

# NYISO 2018 BUDGET OVERVIEW



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# NYISO 2018 Budget: Highlights & Summary Information

# Timeline for Budget Cycle

- **September 11:** NYISO presents draft of 2018 budget to BPWG
- **September 18:** BOD meeting to review high level draft budget summary
- **September 27:** BPWG to present 2018 draft budget to Management Committee
- **October 6:** BPWG meeting
- **October 16:** BOD meeting to review draft of 2018 budget
- **October 25:** Management Committee to vote on 2018 budget
- **November 14:** BOD approval of final 2018 budget

# Key Priorities & Projects for 2018

- **Security Program Enhancements focus on ensuring secure operations and proactively meeting audit and compliance needs in a timely and cost efficient manner:**
  - Implementation of processes & controls for Supply Chain Security (CIP-013)
  - Quality Assurance of compliance with NERC Critical Infrastructure Protection Program
    - Preparation for 2019 NERC CIP Audit
  - Participation in NERC ICE (Internal Controls Evaluation) pilot
- **Physical and Cyber Security Enhancements**
  - Enhancing physical controls at both NYISO sites
  - Improvements in automation of Access Management Capabilities
  - Continued participation within Cyber Risk Information Sharing Program (CRISP)
  - Continue evolution to next generation security architecture
  - Completion of rollout of NAESB compliant certificates
  - Enhancements to Cyber Security Operations Center
  - Security Awareness and Training Program enhancements

# Key Priorities & Projects for 2018 (Cont.)

- **System and Resource Planning focus on Reliability and Public Policy Planning Requirements:**
  - Continued support of PSC-requested studies including
    - Support of AC Transmission and Western NY public policy requirements
    - Assessment of potential public policy transmission needs such as off-shore wind integration, North Country unbottling, and Clean Energy Standard implementation
    - Assessment of impacts from various environmental regulations
  - Other Planning initiatives include
    - Comprehensive System Planning Process Review
    - Interconnection Project Queue (Portal) Automation
    - Impact studies of enhanced energy efficiency
    - Monitoring of solar irradiance and MW forecasts
    - Dynamic simulations to meet compliance obligations for NERC, NPCC and NYSRC
    - Model on Demand Upgrade and Build-out

# Key Priorities & Projects for 2018 (Cont.)

- **Reliability through Markets:**
  - Capacity Market Enhancements
    - Alternative Methods for Determining Locational Capacity Requirements
    - On Ramps and Off Ramps for Zones
    - Reliability Must Run Cost Recovery Phase II
    - Buyer Side Mitigation: Repowering
    - Performance Assurance
    - CRIS for External – ROS Transmission Investment
  - Energy Market Enhancements
    - FERC Order 831: Offer Caps
    - RTC/RTD Convergence Improvements
    - Model 100+KV Transmission Constraints
    - Constraint Specific Transmission Demand Curves

# Key Priorities & Projects for 2018 (Cont.)

- **Integration of Distributed Energy Resources:**
  - Distributed Energy Resource Participation Model
  - Distributed Energy Resource Pilot Framework
  - FERC Order 745
  - Granular Pricing & Market Price Delivery
  
- **Integration of Public Policy:**
  - Integrating Public Policy
  - Energy Storage Integration & Optimization
  - Large Solar Participation Model

# Key Priorities & Projects for 2018 (Cont.)

- **Technology and Infrastructure Investment:**
  - System Upgrades
    - Microsoft System Upgrade
    - Network Infrastructure Upgrade
    - Application Platform Upgrade Phase V
    - Database Platform Upgrade Phase II
    - Planning High Performance Computing Platform Upgrade
    - TOA Platform Upgrade Phase II
    - Telephony System Upgrade
    - Software AG Upgrade
  - Information Technology Strategy
    - Public Website Content Management Platform and Redesign
    - Enterprise Information Management-Data Integration Phase III
    - Application Testing Improvements Phase II
    - EPG PMU Enhancements
    - ICAP AMS Redesign & Testing Improvements Phase II

# Key Priorities & Projects for 2018 (Cont.)

- Upgrade of the Market Management System to efficiently support future business requirements (EMS/BMS Replacement):
  - Fourth phase of a multi-year project to upgrade both the Energy Management System (EMS) and the Business Management System (BMS), collectively, the Market Management System (MMS)
  - The EMS encompasses the core reliability functions used by the system operators such as load flow and contingency analysis. The BMS/MMS encompasses the day ahead and real time energy market functionality
  - The fourth phase will complete the Factory Acceptance Testing and begin the Site Acceptance Testing, User Acceptance Testing, Parallel Operations and Production Deployment

# Budget Highlights

- NYISO's draft 2018 budget totals **\$155.7M**, allocated across a forecast of **157.8** million MWh, for a Rate Schedule 1 charge/MWh of **\$0.987**. Comparatively, the 2017 budget was **\$148.2M**, allocated across **158.3** million MWh for a Rate Schedule 1 charge/MWh of **\$0.936**
- NYISO's draft 2018 budget represents a **5.06%** increase in revenue requirement from the 2017 budget and a **0.32%** decrease in projected MWh, for an overall Rate Schedule 1 increase of **5.45%**

## Budget Highlights: Historical Budget Comparisons

%  
Change

(in millions, excluding RS1/MWh charges)	2014 Budget*	2015 Budget*	2016 Budget	2017 Budget	2018 Draft	2018 vs. 2017
RS1 Rev. Requirement (in \$\$)	\$148.0	\$148.4	\$148.1	\$148.2	\$155.7	5.06%
Budgeted MWh	<u>167.4</u>	<u>165.8</u>	<u>159.5</u>	<u>158.3</u>	<u>157.8</u>	(0.32%)
RS1 Rev. Requirement (\$/MWh)	\$0.884	\$0.895	\$0.928	\$0.936	\$0.987	5.45%

\* Adjusted to exclude FERC Fees from RS1 \$ and \$/MWh requirement

### RS1 Charge/MWh – Gross (before rebates from non-physical transactions):

RS1 Charge/MWh: Purchasers @ 72%	\$0.636	\$0.644	\$0.668	\$0.674	\$0.711	
RS1 Charge/MWh: Sellers @ 28%	\$0.248	\$0.251	\$0.260	\$0.262	\$0.276	

