG

- *Proposed Project Descriptions for 2015 Project Candidates*
- *Proposed 2015 Project Budget*

Proposed 2015 Project Budget

Business Intelligence Products					
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	Estimated Cost (in millions)		
			<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>
NY Generator Attribute Tracking System (GATS) Data Feed	Deployment	Authoritative Source of Information	\$0.21	\$0.00	\$0.21
OASIS Postings Technology Upgrade Phase 2	Deployment	Excellence in Execution	\$0.18	\$0.00	\$0.18
DSS Business Objects Upgrade	Deployment	Excellence in Execution	\$0.17	\$0.15	\$0.31
Public Website Renewables Page	Deployment	Authoritative Source of Information	\$0.11	\$0.00	\$0.11
Public Website NYISO Budget and Value Proposition Pages	Deployment	Authoritative Source of Information	\$0.03	\$0.07	\$0.10
Enterprise Information Mgmt: Data Integration	Deployment	Leader in Technology Innovation	\$0.22	\$0.56	\$0.79
Total			\$0.92	\$0.78	\$1.70

Capacity Products					
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	Estimated Cost (in millions)		
			<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>
Modify the Pivotal Supplier Tests (SOM)	Deployment	Excellence in Execution	\$0.06	\$0.00	\$0.06
ICAP AMS Enhancements Phase 2	Deployment	Excellence in Execution	\$0.09	\$0.00	\$0.09
Reactive Test Data Collection and Tracking	Software Design	Excellence in Execution	\$0.15	\$0.00	\$0.15
ICAP Reference System Phase 2	Functional Requirements	Excellence in Execution	\$0.06	\$0.00	\$0.06
ICAP Auction Validating and Reporting Phase 2	Deployment	Leader in Technology Innovation	\$0.14	\$0.00	\$0.14
External CRIS Rights for Non-UDR Transmission Expansion	Market Design Concept	Leader in Market Design	\$0.06	\$0.00	\$0.06
Behind the Meter: Net Generator Model+	Market Design Approved	Leader in Market Design	\$0.10	\$0.00	\$0.10
Winter DMNC Temperature Adjustments	Market Design Approved	Excellence in Execution	\$0.02	\$0.00	\$0.02

Capacity Products (continued)					
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	Estimated Cost (in millions)		
			<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>
Fuel Assurance: Market Design Concepts	Market Design Concept	Leader in Market Design	\$0.10	\$0.00	\$0.10
ICAP AMS Enhancements Phase 3	Development Complete	Excellence in Execution	\$0.18	\$0.00	\$0.18
Total			\$0.96	\$0.00	\$0.96

Demand Response					
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	Estimated Cost (in millions)		
			<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>
SCR Performance Obligations	Deployment	Leader in Reliability	\$0.22	\$0.00	\$0.22
Metering Infrastructure Requirements for Demand Response+	Functional Requirements	Excellence in Execution	\$0.11	\$0.10	\$0.21
DRIS Enhancements for DR Program Administration	Deployment	Excellence in Execution	\$0.14	\$0.00	\$0.14
Expanding on Selected DER Concepts to Further Align with REV+	Market Design Concept	Leader in Market Design	\$0.04	\$0.00	\$0.04
Total			\$0.51	\$0.10	\$0.61

Energy Markets					
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	Estimated Cost (in millions)		
			<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>
Coordinated Transaction Scheduling with ISO-NE (SOM)	Deployment	Leader in Market Design	\$1.14	\$2.42	\$3.56
Scheduling & Pricing: Comprehensive Shortage Pricing (SOM)	Deployment	Leader in Market Design	\$0.66	\$0.23	\$0.89
Scheduling & Pricing: Comprehensive Scarcity Pricing (SOM)	Development Complete	Leader in Market Design	\$0.36	\$0.26	\$0.62
Fuel Assurance: Market Concepts	Market Design Concept	Leader in Market Design	\$0.04	\$0.02	\$0.06
Behind the Meter: Net Generation Model+	Market Design Approved	Leader in Market Design	\$0.06	\$0.01	\$0.07
Total			\$2.26	\$2.94	\$5.20

Enterprise Products					
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	<i>Estimated Cost (in millions)</i>		
			<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>
NERC CIP v5 Planning & Conversion	Study Complete	Excellence in Execution	\$0.29	\$0.32	\$0.61
NERC CIP-005 v5 Electronic Security Perimeter	Deployment	Excellence in Execution	\$0.16	\$0.35	\$0.51
NERC CIP-010 v5 Configuration Management	Deployment	Excellence in Execution	\$0.37	\$0.03	\$0.40
NERC CIP-011 v5 Information Protection	Deployment	Excellence in Execution	\$0.18	\$0.00	\$0.18
Enterprise Project Management Phase IV	Deployment	Excellence in Execution	\$0.19	\$0.21	\$0.40
Stakeholder Services Suite Phase II	Deployment	Excellence in Execution	\$0.27	\$0.27	\$0.54
Identity and Access Management Phase IV	Deployment	Leader in Technology Innovation	\$0.54	\$0.15	\$0.69
Enterprise Technology Monitoring Phase II	Deployment	Leader in Technology Innovation	\$0.28	\$0.81	\$1.09
Application Platform Upgrade Phase II (Linux)	Deployment	Leader in Technology Innovation	\$0.31	\$0.07	\$0.38

Enterprise Products (continued)					
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	Estimated Cost (in millions)		
			<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>
Windows Server Upgrades	Deployment	Excellence in Execution	\$0.19	\$0.10	\$0.29
Integration Platform Availability Improvements	Software Design	Leader in Technology Innovation	\$0.17	\$0.15	\$0.32
Storage Infrastructure Redesign	Deployment	Leader in Technology Innovation	\$0.40	\$3.50	\$3.90
Total			\$3.35	\$5.96	\$9.31

