# REGIONAL ELECTRICITY OUTLOOK

2007 ANNUAL REPORT



#### **ABOUT ISO NEW ENGLAND**

ISO New England is the independent, not-for-profit corporation responsible for providing day-to-day reliable operation of New England's bulk power generation and transmission system, overseeing and ensuring the fair administration of the region's wholesale electricity markets, and managing comprehensive regional bulk power system planning.

Its board of directors and 420 employees have no financial interest in any company doing business in the region's wholesale electricity marketplace. ISO New England serves a six-state region that includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.

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### Message from the Chairman

## COMPETITION IS KEY

In 1999, ISO New England opened wholesale electricity markets in New England and set the region on a path for wholesale competition to supply reliable and reasonably priced electricity to the region's 14 million residents.

Before markets, New England's electricity was produced and delivered by utilities that were guaranteed a rate of return by regulators and whose investments were backed financially by consumers. Today, the region has a suite of

competitive markets for energy, capacity, and ancillary services that have succeeded in attracting new investment in generation and transmission and in encouraging the development of demand-response and renewable-energy resources. In 2007, more than 340 buyers and sellers in the marketplace completed in excess of \$10 billion of wholesale electricity transactions—that's more than double the number of participants from the inaugural marketplace of 1999.

Almost a decade later, some question the value of markets because electricity prices have continued to rise. However, focus on price ignores the many benefits that have resulted from competition. Blaming markets for higher prices



overlooks the real cause—the increase in the price of natural gas and oil, which fuels the majority of New England's power plants, and the high cost of meeting electricity demand on peak days. Going forward, new environmental regulations will create additional challenges for the region. In reality, as this report describes, introducing competition to the industry has resulted in a bulk electric power system that serves the region's needs reliably and efficiently.

New England should forge ahead and build on the advancements made to date. Working collectively, the region can successfully surmount the factors that influence price volatility, threaten regional reliability, and inhibit our ability to comply with forthcoming environmental policy.

Sincerely,

V M ÖRailly

Vincent M. O'Reilly Chairman of the Board

Introducing competition to the industry has resulted in a bulk electric power system that serves the region's needs reliably and efficiently.

### Letter from the CEO

## WHY A REGIONAL ELECTRICITY OUTLOOK?

Historically, the electricity industry in New England has been challenged by the lack of indigenous power plant fuel and its location at the end of the fuel-supply pipeline, causing reliability concerns and vulnerability to high fuel prices. Moreover, extreme hot and cold weather cause electricity usage patterns that have required the construction of expensive, but typically underutilized, power grid infrastructure. Finally, the region continues to raise the bar on environmental standards. This adds complexity



The second event was the 2007 New England Electricity Scenario Analysis Initiative. This collaborative effort with regional stakeholders examined how various ways to meet the region's electricity needs might affect future system reliability, the cost of electricity, and the environment. The results clearly revealed that, in theory, many options are available for satisfying New England's electricity needs. In practice, however, many of them have practical, economical, or political roadblocks—and all will

and cost to the delivery of electricity that, rightly, must be reliable, reasonably priced, and environmentally sound.

Two major events occurred over the past year that provided the opportunity for ISO New England and the region's wholesale electricity stakeholders to step back, assess where we now stand, and evaluate what course we must follow to tackle these challenges.

First, the final design and implementation of the Forward Capacity Market (FCM) made clear that competitive markets can effectively meet the electricity needs of the region. This new market responds directly to New England's unique challenges. It is increasing the region's electricity supply by 10% over the next three years. New power plants will be located where they are needed most—many of them will run on renewable fuels and many will provide a quick source of electricity to meet peak demand. Even more revolutionary, FCM gives demand-side resources the opportunity to compete with power plants in the marketplace to maintain bulk power system reliability at the lowest cost. require trade-offs.

These two events signaled that the region's wholesale electricity stakeholders are willing to put great effort into developing the best possible solutions; that the time is ripe to act; and that a comprehensive, consensus-based strategy must be followed. This report captures the progress restructuring has made to date and explains the risks, challenges, and options currently facing the industry. ISO New England's aim is to assist those vested in securing the region's electricity future in determining a reasonable and effective course of action that meets the needs of the residents and businesses within our six states.

Sincerely,

Gordon van Welie President and CEO



## WHERE WE STAND

Since its inception in 1997, ISO New England has worked collaboratively with the region's electricity stakeholders to fulfill one overarching goal: to ensure New England's bulk electric power system meets the needs of the region's citizens and economy, today and for future generations.

#### Design and Planning Cultivate Competitive Markets

#### **Prudent Market Design**

Carefully designing effective wholesale electricity markets is the fundamental catalyst to ensuring the region's residents and businesses have the electricity they need to live their daily lives. Throughout the past decade, ISO New England's (ISO) collaboration with the market participants who comprise the New England Power Pool (NEPOOL), state regulators who form the New England Conference of Public Utilities Commissioners (NECPUC), and other public officials has brought about numerous advancements in the rules and procedures that guide the wholesale electricity marketplace in order to improve the competitiveness and thereby the efficiency—of markets:

- A market makeover, called Standard Market Design (SMD), implemented in 2003 added key features, including a day-ahead market, locational pricing, and risk management tools, to improve both power system and market performance—fundamentally, to bring about more efficient and economical use of power plants and transmission lines plus competitive wholesale electricity prices.
- The Forward Capacity Market initiated in 2006 is an innovative solution to ensure the region continuously develops an adequate supply of electricity to meet growing demand. Through FCM, the region's supply needs are projected three years in advance, and an annual auction is held to purchase the resources to meet those needs. FCM is the first market mechanism to allow demand-side resources to compete with traditional power plants to meet capacity needs.