### RS1 Charge/MWh – Net (after estimated rebates from non-physical transactions):

RS1 Charge/MWh: Purchasers @~ 68%	\$0.601	\$0.608	\$0.631	\$0.636	\$0.671	
RS1 Charge/MWh: Sellers @~26%	\$0.230	\$0.233	\$0.241	\$0.244	\$0.257	
RS1 Charge/MWh: Non-physical transactions @~6%	\$0.053	\$0.054	\$0.056	\$0.056	\$0.059	

# Budget Highlights: Peer Comparison

(\$ in millions)					
	Revenue Requirement *			Other Information *	
ISO/RTO	2018 Revenue Req. (In \$\$)	Estimated 2018 MWh throughput (In millions of MWh)	2018 revenue req. (In \$/MWh)	Debt outstanding at 12/31/18	Authorized FTEs at 12/31/18
MISO	Not yet available				
PJM	\$294.0M	866.0	\$0.339/MWh	\$20.0M	705
ERCOT	\$222.3M	363.6	\$0.611/MWh	\$55.0M	749
ISO-NE	\$195.6M	142.1	\$1.377/MWh	\$102.6M	590
CAISO	Not yet available				
NYISO	\$155.7M	157.8	\$0.987/MWh	\$114.7M	579
*All amounts are DRAFT, and may be subject to change as each ISO/RTO completes its 2018 budget approval process					

# Budget Highlights

While the NYISO has been successful in maintaining a virtually flat revenue requirement for the past four years (2014 – 2017), this trend is not sustainable for the 2018 budget. Upward pressure is being placed on NYISO's Revenue Requirement due to the following required spending level increases:

- Debt Service
  - Repayment of EMS/BMS System Upgrade project financing
- Salaries & Benefits
  - 3% Proposed Merit and 0.5% Promotion Adjustments
  - 5 Additional FTEs
- Hardware and Software Maintenance
  - Increasing inventory of software licenses
  - New hosted services
  - New IT infrastructure and software to support compliance requirements and security initiatives
  - Maintenance for new EMS environment in parallel with existing EMS environments
  - Annual contract increases in vendor support costs

# Budget Highlights

However, NYISO continues to mitigate the impact of required spending level increases in 2018 by implementing cost reduction, avoidance and containment measures in the following Budget categories:

- Salaries & Benefits
- Professional Fees
- External Legal Fees
- Computer Services
- Corporate Insurance
- Telecommunications
- Meetings & Training
- Debt Service Cost
- Debt Proceeds
- Miscellaneous Revenue

# Budget Highlights

## Spending Reduction/Avoidance/Containment Measures

- **Salaries & Benefits - The 2018 increase of \$2.9M has been partially mitigated by the following actions:**
  - Total authorized FTE positions for 2018 are proposed to increase by five new positions. In addition, NYISO has requirements for eight new positions that are planned to be sourced from vacancies within the organization. The 2018 estimated avoided increase to RS1 of internally sourcing eight positions is \$0.008
  - Employee health insurance plan changes are anticipated to reduce a projected premium increase of 5% to 0%, avoiding \$0.6M in additional employee benefit cost and an avoided increase to 2018 RS1 of \$0.004
  - Due to the projected 2018 impact of interest rates, actuarial assumptions, level of benefit payments, and funded status; NYISO continues to maintain a reduced level of budgeted pension funding, avoiding additional employee benefit increases. However, these factors are evaluated each year to determine funding requirements, therefore, it cannot be assumed that this reduction will be carried forward to future years

# Budget Highlights

## Spending Reduction/Avoidance/Containment Measures (Cont.)

### Professional Fees

- In addition to the reduction of **\$5.0M**, primarily driven by the EMS/BMS System Upgrade project schedule, NYISO has assumed 2018 budgeted cost reductions for non-project consulting support of \$2.1M. These reductions are in anticipation of continued favorable contract negotiations, maximizing internal resource utilization and, in some cases, deferral of initiatives to a future budget year, resulting in a virtually flat budget for non-project consulting support.
- The 2018 impact to RS1 is an avoided increase of \$0.013

### Computer Services

The 2018 increase of \$0.6M has been partially mitigated by the following actions:

- Cost reductions of \$0.5M in negotiated savings to be realized in 2018 resulting from achievements in support of the 2017 Enterprise Cost Management corporate goal:
  - Optimization of software maintenance contracts and software utilization
  - Reductions in service levels in hardware maintenance contracts for non production systems
- The 2018 impact to RS1 is an avoided increase of \$0.003

