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ISO New England Proposed 2025 Operating and Capital Budgets

NEPOOL Budget & Finance Subcommittee Meeting

Robert Ludlow

CHIEF FINANCIAL OFFICER | ISO NEW ENGLAND

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The following appendices are also included for reference:

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EXECUTIVE SUMMARY

Executive Summary

- The 2025 budget represents the organization's commitment to supporting the region as it transitions to clean energy and ensuring that its continued operations are efficient and reliable
- Public impetus around addressing climate change through clean energy investments and electrifying transportation and heating sectors is driving substantial changes to the New England power system:
  - Increases to the number of interconnected and behind-the-meter (BTM) generating assets are changing how the transmission and distribution system operate and interact with each other
  - A shift from larger, dispatchable resources to smaller non-dispatchable, weather-dependent ones is changing the complexity involved in dispatching resources to meet demand
  - New daily and seasonal demand patterns are changing the types and timing of such needs
- The changes to the grid represent a step-up in system complexity that the ISO began to address in 2024 and will continue ramping-up in 2025 and throughout the remainder of the decade
  - This step-up in complexity represents a considerable increase to ISO workload

Executive Summary *(cont.)*

- In order to carry out ISO-NE's mission of planning the transmission system, administering the region's wholesale markets, and operating the power system to ensure reliable and competitively priced wholesale electricity, it is necessary to develop new capabilities for supporting the grid of the future
  - As indicated during last year's budgeting process, after years of keeping headcount flat or with minimal additions, the organization has seen the need to continue increasing headcount in order to meet the complexities of the clean energy transition; this is in line with hiring trends observed across other ISOs
- The budget reflects additional investment in information technology (IT) needed to support operations given the changing resource mix, including: new technology, transition cost related to cloud-based infrastructure, and continued improvements to cyber security
- The budget addresses the inflationary and renewal costs for current IT infrastructure and licensing, labor, and professional fees as well as the year-over-year costs of continued operation

Executive Summary *(cont.)*

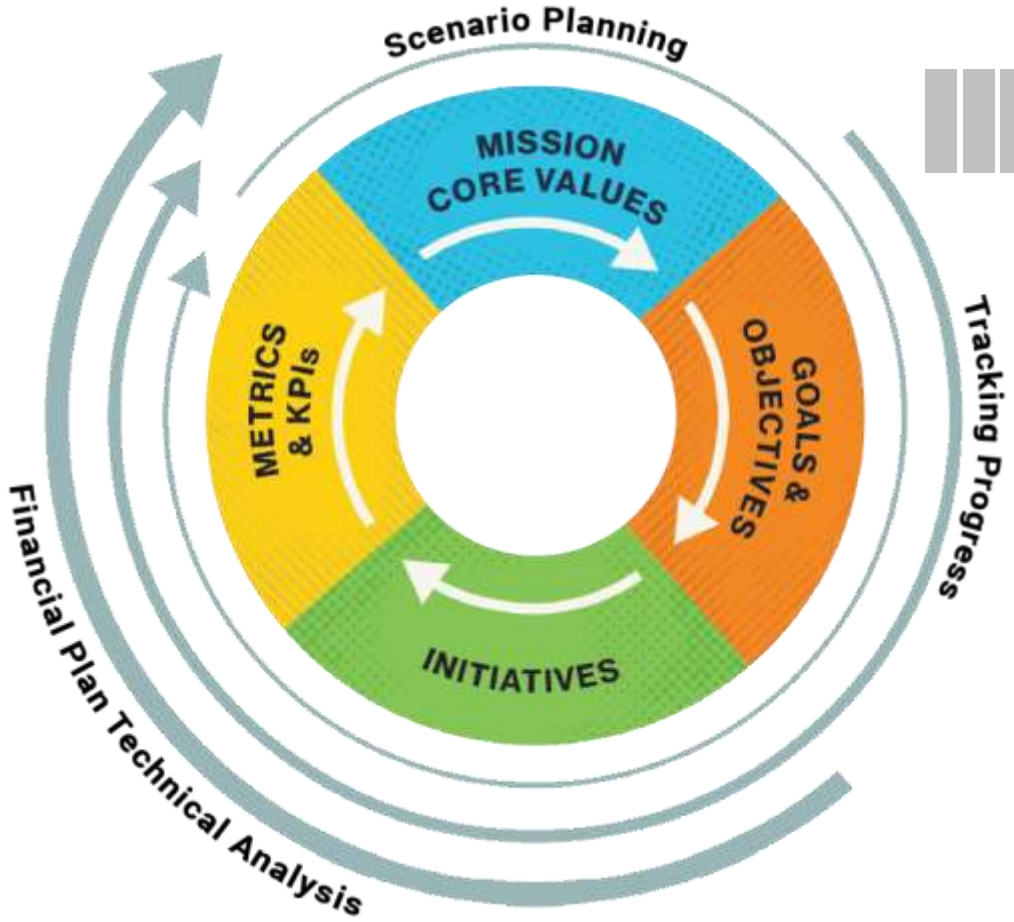
- For the 2025 budget, ISO is proposing adding 46 FTEs driven primarily by:
  - IT support to operationalize internally developed software for market simulation and situational awareness
  - Support the increasingly complex information to stakeholders and the public and to assist the growing and distributed workforce
  - Additions in System Planning for modeling, forecasting, longer-term transmission planning, and addressing current FERC orders;
    - This is the first iteration of a budget representing the need to scale up capabilities in these areas to support the Longer-Term Transmission Studies (LTTS) and necessary tariff changes, as well as the issuance of initiated transmission RFPs that require technical and economic analyses
    - There are still many unknowns, including the volume of RFPs to support and compliance with FERC transmission orders; it is our expectation that the resource requirements will be refined over time as we gain experience with the new processes

THE STRATEGIC PROCESS

ISO-NE's integrated business and strategic planning framework

Strategic Planning Framework

The 2025 ISO-NE budget represents the needs for the organization's strategy in supporting the region on its path to a decarbonized grid



Strategic Planning Framework – Five-Step Project Approach

STEP 1	STEP 2	STEP 3	STEP 4
Situation Analysis	Strategy Formulation	Operating Model Review	Implementation Plan Development

STEP 5

(High Level) **Economic/Financial Modeling** (Detailed)

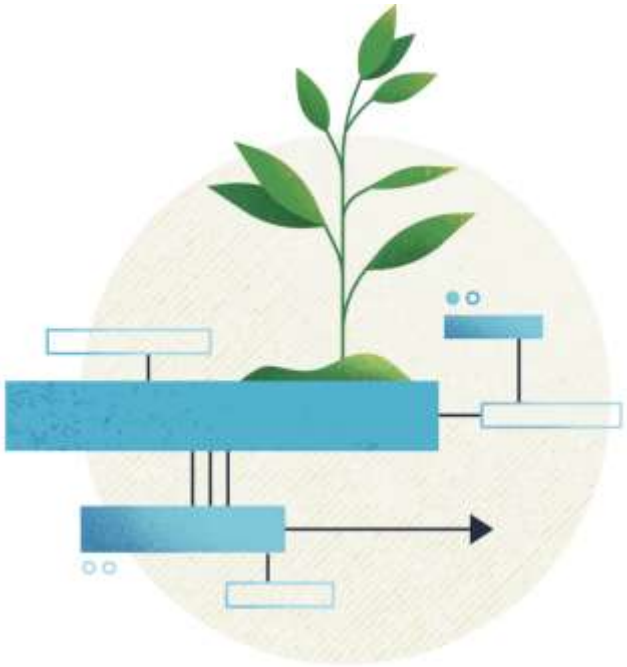
The 2025 budget responds to the emerging needs of the region in achieving their goals of decarbonizing the electric grid

Annual Process – Business and Strategic Planning

ISO-NE is guided by a purposeful and integrated business planning approach that drives focus towards a common target that management teams and the entire organization can get behind, with the aim of creating value for ISO stakeholders

Our Guidepost: The ISO New England Vision Statement

The ISO-NE Vision Statement is an explicit statement about our intent to achieve a reliable transition to clean energy utilizing competitive markets and transmission planning



Vision Statement:

To harness the power of competition and advanced technologies to reliably plan and operate the grid as the region transitions to clean energy

The ISO's Vision represents the company's commitment to work with FERC, the states, and market participants to support the clean energy transition within the limits of our jurisdiction.

Our Responsibility to the Region: ISO's Mission

The ISO-NE Mission Statement outlines the core role and responsibilities of the ISO's daily operations

Mission Statement:

Through collaboration and innovation, ISO New England plans the transmission system, administers the region's wholesale markets, and operates the power system to ensure reliable and competitively priced wholesale electricity

Four Pillars of Supporting a Successful Energy Transition

When the ISO looks toward the future, these are the objectives the ISO, states, market participants, and regulators need to advance in order to support the clean energy transition

1

Significant amounts of clean energy to power the economy with a greener grid

2

Balancing resources that keep electricity supply and demand in equilibrium

3

Energy adequacy—a dependable energy supply chain and/or a robust energy reserve to manage through extended periods of severe weather or energy supply constraints

4

Robust transmission to integrate renewable resources and move clean electricity to consumers across New England

CLEAN ENERGY TRANSITION & 2040 OUTLOOK

The path to the 2040 (and beyond) decarbonized grid based on state policy goals and assumptions

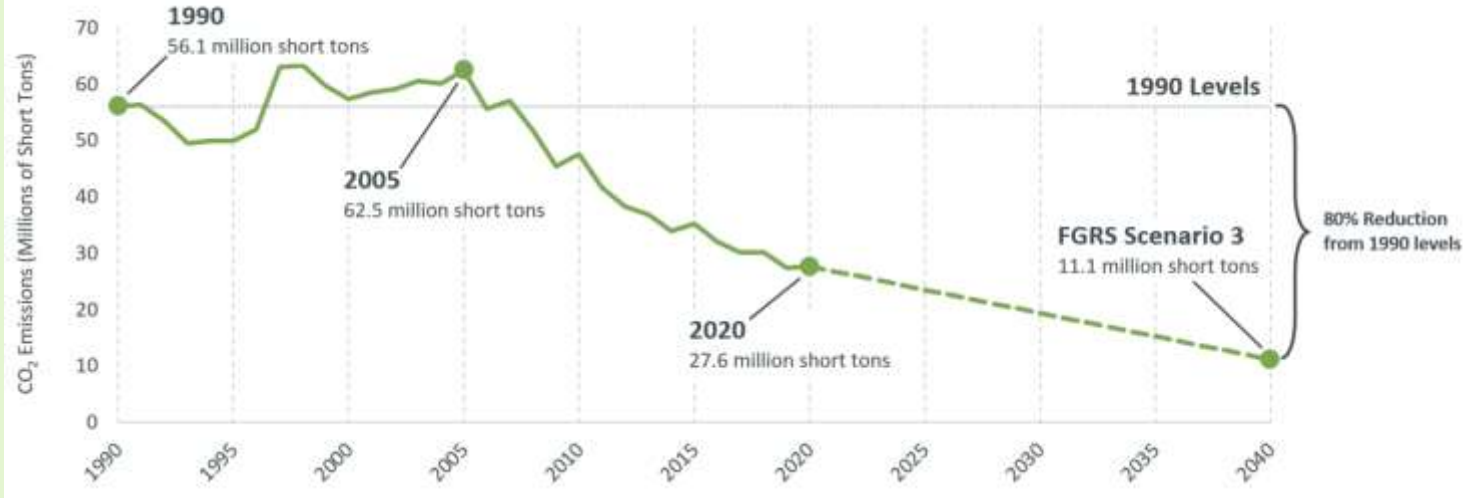
Overview of 2040 Outlook

- Renewables will continue to displace natural gas-fired resources over the next 20 years
  - A shift from centrally dispatched generation to distributed resources
  - A shift from conventional generation to weather-dependent renewable generation
  - Grid will primarily rely on a large number of non-dispatchable, weather-dependent generators, with smaller nameplate capacities
- Significant demand growth as system peak shifts to winter
  - During cold months the system will be at risk of insufficient fuel to support balancing resources (natural gas)
- Escalating variability in supply and demand
  - Most pathways to a low-carbon grid involve high variability in both supply and demand, which will result in either reliability challenges or higher costs
- By 2040, the region could experience consistent negative wholesale energy prices
- As outlined in the ISO-NE 2050 Transmission Study, of the estimated $25 billion needed for transmission upgrades by 2050, upwards of $13 billion will need to be in service by 2040; reducing peak load significantly reduces transmission costs

Emissions Reduction through Decarbonization of the Resource Fleet is the Catalyst for Change to the New England Grid

New England has seen progress in lowering emissions in 2021-2023, but 2024 emissions levels are up from the previous year, mainly due to increased demand

Historical and Extrapolated New England CO_2 Emissions

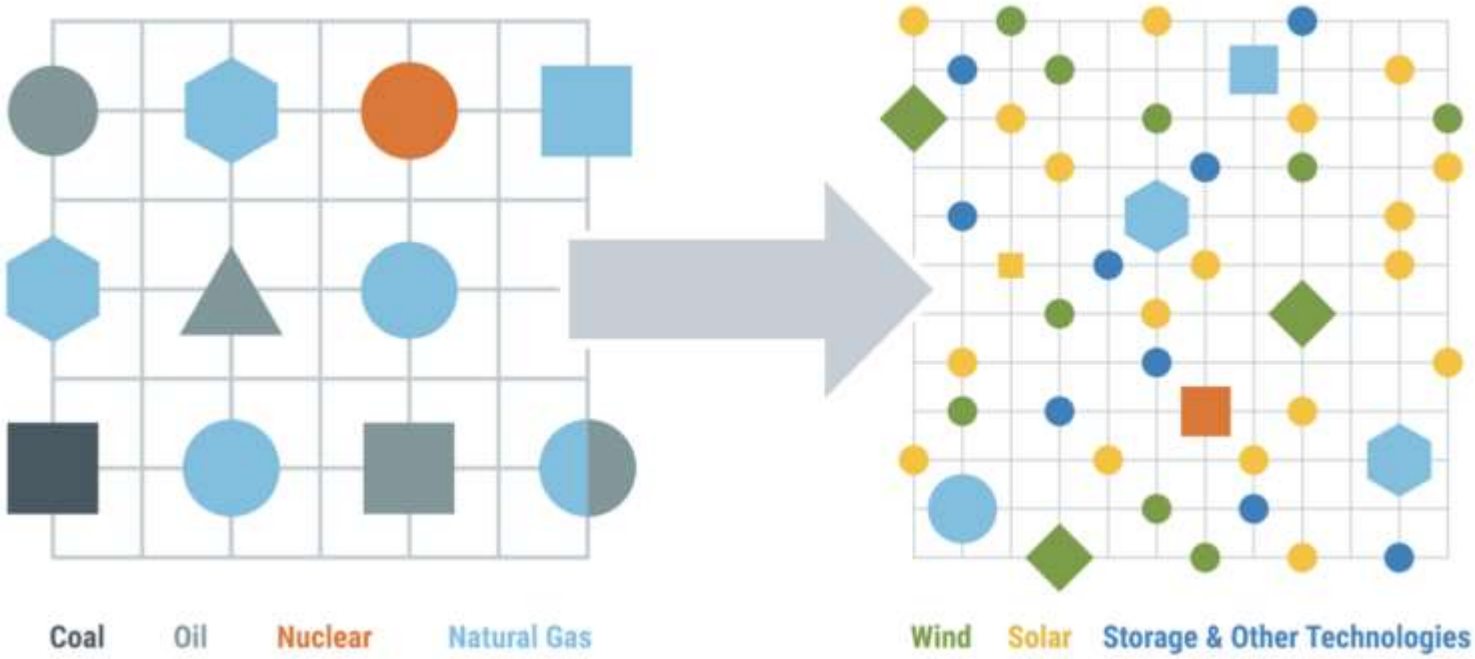


- State policies to address climate change through emissions reduction mandate an 80% reduction from 1990 levels
- These mandates will result in a drastically different generation profile for the region compared to today

Note: The dashed line between 2020 and 2040 illustrates the difference between the known emissions in 2020 and the simulated emissions in 2040 from FGRS Scenario 3. We are not predicting what the annual emissions levels or rate of reduction will be between those two years

- To illustrate the grid of 2040, we drew from the following scenario
  - **The Deep Decarbonization scenario** (Scenario 3 or S3) from the Future Grid Reliability Study – derived from the "All Options Pathway" of the Massachusetts 2050 Deep Decarbonization Roadmap Study outlining heavy renewable penetration and increased electrification loads

Two Dimensions to the Transition to Clean Energy that Contribute to Increased Grid Complexity by 2040



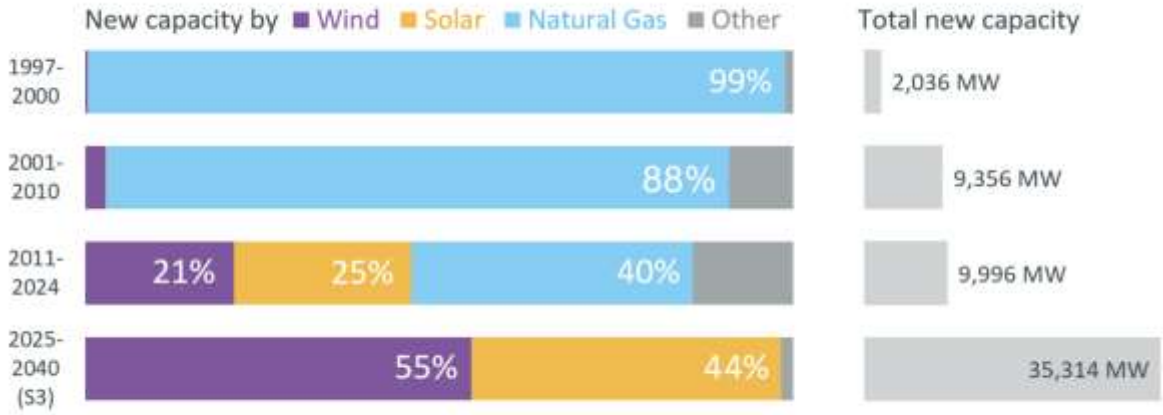
1. A shift from centrally dispatched generation to distributed resources

2. A shift from conventional generation to weather-dependent renewable generation

The 2040 Grid will Primarily Rely on a Large Number of Non-Dispatchable, Weather-Dependent Generators, With Smaller Nameplate Capacities

- **Potential for 1 Million+** non-dispatchable/weather-dependent generators
- **Addition of 17,000 MW** of offshore wind
- **Addition of 28,000 MW** of solar power
- **Nuclear resources clearing FCA** assumed to be staying online in 2040
- **0 GWh** of generation produced from coal, oil, or refuse burning generators
- **2 Additional Tie Lines** for imported electricity from Canada, New England Clean Energy Connect (NECEC), plus an additional new tie-line with Hydro Québec

Historical and Anticipated New Resource Capacity by Fuel Type, 1997 Baseline



Over the next 15 years, in order to meet electrification and clean energy requirements, the region will need to add almost double the amount of new generation as was added to the system in the last 25 years.

Well before the 2040 Outlook (Early 2030s), the ISO Expects to See Substantial Changes to the New England Power System

ISO needs to plan for a power system that by 2030 is projected to be very different than the grid of today:

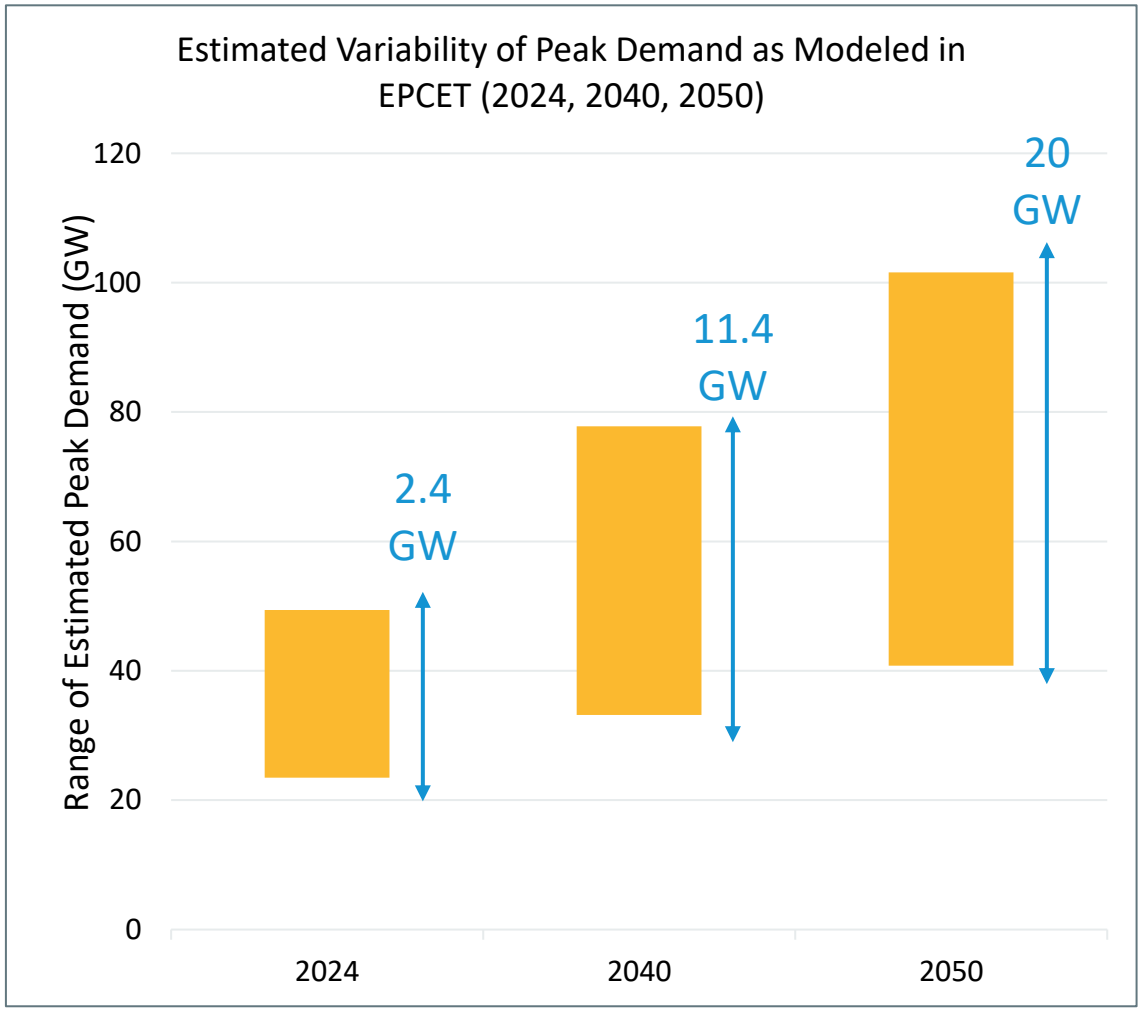
- **Double the installed capacity of solar resources**
- **Development of thousands of MW of offshore wind**
- **Substantial new transmission investment**
  - Supporting inter- and intra-regional transfers, upgrading condition of existing assets, and addressing increasing interaction between transmission and distribution system
- **Enhanced market structures** – accounting for resource mix with different operating characteristics
- **Decarbonization** will change the composition of the power system
  - Increasing numbers of inverter-based resources looking to connect to the New England grid
  - Additional resources are connecting to the distribution system, outside of the ISO's current visibility, that contribute to load variability and forecasting challenges
- **Changing load characteristics** will exacerbate operational complexity
  - Increased load anticipated through electrification of heating and transportation
  - Increased variability through proliferation of BTM generation
  - Increasing load-dependence on weather at a time when weather is becoming more erratic

To support these efforts, the ISO will engage in a slate of work in 2025 and beyond, that directly addresses these developments.

Escalating Variability in Supply and Demand

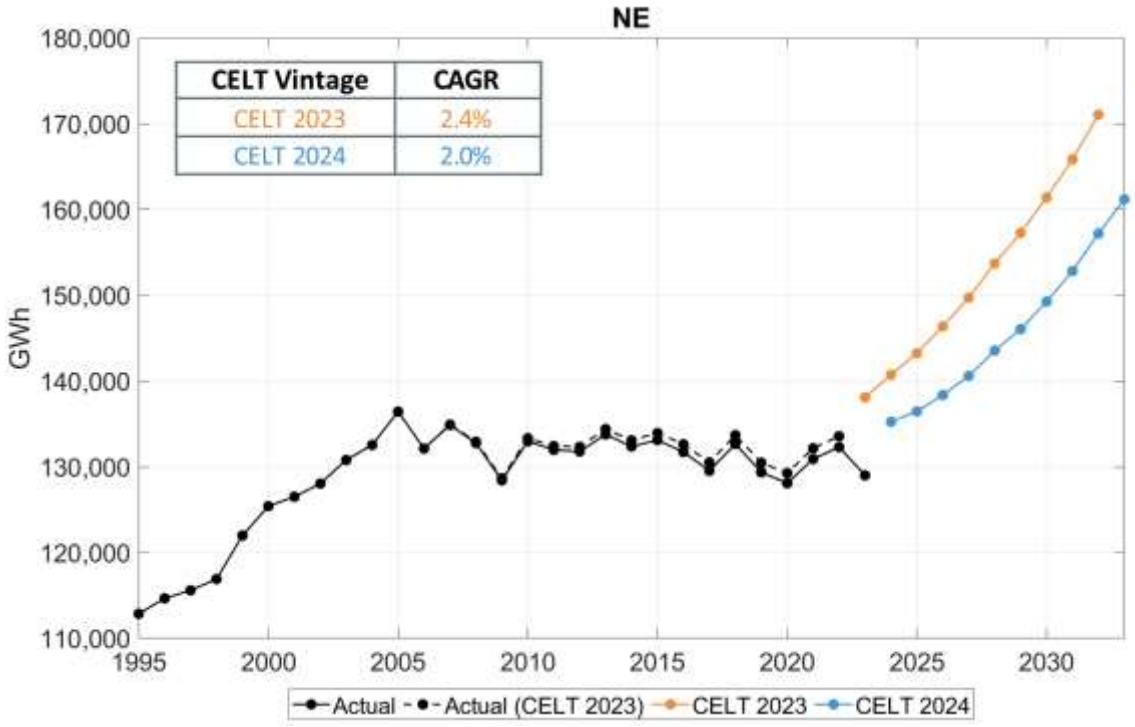
Most pathways to a low-carbon grid involve high variability in both supply and demand, which will result in either reliability challenges or higher costs

- Today's electrical grid experiences only small variations in peak annual demand between years, allowing for efficient planning for a limited number of possible outcomes
- The large variation in demand will require vastly different supply from year to year
  - Some years will require most or all resources to operate; other years, resources will run for just for a few hours of the year, or not at all



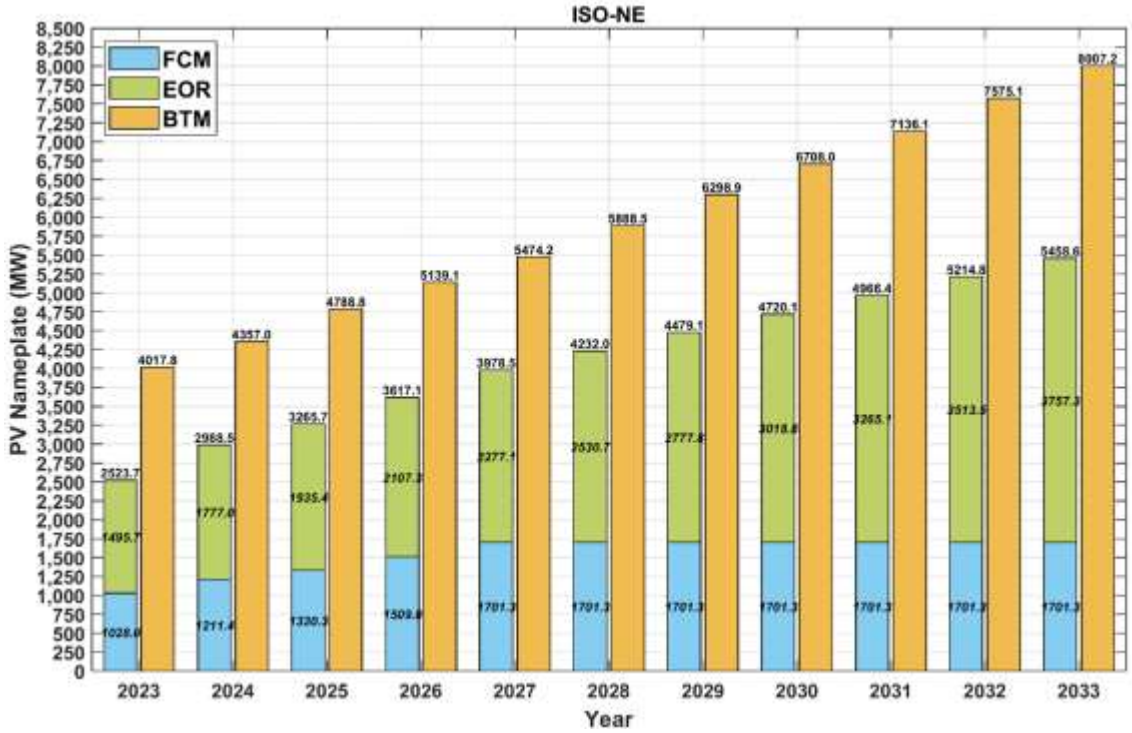
Continued Growth in PV and Peak-Load Estimates Through 2030

Peak load is projected to grow through 2030s



Source: March 2024, Load Forecast Committee: 2024 Final Draft Energy and Seasonal Peak Forecasts

ISO projects PV growth to approximately double over next 10 years

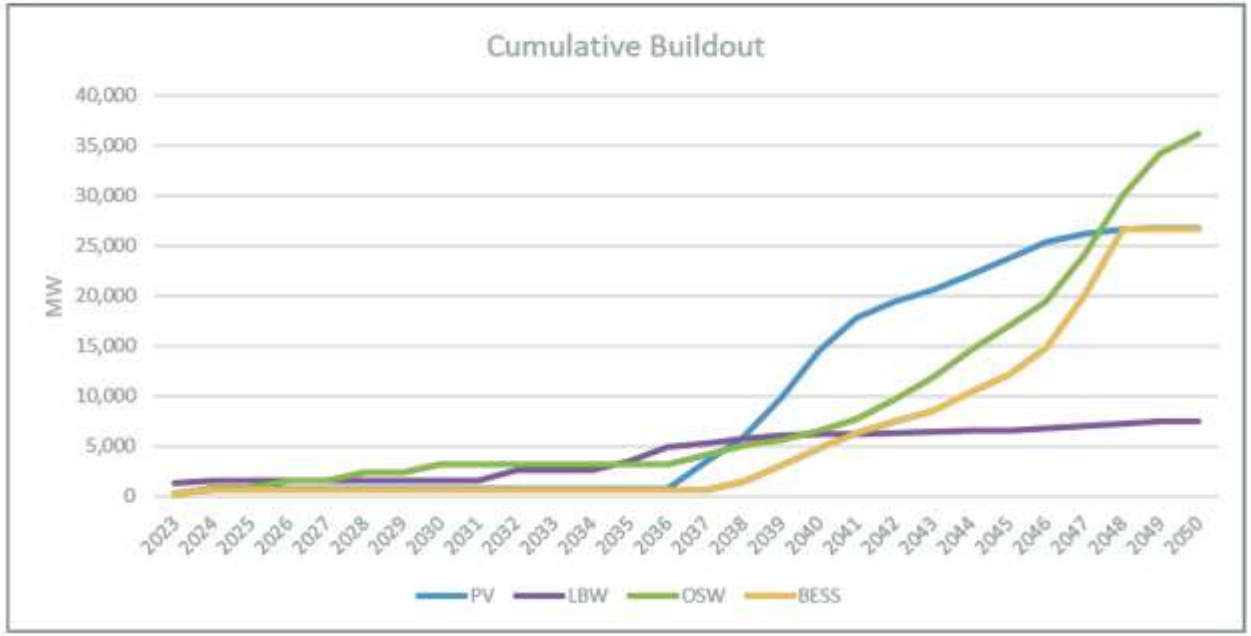


Source: March 2024, Distributed Generation Forecast Working Group: Final 2024 PV Forecast

Grid-level Renewable Capacity Will Need to Increase Substantially in the 2030s

- As load electrifies and grows, carbon constraints require increasing amounts of wind/solar/battery storage
- Despite modeled future systems with significant penetration of wind, PV, and energy storage resources, periods of high net load and depleted energy storage will drive a significant need for dispatchable resources
  - These resources will run less and less over time, but will be relied upon at crucial moments
- The quantities of energy storage needed to ride through wind and PV droughts will be immense