- The markets for ancillary services were redesigned over the past few years to better secure electricity generation held in reserve for periods of heavy demand or system emergencies. The reserves markets encourage the development of dependable "peaking" power plants that can be called on to quickly start up and produce electricity when and where reserves are needed.
- Market monitoring functions have expanded over the past decade, ensuring that the markets are functioning fairly and are not being manipulated, elements essential to a competitive environment.

#### **Coordinated System Planning**

Simultaneous to enhancing the market design and oversight functions, ISO New England and regional stakeholders conduct comprehensive planning to continuously stay ahead of the region's near-, medium-, and long-term electricity requirements. The analyses identify electricity consumption patterns and growth, the levels of supply and demand resources needed and their most suitable locations, issues related to power plant fuel supplies and fuel diversity, the need for transmission upgrades and expansion, and environmental concerns.

This collaborative planning process works in conjunction with the markets to provide transparency to the industry about what kinds of system investments are needed and what problems must be addressed to sustain the goal of ensuring reliable, clean, and reasonably priced electricity.

Contributions to this cooperative process continue to expand. ISO New England now welcomes to the table the New England Governors' Conference (NEGC); the Northeast International Committee on Energy (NICE), a committee formed by the New England Governors and Eastern Canadian Premiers (NEG/ECP); and the New England States Committee on Electricity (NESCOE), a committee formed in 2008 that is under the auspices of the federal government.

#### **Competitive Markets Yield Reliable Wholesale Electricity**

In a relatively short time, New England's competitive marketplace—with its solid energy, capacity, and ancillary services markets—has unleashed incentives and creative forces in the wholesale electricity industry. The result is a more efficient and environmentally sound power system that reliably serves the region's needs.

#### **Development of Clean and Less Expensive Power Plants**

New England's wholesale electricity marketplace is guided by rules that encourage fair competition, transparent prices at which electricity suppliers can calculate the value of their product, defined performance requirements to assist plant owners in fully understanding their obligations in the market, open access to the transmission system for all suppliers, and clear procedures governing the physical interconnection of new supply resources.

When launched, the competitive environment quickly prompted existing electricity suppliers in New England to operate their power plants more efficiently. Since the beginning of wholesale markets in New England, generator availability has increased from 81% to 89%. This indicates that the markets are working as designed—suppliers are responding to economic incentives to keep their plants running when demand is highest and scheduling planned maintenance during off-peak periods. It also shows how markets can reduce the consumer cost of electricity. Before the establishment of markets, customers paid the full cost of power plants regardless of their overall performance levels or system needs.

The transparency and openness of the marketplace also prompted a flow of private investment into power plants. Between 1999 and 2003, New England experienced a 34%, or about a 10,000 megawatt (MW), increase in new plants. Because private firms and not public utilities make these investments, consumers are shielded from the financial risks they had been exposed to under a traditional cost-of-service system. This consumer protection was a major objective of restructuring in New England where billions of dollars in stranded costs had accumulated from poor investment decisions.

#### ISO NEW ENGLAND PUBLISHES ANNUAL ANALYSES

Each spring, ISO New England publishes an analysis of the previous year's markets in its *Annual Markets Report*. The ISO also publishes weekly, monthly, and quarterly market performance reports, a monthly load-zone cost report, plus five-minute and hourly market prices on its Web site.

Each fall, the ISO publishes its forwardlooking analysis of the bulk power system in its *Regional System Plan*. System plan updates are posted to the ISO Web site throughout the year.

With the launch of the first FCM auction in February 2008, 626 MW of new supply resources are scheduled to come on line over the next three years, increasing the region's supply by 2%. The majority of the proposed new power plants are in Massachusetts and Connecticut, where the need for new resources is greatest, and many of them are fast-start "peaking" units. Over time, as the requirement for new capacity grows, the market will purchase more resources.

Competitive markets have also assisted state policymakers in addressing environmental goals. Power plants developed since the beginning of markets are cleaner and more efficient than the older facilities and have decreased carbon dioxide emissions by 7.5%, nitrogen oxide emissions by 44%, and sulfur dioxide emissions by 65%—emissions that contribute to global climate change, smog, and acid rain. Because polluting or carbon-emitting plants gradually will become more expensive, markets will provide the opportunity for those plants to be displaced by new, cleaner electricity supply resources.

Competitive markets also are enabling market participants to respond to state, regional, and federal policies that encourage the development of renewable power resources. Open access provided by markets, in combination with state and federal environmental policies, has resulted in renewable projects totaling almost 2,600 MW of capacity—most of it wind power—being proposed for the New England region.