Finance Products					
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	Estimated Cost (in millions)		
			<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>
Regulated Transmission Cost Recovery Implementation	Deployment	Leader in Market Design	\$0.14	\$0.00	\$0.14
Procurement Enhancements	Deployment	Excellence in Execution	\$0.07	\$0.02	\$0.10
Manual Adjustments Redesign	Deployment	Excellence in Execution	\$0.17	\$0.00	\$0.17
CMS True-up Exposure	Deployment	Excellence in Execution	\$0.16	\$0.00	\$0.16
Oracle Financials Fixed Assets	Deployment	Excellence in Execution	\$0.08	\$0.10	\$0.18
Budget versus Actual Automation	Functional Requirements	Excellence in Execution	\$0.08	\$0.10	\$0.17
RFP Evaluation Tool	Deployment	Excellence in Execution	\$0.14	\$0.12	\$0.26
Rate Schedule 1 Technology Automation	Market Design Concept	Leader in Market Design	\$0.12	\$0.00	\$0.12
CMS Financial Risk Assessment Tools	Functional Requirements	Excellence in Execution	\$0.07	\$0.00	\$0.07

Finance Products (continued)					
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	Estimated Cost (in millions)		
			<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>
CMS Ratings Automation	Functional Requirements	Excellence in Execution	\$0.07	\$0.00	\$0.07
CMS External Transactions Timing Adjustments	Deployment	Excellence in Execution	\$0.25	\$0.00	\$0.25
CMS ICAP Spot Market Offers Enhancement	Deployment	Excellence in Execution	\$0.12	\$0.00	\$0.12
Total			\$1.47	\$0.34	\$1.81

Operations & Reliability Products					
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	Estimated Cost (in millions)		
			<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>
FERC Funded Rerun Phase 2	Deployment	Excellence in Execution	\$0.07	\$0.00	\$0.07
FERC Funded Rerun Phase 3	Development Complete	Excellence in Execution	\$0.32	\$0.00	\$0.32
EMS/BMS System Upgrade	RFP Initiated	Leader in Reliability	\$0.18	\$1.63	\$1.81
BES: Contingency Analysis Updates	Deployment	Leader in Reliability	\$0.15	\$0.62	\$0.77
BES: Interconnection Reliability Operating Limits (IROL) Visualization	Deployment	Leader in Reliability	\$0.07	\$0.05	\$0.12
Gas-Electric Coordination: Fuel Availability Self Reporting (SOM)	Deployment	Leader in Reliability	\$0.22	\$0.00	\$0.22
MMA Market Operations Report Automation	Functional Requirements	Excellence in Execution	\$0.14	\$0.00	\$0.14
2015 Reference Level Software (RLS) Enhancements	Deployment	Leader in Market Design	\$0.30	\$0.11	\$0.41
Total			\$1.45	\$2.41	\$3.86

Planning Products					
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	Estimated Cost (in millions)		
			<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>
Economic Planning Model Management	Functional Requirements	Sustain & Enhance Robust Planning Processes	\$0.13	\$0.14	\$0.27
Total			\$0.13	\$0.14	\$0.27

TCC Products					
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	Estimated Cost (in millions)		
			<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>
TCC Revenue Allocation Automation	Deployment	Excellence in Execution	\$0.33	\$0.00	\$0.33
Balance-of-Period AMS	Software Design	Leader in Market Design	\$0.11	\$0.00	\$0.11
Balance-of-Period AVS	Functional Requirements	Leader in Market Design	\$0.17	\$0.00	\$0.17
Balance-of-Period CMS	Functional Requirements	Leader in Market Design	\$0.07	\$0.00	\$0.07
TCC AMS Round Type and Upgrade	Development Complete	Leader in Technology Innovation	\$0.11	\$0.00	\$0.11
Total			\$0.79	\$0.00	\$0.79

ESTIMATED TOTAL PROJECT COST BY PRODUCT AREA

(\$ in millions)				
Product Area	NYISO Labor	Capital/ Consultancy	Total	Mandatory Budget*
Business Intelligence	\$0.92	\$0.78	\$1.70	\$0.21
Capacity Market	\$0.96	\$0.00	\$0.96	\$0.06
Demand Response	\$0.51	\$0.10	\$0.61	\$0.00
Energy Market	\$2.26	\$2.94	\$5.20	\$3.57
Enterprise	\$3.35	\$5.96	\$9.31	\$1.70
Finance	\$1.47	\$0.34	\$1.81	\$0.14
Operations and Reliability	\$1.45	\$2.41	\$3.86	\$0.00
Planning	\$0.13	\$0.14	\$0.27	\$0.00
TCC Market	\$0.79	\$0.00	\$0.79	\$0.00
Total Cost	\$11.84	\$12.67	\$24.51	\$5.68

*Mandatory = FERC Order, Strategic Initiative, Tariff Obligation, or Dependency To Support Order, Initiative, or Obligation: these funds do not reflect projects required for necessary upgrades or projects necessary to mitigate undesirable risks