Carbon Constrained Buildout

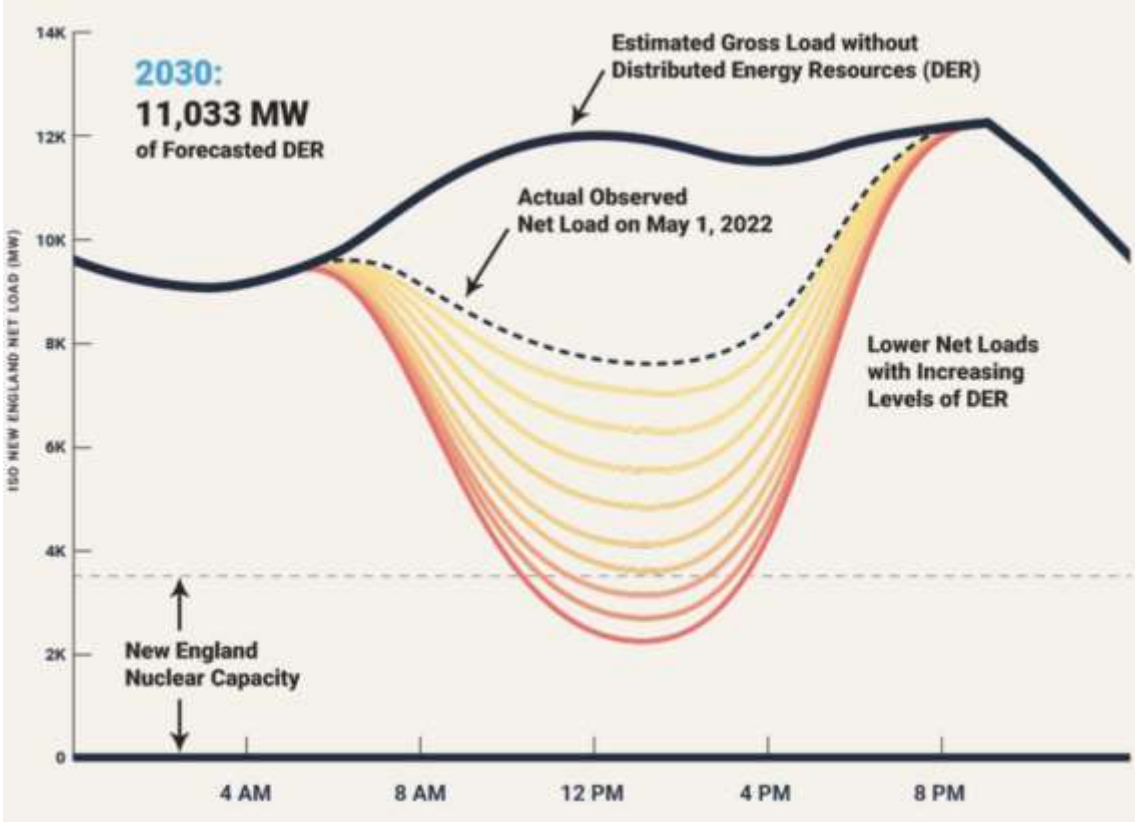


Source: Economic Planning for the Clean Energy Transition

By 2030s, the System May Experience Difficult Conditions with Minimum Load

- Due to increased variability in supply and demand, by the early 2030s the system may experience difficult minimum load conditions, unless demand grows during these periods (e.g., battery charging to take advantage of low/negative prices)
- Potential issues include:
  - Low loads dipping below NE nuclear capacity
  - Transmission system experiences more voltage problems
  - High ramping rates

Behind-the-Meter Solar Reduces Grid Demand



By Early-mid 2030s, Heating Electrification is Expected to Turn the Grid Into a Winter-Peaking System

- Over the next 15 years, the region needs to add almost twice as much new generation as it added in the last 25 years
  - By the early 2030s, the annual energy needed to heat buildings and charge electric vehicles is expected to grow to about 20 times the forecast for 2024
- Long duration storage helps alleviate anticipated problems
  - Higher variability in both supply and demand will increase the value of dispatchable resources
- In the medium term (2030 - 2040) when peak load begins to accelerate, there will be an urgent need for dispatchable capacity on the system
  - Anything that is retired in the short-term may have to be replaced at a larger expense in the medium to long-term

Timing of Shift to Winter-Peaking System

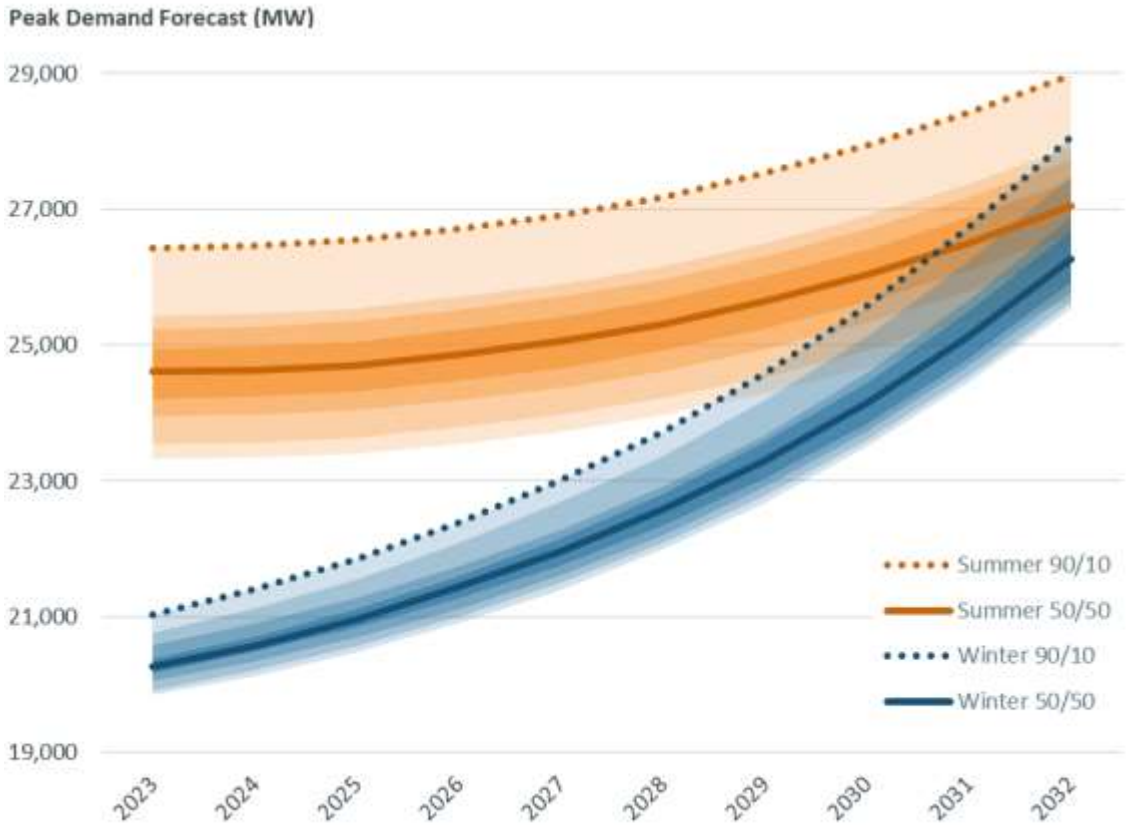
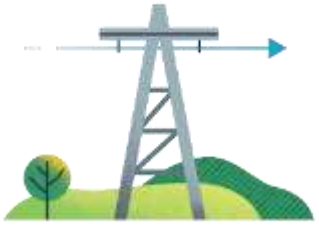


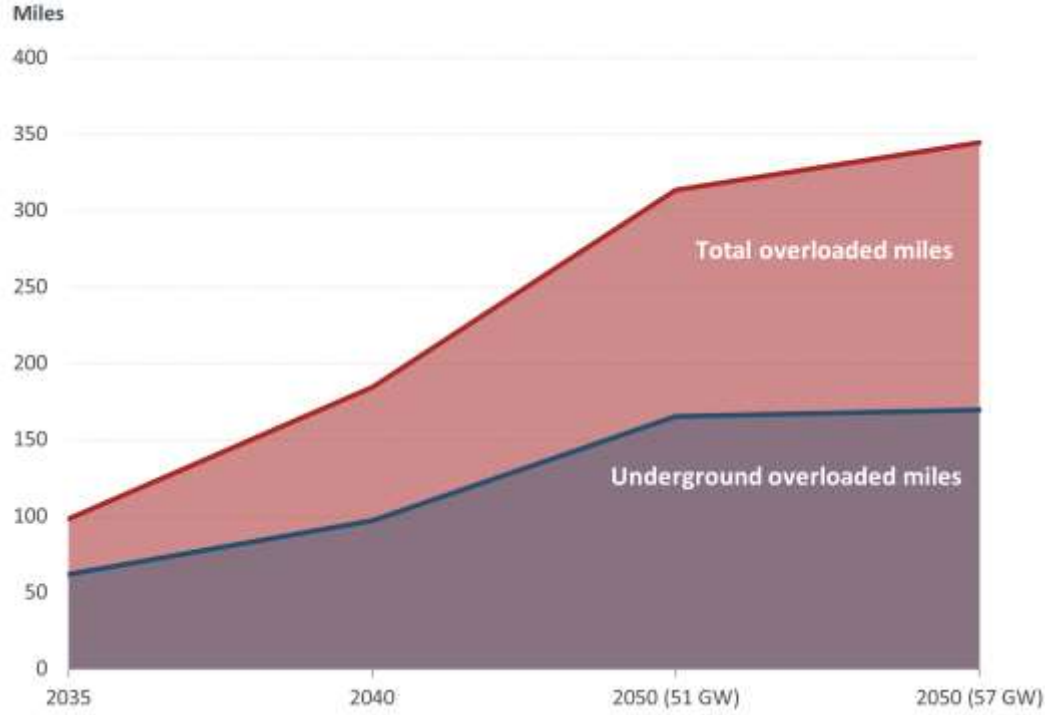
Figure source: 2023 Regional System Plan, Figure 4-9
Data Source: 2023 CELT Report

The Region's Transmission System Will Need Significant Investment



- Assuming pace of renewables continues, and electrification of heating and transportation proceeds as expected, significant upgrades to regional transmission are needed
  - As demand grows over the Clean Energy Transition, the renewable energy to serve that demand will be more geographically dispersed
- Transmission projects that address high-likelihood concerns are likely to bring the greatest benefit for a wide range of possible future conditions as the clean energy transition accelerates
- **Transmission projects to serve 2030s should be in planning stage now**
  - The states have recognized the need, driving the creation of the LTTS planning rules
  - The states, assisted by the ISO, have applied for DOE GRIP funding for two projects

Line Mileage Overloaded in Boston with Generator Interconnection Locations Optimized



Source: 2050 Transmission Study, Figure 2-1

Constraints on the distribution system may also present bottlenecks.

To Ensure the Four Pillars are Robust in the Long-Term, We Must Have a Focused Effort to Ramp-Up Capabilities *Now*

- New England is transitioning to a cleaner electric grid in an effort to mitigate the impacts of climate change and meet the need for a reliable, cost-effective and environmentally sustainable bulk electric system
- To ensure this successful transition, the ISO must focus on the near-term and what the organization must do to strengthen reliability today while keeping New England on the path to the clean, reliable grid of the future
- Successful management of this unprecedented transition requires us to look very carefully toward both the short and the long term
  - The short term because we must maintain reliability during the transition to a carbon-free grid, and lay the foundation for the longer term
  - The longer term because we need to make sound decisions now that will help us reach that destination in the most reliable and cost-effective way

In 2025, the ISO has identified a set of initiatives that make progress towards the goals supporting the organization's mission and vision; the 2025 budget represents a needed step-up in preparing for the anticipated changes.

2025 BUDGET OVERVIEW

2025 Budget Overview

- Key drivers supporting the proposed increase are (see further details on the following pages):
  - Continuing to **enhance capabilities to address the modeling, analysis, processing, and communication** needs directly resulting from the clean energy transition
  - **Addressing the effects of inflation** on products/licenses, labor, and professional fees as well as the year-over-year costs of continued operation
- The 2025 Proposed Budget reflects the resources needed to support the clean energy transition and to continue carrying out the work to fulfill ISO's mission and continuing operations
- The proposed 2025 revenue requirement *before true-up* is $306.4M, an increase of 10.7% over 2024; when including the net true-up, an increase of $7.8M, the total revenue requirement increase is 13.6% year over year

Note: Throughout the presentation some schedules may appear inconsistent due to rounding.

2025 Budget Overview *(cont.)*

Changes Compared to Preliminary (Top-Down) Budget presented in June

- The proposed 2025 budget presented today is the bottom-up detailed budget (prepared with input from each ISO business unit and refinements to preliminary estimates), compared to the top-down budget presented in June (that included preliminary estimates); the detailed bottom-up budget resulted in a $0.3 million increase compared to the preliminary top-down version:
  - Increases include: additional funding for regional study work on raising the minimum loss of source value for New England; Information Technology staff augmentation; higher medical renewal rates; and for interest expense
  - Decreases, that largely offset the noted increases, include: lower salary rates due to staff turnover; and the removal of capacity auction licensing fees due to FERC approved two year FCA 19 delay

Clean Energy Transition Driving 2025 ISO-NE Budget

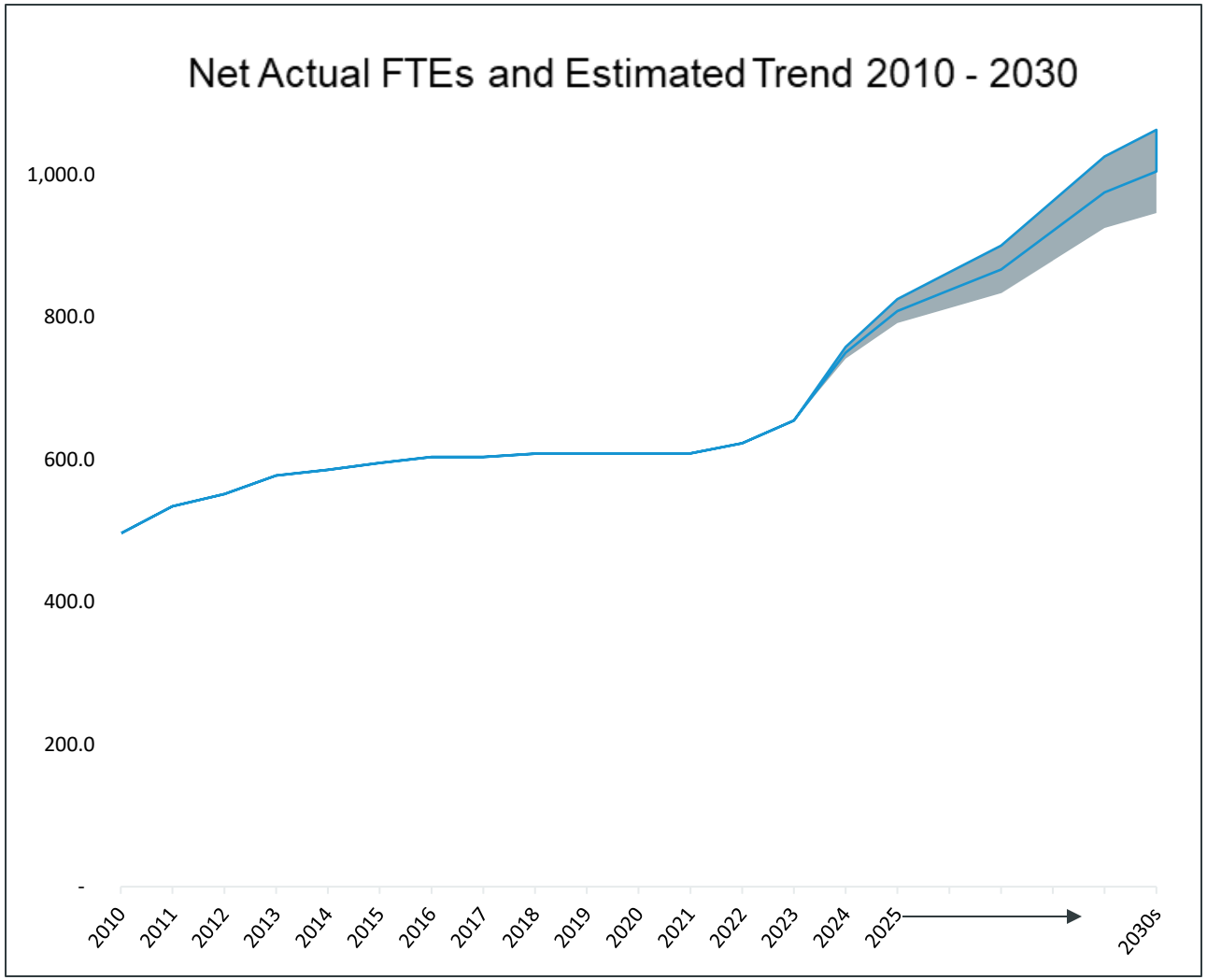
Driver: The main drivers of the 2025 budget are the need to add personnel and make technology investments for the organization to address the modeling, analysis, processing, operational and communication needs directly resulting from the clean energy transition, and includes:

- Continuing to **upgrade our IT infrastructure** to support increasing cybersecurity risk mitigation, data analysis, and rapid technology evolution (often driven by vendors)
  - Capitalize on increased computing power offered through the move to the cloud environment in order to process the volume of data and complexity of analyses that will be needed to support the changing grid
  - Maintaining the internal development and critical software developed by ISO's Advanced Technology Solutions
- **Advancements in modeling and forecasting** to account for net load characteristics and trends that have rapidly evolved in recent years and are anticipated to change even more significantly in the coming decades
- **Market design** work responding to changing system needs, public policies, and new energy technologies
- Development of a team to support **longer-term transmission planning** and administering of transmission RFPs, including analytical support for determining the Benefit to Cost Ratio (BCR) for proposed projects
- Staying compliant with and responding to increasingly **complex federal and state mandates and requests**
- **Investing in more sophisticated operational tools (including updating the EMS)** to support the control room's ability to manage rapidly increasing grid and resource complexity

After Years of Flat Headcount, in 2023, ISO-NE Began Plan to Increase Hiring to Address Clean Energy Transition

Clean energy transition driving FTE needs:

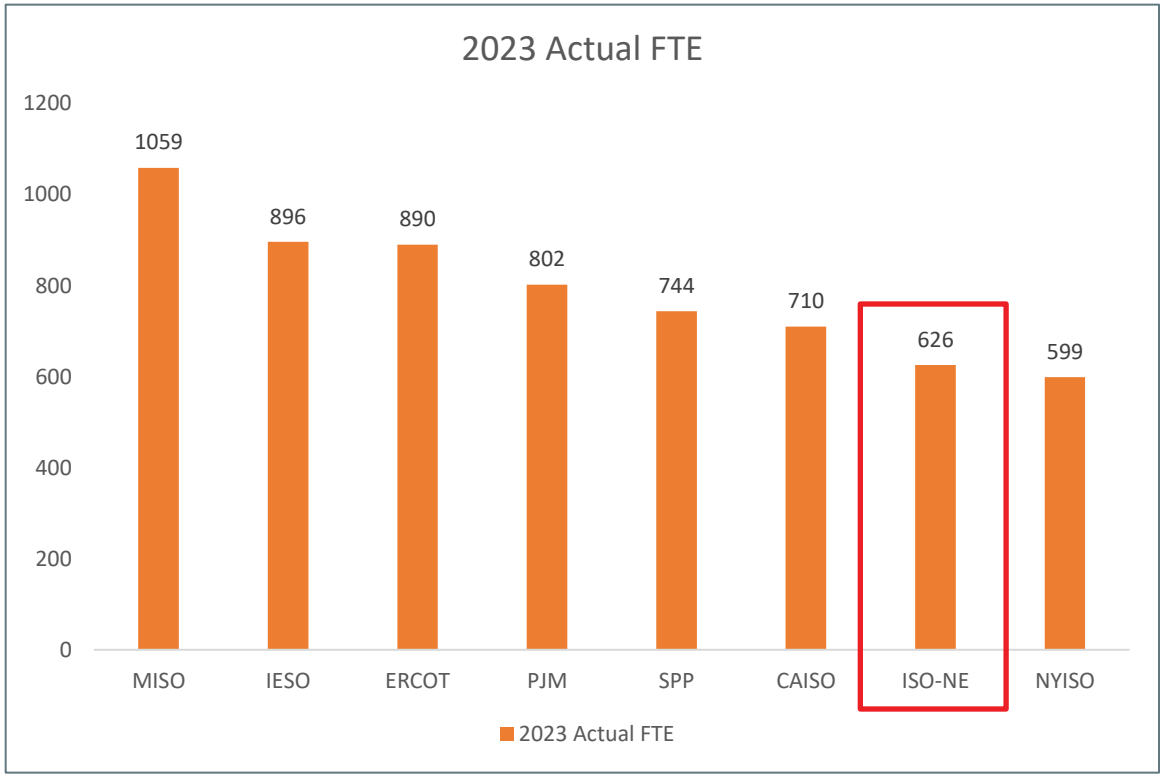
- Increasing number of resources to be interconnected, studied, and incorporated into modeling and forecasting
- New roles for the ISO including assisting states with transmission RFPs
- Increasing compliance needs to address FERC orders, and assess their impacts on operations – 2222, 841, 881, 901, 1920, and 2023
- Emergent needs to collect data for Distributed Energy Resources (DER) to address tripping and low-loads
- New and enhanced skills to work with changing technology stack, new data streams, and operationalizing new applications
- Personnel to communicate increasingly complex information to stakeholders and the public
- Increased support needs to assist the growing and distributed workforce



ISO-NE's Incremental and Actual Headcount in Comparison to other ISO/RTOs'

Other ISOs had already begun ramping up their hiring prior to ISO-NE

ISO-NE is still relatively small compared to other multi-state ISOs



Note: FTE additions and totals are based on actual FTE amounts on 12/31 of the applicable year.

Other Factors Driving Increases to the 2025 Budget

In addition to the budget increases, for added personnel and technology, to support clean energy as described in the previous slides, the other primary factor to the 2025 budget is inflationary cost increases and for continued operations

Driver: addressing the effects of inflation on products/licenses, labor, and professional fees as well as the year-over-year costs of continued operation

- This includes the need to supplement the bench strength in certain departments to compensate for turnover and retirements

The region is committing to invest tens of billions of dollars in the clean energy transition over the next three decades and much of that investment will not only drive work for the ISO, but change the way we work; in order for the region to fully realize the benefits of that investment, the ISO needs to be prepared to reliably operate in that future paradigm

- Like the region it services, the ISO is an organization that is in transition – including operational needs, inflation, and workforce composition – and because of that, our budget estimates over the ensuing years will increase and should be expected to fluctuate due to the volatility of the input assumptions
- The transition – and work flow – will be dynamic, as will other budget assumptions (e.g., various inflationary forces, turnover rates due to the competitive market, headcount needs for yet-to-be-determined market designs, and business processes); therefore long-term budget forecasts will fluctuate

For the ISO to Manage the Transition to Clean Energy, a Significant Investment is Required in The Near-Term

The main factors for the increases to the 2025 ISO budget are:

1. The transition to clean energy:
    - Adding full-time employees (FTEs) and other resources to address work directly related to the transition to clean energy
    - Additional investment in information technology (IT) for enhanced modeling, emerging technologies and forecast methods, and the transition to cloud-based infrastructure
2. Inflationary and continued operations drivers:
    - Standard salary increases to keep pace with the labor market in order to retain and attract employees, to address cybersecurity, and for other miscellaneous cost increases

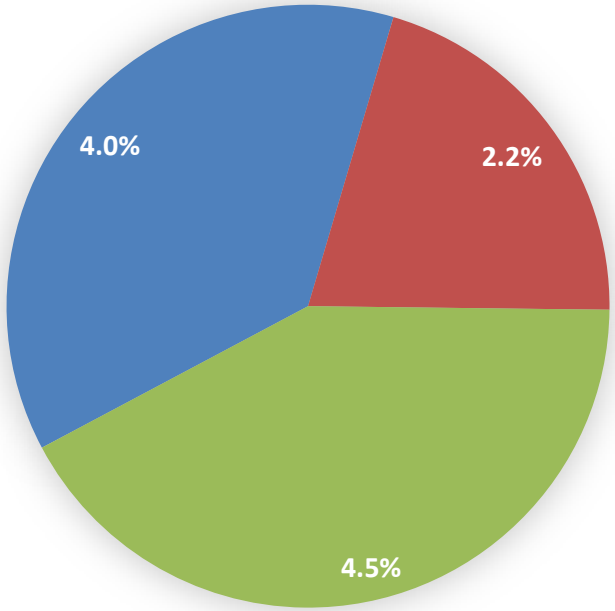
Factor	% Increase	$ Amount	$KWh Rate	Average Monthly Consumer Cost Impact *
Clean Energy Transition	6.2 %	$16,898,100	$0.00012	$0.09
Inflationary/ Continued Operations	4.5 %	$12,610,100	$0.00009	$0.07
Total:	**10.7 %**	**$29,508,200**	**$0.00021**	**$0.16**

**Average Monthly Consumer Cost Impact* is based on average consumption of 750 kWh per month.

Note: See chart on the following slide with an allocation of expense by factor, including a depiction of Clean Energy between investment in people and technology

Key Factors to the 2025 ISO-NE Budget

Key 2025 Budget Drivers



- 4.0% Clean Energy – Investment in People
- 2.2% Clean Energy – Investment in Technology (1)
- 4.5% Inflationary/Continued Operations (2)

(1) The Clean Energy Investment in Technology represents $1.7M of Computer Services increases for improved modeling, load forecasting, and moving to a cloud environment. The Clean Energy Investment in Technology also includes: increases for Depreciation Expense including that for new market features and enhancement related projects such as Day-Ahead Ancillary Services Improvements and nGEM Software Development Part III; and Network Operations increases for transition of communication lines to new technologies

(2) Inflationary/Continued Operations includes $4.3M of Computer Services increases representing $2.3M of existing product increased costs and/or licensing and $2.0M related to Cyber Security additions and enhancements

Note: See slides 36 and 37 for additional information on Computer Services and technology

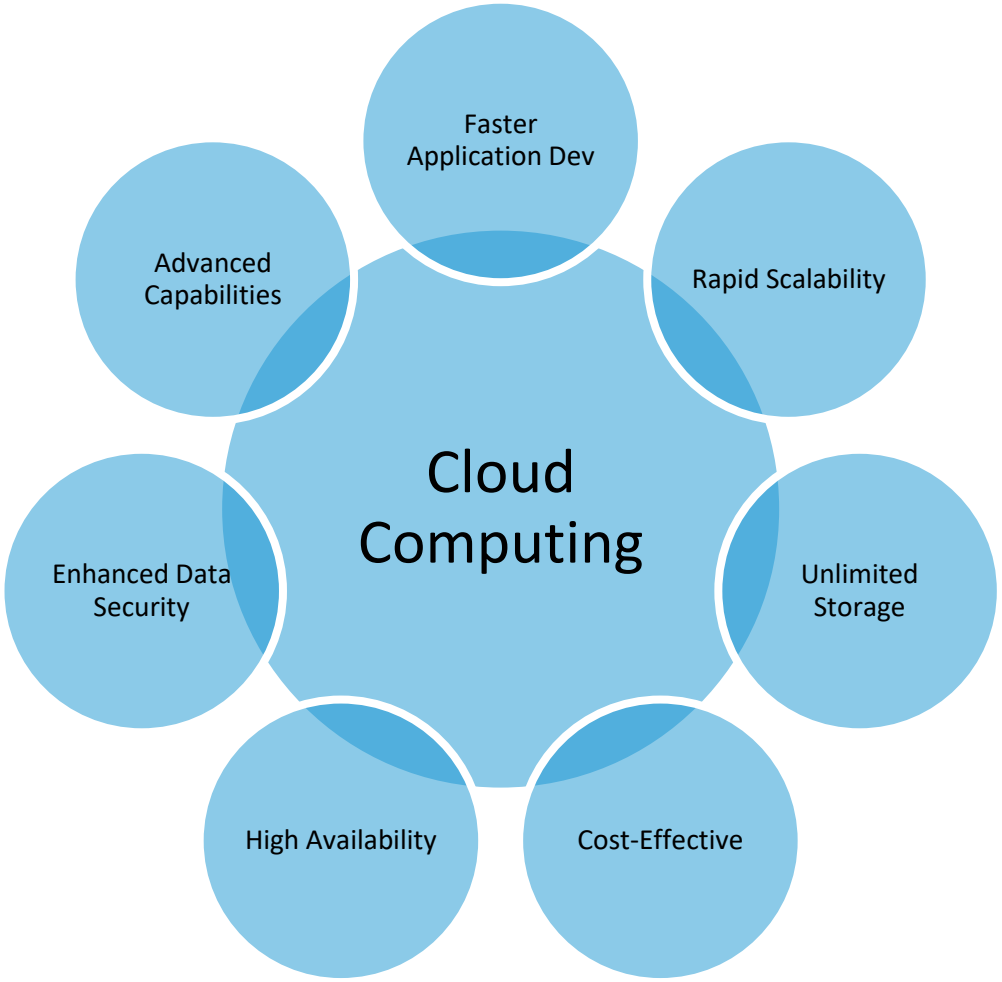
Budget Driver: The Need to Enhance Computer Services and Technology Stack

Computer services driving budget costs in 2025:

- ISO moving to cloud environment
  - Changes the organization's technology stack
  - Enhances efficiencies and capabilities
  - Necessitates new roles within IT
- New/increasing licensing and products
  - Increases in user licenses or central processing units
  - Vendor and product inflation

Existing staff will be trained to support new platforms and tools.