#### Increased Capability to Reduce Peak Demand

ISO New England's initial demand-response programs, which make payments to participants based on how much electricity they do not use, grew to more than 1,500 MW between 2000 and 2007–a 700% increase. The capability of wholesale electricity customers to temporarily reduce their electricity use contributes to system reliability and stable wholesale prices during peak periods. Demand response also is a vitally important tool for enhancing market efficiency and long-term system resource adequacy, mitigating price volatility, and limiting market power by wholesale electricity suppliers.

The new FCM takes demand response a step further by permitting demand-side resources to compete in the capacity market with traditional generation resources. Market participants now are able to offer a price for the capacity they do not use during peak periods—and that price competes against the price suppliers are bidding for the capacity they want to sell. Approximately 1,188 MW of new demand resources and 1,366 MW of existing demand resources cleared in the first FCM auction in February 2008, made up of demand management, demand response, and distributed generation. When these resources go into service, demand resources will make up approximately 8% of the region's capacity to meet peak demand. Research has



**ISO's Demand Response Programs** 

shown that demand response of between 5% and 15% of peak demand generally is sufficient to fully realize its benefits in electricity markets. The ISO's demand- and priceresponse programs are scheduled to end on June 1, 2010, when the first delivery period for FCM begins.

#### Transmission Efficiency and Expansion

Collaborative regional planning and a consensus-driven transmission cost-allocation process, both led by ISO New England, have been instrumental in developing, siting, and constructing much needed transmission infrastructure in virtually all New England states. From 2002 through 2007, transmission projects totaling more than \$1 billion were placed in service, including an important new tie with Canada. Among these projects are three significant

Infrastructure improvements significantly reduce transmission congestion costs in the New England market and reduce the overall consumer cost of electricity.

345-kilovolt projects in some of the region's most congested areas. In Boston, the first phase of transmission upgrades was completed in early 2007, and in Southwest Connecticut, the first phase of a two-phase transmission project was completed in October 2006 with the second phase proceeding on schedule. The ISO has identified that approximately \$7 billion in transmission investment will be needed over the next 10 years. These projects are now in various stages of planning, development, or construction and address transmission bottlenecks that have existed for decades. By enabling wholesale electricity to move more efficiently within and between regions and providing greater access to more efficient and lower-cost power, these infrastructure improvements significantly reduce transmission congestion costs in the New England market and reduce the overall consumer cost of electricity.

#### **Competitive Markets Yield Reasonable Wholesale Electricity Prices**

Volatility in the price of natural gas and oil, which together fuel more than 60% of the region's generating units, has kept overall wholesale electricity prices high—a trend that likely will continue until the region reduces its reliance on these fuels to produce electricity. Factoring out the cost of fuel that power plants use to generate electricity, wholesale electricity prices remained stable in 2007.

## The Role of ISO New England

### **Scheduling Electricity Production and Transmission**

Though it owns no power plants or transmission lines, ISO New England dispatches the production and directs the flow of electricity around the clock from its control center. Through its broad oversight, decision-making ability, and sophisticated technical resources, the ISO can efficiently and economically operate the power system to maintain reliability throughout the region and quickly respond to power system emergencies. The ISO also schedules power system maintenance outages in a way that reduces costs.



#### **BULK POWER SYSTEM (WHOLESALE ELECTRICITY)**

Electricity is **produced** in New England by more than 350 generating resources—natural gas and oil-fired power plants, hydroelectric dams, coal or nuclear stations, biomass plants, among others. Generators sell the electricity through either the wholesale electricity markets or contracts with utilities and competitive suppliers.

New England's 8,000 miles of **high-voltage transmission lines**, owned by transmission companies, move electricity from generators to **substations**, where it is "stepped down" in voltage to feed into **local distribution lines**.

### **Running the Regional Wholesale Electricity Markets**

ISO New England runs competitive wholesale markets to balance the region's daily electricity supply and demand. With a total market value of \$10 billion in energy transactions annually, the competitive markets determine the wholesale price of electricity for all of New England. The ISO also monitors the markets to ensure a fair and effective marketplace for both buyers and sellers of electricity.

### **Planning for Reliable Electricity in the Future**

As an independent entity, the ISO analyzes and estimates New England's bulk electric power system needs and informs state regulators, utilities, and other groups. Stakeholders use this information to make business and policy decisions that help provide for the continued development of a reliable system that meets the region's needs.



#### LOCAL DISTRIBUTION SYSTEM (RETAIL ELECTRICITY)

Electric utilities and competitive suppliers buy electricity either through the wholesale markets or contracts with power producers; local utilities **distribute** the electricity to businesses and homes. The region's 6.5 million households and businesses create the **demand** for electricity, which must be produced the instant it is needed.

## WHAT WE FACE

Even with the progress made through markets and existing planning processes, the region continues to face several challenges that affect the price of electricity and the reliability of the bulk electric power system.

#### **Diversifying the Power Plant Fleet**

One major challenge for New England is to diversify its wholesale electricity supply resources. More than 40% of the region's electricity is produced by plants that operate on natural gas, and they set the wholesale electricity price more than 80% of the time. These plants help support environmental goals since they are efficient and produce few emissions. However, this level of dependency ties electricity prices too closely to volatile natural gas prices.