Next Steps

- ◆ **Ongoing dialogue with Market Participants at BPWG**

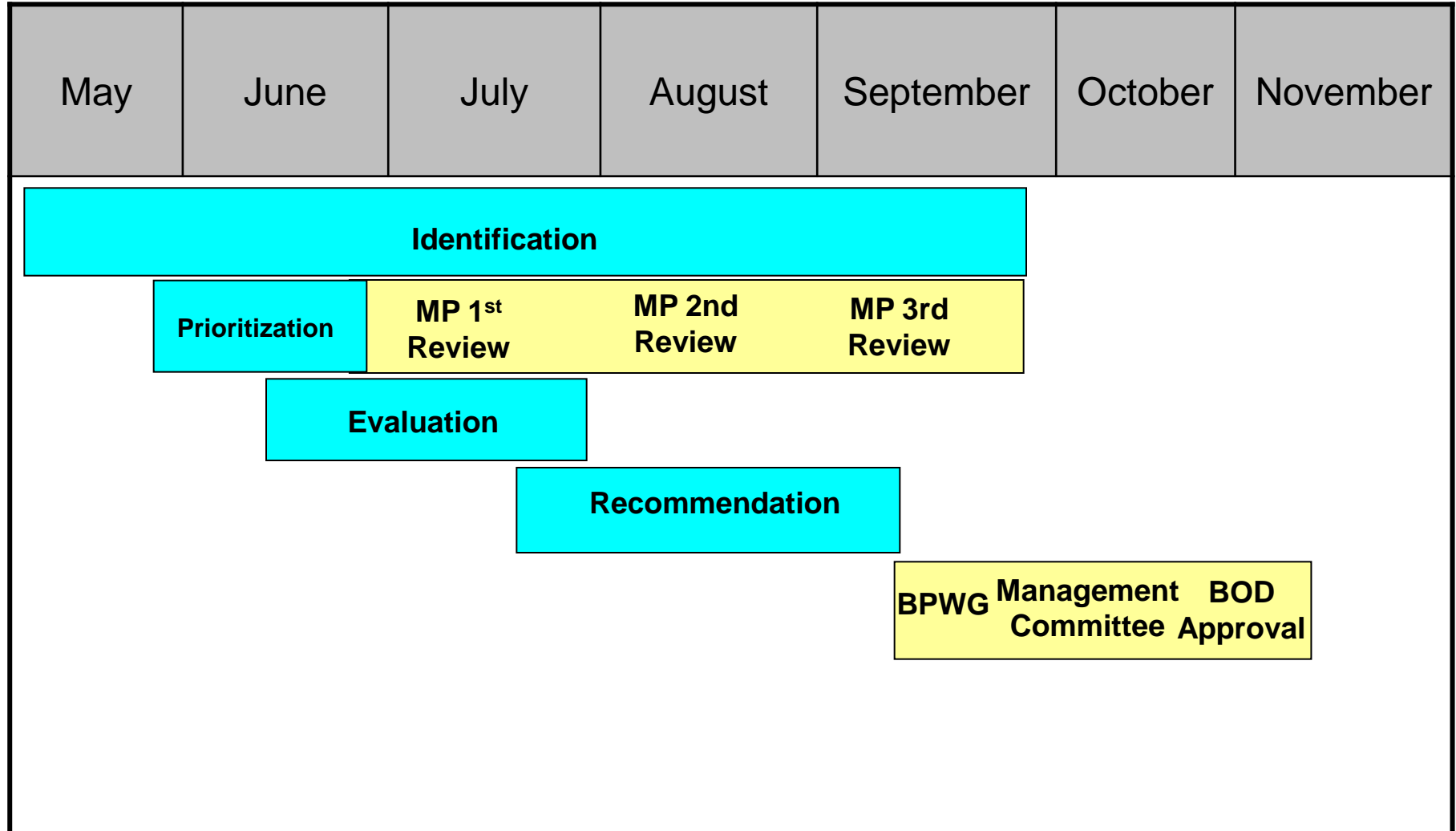
APPENDICES

Appendix A: 2015 Selection Process and Timeline

2015 Project Selection Process

Phase	Definition
Identification	<ul style="list-style-type: none"> ◆ FERC Orders ◆ Existing tariff obligations ◆ Strategic Initiatives ◆ State of the Market recommendations ◆ Necessary infrastructure enhancements ◆ Feedback from MPs throughout the year ◆ Product Plans, Market Design Evolution and Strategic Plan
Prioritization	Evaluate projects using objective criteria that reflects the NYISO strategy, stakeholder interest, and potential impacts to budget and resources
Evaluation	Conduct feasibility assessment – detailed estimates of hardware, software, consultancy and staff
Recommendation	Refine 2015 proposed projects based on feasibility assessment

2015 Project Prioritization and Budgeting Timeline



Appendix B: 2015 Project Prioritization

2015 Prioritization Criteria

PRIORITIZATION CRITERIA							
#	Category	Criteria	Criteria Weight (1-10)	HIGH	MEDIUM	LOW	NONE
				10	7	3	0
1	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
2		Leader in Market Design	10	Significantly improves NYISO Market Design	Moderately improves NYISO Market Design	Minimally improves NYISO Market Design	None
3		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
4		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
5	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)
6		Appeal	10	Broad Customer and NYISO desirability.	Desired by Customer	Desired by NYISO	Not Desired by Customer & Not Desired by NYISO
7		Market Efficiency	10	Significant improvement	Moderate improvement	Minimal improvement	No impact
8		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
9	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
10		Business Process (inclusive of technology impact on business process)	10	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
11		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
		Sum	100				
Execution							
1	Execution (if we do this project)	Cost	4	project, <\$100k	>\$100k, <\$500k	>\$500, <\$1M	>\$1M
2		Multi-Year Dependency	6	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
3		Complexity of Business and Technology	4	One area/technology	Cross-functional < 3 Areas/Technology	Highly Cross-functional/ Re-engineering	Complex, solution and impact unknown
4		Compliance	10	Non-appealable, ordered by FERC / desired by NYISO and MP	Ordered by FERC, undesired by NYISO or MP	Potential order identified by FERC	No regulatory impact

Priority Scores

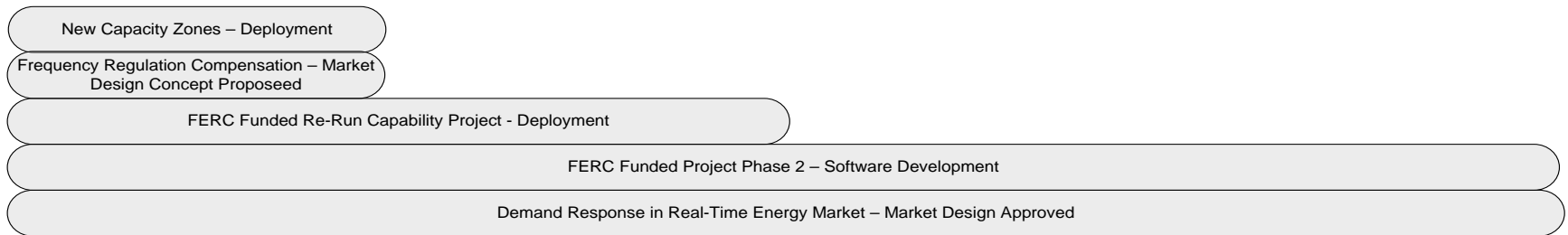
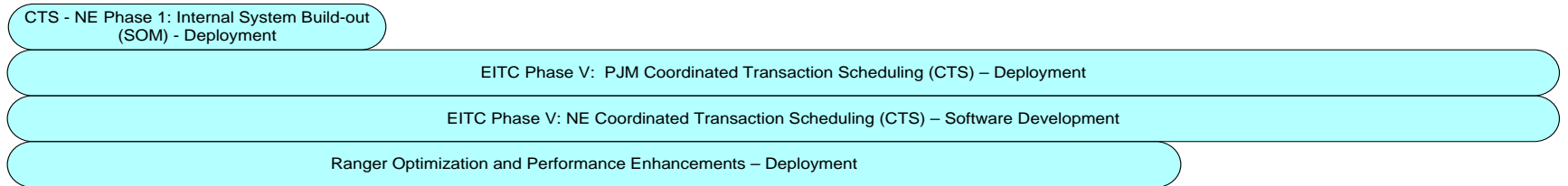
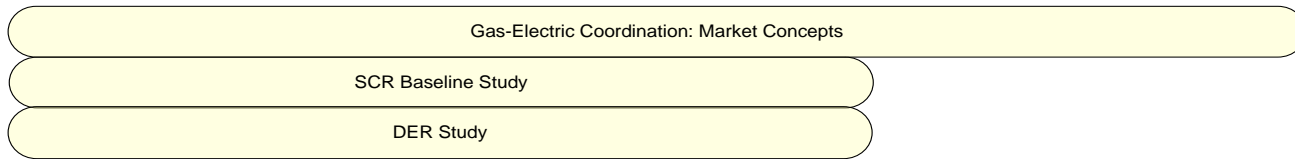
- ◆ **Individual projects scored against objective criteria**
- ◆ **Objective criteria aligned with NYISO Strategic Plan**
- ◆ **High level project descriptions utilized as a basis for potential scope for evaluation purposes**
- ◆ **Individual project priority scores provide indication of relative ranking**