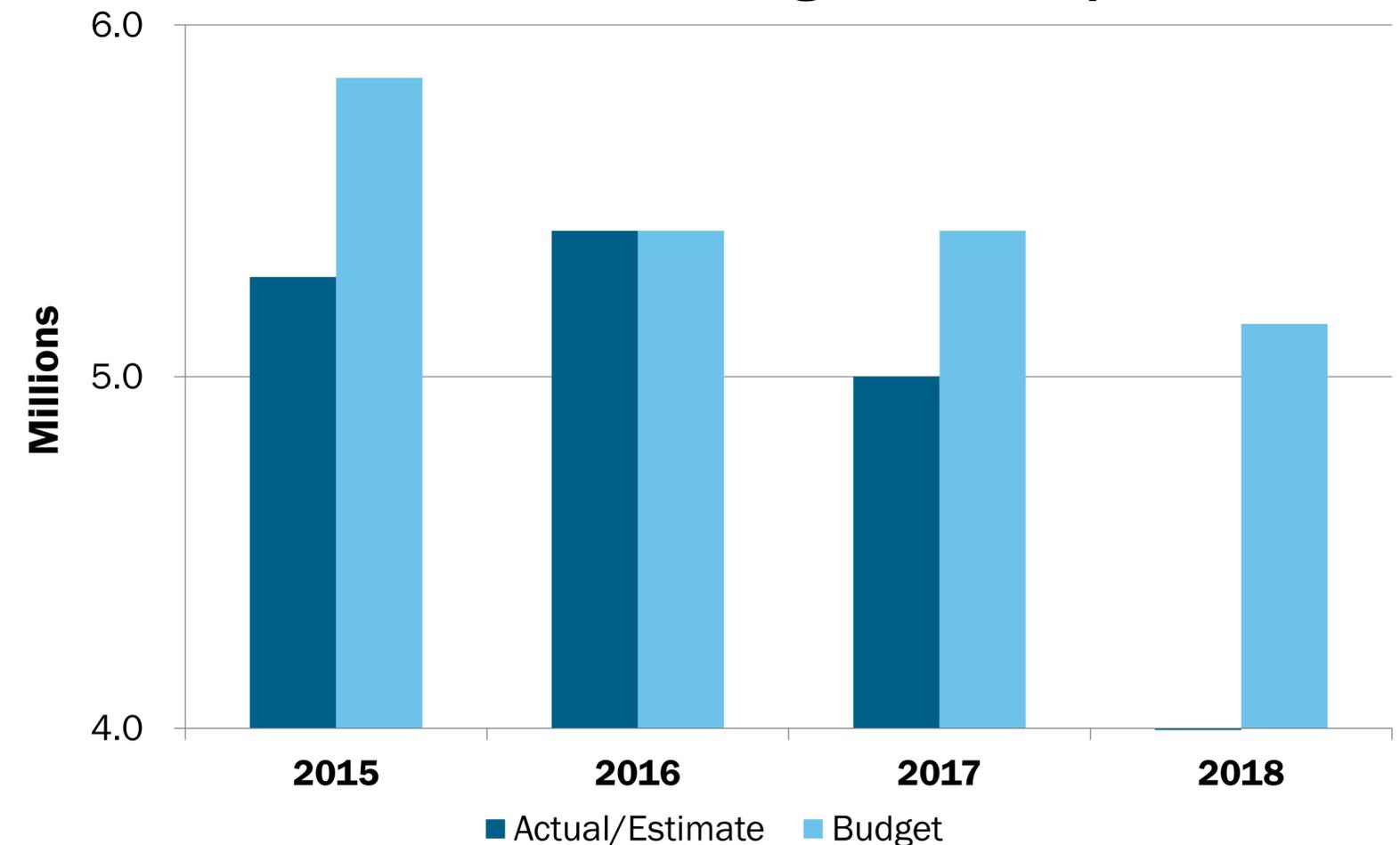
# Budget Highlights

## Spending Reduction/Avoidance/Containment Measures (Cont.)

### External Legal Fees

- NYISO continues to implement measures and develop internal staff to enable reduced reliance on outside counsel as much as possible. While the use of outside counsel may vary due to increases in litigation and legal support required for new initiatives, NYISO is proposing to [reduce the 2018 budget by \\$0.2M or ~5%](#), which is a [RS1 reduction of \\$0.002](#)
- The following chart provides historical trends from 2015 to 2018

Historical External Legal Fees Comparison



# Budget Highlights

## Spending Reduction/Avoidance/Containment Measures (Cont.)

### ■ Corporate Insurance

- In 2017, NYISO reduced its budget for corporate insurance premiums by \$0.2M, in anticipation of continued successful policy renewal negotiations
- Based upon historical negotiation outcomes, NYISO is proposing to hold the 2018 budget flat to 2017 at \$2.9M

# Budget Highlights

## Spending Reduction/Avoidance/Containment Measures (Cont.)

### ■ Telecommunications

As a result of the multi - year Telephony System Upgrade project, NYISO is recognizing the following benefits and cost reductions of \$0.2M:

- Increased bandwidth and resiliency in the network interconnecting NYISO with Transmission Owner Energy Management Systems and select substations
- Retirement of a network architecture that will no longer be supported by the communications carriers
- Fewer telecommunication vendors to manage while maintaining necessary diversity
- Improved contract terms

### ■ Meetings & Training

NYISO's employee training budget is proposed to decrease by \$0.1M, primarily due to savings in training cost by bundling trainings and utilizing online training options as well as a reduction in travel related to the EMS/BMS Upgrade Project

The combined 2018 RS1 impact of these cost savings is a reduction of \$0.002

# Budget Highlights

## Spending Reduction/Avoidance/Containment Measures (Cont.)

### ■ Debt Service Cost

- In 2017, after consultation with Market Participants, NYISO utilized the 2016 budget underspend and RS1 overcollection, totaling \$7.3M, to make early repayments on outstanding debt. This action has reduced 2018 debt service costs (principal and interest), [avoiding an increase to the 2018 RS1 totaling \\$0.047](#)
- In 2016 NYISO amended and extended its (2014 – 2017) \$100M budget facility, which is used to finance capital purchases and software development costs. These revisions extended the loan term by one year to 12/31/2018 and added \$25M in loan proceeds for 2018
- At the same time the term of NYISO's \$50M Revolving Credit Facility was extended by one year to 12/31/2018
- These extensions included the same favorable terms as the original (2014 - 2017) budget facility that was negotiated in 2013, inclusive of the [same favorable interest rates](#)

# Budget Highlights

## Spending Reduction/Avoidance/Containment Measures (Cont.)

### ■ Debt Service Cost (Cont.)

- In order to fix the interest rate on a portion of the 2018 budget facility loan, NYISO entered into an interest rate swap averaging 1.30%, to lock the all-in interest cost at an average of 2.25% over the life of the loan. This action [mitigates the risk to NYISO's budget of future interest rate increases through the year 2021](#)
- In order to fix the interest rate on a portion of the EMS/BMS project loan, NYISO entered into an interest rate swap averaging 1.12%, to lock the all-in interest cost at an average of 2.07% over the life of the loan. This action [mitigates the risk to NYISO's budget of future interest rate increases through the year 2021](#)

# Budget Highlights

## Spending Reduction/Avoidance/Containment Measures (Cont.)

### ■ Debt Proceeds

- In order to mitigate the annual cost impact on RS1 of the EMS/BMS System Upgrade project, NYISO negotiated a new \$30M budget facility to fund this strategic initiative for the years 2016 through 2018
- Absent a financing mechanism for this project, each year's full cost would have been included in NYISO's annual revenue requirement and charged to Market Participants via RS1
- By utilizing a delayed-draw term loan repayment structure similar to NYISO's existing budget facilities, the annual impact on RS1 is mitigated by spreading it out over several years