New England has little local natural gas supply, limited storage capabilities, and is located at the end of the North American pipeline. Moreover, New England's gas infrastructure is stretched to its limits during the winter months when a significant amount of natural gas is needed simultaneously for home heating and electricity generation, sending prices even higher and creating reliability risks.

As the demand for this product rises, the region will likely rely more on liquefied natural gas (LNG) imports. The prices of these imports are affected by oil prices and global demand and are therefore unstable—this is a serious economic risk for the region.

Since fossil fuels cause greenhouse gases, the region should be mindful of environmental goals as it endeavors to diversify its electricity resource base and site resources that do not emit carbon dioxide. This points the region toward energy efficiency, renewable generation and nuclear power, or imports of electricity from non-carbon-emitting sources in neighboring regions.

#### **Meeting Peak Demand for Electricity**

Another challenge for New England is the growing imbalance between the amount of electricity used on hot summer days and the amount used on average the rest of the year. Over the past several years, consumers have set new daily records for electricity use more than 10 times. In 2006, the record was broken three times in a two-week period. The region's summer peak is now more than 28,000 MW, while average electricity use the rest of the year is around 18,000 MW. With peak demand rising at about 400 MW per year, which is equivalent to the output of a medium-sized power plant, the region will need to continue to build and maintain resources that are used only a few hot summer days a year—an expensive proposition that results in an inefficient system overall.

While the wholesale markets are working well to promote demand reduction for reducing the costs associated with peak demand and reliability issues, the retail markets remain an untapped resource. Retail electricity rates lag wholesale prices and do not reflect operational conditions on the bulk power system. Without a more direct link between wholesale costs and retail prices, consumers have no way of seeing how their consumption patterns affect their monthly electricity bill. Since the price they pay during peak hours is the same as overnight and other off-peak hours, they are unlikely to be motivated to conserve at times of peak demand. By contrast, if retail prices more closely matched the changes in wholesale prices, consumers would be motivated to conserve as wholesale prices increase.

#### **Fulfilling Environmental Requirements**

The New England states are aggressively establishing environmental initiatives to lower emissions from power plants and increase the percentage of electricity produced from power plants that run on renewable fuels.

New England's six states are among several Northeast and Mid-Atlantic states that have formed a compact the Regional Greenhouse Gas Initiative (RGGI)—which seeks to restrict the carbon dioxide output of power plants. Beginning in 2009, carbon emissions for all New England plants with at least 25 MW in capacity will be capped at certain levels until 2014. By 2018, these caps must be reduced by 10%.

In addition, all the region's states have put policies in place that encourage the development of power plants that run on renewable resources. Five of the six New England states have established Renewable Portfolio Standards (RPSs), which require utilities and competitive suppliers to supply customers with at least a minimum percentage of electricity generated from renewable fuel sources.

Taken together, these new requirements would more than double the amount of electricity from renewable resources over the next decade from 5.6% in 2007 to 14% by 2016 an increase of more than 13,000 gigawatt-hours (GWh). The number of renewable projects currently being proposed for development would fulfill less than half of the requirement.

Certain areas in New England and Canada, particularly in the north and offshore, are ripe for developing renewable resources such as wind and forest waste. However, these areas typically are far from where the electricity is actually needed. Moving the power to where demand is greatest will require significant expansion of the transmission infrastructure. The development of renewable generation also is impeded by the disparate definitions of renewable resources and qualification processes among the New England states.

The combination of the region's reliance on natural gas and its aggressive environmental goals will make New England more vulnerable to price increases as well as present reliability challenges to the region and the ISO. It is clear that the competitive wholesale market structure provides an effective framework for seeking the most efficient solutions to these challenges; however, it is also important that the region come to consensus on how best to broaden the marketplace and develop greater resource diversity.

#### **Evaluating Options**

Recognizing that New England faces many complex and difficult decisions about the region's electricity future, ISO New England launched the New England Electricity Scenario Analysis Initiative in 2007. The objective was to bring understanding to every stakeholder in the industry on how the business decisions, policies, and other actions they make today will affect system reliability, the cost of electricity, and the environment in the future.

The initiative was based on an estimated need for 8,000 MW of new electricity sources by 2025. Each of the seven

scenarios studied assumed a concentrated addition of natural gas, nuclear, new-technology coal, imported electricity, demand-side resources, and renewable resources. It was framed as a "what if" analysis, for example, asking what if the region were to add significant amounts of nuclear power to meet its expected capacity needs for 2025—and how would this affect wholesale electricity prices and carbon emissions? The initiative did not advocate for any particular solution.

The results, published in an August 2007 report, clearly revealed that, in theory, many options are available for satisfying New England's electricity needs-but each option requires a trade-off. Developing additional natural-gas-fired generation would be an easy solution to the carbon reduction requirements, but this scenario would further increase the region's vulnerability to gas-particularly LNG-prices. Electricity generation run on nuclear power produces few emissions but has little chance of being built in the region. Renewable sources are difficult to site, and remote sources require a significant investment in new transmission to deliver it to market and a decision on who should pay for that cost. Importing environmentally friendly electricity from Canada is another possibility; however, this scenario too requires major transmission investment and commitments to purchase the power several years in advance.