Appendix C: Strategic Initiatives and Stakeholder Input

2014 – 2016 Product Plan: Strategic Initiatives and FERC Orders

2014 Product Plan - Strategic Initiatives and FERC Orders

Q1-2014	Q2-2014	Q3-2014	Q4-2014
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- NYISO Strategic Initiatives
- Broader Regional Markets
- FERC Order

2015 - 2016 Product Plan - Strategic Initiatives and FERC Orders

2015	2016
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- Expanded Gas-Electric Coordination
- Robust Planning
- Capacity Markets and Generator Retirements
- Technology and Smart Grid
- Demand Response

- EITC Phase I: HQ on Dispatch (5-Minute)
- EITC Phase IV: ISO-NE CTS – Deployment

- Demand Response in RT Energy Market – Development and Testing
- Demand Response in RT Energy Market – Implementation
- FERC Funded Project Phase 2 - Deployment
- FERC Funded Project Phase 3 - Deployment
- NERC Critical Infrastructure Protection v5 - Implementation
- Regulated Transmission Cost Recovery

- NYISO Strategic Initiatives
- Broader Regional Markets
- FERC Order

Stakeholder Input Received

Stakeholder Input	NYISO Response
<p>Noted that the NYISO committed to FERC that it would address ROS Mitigation for Uneconomic Entry in the stakeholder process. Request to add this to the project candidate list.</p>	<p>The NYISO disagrees that it committed to pursue such a project.</p>
<p>Request to add Annual Capacity Market to project candidate list to continue the development work that may result from this year's effort.</p>	<p>Both Annual and Forward Capacity Market (FCM) concepts and feasibility will be discussed with stakeholders in 2014. If there is sufficient stakeholder support to move forward, the NYISO will include an Annual or FCM detailed market design for 2015 before the NYISO project list and budget is finalized.</p>
<p>Request to add Minimum Criteria for Capacity Provider to project candidate list.</p>	<p>Included in Fuel Assurance: Market Design Concepts under Capacity Markets.</p>
<p>Request to break out Locational Planning Requirements - Pre-Define Capacity Zones (SOM) and Rules to Eliminate Zones separately in the project candidate list.</p>	<p>Determining rules to eliminate zones is linked to the criteria for creating zones, therefore, these two issues should not be treated as separate projects.</p>

Stakeholder Input Received

Stakeholder Input	NYISO Response
Request to expand the naming of Rules to Eliminate Capacity Zones to include “or achieve price convergence”.	Updated under Capacity Products.
Request to rename Incremental External CRIS Rights for Non-UDR Transmission Expansion “Grant EXTERNAL CRIS Rights” through the Class Year studies and note that there is a process to obtain “internal” CRIS through the Class Year studies.	Updated under Capacity Products.
Request to rename Comprehensive Shortage Pricing – Phase II to reflect that it is addressing Scarcity pricing.	Updated under Energy Market Products.
<p>FERC Order No. 1000 / Methodology for Allocating the Costs of Resolving Transmission Security Violations</p> <p>The NYISO will initiate a stakeholder review process to develop a cost allocation methodology and file with Commission through a Section 205 filing by the end of the third quarter of 2014. This will enable the methodology to be in place by the time the NYISO begins to consider possible solutions to needs identified in the next RNA. If FERC grants a delay in the implementation of these procedures and it does not get done this year than it should be put on the project list for next year.</p>	Included in Regulated Transmission Cost Recovery under Finance Products.
Request to add Post Day Ahead and Real-Time Line De-rates Daily to project candidate list.	Added under Operations & Reliability Products.

Appendix D: Cost/Benefit Analysis for 2015 Preliminary Project Candidates

2015 PRELIMINARY PROJECT CANDIDATES: COST/BENEFIT ANALYSIS*

***All projects in the following list are currently being evaluated on an individual basis according to priority, cost and resource availability for 2015. NYISO does not have the resource and budget capacity to feasibly do all of the following projects. NYISO will propose a feasible list of projects and a budget at the September BPWG**