Benefits of moving to the cloud

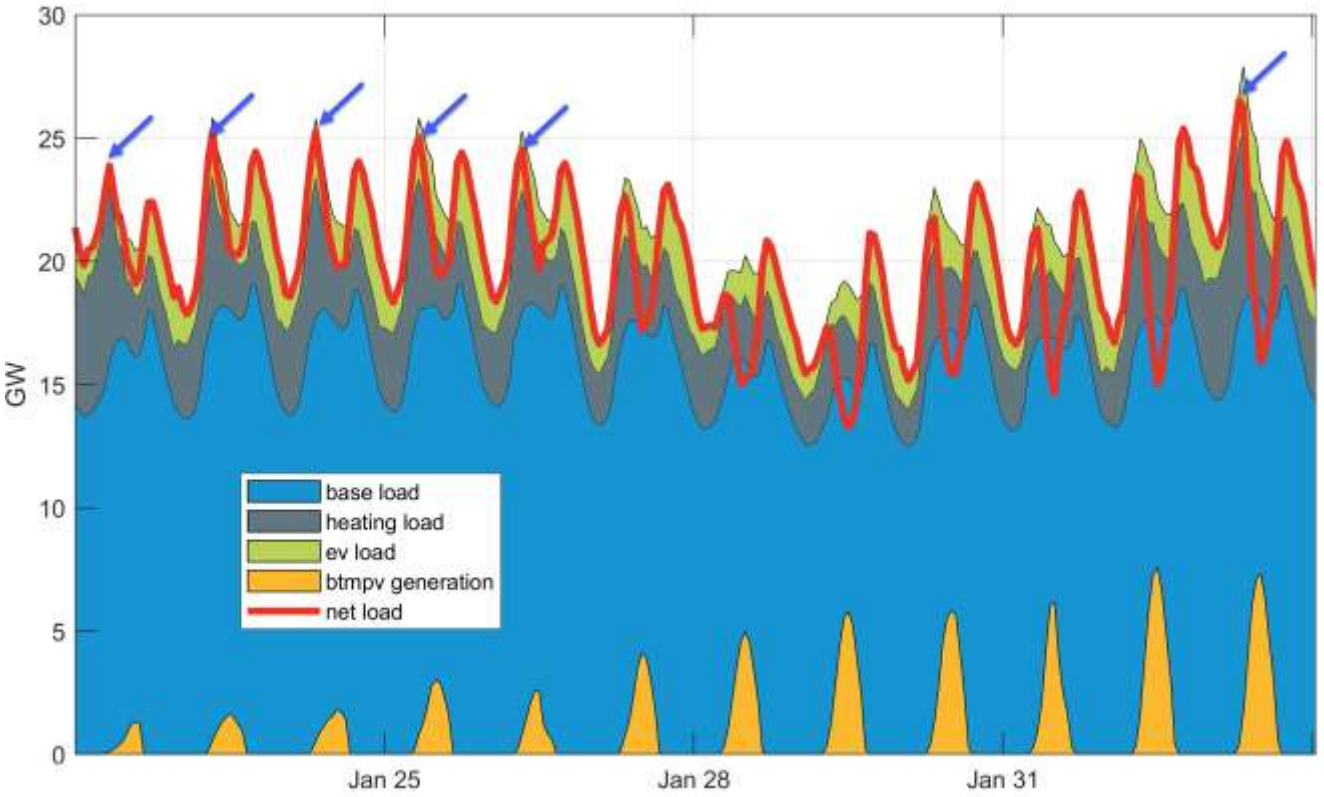


Budget Driver: Technology Improvements for Forecasting Demand and Increasing Complexity of Planning Studies

- Emerging trends require **enhanced modeling and accounting** to resolve net impacts on demand and to forecast full range of demand during all seasons and grid conditions
  - DER PV and DER storage
  - Electrified heating
  - EV managed charging
  - Retail-based active demand response
- **Keep pace with emerging technologies and forecast methods**
- Increasing need for **studying non-typical peak hour insights**
  - Midday minimum loads
  - Sub-regional, “non-coincident” load characteristics
  - Seasonal peaks occurring on weekends, holidays, or atypical months
- Growing emphasis on **load shape and short-term energy requirements in studies**

Need Explicit Accounting of Load Shape

Our current forecasting methodology does not capture the morning peaks we are observing



Source: Data from 2023 CELT Report

Budget Driver: Designing Markets and Supporting Analyses for the Clean Energy Transition

- Hiring to support the development and maintenance of new market mechanisms for the changing resource mix:
  - Capacity Auction Reforms:
    - Resource Capacity Accreditation
    - Move to a prompt/seasonal market
      - *The extent there are personnel efficiencies from the shift to a prompt/seasonal market, the ISO will redeploy existing staff to areas of need*
  - Ramping and flexible response products
  - Day-Ahead Ancillary Services Initiative
- Hiring to support the effects of evolving resource mix on market analyses
  - New and more frequent energy analyses
  - Growing number of transmission and interconnection studies
  - Need to support transmission RFPs with economic analyses

Budget Driver: Compliance with Increasingly Complex Stakeholder, State, and Federal Requests

The clean energy transition will necessitate new roles and capabilities at the ISO including supporting states' requests (including longer-term transmission planning and RFPs), staying compliant with federal mandates, and hiring new skillsets geared specifically towards engaging stakeholders

In addition to the personnel needed to address the workload associated with the modeling, forecasting, and technology needs of the changing grid, addressing the related federal, state, and stakeholder requests will drive budget needs in 2025:

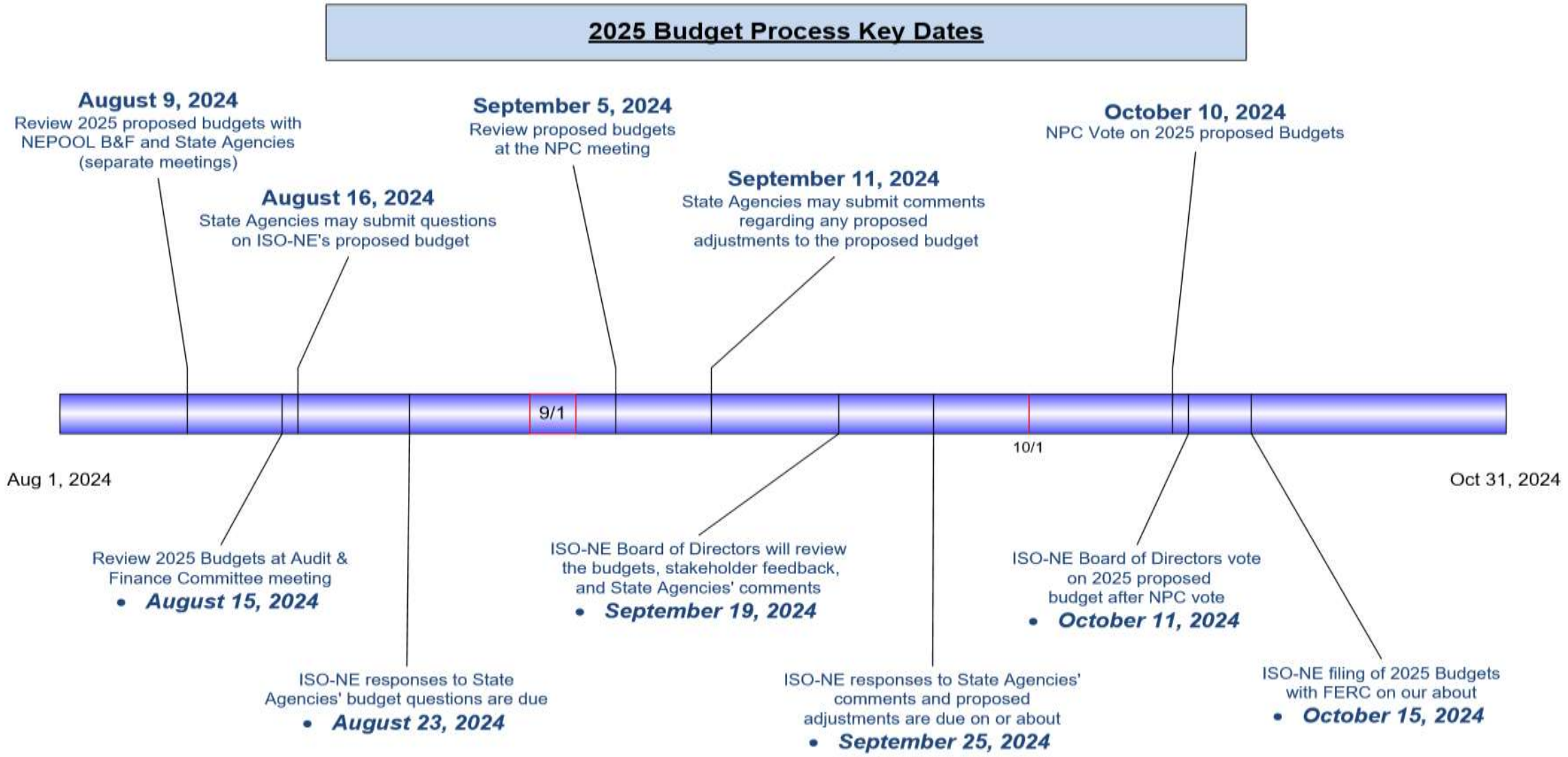
- Development of capabilities to assist states in the transmission RFP and long-term transmission planning processes, **which will necessitate the addition of a new team at the ISO**
  - **This new capability will require a buildout over the course of a few years beginning in 2025**
- Implementation and evaluation of FERC orders: FERC Orders 2222, 841, 881, 901, 1920, and 2023
  - Including elements of implementing outcomes from Regional Energy Shortfall Threshold and Day-Ahead Ancillary Services
- Hiring new skillsets to service stakeholder needs, requests, and communication of increasingly complex grid and market information

2025 Budget Overview

The 2025 Capital Budget is also presented in summary form

- The 2025 Capital Budget has increased from $35M in 2024 to $42.5M in 2025
  - The 2025 capital budget is $2.5M above the $40M presented in the preliminary 2025 budget as a result of incorporating the workspace changes needed to satisfy short-term constraints for the next couple of years; as discussed in the preliminary budget, the Holyoke campus was designed to support 560 headcount therefore creating a need to redesign the Holyoke facilities to accommodate the larger workforce; after exploring financing options with TD Bank, ISO determined this was the most cost efficient way to finance the short-term needs; the costs will be covered under the $75M private placement which will be in effect in 2024; additionally, this will allow ISO to save on closing costs
  - The increased capital budget need is being driven by four primary drivers as explained in further detail on slides 75-79
  - The increased capital spending will result in higher interest expense costs and depreciation expense in future years as capital projects go into service and are included in operating budgets and rates
- The 2025 proposed capital budget of $42.5M is provided with a list of projects by strategic goal that are currently chartered and on-going or in planning/conceptual design (See Slides 82-85)
- Detailed project descriptions are presented in Appendix 7

2025 Budget Process – Key Dates



2025 Budget – 5 Year Comparison

(Budget Amounts are in Millions)	2025	% Change	2024	% Change	2023	% Change	2022	% Change	2021
Operating Budget Before Depreciation	$269.4	10.3%	$244.3	16.8%	$209.2	10.7%	$189.1	5.8%	$178.6
Capital Budget	42.5	21.4%	35.0	4.5%	33.5	4.7%	32.0	14.3%	28.0
Total Cash Budget	**$311.9**	**11.7%**	**$279.3**	**15.1%**	**$242.7**	**9.8%**	**$221.1**	**7.0%**	**$206.6**
Operating Budget Before Depreciation	$269.4	10.3%	$244.3	16.8%	$209.2	10.7%	$189.1	5.8%	$178.6
Depreciation	$37.0	13.6%	32.6	5.1%	31.0	19.1%	26.0	(1.2)%	26.3
Revenue Requirement Before True-up	306.4	10.7%	276.9	15.3%	240.2	11.7%	215.1	4.9%	205.0
True up	4.8		(3.0)		(14.6)		1.1		0.2
Revenue Requirement	**$311.2**	**13.6%**	**$273.9**	**21.4%**	**$225.6**	**4.4%**	**$216.1**	**5.4%**	**$205.1**
Forecast – TWhs (1)	**136.5**	**(3.0)%**	**140.7**	**(1.6)%**	**143.0**	**(1.0)%**	**144.4**	**(2.0)%**	**147.4**
$/KWh Rate	**$0.00228**	**17.1%**	**$0.00195**	**23.4%**	**$0.00158**	**5.4%**	**$0.00150**	**7.5%**	**$0.00139**
Average Monthly Consumer Cost (2)	**$1.71**		**$1.46**		**$1.18**		**$1.12**		**$1.04**

(1) 2025 Forecast based on May 2024 CELT Report (Schedule 1.5.2 - Net Annual Energy - Gross (without reductions)). All other years based on CELT Report for the applicable year, which can be found on www.iso-ne.com.

(2) Based on average consumption of 750 kWh per month.

Note: Throughout the presentation some schedules may appear inconsistent due to rounding of amounts.

2025 STRATEGIC GOAL INITIATIVES

2025 Initiatives: Responsive Market Designs

Support reliability through competitive market mechanisms

1. Capacity Auction Reforms
   - Transition to a Prompt/Seasonal Capacity Market
   - Resource Capacity Accreditation Reforms
2. Implement Day-Ahead Ancillary Services
3. Guide stakeholder discussions on specific new flexible response services
4. Finalize decision to extend or terminate IEP post 24/25 winter

Administer FERC Orders Supporting DER

1. Complete Business Requirements for all affected software and beginning development for Order No. 2222
2. Begin Implementation of Day-Ahead Market Storage Enhancements for Order 841

2025 Initiatives: Progress and Innovation

Improve modeling for emerging technology resources

1. Development of nGEM Real-Time Market Clearing Engine
2. Completion of nGEM Phase III program development
3. Integrate EMT Study Tools into Engineering Processes
4. Enhance data collection for co-located and hybrid resources to improve modeling/visibility

Continue to develop forecasting capabilities to support clean energy transition

1. Develop Probabilistic Forecast Capabilities for Wind, Solar, and Load
2. Integrate Probabilistic Energy Adequacy Tool (PEAT) analysis into seasonal forecasts
3. Improve load forecasting methodology

2025 Initiatives: Operational Excellence

Maintain Reliability and Forecasting for Operation of the Bulk Power System

- Evaluate Single Source Contingency Limit Increase
- Continue to evaluate tie benefits
- Implement ambient adjusted line ratings (FERC Order 881)
- Address trend of increasing DER/decreasing springtime load
- Enhance synchrophaser applications

Implement internal process and technology improvements to address increasing operational complexity

- Increase the usability and broaden usage of ISO-developed innovations to enhance control room situational awareness and market efficiency related to grid complexity
- Enterprise resource planning system replacement
- Evaluate the impacts of FERC Order 2023 on streamlining interconnection queue

Continue to modernize IT assets, technologies, and tools to mitigate cybersecurity threats

- Modernize tools for escalating cybersecurity threats
- IT Asset Workflow (ITAW) Integration and Updates
- IT Support for specific projects (e.g., market design evolution; enhancements to system operator situational awareness/modeling tools)
- Cloud Computing

2025 Initiatives: Stakeholder Engagement

Communicate Power System and Wholesale Markets Performance & Needs

1. Implement Extended Term/Longer Term Transmission Planning Phase 2
2. Coordinate regional discussions around Transmission Owners' asset replacement for the clean energy transition
3. Engage States/FERC to determine implementation path for Regional Energy Shortfall Threshold (REST)
4. Economic studies coming out of the Economic Planning for the Clean Energy Transition (EPCET) Study

Provide high-quality services to stakeholders and the public

1. Develop new communications materials, expand access to regional energy information and conduct outreach to new audiences
2. Survey stakeholders' satisfaction for ISO services
3. Enhance communications about clean energy transition

2025 Initiatives: Attract, Develop, and Retain Talent

Maintain Competitiveness in Labor Market

1. Advance competitive pay benchmarking and associated salary adjustments and structure
2. Continue critical talent retention strategies inclusive of pay, development, and succession planning
3. Additional investment in early career talent programs
4. Improve employee experience- onboarding, coaching and development, flexible work (hybrid), change management
5. Deliver competitive benefit programs with a focus on emotional, physical, and financial wellness

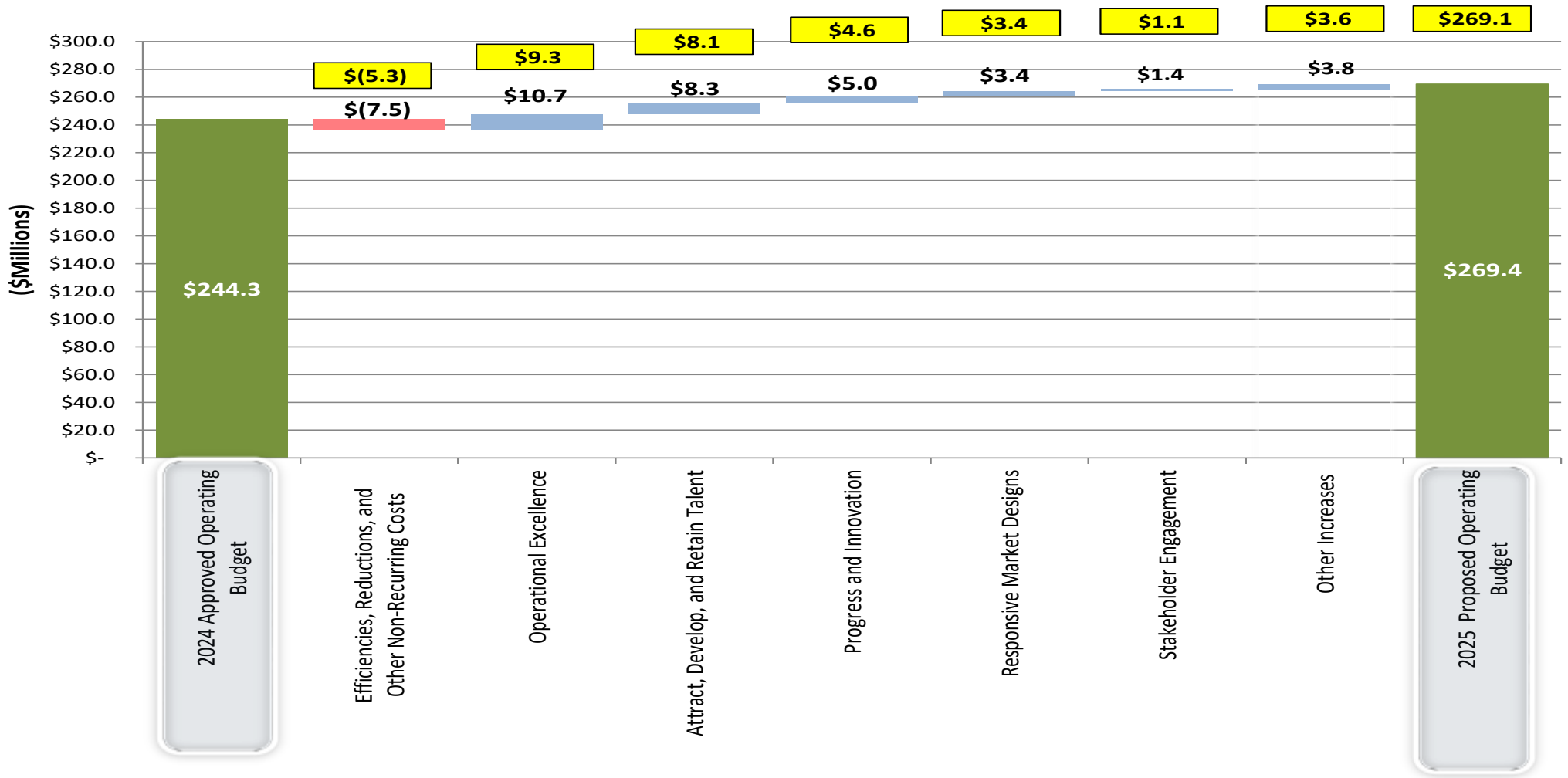
Support the Professional Development of the ISO Workforce

1. Advance Diversity and Inclusion – raising awareness, employee networks, focus on culture
2. Advance leadership capability through the design and delivery of leadership development opportunities and programs
3. Support the organization change, upskilling, and reskilling required to achieve business outcomes
4. Refresh and administer HR Policies and Programs

2025 Detailed Budget Changes by Strategic Goal

2025 Budget

Changes in budget by Strategic Goal



Note: Items in yellow above represent the estimate that was included in the 2025 preliminary budget presented in June 2024.

2025 Budget Details

Efficiencies, Reductions, and Other Non-Recurring Costs

Reductions include: ($7.5M)

- Reductions for consulting professional fees for 2024 studies or other non-recurring work including:
  - Utilization of external support for New England States' requests to be offset by ISO-NE internal staff
  - Funding for FCA 21 Cost of New Entry (CONE) parameter updates
  - Reduction in funding for the assessment of a conceptual framework for a Prompt Seasonal Capacity Market
  - Removal of professional fees funding in Market Administration & Auctions and Market Monitoring, and capacity auction licensing fees due to the FERC approved two year delay of FCA 19
  - For Distributed Energy Resource and minimum load studies for assistance in determining requirements on how to ensure reliability on the system under conditions where it is powered solely by inverter-based resources
  - Reductions in Market Development study and project management support
  - For Energy Resource Opportunity cost support in Market Monitoring

2025 Budget Details

Efficiencies, Reductions, and Other Non-Recurring Costs

Reductions: *(cont.)*

- Lower support costs, upon contract renewal, for Participant Support management software
- Lower salary rates due to employee turnover and retirements
- Increase in Interest Income due to raising of interest rates for 2025 to 2.75% compared to 1.00% in 2024 budget

2025 Budget Details *(cont.)*

Detailed allocation by Strategic Goal/2025 Initiatives

Goal 3: Operational Excellence: $10.7M

- Computer service and leasing increases for: cyber security (security logging, firewall updates, network collaboration tool, network traffic segmentation, encryption software, and risk management); leasing of servers as part of data center refresh; photovoltaic and demand response forecast products; licensing for System Planning and Operations applications; performance monitoring software; Enterprise Resource Planning software; compliance software; and inflationary and vendor increases across our portfolio of computer service products ($6.4M)
- Funding for 11.0 FTEs* related to this goal across Information and Cyber Security Services for Cloud Computing transition including architecture, security and infrastructure support, and FinOps management, for IT modeling and software development, and support for enterprise and settlement applications; for Participant Training support; and for Finance and Market Credit Risk support to the organization ($2.5M)
- Network Operations increases for transition of communication lines to new technologies, for data redundancy, and for inflationary and communication line increases ($0.6M)

* FTE totals and related funding on slides 53-60 reflect partial funding for 2025 positions (30 FTEs), as well as a partial carryover for 2024 positions (20 FTEs).

2025 Budget Details *(cont.)*

Detailed allocation by Strategic Goal/2025 Initiatives

Goal 3: Operational Excellence: *(cont.)*

- Information and Cyber Security Services staff augmentation inflationary rate increases ($0.5M)
- Addition of an professional fees for an Audio Visual Engineer to support the Information Technology Service Delivery team ($0.2M)
- Internal Audit support for cloud applications and NERC Critical Infrastructure Protection (CIP) programs ($0.2M)
- Travel and training due to full renewal of in-person meetings, higher travel costs, and training of staff to support new platforms and tools ($0.2M)
- Information Technology administrative staff augmentation consulting support ($0.1M)

2025 Budget Details *(cont.)*

Detailed allocation by Strategic Goal/2025 Initiatives

Goal 5: Attract, Develop, and Retain Talent: $8.3M

- Merit and Promotion increases (6.0% Total): for annual merit (4.0%) and for standard and targeted equity/promotions (2.0%), less timing of 2024 equity/promotion adjustments and allocation of amounts between operating and capital/reimbursable work ($4.7M)
- Increases in employee benefit costs, primarily for medical trend, increased number of employees in Defined Contribution Benefit Plan, and higher 401K match due to overall employee salaries ($1.8M)
- Increase for employee incentive target amounts including adjustments based on compensation study review ($1.4M)
- Funding for 6.0 FTEs* related to this goal across Human Resources, Legal, and Corporate Communications (in HR for talent and project management, early career associates, and learning coordinator; in Legal for corporate counsel to support employee related matters; and in Corporate Communications for a communications specialist to expand external communications to attract talent) ($1.0M)

* FTE totals and related funding on slides 53-60 reflect partial funding for 2025 positions (30 FTEs), as well as a partial carryover for 2024 positions (20 FTEs).

2025 Budget Details *(cont.)*

Detailed allocation by Strategic Goal/2025 Initiatives

Goal 5: Attract, Develop, and Retain Talent: *(cont.)*

- Higher recruiting and benefits administration related expenses including relocation, recruiter fees, and employee experience consulting ($0.5M)
- Leasing of land adjacent to Holyoke facility in conjunction with Space Utilization project ($0.3M)
- Human Resources support for instructional design and executive coaching ($0.2M)
- A reduction for the increase of employee vacancy from 5% to 6% (reduction of $1.6M)

2025 Budget Details *(cont.)*

Detailed allocation by Strategic Goal/2025 Initiatives

Goal 2: Progress and Innovation: $5.0M

- Funding for 16.0 FTEs* including Information and Cyber Security Services and Advanced Technology Solutions for bringing ISO-NE developed advanced technologies into the operating environment to increase our situational awareness capabilities; System Operations and System Planning positions for forecasting and energy analysis across different timespans as the system's resource mix continues to evolve, and for modeling and electromagnetic transient analyses for market and reliability operating limits of Inverter Based Resources; and in Transmission Planning and Services for RFP processing and long-term studies ($3.4M)
- Funding for a transmission planning system assessment under NERC Transmission Planning Standard TPL-001 ($0.5M)
- Increased utilization of cloud computing with more products moving to the cloud including the Customer and Asset Management System (CAMS), Forward Capacity Tracking System (FCTS), and internal development software application ($0.5M)
- Funding to support transmission planning and analysis studies to establish facility out transfer capability for Northern New England and NECEC ($0.3M)

* FTE totals and related funding on slides 53-60 reflect partial funding for 2025 positions (30 FTEs), as well as a partial carryover for 2024 positions (20 FTEs).

2025 Budget Details *(cont.)*

Detailed allocation by Strategic Goal/2025 Initiatives

Goal 2: Progress and Innovation: *(cont.)*

- Funding for Planning Services benchmarking and validation of generator outage data ($0.1M)
- Fees for a battery storage modeling application being utilized by Internal Market Monitoring staff ($0.1M)
- For research by Advanced Technology Solutions with outside firm on impacts of Inverter Based Resources on the system based on differing scenarios including location, timing, and volumes ($0.1M)

2025 Budget Details *(cont.)*

Detailed allocation by Strategic Goal/2025 Initiatives

Goal 1: Responsive Market Designs: $3.4M

- Funding for 11.0 FTEs* related to this goal including for: Market Development in design of market overhauls including Capacity Auction Reforms (prompt seasonal capacity market, and resource capacity accreditation), and flexible response services; Operations Training to design and support trainings for Operations and Market Administration and Auctions staff for new market features; Information and Cyber Security Services and Advanced Technology Solutions staffing to support and integrate new market features into applications and tools; and Planning and Transmission Services to align with new market designs, for identifying enhancements to existing reliability modeling and researching, and developing modeling techniques for emerging technologies ($2.4M)
- nGEM vendor support with the Day-Ahead Market Clearing Engine production application that is being supported at the same time as the legacy Real-Time application (forecasted to go live in 2026) ($0.6M)
- Support in Advanced Technology Solutions for Integrated Market Simulator system support and enhancements ($0.3M)
- Support for Market & Credit Risk modeling ($0.1M)

* FTE totals and related funding on slides 53-60 reflect partial funding for 2025 positions (30 FTEs), as well as a partial carryover for 2024 positions (20 FTEs).

2025 Budget Details *(cont.)*

Detailed allocation by Strategic Goal/2025 Initiatives

Goal 4: Stakeholder Engagement: $1.4M

- Funding for 3.5 FTEs* in Participant Relations and Services for project services (gathering, managing, and supporting the assessment of participant requests), for data analytics on key trends, for technical readiness on participants inquiries and proposals, and for technical writing and instructional design work for broader and deeper training for new market features and initiatives scheduled for 2025 and 2026 ($0.7M)
- Funding for 1.5 FTEs* in System Planning for Economic Study and Environment Outlook and Interconnection Study work; and 1.0 FTE* in External Affairs for increased support and substantive interactions with the states and facilitating engagement of ISO subject matter experts on matters related to renewable and clean energy development, transmission and interregional planning, generator interconnections, and integration of demand-side solutions and distributed resources ($0.5M)
- Increase in funding for a regional study with PJM and NYISO for 1,200MW single source contingency limit appropriateness and determine upgrades required to support 2,000MW single source limit ($0.2M)

* FTE totals and related funding on slides 53-60 reflect partial funding for 2025 positions (30 FTEs), as well as a partial carryover for 2024 positions (20 FTEs).

2025 Budget Details *(cont.)*

Detailed allocation by Strategic Goal/2025 Initiatives

Other Increases: $3.8M

- The allocation of NPCC and NERC dues ($1.2M)
- An increase in Interest Expense and fees with changes to: Private Placement debt in late 2024 at higher balance and expected higher rate than previous debt; tax exempt debt due to higher rate slightly offset by decrease in principal balance; with a partial offset on the working capital borrowing ($1.1M)
- An increase in the CEO Emerging Work Allowance ($1.0M)
- Insurance policy rate increase ($0.5M)

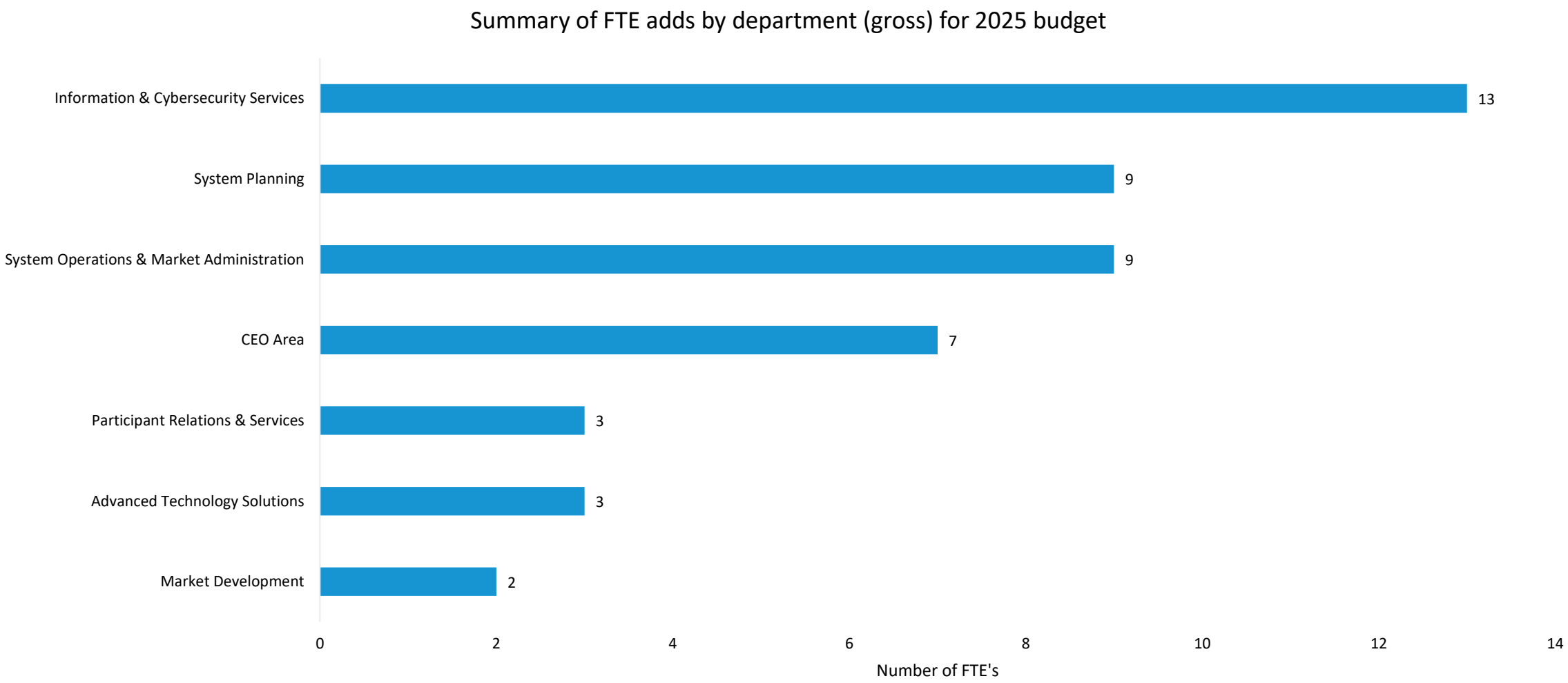
2025 BUDGET RESOURCING NEEDS

2025 Budget Resourcing Needs

Repurposed Positions

- The ISO evaluates each position that becomes vacant to determine the continued need in that area and for possible repurposing for use in other areas of the organization
  - Since 2018 this has resulted in 40 positions, including 4 to-date in 2024, being repurposed for other work where a more urgent need existed
  - Positions repurposed since 2018 include: 9 for Information Technology for Software Development, Cyber Security, Power System Modeling, Application Support, Infrastructure and Digital Transformation; 7 for System Operations & Market Administration for Energy Security, Asset Registration & Auditing, Control Room Operations, and Operations Training; 6 for Market Development analysis and market design work; 4 for Human Resources for recruiting support and to replace contract positions; 2 for Advanced Technology Solutions; 2 for Market Monitoring; 2 for Market & Credit Risk; 2 for Participant Support; 2 for Corporate, Media, and Digital Communications; 1 for Load Forecasting to replace a contract position; 1 for Resource Studies & Assessments; 1 for Settlements; and 1 for Corporate Strategy

Requested Additional Headcount for 2025



Note: CEO Area headcount additions include those for External Affairs, Human Resources, Finance, Market & Credit Risk, and Legal

2025 Budget Resourcing Needs *(cont.)*

In 2025 there are 46 FTE (gross) additions as follows:

		Clean Energy Pillar(s) (*)	Strategic Goal(s)
13.0 FTEs	**Information and Cyber Security Services**		
	Resources to support advanced technology solution tools as well as the Integrated Market Simulator, Prompt/Seasonal Markets; Development efforts including the nGEM system, and integration of Day Ahead Ancillary Services; IT Architecture to support leveraging cloud technologies; infrastructure support to alleviate understaffing pressures; and resources to break teams into smaller pods that support the growing number of IT products and services (7 FTEs Support the Clean Energy Transition)	N/A	Operational Excellence; Responsive Market Designs; Progress and Innovation
9.0 FTEs	**System Planning**		
	Resources to support continued growth and development of PSCAD modeling capability, Resource Capacity Accreditation and use of probabilistic analysis, to accommodate evolving study and forecasting needs and increased complexity associated with the clean energy transition, resources to support expected increases in transmission RFPs, support stakeholder requests for long-term transmission studies, to address FERC order on long-term transmission planning for asset condition based replacement and future-sizing of the transmission system (9 FTEs Support the Clean Energy Transition)	Energy Adequacy; Balancing Resources; Robust Transmission	Progress and Innovation; Operational Excellence; and Attract, Responsive Market Design
9.0 FTEs	**System Operations and Market Administration (SOMA)**		
	Resources to support the evolving project needs of the SOMA department, support improvements to Outage Coordination, and additional analytical requirements to perform complex and evolving Electromagnetic Transient analyses; resources for the performance of energy analysis across varying time horizons, and for Operations Training coordinate with SOMA business groups to proactively identify gaps and challenges with integrating significant amounts of clean energy and energy storage to work with Advanced Technology Solutions and IT to develop necessary tools and solutions (9 FTEs Support the Clean Energy Transition)	Clean Energy Resources; Energy Adequacy	Responsive Market Designs; Operational Excellence; Progress and Innovation

(*) See the Four Pillars of the Clean Energy Transition on Slide 13

2025 Budget Resourcing Needs *(cont.)*

In 2025 there are 46 FTE (gross) additions as follows: (cont.)

		Clean Energy Pillar(s)	Strategic Goal(s)
3.0 FTEs	**Advanced Technology Solutions**		
	Resources to serve as the company-wide SME on synchrophasor technology, conduct research and development on emerging power system issues such as large scale renewable integration, and resources to analyze and assess market designs or operations processes to include the development of models for market design and optimization problems (3 FTEs Support the Clean Energy Transition)	Clean Energy Resources; Energy Adequacy	Progress and Innovation
3.0 FTEs	**Participant Relations & Services**		
	Resources to conduct data analysis of key trends embedded in participant inquiries to discover critical knowledge gaps, resources to provide required technical readiness and real-time support to participants on notable corporate initiatives scheduled for 2025/26 and an additional resource to address the required development of new and increasing participant training needs for new initiatives and products (3 FTEs Support the Clean Energy Transition)	Robust Transmission	Stakeholder Engagement
2.0 FTEs	**External Affairs**		
	Given the increasing expectations from the New England states to have the ISO provide support in achieving their state policy goals, the External Affairs team is being called upon increasingly to support substantive interactions with the states and facilitate engagement of ISO SMEs on matters related to renewable and clean energy development. One resource is to oversee the day-to-day responsibilities of the team's state policy advisors and one resource to enable more substantive interactions with the states and alleviate the need for involvement from SMEs. (2 FTEs Support the Clean Energy Transition)	Clean Energy Resources	Stakeholder Engagement

2025 Budget Resourcing Needs *(cont.)*

In 2025 there are 46 FTE (gross) additions as follows: (cont.)