#### SOME OF NEW ENGLAND'S RENEWABLE POWER GOALS\*

**CONNECTICUT** 20% renewable supply by 2020

RHODE ISLAND 20% renewable supply by 2011, with 15% of that from wind power

MAINE 30% renewable supply by 2000

MASSACHUSETTS 20% renewable supply by 2020

**NEW HAMPSHIRE** 25% renewable supply by 2025

NEG/ECP

10% renewable supply regionwide by 2020

\*These represent a sample of goals as of April 2008. The numbers are subject to change over time.



## HOW WE SOLVE

The actions the region must take to address its future electricity needs are complex and multifaceted, requiring consensus from the industry and the six state governments and regulators.

#### Assure the Supply of Natural Gas

Because New England is heavily reliant on power plants that run on natural gas, one of the first actions electricity stakeholders need to consider is how to assure the supply of natural gas to these plants. To allow for more accurate contingency planning, the region must assess the amount of electricity generation that could be lost with the loss of a single gas pipeline and the associated reliability and economic consequences. The region also must devise ways to increase the number of natural gas plants that can run on a second type of fuel and consider greater flexibility for plants that burn oil in complying with air emissions limits during abnormal system conditions. These steps can be led by ISO New England, working with state officials and

the natural gas industry, through the NEPOOL stakeholder process.

As production from Sable Island, Nova Scotia, declines and demand for natural gas within the United States grows, it may be prudent for the region to consider adding natural gas pipelines, offshore LNG facilities, or both. A comprehensive look at the natural gas supply and demand picture by the electricity and gas industries in both the New England states and eastern Canadian provinces, similar to the resource scenario study conducted by the New England governors in 2005, could be instrumental in assuring that sufficient natural gas supply facilities are built.

#### Pursue Demand Response, Energy Efficiency, and Dynamic Retail Pricing

New England must continue to pursue and encourage demand-reduction measures to bring peak demand under control, delay the need to build costly new infrastructure, and use the existing bulk power system infrastructure more efficiently.

#### Integrate Demand Response

Over the past few years, ISO programs have been successful in increasing demand-response capability, and FCM is stimulating even greater development and expansion of this

#### WHOLESALE ELECTRICITY CHALLENGES AND STRATEGIES

#### CHALLENGES

biversitying the power plant freet

Fulfilling environmental requirements

#### STRATEGIES

Assure the supply of natural gas

Pursue demand response, energy efficiency, and dynamic pricing

Enable the siting and interconnection of renewable or non-carbon-emitting power plants

Facilitate investment in transmission that brings electricity from new renewable or non-carbon-emitting power plants to market resource. As New England reaches these higher levels of demand response, the ISO is determining how it will operate the bulk power system with the addition of hundreds of smaller distributed resources. To help meet the challenge of integrating these demand resources into moment-tomoment bulk power system operations, the ISO has launched a small resources reserves pilot. Through this pilot program, the ISO is developing alternatives to the sophisticated, expensive telemetry currently used by power plants to enable small resources to communicate with and be dispatched by the regional system operator.

#### Persist with Energy Efficiency

Electricity conservation programs traditionally run by utilities, nonprofits, and state agencies continue to gain momentum. For example, the Connecticut Energy **Conservation Management Board** is assessing conservation potential in the state and working with the Department of Public Utility Control to implement a statewide energy-efficiency and outreach marketing campaign in 2008. Massachusetts is passing legislation establishing an energy procurement process that requires resource needs to first be met through energy efficiency and is increasing energy conservation education. ISO New England's FCM market



#### ISO NEW ENGLAND BUILDS ENERGY-EFFICIENCY AWARENESS

ISO New England's own electricity conservation campaign—*Take Charge New England*<sup>SM</sup>, promotes simple, effective steps for becoming more energy efficient to both residential and business electricity users.

will attract cost-effective energy efficiency in areas where it is most needed.

#### **Realize Dynamic Pricing**

Changing the retail rate structure by implementing dynamic retail pricing would allow retail rates to vary as wholesale electricity costs fluctuate over the course of a day. Results of a dynamic pricing study showed that if about one-third of all the New England customers over 1 MW reduced their electricity consumption in response to a retail rate indexed to day-ahead prices, all New England consumers would save approximately \$340 million over five years.

Implementation of dynamic retail pricing will require changes in state regulatory policy, investment in metering, the development of communications and software technology, and education of customers to enable them to respond appropriately. A few states are taking action. Connecticut is implementing time-differentiated rates, and Massachusetts is pursuing "smart grid" pilot programs for consumers.

#### **Enable the Siting and Interconnection of Renewable or Non-Carbon-Emitting Power Plants**

To meet environmental regulations and to diversify New England's power plant fleet, the amount of electricity generated from plants that run on renewable sources of fuel must increase. This will require New England to determine what types of plants it is willing to site and whether it is prepared to invest in and site the additional transmission that will likely be required.