Business Intelligence Products							
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	<i>Priority Score</i>	<i>Estimated Cost (in millions)</i>			<i>Benefits</i>
				<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>	
Mandatory Projects*							
NY Generator Attribute Tracking System (GATS) Data Feed	Deployment	Authoritative Source of Information on Key Issues	293	\$0.208	\$0.000	\$0.208	<ul style="list-style-type: none"> Mandated by NYS Legislature Reduce current NYISO processes for EDP and RPS programs
Continuing from 2014							
OASIS Postings Technology Upgrade Phase 2	Deployment	Excellence in Execution	338	\$0.176	\$0.000	\$0.176	<ul style="list-style-type: none"> Improve supportability Remove reliance on older technology
DSS Business Objects Upgrade	Deployment	Excellence in Execution	214	\$0.166	\$0.145	\$0.311	<ul style="list-style-type: none"> Upgrade to latest vendor version Improve supportability
Projects for Prioritization							
Public Website Renewables Page	Deployment	Authoritative Source of Information on Key Issues	230	\$0.109	\$0.000	\$0.109	<ul style="list-style-type: none"> Provide public visibility to different fuel types
Public Website NYISO Budget and Value Proposition Pages	Deployment	Authoritative Source of Information on Key Issues	230	\$0.033	\$0.071	\$0.104	<ul style="list-style-type: none"> Ease of locating and accessing NYISO budget information
Enterprise Information Mgmt: Data Integration	Deployment	Leader in Technology Innovation	305	\$0.223	\$0.564	\$0.787	<ul style="list-style-type: none"> Improve management of NYISO data Reduce time and costs for external data feeds

Capacity Products							
	Proposed Deliverable	Strategic Objective	Priority Score	Estimated Cost (in millions)			Benefits
				NYISO Labor	Capital/ Consultancy	Total	
Mandatory Projects*							
Modify the Pivotal Supplier Tests (SOM)	Deployment	Excellence in Execution	790	\$0.058	\$0.000	\$0.058	<ul style="list-style-type: none"> Satisfies compliance requirement May prevent large supplier from circumventing mitigation and benefiting from withholding capacity
Continuing from 2014							
ICAP AMS Enhancements Phase 2	Deployment	Excellence in Execution	783	\$0.106	\$0.000	\$0.106	<ul style="list-style-type: none"> Automates ICAP Market functions that were previously completed manually via spreadsheets and e-mail, reducing risk of errors.
Projects for Prioritization							
DMNC Test Validation Automation	Functional Requirements	Excellence in Execution	396	\$0.067	\$0.000	\$0.067	<ul style="list-style-type: none"> Automates manual processes and reduces risk of errors.
Reactive Test Data Collection and Tracking	Software Design	Excellence in Execution	609	\$0.148	\$0.000	\$0.148	<ul style="list-style-type: none"> Automates manual processes and reduces risk of errors.
ICAP Reference System Phase 2	Functional Requirements	Excellence in Execution	467	\$0.062	\$0.000	\$0.062	<ul style="list-style-type: none"> Improves transparency Expands functionality to additional processes
ICAP Auction Validating and Reporting Phase 2	Deployment	Leader in Technology Innovation	781	\$0.140	\$0.000	\$0.140	<ul style="list-style-type: none"> Provides efficient access to ICAP Auction Data, supporting Auction validation and report automation

Capacity Products (continued)							
	Proposed Deliverable	Strategic Objective	Priority Score	Estimated Cost (in millions)			Benefits
				NYISO Labor	Capital/ Consultancy	Total	
Projects for Prioritization (continued)							
External CRIS Rights for Non-UDR Transmission Expansion	Market Design Concept	Leader in Market Design	199	\$0.080	\$0.000	\$0.080	<ul style="list-style-type: none"> Grant MPs funding upgrades a capacity benefit associate with the upgrade May incent economic transmission
Locational Planning Requirements - Pre-define Capacity Zones (SOM) and Develop Rules for the Elimination of Capacity Zones or Achievement of Price Convergence	Market Design Approved	Leader in Market Design	329	\$0.148	\$0.000	\$0.148	<ul style="list-style-type: none"> May provide more timely price signals to incent investment needed to meet reliability requirements. May address price convergence issues associated with Locational requirements.
Behind the Meter: Net Generator Model+	Market Design Approved	Leader in Market Design	533	\$0.095	\$0.000	\$0.095	<ul style="list-style-type: none"> Allow surplus energy and capacity to participate in the wholesale market
Expand BSM measures to Address the Effects of Uneconomic Transmission Investment (SOM)	Market Design Concept	Leader in Market Design	185	\$0.096	\$0.000	\$0.096	<ul style="list-style-type: none"> Enhance market efficiency May defer investment in uneconomic transmission projects
Modify Demand Curve to Minimize Costs of Satisfying LCR & Incent Siting Capacity Where It	Market Design Concept	Leader in Market Design	199	\$0.166	\$0.000	\$0.166	<ul style="list-style-type: none"> Enhance market efficiency May reduce costs of meeting LCRs

*Mandatory = FERC Order, Strategic Initiative, Tariff Obligation, or Dependency To Support Order, Initiative, or Obligation

+ = Project may be applicable to the implementation of REV directed outcomes.

Capacity Products (continued)							
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	<i>Priority Score</i>	<i>Estimated Cost (in millions)</i>			<i>Benefits</i>
				<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>	
Projects for Prioritization (continued)							
Winter DMNC Temperature Adjustments	Market Design Approved	Excellence in Execution	430	\$0.021	\$0.000	\$0.021	<ul style="list-style-type: none"> Enhance measurement of Installed Capacity available for typical winter peak conditions
ICAP Import Rights Design Re-assessment	Market Design Approved	Excellence in Execution	311	\$0.030	\$0.000	\$0.030	<ul style="list-style-type: none"> Automate FCFS fax process Enhance market efficiency
Locational Planning Requirements - Grant Internal Capacity Deliverability Rights for Transmission Upgrades into a Local Area (SOM)	Market Design Concept	Leader in Market Design	199	\$0.082	\$0.000	\$0.082	<ul style="list-style-type: none"> Allow for Capacity Market incentive for economic transmission investments
Fuel Assurance: Market Design Concepts	Market Design Concept	Leader in Market Design	563	\$0.096	\$0.000	\$0.096	<ul style="list-style-type: none"> Incent intra-day operational flexibility Promote increased resource availability and performance
ICAP AMS Enhancements Phase 3	Development Complete	Excellence in Execution	471	\$0.309	\$0.000	\$0.309	<ul style="list-style-type: none"> Automates manual processes and reduces risk of errors.
External CRIS Right (4 strike rule) Rule	Market Design Approved	Leader in Market Design	239	\$0.093	\$0.000	\$0.093	<ul style="list-style-type: none"> Enhance market efficiency
Discuss concept for applying BSM measures in the NYCA	Market Design Concept	Excellence in Execution	228	\$0.189	\$0.000	\$0.189	<ul style="list-style-type: none"> May enhance market efficiency