		Clean Energy Pillar(s)	Strategic Goal(s)
2.0 FTE	**Market Development**		
	Resources for increasing data analytics capacity and capability, focused on Prompt/Seasonal Capacity Market, Resource Capacity Accreditation Reforms, and future Flexible Response Services, as well as ongoing data-intensive priority work on Storage Modeling Enhancements, Multi-Interval Optimization, and other projects (2 FTEs Support the Clean Energy Transition)	Support	Responsive Market Designs
2.0 FTE	**Human Resources**		
	Resources to support department and organizational change and effectiveness efforts, foster a diverse, inclusive and engaging work environment, as well as centralizing coordination of learning activities and administration into a single role (1 FTE Supports the Clean Energy Transition)	Support	Attract, Develop, and Retain Talent
1.0 FTE	**Finance**		
	For a FinOps Manager to provide financial and analytical support, assist in the development of department budgets as well as act as a liaison between IT departments and the finance and budget departments	Support	Operational Excellence
1.0 FTE	**Market & Credit Risk**		
	For an experienced credit analyst to assess and monitor the creditworthiness of banks and market participants due to changes to the Financial Assurance Program (FAP) made in 2023 as well as planned changes to the FAP regarding parental/affiliate guarantees in the Forward Capacity Market (pending FERC approval)	Robust Transmission	Operational Excellence
1.0 FTE	**Legal**		
	Support for growing legal needs in Human Resources including employee relations and benefit plan changes	Support	Attract, Develop and Retain Talent
46.0 FTE's	**Total 2025 Proposed FTE Additions**		

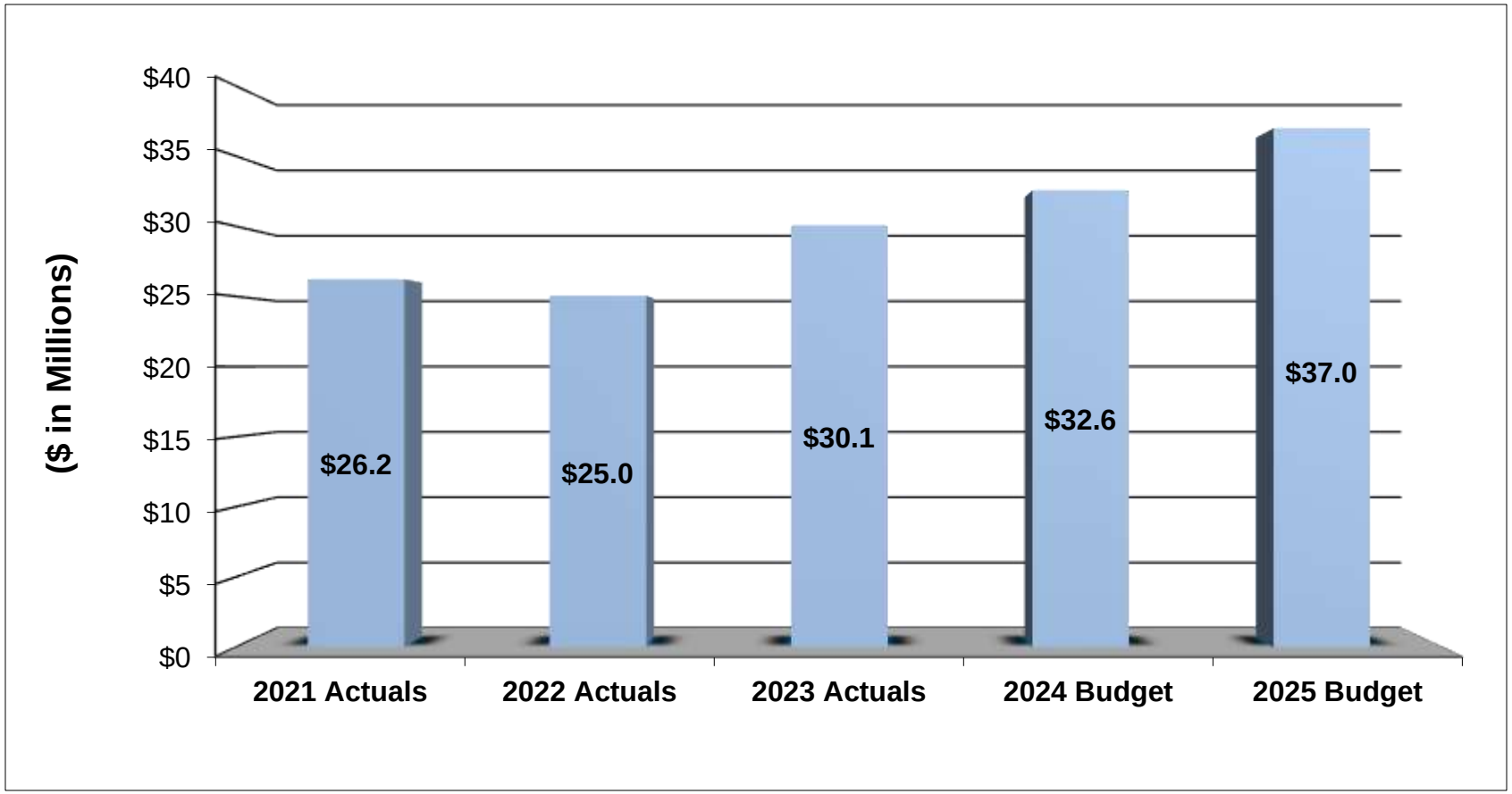
2025 OPERATING BUDGET RISKS

2025 Operating Budget Risks

- Additional funding may be required to enhance new models to study extreme weather and contingencies; to conduct new studies related to the integration of variable resources and emerging technologies; and for long-range transmission planning studies including request for proposals (RFP) process for finding competitive solutions to identified transmission needs in the region
- Resources may be needed as operations evolve (e.g., energy forecasting, load management) due to the changing resource mix occurring
- Information Technology software licensing and maintenance costs, and cloud migration costs may each require additional funding
- Insurance policy renewals may be higher than increases estimated in the budgets
- Interest Rates may impact the ISO floating rates on tax-exempt debt, pension and post-retirement benefit plans liability costs, and interest income on settlement float balance
- Legal costs from material litigation that may arise during the course of the year would pose a risk to the ISO's ability to operate within the approved budget
- Federal and state policy directives/changing policies could result in additional cost associated with new requirements
- Workforce sourcing and related pay rates and supply chain disruption may each have budgetary impacts

DEPRECIATION

ISO New England Depreciation



ISO New England Depreciation *(cont.)*

Depreciation expense is an accounting method used to allocate the cost of a tangible or physical asset over its useful life. Below is a table of the ISO's asset classes and depreciable lives.

Asset Class	Depreciable Life
Computer Hardware, Software, and Accessories	3-5 Years
Software Development Costs	3-5 Years
Furniture and Fixtures	7 Years
Machinery & Equipment	7 Years
Building Improvements	Useful life of the improvement
Leasehold Improvements	Useful life of the improvement or remaining life of the lease
Building	25 Years (economic useful life determined during bond offering)
Vehicles	3-7 Years

ISO New England Depreciation *(cont.)*

- The Capitalization Policy – Highlights
  - Costs are capitalized when dollar threshold has been meet and the item has a useful life beyond one year
  - Interest and fees associated with borrowings that the Company has entered into for the acquisition of assets related to a project that has a material effect on the Company's financial position are capitalized as required by the Accounting of Certain Types of Regulation Topic of the Financial Accounting Standards Board ("FASB") Accounting Standards Codification
  - Software development costs are capitalized as required by the Cost of Computer Service Software Development Topic of the FASB Accounting Standards Codification
  - The capitalized cost of new hardware or software includes the first year of maintenance for hardware and software
  - Time spent on project management and software testing for capital projects and business analysts' time in the Project Management department are capitalized and specifically noted in the Annual Administrative Costs Services and Capital Budget Filing

Forward Looking Capital Budget Spending

Forward Looking Capital Budget Spending

- The capital budget over the next five years and beyond will continue to support the Company's strategic goals with specific focus on four primary drivers:
  - nGem platform (replacing the current market system)
  - Major market and reliability related efforts
  - Cyber security
  - IT asset and infrastructure replacement
- In order to achieve these goals and to accommodate the expanded workspace, ISO has increased the capital spending over the last few years with spending of $35M in 2024, and increasing to $42.5M in 2025, and at a $40M level in 2026 and beyond; the capital costs are dependent on various factors, including regulatory orders and approvals and the use of professional services or internal staff
  - The ISO will continue with its current practice of providing a rolling two-year look-ahead window

Forward Looking Capital Budget Spending *(cont.)*

nGEM Platform Replacement (*)

- The nGEM program (next Generation Markets Management) will upgrade the core market software by supporting a system with a growing number and type of grid assets, new and more complex market features, ever multiplying security threats, and advancing IT technologies
  - GE Solutions is developing nGEM in collaboration with ISO-NE, MISO, and PJM; the portion of the software upgrade unique to each ISO will be shouldered by each ISO individually
- With the completion of the infrastructure and the day-ahead version of the new market clearing engine (MCE) in 2023, the ISO is continuing work on the complex processes for customizing and implementing the next phases, which include the infrastructure and real-time version of the MCE; this work is expected to continue until 2026 with an estimated cost of $15M
- Additional phases for nGem are expected in 2025 thru 2028 with an estimated cost of $45M

(*) nGEM Platform Replacement is a multi-year initiative that will advance multiple strategic goals, including Responsive Market Designs, Progress and Innovation, and Operational Excellence. The initiative will require significant investment (over $15M) and, as such, is being flagged consistent with the enhanced process for Board overview of significant and multi-year capital projects.

Forward Looking Capital Budget Spending *(cont.)*

Major Market and Reliability Related Efforts

- The capital budget will support ISO's market design objectives for 2024 and beyond of moving toward clean energy, balancing resources, energy adequacy, and robust transmission
- Many of these projects are complex efforts that will have long lead times to complete and have dependencies of stakeholder and regulatory approval; the following projects have been identified for 2025 and beyond but may fluctuate depending on stakeholder/FERC priorities:
  - Day-Ahead Ancillary Services Improvements Design: This project seeks to develop market constructs for procuring and transparently pricing ancillary service capabilities needed for a reliable, next-day operating plan with an evolving resource mix; the ISO plans to develop day-ahead flexible response services to enable the system to recover from sudden source-loss contingencies and respond quickly to fluctuations in net load during the operating day
  - FERC Order 2222: The ISO will be building software systems to integrate distributed energy resources into the wholesale markets

Forward Looking Capital Budget Spending *(cont.)*

Major Market and Reliability Related Efforts *(cont.)*

- Significant Capacity Market Reforms: The ISO is currently recommending the move from a forward capacity auction construct to a prompt and seasonal capacity auction construct; this is a substantial scope of work that will better position the ISO to mitigate energy adequacy risks as the power system evolves
- Managing Transmission Line Ratings: This project is in response to recent FERC orders and will require substantial IT and database work to collect and appropriately use data in planning and operations
- Market Simulator, 21 Day Energy Simulator, Inverter-Based Resource Modeling: There are various research and development efforts at the ISO that are expected to result in significant improvements to ISO modeling capabilities and situational awareness
- Stakeholder Priorities: The ISO has embarked on an improved prioritization process with stakeholders; each year, the ISO expects stakeholders to highlight three key priorities; some of these priorities will require the development of new software and associated applications
- Other Market Design Projects Identified in the ISO's Multi-Year Work Plan: The ISO plans to continue to make improvements to existing ancillary services, and design new ancillary services products; new ancillary products may include replacement reserves and ramping products

- Based on the complexity of the projects, the ISO expects the cost for market and reliability efforts will range from approximately $40M - $60M over the next five plus years

Forward Looking Capital Budget Spending *(cont.)*

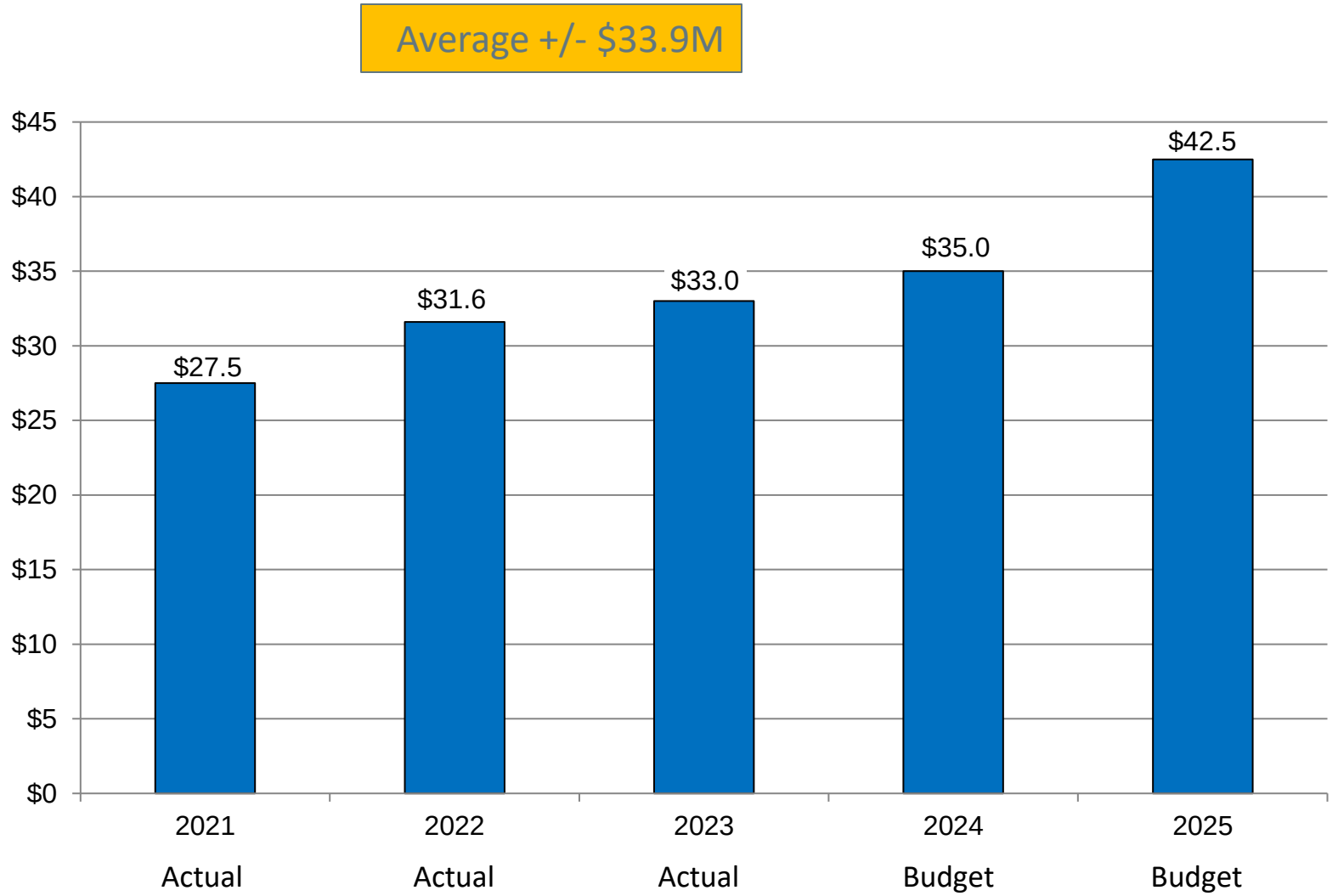
Cyber Security & IT Asset and Infrastructure Replacement

- Capital spending on improvements to cyber security and IT assets and infrastructure will support the ISO's strategic goals of Operational Excellence and Progress and Innovation
- ISO's cyber security maturity level has been an ongoing major investment and will continue over the next 3 - 5 years; ISO has greatly benefited from earlier investments in this area and is now able to layer improved defense, network segmentation, email and web filtering to improve monitoring, detection, and recovery tools to keep pace with increasingly sophisticated attack threats
- The ISO's transition to a cloud environment began in 2022 and is expected to be a major capital effort over the next several years
  - Reliability of operating a modern system comprised of renewable and storage resources requires the processing, transfer, and storing of vast amounts of data; in multiple phases, the ISO will be implementing cloud computing infrastructure and virtualization technology to reduce reliance on energy-heavy data centers and enable more dynamic expansion of computing capability, while maintaining reliability
- The cost for IT and cyber security initiatives will vary depending on the use of professional services or internal staff; the cost will range from approximately $20M - $40M over the next several years

CAPITAL BUDGET SUMMARY

Capital Budget

Historical Comparison Capital Expenditures



Capital Budget
2025 Expenditures

Goal: Responsive Market Designs

Project	2025 Budget	Total Project Cost	Estimated Completion Date	Project Stage
. FERC Order 841	$2.0 M	$2.9 M	10/25	Conceptual Design
. Day-ahead Ancillary Services Improvements	$1.5 M	$9.1 M	03/25	In Development
. FERC Order 2222	$1.0 M	$6.0 M	11/26	Conceptual Design
. Solar Do Not Exceed Dispatch Phase III	$0.3 M	$0.3 M	11/25	Conceptual Design
. Storage as Transmission Only Asset	$0.4 M	$1.4 M	03/27	Conceptual Design
Total:	**$5.2 M**			

Goal: Progress and Innovation

Project	2025 Budget	Total Project Cost	Estimated Completion Date	Project Stage
. nGEM Real-Time MCE Implementation	$4.0 M	$14.8 M	06/26	In Development
. nGEM Software Development Part III	$2.9 M	$4.5 M	04/25	In Development
. Integrated Market Simulator Enhancement	$1.5 M	$1.5 M	12/25	Conceptual Design
. nGEM Software Development Part IV	$1.0 M	$2.0 M	06/26	Conceptual Design
. EMS Short-term Load Forecast Replacement	$0.1 M	$1.4 M	02/25	In Development
Total:	**$9.5 M**			

Capital Budget
2025 Expenditures *(cont.)*

Goal:Operational Excellence

Project	2025 Budget	Total Project Cost	Estimated Completion Date	Project Stage
. Space Utilization Project Phase I	$2.0 M	$3.0 M	08/25	Conceptual Design
. Enterprise Core Network Refresh	$2.0 M	$2.0 M	12/25	Conceptual Design
. Enterprise Resource Planning System Replacement	$1.9 M	$4.1 M	12/25	Conceptual Design
. Managing Transmission Line Ratings	$1.7 M	$7.7 M	11/25	In Development
. EMP 3.5 Upgrade	$1.5 M	$5.5 M	12/26	Conceptual Design
. Windows Server Replacement Phase II	$1.5 M	$1.7 M	12/25	Conceptual Design
. MW Dependent Fuel Price Adjustment	$1.0 M	$1.1 M	11/25	Conceptual Design
. 2025 Issue Resolution Project	$0.8 M	$0.8 M	09/25	Conceptual Design
. CAMS Application Software Technology Upgrade	$0.7 M	$1.4 M	06/25	In Development
. Network Modeling Tool Enhancements	$0.5 M	$1.3 M	07/25	In Development
. Tie Line Telemetry and PCEC Upgrades Phase II	$0.5 M	$0.5 M	07/25	Conceptual Design
. Circuit Inventory Management Platform	$0.4 M	$0.6 M	10/25	Conceptual Design
. Microsoft 365 Service Adoption	$0.1 M	$0.7 M	11/24	In Development
. Tie Line Telemetry and PCEC Upgrade	$0.1 M	$0.3 M	06/25	In Development

Continue to the next page

Capital Budget
2025 Expenditures *(cont.)*

Goal:Operational Excellence

Project	2025 Budget	Total Project Cost	Estimated Completion Date	Project Stage
. CIP Electronic Security Perimeter Redesign Phase II	$0.3 M	$5.0 M	06/25	In Development
. Replace Employee & Pager Application	$0.3 M	$0.4 M	10/25	Conceptual Design
. Adoption of NERC CIP Compliance of Synchrophasor Systems	$0.3 M	$1.0 M	10/26	Conceptual Design
. Automatic Ring Down Circuit Continuity Modernization and Reliability Enhancements	$0.3 M	$0.9 M	08/25	In Development
. New England Clean Energy Connect	$0.3 M	$0.5 M	12/25	In Development
. Non-Project Capital Expenditures	$5.0 M			
Total:	**$21.1 M**			

Capital Budget
2025 Expenditures Summary

2025 Capital Budget Expenditure Summary

Allocation Category	2025 Budget
Goal: Responsive Market Designs	$5.2 M
Goal: Progress and Innovation	$9.5 M
Goal:Operational Excellence	$21.1 M
Other Emerging Work	$5.7 M
Capital Interest	$1.0 M
Total:	**$42.5 M**

CAPITAL STRUCTURE AND CASH FLOW

Capital Structure and Cash Flow

- In order to support the markets and reliability efforts, ISO will increase the capital spending from $35M in 2024 to $42.5M in 2025, and at $40M in 2026 and beyond
  - The areas driving the increase in spending are dependent on various factors such as regulatory approvals, use of professional services versus internal staff, estimated range of spending, inflationary cost and longer lead times to complete
  - Longer lead time to complete capital projects results in a greater period of time from when the ISO spends capital funds to tariff recovery through depreciation expense of these projects

- Capital project costs are largely funded by $50M in Private Placement Notes set to expire in November 2024; in order to support the future capital program, we have determined that another $25M in available capital project funding is needed to support a higher sustained level of capital spend; consequently, ISO worked through the stakeholder and Board process to get approval for $75M Private Placement Note and is working to complete the offering in Q3 of 2024

Capital Structure and Cash Flow *(cont.)*

The ISO received FERC approval on July 19, 2024 to enter into $75M Private Placement Note. The ISO is current in the process of going out to market to secure funding that will be issued and available by the time the $50M balloon payment on the current note is due in November.

ISO New England
2024 - 2028 Debt Service Cash Flow

	2024 Forecast	2025 Budget	2026 Forecast	2027 Forecast	2028 Forecast
Cash flows from operating activities:					
Operating Cost Recovery *	$ 228,956	$ 268,509	$ -	$ -	$ -
Non Cash Items:					
Depreciation, Amortization & G/L on Disposals	32,659	36,975	42,132	40,296	39,786
Amortization Term Loan Fees	61	96	96	96	96
Chg in Deferred Revenue-Depreciation	(100)	-	-	-	-
Chg in Accrued Expenses	120	-	-	-	-
Interest Expense	(3,570)	(4,475)	-	-	-
Operating Expenses, net of CEO Emerging Work & Allowance & Board Contingency *	(233,487)	(264,859)	-	-	-
Net cash provided by operating activities	24,639	36,247	42,228	40,392	39,882
Cash flows from investing activities:					
Capital expenditures	(35,000)	(42,500)	(40,000)	(40,000)	(40,000)
Net cash used in investing activities	(35,000)	(42,500)	(40,000)	(40,000)	(40,000)
Cash flows from financing activities:					
Net Proceeds/(Repayment) - Revolving Credit Line	-			-	
Repayment of Principal - Private Placement	(50,000)	-	-	-	-
Proceeds - Private Placement	75,000	-	-	-	-
Repayment of Principal - Tax Exempt Bonds	(3,180)	(3,180)	(3,180)	(3,180)	(3,180)
Net cash provided by (used by) financing activities	21,820	(3,180)	(3,180)	(3,180)	(3,180)
Net increase/(decrease) in cash	11,459	(9,433)	(952)	(2,788)	(3,298)
Cash & Cash Equivalents on Hand - Beginning of Period	16,207	27,666	18,233	17,281	14,493
Change in Cash & Cash Equivalents Available	11,459	(9,433)	(952)	(2,788)	(3,298)
Cash & Cash Equivalents on Hand - End of Period	$ 27,666	$ 18,233	$ 17,281	$ 14,493	$ 11,195
Debt Maturity Schedule					
Tax Exempt Bond - BCC	1,360	1,360	1,360	1,360	1,360
Tax Exempt Bond - MCC	1,820	1,820	1,820	1,820	1,820
Total Year Repayment	$ 3,180	$ 3,180	$ 3,180	$ 3,180	$ 3,180

***= Operating Cost Recovery for 2024 has decreased by an overcollection in 2022 of $3,006 which was not amortized in 2023 but included in the 2024 tariff. The undercollection of $4,844 for 2023 will be filed with the 2025 tariff and will be reflected in the Operating Cost Recovery for 2025. The Operating Cost Recovery for 2026-2028 is projected to offset Operating Expenses for 2026-2028. The Operating Cost Recovery amount for 2026-2028 has not yet been established at this point.**

Capital Structure and Cash Flow *(cont.)*

- The ISO currently has two revolving credit lines with TD Bank that are set to expire July 1, 2028; the first is a $40 million working capital line to support the ISO's short-term operational needs and cash flow risks, which may include draws to support lower than projected load driving decreased Tariff collections, a continued increase in budgetary needs over the next 3 - 4 years, and more recently the issuance of FERC Order 2023 which may increase withdrawals of system impact studies (i.e., reducing cash available to the ISO); the second is a $4 million line to support the short-fall funding arrangements necessary to support twice- weekly billing of the ISO New England markets
- For the six months ended June 30, 2024, the ISO's total weighted average cost of capital was 4.04%, excluding fees charged on the various debt financing; fees ranged from .075% to .38%

APPENDIX 1: OTHER OPERATING BUDGET DETAILS

Operating Budget Details - Budget Categories

(see next slides for detail on certain categories)

($ in thousands)	2021 Actual	2022 Actual	2023 Actual	2024 Budget	2025 Budget
Salaries	$90,069	$94,438	$104,324	$122,140	$134,822
Burden	28,329	30,117	32,993	36,069	39,138
Professional fees and consultants	19,695	19,833	22,200	29,257	27,777
Building services	2,832	3,348	3,339	3,430	3,492
Rents/leases	777	696	719	781	2,123
Network Operations	2,802	2,958	3,138	3,652	3,936
Computer services	15,952	17,482	20,469	25,373	31,336
Insurance expense	2,153	2,633	2,927	3,394	3,887
Board of Directors Expense	1,592	1,674	1,543	1,607	1,637
Meetings & Related Expenses	536	1,015	990	1,511	1,637
Education & Training	891	1,062	1,032	1,332	1,433
NPCC and NERC Dues	6,062	6,437	7,277	8,052	9,253
Interest Expense	2,120	2,249	2,834	3,459	4,571
Contingency Funds	-	-	-	2,700	3,700
Other Expense	1,758	1,931	1,863	2,498	2,469
Interest Income & Other Revenue	(443)	(1,267)	(2,055)	(917)	(1,783)
Net Expense before Depreciation	**175,125**	**184,606**	**203,595**	**244,337**	**269,430**
Depreciation	26,221	25,046	30,056	32,559	36,975
Total ISO Tariff Recovery	**$ 201,346**	**$209,652**	**$233,651**	**$276,897**	**$306,405**
Revenue True-up	151	1,071	(14,589)	(3,006)	4,844
Revenue Requirement	201,497	210,723	219,062	273,891	311,249
Network Load (GWh)	139,423	142,463	143,042	140,711	136,500
Grid Market Charge $/KWh	$0.00145	$0.00148	$0.00153	$0.00195	$0.00228
Headcount (FTE's) (2) (3)	573.5	589.5	614.5	644.5	688.5

(1) Net Expense Before Depreciation of $269.4 million for 2025 agrees to slide 42 of the presentation.

(2) 2021, 2022 and 2023 reflect December 31 actual headcount for those years. 2024 and 2025 reflect planned headcounts of 698.5 and 746.5, respectively, less vacancy (of 5.0% for 2024 and 6.0% for 2025) and the impact of layering in new positions to account for recruiting and onboarding.

(3) Funding of $6.4 million of Salaries and $2.3 million of Burden exists for 2025 internal capital development and reimbursable study time of ISO-NE Employees. Total Salaries and Burden including these and operating costs equal $182.6 million.

Operating Budget Details - Budget Categories *(cont.)*

The following are explanations of budgeted items that are included in the *Other Expense* and *Interest Income & Other Revenue* lines of the budget details by category (as shown on the previous slide):

- *Other Expense* – This line includes Data Services & Office expenses which include subscriptions for industry and general information, professional dues, printing, office supplies and equipment, and postage and courier; this line also includes payment in lieu of taxes, bank fees, and business & license fees
- *Interest Income & Other Revenue* – This line includes interest income on accounts, purchase discount (primarily from utility expense), and miscellaneous service revenue

The following are line items that contain budget increases in 2025 which are greater than 5% or $500,000 and a brief explanation of what is driving the change:

- *Salaries ($12.7M or 10.4%)* – Increases include salary related to annual merit and promotional increases to align compensation according to compensation study results, funding for the addition of 50 full-time equivalent positions including funding for 30 in 2025 and carryover of 20 FTE's from 2024, and for employee incentive target amounts including adjustments based on compensation study review. These increases were partially offset by a reduction for employee rates due to employee turnover and retirements, and an increase in the vacancy rate (from 5.0% to 6.0%)
- *Burden ($3.1M or 8.5%)* – Increases for payroll taxes related to noted salary increases including for the additional 50 full-time equivalent positions funded in 2025; also contributing to increased expenses is higher employee benefits including those for medical trend, and defined contribution and 401K (match) plans due to both higher salaries and increased participants

Operating Budget Details - Budget Categories *(cont.)*

- *Rents/Leases ($1.3M or 171.8%)* – Increase for leasing tranche of blade servers for data center replacements that is more favorable than buying, as well as leasing of land adjacent to Holyoke facility in conjunction with Space Utilization project
- *Network Operations ($0.3M or 7.8%)* – Increases for transition of communication lines to new technologies, for data redundancy, and for inflationary and communication line increases
- *Computer Services ($6.0M or 23.5%)* – Increases for: cyber security (security logging, firewall updates, network collaboration tool, network traffic segmentation, encryption software and risk management); photovoltaic and demand response forecast products; licensing for System Planning and Operations applications; performance monitoring software; Enterprise Resource Planning software; compliance software; and inflationary and vendor increases across our portfolio of computer service products (The $6.0M increase includes $2.3M for existing product costs and/or licensing, $2.0M for Cyber Security additions/enhancements, and $1.7M for Clean Energy technology investments).
- *Insurance Expense ($0.5M or 14.5%)* – Increased premiums across insurance lines
- *Meetings & Related Expenses ($0.1M or 8.3%)* – Meetings & related expenses increased primarily due to full renewal of in-person meetings, higher travel costs, and travel for offsite training of additional staff and for new platforms and tools
- *Education & Training ($0.1M or 7.6%)* – Training of additional staff and for education of new platforms and tools
- *NPCC and NERC Dues ($1.2M or 14.9%)* – Increases for both Northeast Power Coordinating Council and North American Electric Reliability Corporation dues assessed to the ISO

Operating Budget Details - Budget Categories *(cont.)*

- *Interest Expense ($1.1M or 32.1%)* – For Private Placement debt in late 2024 at higher balance and expected higher rate than previous debt; tax exempt debt due to higher rate slightly offset by decrease in principal balance; with a partial offset on the working capital borrowing
- *Interest Income & Operating Revenue ($0.9M or 94.4%)* – Increase in interest income due to raising of interest rates for 2025 to 2.75% compared to 1.00% in 2024 budget
- *Depreciation Expense ($4.4M or 13.6%)* – Depreciation expense increases primarily driven by 2025 implementations of Day-Ahead Ancillary Services, nGEM Software Development Phase III, and CIP Electronic Security Perimeter Redesign Phase II projects

Operating Budget Details - Budget Categories *(cont.)*

ISO True-Up Mechanism

Description of True-Up Mechanism:

As set forth in Section IV.A.2.2 of the ISO's Tariff, the 2025 revenue requirement will include an adjustment for deviations between actual collections and expenses for calendar year 2023. In general, the amount of the true-up is added to (in the case of a revenue shortfall) or subtracted from (in the case of a revenue over-recovery) the ISO's total estimated budgeted amounts for the upcoming budget year.

The $4.8 million true-up amount, that is increasing the 2025 revenue requirement, is based on the following:

The final 2023 revenue requirement was an under-collection of $4.8 million, which will increase the 2025 requirement. The under-collection resulted from lower collections that were partially offset by lower expenses. Specifically, 2023 collections under Section IV.A of the ISO-NE tariff were $11.4M below what was included in the 2023 budget/tariff filing, while expenses were $6.6 lower than budgeted. Please see the next slide for further detail and a reconciliation making up the $4.8 million under-collection.