#### Determine What Clean Power Plants to Site and Interconnect

While markets will be a driving force in developing a fleet of power plants that run on renewable sources of fuel, it will be up to the states to site these new projects and help resolve any opposition to getting these plants built. To do this, policymakers must be thoroughly informed on all the factors that contribute to the costs and benefits of securing these resources.

To inform policymakers about their options for meeting RPS standards, a review of the current and possible renewable resources in New England is first necessary. Beyond this, an assessment of the potential resources located in eastern Canada and available for export will be needed. Next, an economic analysis must be conducted of these resources to evaluate their cost of development, the amount of electricity they would produce, and their value in reducing carbon or meeting state RPSs. The ISO also must address issues associated with connecting to the grid and dispatching these resources, which often run intermittently.

Since nuclear power plants do not emit harmful pollutants into the atmosphere, the region should examine the role of existing nuclear power plants and whether additional nuclear power makes sense for safely meeting environmental targets.

#### Import Clean Electricity from Canada

New England and Canada have a longstanding electricity trading relationship, and New England has been an importer of Canadian electricity for decades. It is logical for the two regions to explore greater electricity trade. New England's growing requirements for renewable and non-carbonemitting resources are well aligned with the new wind, hydro, and nuclear resources in various stages of development in eastern Canada. But because a comprehensive approach for developing generation resources likely will require long-term agreements between sellers in Canada and buyers in New England, policymakers and regulators need to assess the potential costs and benefits of such arrangements for consumers.

#### Synchronize States' Renewable Portfolio Standards

To help ease some of the complexities faced by companies looking to develop renewable resources, the New England states may find it advantageous to evaluate the possibility of standardizing their definitions of renewable resources and developing a regional, rather than state-specific, qualification process. Having one set of definitions and processes would provide uniformity and certainty that could encourage the development of renewable resources.

#### Facilitate Investment in Transmission that Brings Electricity from New Renewable or Non-Carbon-Emitting Power Plants to Market

As experienced by New England stakeholders over the past seven years, the best means of bringing about transmission development is through collaborative regional planning and the fair allocation of the transmission project costs. To facilitate investment in transmission projects that would enable the development of and access to renewable-resource electricity supplies, the ISO and regional stakeholders need to determine how to evaluate, select, and finance these types of transmission projects.

#### Develop Framework for Conducting Economic Studies and Evaluating Economic Benefits of Transmission Projects

Under the ISO's Open Access Transmission Tariff (OATT), the cost of a transmission project is shared throughout the region when the ISO deems that the project provides regional benefits. Each state pays a portion of regional transmission costs on the basis of its share of overall consumption.

To date, New England has used this cost-allocation methodology only to fund Reliability Transmission Upgrades—that is, transmission projects that provide regional reliability benefits. However, the OATT also provides for the cost of a transmission project to be shared among states if it is deemed to provide regional economic benefits—that is, to be a Market Efficiency Transmission Upgrade (METU).

Transmission projects built specifically to bring clean electricity from remote power plants to demand centers generally would not qualify for regional cost support based on reliability justification. If the region wishes to build these projects, the region must enhance its methodology for assessing the economic needs of the system and the criteria for evaluating the economic benefits of these types of transmission projects.

#### **Define Economic Study Methodology and Prioritization**

Through the typical regional planning process, ISO New England conducts assessments of the regional transmission system to identify reliability-based needs. In 2007, the OATT was revised to require the ISO to conduct annual analyses that identify the economic needs of the regional system.

Under the revised OATT, New England stakeholders may submit requests for the ISO to undertake economic studies in a given year. Only three economic studies can be funded through the OATT each year; stakeholders are required to fund any additional studies they request. Because the ISO anticipates receiving numerous study requests, the standards and criteria for prioritizing and selecting the economic studies to perform need to be defined.

To kick off this process, the ISO has formed a stakeholder working group that will meet throughout 2008 to develop

#### WHY A REGIONAL FRAMEWORK?

The ISO, NECPUC, NESCOE, NICE, and other groups are conducting a number of activities to assess the potential for remote areas of New England and eastern Canada to add clean power plants and to determine the transmission development needed to move this electricity.

More potential solutions are likely to be proposed than are needed or could be funded. By the beginning of 2008, ISO New England had received proposals for seven transmission projects that would move clean electricity from remote locations to demand centers. The variety of projects already being put forward by power plant and transmission developers clearly illustrates the need to evaluate these options through a framework developed in consensus among stakeholders and the states to ensure projects selected provide the greatest reliability, economic, and environmental benefits for the region. the methodology for conducting rigorous and transparent economic studies of the regional system and define the criteria for prioritizing and selecting studies to be conducted. Recognizing that the methodology and criteria must be developed with consensus among regional policymakers and market participants, the stakeholder working group is being led by representatives from ISO New England, NECPUC, and NEPOOL.

#### **Identify Market-Efficiency Criteria**

Through the typical regional planning process, after system needs are identified, the ISO evaluates possible transmission solutions to meet these needs. The review of a transmission upgrade solution is based on either the reliability or marketefficiency factors defined in the OATT. While the tariff already provides the basic criteria for determining whether proposed transmission projects qualify as METUs, the criteria may need to be revised to properly account for the economic benefits that may be achieved from transmission projects, including projects that would enable the development of and access to renewable-resource electricity supplies .