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Demand Response Products							
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	<i>Priority Score</i>	<i>Estimated Cost (in millions)</i>			<i>Benefits</i>
				<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>	
Mandatory Projects*							
Demand Response in Real-Time Energy Market	Functional Requirements	Leader in Market Design	737	\$0.158	\$0.000	\$0.158	<ul style="list-style-type: none"> Provides opportunity for demand response to participate in NYISO's hour-ahead market
FERC Order 745: Monthly Net Benefits Test	Deployment	Leader in Market Design	437	\$0.005	\$0.000	\$0.005	<ul style="list-style-type: none"> Variable offer floor and improved cost allocation
Continuing from 2014							
SCR Performance Obligations	Deployment	Leader in Reliability	653	\$0.217	\$0.000	\$0.217	<ul style="list-style-type: none"> Increased reliability of the grid Event response may be used to satisfy the test requirement Option to retest
Metering Infrastructure Requirements for Demand Response+	Functional Requirements	Excellence in Execution	485	\$0.106	\$0.095	\$0.201	<ul style="list-style-type: none"> Improve administration of DR programs with increased measurement, verification and audit capabilities Improve operational visibility of demand side resources
Projects for Prioritization							
DRIS Enhancements for DR Program Administration	Deployment	Excellence in Execution	492	\$0.141	\$0.000	\$0.141	<ul style="list-style-type: none"> Increased efficiency and accuracy for DR program administration
Market Rule Changes to SCR Baselines	Market Design Approved	Excellence in Execution	646	\$0.064	\$0.000	\$0.064	<ul style="list-style-type: none"> Improve methodologies for estimating available capacity and load reductions of demand response resources
Expanding on Selected DER Concepts to Further Align with REV+	Market Design Concept	Leader in Market Design	396	\$0.043	\$0.000	\$0.043	<ul style="list-style-type: none"> Alignment with the New York State Public Service Commission's "Reforming the Energy Vision (REV) proceeding"

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+ = Project may be applicable to the implementation of REV directed outcomes.

Energy Products							
	Proposed Deliverable	Strategic Objective	Priority Score	Estimated Cost (in millions)			Benefits
				NYISO Labor	Capital/ Consultancy	Total	
Mandatory Projects*							
Coordinated Transaction Scheduling with ISO-NE (SOM)	Deployment	Leader in Market Design	741	\$1.144	\$2.423	\$3.567	<ul style="list-style-type: none"> \$17M/year in Production Cost Savings (D. Patton – Potomac Economics)
Continuing from 2014							
Scheduling & Pricing: Comprehensive Shortage Pricing (SOM)	Deployment	Leader in Market Design	628	\$0.657	\$0.228	\$0.885	<ul style="list-style-type: none"> Increase in the efficiency of price signals More efficient scheduling
Scheduling & Pricing: Comprehensive Scarcity Pricing (SOM)	Development Complete	Leader in Market Design	626	\$0.364	\$0.261	\$0.625	<ul style="list-style-type: none"> Increase in the efficiency of internal and external price signals Incenting fuel assurance
Projects for Prioritization							
Fuel Assurance: Market Concepts	Market Design Concept	Leader in Market Design	563	\$0.040	\$0.024	\$0.064	<ul style="list-style-type: none"> Incent intra-day operational flexibility Promote increased resource availability and performance
Gas-Electric Coordination: Constrained Fuel Supply Bidding (SOM)	Market Design Concept	Leader in Market Design	483	\$0.050	\$0.000	\$0.050	<ul style="list-style-type: none"> Greater efficiency for dispatch Improved Gas-Electric coordination
Behind the Meter: Net Generation Model+	Market Design Approved	Leader in Market Design	533	\$0.062	\$0.010	\$0.072	<ul style="list-style-type: none"> Allow surplus energy and capacity to participate in the wholesale market

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Energy Products (continued)							
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	<i>Priority Score</i>	<i>Estimated Cost (in millions)</i>			<i>Benefits</i>
				<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>	
Projects for Prioritization (continued)							
Disaggregated Virtual Trading	Market Design Approved	Leader in Market Design	100	\$0.165	\$0.095	\$0.260	<ul style="list-style-type: none"> Improved market efficiency Enhanced market functionality
External Transaction Balancing Protection	Market Design Concept	Excellence in Execution	483	\$0.009	\$0.000	\$0.009	<ul style="list-style-type: none"> Improve market performance
Energy Storage Optimization	Market Design Concept	Leader in Market Design	361	\$0.035	\$0.000	\$0.035	<ul style="list-style-type: none"> Improved market efficiency through better utilization of storage resources
5 minute Transaction Scheduling	Market Design Concept	Leader in Market Design	359	\$0.077	\$0.000	\$0.077	<ul style="list-style-type: none"> Improved price signals More efficient scheduling Reduce residuals
Scheduling & Pricing: RTD/RTC Forward Horizon Coordination Improvements (SOM)	Market Design Concept	Leader in Market Design	303	\$0.064	\$0.000	\$0.064	<ul style="list-style-type: none"> Improved price signals More efficient scheduling
Long Island PAR Optimization (SOM)	Market Design Approved	Leader in Market Design	291	\$0.044	\$0.000	\$0.044	<ul style="list-style-type: none"> \$20M in Production Cost Savings (D. Patton – Potomac Economics)
Scheduling & Pricing: Hybrid GT Pricing Improvements (SOM)	Market Design Approved	Leader in Market Design	301	\$0.046	\$0.000	\$0.046	<ul style="list-style-type: none"> Improved price signals More efficient scheduling Reduce residuals
Virtual Trading using Spread Bids	Market Design Concept	Leader in Market Design	100	\$0.050	\$0.000	\$0.050	<ul style="list-style-type: none"> Improved market efficiency Enhanced market functionality