### ■ EMS/BMS System Upgrade debt funding of \$8.9M is being proposed as part of the 2018 budget

- 2018: Start of Principal and Interest payments on 2017 borrowings in addition to payments on 2016 borrowings, interest only payments on 2018 borrowings
- 2017-2021: Following each drawdown year 2016-2018, there will be a three-year payback period extending through the year 2021
- The net impact on 2018 RS1 of the EMS/BMS debt funding of \$8.9M and related debt service payments on prior year borrowings of \$6.6M is a [reduction of \\$0.014](#)

Refer to slides 41 and 42 for additional details

# Budget Highlights

## Spending Reduction/Avoidance/Containment Measures (Cont.)

### ■ Miscellaneous Revenue

- Miscellaneous revenue from reimbursable planning studies is projected to **increase by \$0.4M** due to the addition of three FTEs in support of Interconnection, Public Policy and Interregional planning
- Interest income is projected to **increase by \$0.3M** in 2018 due to more favorable interest rate environment
- The combined 2018 RS1 impact of these Miscellaneous Revenue increases is a **reduction of \$0.004**

# Summary of Spending Reduction/Avoidance RS1 Impacts

Measures	Impact
<b>Spending Reduction Measures:</b>	
• External Legal Fees	\$0.002
• Telecommunications/Meetings & Training	\$0.002
<b>Spending Avoidance Measures:</b>	
• Early repayment of outstanding debt	\$0.047
• EMS/BMS System Upgrade project financing (net impact)	\$0.014
• Professional Fees – anticipated savings	\$0.013
• Internal sourcing of additional FTE positions	\$0.008
• Employee benefit plan changes	\$0.004
• Miscellaneous Revenues	\$0.004
• Computer Services – negotiated savings	<u>\$0.003</u>
<b>Total impact to 2018 proposed RS1</b>	<b>\$0.097</b>

# Summary of Revenue Requirement Changes

2018 Rate Schedule 1 Revenue Requirement		\$155.7
2017 Rate Schedule 1 Revenue Requirement		<u>\$148.2</u>
Increase in Rate Schedule 1 Revenue Requirement		\$ 7.5
<ul style="list-style-type: none"> <li> <b>Spending Reductions/Avoidance/Containment</b> </li> </ul>		
Professional Fees*	(5.0)	
Miscellaneous Revenue	(0.7)	
External Legal Fees	(0.2)	
Debt Interest	(0.2)	
Telecommunications	(0.2)	
Meetings & Training	<u>(0.1)</u>	
	(\$6.4)	
<ul style="list-style-type: none"> <li> <b>Budget Increases</b> </li> </ul>		
Reduction in Debt Proceeds*	4.9	
Debt Service*	4.8	
Salaries and Benefits	2.9	
Computer Services	0.6	
Capital**	0.6	
Building Services	<u>0.1</u>	
	\$13.9	

\*Primarily driven by the EMS/BMS System Upgrade project

\*\* Funded by current year Debt Proceeds

# 2018 Budget Overview

(\$ in millions, except RS#1/MWh)	2018 Draft Budget		
	Enterprise	Projects	Total
Capital	\$2.0	\$8.2	\$10.2
Salaries & Benefits	76.3	15.5	91.8
Professional Fees (including Legal)	18.2	8.4	26.6
Building Services	6.4	-	6.4
Computer Services	16.4	-	16.4
Insurance	2.9	-	2.9
Telecommunications	2.9	-	2.9
Other Expenses (BOD, Travel/Training, NPCC Fees)	<u>4.0</u>	-	<u>4.0</u>
<b>Subtotal: Current Year Needs</b>	<b>\$129.1</b>	<b>\$32.1</b>	<b>\$161.2</b>
Debt Service	32.0	-	32.0
<b>Subtotal: Cash Budget</b>	<b>\$161.1</b>	<b>\$32.1</b>	<b>\$193.2</b>
Less: Miscellaneous Revenues	(3.7)	-	(3.7)
Less: Proceeds from Current Year Budget Debt	(2.1)	(32.1)	(34.2)
Add: Interest on Current Year Budget Debt	<u>0.3</u>	<u>0.1</u>	<u>0.4</u>
<b>Total: Rate Schedule #1 Revenue Requirement in \$\$</b>	<b>\$155.6</b>	<b>\$0.1</b>	<b>\$155.7</b>
<b>Budgeted MWh (in millions)</b>			<b>157.8</b>
<b>Rate Schedule #1 Revenue Requirement in \$/MWh (budget)</b>			<b>\$0.987</b>

# 2017 Budget Overview

	2017 Budget		
(\$ in millions, except RS#1/MWh)	Enterprise	Projects	Total
Capital	\$2.8	\$6.8	\$9.6
Salaries & Benefits	73.8	15.1	88.9
Professional Fees (including Legal)	18.3	13.5	31.8
Building Services	6.3	-	6.3
Computer Services	15.2	0.6	15.8
Insurance	2.9	-	2.9
Telecommunications	3.1	-	3.1
Other Expenses (BOD, Travel/Training, NPCC Fees)	3.8	0.3	4.1
<b>Subtotal: Current Year Needs</b>	<b>\$126.2</b>	<b>\$36.3</b>	<b>\$162.5</b>
Debt Service	27.2	-	27.2
<b>Subtotal: Cash Budget</b>	<b>\$153.4</b>	<b>\$36.3</b>	<b>\$189.7</b>
Less: Miscellaneous Revenues	(3.0)	-	(3.0)
Less: Proceeds from Current Year Budget Debt	(2.8)	(36.3)	(39.1)
Add: Interest on Current Year Budget Debt	-	0.6	0.6
<b>Total: Rate Schedule #1 Revenue Requirement (in \$\$)</b>	<b>\$147.6</b>	<b>\$0.6</b>	<b>\$148.2</b>
<b>Budgeted MWh (in millions)</b>			<b>158.3</b>
<b>Rate Schedule #1 Revenue Requirement in \$/MWh (budget)</b>			<b>\$0.936</b>

# NYISO 2018 Budget: Detailed Line Item Information

# Line Item Details - Capital

(\$ in millions)	2018 Draft	2017 Budget	\$ Change
Facility Improvements	\$0.9	\$1.7	(\$0.8)
Replacement of Existing Hardware	6.6	5.8	0.8
Software & Software Licenses (capitalized)	<u>2.7</u>	<u>2.1</u>	<u>0.6</u>
<b>Total Capital Costs</b>	<b>\$10.2</b>	<b>\$9.6</b>	<b>\$0.6</b>

## Facility Improvements:

Facility improvements included within the 2018 budget include \$0.3M for modifications of the Cyber Security Operations Center (CSOC), \$0.3M for electrical distribution panel upgrade and refurbishment of switchgear house, \$0.2M for replacement of the fire alarm system at the KCC and \$0.1M for HVAC improvements. The reduction from 2017 is primarily due to the completion of the offsite receiving and delivery facility.