Operating Budget Details - Budget Categories *(cont.)*

The following is a reconciliation of the $4.8 million true-up amount, that is increasing the 2025 revenue requirement ($ in thousands):

2023 Revenue Requirement True-Up Reconciliation - ISO New England Inc.
(Dollars in thousands)

	$ Amounts (credits are savings)	Totals (credits are savings)
Spending Variances (Dollars in thousands):		
Contingencies:		
Board Contingency	$ (700.0)	
CEO Emerging Work Allowance	$ (2,000.0)	
Net Savings in Contingencies		**$ (2,700.0)**
Professional and Legal Fees Changes:		
Information Technology - decreases include Energy Management System and other Information Technology consultant support that was reallocated for capital development work (nGEM and Day-Ahead Ancillary Services Improvements projects), lower rates for Information Technology positions, and higher than forecasted vacancy of consultants	$ (1,705.8)	
Legal - reduced need for external legal counsel to supplement ISO-NE staff, and lower use of the External Market Monitor (budgeted through Legal) for Day-Ahead Ancillary Services Initiative (DASI) project implementation and Forward Capacity Auction parameter review work	$ (877.8)	
All Other Areas	$ (151.4)	
Net Changes in Professional and Legal Fees		**$ (2,735.0)**
Interest Income - increase due to higher than forecasted rates on settlement and operating fund balances		**$ (1,412.6)**
Depreciation Expense - reductions due to the timing of project completion or lower actual spending for various projects including Priveleged Account Management Security Enhancments 2023, Inventoried Energy Program, Forward Capacity Tracking System Infra. Conversion Part III, IMM Data Analysis Phase III, E-mail List Server Technology Refresh and New Cyber Security Operations Center		**$ (919.6)**
Interest Expense - reduction is due to higher allocation of interest expense to multi-year work-in-progress capital projects due to higher interest rates, and lower forecasted borrowing on the working capital line of credit. These reductions were partially offset by higher expense due to higher rates on tax-exempt debt.		**$ (303.3)**
Salaries and Overheads - Increases include salary raises outside of the annual merit and promotional cycle which has been largely driven by compensation benchmarking data for identified critical or hard to fill roles; for retention, overtime, and succession planning; and due to lower reimbursable study work. Partially offsetting the increases are reductions due to higher and from lower employee pay rates than previous incumbents.		**$ 2,615.4**
Net Change across all other Expense Lines: Includes several line items with variances between $100 and $300 (thousand)		**$ (1,098.8)**
Net Savings in Expenses:		**$ (6,553.9)**
Tariff Collections (under collection): Tariff collections came in 5.0% below plan, which were driven primarily by lower than budgeted load related factors.		**$ 11,397.5**
Total 2023 True-Up		**$ 4,843.6**

Operating Budget Details

Professional Fees

(See next slides for details)

	($ in Millions) 2025	2024
Corporate Center	$ 6.6	$ 6.0
Legal	3.2	3.2
Operations	17.9	20.0
Total Professional Fees	**$ 27.8**	**$ 29.3**

Operating Budget Details

Professional Fees – Corporate Center

	($ in Millions) 2025	2024
Benefits and Hiring		
Recruiter Fees and Background Checks	$ 0.4	$ 0.4
Relocation	0.7	0.5
Temp Help	0.3	0.3
Compensation Surveys	0.4	0.4
Other Consulting for Pension & Benefits	1.4	1.0
Total Benefits and Hiring	3.2	2.5
Financial Support (Payroll processing, Temp Help, etc.)	0.4	0.5
Audits (i.e., SOC 1, financial statement, IT systems, federated authentication)	1.3	1.2
Corporate Communications (see following slide)	0.2	0.2
External Affairs (see following slide)	0.5	0.5
Market and Credit Risk Support (New margin models)	0.4	0.3
Strategy, Risk and Operation Compliance (Professional Consulting Support for the Governance/Risk/Compliance tool, Record Storage and Destruction, and Procedure Writing)	0.2	0.2
Market Monitoring and Mitigation - Application Support, and Energy Market Consultation	0.4	0.8
Total Included in Budget	**$ 6.6**	**$ 6.0**

	($ in Millions) 2025	2024
Corporate Center	$ 6.6	$ 6.0
Legal	3.2	3.2
Operations	17.9	20.0
Total Professional Fees	**$ 27.8**	**$ 29.3**

Operating Budget Details

Professional Fees – External Affairs/Corporate Communications

	($ in Millions) 2025	2024
Corporate Center	$ 6.6	$ 6.0
Legal	3.2	3.2
Operations	17.9	20.0
Total Professional Fees	**$ 27.8**	**$ 29.3**

	($ in Millions) 2025	2024
State Educational Outreach / Legislative Monitoring	$ 0.3	$ 0.3
Media Relations / General Support	0.2	0.2
Federal Educational Outreach / Legislative Monitoring	0.1	0.1
Total Included in Budget	**$ 0.7**	**$ 0.7**

Operating Budget Details
Professional Fees – External Affairs

	($ in Millions) 2025	2024
Corporate Center	$ 6.6	$ 6.0
Legal	3.2	3.2
Operations	17.9	20.0
Total Professional Fees	**$ 27.8**	**$ 29.3**

- Purpose: To inform state and federal government stakeholders and policymakers on the performance and needs of the power system and wholesale markets
- Activities:
  - Timely information on the status of the power system including:
    - Emergency communications during power supply deficiencies
    - Continuous information on the current and future needs of the power system region-wide and on a state and sub-regional basis
  - Facilitate state regulatory input into the transmission system and market design processes
  - Monitor state energy initiatives to inform the wholesale market and transmission planning development processes

Operating Budget Details

Professional Fees – External Affairs *(cont.)*

	($ in Millions) 2025	2024
Corporate Center	$ 6.6	$ 6.0
Legal	3.2	3.2
Operations	17.9	20.0
Total Professional Fees	**$ 27.8**	**$ 29.3**

- Resources
  - Internal staff resources are focused on providing information to regulatory commissions, governors' offices, state legislatures, federal congressional offices, consumer advocates, business and industry organizations, academic institutions and general public outreach
    - Nine professional staff, including new position, policy advisor for environmental and community affairs, to support environmental justice discussions
    - For the first seven months of 2024:
      - 60 utility commission / state agency meetings & briefings
      - 50 state policymaker meetings & briefings
      - 20 federal policymaker / regulator meetings & briefings
      - 40 industry conferences, speaking engagements & meetings supported / attended by ISO-NE staff
      - 8 academic group virtual visits or lecture series participated in / attended by ISO-NE staff
      - 2 Consumer Liaison Group meetings
  - External resources are focused on monitoring state and federal legislation initiatives, organizing educational opportunities, and distributing timely information
    - Contract consultants in each state, and in Washington, DC

Operating Budget Details
Professional Fees – Legal

	($ in Millions) 2025	2024
Corporate Center	$ 6.6	$ 6.0
Legal	3.2	3.2
Operations	17.9	20.0
Total Professional Fees	**$ 27.8**	**$ 29.3**

	($ in Millions) 2025	2024
Independent Market Advisor	$ 1.4	$ 1.3
Market Rule and Tariff/OATT Proceedings	1.4	1.4
Labor Matters	0.1	0.1
Other	0.4	0.4
Total Included in Budget	**$ 3.2**	**$ 3.2**

Operating Budget Details

Professional Fees – Operations

	($ in Millions) 2025	2024
Corporate Center	$ 6.6	$ 6.0
Legal	3.2	3.2
Operations	17.9	20.0
Total Professional Fees	**$ 27.8**	**$ 29.3**

	($ in Millions) 2025	2024
Information Technology (SMS/SAS/EMS/CAMS Support, Network Model and Model-On-Demand, Energy Management System Support, Software License Management & Reporting Support, Website Support, Cyber Security and Vulnerability Testing, Desktop and Database Services Support, RTU and NX9/NX12 Network Model Support, and other Temp Help)	$ 10.1	$ 9.7
FCA and FCM Analysis Support	0.2	1.6
System and Transmission Planning Regional study with PJM and NYISO on single source transmission limits, TPL-001 System Assessment, Transmission Planning / Non-Transmission Alternatives, Interconnection Studies, Short Circuit Analysis, Integrating Emerging Technologies and Distributed Generation into Load Forecasting, and develop and execute long range transmission planning studies in conjunction with the states	3.4	4.0
Market Development for Medium Term Energy Adequacy and Project Management	1.3	1.4
Capacity Auction Reforms	1.2	2.5
Project Management (Impact Analysis, R&D, Project Work and Initiatives)	1.5	0.7
System Operations Support (New England Clean Energy Connect Project)	0.3	0.0
Participant Support and Training	0.1	0.3
Total Included in Budget	**$ 17.9**	**$ 20.0**

Operating Budget Detail

2025 Budget for Board Compensation

2025 Original Budget (1)

• Annual retainers for Board Committee membership (2) ($115K/Board Member)	$1.0M
• Annual retainers for Chair positions (2) ($40K Chairman and $10K Committee Chair)	$0.4M
Total Board Compensation (3)	$1.4M
• Meetings and Travel Expenses	$0.2M
Total Board of Directors Expenses	$1.6M

(1) The budget contemplates 9 members for 2025 not including the CEO who is the 10th member of the Board

(2) Effective Feb 15, 2024, the Board of Directors compensation structure has transitioned from a meeting fee structure to a retainer only structure. The revised policy eliminates all references to meeting fees and now specifies the annual retainers for Board Committee membership and Chair positions

(3) Board Compensations are evaluated using independent surveys, similar to process used for determining executive compensation

APPENDIX 2: COMPENSATION

Process for Establishing Salary Budget Increases

- Each year, ISO-NE reviews comprehensive salary budget planning data compiled by nationally-recognized compensation consulting firms
  - The firms used for 2025 are Mercer, WorldatWork, WillisTowersWatson, Payscale, Empsight, KornFerry, Conference Board, and PearlMeyer
  - These surveys are typically published later in the summer and reflect planned salary budget increases of over 2,300 employers, including more than 100 utility companies
    - The data is often presented by region, industry, and by employee group (executive, management, exempt, and non-exempt employees)
    - Salary budget data may be further classified into two categories: merit increases and promotional/equity increases. Several surveys indicate that less than half of respondent companies formally budget for promotions and/or adjustments.
- ISO-NE will also review expected salary increases of other ISOs/RTOs

Process for Establishing Salary Budget Increases *(cont.)*

- Merit Increases
  - Merit pools are the percentage of total employee salaries that companies intend to use for broad-based salary increases in the coming year
    - At ISO-NE, this pool funds the annual performance-based increases for eligible non-bargaining unit employees
    - Individual percentage increases vary based on employees' performance, with some receiving less than and some receiving more than the budget percentage
- Promotional/Equity Increases
  - Historically, a separate, smaller pool of monies used in select circumstances to fund promotions and base salary adjustments for critical positions
    - At ISO-NE, this pool more recently has been increased to fund any required salary adjustments based on our benchmarking initiative and to allow for targeted compensation adjustments to enable us to retain key talent

Process for Establishing Salary Budget Increases *(cont.)*

- In 2022, to address competitive challenges related to the clean energy transition, particularly those specified on Slide 111, ISO engaged a compensation consulting film to conduct more discrete, 1-for-1 job-specific benchmarking to establish competitive rates of pay for our highly skilled and in-demand workforce
- Supplementing the salary budget survey data with job-specific benchmarking allows us to better ensure that we are providing competitive rates of pay to our current employees, as well as attracting the necessary talent to be successful in the future
  - In 2022, we assessed compensation levels for our most technical engineering and IT roles, approximately 1/3 of our organization
  - In 2023, we assessed another 1/3 of the organization, with continued focus on IT and other roles requiring significant technical expertise
  - In 2024 and 2025, we plan to assess the remainder of the roles in the organization

Process for Establishing Salary Budget Increases *(cont.)*

- A summary of the available survey results and management's recommendation is presented to the Compensation and Human Resources Committee of the Board of Directors
  - The Committee reviews the data at its September meeting and establishes the annual merit and promotional/equity adjustment increase percentages
- The table on the next slide compares annual survey data to ISO-NE's budgeted increases for the past ten years

ISO New England Salary History

Comparison: Survey Data to ISO New England Salary Increase Budgets						
Year	*Merit Increase Budgets* (survey results represent averages of all participating companies)			*Promotion/Equity Increase Budgets* (survey results represent averages of all participating companies)		
	Survey Results		ISO-NE Budget	Survey Results		ISO-NE Budget
	Utility Industry	General Industry		Utility Industry	General Industry	
2025 *	3.6%-4.0%	3.5%-4.0%	4.0%	0.7%-2.0%	0.7%-2.0%	2.0%
2024	3.7% - 4.0%	3.5% - 3.7%	4.0%	0.0% - 0.5%	0.5% - 1.0%	4.0%
2023	3.5% - 4.0%	3.1% - 4.0%	4.0%	0.5% - 1.0%	1.0% - 1.2%	1.75%
2022	3.0% - 3.0%	3.0% - 3.0%	3.0%	0.5% - 1.0%	0.0% - 1.0%	0.5%
2021	2.9% - 3.1%	2.8% - 3.0%	2.5%	0.0% - 1.5%	0.15% - 1.1%	0.5%
2020	3.0% - 3.1%	2.9% - 3.2%	3.0%	0.5% - 1.0%	0.5% - 1.0%	0.5%
2019	2.8% - 3.1%	2.9% - 3.0%	2.75%	0.0% - 1.0%	0.0% - 1.0%	0.75%
2018	2.8% - 3.2%	2.9% - 3.0%	2.75%	0.5% - 0.8%	0.5% - 1.0%	0.75%
2017	2.8% – 3.1%	3.0% - 3.0%	2.75%	0% - .05%	0.5% - 0.5%	0.75%
2016	2.8% - 3.0%	3.0% - 3.0%	2.75%	0% - 0.8%	0.5% - 1.0%	0.75%
2015	2.9% - 3.0%	2.9% -3.1%	2.75%	0.5% - 1.0%	0.5% - 1.0%	0.75%

* As of the date of this presentation, the ISO is still awaiting one survey response. The above chart reflects data received to date.

Competitive Challenges

- As described in industry literature and shared with NEPOOL in the past, ISO-NE and utility employers face significant challenges associated with the retirement of a seasoned, technical workforce
  - Approximately 19% of the ISO-NE workforce is retirement-eligible
- The clean energy transition has increased the demand for highly specialized personnel required to address the modeling, analysis, processing, and operational needs of the transition
  - Hiring and retaining highly specialized technical talent has become more challenging and costly
- This competition will only intensify as the region becomes increasingly involved with new and emerging technologies
  - More employees, with different skillsets will be needed to address the volume of market design changes and operational/planning complexities
  - Major investments in new technologies to create and support the core business applications and processes, including increased computational capacity to deal with increased grid complexity, will require the requisite staff to complete this work

Executive Compensation

- As a tax-exempt organization, ISO-NE's Board of Directors is required by the Internal Revenue Code Section 4958 to ensure that executive compensation falls within a reasonable range of compensation practices among functionally comparable positions at similarly-situated organizations, both taxable and tax-exempt
- ISO-NE's Board of Directors contracts with Mercer, an independent compensation consulting firm, to study each executive's total compensation for "reasonableness"
  - The analysis includes examining data from other ISOs, utilities, and as appropriate, the general industry
  - Considerations such as the complexities of the markets, the significance of maintaining the grid, and the multi-billion dollars in settlements handled by ISO-NE are also factored into the review
  - Following its analysis, Mercer issues a Reasonableness Opinion
- The Mercer Reasonableness Opinion has consistently concluded that ISO-NE's executive compensation is within the appropriate competitive range

Executive Compensation *(cont.)*

- The Compensation and Human Resources Committee of the Board of Directors and the full Board of Directors review the Mercer Reasonableness Opinion and use it to finalize their decisions regarding each executive's compensation
- Executive compensation is reported in ISO-NE's annually filed IRS Form 990
  - This public filing is required for all tax-exempt companies and depicts officer compensation in detail
  - In addition to annual compensation, the data includes incremental increases in accrued pension benefits and other potential future compensation not yet received by the executive
- 2025 Budget for Executive Salaries $5.2M
  - Executive Salaries comprise the base salaries of the officers on the IRS Form 990

Pension and Defined Contribution Benefit Plans in 2025

- Defined Contribution Pension Plan: In 2014, ISO-NE changed its retirement plan offering from a Defined Benefit Pension Plan (Pension Plan) to a Defined Contribution Pension Plan (DC Plan) for employees hired after 12/31/13 and closed its Pension Plan to new participants; the DC Plan provides predictable cost and reduced balance sheet liability, with no investment risk and minimal cost volatility for ISO-NE

Pension and Defined Contribution Benefit Plans in 2025 *(cont.)*

- Defined Benefit Pension Plan: In 2016, for the Pension Plan, ISO-NE modified the funding approach that it had consistently employed since 1997
  - ISO-NE previously calculated the budgeted Pension Plan expense amount in accordance with the Financial Accounting Standards (FAS)
  - This amount was included in the filed rates and contributed to the Pension Plan
  - In 2014 ISO-NE began looking into a level funding approach for the Pension Plan; ISO-NE engaged its actuaries and its investment consulting firm to perform analyses on implementing a change to the current funding approach
  - In 2016, ISO-NE implemented the level funding approach for making contributions and for inclusion in the filed rates
  - ISO-NE's actuaries refreshed the analysis in 2019 and the conclusion was to continue to fund the Pension Plan at the originally established level funding amount of $10,000,000 per year. ISO is in process of having this analysis refreshed and preliminary results show $10,000,000 continues to be an appropriate level of funding to cover the service cost of the plan and the fluctuating interest rate environment
  - The Pension Plan expense that is included in the 2025 budget is $10,000,000 compared to the projected FAS expense of $5,480,000

Pension and Defined Contribution Benefit Plans in 2025 *(cont.)*

The table below identifies the number of active ISO-NE employees, at each year-end, that are included in the Defined Benefit Pension Plan and the Defined Contribution Plan:

Date	Defined Benefit Pension Plan	Defined Contribution Plan
12/31/2021	328	246
12/31/2022	306	286
12/31/2023	287	339

Note: The Defined Benefit Pension Plan was closed to employees hired or rehired after December 31, 2013.

Postretirement Medical Benefit Plan in 2025

- In 2014 ISO-NE looked at making changes to its benefit plan offerings; to better align with the industry, the decision was made to close the Postretirement Benefit Plan to new hires, effective January 2016; in addition, a modification was made to the criteria for when this benefit could start for those employees in the plan prior to January 1, 2016; the age and years of service requirements were increased, thereby reducing future benefits that could be paid
- Consistent with previous years' budgets, ISO-NE's actuaries prepared estimated 2025 Financial Accounting Standards (FAS) Expense for the Postretirement Benefit Plan
- Actuaries utilized the FTSE Pension Discount curve, and reflected the change in discount rates as of May 31, 2024 to estimate the discount rate used in the calculation of the Postretirement Benefit Plan; current rates approximate the forward curve rates
  - Discount Rates Selected:
    - Postretirement Benefit Plan 5.33%
  - Salary Scale assumption (weighted Avg.) 3.00%
  - Projected 2025 annual earnings rate 6.25% (approximately)
- The calculated FAS expense amount for the Postretirement Benefit Plan of $880,000 is included in the 2025 budget

Operating Budget Details

Staffing - Salary and Benefits Costs

The $15.8M increase in salary and burden costs is driven by the following factors:

2025 Merit & Promotion - (budgeted 6.0% increase (4.0% merit and 2.0% promotion/equity), which was approved by the Board Compensation and Human Resources Committee)	$	6.3	
Salary Impact of Funding for 50 Additional FTEs (1)		10.6	
Increase for employee incentive compensation target amounts including adjustments based on compensation study review		1.4	
Increase in Vacancy Rate (from 5.0% to 6.0%)		(1.6)	
Salary Rate Changes		(1.5)	
Other Salary Changes		(1.3)	
Total Salary Impact			$ 13.9
Change in Employee Benefit Costs			$ 1.9
Total Salary and Burden Increase			$ 15.8

(1) The 2025 budget includes the recruitment of 46 additional positions with funding for 30 full-time equivalents, in addition to the carryover of deferred funding of 20 positions from the 2024 budget.

Operating Budget Details

Staffing – Authorized, Budgeted, and Actual Headcount

The following is historical full-time equivalent (FTE) headcount information:

Year	Authorized total FTE's	Budgeted FTEs	Actual FTEs (1)	Budgeted Vacancy %	Actual Average Vacancy
2015	595.0	577.0	584.5	3.0%	3.2%
2016	603.5	585.5	572.5	3.0%	3.8%
2017	603.5	585.5	583.5	3.0%	4.1%
2018	608.0	587.5	584.5	3.4%	3.9%
2019	608.0	583.5	587.0	4.0%	3.5%
2020	608.0	583.5	577.5	4.0%	3.8%
2021	608.0	583.5	573.5	4.0%	4.1%
2022	622.5	593.0	581.5	4.0%	5.8%
2023	654.5	614.5	625.5	5.0%	4.9%
2024	698.5	644.5	647.5	5.0%	6.1%
2025 (2) (3)	746.5	688.5	N/A	6.0%	N/A

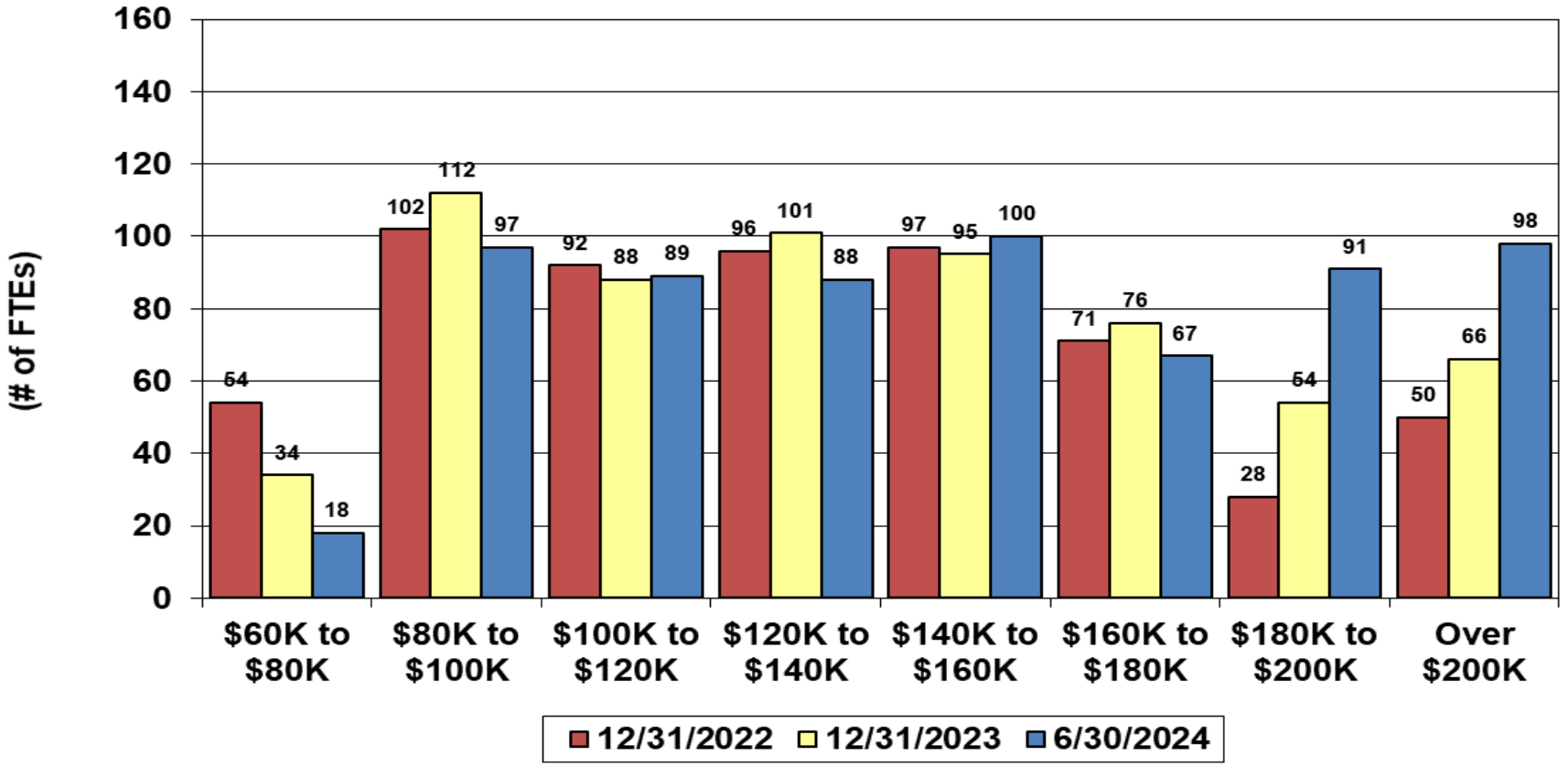
(1) Actual FTEs is the number as of December 31st for each year with the exception of 2024 which represents the number as of June 30th

(2) The 2025 budget includes the recruitment of 46 additional positions, with funding for 30 full-time equivalents with onboarding expected to occur throughout the year. All other existing positions have been budgeted with an estimated 6.0% vacancy.

(3) The 2025 budget includes the conversion of 2 FTE consultant positions to ISO-NE employees (FTE's) with no overall $ impact on the 2025 budget (compared to 2024)

Operating Budget Details

Staffing – Number of Employees by Salary Band



Operating Budget Details

Staffing - Salary and Benefits Cost Comparison

The following provides actual Salary and Benefit related costs compared to budget for the two most recent completed years, 2023 and 2022, by component ($ in Thousands):

Description	2023			2022		
	Actual Expense	Approved Budget	Incr/(Dec)	Actual Expense	Approved Budget	Incr/(Dec)
Salaries and Wages - Base	$ 85,725.0	$ 85,304.6	$ 420.4	$ 76,075.0	$ 78,194.8	$ (2,119.8)
Salaries and Wages - Overtime	3,210.5	2,662.6	547.9	3,325.6	2,666.7	658.9
Salaries and Wages - Incentive/Bonus	15,389.0	14,224.8	1,164.2	15,037.5	13,723.0	1,314.5
Employee Benefits - Pension (1)	11,905.2	11,149.2	756.0	11,299.3	10,821.3	478.0
Employee Benefits - Post-Ret Benefits	739.2	927.8	(188.6)	328.0	554.0	(226.0)
Employee Benefits - Health Insurance	8,468.3	8,473.4	(5.1)	7,189.2	7,300.5	(111.3)
Employee Benefits - Dental Insurance	523.6	508.5	15.0	481.7	485.5	(3.8)
Employee Benefits - 401(K) Match	3,342.4	3,567.0	(224.6)	3,071.2	3,174.8	(103.6)
Salary Burden - Payroll Taxes	7,346.4	7,205.8	140.7	7,207.4	6,659.1	548.3
Other Benefit/Burden <$200K	667.9	678.4	(10.6)	540.5	566.8	(26.3)
Total Salaries & Burden Expense	**$ 137,317.5**	**$ 134,702.1**	**$ 2,615.3**	**$ 124,555.4**	**$ 124,146.6**	**$ 408.8**

(1) Pension costs include funding for both the Defined Benefit and Defined Contribution plans.

APPENDIX 3: 2023 DELIVERABLES AND SELECT METRICS

ISO Tracks Metrics to Monitor Progress and Efficiency in Upholding its Regional Responsibilities

- To carry out the ISO's mission and keep track on its strategic goals, the organization tracks a number of metrics to gauge progress; those metrics are listed in the subsequent slides
- ISO-NE Five Strategic Goals:
  - Responsive Market Designs
  - Progress and Innovation
  - Operational Excellence
  - Stakeholder Engagement
  - Attract, Develop, and Retain Talent

Mission Statement:

Through collaboration and innovation, ISO New England plans the transmission system, administers the region's wholesale markets, and operates the power system to ensure reliable and competitively priced wholesale electricity

In 2023 the ISO Delivered on a Large Number of Complex and Novel Initiatives Addressing the Clean Energy Transition

ISO initiatives illustrate our commitment to advancing our vision to support the region's clean energy transition

Clean Energy Pillar

- Supported the changing grid and adapted to increasing system complexity through:
  - Acquiring new and more granular data about weather and end-use customer behavior
  - New modeling techniques to assimilate increasingly complex data sets
- Supported policy-makers considerations about how to achieve the goals of the clean energy transition
  - 2050 Transmission Study
  - Economic Planning for the Clean Energy Transition (EPCET)

Balancing Resources Pillar

- Filed Day-Ahead Ancillary Services Initiative (DASI)
- Completed an internal assessment of moving to a prompt and/or seasonal capacity market construct
- Took significant steps to reform how ISO accredits resource capacity with its Resource Capacity Accreditation work

In 2023 the ISO Delivered on a Large Number of Complex and Novel Initiatives Addressing the Clean Energy Transition

ISO initiatives illustrate our commitment to advancing our vision to support the region's clean energy transition

Energy Adequacy Pillar

- Developed advanced forecasting and modeling processes to drive actionable decision-making around power system needs
  - Quantified region's energy adequacy vulnerabilities
  - Developed Probability Energy Adequacy Tool (PEAT)
  - Established Regional Energy Shortfall Threshold (REST)
- ISO recognized for its leading-edge actions developing a systematic approach to determine risk of extreme weather conditions on energy adequacy
  - ISO employees awarded by EPRI for their work to develop metrics and methods for maintaining grid stability with inverter based resources
  - ISO employees participating in NERC energy adequacy standard drafting effort

Transmission Pillar

- The 2050 Transmission Study highlighted for stakeholders the high value of taking steps in the nearer term to mitigate long-term transmission needs:
  - Encouraged state regulators to further enable demand reductions to reduce peak loads
  - Gave greater consideration to the location and size of new generation
  - Identifies the important incremental upgrades and priorities to address high-likelihood concerns
- Filing on Extended/Longer-Term Transmission Planning Phase 2 accepted by FERC in Q3 2024
  - Enables development of transmission infrastructure to address the findings of a Longer-Term Transmission Study
    - Codifies NESCOE and the ISO's respective roles throughout the process
    - Establishes the cost recovery methodology for resulting transmission
    - Provides for ISO supporting States' RFPs

Responsive Market Designs

Improve the current market structure and continue to evolve and reposition the market design to support the states' objectives and transition to high levels of renewables and distributed resources. Maintain a robust fleet of balancing resources and preserve the ability of the market to guide the orderly entry and exit of resources.

Wholesale energy market is structurally competitive

- Operating reserve margins remain relatively high
- Residual Supply Index (RSI) scores meet expectations
- Energy market mitigation is relatively infrequent
- Markups in RT and DA markets were close to zero or negative
- In 2023, withheld economic capacity relatively low

Wholesale capacity market structurally competitive

- RSI and Pivotal Supplier Test scores: no pivotal suppliers
- Overall competitiveness increased with decrease in SENE zonal load forecast & increase in import capability limit

Wholesale Ancillary Services generally performing well, and the regulation market structurally competitive.

In 2024, ISO filed and obtained approval from FERC to implement changes for the 2024 Forward Reserve Auction to address previous years' findings that the Forward Reserve Market (FRM) was structurally uncompetitive.

Note: *See IMM 2023 Annual Markets Report for detail*

2025 continue to focus on enhancing market design for capacity, energy, and ancillary services markets to send more accurate price signals – addressing changing resource mix, associated operating complexity, and the region's winter security risks.

Note: *See Annual Work Plan & Wholesale Markets Plan for detail*

Progress & Innovation

Evolve capabilities to support the grid as the region transitions to clean energy, including improved power system and market modeling. Support investments in transmission infrastructure to enable renewable energy. Facilitate the integration of distributed energy resources. Provide data and information-based services.

Improve day-ahead load forecasting accuracy

- Average accuracy for peak hours of the month meets ISO's standards, *but* average accuracy across all hours of month does not. *See Monthly COO report to NEPOOL for detail*
- Implemented Day-Ahead nGEM Platform in 2023

Enhance programs to incorporate state policy objectives

- Reflect state energy efficiency goals; PV and electrification growth in long-term forecasting methodology. *See NEPOOL Load Forecast Committee & Planning Committee working groups*
- In 2024, ISO filed and obtained approval from FERC to enhance longer-term transmission planning program

Interconnect and register new resources to meet FERC established timeframes

- Order 2023 Reporting metrics (to be implemented)
- Analyzing the impacts of FERC Order 2023 on the interconnection process
- Streamlined DER process through transferring all distribution system interconnection to state processes

2025 focus is on integrating recent studies and analyses into existing tools and programs to improve modeling of emerging technology resources and develop forecasting solutions and load management solutions for weather dependent resources:

- Collect more detailed information about resources' operating characteristics, reflecting increased complexity and limited energy of resources
- Methods for tracking and forecasting amount and impact of electrification of heating (space & water) and transportation (vehicle classes)

Operational Excellence:

Continuously improve operations and processes, with a focus on prioritizing project scope and implementation, business results, and continuity of reliable operations

Maintain NERC Standards compliance

- Operate bulk electric system reliability, e.g., within frequency limits; to avoid instability, cascading outages or uncontrolled separation
- Maintain accurate planning models and update planning studies
- Oversee facility interconnection studies

Accurately settle markets with no errors

- Satisfactorily complete annual SOC 1 audit
- Administer hourly market operations with minimal LMP corrections and zero provisional DAM results adjustments

Maintain IT uptime and ensure business continuity

- Continuous assessments of cyber security threats and risks against CIP Standards; NIST Framework; DHS Known Exploited Vulnerabilities; phishing attempts

Maintain accurate quarterly budget forecasts, comparing projected costs/revenues against actual financial results.