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Enterprise Products							
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	<i>Priority Score</i>	<i>Estimated Cost (in millions)</i>			<i>Benefits</i>
				<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>	
Mandatory Projects*							
NERC CIP v5 Planning & Conversion	Study Complete	Excellence in Execution	629	\$0.289	\$0.323	\$0.612	<ul style="list-style-type: none"> NERC CIP v5 compliance NERC CIP audit readiness
NERC CIP-005 v5 Electronic Security Perimeter	Deployment	Excellence in Execution	612	\$0.164	\$0.347	\$0.511	<ul style="list-style-type: none"> NERC CIP v5 compliance NERC CIP audit readiness
NERC CIP-010 v5 Configuration Management	Deployment	Excellence in Execution	623	\$0.371	\$0.025	\$0.396	<ul style="list-style-type: none"> NERC CIP v5 compliance NERC CIP audit readiness
NERC CIP-011 v5 Information Protection	Deployment	Excellence in Execution	619	\$0.175	\$0.000	\$0.175	<ul style="list-style-type: none"> NERC CIP v5 compliance NERC CIP audit readiness
Continuing from 2014							
Enterprise Project Management Phase IV	Deployment	Excellence in Execution	365	\$0.190	\$0.214	\$0.404	<ul style="list-style-type: none"> Improve resource capacity and utilization data for project decision making
Stakeholder Services Suite Phase II	Deployment	Excellence in Execution	384	\$0.272	\$0.316	\$0.588	<ul style="list-style-type: none"> Improve data for managing customer interactions Reduce manual processing of duplicate data
Identity and Access Management Phase IV	Deployment	Leader in Technology Innovation	464	\$0.542	\$0.145	\$0.687	<ul style="list-style-type: none"> Enhance security of critical cyber assets Enhance security of physical security systems

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Enterprise Products (continued)							
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	<i>Priority Score</i>	<i>Estimated Cost (in millions)</i>			<i>Benefits</i>
				<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>	
Continuing from 2014 (continued)							
Enterprise Technology Monitoring Phase II	Deployment	Leader in Technology Innovation	523	\$0.277	\$0.814	\$1.091	<ul style="list-style-type: none"> Enhance IT situational awareness of critical applications and infrastructure Reduce unplanned service interruptions
Application Platform Upgrade Phase II (Linux)	Deployment	Leader in Technology Innovation	453	\$0.311	\$0.070	\$0.381	<ul style="list-style-type: none"> Replace obsolete hardware running NYISO applications Maintain product support
Windows Server Upgrades	Deployment	Excellence in Execution	381	\$0.190	\$0.100	\$0.290	<ul style="list-style-type: none"> Maintain product support Maintain NYISO security posture
Projects for Prioritization							
Improve MP Access Security	Architecture Design	Excellence in Execution	365	\$0.063	\$0.000	\$0.063	<ul style="list-style-type: none"> Improve access security to NYISO market systems Maintain NYISO security posture
Integration Platform Availability Improvements	Deployment	Leader in Technology Innovation	402	\$0.168	\$0.229	\$0.397	<ul style="list-style-type: none"> Enhance platform capabilities Improve platform availability Maintain product support
Storage Infrastructure Redesign	Deployment	Leader in Technology Innovation	457	\$0.404	\$3.500	\$3.904	<ul style="list-style-type: none"> Utilize more efficient technologies to meet growing data storage requirements Maintain product support
Market Test Environment	Deployment	Excellence in Execution	255	\$0.100	\$0.400	\$0.500	<ul style="list-style-type: none"> Increased availability of "sandbox" environment for MP testing and training

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Finance Products							
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	<i>Priority Score</i>	<i>Estimated Cost (in millions)</i>			<i>Benefits</i>
				<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>	
Mandatory Projects*							
Regulated Transmission Cost Recovery Implementation	Deployment	Leader in Market Design	651	\$0.143	\$0.000	\$0.143	<ul style="list-style-type: none"> Support planning Meet reliability, economic and/or public policy needs
Continuing from 2014							
Procurement Enhancements	Deployment	Excellence in Execution	238	\$0.071	\$0.024	\$0.095	<ul style="list-style-type: none"> Improve efficiencies for creating and approving purchase requests
Manual Adjustments Redesign	Deployment	Excellence in Execution	406	\$0.167	\$0.000	\$0.167	<ul style="list-style-type: none"> Provide automation for processes which are currently manual
Projects for Prioritization							
CMS True-up Exposure	Deployment	Excellence in Execution	408	\$0.157	\$0.000	\$0.157	<ul style="list-style-type: none"> Reduce potential financial exposure
Oracle Financials Fixed Assets	Deployment	Excellence in Execution	238	\$0.080	\$0.095	\$0.175	<ul style="list-style-type: none"> Enhance processes Consolidate processes into one system
Budget versus Actual Automation	Functional Requirements	Excellence in Execution	233	\$0.075	\$0.095	\$0.170	<ul style="list-style-type: none"> Improve usability Improve visibility
RFP Evaluation Tool	Deployment	Excellence in Execution	143	\$0.139	\$0.120	\$0.259	<ul style="list-style-type: none"> Consolidation of information Standardization of process
DAMAP Enhancement	Deployment	Excellence in Execution	293	\$0.135	\$0.000	\$0.135	<ul style="list-style-type: none"> Improve market design

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Finance Products (continued)							
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	<i>Priority Score</i>	<i>Estimated Cost (in millions)</i>			<i>Benefits</i>
				<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>	
Projects for Prioritization (continued)							
North Subzone Redistricting	Market Design Concept	Leader in Market Design	215	\$0.384	\$0.000	\$0.384	<ul style="list-style-type: none"> • Reduce Unaccounted for Energy(UFE)
Rate Schedule 1 Technology Automation	Market Design Concept	Leader in Market Design	365	\$0.118	\$0.000	\$0.118	<ul style="list-style-type: none"> • Reduce manual processes • Improve efficiencies and reduce risk
CMS Financial Risk Assessment Tools	Functional Requirements	Excellence in Execution	308	\$0.069	\$0.000	\$0.069	<ul style="list-style-type: none"> • Reduce risk • Replace manual processes
CMS Ratings Automation	Functional Requirements	Excellence in Execution	308	\$0.074	\$0.000	\$0.074	<ul style="list-style-type: none"> • Improve efficiency • Replace manual processes
CMS External Transactions Timing Adjustments	Deployment	Excellence in Execution	348	\$0.251	\$0.000	\$0.251	<ul style="list-style-type: none"> • Improve Credit policy • Potential MP reduction in collateral
CMS ICAP Spot Market Offers Enhancement	Deployment	Excellence in Execution	333	\$0.120	\$0.000	\$0.120	<ul style="list-style-type: none"> • Improve Credit policy • Potential MP reduction in collateral
CMS Unbalanced Trading Hubs	Deployment	Leader in Market Design	213	\$0.394	\$0.000	\$0.394	<ul style="list-style-type: none"> • Improve market design