## Replacement of Existing Hardware:

Replacement of computer hardware fluctuates from year to year and is driven by technology refresh schedules, planned obsolescence by technology vendors, and the specific mix of new computer requirements identified in the current year project schedule. The 2018 budget includes \$6.0M in new hardware required for proposed projects including, \$1.8M for Network Infrastructure Upgrade, \$1.5M for Microsoft System Upgrade, \$1.1M for the EMS/BMS workstation upgrade, \$0.8M for Application Platform Upgrades, \$0.4M for System & Resource Planning High Performance Computing Platform and \$0.3M for a Hardware Refresh. The 2018 budget also includes \$0.6M for new hardware primarily required to support various Security Program Enhancements.

## Software and Software Licenses (capitalized):

Replacement of computer software and software licenses fluctuates from year to year and is driven by a change in the number of users as well as by software required as identified in the current year project schedule. The 2018 budget includes \$2.2M in new software required for proposed projects including, \$0.8M for Microsoft System Upgrade, \$0.6M for EMS/BMS System Upgrade, \$0.5M for Database Platform Upgrade, \$0.2M for EPG PMU Enhancements, and \$0.1M for System & Resource Planning High Performance Computing Platform. The 2018 budget also includes \$0.5M for new software primarily required for various Security Program Enhancements.

# Line Item Details - Salaries & Benefits

(\$ in millions)	2018 Draft	2017 Budget	\$ Change
Base Salaries	\$63.3	\$61.2	\$2.1
Benefit Programs / At-Risk Compensation	23.4	22.8	0.6
Payroll Taxes	<u>5.1</u>	<u>4.9</u>	<u>0.2</u>
<b>Total Salaries &amp; Benefits</b>	<b>\$91.8</b>	<b>\$88.9</b>	<b>\$2.9</b>

The ~3.3% increase in Salaries & Benefits is primarily driven by:

- \$2.3M reflecting an average 3.0% merit and 0.5% promotion adjustment budget for NYISO employee compensation and 5 additional FTE positions in 2018
- \$0.6M reflecting an increase in Benefit Programs, primarily driven by an increase in health insurance claim costs based on 2017 YTD experience, 5 additional FTE's and 401k contributions on 2018 base salaries

**See additional details on Salaries & Benefits on the following slides**

# Line Item Details - Salaries & Benefits (Cont.)

Headcount Summary		
Total Authorized FTE Positions for 2017	574	
Add: New Positions for 2018	<u>5</u>	There are 5 proposed incremental authorized positions in 2018 (see details on next slide)
Total Authorized FTE Positions for 2018	579	
Less: Assumed Vacancies	<u>(29)</u>	Based on assumed vacancy rate of 5%
<b>Equals: Total Budgeted FTE Positions</b>	<b>550</b>	

Headcount Summary By Year			
	2018	2017	Change
Total Authorized FTE Positions	579	574	5
Less: Assumed Vacancies	<u>(29)</u>	<u>(29)</u>	<u>(-0-)</u>
<b>Total Budgeted FTE Positions</b>	<b>550</b>	<b>545</b>	<b>5</b>



# Line Item Details - Salaries & Benefits (Cont.)

Department	New for 2018	Key Contributions from Positions
System & Resource Planning	4	<p><b>Planning Engineer:</b> This position will conduct reliability and economic studies to support the Public Policy Transmission Planning Process and coordinate with other planning departments. This position will be partially self funded with an increase in reimbursable planning study revenue.</p> <p><b>Planning Engineer:</b> This position’s primary responsibility will be to perform and coordinate generation and transmission interconnection studies under FERC and PSC jurisdictions. This position will be self funded with an increase in reimbursable planning study revenue.</p> <p><b>Planning Engineer:</b> This position’s primary responsibility will be to perform and coordinate inter-ISO interconnection studies under FERC and PSC jurisdictions to be compliant with Northeast Planning Protocol’s requirements. This position will be self funded with an increase in reimbursable planning study revenue.</p> <p><b>Load Forecasting Analyst:</b> This position will assist with the development and support of short term and long term load and solar forecasting models and additional forecasting capabilities that address non-conforming loads and distributed energy.</p>
Market Operations	1	<p><b>Distributed Resources Operations Engineer:</b> This position will support the DER PILOT project and existing production responsibilities, serve as the primary contact between Operations and the pilot team, and support PILOT project feedback to stakeholders.</p>
Total Impact on Budgeted Positions	5	

# Line Item Details - Salaries & Benefits (cont.)

- Merit & Promotion Adjustment

- NYISO's 2018 draft budget includes an average salary increase to employee compensation of **3%** and a Promotion Adjustment budget of **0.5%**, which is proposed based upon a number of factors that include:
  - National surveys <sup>1</sup> show the median number for merit (excluding promotion adjustments) increases across the country to be **3.2%**
  - Among our ISO peers, the planned budget for compensation adjustments in 2018 ranges between **3.0% - 4.0%** (inclusive of both merit and promotion adjustments)
  - It is imperative that the NYISO continue to offer competitive salaries in order to attract and retain talent in our current environment
    - Increased competition for talent with tightening labor market (increase in job openings and low unemployment rate of 4.3%<sup>2</sup> as of July 2017)
    - Costs (direct and indirect) of employee turnover can be significant

1 – WorldatWork, The Conference Board, ERI Economic Research Institute and Korn Ferry Hay Group

2 – Bureau of Labor Statistics (BLS)