2025 focus is on improving business operations across organization

- Implement internal process and technology improvements to address increasing grid complexity, including:
  - Broadening usage of ISO-developed innovations to enhance control room situational awareness and market efficiency
  - Addressing the trend of increasing DER/decreasing springtime load
  - Examining the single-source contingency limit
- Continue to modernize IT assets, technologies, and tools to mitigate cybersecurity threats
- Migrate ISO systems to the cloud

Stakeholder Engagement:

Collaboratively understand and anticipate needs, demonstrate thought leadership through high-quality analysis and communication, and nurture productive relationships with FERC, the states and market participants in supporting the four pillars of the clean energy transition

- Address public policy concerns
  - Assess regional policy requests
  - Administer stakeholder prioritization process
  - Hired for position to focus on environmental policies and community outreach in 2024
- Annually survey stakeholder satisfaction with ISO services
  - Overall service quality
  - Market Participant training course satisfaction
- Over past several years, ISO has delivered products responsive to New England States' 2020 Vision and policy initiatives:
  - Request to evaluate clean energy pricing (Pathways report)
  - Request to conduct longer-term transmission planning (Future Grid Reliability Study; 2050 transmission study)
  - Enhancement to longer-term transmission planning process
  - Technical support on States' RFP efforts
- Focus in 2025 includes:
  - Building on novel analyses performed in 2023-24 to update assessments of regional energy adequacy vulnerabilities
    - Regional Energy Shortfall Threshold (REST)
    - Economic Planning for the Clean Energy Transition (EPCET) Study
  - Continue to work with States and stakeholders to improve asset condition process, and establish a criteria for right-sizing transmission investments to support integration of renewables and higher load levels
  - Continue to provide technical support to States, as requested, on clean energy and transmission RFP

APPENDIX 4: CYBER SECURITY AND CIP COMPLIANCE HISTORY AND COSTS

Cyber Security and CIP Compliance

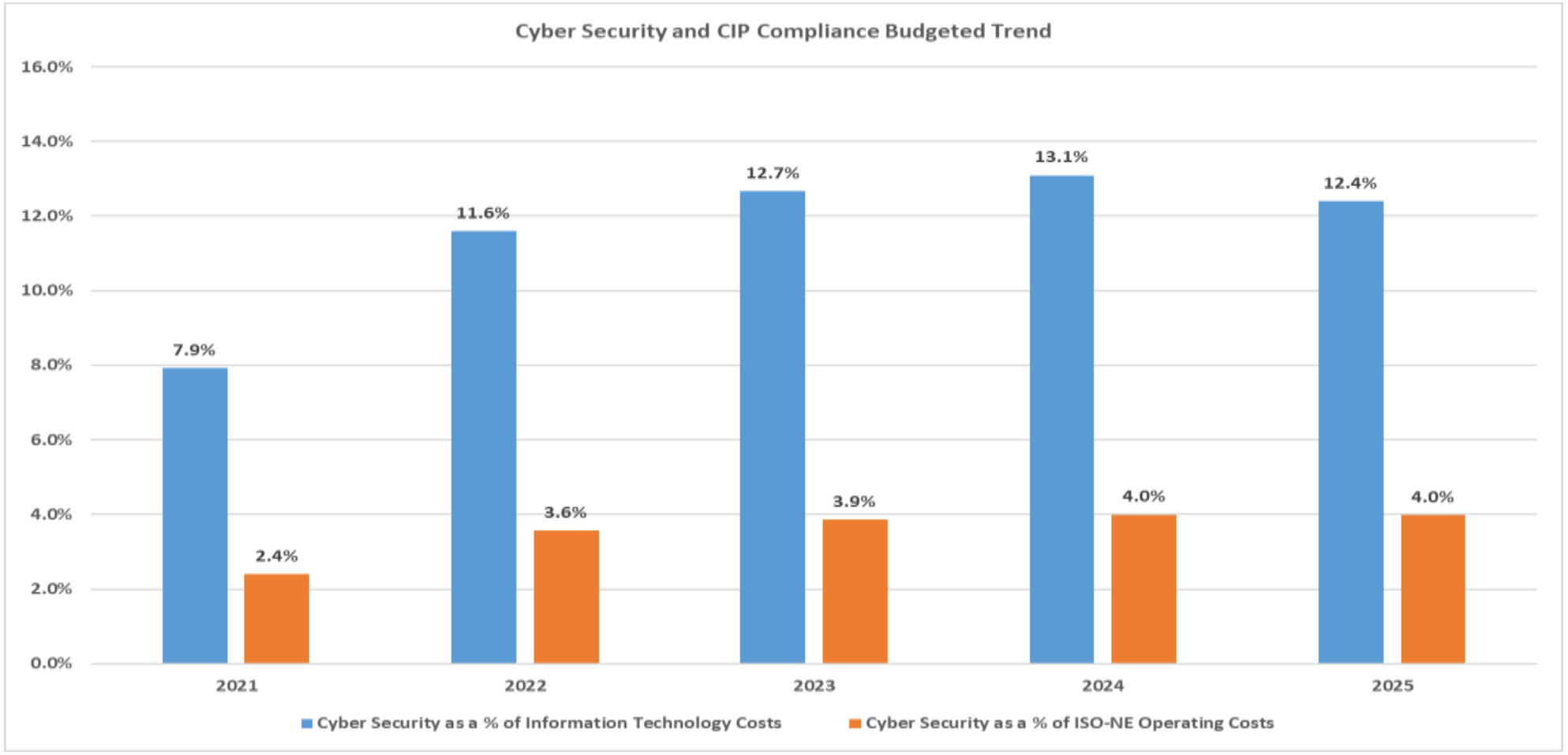
- Background
  - Information technology has become an indispensable tool for efficiently and reliably operating the increasingly complex regional power system, administering the billion-dollar markets where wholesale electricity is bought and sold in New England, and engaging and collaborating with our stakeholders
  - The energy sector faces significant risk of attempted cyber intrusion. ISO-NE is committed to making sure power grid and market operations remain secure and will continue to build on our already extensive process controls, advanced detection and response systems, and redundancy in systems and control centers
  - Our Security Operations Center monitors the ISO-NE environment and multiple new state-of-the-art cyber security capabilities were deployed in 2022, including best in class endpoint detection and response, network detection and response, software vulnerability detection, and cyber threat hunting
  - A prominent corporate objective requires all ISO-NE employees to participate in annual cyber security training; ISO-NE has tightened security controls for cyber assets and visitors to ISO facilities in compliance with revised NERC CIP cyber security standards
  - ISO-NE developed and implemented a third-party cyber security risk management program that includes compliance with CIP-013 related to Supply Chain Cyber Security Risk

Cyber Security and CIP Compliance *(cont.)*

- A CIP and Systems Compliance Operations Group provide day-to-day support of highly complex infrastructure and cybersecurity compliance functions required by North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) standards - Version 5
- During 2022 ISO-NE also procured additional software to enhance our capability to visualize, detect, and respond to threats and vulnerabilities from industrial control systems and technology that interfaces with the physical world (e.g., distributed control systems, SCADA); and software to improve ISO-NE's ability to recognize and block phishing attempts, as these attempts have increased exponentially and become more sophisticated in the past several years; additional alerts and automations to increase the reach and productivity of Security Operations Center staff were developed in 2023 and will continue in 2024
- In 2023, additional security awareness training capabilities were added to address the human element of cyber security regularly
- During 2023 ISO-NE began to incorporate "immutable" technology that prevents modifications to data written to disk for both enterprise storage applications and system backups providing greater resiliency and protection for ransomware-style attacks; in the same year, ISO-NE deployed a technology framework to identify and fix known vulnerabilities more rapidly and to protect applications from emerging threats
- In June 2024, ISO-NE completed its periodic NERC CIP compliance audit with NPCC resulting in zero potential non-compliance (PNC) items, zero areas of concern (AOC), and four positive observations shared jointly with the Operations review

Cyber Security and CIP Compliance *(cont.)*

To ensure robust cyber security defenses against ongoing sophisticated threats and to ensure compliance with CIP standards, ISO-NE has increasingly invested in these areas which have trended higher of our Information Technology and Overall Operating Expense Budgets



APPENDIX 5: 2025 BUDGET RESOURCES BY FUNCTIONAL AREA

2025 Budget Resources By Functional Area

ISO-NE provides a vast array of services to market participants and the New England region. Slides 136 through 160 include a description of the most significant services by area and provide the costs for Salaries and Burden, Professional Fees, and Computer Services for each area. Below is a reconciliation of the costs for each area and other support costs that make up the 2025 Operating Budget.

Area/Item	Amount in millions		Area/Item	Amount in millions
System Operations & Market Administration	35.3		Rents & Leases	2.1
System Planning	23.0		Network Operations	3.9
Market Development	12.6		Computer Services	31.3
Settlements	6.5		Data Services & Office Expenses (1)	2.2
Information Services	58.1		Insurance Expense	3.9
Program Management, Adv Tech Solutions, and NEPOOL Relations	17.6		Board of Directors Expense	1.6
Market Monitoring & Mitigation	6.9		Meetings & Related Expense	1.6
Legal Services	8.2		Education & Training	1.4
External Affairs and Corporate Communications	5.9		Taxes, Permits, Licenses & Fees (1)	0.3
Compliance, Risk Management, Finance, and Internal Audit	14.8		NPCC Dues	9.3
Human Resources	9.0		Interest Expense	4.6
CEO and COO and Support Staff	3.1		CEO Emerging Work Allowance and Board Contingency	3.7
Building Services	4.3		Misc. Revenues, Interest Income, and Purchase Discounts	(1.8)
			Total Operating Budget	**$ 269.4**

(1) Comprises the $2.5 million total of *Other Expense* on Slide 91

2025 Budget Resources By Functional Area

The table below lists full-time equivalent (FTE) headcount by area. The *20XX Budgeted FTEs* represent estimated net headcount by area after the budgeted vacancy % is applied. Actual vacant positions will vary by area.

Area	2022 Total FTEs	2022 Budgeted FTEs	Positions Filled 12/31/2022	2023 Total FTEs	2023 Budgeted FTEs	Positions Filled 12/31/2023	2024 Total FTEs	2024 Budgeted FTEs	Positions Filled 6/30/2024	2025 Total FTEs	2025 Budgeted FTEs
System Operations & Market Administration	135.0	127.5	127.0	137.0	128.5	134.0	138.0	127.5	135.0	147.0	135.5
System Planning	66.0	62.5	57.0	70.0	65.5	73.0	85.0	78.5	75.0	94.0	87.0
Market Development	20.0	19.0	20.0	29.0	27.0	24.0	33.0	30.5	23.0	35.0	32.5
Settlements	35.0	32.5	35.0	35.0	33.0	33.0	35.0	32.5	35.0	35.0	32.0
Information Services	184.0	175.5	179.0	193.0	181.0	181.0	200.0	185.0	189.0	217.0	200.0
Prog Mgt, Adv Tech Solutions, & NEPOOL Relations	54.5	52.0	51.5	58.5	55.0	54.0	64.5	59.5	58.0	70.5	65.0
Market Monitoring & Mitigation	21.0	20.0	18.0	21.0	19.5	19.0	21.0	19.5	20.0	21.0	19.0
Legal Services	18.0	17.5	18.0	18.0	17.0	18.0	18.0	16.5	17.0	19.0	17.5
Ext Affairs and Corp Comm	19.0	18.0	17.0	21.0	19.5	18.0	23.0	20.5	21.0	25.0	23.0
Compliance, Risk Mgt, Finance & Internal Audit	44.0	43.0	41.0	44.0	41.5	45.0	47.0	43.5	47.0	50.0	46.0
Human Resources	16.0	15.5	16.0	18.0	17.0	17.0	24.0	22.0	18.0	23.0	21.0
CEO and COO Support Staff	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	5.0	5.0	5.0
Building Services	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	5.0	5.0	5.0
Totals	**622.5**	**593.0**	**589.5**	**654.5**	**614.5**	**626.0**	**698.5**	**644.5**	**648.0**	**746.5**	**688.5**

Budgeted Vacancy %'s are as follows: 2022 – 4.0%; 2023 and 2024 is 5.0%; 2025 is 6.0%.

2025 Budget Resources By Functional Area

The table below lists expense $'s and full-time equivalent (FTE) amounts for *outside consultants* by area with Information Services broken out separately for Cyber Security and Compliance. Actual amounts are reflected for 2022 and 2023, current forecasted amounts for 2024, and proposed budget amounts for 2025.

Area	2022		2023		2024		2025	
$ amounts in thousands	Expense	FTE Equiv	Expense	FTE Equiv	Expense	FTE Equiv	Expense	FTE Equiv
System Operations & Market Adm.	$ 156.9	1.1	$ 732.2	5.0	$ 1,194.4	7.9	$ 273.0	1.7
System Planning	2,044.1	10.0	2,530.4	11.9	3,686.0	16.6	3,563.4	15.4
Market Development	2,428.0	10.0	2,062.3	8.2	3,085.6	11.7	2,381.5	8.7
Settlements	-	-	-	-	-	-	-	-
Information Services	5,235.4	25.3	5,513.4	25.6	6,488.3	29.0	6,551.7	28.1
Info. Services - Cyber Security	1,231.8	6.0	1,724.9	8.0	3,028.9	13.5	3,517.7	15.1
Prog Mgt, Adv Tech Solutions, & NEPOOL Relations	1,515.0	6.2	1,717.2	6.7	1,648.1	6.2	1,649.0	6.0
Market Monitoring	1,967.8	10.2	1,776.1	8.9	1,610.3	7.7	1,806.0	8.3
Legal Services	1,276.6	4.7	956.7	3.4	1,620.7	5.6	1,877.0	6.2
Ext Affairs & Corp Comm	668.2	3.5	726.9	3.7	660.8	3.2	669.9	3.1
Compl., Risk Mgt, Finance & Int Audit	1,293.2	6.3	2,105.1	9.9	2,925.2	13.2	2,331.3	10.1
Human Resources	2,015.6	7.8	2,354.2	8.7	2,384.9	8.5	3,156.4	10.8
CEO & COO & Support	-	-	-	-	-	-	-	-
Building Services	-	-	1.0	-	-	-	-	-
Total	**$ 19,832.8**	**91.0**	**$ 22,200.4**	**100.0**	**$ 28,333.2**	**123.2**	**$ 27,776.9**	**113.7**

Note:Outside consulting in the capital budget is done per project and not by functional area. Consultant spending on all capital projects totaled $14,147.8 or approximately 65 FTEs for 2022 and $13,794.6 or 62 FTEs for 2023. Budgeted/forecasted amounts for 2024 or 2025 cannot be provided since several projects are in the Planning/Conceptual Design phase and their specific requirements have not been fully established.

2025 Budget Components By Functional Area

System Operations & Market Administration – 147.0 FTEs

Salaries (fully burdened)	$ 35.0M
Professional Fees	$ 0.3M

System Operations is responsible for the 24/7/365 reliable and efficient operation of New England's Bulk Electric System (BES) and coordination with NERC Reliability Coordinators. System Operations provides near term engineering and outage coordination services, market transaction management as well as wind, solar and load forecasting services, and asset commitment services. The control room performs all Reliability Coordination (RC), Balancing (BA), and Transmission Operation (TOP) services under the NERC Standards for the New England Participants.

Market Administration is responsible for the day-to-day operations of the wholesale electricity markets in New England as well as the completion of asset registration, new generation coordination, and asset capability auditing. This includes developing market operating procedures to ensure compliance with FERC requirements. In addition, System Operations & Market Administration performs training, project integration, and analytical and auditing services for the corporation and its participants.

Description

- *Control Room Operations* – Around the clock operation of the BES and ISO real-time markets. This includes the Reliability Coordination, Balancing Authority and Transmission Operator for the New England Region including services for 400 Generating Stations and 9000 miles of transmission assets. Develop the New England Operating Plan including forecasting load, as well as resource scheduling, contract management, dispatch services and transmission operations services for the New England Participants.

2025 Budget Components By Functional Area

System Operations & Market Administration *(cont.)*

Description

- *Design, Develop and Deliver Engineering Operating Guides and Studies* - Design, develop, and deliver engineering operating guides, studies, and services regarding voltage, stability, and thermal constraints for use by the Company and Local Control Centers to reliably and efficiently operate the BES.
- *Transmission & Generation Outage Coordination* - Includes both short-term and long-term outage scheduling and coordination services looking out 2 years.
- *Training* – The Operational Performance, Training & Integration (OPTI) group provides new and ongoing training and simulation for system operators (+-160 hours per year, per operator), Designated Entities, and all Local Control Center Operators on an ongoing basis.
- *Procedure and Process Development and Maintenance* - All ISO Operating Procedures, Master Local Control Center Procedures, Control Room Operating Procedures, System Operating Procedures, Transmission Operating Guides, Operating Manuals, and the Open Access Same-Time Information System (OASIS). This activity includes the committee approval processes at the RC, MC, PC, and MLCC.
- *Integration* - OPTI provides corporate project support for the department which consists of development, integration, and testing of market design changes into system and market operations; this includes development and maintenance of business procedures and operating manuals to ensure continuous compliance with the ISO New England Transmission, Markets, and Services Tariff.
- *Gas-Electric Coordination and Energy Assessments* - Coordination and information sharing with gas pipelines, energy analysis across different years, seasons and in real-time based on information gathered from fuel surveys and pipelines, establishing operating plans to deal with different system conditions, and communicating with stakeholders and regulators on a regular basis regarding all fuel types.

2025 Budget Components By Functional Area

System Operations & Market Administration *(cont.)*

Description

- *NERC/NPCC/FERC Compliance* - Ensure operational compliance with new and existing federal, regional, and New England Standards. Review and update processes, procedures, and training to ensure compliance.
- *NERC/NPCC/NATF and ISO Committee* - System Operations represents the ISO on national, regional, and New England task forces.
- *Reliability Coordination*- System Operations implements all reliability coordinating agreements with Hydro Quebec, NYISO, and New Brunswick System Operator and staffs the coordinating committee(s) to maintain the agreements.
- *Market Administration* – Administers the Hourly and Monthly markets including Day-Ahead, Financial Transmission Rights (FTR), Forward Reserve and Forward Capacity annual and monthly reconfiguration markets; administering the Forward Capacity Auctions and supporting related FERC filings; and Real-Time price monitoring and finalization.
- *Asset Registration* – Performs the tasks associated with the registration of assets as defined in the New England Markets, such as Generation, Loads, Tie Lines, Asset Related Demand, Demand Response Assets, Alternative Technology Regulation Resources, and On-Peak and Seasonal Peak Demand Resources.
- *Auditing* – Performs the tasks associated with the various types of audits as defined in the New England Markets, such as Passive On-Peak and Seasonal Peak Demand Resources, Active Demand Response Assets, Generation CCA (Establish & Seasonal) and Dual Fuel Audits, Blackstart, Claim 10/30, Reactive Power. In addition perform the continuous review of meter data quality for Demand Response Assets and periodic review of Measurement and Verification documentation for On-Peak and Seasonal Peak Demand Resources.
- *New Gen Coordination* – Manages and performs the tasks associated with the new generation coordination, modeling changes to existing generators and pnode activations/deactivations processes.

2025 Budget Resources By Functional Area

System Planning – 94.0 FTEs (7.5 FTEs are allocated to reimbursable studies)

Salaries (fully burdened)	$ 19.4M
Professional Fees	$ 3.6M

System Planning is responsible for development of the Regional System Plan, implementing the regional transmission planning process, administration of the generator interconnection process, developing findings for allocating transmission costs, interregional planning with our neighbors, and supporting New England's capacity markets. A more detailed breakdown of services is provided below.

Description

- *Transmission Planning Studies* – Study and support for requests to add or change interconnection and transmission service and ensure compliance with federal and regional reliability criteria as it pertains to planning of the New England Power System. Support regional transmission owners in state siting proceedings for major transmission projects. Issue and support RFP's for competitive transmission per FERC Order 1000. Review and enhance generator interconnection policies and practices; continue to support state agencies on their RFPs for clean energy resources. Develop and execute long-range transmission planning studies in conjunction with the states (e.g., 2050 Study).
- *Forward Capacity Market Administration* – Includes establishing regional and zonal capacity requirements; reviewing show-of-interest applications; qualifying new resources (generation, demand resources, and imports); supporting administration of the Forward Capacity Auctions and supporting related FERC filings; performing all reliability analysis in review of retirement requests, de-list bids, reconfiguration auctions, and bilateral contracts.
- *Eastern Interconnection Planning Collaborative (EIPC)* – Model Roll-up and Evaluation (contingency analysis and/or transfer analysis); participation in all levels of the EIPC structure including Technical Team, Economic Analysis Working Group, Coordination Committee, and Executive Committee. Support EIPC in management of the Multi-regional Modeling Working Group process.
- *Attachment K Economic Studies* – Carry out the regional economic planning process as requested by stakeholders on an annual basis for up to three economic studies per year.

2025 Budget Resources By Functional Area

System Planning *(cont.)*

Description

- *Energy-Efficiency (EE) Programs* - Develop annual EE forecasts across the ten-year planning horizon and work with the EE Forecast Working Group to review and refine the EE forecast process for development of future forecasts.
- *Solar PV Forecast* - A similar process for state investments in distributed generation is now in place, and an annual forecast of solar PV across the ten-year planning horizon is developed annually.
- *Electrification Forecast* – Annually develop a forecast that predicts the increase in demand due to the adoption of air-source heat pumps (ASHPs) in the winter months and use of electric vehicles. This forecast is incorporated into the ten-year load forecast used for the FCM and transmission planning.
- *Installed Capacity and Local Sourcing Requirements* - Develop the regional Installed Capacity Requirement, and Zonal Local Sourcing Requirement and Maximum Capacity Limit values that establish the requirements within the Forward Capacity Market. These values are reviewed within the NEPOOL committee structure; advisory input is provided by the Reliability Committee and Participants Committee, and the values are subsequently filed with FERC.
- *Regional System Plan* - Initiate a biennial planning report that documents all regional and interregional planning activities, and identifies resources and transmission facilities needed to maintain the reliable operation of New England's bulk electric power system over a ten-year horizon. ISO administers much of the regional planning process through interaction with the Planning Advisory Committee. Continue regional dialogue on Grid Transformation.

2025 Budget Resources By Functional Area

System Planning *(cont.)*

Description

- *Interregional Planning* - Participate in joint planning activities with NYISO and PJM through the Inter-Area Planning Stakeholder Advisory Committee stakeholder process. This process results in development of a periodic report of activities in the Northeast Coordinated System Plan. This process has been updated in compliance with FERC Order 1000. Active participation in various NERC committees and standard drafting teams, and provide leadership to the EIPC.
- *Compliance* - Active involvement in NERC and NPCC Committees and related activities in support of compliance with established federal and regional reliability standards and interregional planning activities.
- *Training* - Support ISO-led training activities for the Forward Capacity Market, State Regulator, and Market Participant training on the overall System Planning Process, and State Regulator Training on Transmission Planning criteria and analysis.
- *Other* - Conduct ten-year forecasting of seasonal peak demand and energy requirements and support operations daily forecast models including the solar PV forecast; support regional dialogue on strategic planning issues through various types of system operations analysis; develop annual marginal emissions report; process and maintain Generating Availability Data System database; monitor and evaluate emerging state and federal environmental and renewable energy standards; support the North American Energy Standards Board standards development process; and support individual state planning activities.

2025 Budget Resources by Functional Area

Market Development & Settlements - 70.0 FTEs* (0.5 FTEs are allocated to the capital budget)

Salaries (fully burdened)**	$ 16.7M
Professional Fees	$ 2.4M

Market Development & Settlements is responsible for the design and development of Wholesale Electricity Markets and Wholesale Markets Strategy, Demand Resources Strategy, reporting and analysis of market results, and the settlement of all ISO-administered markets, programs, and fees consistent with the ISO Tariff.

Description

- *Market Assessment* – Development of enhancements to the current markets and introduction of new markets and market products to address existing problems or emerging issues identified by ISO staff, the market monitors, stakeholders, and FERC.
- *Support Market Change Recommendations* – Support recommended changes in materials presented to stakeholders and in filings with FERC; support internal ISO implementation teams in designing new and enhanced markets and products.
- *Tariff Updates and Compliance* – Analysis of necessary updates to the ISO New England Transmission, Markets, and Services Tariff.
- *Demand Response and Distributed Energy Resources* – Development of market designs that enable Demand Response Resources and Distributed Energy Resource Aggregations to provide all wholesale services they are technically capably of providing.
- *Market Analysis and Reporting* – Designing, developing, and issuing weekly and monthly reports and public data files detailing market activities and outcomes, including load cost reports; delivering data and producing analyses of market activity requested from market participants, states, FERC, and other government officials.

*Note: Amounts and FTEs include Market Development & Settlements noted on slide 135 - 137

**Note: Direct Market Development & Settlement costs for Internal Capital Development are included in the Capital Budget. The cost noted above only includes operating costs.

2025 Budget Components By Functional Area

Market Development & Settlements *(cont.)*

Description

- *Market Settlements* – Settlement of all Market Participant obligations, charges, and fees in the ISO-administered markets and ISO Tariff, including: the Day-Ahead and Real-Time markets, Bilateral energy transactions, Forward Transmission Rights Markets, Congestion Revenue accounting, Net Commitment Period Compensation Payments and charges, all market-based and OATT-based Ancillary Services, the Forward Capacity Market credits and charges, and other charges and payments due under the Open Access Transmission Tariff.
- *Market Participant Settlement Support* – Conduct timely analysis, investigation, and resolution of individual market participant inquiring about ISO invoices, statements and bills.
- *Audit and Compliance Settlements Support* – Extensive support for internal and external annual audits of the ISO's Market Settlement systems and execution, to ensure confidence in the ISO-administered markets and all participants' credits/charges
- *Training* - Support ISO-led training activities for Market Participants and federal and state regulators on the ISO-administered markets, new market designs, project integration, participant settlement obligations, and participants' Market Information System reports.

2025 Budget Resources By Functional Area

Information and Cyber Security Services – 217.0 FTEs (23.0 FTEs are allocated to the capital budget)

Salaries (fully burdened)*	$ 48.0M
Professional Fees	$ 10.1M

The ISO's Information and Cyber Security Services group is responsible for the information and data integrity of the organization as well as all information systems functions, including data centers, technical service centers, cyber security, production scheduling, software development, and systems operations. Total IT license and maintenance fees support 1,387 product versions, 1,657 servers, 1,279 desktop systems, 1,157 network devices, and 597 appliances.

Description	Amount ($ in Millions)
Information Technology (IT) Software Development and Power System Support - (133.0 FTEs) Staff perform the following functions: • Application Architectural Design, Technology Evaluation, and Selection • Corporate, Markets and Energy Management System Support including: – Power System Network Modeling and Maintenance • Includes NX9 (Transmission) and NX12 (Generation) Systems – Energy Management Systems Maintenance and Support • Includes Inter-Control Center Communications Protocol (ICCP)	See following slide

*Note: Direct Information Services costs for Internal Capital Development are included in the Capital Budget. The Information Services costs noted on Slides 146 through 149 only include operating costs.

2025 Budget Resources By Functional Area

Information Services *(cont.)*

Description	Amount ($ in Millions)
Information Technology (IT) Software Development and Power System Support, *(cont.)* • Energy Market Applications Maintenance and Support – Includes Day-Ahead and Real-Time Energy Markets, Financial Transmission Rights (FTRs), the Testing and Training Simulator Environment (TTSE), the Dispatcher Training Simulator (DTS), and ISO specific specialized systems (FCM Tracking System, Wind Integration, and Synchrophasor Monitoring) • Data Architecture, Database Administration, and Business Intelligence • Web Application Support • Software and Maintenance support for Market Administration, Market Monitoring, Settlements, Transmission Planning, Finance/Payroll, and Human Resources	
Total IT Software Development and Power System Support:	**$ 32.3M**

2025 Budget Resources By Functional Area

Information Services *(cont.)*

Description	Amount ($ in Millions)
Information Technology (IT) Management, Cyber Security, and Infrastructure Services (84.0 FTEs)	

Staffing and Consultants perform the following functions:

- Direct Management of Infrastructure & Service Delivery, Cyber Security, and Software Testing (including change management)
- Cyber Security, including:
  - Policy and Procedure Development
  - Controls Assessment
  - Security Compliance & Reporting
  - Virus/Malware Response & Reporting
  - Intrusion Monitoring & Response
  - Security Software Tools Maintenance & Support
  - Critical Infrastructure Protection Compliance & Monitoring
  - Security Metrics Collection & Reporting
  - Change Control Testing & Reporting
  - Security Awareness & Training, Software Change Management, and Quality Assurance Control
- Software Testing Control

2025 Budget Resources By Functional Area

Information Services *(cont.)*

Description	Amount ($ in Millions)
Information Technology (IT) Management, Cyber Security, and Infrastructure Services, (cont.) • Desktop, Host Computer hardware/software, and networking hardware support • Data Communications including Main Control Center, Backup Control Center, and communications with Local Control Centers and other external touch points • System Administration for Unix and Windows • IT Asset and License Management	
Total IT Management, Cyber Security, and Software Testing:	**$24.8M**
Total Information Services Staffing, Consulting, and Computer Services:	**$57.1M**

2025 Budget Resources By Functional Area

Program Management, Advanced Technology Solutions, and Participant Relations & Services – 70.5 FTEs (9.0 FTEs are allocated to the capital budget)

Salaries (fully burdened)*	$ 15.9M
Professional Fees	$ 1.6M

The Program Management Office (PMO) is responsible for oversight and management of the Capital Budget. PMO and Advanced Technology Solutions are responsible for implementing program and system changes for the broad range of services and related applications that run the New England bulk electric power system, the wholesale electricity markets, and other supporting ISO New England Systems. The Participant Relations & Services (PRS) Department is responsible for leading the company's engagement, training, and support of industry stakeholders on proposed changes to and implementation of ISO's planning, operational, and market initiatives.

Description

- *Evaluation of New Projects* – Review and determine need and possible solutions for proposed emerging work requirements to be presented to senior management for approval.
- *Project Management* – Develop formal processes and procedures for the evaluation of capital project work including the value of proposed projects and determination of impacted business users; develop project scope and necessary resources; development and ongoing analysis of project budget, timeline, progression, risks and opportunities; and ensure proper project testing and business user acceptance.

*Note: Direct Project Management costs for Internal Capital Development are included in the Capital Budget. The cost noted above only include operating costs.

2025 Budget Resources By Functional Area

Program Management, Advanced Technology Solutions, and Participant Relations & Services *(cont.)*

Description

- *Business Analysis and Product Management* – Work with all business units to assess and review issues and opportunities for improvement, and manage implementation issues identified under the Corrective Action/ Preventative Action program to minimize disruption to business and system process.
- *Advanced Technology Solutions* – Develop both short-term and long-term solutions for market and system technology improvements, market clearing models to implement various market designs and improve market efficiency, algorithms and tools to improve system reliability, auction clearing software for forward capacity market, and simulation software.
- *PRS: NEPOOL Relations* - Leads the ISO's engagement with market participants and other stakeholders to collaborate on ISO's projects for market designs and reliability improvements. Administers the NEPOOL Technical Committees and related working groups, and serves as the ISO's primary liaison for NEPOOL members.
- *PRS: Participant Support & Solutions* – Manages and supports user experiences in the ISO markets, transmission planning processes, and other business functions to resolve industry stakeholder issues.
- *PRS: Participant Training Services* – Develops and delivers the ISO's external training programs for industry stakeholders to participate in all ISO systems and do business within ISO New England's footprint.
- *PRS: Project Services* – Develops and coordinates internal and external plans, work flows, and information on corporate projects across multiple departments to integrate the ISO's market, planning, and operations initiatives. Regularly publishes updated reports to industry stakeholders on corporate initiatives.

2025 Budget Resources By Functional Area

Market Monitoring & Mitigation – 21.0 FTEs

Salaries (fully burdened)	$ 5.1M
Professional Fees	$ 1.8M

Market Monitoring is a FERC-mandated function of each Regional Transmission Organization (RTO). Per FERC, RTO Market Monitors must report directly to the Board of Directors to assure independence from management.

Description

The ISO's Internal Market Monitoring area is responsible for:

- Analysis of and report to stakeholders, FERC, and ISO Management on market performance.
- Administer market power mitigation and other mitigation provisions in the Tariff.
- Monitor for and identify instances of rule violations (including uncompetitive participant behavior), investigate and refer potential violations to FERC Office of Enforcement.
- Identify issues with current and proposed market design and provide recommendations for improvement.

Additionally, ISO-NE retains an External Market Monitor that also reports to the Board of Directors on its review of market outcomes and market design changes. External Market Monitor funding is included in the Legal and Professional Fees budget; however for purposes of Functional Area presentation it is included in the Market Monitoring & Mitigation amount above.

2025 Budget Resources By Functional Area

Legal Services - 19.0 FTEs

Salaries (fully burdened)	$ 6.3M
Legal Fees	$ 1.9M

The ISO New England Legal Services budget includes funding for staff attorneys, a paralegal, support staff, and external counsel to augment ISO Legal staff or for use where a particular expertise is needed.

Description

Both internal and external counsel cover work for:

- Development of market rule, Tariff and operating/planning procedure changes; support for the stakeholder process; and related regulatory and appellate litigation.
- Support for the market monitoring department.
- Tracking federal and state legal developments.
- Negotiating interconnection agreements and supporting the qualification of new assets.
- Refining the financial assurance and billing policies.
- Filing and supporting the administrative and capital funding tariffs.
- Advising on finance, tax, intellectual property, and contract matters.
- Handling labor, employment, and ERISA matters.
- Support for NERC and NPCC rulemakings and other compliance support.
- Responsible for corporate governance, including support for the Board of Directors and standing committees.

2025 Budget Components By Functional Area

External Affairs and Corporate Communications - 25.0 FTEs

Salaries (fully burdened)	$ 5.3M
Professional Fees	$ 0.7M

ISO New England's External Affairs and Corporate Communications are responsible for outreach to and communications with public officials, consumer representatives, the media, ISO employees, and the general public.

Description

The Department:

- Responds to media inquiries and communicates regional electric grid and wholesale markets information to media outlets.
- Develops and coordinates ISO publications (e.g., Regional Electricity Outlook, Regional System Plan) and conference presentations.
- Manages Web Design, Web Content, ISO Newswire, the ISO App and social media.
- Informs public officials on the performance and needs of the power system and wholesale markets.
- Manages emergency and crisis communications to public officials, stakeholders, and the media, including the status of the power system during abnormal and emergency situations.
- Facilitates state feedback on the transmission system and wholesale market design.
- Monitors state and federal policy initiatives, to inform the market development and system planning process.
- Manages the Consumer Liaison Group, including meetings, presentations and the annual report.
- Manages internal employee communications, including the company's intranet.
- Assists other departments with communications materials (e.g., Human Resources recruitment marketing).
- Assesses environmental policies and advises company on implications and conducts outreach to community groups.

2025 Budget Resources By Functional Area

Compliance, Strategy, Risk Management, Finance/Market and Credit Risk, and Internal Audit - 50.0 FTEs

Salaries (fully burdened)	$ 12.5M
Professional Fees	$ 2.3M

Reliability & Operations Compliance, Enterprise Risk Management, Finance, and Internal Audit provide services in support of the ISO's mission as described below.

Description

- *Compliance* – Works to ensure compliance with FERC approved tariffs; NERC and NPCC compliance, certifications, and audits; and coordination with and support of national and regional compliance reliability standard-setting authorities and related committees.
- *Enterprise Risk Management* – Programs and processes include corporate-level risk identification, assessment, monitoring and reporting; support of corrective action programs and Operation Excellence activities; Business Process Documentation Standards and Change Management; Records Management and Retention policy; Business Continuity planning; Corporate Strategy; Tariff change coordination; and information governance.
- *Finance/Market and Credit Risk* – Responsible for payroll administration, procurement, accounts payable, budgeting and forecasting, accounting, financial statement and financial filings, corporate tax reporting, treasury, cash management, capital adequacy, settlement billing and cash clearing, development and administration of the Financial Assurance Policy; financial reporting; and Insurance Program Management.
- *Internal Audit* - Conducts and coordinates audits and reviews across the organization, at key vendors, and at LCC's to ensure compliance with company policy and a sound system of internal controls, maintain certifications for market system changes, and meet assurance requirements for external parties. Audits conducted by internal staff include internal controls and compliance audits in the areas of operations, IT and cyber security, system development projects, and adherence to company finance and human resources administrative policies. Coordination activities for external audits and reviews include the System and Organization Controls (SOC 1) engagement, the Financial Statements Audit, the Benefits Plans Audits, and market system software certifications.