Therefore, another objective for the regional stakeholder working group over the course of 2008 will be to review and potentially refine the factors to be considered in evaluating whether proposed transmission projects could result in regional economic benefits.

#### Select and Finance Transmission Projects

Through the regional planning process, after ISO New England conducts its review of potential solutions, the transmission companies ultimately define what they want to build and propose it to the ISO. The projects are then put through a cost-allocation review process. If transmission projects designed to enable the development and transfer of clean electricity are found to provide regional economic benefits, the costs to construct these projects would be rolled into the regional transmission rate and allocated regionwide.

#### **Support Coordinated Action**

Situated at the intersection of government and industry, ISO New England possesses a unique perspective. Because the ISO does not own power system infrastructure and does not set policy, it offers unbiased information for both sectors to draw on in developing regional solutions.

ISO New England is committed to using its experience of facilitating collaboration among all stakeholders to bring about change and progress for the region. ISO New England will help create and participate in working groups, provide data and analyses, and address any changes in the marketplace necessary to tackle these issues.

ISO New England will reflect these actions in its business planning process so that it can efficiently dedicate its resources—its highly skilled workforce and sophisticated information technology systems—to helping secure the region's electricity future.

#### ACHIEVING LASTING VALUE

Although the breadth of services ISO New England provides and the technological innovations it develops continue to grow each year, stringent financial management has yielded level operating and capital costs. In fact, the ISO has been able to undertake many new services and projects without adding to the budget. Efficiencies have saved more than \$10 million in operating expenses. The ISO's total capital and operating budget for 2008 is approximately \$116 million.

## NEW ENGLAND'S ELECTRIC POWER SYSTEM AT A GLANCE

6.5 MILLION HOUSEHOLDS and BUSINESSES; POPULATION 14 MILLION

MORE than 350 GENERATORS

OVER 8,000 MILES of HIGH-VOLTAGE TRANSMISSION LINES

12 INTERCONNECTIONS to ELECTRICITY SYSTEMS in NEW YORK and CANADA

MORE than 32,000 MW of TOTAL SUPPLY (INCLUDES MORE than 1,500 MW of DEMAND-RESPONSE CAPACITY as of DECEMBER 31, 2007)

ALL-TIME PEAK DEMAND of 28,130 MW, SET on AUGUST 2, 2006

MORE than 300 PARTICIPANTS in the MARKETPLACE (THOSE WHO GENERATE, BUY, SELL, TRANSPORT, and USE WHOLESALE ELECTRICITY)

\$10 BILLION ANNUAL TOTAL ENERGY MARKET VALUE (2007)

MORE than \$1.0 BILLION in TRANSMISSION INVESTMENT since 2002; ANOTHER \$4-PLUS BILLION PLANNED over the NEXT 10 YEARS

SIX NEW 345-KILOVOLT TRANSMISSION PROJECTS in VARIOUS STAGES of CONSTRUCTION and OPERATION



### ISO NEW ENGLAND CAMPUS EARNS U.S. GREEN BUILDING COUNCIL GOLD CERTIFICATION

When ISO New England expanded and renovated its office and control room facility in 2006, the company incorporated ecological components into the project to help use natural resources wisely, protect the environment, and provide a healthier place to work. For those efforts, the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) program awarded the ISO gold-level certification.

The consensus-based LEED green-building rating system evaluates buildings according to a four-tier rating system—certified, silver, gold, platinum—for features relating to site sustainability, water and energy efficiency, the materials used, indoor environmental quality, and any innovations.

The ISO earned exemplary performance points for several innovations: recycling 96% of construction and renovation waste material, using three times the recycled building content required to earn LEED points, reducing heat island effect in the roofing, and establishing a green housekeeping program.

ISO New England is dedicated to maintaining practical and ecological facilities-management, waste-management, and purchasing programs to ensure it continually makes sensible use of resources.



### ISO New England Board of Directors and Senior Management<sup>\*</sup>

#### **Board Members**

VINCENT M. O'REILLY Chairman

DAVID J. VITALE Vice Chairman

GORDON VAN WELLF President and Chief Executive Officer

ROBERTA S. BROWN

DONALD L. ISAACS.

John G. Kassarian

ATVIN K. KLEVORICE

RICHARD E. KESSEL

PAULE, LEVY

V. LOUISE MCCARREN

#### Senior Management

GORDON VAN WELLF President and Chief Executive Officer

STEPHEN G. WHITLEY Senior Vice President and Chief Operating Officer

Vam51 Chadai avada Senior Vice President, Market and System Solutions

Jam5hin A. Afnan Vice President, Information Services

**PFTFR T. BRANDIFN** Vice President, System Operations

JANICE S. DICESTEIN Vice President, Human Resources

Raymond W. Hepper Vice President and General Counse.

KEVIN A. KIRBY Vice President, Market Operations

DAVID LAPIANTE Vice President, Wholesale Markets Strategy

ROBFRT C. LUDIOW Vice President and Chief Financial Officer

STEPHEN J. ROURKE Vice President, System Planning

\*As of January 31, 2008

## Independent Auditors' Report

The Board of Directors ISO New England Inc.