# Line Item Details - Professional Fees

(\$ in millions)	2018 Draft	2017 Budget	\$ Change
Product Enhancement consultants ( <i>several vendors</i> )	\$8.4	\$13.5	(\$5.1)
External legal fees	\$5.2	\$5.4	(\$0.2)
Market Monitoring	\$4.1	\$3.5	\$0.6
Misc. Professional Fees (all individually < \$500K)	\$1.7	\$1.7	\$-
Security guards	\$1.7	\$1.7	\$-
Reliability & Economic Planning	\$1.0	\$1.2	(\$0.2)
Information Technology & Facilities	\$0.9	\$1.1	(\$0.2)
Market design & related consulting	\$0.7	\$0.9	(\$0.2)
Ranger support & enhancements	\$1.0	\$1.0	\$-
Employee Benefits & Recruiting	\$1.2	\$1.0	\$0.2
External audits and Internal Audit co-sourcing	\$0.7	\$0.8	(\$ 0.1)
<b>Total Professional Fees</b>	<b>\$26.6</b>	<b>\$31.8</b>	<b>(\$5.2)</b>

**Product Enhancement Consultants:** The expected decrease is primarily due to a reduction in consulting support required for the EMS/BMS System Upgrade project in 2018 (See details on 2018 proposed product enhancements in a separate presentation posted for the 8/18/2017 BPWG meeting).

**Market Monitoring:** The expected increase of \$0.6M is projected due to a 1.7% increase in billing rates for 2018, new cyber-security measures, required by NYISO, for the protection of confidential market data and new tariff requirements to evaluate the efficacy of NYISO-ISONE Coordinated Transaction Scheduling.

**Employee Benefits & Recruiting:** The expected increase of \$0.2M is primarily to provide external recruiting support in addition to in house recruiting expertise.

# Line Item Details - Building Services

(\$ in millions)	2018 Draft	2017 Budget	\$ Change
Building Services	\$6.4	\$6.3	\$0.1
<p>NYISO includes building service contracts, repairs &amp; maintenance, and membership dues &amp; subscriptions within this budget category.</p> <p>The 2018 budget is proposed to increase by \$0.1M, primarily due to additional subscriptions for solar forecasting services.</p>			

# Line Item Details - Computer Services

(\$ in millions)	2018 Draft	2017 Budget	\$ Change
Computer Services Costs	\$16.4	\$15.8	\$0.6

NYISO includes hardware and software maintenance, software licenses (non-capitalized), computer supplies, and minor equipment purchases within this budget category.

The continued addition of new hardware, software, software licenses and technology upgrades continues to drive increases in this budget category as follows:

- ~\$1.5M increase in software maintenance primarily due to increased usage, growth, and storage on NYISO servers and maintenance required for new software agreements

The above increase is partially offset with planned reductions in the following categories:

- ~\$0.5M decrease in hardware maintenance due to reductions in service levels for non-production systems and planned retirements
- ~\$0.4M decrease in PC equipment required due to planned completion of corporate laptop replacements in 2017

# Line Item Details - Insurance

(\$ in millions)	2018 Draft	2017 Budget	\$ Change
Insurance	\$2.9	\$2.9	\$-

Based on the continued success of policy renewal negotiations and close monitoring, NYISO is proposing to hold flat its 2018 budget for insurance premiums.

# Line Item Details - Telecommunications

(\$ in millions)	2018 Draft	2017 Budget	\$ Change
Telecommunications	\$2.9	\$3.1	(\$0.2)

As a result of the multi-year Telephony System Upgrade project, NYISO will recognize the following benefits and cost reductions of \$0.2M:

- Increased bandwidth and resiliency in the network interconnecting NYISO with Transmission Owner Energy Management Systems and select substations
- Retirement of a network architecture that will no longer be supported by the communications carriers
- Fewer telecommunication vendors to manage while maintaining necessary diversity
- Improved contract terms

# Line Item Details - Other Expenses

(\$ in millions)	2018 Draft	2017 Budget	\$ Change
Travel, Meetings, Training Costs	\$2.2	\$2.3	(\$0.1)
BOD Fees and Expenses	\$1.5	\$1.5	\$ -
NPCC Fees	<u>\$0.3</u>	<u>\$0.3</u>	<u>\$ -</u>
<b>Total Other Expenses</b>	<b>\$4.0</b>	<b>\$4.1</b>	<b>(\$0.1)</b>

NYISO's travel and training budget is expected to decrease by \$0.1M primarily due to savings by bundling trainings and utilizing online training options as well as a reduction in travel related to the EMS/BMS Upgrade Project.

# Line Item Details - Debt Service

## Annual Principal and Interest Repayments \*\* (\$ in millions)

Debt Facility & Repayment Period	Borrowings	2014	2015	2016	2017	2018	2019	2020	2021	2022
2005 KCC Bldg Mortgage & Renov. (20 yrs)	\$24.8M	\$2.1	\$2.1	\$2.1	\$2.1	\$2.1	\$2.0	\$2.0	\$2.0	\$2.1
Infrastructure Master Plan Mortgage (19 yrs)	\$45.0M	\$3.0	\$4.5	\$4.4	\$4.3	\$4.4	\$4.1	\$4.0	\$3.9	\$3.8
2011 Budget Loan (3 yrs)	\$25.0M	\$8.5	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-
2012 Budget Loan (3 yrs)	\$25.8M	\$14.1	\$3.0	\$-	\$-	\$-	\$-	\$-	\$-	\$-
2013 Budget Loan (3 yrs)	\$24.2M	\$8.8	\$13.5	\$3.0	\$-	\$-	\$-	\$-	\$-	\$-
2014 Budget Loan (3 yrs)	\$25.0M	\$0.2	\$8.1	\$16.7	\$0.6	\$-	\$-	\$-	\$-	\$-
2015 Budget Loan (3 yrs)	\$25.0M	\$-	\$0.3	\$8.8	\$15.9	\$1.0	\$-	\$-	\$-	\$-
2016 Budget Loan (3 yrs)	\$25.0M	\$-	\$-	\$0.3	\$8.9	\$8.7	\$8.5	\$-	\$-	\$-
2017 Budget Loan (3 yrs)	\$24.7M Est.	\$-	\$-	\$-	\$0.4	\$9.0	\$8.7	\$8.4	\$-	\$-
2018 Budget Loan (3 yrs)	\$25.3M Est.	\$-	\$-	\$-	\$-	\$0.3	\$8.9	\$8.7	\$8.6	\$-
2016-2018 EMS/BMS System Upgrade	\$27.6M Est.	\$-	\$-	\$-	\$2.4	\$6.6	\$9.5	\$7.1	\$3.0	\$-
Bank Fees	n/a	\$0.8	\$0.5	\$0.5	\$0.4	\$0.3	\$0.5	\$0.5	\$0.5	\$0.5
<b>Total Debt Service Payments</b>		\$37.5	\$32.0	\$35.8	\$35.0	\$32.4	**	**	**	**

\*\* Note: Totals after 2018 are not presented as additional Budget Loans after 2018 are not factored into this table.