2025 Budget Resources By Functional Area

Human Resources - 23.0 FTEs

Salaries (fully burdened)	$ 5.9M
Professional Fees	$ 3.2M

The ISO's Human Resource group is tasked with attracting, retaining, and developing the company's uniquely qualified and highly skilled workforce.

Description

Responsibilities include:

- Recruiting candidates for full-time, part-time, and temporary positions at all levels from summer interns to executives. Recruitment costs include expenses for the company's formal university relations, summer intern, and co-op programs and costs for external recruiter fees, background checks (initial and required updates), candidate travel, drug screening, visa processing, and testing of potential new hires (for certain positions).
- Determining an appropriate compensation structure for the organization and appropriate compensation levels for all new and existing hires. HR participates in ongoing benchmarking surveys and works with external compensation consultants to benchmark remuneration for employees, executives and the Board of Directors. HR annually benchmarks and administers pools for merit and promotional increases, as well as the company's incentive programs.
- Establishing and administering competitive benefit programs including the selection, design, and administration of all health and welfare benefits (e.g., medical, life insurance, etc.), working with providers and brokers, and designing and administering the company's 401k and pension plans. The department benchmarks all benefits on an ongoing basis. Relocation benefits for new hires (for certain positions) are administered from HR and associated costs are contained in the HR budget.

2025 Budget Resources By Functional Area

Human Resources *(cont.)*

Description

- Designing, benchmarking, and administering general Human Resource policies and programs, including those for annual performance reviews and development plans, employee recognition, and employee issue resolution. The department supports the company's union employees and negotiates the union contract every three years. The HR department also manages all succession processes and programs to ensure the work environment is diverse and inclusive, that key talent is developed to support critical positions within the organization, and that knowledge is retained despite talent attrition.
- Supporting organizational effectiveness through the alignment of strategy, goals, scorecards, performance and rewards as well as consultation on enhancing employee engagement, optimizing team performance and organizational design, and elevating leadership capabilities.
- Designing, developing, and delivering both industry-specific, leadership, and general training that is provided both as "live" (virtual and in person) classroom and self-paced web-based courses. The department manages the company's tuition reimbursement program.
- Designing and facilitating programs to embrace and celebrate the diversity of our ISO community and to educate employees on the value of maintaining a workplace that is diverse, equitable, and inclusive. The department oversees the ISO New England Council for Diversity & Inclusion, Employee Resource Groups, and diversity recruitment efforts.
- Deepening employee engagement by developing and enhancing programs for employee onboarding, career progression, diversity and inclusion, employee well-being, and employee communications as related.

2025 Budget Resources By Functional Area

Human Resources *(cont.)*

Description

- Managing back-end employee information including personnel files and payroll administration, while owning and developing HRIS system(s).
- Managing the ISO Reception function, including registration of numerous stakeholders and visitors to our secure facility.
- Offering input as a key advisor towards workplace safety, employee relations, and positive employee experience.

Description

CEO, COO, and Support Staff – 5.0 FTE's

Salaries (Fully Burdened)	$ 3.1M

2025 Budget Resources By Functional Area

Building Services $4.3M

Building Services includes funding for physical security including compliance with relevant NERC standards and building services for both the Main Control Center and Backup Control Center including: utilities, maintenance, upkeep, cleaning, landscaping, snow, and trash removal.

Description	Amount ($ in Millions)
• Salary and benefits – 5.0 FTEs	$ 0.8
• Utilities	1.6
• Repairs and Maintenance, Cleaning Services, Snow Removal, Landscaping, and Trash Removal	1.0
• Security	0.9
Total Building Services	**$ 4.3**

2025 Budget Resources By Functional Area

Meetings & Related Expenses and Education & Training $3.1M

Includes travel, meals, lodging, incidentals, and course/seminar fees (where applicable) for stakeholder meeting costs, travel for regulatory meetings (FERC/NERC/NPCC), state agency meetings, technical and general training costs, attendance at industry and other conferences, education reimbursement, and offsite ISO-sponsored market training for participants.

Description	Amount ($ in Millions)
• *Corporate Training* – Enterprise wide training programs including supervisory leadership development, professional development, Power System Engineering Program, and business skills.	$ 0.4
• *Technical and NERC Certification Training* – NERC certification training and other job required training for the development, administration, or maintenance of IT Systems.	0.6
• *Industry and Other Conference Attendance* – Attendance to speak, or provide industry expertise, attend joint ISO/RTO conferences, and attend other miscellaneous conferences.	0.4
• *Regulatory* – Travel and related expense for regulatory meetings and support including FERC, NERC, NPCC, and state agencies.	0.3
• *Stakeholder Meetings* – Travel and related expense for ISO employees to attend stakeholder meetings throughout the region.	0.4
• *Market Training* - Costs for offsite ISO sponsored market participant training classes. Includes facility and equipment rental and meals for participants. These costs are fully reimbursed by participant attendance fees (fees are included in Interest Income and Other Revenue line).	0.1
• *Education Reimbursement* – Reimbursement for employment related degree programs approved by the Human Resources department and other job-related certification exams approved by the employees' manager.	0.2
• *Other* – Includes miscellaneous travel reimbursement and employee service recognition.	0.7
Total Meetings & Related Expenses and Education & Training	**$ 3.1M**

APPENDIX 6: INTEREST RATE RISK

Interest Rate Risk

- Fluctuating interest rates can have an impact on the costs of the ISO in several ways. Specifically, the ISO earns interest on the settlement funds it collects from market participants, pays a floating interest rate on its tax-exempt bonds, and uses assumptions on interest rates to establish liabilities and costs for its pension and post-retirement benefit plans
  - ISO-NE earns interest on the settlement account float
    - Interest income rates are also dependent on market conditions with rate fluctuations impacting the effectiveness of the settlement float hedge; during the majority of 2020-2021, the interest income rates have exceeded floating debt rates; since 2022 we have seen multiple rate increases with the rise is tax exempt debt outpacing interest income rates. As of June 30, 2024, the tax-exempt debt rate is 3.9% and settlement float rate is 2.75%
      - These costs could exceed what's predicted on Slide 91
    - Unlike the interest rate that is currently lower that the tax-exempt debt rate, the average float in the settlement account is higher than the outstanding principal of the tax-exempt debt therefore has been an effective hedge against interest expense rates.
  - ISO-NE pays a floating interest rate on its tax-exempt bonds
  - ISO-NE utilizes interest rate assumptions in establishing liabilities and related costs for its postretirement benefit plans (See Slide 117)

APPENDIX 7: CAPITAL EXPENDITURES BUDGET DETAIL

Capital Budget – 2025 Capital Projects Schedule

($000's)	Project-To-Date	Current Year (2024) Cost to Complete [1]	2025 Cost to Complete	Future Year Cost to Complete	Total Project Costs	Estimated Complete Date
Capital Projects - Approved Charters						
. nGEM Real-Time MCE Implementation	$ 5,916.6	$ 2,748.3	$ 4,043.6	$ 2,043.7	$ 14,752.2	06/26
. nGEM Software Development Part III	1,288.8	240.6	2,937.5	-	4,466.8	04/25
. Managing Transmission Line Ratings [3]	3,654.0	2,324.6	1,722.6	-	7,701.2	11/25
. Day-ahead Ancillary Services Improvements	6,560.7	984.0	1,526.8	-	9,071.5	03/25
. CAMS Application Software Technology Upgrade	350.8	337.2	667.9	-	1,355.9	06/25
. Network Modeling Tool Enhancements	359.3	397.3	523.4	-	1,280.0	07/25
. New England Clean Energy Connect	35.4	139.8	316.9	-	492.1	12/25
. Automatic Ring Down Circuit Continuity Modernization and Reliability Enhancements	489.3	130.9	277.0	-	897.2	08/25
. CIP Electronic Security Perimeter Redesign Phase II	4,395.4	311.7	270.2	-	4,977.3	06/25
. Tie Line Telemetry and PCEC Upgrade	53.7	176.4	88.1	-	318.2	06/25
. EMS Short-term Load Forecast Replacement	1,007.3	393.2	38.5	-	1,439.0	02/25
. Microsoft 365 Service Adoption	276.6	429.4	7.7	-	713.7	11/24
Sub Total Projects with Approved Charters	**24,387.8**	**8,613.3**	**12,420.2**	**2,043.7**	**47,465.0**	
Planning/Conceptual Design [2]						
. FERC Order 841	89.2	851.3	2,000.0	-	2,940.5	10/25
. Space Utilization Project Phase I	475.1	476.9	2,000.0	-	2,952.0	08/25
. Enterprise Core Network Refresh	-	-	2,000.0	-	2,000.0	12/25
. Enterprise Resource Planning System Replacement	1,598.9	574.2	1,900.0	-	4,073.1	12/25
. EMP 3.5 Upgrade	-	-	1,500.0	4,000.0	5,500.0	12/26
. Windows Server Replacement Phase II	151.6	80.8	1,500.0	-	1,732.4	12/25
. Integrated Market Simulator Enhancement	-	-	1,500.0	-	1,500.0	12/25
. FERC Order 2222	-	-	1,000.0	5,000.0	6,000.0	11/26
. nGEM Software Development Part IV	-	-	1,000.0	1,000.0	2,000.0	06/26
. MW Dependent Fuel Price Adjustment	24.6	75.4	1,000.0	-	1,100.0	11/25
. 2025 Issue Resolution Project	-	-	750.0	-	750.0	09/25
. Tie Line Telemetry and PCEC Upgrades Phase II	-	-	500.0	-	500.0	07/25
. Storage as Transmission Only Asset	-	-	400.0	1,000.0	1,400.0	03/27
. Circuit Inventory Management Platform	13.7	186.3	400.0	-	600.0	10/25
. Replace Employee & Pager Application	49.0	1.0	349.0	-	399.0	10/25
. Adoption of NERC CIP Compliance of Synchrophasor Systems	38.5	11.5	300.0	600.0	950.0	10/26
. Solar Do Not Exceed Dispatch Phase III	-	-	270.0	-	270.0	11/25
. Long-term FTRs [4]	907.5	-	-	-	907.5	TBD
. Other Emerging Work	-	-	5,710.8	-	5,710.8	
Sub Total Conceptual Design	3,348.1	2,257.5	24,079.8	11,600.0	41,285.4	
. Non-Project Capital Expenditures	2,183.0	2,427.0	5,000.0	-	9,610.0	
. Capitalized Interest & Loan Fees	645.7	854.3	1,000.0	-	2,500.0	
Total Capital Expenditures (Including Capitalized Interest)	**$ 30,564.5**	**$ 14,152.1**	**$ 42,500.0**	**$ 13,643.7**	**$ 100,860.4**	

[1] The amounts under the "Current Year (2024) Cost to Complete" list only includes those projects with budgeted costs in 2025 and beyond.
[2] The 2025 Budget for Projects in Planning and Conceptual Design is not final. Once the project scope and timeline have been determined the budget will be finalized.
[3] The Managing Transmission Line Ratings project was previously known as the FERC Order 881 Compliance project.
[4] The Long-term FTRs project has been indefinitely deferred pending the development of appropriate credit requirements.

Capital Budget

2025 Expenditures/Major Projects in Development

nGEM Real-Time Market Clearing Engine Implementation $4.0M

ISO-NE's Market Management System (MMS) is based on GE Grid Solution's suite of market applications known as the Next Generation Markets (nGEM) program. GE is redeveloping the Market Clearing Engine (MCE), a central component of the MMS.

Pursuant to a separate capital project, the Day-Ahead MCE has been developed and is in production. The nGEM Real-Time Market Clearing Engine (RT MCE) project will build on the Day-Ahead MCE to develop and deploy the Real-Time MCE, including ISO-NE customizations.

During the first phase of the nGEM RT MCE project, two of the legacy RT MCE study modes (the Real-Time Unit Commitment (RTUC) and Coordinated Transaction Scheduling Pricing Engine (CTSPE) functions) will be replaced and the transition from EMS to MMS interfaces has started. The nGEM RT MCE project will provide performance improvements by enabling more intensive market clearing formulations; eliminate reliance on .CSV flat files for communication of data between the MCE and other parts of the MMS; and enhance installation, patching, and upgrades of MCE's in ISO infrastructure.

The target completion date for this project is June 2026.

Capital Budget

2025 Expenditures/Major Projects in Development

nGEM Software Development Part III & Part IV $3.9M

ISO-NE is co-funding the core product development for GE Grid Solutions' nGEM software development. The nGEM Software Development project will enhance data transfer technology; Day-Ahead and Real-Time market clearing engines; and bidding micro services. It will also include various software upgrades.

Part I delivery, completed in October 2020, included enhanced data transfer technology and the elimination of the Habitat platform. Part II, completed in June 2023, included Day-Ahead market clearing engine enhancements, bidding micro services, and Real-Time market clearing engine replacements.

Part III will implement advanced storage support in the nGEM Market Clearing Engine (MCE) and Market CIMNet Simultaneous Feasibility Test software; enhance the nGEM MCE to further support real-time study modes and other components; and replace the Oracle based workflow controller with software designed as part of the Part II phase of the project. The targeted completion date for Part III is April 2025, with budgeted 2025 funding of $2.9M.

Part IV is still in the design stage and will build upon efforts made in the first three nGEM phases. The targeted completion date for Part IV is June 2026, with budgeted 2025 funding of $1.0M.

Capital Budget

2025 Expenditures/Major Projects in Development

Managing Transmission Line Ratings $1.7M

In Order No. 881, FERC adopted reforms that impose certain obligations and compliance requirements on transmission providers and public utility transmission owners with respect to transmission line ratings in order to ensure wholesale rates more accurately reflect the cost of the wholesale service being provided.[1]

ISO-NE will implement various Order 881 requirements as part of the Manage Transmission Line Ratings project, including implementation of a new GE product for submission of line ratings and other system improvements to the Real-Time and Day-Ahead energy markets and the network model application which provides authorized users an entry system with real-time access to one-line diagrams.

As part of this project, GE will provide four deliverables: a Limit Exchange Portal (LEP), which serves as an exchange portal to allow submission of new ratings and query of current/resolved ratings; an enhanced EMS to address Order 881 compliance requirements; network modeling customizations, including modifications to various forms and customizations; and customizations to support WebFG modeling, which is the software used for modeling one-line diagrams.

The targeted completion date for this project is November 2025.

[1] See Managing Transmission Line Ratings, Order 881, 177 FERC ¶ 61,179 (2021), P. 29.

Capital Budget

2025 Expenditures/Major Projects in Development

Day-Ahead Ancillary Services Improvements $1.5M

The Day-Ahead Ancillary Services Improvements project will implement the market design for procuring and transparently pricing the ancillary service capabilities needed for a reliable, next-day operating plan with an evolving generation fleet.

As part of the design, a new Day-Ahead ancillary service will be introduced to cover the “gap” when the Day-Ahead Energy Market’s physical energy supply awards are below the ISO’s forecast Real-Time load. A second component is to procure Day-Ahead flexible response services to ensure the system is prepared to recover from sudden source-loss contingencies and can respond quickly to fluctuations in net load during the operating day.

The Day-Ahead Ancillary Services Improvements project will develop and implement complex software changes to numerous ISO-NE systems to establish this new market functionality. The changes and integration efforts will ensure proper and timely data flow among key internal systems, including the Market Management System, Market Information System, and Financial Assurance Management system. To ensure quality outcomes, comprehensive testing will be conducted and training programs will be developed to educate Market Participants on the new Day-Ahead ancillary market.

The targeted completion date for this project is March 2025.

Capital Budget

2025 Expenditures/Major Projects in Development

CAMS Application Software Technology Upgrade $0.7M

The Customer Asset Management Systems (CAMS) is the primary system for ISO's management of customer, asset, relationship, and person-entitlement records. It is integrated with several other applications in order to collectively handle essential functions such as the Customer Registration, Asset Registration, Asset Auditing, Market Monitoring, and Customer Personally Identifiable Information (PII) Management application. The current architecture, relying on on-premise servers, poses challenges in data integrity, vulnerability management, patching, testing, and monitoring.

This project will migrate CAMS and associated applications to ISO-NE's Amazon Web Services (AWS) cloud environment, establishing a foundation for future market applications and reducing costs associated with maintaining on-premise hardware.

The targeted completion date for this project is June 2025.

Capital Budget

2025 Expenditures/Major Projects in Development

Network Modeling Tool Enhancements $0.5M

ISO-NE currently uses an energy management system (EMS) WebFG modeling tool to update and maintain the network model in use in the Control Room and in study applications by transmission outage coordinators. This tool is 25 years old and has tabular displays, antiquated command line entry interfaces, and limitations that force repeated updates for duplicative information across databases.

The Network Modeling Tool Enhancements project will adopt a new modeling platform, the GE Eterra Source platform, which is used by many other independent system operators and utilities. This new platform has capabilities that simplify topology checking, reducing the likelihood of modeling errors. The new tool also allows for bulk data uploads, easier engineering change reviews, and is less reliant on other internal resources for validations.

The development of a new EMS modeling tool will require deployment of servers, cycle testing of the new platform, configuration, development of user templates, and user training.

The targeted completion date for this project is July 2025.

Capital Budget

2025 Expenditures/Major Projects in Development

New England Clean Energy Connect $0.3M

The New England Clean Energy Connect (NECEC) project is focused on integrating a new transmission line between Hydro Quebec and Maine, which is slated to participate in the New England Markets by January 2026. This transmission line will play a key role in supporting the region's key access to clean energy and achieving broader environmental goals.

As part of this project, the ISO will undertake a thorough review and modification of relevant processes and systems. This includes making necessary adjustments to tariffs, legal frameworks, and operational procedures to ensure the seamless integration of NECEC into the existing electrical grid and market operations.

The ISO will update various applications and complete all necessary software and operational adjustments in time for test power delivery in late 2025. Additionally, new inter-operating agreements and coordination agreements will be developed and filed with FERC, along with necessary updates to the ISO's Tariff and several operational manuals. Further revisions to numerous Operating Procedures, Standard Operating Procedures (SOPs), and Market Participant Operating Procedures (MPOP) will be required to reflect NECEC's inclusion.

The targeted completion date for this project is December 2025.

Capital Budget

2025 Expenditures/Major Projects in Development

Automatic Ring Down Circuit Continuity Modernization and Reliability Enhancements $0.3M

The Automatic Ring Down Circuit Continuity Modernization and Reliability Enhancements project addresses the discontinuation of traditional analog Automatic Reclosing Device (ARD) circuits and the reliance on T-Mobile's Long-Term Evolution (LTE) service for ISO-NE's Energy Dispatch (ED) network. The project will involve migrating ARD circuits to the ED network and transitioning to AT&T's FirstNet, a protected LTE network for first responders. ISO-NE will collaborate with external engineering resources for this migration and upgrade.

The targeted completion date for this project is August 2025.

Capital Budget

2025 Expenditures/Major Projects in Development

CIP Electronic Security Perimeter Redesign Phase II $0.3M

The CIP Electronic Security Perimeter Redesign project is a multi-phase project that will redesign ISO-NE's electronic security perimeter (ESP) networks to enhance ISO-NE's overall network security posture to align with industry best practices regarding resiliency, recovery, and change management. This project will also facilitate compliance with North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) standards. Phase I completed in July of 2021, involved the reconfiguration of both ISO-NE facility data centers, the isolation and protection of management control functions, changes to network designs and firewalls to reduce complexity, and installation of conduit encryption for all inter-physical security perimeter connections.

The second phase will improve ESP network CIP compliance and will enhance ISO-NE's overall network security posture. Phase II efforts will consolidate ISO-NE's production and integration networks into one ESP, with fewer electronic access points; modernize ISO-NE's firewall platform; implement a modern access control mechanism for CIP networks, replacing a legacy terminal-server based system; and standardize ISO-NE's IP address scheme to enable easier network management. This project is also foundational for future CIP compliance projects.

The targeted completion date for this project is June 2025.

Capital Budget

2025 Expenditures/Major Projects in Development

Tie Line Telemetry and PCEC Upgrades Phases I & II $0.6M

ISO-NE's current Pool Control Error Calculator (PCEC) is a crucial tool for control room operators to manage area control errors. However, it relies on outdated analog telemetry for tie-lines, which is now at the end of its manufacturer support. Additionally, the servers supporting the PCEC system will no longer receive extended support coverage or security patches after June 2024. Upgrading the tie-line telemetry equipment will provide greater communication flexibility, consolidate equipment to remove failure points, and improve the overall resilience of the PCEC system.

Phase I is focused on replacing the PCEC and its components, with targeted completion scheduled for June 2025, with budgeted 2025 funding of $0.1M.

Phase II is still in the design phase and will focus on updating the tie-line telemetry and frequency metering equipment. The targeted completion date for Phase II is July 2025, with budgeted 2025 funding of $0.5M.

Capital Budget

2025 Expenditures/Major Projects in Development

EMS Short-term Load Forecast Replacement $0.1M

The Energy Management System's short term load forecast (STLF) is a critical input to Real-Time unit commitment and unit dispatch software. The existing STLF software is unable to address the emergence of behind-the-meter solar to account for load patterns of weather and clouds, requiring significant manual intervention by control room operators in order to minimize market and reliability impacts. This issue has been growing in severity over the past several years and a variety of small-scale initiatives have been completed in order to allow system operators to manually adjust the STLF to account for behind-the-meter solar activity during the operating day. Because of the significant manual adjustments and rapid growth of behind-the-meter solar, replacement of the STLF engine is required for efficiency and accuracy.

The development of a new forecasting system to replace the current STLF will improve the price formation for Coordinated Transaction Scheduling, provide a more accurate input for Real-Time unit commitment and dispatch software; and reduce the time Control Room operators spend monitoring and manually intervening in the STLF results, allowing operators to focus more on system conditions and reliability. This project will also develop and deliver a new forecasting system with a dynamic modeling process that will create a real-time load data feed and incorporate real-time behind-the-meter photovoltaic data for use in forecasting; develop new forecasting models; establish the necessary development, integration, and production environments for the load forecasting platform; train ISO personnel regarding the new system; and update the relevant internal procedures and process documentation.

The targeted completion date for this project is February 2025.

Capital Budget

2025 Expenditures/Major Projects in Development

Microsoft 365 Service Adoption $0.1M

The capabilities and resiliency of ISO's on-premise enterprise software (e.g., directories, file shares, and mail servers) can be improved and consolidated using the cloud-based Microsoft 365 Services. Adoption of Microsoft 365 Services for certain enterprise software will significantly increase ISO's business continuity posture and will allow employees to work more productively with natively built-in tools and features.

The successful migration to Microsoft 365 will improve employee collaboration, streamline information technology operations with new management tools and automation, improve protection of end users and information with platform-wide security solutions, and reduce overhead associated with maintaining physical information technology infrastructure.

Future Microsoft 365 Service Adoption project efforts are expected to be completed in a future phase(s). While this initial phase will focus on transitioning to cloud-based services, the second phase will build on these efforts by enhancing system integrations, introducing additional cybersecurity tools, supporting a wider adoption of Microsoft 365 applications, as well as the integration of additional management tools and automation solutions.

The targeted completion date for this project is November 2024.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

FERC Order 841 $2.0M

The FERC 841 project will modify ISO-NE's electric storage resources participation model to account for State of Charge and duration characteristics consistent with the final FERC rule. The project will allow the ISO to introduce four new bidding parameters in the Day-Ahead Energy Market: (1) Initial State of Charge, (2) Maximum State of Charge, (3) Minimum State of Charge, (4) Round-Trip Efficiency; and (5) Derived State of Charge parameter.

The targeted completion date for this project is October 2025.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

Space Utilization Project Phase I $2.0M

The Space Utilization project will redesign and update ISO-NE's Holyoke (MCC) and Windsor (BCC) campuses, to accommodate the expected employee growth as the region transitions to clean energy. The first phase of this project will include modest changes to the Windsor campus to accommodate a temporary relocation of 75-100 employees and reprograming of the Holyoke campus. The changes at the Windsor campus include upgrades to add audio visual capabilities in conference rooms, upgrades to wireless technology, the replacement of the current guard building, and updates to the kitchen facilities. Changes at the Holyoke campus will include minor upgrades to facilitate changes in floor plans to accommodate employee growth.

Phase I of this project is targeted to be complete by August 2025.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

Enterprise Core Network Refresh $2.0M

ISO-NE's core network infrastructure requires an upgrade as it is over a decade old with hardware and software nearing the end of support. This project will involve researching and implementing the latest network and security technologies. The upgrade will help ISO-NE adopt zero-trust security principles and improve efficiency, reliability, security, and cost-effectiveness for its key technology infrastructure.

The targeted completion date for this project is December 2025.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

Enterprise Resource Planning System Replacement $1.9M

ISO-NE's current financial Enterprise Resource Planning (ERP) system reaches end-of-life in April 2026 and will need to be replaced. ISO-NE's ERP system provides the core framework for recording and reporting financial transactions and is a key component of settling the wholesale electricity markets, securing the necessary funding for ISO-NE operations, and maintaining strict compliance with reporting and filing requirements (including FERC reporting requirements).

ISO-NE has selected a new cloud-based software as a service (Saas) solution as our future ERP system that will modernize our ERP capabilities by providing enhanced workflows, integrated contract management, a comprehensive financial forecasting system, and robust enterprise reporting. Use of the new software will also reduce risks and dependencies on third-party software.

The targeted completion date for this project is December 2025.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

EMP 3.5 Upgrade $1.5M

ISO-NE's Energy Management System (EMS) relies on GE's suite of Energy Management Platform (EMP) applications. Customization to GE's EMP software are necessary in order to meet the business requirements of ISO-NE's System Operations and Market Operation groups. GE released a new version of its EMP application (EMP 3.5) in Q1 2025 and ISO-NE must upgrade to GE's latest platform to continue receiving support. The upgrade will involve significant effort to port ISO-NE's customized software to the new EMP platform.

The targeted completion date for this project is December 2026.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

Windows Server Replacement Phase II $1.5M

A team of ISO IT personnel are in charge of providing consistent, standard, and modern deployments of the Microsoft (MS) Windows Server Operating System to meet ISO-NE's business objectives. Phase I of the project, known as the Windows Server 2019R2 Deployment project, was completed in December 2023, and laid the groundwork for deploying Windows Server 2019.

Phase II of the project will enhance our deployment process to include the modern and supported Windows Server 2019 operating system. By upgrading to Windows Server 2019, we extend our support lifecycle to January 2029. Additionally, the new build process will establish a more consistent, detailed, and secure configuration that complies with the Center for Internet Security (CIS) standards. This will ensure a higher level of security and reliability for our IT infrastructure.

The targeted completion date for this project is December 2025.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

Integrated Market Simulator Enhancement $1.5M

The Integrated Market Simulator Enhancement project will enhance the functionality of the Integrated Market Simulator (IMS) based on Market Development's user experience. The enhanced IMS will introduce new features to better simulate real market conditions. These improvements will support business users by providing more accurate and comprehensive tools for their purposes and studies, and deliver significant advancements in market simulation capabilities.

The targeted completion date for this project is December 2025.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

FERC Order 2222 $1.0M

FERC's Order 2222 requires that independent system operators and regional transmission organizations remove barriers to the participation of distributed energy resource aggregations (DERAs) in wholesale electricity markets. In accordance with Order 2222, ISO-NE proposes to expand its current energy market models and add two new energy market participation models for DERAs: Settlement Only Distributed Energy Aggregation, and Demand Response Distributed Resource Aggregation. Additionally, the introduction of a new resource type, Distributed Energy Capacity Resource, will allow DERAs to participate in the Forward Capacity Market.

Compliance with Order 2222 will span two projects. The first project, Forward Capacity Market Order 2222, which was completed in February 2024, implemented the necessary software changes to support the qualification and participation of Distributed Energy Capacity Resources in the Forward Capacity Market. The FERC Order 2222 project will include the software changes to allow for the integration of DERAs in the wholesale markets and operations systems and any remaining compliance obligations of the order.

The targeted completion date for this project is November 2026.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

MW Dependent Fuel Price Adjustment $1.0M

ISO-NE is proposing changes to the energy market mitigation rules that govern the fuel price adjustment (FPA) process. These changes, known as "MW-dependent FPAs," will allow resources to reflect up to two different fuel prices in their cost-based reference levels, which will improve the accuracy of energy market mitigation and enhance energy market efficiency.

The MW Dependent Fuel Price Adjustment project involves updating ISO-NE's energy market software to allow participants to submit an FPA with one or two fuel prices and to allow for participants to specify how the requested price(s) apply to their supply offer. The software enhancements will address issues raised in the May 5, 2023, FERC Show Cause Order.

The targeted completion date for this project is November 2025.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

2025 Issue Resolution Project $0.8M

ISO-NE uses an Application Modification Request (AMR) approach (previously known as CAPA) to identify and track needed enhancements to existing systems and processes to more efficiently administer the market rules and procedures.

The 2025 Issue Resolution Project will focus on resolving AMRs that enhance various software systems. Software changes can span a wide range of functionality including user interface improvements, internal and external reporting modifications, and other market related improvements.

The targeted completion date for this project is September 2025.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

Storage as Transmission Only Asset $0.4M

In October 2023, FERC approved a proposal from ISO-NE, which enables electric storage facilities to be planned and operated as transmission only-assets to address system needs identified in the regional system planning process. The rules allow transmission companies to own and maintain energy storage assets for supporting the transmission system. These assets are called Storage as Transmission Only Assets (SATOAs).

SATOAs are different from energy storage assets that participate in the ISO-NE's wholesale markets and generate revenue in that they serve a transmission function only. Unlike energy storage assets, SATOAs are selected as transmission solutions through the regional system planning process administered by ISO-NE, and are subject to ISO-NE's operational authority. They do not participate in the wholesale markets other than for limited purposes specified in the rules.

Like other regional transmission facilities, transmission companies will own and maintain SATOAs. However, ISO-NE systems operators will manage the actual operation of these assets. The main purpose of SATOAs is to ensure the reliable transmission of electricity from power plants to consumers. Because they are designed solely for this purpose, SATOAs are not expected to influence wholesale market prices. This project will integrate the operation of SATOAs into ISO-NE's operation applications.

The targeted completion date for this project is March 2027.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

Circuit Inventory Management Platform $0.4M

The ISO-NE IT Communications Projects team (ITComms) requires a centralized platform for Communications and Information Management (CIM) that meets the everyday needs of the ITComms team and facilitates the sharing of telecom data with other departments within the organization.

The goal of the Circuit Inventory Management Platform project is to acquire and implement a centralized platform, ensuring it is tailored for optimal use by the ITComms team and capable of effectively integrating and distributing telecom data across the organization. Completion of this project will allow for enhanced collaboration, streamline processes, and improve overall efficiency in managing communications and information.

The targeted completion date of this project is October 2025.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

Replace Employee & Pager Application $0.3M

The access rights and employee request applications are essential for managing identity and access within the organization. These applications allow workforce members to model, request, approve, and implement access to various information technology assets, such as servers, systems, shared drives, and badged physical access. To adhere to industry best practices and address several recommendations from ISO-NE staff, these systems needed new functionality.

Phase I of the project, known as Identity and Access Management Phase I, involved purchasing and implementing the necessary hardware and software to update the current access rights process.

Phase II, known as Identity and Access Management Phase II, focused on integrating the new hardware and software with ISO-NE systems. This phase also implemented new authorization roles and added features to protect the system from unauthorized access.

The Replace Employee & Pager Application project is the third phase and will replace the current employee and pager applications, develop one or more new applications to enhance system capabilities, and identify potential automation efficiencies.

The targeted completion date for this project is October 2025.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

Adoption of NERC CIP Compliance of Synchrophasor Systems $0.3M

Phasor Measurement Units (PMUs) are essential for monitoring real-time grid dynamics. This is increasingly important as the electrical grid faces more uncertainties, operates closer to stability limits, and integrates more inverter-based resources at unprecedented levels. Although the ISO has made significant progress in adopting Synchrophasor technology in both planning and operations, the organization has not fully utilized its potential in real-time operations due to Critical Infrastructure Protection (CIP) requirements.

The Adoption of NERC CIP Compliance of Synchrophasor Systems project aims to enhance the infrastructure related to Synchrophasor applications and ensure they adhere to NERC CIP compliance protocols. Additionally, it will help us utilize the full potential of Synchrophasor technology in real-time operations while maintaining compliance with the necessary security standards.

The targeted completion date for this project is October 2026.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

Solar Do Not Exceed Dispatch Phase III $0.3M

The amount of solar energy generation in New England is growing and expected to continue increasing. Integrating these solar resources requires developing rules, processes, forecasts, and tools to incorporate them into the Do-Not-Exceed (DNE) dispatch processes.

In Phase I, GE enhanced ISO-NE's Renewable Plan (Rplan) software. This allows Market Participants to submit medium and long-term data on future power generation availability. The upgrades support the inclusion of solar power forecasts, alongside wind forecasts from multiple vendors.

In Phase II, remote terminal units (RTU) were installed and tested at solar units to support DNE dispatch signals. Additionally, several applications, including PWRFLOW and RTGEN were also updated to support the new DNE functionality.