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Operations & Reliability Products							
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	<i>Priority Score</i>	<i>Estimated Cost (in millions)</i>			<i>Benefits</i>
				<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>	
Continuing from 2014							
FERC Funded Rerun Phase 2	Deployment	Excellence in Execution	770	\$0.073	\$0.000	\$0.073	<ul style="list-style-type: none"> Improved efficiency of meeting FERC Office of Enforcement request
FERC Funded Rerun Phase 3	Development Complete	Excellence in Execution	770	\$0.315	\$0.000	\$0.315	<ul style="list-style-type: none"> Improved efficiency of meeting FERC Office of Enforcement request
Projects for Prioritization							
EMS/BMS System Upgrade	RFP Initiated	Leader in Reliability	743	\$0.178	\$1.625	\$1.803	<ul style="list-style-type: none"> Increased supportability Increased Ranger platform stability
Breaker Level Market Modeling	Deployment	Leader in Reliability	598	\$0.057	\$0.190	\$0.247	<ul style="list-style-type: none"> Improve price signals Reduce market inefficiency
Transmission Service Charges: Rate Update	Deployment	Excellence in Execution	520	\$0.046	\$0.000	\$0.046	<ul style="list-style-type: none"> Improved supportability
BES: Contingency Analysis Updates	Deployment	Leader in Reliability	618	\$0.150	\$0.618	\$0.768	<ul style="list-style-type: none"> Enhanced contingency processing Increased system reliability
BES: Interconnection Reliability Operating Limits (IROL) Visualization	Deployment	Leader in Reliability	592	\$0.074	\$0.048	\$0.122	<ul style="list-style-type: none"> Improve operational awareness Redundancy for periods of Ranger unavailability

Operations & Reliability Products (continued)							
	Proposed Deliverable	Strategic Objective	Priority Score	Estimated Cost (in millions)			Benefits
				NYISO Labor	Capital/ Consultancy	Total	
Projects for Prioritization (continued)							
Dispatcher Training System (DTS) Sustainability Phase II	Development Complete	Leader in Reliability	578	\$0.157	\$0.150	\$0.307	<ul style="list-style-type: none"> Reduction in training downtime and rescheduling Continued compliance with NERC PER-005
Gas-Electric Coordination: Fuel Availability Self Reporting (SOM)	Deployment	Leader in Reliability	663	\$0.222	\$0.000	\$0.222	<ul style="list-style-type: none"> Improved situational awareness of grid and market conditions Improved reliability at times of high natural gas demand
MetrixIDR (Load Forecaster Upgrade)	Deployment	Leader in Reliability	578	\$0.223	\$0.000	\$0.223	<ul style="list-style-type: none"> Supportability Allows Operators to focus on the forecast, not complex software
MMA Market Operations Report Automation	Functional Requirements	Excellence in Execution	660	\$0.140	\$0.000	\$0.140	<ul style="list-style-type: none"> Improve efficiency of MMA tasks
2015 Reference Level Software (RLS) Enhancements	Deployment	Leader in Market Design	636	\$0.304	\$0.105	\$0.409	<ul style="list-style-type: none"> Improved alignment of Reference Prices with Gas Market Increased user flexibility
Posting of Line Derates / Uprates	Deployment	Authoritative Source of Information on Key Issues	188	\$0.109	\$0.000	\$0.109	<ul style="list-style-type: none"> Increase Transparency Satisfies MP Request

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Planning Products							
	Proposed Deliverable	Strategic Objective	Priority Score	Estimated Cost (in millions)			Benefits
				NYISO Labor	Capital/ Consultancy	Total	
Continuing from 2014							
Economic Planning Model Management	Deployment	Sustain & Enhance Robust Planning Processes	637	\$0.132	\$0.143	\$0.275	<ul style="list-style-type: none"> Improved efficiency in development of Planning models through automation Reduced risk through development of standard procedures

TCC Products							
	<i>Proposed Deliverable</i>	<i>Strategic Objective</i>	<i>Priority Score</i>	<i>Estimated Cost (in millions)</i>			<i>Benefits</i>
				<i>NYISO Labor</i>	<i>Capital/ Consultancy</i>	<i>Total</i>	
Continuing from 2014							
TCC Revenue Allocation Automation	Deployment	Excellence in Execution	744	\$0.000	\$0.000	\$0.000	<ul style="list-style-type: none"> Improves efficiency and reduces risk through automation of manual processes Required for multi-duration auction support
Projects for Prioritization							
Balance-of-Period AMS	Software Design	Leader in Market Design	564	\$0.111	\$0.000	\$0.111	<ul style="list-style-type: none"> Evolves TCC Market to allow MPs to reconfigure remaining months in capability period Satisfies a top priority for MPs
Balance-of-Period AVS	Functional Requirements	Leader in Market Design	564	\$0.171	\$0.000	\$0.171	<ul style="list-style-type: none"> New Validations associated with new Balance-of-Period processes are developed Automation of manual processes
Balance-of-Period CMS	Functional Requirements	Leader in Market Design	564	\$0.072	\$0.000	\$0.072	<ul style="list-style-type: none"> Development of credit policy for Balance-of-Period auction format Identification of modifications to CMS
TCC AMS Round Type and Upgrade	Development Complete	Leader in Technology Innovation	424	\$0.106	\$0.000	\$0.106	<ul style="list-style-type: none"> Allows AMS to be used for round analysis inquiries Improves efficiency Improves supportability
TCC On-Peak/Off-Peak	Market Design Concept	Leader in Market Design	350	\$0.023	\$0.000	\$0.023	<ul style="list-style-type: none"> Investigates benefits of offering separate On-Peak / Off-Peak TCCs

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



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