Approximately \$25M is expected to be borrowed on average each year during 2016 – 2018, representing the annual cost of implementing Projects (in addition to EMS/BMS Replacement), technology enhancements, and facility improvements.

# Line Item Details - Debt Service (Cont.)

Principal Balance Outstanding at December 31 (\$ in millions)									
Debt Facility	2014	2015	2016	2017	2018	2019	2020	2021	2022
2005 KCC Bldg Mortgage & Renov.	\$16.7	\$15.6	\$14.4	\$13.2	\$12.0	\$10.7	\$9.2	\$7.7	\$6.0
Infrastructure Master Plan Mortgage	\$43.9	\$41.2	\$38.6	\$35.9	\$33.3	\$30.7	\$28.0	\$25.4	\$22.7
2012 Budget Loan	\$2.9	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-
2013 Budget Loan	\$16.1	\$2.9	\$-	\$-	\$-	\$-	\$-	\$-	\$-
2014 Budget Loan	\$25.0	\$17.3	\$0.7	\$-	\$-	\$-	\$-	\$-	\$-
2015 Budget Loan	\$-	\$25.0	\$16.7	\$1.0	\$-	\$-	\$-	\$-	\$-
2016 Budget Loan	\$-	\$-	\$25.0	\$16.7	\$8.4	\$-	\$-	\$-	\$-
2017 Budget Loan	\$-	\$-	\$-	\$24.7	\$16.5	\$8.3	\$-	\$-	\$-
2018 Budget Loan	\$-	\$-	\$-	\$-	\$25.3	\$16.9	\$8.5	\$-	\$-
2016-2018 EMS/BMS System Upgrade	\$-	\$-	\$6.7	\$16.5	\$19.2	\$10.0	\$3.0	\$-	\$-
<b>Total Principal Outstanding</b>	<b>\$104.6</b>	<b>\$102.0</b>	<b>\$102.1</b>	<b>\$108.0</b>	<b>\$114.7</b>	<b>**</b>	<b>**</b>	<b>**</b>	<b>**</b>
<b>** Note: Totals after 2018 are not presented as additional Budget Loans after 2018 are not factored into this table.</b>									

# Line Item Details - Misc. Revenue

(\$ in millions)	2018 Draft	2017 Budget	\$ Change
Total Miscellaneous Revenues	\$3.7	\$3.0	\$0.7

Miscellaneous revenue from reimbursable planning studies is projected to increase by \$0.4M due to the addition of three FTEs in support of Interconnection, Public Policy and Interregional planning.

Interest income is projected to increase by \$0.3M in 2018 due to a more favorable interest rate environment.

# NYISO 2018 Budget: Recap

# 2018 Budget Overview Recap

(in millions, excluding RS#1/MWh charges)	2018 Draft	2017 Budget	2018 vs. 2017
RS#1 Revenue Requirement (in \$\$)	\$155.7	\$148.2	\$7.5
Budgeted MWh Hours	<u>157.8</u>	<u>158.3</u>	<u>(0.5)</u>
RS#1 Revenue Requirement - \$/MWh	\$0.987	\$0.936	\$0.051
<b>RS1 Charge/MWh – Gross (before rebates from non-physical transactions)</b>			
RS#1 Charge/MWh: Purchasers @ 72%	\$0.711	\$0.674	\$0.037
RS#1 Charge/MWh: Sellers @ 28%	\$0.276	\$0.262	\$0.014
<b>RS1 Charge/MWh – Net (after estimated rebates from non-physical transactions)</b>			
RS#1 Charge/MWh: Purchasers @ ~68%	\$0.671	\$0.636	\$0.035
RS#1 Charge/MWh: Sellers @ ~26%	\$0.257	\$0.244	\$0.013
RS#1 Charge/MWh: Non-physical transactions @ ~6%	\$0.059	\$0.056	\$0.003

# 2019 - 2020 Draft Budget: Projections

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# Rate Schedule 1 Summary

(\$ in millions, except RS#1/MWh)	Budget Drafts		
	2018 Draft	2019 Projection	2020 Projection
Total: Rate Schedule #1 Revenue Requirement (in \$\$)	\$155.7	\$174.8	\$176.0
Budgeted MWh (in millions)	157.8	157.1	156.9
Rate Schedule #1 Revenue Requirement in (\$/MWh)	\$0.987	\$1.113	\$1.122

The 2019-2020 budget drafts presented above are advisory only.  
Actual budgets for these years will be developed and discussed with Market Participants annually.

# Budget Projections By Category

(\$ in millions, except RS#1/MWh)	Budget Drafts		
	2018 Draft	2019 Projection	2020 Projection
Capital	\$10.2	\$8.8	\$8.8
Salaries & Benefits	91.8	95.2	98.6
Professional Fees (including Legal)	26.6	25.9	23.6
Building Services	6.4	6.5	6.6
Computer Services	16.4	16.8	16.6
Insurance	2.9	3.0	3.2
Telecommunications	2.9	2.9	2.9
Other Expenses (BOD, Travel/Training, NPCC Fees)	<u>4.0</u>	<u>4.0</u>	<u>4.0</u>
<b>Subtotal: Current Year Needs</b>	<b>\$161.2</b>	<b>\$163.1</b>	<b>164.3</b>
Debt Service	<u>32.0</u>	<u>42.3</u>	<u>39.9</u>
<b>Subtotal: Cash Budget</b>	<b>\$193.2</b>	<b>\$205.4</b>	<b>\$204.2</b>
Less: Miscellaneous Revenues	(3.7)	(3.7)	(3.7)
Less: Proceeds from Current Year Budget Debt	(34.2)	(27.4)	(25.0)
Add: Interest on Current Year Budget Debt	<u>0.4</u>	<u>0.5</u>	<u>0.5</u>
<b>Total: Rate Schedule #1 Revenue Requirement in \$\$</b>	<b>\$155.7</b>	<b>\$174.8</b>	<b>\$176.0</b>
<b>Budgeted MWh (in millions)</b>	<b>157.8</b>	<b>157.1</b>	<b>156.9</b>
<b>Rate Schedule #1 Revenue Requirement in \$/MWh (budget)</b>	<b>\$0.987</b>	<b>\$1.113</b>	<b>\$1.122</b>