To accommodate the anticipated growth of solar resources, further development is needed. This involves aligning ISO-NE internal applications with changes from the initial project phases. In Phase III, updates are planned for TARA Case Builder, STOCM, Jasper Reports, and the Operator Training Simulator (TTSE).

The targeted completion date for this project is November 2025.

Capital Budget

2025 Expenditures/Major Projects in Conceptual Design

Non-Project Capital Expenditures $5.0M

Non-Project capital expenditures fund external and internal capitalized labor necessary to program System Improvement Requests ($2.5M); non-project related hardware purchases ($2.0M); and Building Improvements, Machinery & Equipment, and Furniture & Fixtures ($0.5M).

Other Emerging Work $5.7M

This category is primarily intended to address emerging work requests during 2025 that result from operational needs, compliance obligations, or stakeholder feedback.

Refer to the following slide for further detail on Non-Project Capital Expenditures.

Capital Budget

2025 Non-Project Capital

The budget forecast for each of the non-project capital categories is informed by historical level expenditures and an assessment of planned investments for the upcoming year. The budgeted expenses for Non-Project Capital Expenditures, like the ISO-NE operating budget categories, are zero-based each year. The 2025 amounts and description of funding included for each category is provided as follows:

- **$2.5 million – System Improvement Requests**: Annually, ISO-NE's Information Services ("IS") department addresses several hundred small requests to improve existing software infrastructure. The IS department deploys a combination of ISO-NE internal employees, consultants, and vendors to address the list of open system improvements. Each year, the forecasted budget is reviewed to ensure the resources dedicated to this effort are not in conflict with slated major projects.
- **$2.0 million – Non-Project Hardware**: ISO-NE has a critical investment in servers, storage, networking, and monitoring systems in our data center environment that support ISO-NE's critical roles of Grid Operation, Market Administration, and Power System Planning; as well as general corporate needs. ISO-NE is required to ensure that existing deployed infrastructure is current with vendor established end-of-support and end-of-life timelines. These continual refresh activities are essential to ensure ISO-NE data center services remain supported with security and maintenance contracts, as well as meet IT reliability service levels. In 2025, ISO-NE will continue to replace and upgrade IT Infrastructure as required. Projects include: (1) to continue refreshing ISO-NE's virtualization server infrastructure to replace servers reaching end-of-life; (2) replace aging storage infrastructure supporting database and virtualization workloads; and (3) upgrades to the network security infrastructure that support remote access, including firewall replacements and security controls integration.
- **$0.5 million - Building Improvements, Machinery & Equipment, and Furniture & Fixtures**: Annually, ISO-NE's Building Services department invests in the upkeep and upgrading of ISO-NE's Holyoke and Windsor facilities. The 2025 budget funding includes replacement of the Holyoke North Building roof, converting an Information Technology work lab into a more functional workspace, upgrading the lighting fixtures at the Windsor Facility, and replacing the exit gate at the Windsor Facility.

Capital Budget

Resource Allocation for 2025 Projects with Approved Charters

The following projects included in the 2025 budget have approved charters with specific funding requirements established. For each project the breakdown of costs and full-time equivalent (FTE) positions is provided by year and between internal labor and outside consultants. Amounts include actual and future forecast/budget.

	2022 Actual				2023 Actual				2024 Actual & Remaining Forecast (1)				2025 Budget			
Capital Projects - Approved Charters	**Int Labor $**	**FTE Equiv**	**Consult $**	**FTE Equiv**	**Int Labor $**	**FTE Equiv**	**Consult $'s**	**FTE Equiv**	**Int Labor $**	**FTE Equiv**	**Consult $**	**FTE Equiv**	**Int Labor $**	**FTE Equiv**	**Consult $**	**FTE Equiv**
. nGEM Real-Time MCE Implementation (2)	$ 208,132	1.0	$ 655,554	2.4	$ 302,113	1.4	$1,731,311	6.4	$ 391,171	1.8	$3,250,666	12.0	$ 645,000	3.0	$ 3,398,642	12.6
. nGEM Software Development Part III	-	-	-	-	98,719	0.5	936,013	3.5	65,463	0.3	429,123	1.6	45,000	0.2	2,892,480	10.7
. Managing Transmission Line Ratings	-	-	-	-	38,830	0.2	109,050	0.4	615,225	2.8	3,916,719	14.5	380,037	1.7	1,303,273	4.8
. Day-ahead Ancillary Services Improvements	53,628	0.2	416,579	1.5	305,483	1.4	3,257,406	12.0	1,524,766	7.0	1,986,844	7.3	446,000	2.0	1,080,790	4.0
. CAMS Application Software Technology Upgrade	-	-	-	-	37,294	0.2	-	-	475,910	2.2	174,800	0.6	485,320	2.2	149,620	0.6
. Network Modeling Tool Enhancements	-	-	-	-	38,785	0.2	163,230	0.6	257,129	1.2	296,300	1.1	241,230	1.1	282,193	1.0
. Automatic Ring Down Circuit Continuity Modernization and Reliability Enhancements	-	-	-	-	18,574	0.1	15,743	0.1	101,328	0.5	71,818	0.3	106,895	0.5	170,329	0.6
. CIP Electronic Security Perimeter Redesign Phase II	6,092	0.0	-	-	52,387	0.2	1,183	0.0	205,789	0.9	247,395	0.9	150,000	0.7	120,200	0.4
. Tie Line Telemetry and PCEC Upgrade	-	-	-	-	20,050	0.1	-	-	50,883	0.2	58,000	0.2	48,136	0.2	40,000	0.1
. EMS Short-term Load Forecast Replacement	16,765	0.1	-	-	69,955	0.3	13,072	0.0	162,066	0.7	303,248	1.1	38,500	0.2	-	-
. Microsoft 365 Service Adoption	-	-	-	-	-	-	-	-	72,086	0.3	633,936	2.3	7,680	0.0	-	-

Assumptions for FTE Equiv = Int Labor Fully Burdened = $105/hr.; Consultants = $130/hr.

(1) 2024 includes actual results through August as well as the remaining forecast for the rest of the year. Actual amounts through August are: nGEM Real-Time MCE Implementation - $2,290.1K; nGEM Software Development Part III - $254.0K; Managing Transmission Line Ratings - $2,249.4K; Day-ahead Ancillary Services Improvements - $2,527.6K; CAMS Application Software Technology Upgrade $313.5K; Network Modeling Tool Enhancements of $156.1K; Automatic Ring Down Continuity Modernization and Reliability Enh of $53.9K; CIP Electronic Security Perimeter Redesign Phase II of $191.5K; Tie Line Telemetry and PCEC Upgrade $33.6K, EMS Short-term Load Forecast Replacement of $331.3K, and Microsoft 365 Service Adoption $276.7K

(2) The nGEM Real-Time MCE Implementation has $2,043.6K, of costs beyond 2025.

(3) The above amounts exclude hardware and/or software amounts of: nGEM Real-Time MCE Implementation of $2,126.0K; Managing Transmission Line Ratings of $1,338.1K; CAMS Application Software Technology Upgrade of $33.0K; Network Modeling Tool Enhancements of $1.1K; Automatic Ring Down Continuity Modernization and Reliability Enh of $412.5K, CIP Electronic Security Perimeter Redesign Phase II of $4,194.3K, Tie Line Telemetry and PCEC Upgrade of $101.1K, and EMS Short-term Load Forecast Replacement of $835.4K

APPENDIX 8: EMERGING WORK ALLOWANCE & PURCHASING POLICIES AND CONTROLS

Emerging Work Allowance

- ISO New England does not have “equity” or reserves to utilize but must fund unforeseen and newly defined work that arises after the budget is established
- The CEO Emerging Work Allowance (the Fund) is used to fund requests for required activities that were not specifically funded in the original budget and changes to initial cost estimates
- A risk is recorded on the Risks and Opportunities Report (R&O Report) when (i) unbudgeted new work is identified, or (ii) when staff becomes aware that budgeted work may exceed the original estimate; likewise, when potential savings on a budgeted item are anticipated, an opportunity is identified
- The R&O report contains information about the item and the probability of the occurrence of the item and is updated at least monthly

Emerging Work Allowance – Process for Deposits and Withdrawals

- During the quarterly updates to the forecasts, cost center managers review the current amounts forecasted to determine the continued accuracy of their forecasts for the subsequent six months
- Cost center managers will integrate into their updated forecasts highly probable risks or savings that may have been previously identified on the R&O report or may be newly defined
- An explanation is required by the cost center manager for why amounts are being deposited to the Fund (from savings identified) or why there is a need for a withdrawal from the Fund
- All information pertaining to potential deposits to the Fund or withdrawals from the Fund, stemming from the updated quarterly forecast, is compiled and the detail is reviewed by the Manager of Budgeting and Financial Reporting and the Controller and Director, Accounting for reasonableness and/or the need for additional explanation and approved by the CFO and CEO

Purchasing Policies and Controls

- The Company has established a Purchasing Policy with guidelines to follow when committing the funds of the ISO to any vendor, including the placing and handling of purchase orders, requests for proposals and quotes, contracts, and approval limits
- The Purchasing Department is responsible for all purchasing decisions related to materials, equipment, and services
- The Purchasing Department works to minimize costs of purchased goods and services where possible, while maximizing quality
- All purchases require a fully approved purchase order unless a specific exception is noted in the Purchasing Policy (e.g., utility bills and regulatory fees); regardless of whether a purchase is exempt from the purchase order requirement, a rigorous review of the validity and accuracy of the charges is performed
- The Purchasing Department is the only department authorized to purchase goods and/or services for the ISO and all contracts must be approved by the ISO legal department (with limited exceptions)
- The Purchasing Policy is available on the ISO's website

APPENDIX 9: 2025-2028 PRO-FORMA STATEMENTS

2025 - 2028 Pro-Forma Budgets

(Dollars in Millions)	2025	2026	2027	2028
Operating Budget [1]	$269.4	$289.5	$298.2	$307.1
Capital Project Budget	$42.5	$40.0	$40.0	$40.0
Total	**$311.9**	**$329.5**	**$338.2**	**$347.1**
Operating [1]	$269.4	$289.5	$298.2	$307.1
Depreciation [1]	$37.0	$42.1	$40.3	$39.8
True-Up	$4.8	($1.0)	($1.0)	($1.0)
Revenue Requirement	**$311.2**	**$330.6**	**$337.5**	**$345.9**
TWh Forecast [2]	136.5	138.4	140.6	143.5
$/KWh Rate	**$0.00228**	**$0.00239**	**$0.00240**	**$0.00241**

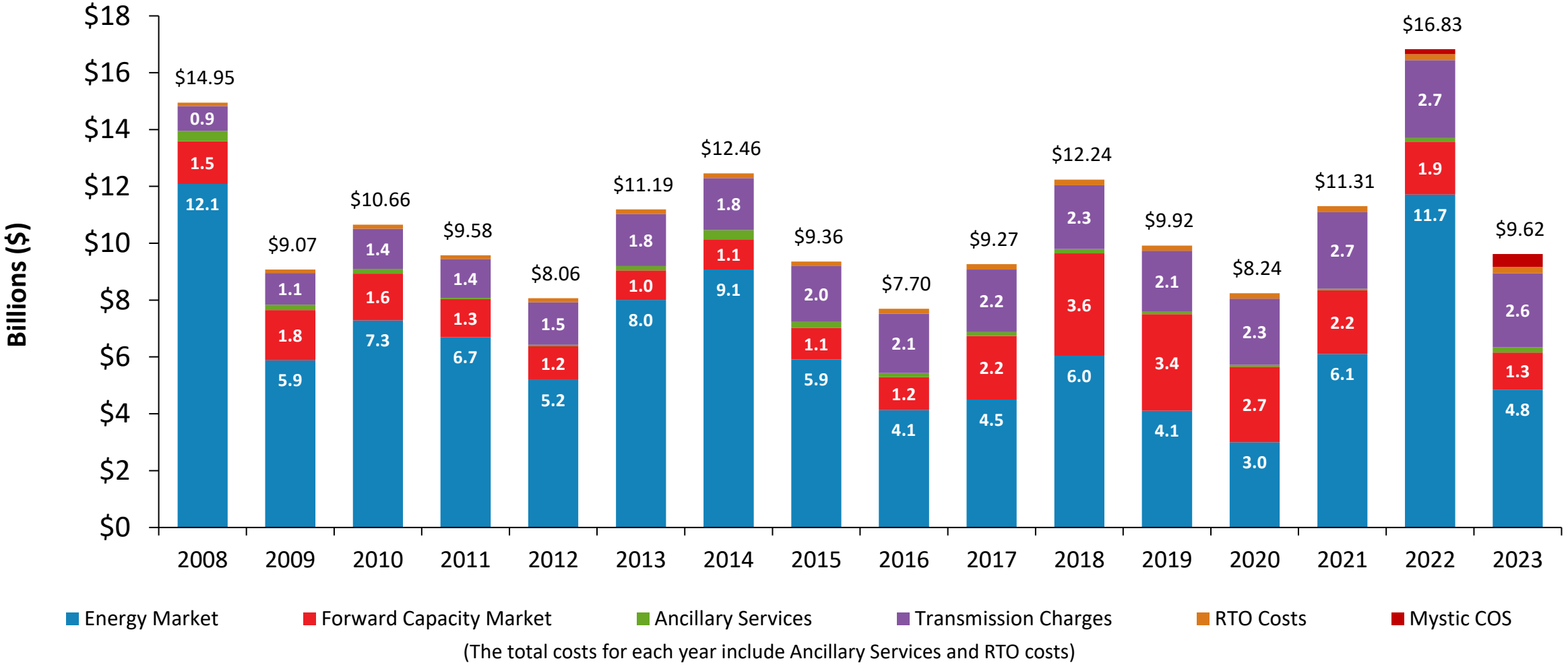
(1) 2026 – 2028 assumes an inflationary increase in Operating costs, however, there is no inflationary increase for interest expense and interest income, and the budgets do not contemplate new mandated activities, or the potential for uncertainties in implementation complexity for existing initiatives (e.g. the new System Planning activities and the Prompt/Seasonal capacity market).

(2) For 2025 – 2028, the May 2024 CELT Report was used.

APPENDIX 10: NEW ENGLAND WHOLESALE ELECTRICITY COSTS AND RETAIL ELECTRICITY RATES

New England Wholesale Electricity Costs*

Annual wholesale electricity costs have ranged from $7.7 billion to $16.8 billion



(The total costs for each year include Ancillary Services and RTO costs)

Source: ISO New England; ***2023 data is preliminary and subject to resettlement**

Note: Forward Capacity Market values shown are based on auctions held roughly three years prior to each calendar year.

New England Wholesale Electricity Costs[a]

	2018		2019		2020		2021		2022		2023*	
	$ Mil.	¢/kWh	$ Mil.	¢/kWh	$ Mil.	¢/kWh	$ Mil.	¢/kWh	$ Mil.	¢/kWh	$ Mil.	¢/kWh
Wholesale Market Costs												
Energy (LMPs)[b]	$6,041	4.7	$4,105	3.3	$2,996	2.4	$6,101	4.8	$11,712	9.0	$4,847	3.9
Ancillaries[c]	$147	0.1	$83	0.1	$62	0.1	$52	0.0	$124	0.1	$182	0.1
Capacity[d]	$3,606	2.8	$3,401	2.7	$2,662	2.2	$2,243	1.8	$1,864	1.4	$1,308	1.1
Subtotal	*$9,794*	*7.6*	*$7,589*	*6.0*	*$5,720*	*4.7*	*$8,404*	*6.6*	*$13,701*	*10.5*	*$6,338*	*5.1*
Transmission charges[e]	$2,250	1.7	$2,146	1.7	$2,331	1.9	$2,688	2.1	$2,739	2.1	$2,612	2.1
RTO costs[f]	$196	0.2	$184	0.1	$191	0.2	$216	0.2	$214	0.2	$214	0.2
				Mystic Cost of Service Agreement					$173	0.1	$460	0.4
Total	**$12,240**	**9.4**	**$9,918**	**7.9**	**$8,242**	**6.7**	**$11,308**	**8.9**	**$16,828**	**13.0**	**$9,624**	**7.7**

(a) Average annual costs are based on the 12 months beginning January 1 and ending December 31. Costs in millions = the dollar value of the costs to New England wholesale market load servers for ISO-administered services. Cents/kWh = the value derived by dividing the dollar value (indicated above) by the real-time load obligation. These values are presented for illustrative purposes only and do not reflect actual charge methodologies. ***The wholesale values for 2023 are preliminary and subject to resettlement.**

(b) Energy values are derived from wholesale market pricing and represent the results of the Day-Ahead Energy Market plus deviations from the Day-Ahead Energy Market reflected in the Real-Time Energy Market.

(c) Ancillaries include first- and second-contingency Net Commitment-Period Compensation (NCPC), forward reserves, real-time reserves, regulation service, and a reduction for the Marginal Loss Revenue Fund.

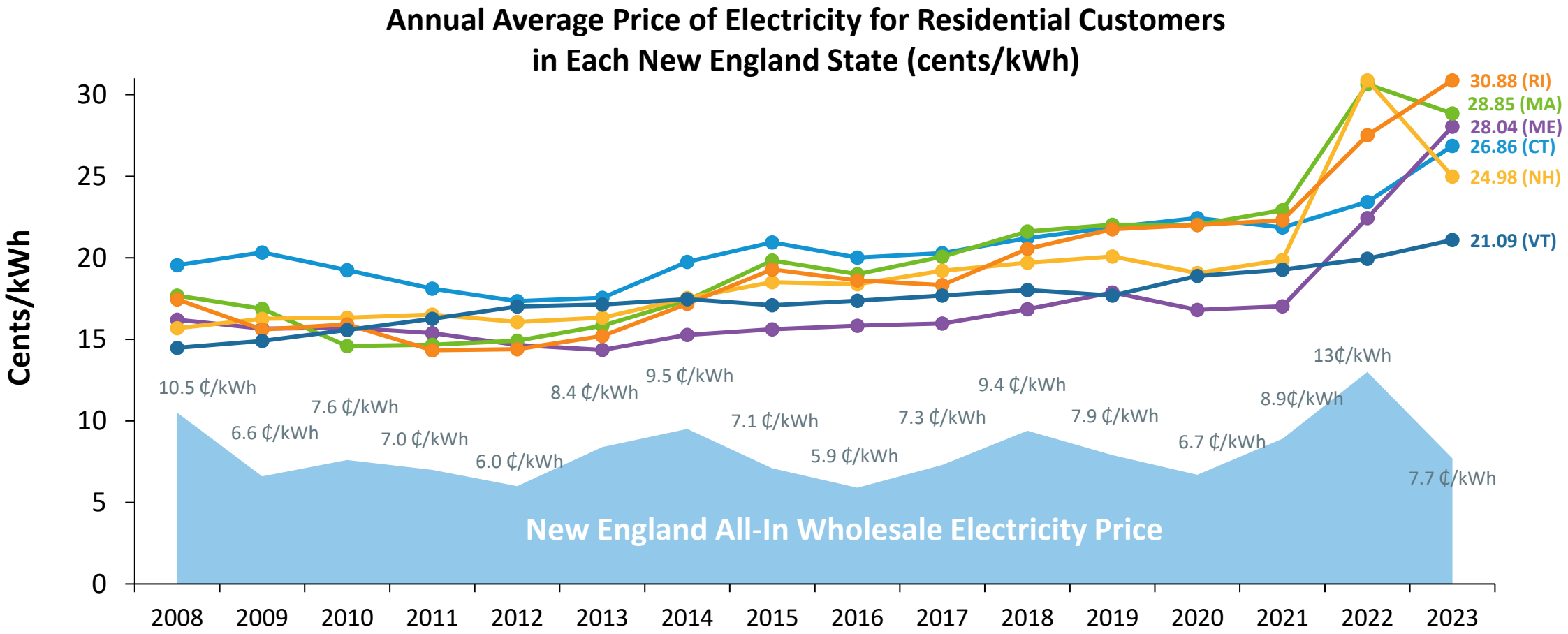
(d) Capacity charges are those associated with the Forward Capacity Market (FCM).

(e) Transmission charges reflect the collection of transmission owners' revenue requirements and tariff-based reliability services, including black-start capability, voltage support, and FCM reliability.

(f) RTO costs are the costs to run and operate ISO New England and are based on actual collections, as determined under Section IV of the *ISO New England Inc. Transmission, Markets, and Services Tariff*.

*2023 figures are preliminary

Retail Electricity Prices Follow Wholesale Prices, But Are Also Influenced by Individual State Policies



Source: U.S. Energy Information Administration, *Electric Power Monthly*, Table 5.6.B Average Price of Electricity to Ultimate Customers by End-Use Sector, by State (Through Dec. 2023); the New England all-in wholesale electricity price is derived by dividing total wholesale electricity costs by real-time load obligation (presented for illustrative purposes; does not reflect actual charge methodologies)

APPENDIX 11: ISO/RTO FINANCIAL COMPARISON

Financial Results Summary

ISO/RTO Financial Summary - 2023 Actual Results

Operating Expense and Capital Expenditures for Calendar Year 2023, and Outstanding Debt as of December 31, 2023 (1)

(Amounts in Millions)

	ISO-NE (2)	PJM	NYISO	CAISO	IESO (3)	MISO	SPP	ERCOT
Operating Expense - 2023	$ 235.6	$ 437.9	$ 231.6	$ 273.4	$ 280.4	$ 449.4	$ 254.9	$ 286.2
Less: Amortization & Depreciation	(30.0)	(37.7)	(17.7)	(28.7)	(24.1)	(30.4)	(16.8)	(34.7)
Regulatory Fees	(7.3)	(81.3)	(17.6)	-	-	(67.4)	(31.3)	-
Grant Expenses	-	-	-	-	-	-	-	-
Net Operating Expense - 2023	$ 198.3	$ 318.9	$ 196.3	$ 244.7	$ 256.3	$ 351.6	$ 206.8	$ 251.5
Other Financial Data								
Capital Expenditures for 2023	$ 35.4	$ 43.2	$ 16.3	$ 20.9	$ 72.6	$ 34.6	$ 14.3	$ 32.4
Outstanding Debt as of 12/31/23	$ 86.6	$ 5.0	$ 73.9	$ 156.7	$ 203.0	$ 274.4	$ 130.7	$ 2,514.0
Actual full-time equivalent headcount as of 12/31/23	625.5	802.0	599.0	710.0	896.0	1059.0	744.0	890.0

(1) Applicable amounts were taken from each entity's 2023 audited financial statements.

(2) ISO-NE Amortization & Depreciation and Capital Expenditures are presented on a cash-flow basis

(3) Amounts are in Canadian dollars

APPENDIX 12: 2022 AND 2023 ACTUAL TO BUDGET VARIANCE ANALYSIS

ISO New England Actual-to-Budget Variance Analysis for 2022 and 2023

The following pages provide actual-to-budget variance analysis for 2022 and 2023. The information provided includes overall results, a table that breaks down salary into base salaries and wages, overtime wages, incentive or bonus payments, and each employee benefit program with an annual cost greater than $200,000. Professional fees and consultant costs are stated separately by department, and an explanation is provided for each variance in excess of $1,000,000.

Amounts in the tables below are in thousands.

2022 (Overall Results)

Description	2022 Actuals	2022 Original Budget	Variance Inc/(Dec)
Operating Expense			
Salaries and Overheads	$ 124,555.4	$ 124,146.5	408.9
Professional Fees & Consulting	17,056.1	16,963.9	92.2
Professional Fees & Consulting - Legal	2,776.6	2,872.0	(95.4)
Building Services	3,348.3	3,075.1	273.2
Rents & Leases	695.5	929.8	(234.3)
Network Operations	2,958.5	3,181.3	(222.9)
Computer Services	17,482.2	17,908.1	(425.9)
Data Services & Office Expenses	1,728.8	1,848.8	(120.0)
Insurance Expense	2,632.9	2,585.8	47.2
Board of Directors Expense	1,674.0	1,480.5	193.5
Meeting & Related Expenses	1,015.3	1,240.5	(225.2)
Education & Training	1,061.9	1,208.3	(146.4)
Taxes, Permits, Licenses & Fees	202.2	189.9	12.3
Total Operating Expense	**177,187.8**	**177,630.4**	**(442.6)**
Revenues, Other Income	**(1,267.1)**	**(492.6)**	**(774.5)**
Operating Expenses net of Revenue	**175,920.7**	**177,137.9**	**(1,217.2)**
CEO Emerging Work Allowance	-	2,000.0	(2,000.0)
Board Contingency	-	700.0	(700.0)
NPCC/NERC Dues & Expense	6,437.0	6,445.5	(8.5)
Interest Expense	2,248.7	2,774.0	(525.3)
Net Expense Before Depreciation	**184,606.4**	**189,057.4**	(4,451.0)
Depreciation Expense	25,047.3	25,953.3	(906.0)
Gain/Loss on Fixed Asset Disposal	(1.5)	60.0	(61.5)
Total Depreciation and Debt Services	**25,045.8**	**26,013.3**	**(967.5)**
Total Expense for ACT Recovery	**$ 209,652.2**	**$ 215,070.7**	**(5,418.5)**

2022 (Salaries & Burden)

Description	Actual 2022 Expense	Approved Budget 2022	Incr/(Dec)
Salaries and Wages - Base	$ 76,075.0	$ 78,194.8	$ (2,119.8)
Salaries and Wages - Overtime	3,325.6	2,666.7	658.9
Salaries and Wages - Incentive/Bonus	15,037.5	13,723.0	1,314.5
Employee Benefits - Pension	11,299.3	10,821.3	478.0
Employee Benefits - Post-Ret Benefits	328.0	554.0	(226.0)
Employee Benefits - Health Insurance	7,189.2	7,300.5	(111.3)
Employee Benefits - Dental Insurance	481.7	485.5	(3.8)
Employee Benefits - 401(K) Match	3,071.2	3,174.8	(103.6)
Salary Burden - Payroll Taxes	7,207.4	6,659.1	548.3
Other Benefit/Burden <$200K	540.5	566.8	(26.3)
Total Salaries & Burden Expense	**$ 124,555.4**	**$ 124,146.6**	**$ 408.8**

2022 (Professional Fees)

Department	2022 Actuals	2022 Original Budget	Variance Inc/(Dec)
System Operations & Market Admin.	$ 156.9	$ 158.0	$ (1.1)
System Planning	2,044.1	1,484.8	559.3
Market Monitoring	467.8	715.0	(247.2)
Information Technology	6,467.3	8,483.4	(2,016.2)
Market Development & Settlements	2,428.0	1,310.3	1,117.7
Human Resources	2,015.6	2,051.8	(36.2)
Finance Operations	438.2	435.5	2.7
Internal Audits	855.0	899.8	(44.8)
Corp Comm and Public Affairs	668.2	591.9	76.3
Advance Technology Solutions	1,375.8	205.7	1,170.1
All Other	139.2	627.7	(488.5)
Total	17,056.1	16,963.9	92.1
Legal Professional Fees	2,776.6	2,872.0	(95.4)
Total Professional Fees	**$ 19,832.7**	**$ 19,835.9**	**$ (3.3)**

2022 Actual vs. Budget variance explanations for items > $1,000,000

- Salaries and Overheads were $408,900 higher than the original budget. Significant increases included funding for higher incentive/bonus amounts for retention efforts of employees due to the labor market environment and higher turnover rate experienced in 2022 as well as increased overtime in some departments; these increases were partially offset by higher than forecasted vacancy and lower salary rates for new hires compared to previous incumbents.

- Professional Fees & Consulting were $3,300 lower than the original budget. The Information Technology segment was $2,016,200 lower primarily due to consultant vacancy as a result of a number of IT augmentation positions being vacant. Offsetting the decrease were increases of $1,170,100 in Advanced Technology Solutions for Resource Capacity Accreditation and Gas Constraint modeling work and $1,117,700 in Market Development & Settlements to undertake a review of the Inventoried Energy Program to evaluate the program's likely performance with changes in market conditions in addition to a Pathways Study to evaluate alternative policy approaches to decarbonizing the New England Grid.

- Because ISO-NE is a non-profit organization with no equity available there is $2,000,000 of funds (the "CEO Emerging Work Allowance") built into the budget to cover unknown or unforeseen costs that emerge during the year. Additional funding needs can be created as a result of refined estimates for work, new activities, or changes in accounting estimates. Similarly, to the extent that these changes result in an "under" expenditure, the CEO Emerging Work Allowance is increased. Requests for funds from the Emerging Work Allowance are reviewed by senior management, and require CFO and CEO approval prior to the spending authorization. No actual amounts are charged to this line item as it is only used for budget/forecast purposes.

2023 (Overall Results)

Description	2023 Actual	2023 Original Budget	Variance Inc/(Dec)
Operating Expense			
Salaries and Overheads	$ 137,317.5	$ 134,702.1	2,615.4
Professional Fees & Consulting	19,743.7	21,600.9	(1,857.2)
Professional Fees & Consulting - Legal	2,456.7	3,334.5	(877.8)
Building Services	3,339.2	3,122.5	216.7
Rents & Leases	719.3	897.6	(178.4)
Network Operations	3,138.4	3,269.9	(131.5)
Computer Services	20,469.2	20,397.8	71.5
Data Services & Office Expenses	1,628.0	2,015.1	(387.1)
Insurance Expense	2,927.0	3,140.2	(213.1)
Board of Directors Expense	1,542.9	1,516.5	26.4
Meeting & Related Expenses	989.9	1,272.4	(282.5)
Education & Training	1,032.1	1,326.9	(294.8)
Taxes, Permits, Licenses & Fees	235.3	193.9	41.4
Total Operating Expense	**195,539.4**	**196,790.3**	**(1,251.0)**
Revenues, Other Income	**(2,055.4)**	**(694.4)**	**(1,361.0)**
Operating Expenses net of Revenue	**193,484.0**	**196,096.0**	**(2,612.0)**
CEO Emerging Work Allowance	-	2,000.0	(2,000.0)
Board Contingency	-	700.0	(700.0)
NPCC/NERC Dues & Expense	7,277.3	7,296.4	(19.1)
Interest Expense	2,834.2	3,137.5	(303.3)
Net Expense Before Depreciation	**203,595.5**	**209,229.9**	(5,634.4)
Depreciation Expense	30,034.2	30,915.3	(881.1)
Gain/Loss on Fixed Asset Disposal	21.5	60.0	(38.5)
Total Depreciation and Debt Services	**30,055.7**	**30,975.3**	**(919.6)**
Total Expense for ACT Recovery	**$ 233,651.2**	**$ 240,205.2**	**(6,553.9)**

2023 (Salaries & Burden)

Description	Actual 2023 Expense	Approved Budget 2023	Incr/(Dec)
Salaries and Wages - Base	$ 85,725.0	$ 85,304.6	$ 420.4
Salaries and Wages - Overtime	3,210.5	2,662.6	547.9
Salaries and Wages - Incentive/Bonus	15,389.0	14,224.8	1,164.2
Employee Benefits - Pension	11,905.2	11,149.2	756.0
Employee Benefits - Post-Ret Benefits	739.2	927.8	(188.6)
Employee Benefits - Health Insurance	8,468.3	8,473.4	(5.1)
Employee Benefits - Dental Insurance	523.6	508.5	15.0
Employee Benefits - 401(K) Match	3,342.4	3,567.0	(224.6)
Salary Burden - Payroll Taxes	7,346.4	7,205.8	140.7
Other Benefit/Burden <$200K	667.9	678.4	(10.6)
Total Salaries & Burden Expense	**$ 137,317.5**	**$ 134,702.1**	**$ 2,615.3**

2023 (Professional Fees)

Department	2023 Actual	2023 Original Budget	Variance Inc/(Dec)
System Operations & Market Admin.	$ 732.2	$ 873.0	$ (140.8)
System Planning	2,530.4	2,120.6	409.8
Market Monitoring	276.1	730.0	(453.9)
Information Technology	7,238.3	8,944.1	(1,705.8)
Market Development & Settlements	2,062.3	2,047.5	14.8
Human Resources	2,354.2	2,093.7	260.5
Finance Operations	1,050.0	702.6	347.4
Internal Audits	1,056.1	1,032.3	23.8
Corp Comm and Public Affairs	726.9	717.2	9.7
Advance Technology Solutions	1,507.9	1,530.0	(22.1)
All Other	209.3	810.0	(600.7)
Total	19,743.7	21,600.9	(1,857.2)
Legal Professional Fees	2,456.7	3,334.5	(877.8)
Total Professional Fees	**$22,200.4**	**$24,935.4**	**$(2,735.0)**

2023 Actual vs. Budget variance explanations for items > $1,000,000

- Salaries and Overheads were $2,615,400 higher than the original budget. Significant increases included funding for higher incentive/bonus amounts for retention efforts of employees due to the labor market environment and higher turnover rate experienced in 2023 as well as increased overtime in some departments; these increases were partially offset by higher than forecasted vacancy and lower salary rates for new hires compared to previous incumbents.

- Professional Fees & Consulting were $2,735,000 lower than the original budget. The Information Technology Segment was $1,705,800 lower primarily due to Energy Management System and other Information Technology consultant support that was reallocated for capital development work (nGEM and Day-Ahead Ancillary Services Improvements projects), lower rates for two Information Technology positions, and higher than forecasted vacancy for consulting in Information Technology and Participant Relations.

- Because ISO-NE is a non-profit organization with no equity available there is $2,000,000 of funds (the "CEO Emerging Work Allowance") built into the budget to cover unknown or unforeseen costs that emerge during the year. Additional funding needs can be created as a result of refined estimates for work, new activities, or changes in accounting estimates. Similarly, to the extent that these changes result in an "under" expenditure, the CEO Emerging Work Allowance is increased. Requests for funds from the Emerging Work Allowance are reviewed by senior management, and require CFO and CEO approval prior to the spending authorization. No actual amounts are charged to this line item as it is only used for budget/forecast purposes.