# Major Assumptions

Cost Category	Major Assumptions for 2019 and 2020
<b>Capital</b>	<ul style="list-style-type: none"> <li>• Purchases of Hardware and Software are estimated as follows:               <ul style="list-style-type: none"> <li>• 2019 = \$6.6M</li> <li>• 2020 = \$6.8M</li> </ul> </li> <li>• Facility Improvements are estimated as follows: \$2.2M for 2019 and \$2.0M for 2020</li> </ul>
<b>Salaries &amp; Benefits</b>	<ul style="list-style-type: none"> <li>• Total budgeted headcount as follows: 584 FTEs for 2019 and 589 FTEs for 2020 (Five additional FTEs each year)</li> <li>• Estimated vacancy factor is 5% in 2019 and 2020</li> <li>• Average annual salary merit increase of 3% and promotion adjustment increase of 0.5% in 2019 and 2020</li> <li>• 5% annual increase in medical insurance costs and \$0.5M pension plan funding in 2019 and 2020</li> </ul>
<b>Professional Fees (including Legal)</b>	<ul style="list-style-type: none"> <li>• Assumes Professional Fees will decrease by \$0.7M in 2019, primarily due to a reduction in consulting required for the EMS/BMS Upgrade project</li> <li>• Assumes Professional Fees will decrease by \$2.3M in 2020, primarily due to the completion of the EMS/BMS Upgrade project in 2019</li> </ul>
<b>Building Services</b>	<ul style="list-style-type: none"> <li>• Assumes a \$0.1M increase in Building Services annually in 2019 and 2020 to provide for potential contract increases</li> </ul>
<b>Computer Services</b>	<ul style="list-style-type: none"> <li>• Assumes an increase of \$0.4M in 2019 primarily due to redundant hardware and software maintenance costs in support of the EMS/BMS Upgrade project</li> <li>• Assumes a decrease of \$0.2M in 2020 in hardware and software maintenance costs following the deployment of the new EMS/BMS Upgrade project</li> </ul>
<b>Insurance</b>	<ul style="list-style-type: none"> <li>• Assumes a 5% annual increase in 2019 and 2020 based on potential for premium increases</li> </ul>
<b>Telecommunications</b>	<ul style="list-style-type: none"> <li>• Assumes Telecommunication service costs remain flat to the 2018 budget at \$2.9M for 2019 and 2020</li> </ul>
<b>Other Expenses</b>	<ul style="list-style-type: none"> <li>• Assumes travel, training and BOD fees will remain flat to the 2018 budget at \$4.0M in 2019 and 2020</li> </ul>
<b>Debt Service</b>	<ul style="list-style-type: none"> <li>• Annual borrowings (with 3-year repayment terms) to fund capital and product enhancements are anticipated to be \$27.4M for 2019 and \$25.0M for 2020</li> <li>• Interest rates for most borrowings expected to be between 2.0% – 5.0%</li> <li>• No reductions for “early payments” on debt from potential savings on annual budget or RS1 overcollections have been included</li> </ul>

# 2019 Budget Summary

- In Summary

- NYISO's draft 2019 advisory budget totals \$174.8M, allocated across a forecast of 157.1 million MWh, for a Rate Schedule 1 charge/MWh of \$1.113. Comparatively, the 2018 draft budget totals \$155.7M, allocated across a forecast of 157.8 million MWh, for a Rate Schedule 1 charge/MWh of \$0.987

- Primary Drivers

- The primary drivers of a \$19.1M increase in the RS1 revenue requirement from 2018 to 2019 are as follows:
  - \$10.3M increase in debt service cost - In 2018 debt service was reduced by \$7.3M as NYISO utilized the 2016 budget underspend and RS1 overcollection to make additional principal payments on the 2015 budget facility. In addition, incremental debt principal and interest payments of ~\$3.1M will be incurred in 2019 to repay amounts borrowed in 2018 to fund the EMS/BMS System Upgrade project
  - \$6.8M reduction in proceeds from debt primarily due to completion of the EMS/BMS Upgrade project in 2019
  - \$3.4M increase in Salaries & Benefits driven primarily by a 3.5% annual merit compensation and promotion adjustments, the addition of 5 incremental FTEs, 5% increase in health insurance costs and \$0.5M in pension funding
  - \$0.4M increase in Computer Services primarily due to redundant hardware and software maintenance costs in support of the EMS/BMS Upgrade project
  - \$1.4M decrease in Capital primarily due to an anticipated reduction in capital requirements
  - \$0.7M decrease in Professional Fees primarily due to a reduction in consulting required for the EMS/BMS Upgrade project

# 2020 Budget Summary

## ■ In Summary

- NYISO's draft 2020 advisory budget totals \$176.0M, allocated across a forecast of 156.9 million MWh, for a Rate Schedule 1 charge/MWh of \$1.122. Comparatively, the draft 2019 advisory budget totals \$174.8M, allocated across a forecast of 157.1 million MWh, for a Rate Schedule 1 charge/MWh of \$1.113

## ■ Primary Drivers

- The primary drivers of a \$1.2M increase in the RS1 revenue requirement from 2019 to 2020 are as follows:
  - \$3.4M increase in Salaries & Benefits driven primarily by 3.5% annual merit compensation and promotion adjustments, the addition of 5 incremental FTEs and a 5% increase in health insurance costs
  - Partially offset by a \$2.3M decrease in Professional Fees primarily due to the completion of the EMS/BMS Upgrade project in 2019

# The Mission of the New York Independent System Operator, in collaboration with its 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 policy makers, stakeholders and investors in the power system



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