We have audited the accompanying statements of financial position of ISO New England Inc. as of December 31, 2007 and 2006, and the related statements of activities and cash flows for the years then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of ISO New England Inc. as of December 31, 2007 and 2006, and the results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

As discussed in Note 5 to the financial statements, the Company implemented the recognition and disclosure provisions of Statement of Financial Accounting Standards No. 158, *Employers' Accounting for Defined Benefits and Other Post Retirement Plans*, as of December 31, 2007.

KPMG LEP

March 18, 2008

## Statements of Financial Position for years ended December 31, 2007 and 2006

	2007	2006
	(In	n thousands)
Assets		
Current assets:		
Cash and cash equivalents	\$ 49,318	\$ 6,705
Security deposits	290,437	194,474
Unbilled receivable, net	18,671	18,488
Prepaid expenses and other assets	547	895
Regulatory assets – current (Note 1)	2,135	-
Restricted cash on deposit	8,934	26,416
Noncurrent assets:		
Property and equipment in-service, net (Note 3)	74,813	76,193
Work in process (Note 3)	13,720	17,491
Deferred charges (Note 1)	136	151
Regulatory assets, net of current portion (Note 1)	10,887	1,309
Total assets	\$ 469,598	\$ 342,122
Liabilities and Net Assets		
Current liabilities:		
Accounts payable:		
Settlement, net	\$ 40,567	\$ 2,999
Administration	8,890	10,827
Deposits payable	296,674	196,177
Interest payable	1,068	1,143
Revolving credit (Note 4)	6,500	7,182
Accrued compensation	11,588	9,813
Deferred income – current	-	5,305
Restricted cash on deposit payable	8,592	21,553
Long-term debt-current portion (Note 4)	1,820	3,988
Long-term liabilities:		
Deferred income, net of current portion	1,697	-
Pension benefit liability (Note 5)	10,887	-
Long-term debt (Note 4)	81,315	83,135
Total liabilities	469,598	342,122
Unrestricted net assets	<del>_</del>	
Total liabilities and net assets	\$ 469,598	\$ 342,122

The accompanying notes are an integral part of these financial statements.

## Statements of Activities for years ended December 31, 2007 and 2006

	2007	2006
	(I	In thousands)
Changes in unrestricted net assets:		
Revenues (Note 1):		
ISO tariff revenues	\$ 115,657	\$ 112,485
Interest income	3,315	2,231
Fees and services	306	222
Total unrestricted revenues	119,278	114,938
Expenses:		
General and administrative:		
Salaries and benefits	57,761	54,057
Professional and consultants	14,539	14,660
Rents and leases	633	1,071
Computer services	5,401	4,379
Depreciation and amortization expense	25,571	24,012
Loss on impaired asset (Note 3)	-	3,530
Communication expense	1,471	1,693
Insurance expense	1,660	1,759
NPCC Dues	2,160	1,427
Interest expense	3,886	3,029
Other	6,196	5,321
Total expenses	119,278	114,938
Change in unrestricted net assets	-	-
Unrestricted net assets, beginning of year		
Unrestricted net assets, end of year	\$ -	\$ -

The accompanying notes are an integral part of these financial statements.

## Statements of Cash Flows for years ended December 31, 2007 and 2006

	2007 2		
	(In thou	usands)	
Cash flows from operating activities:			
Increase in unrestricted net assets	\$ -	\$ -	
Adjustments to reconcile change in unrestricted net assets to			
net cash provided by operating activities:			
Depreciation and amortization expense	25,571	24,012	
Loss on impaired asset	_	3,530	
Effect of the pension accounting change adoption	10,887	-	
(Increase)/decrease in unbilled receivable, net	(183)	2,998	
Decrease/(increase) in prepaid expense	348	(259)	
(Increase)/decrease in regulatory assets	(11,713)	647	
Decrease in swap asset	_	53	
Increase/(decrease) in accounts payable:			
Settlement	37,568	(130,115)	
Administration	1,072	1,000	
(Decrease) in pension benefit liability	_	(1,956)	
(Decrease) regulatory liability	_	(53)	
Increase in accrued compensation	1,775	791	
(Decrease)/increase in interest payable	(75)	62	
(Decrease) in deferred income	(3,608)	(2,909)	
Net cash provided/(used in) by operating activities	61,642	(102,199)	
Cash flows from investing activities:			
Capital expenditures	(23,414)	(41,914)	
Net cash used in investing activities	(23,414)	(41,914)	
Cash flows from financing activities:			
(Increase) in security deposits	(95,963)	(50,193)	
Decrease in restricted cash on deposit	17,482	65,283	
(Decrease) in restricted cash on deposit payable	(12,961)	(45,623)	
Increase in deposits payable	100,497	51,043	
Repayment on long-term debt	(3,988)	(13,833)	
(Decrease)/increase in net borrowings on working capital line	(682)	5,214	
Net cash provided by financing activities	4,385	11,891	
Net increase/(decrease) in cash and cash equivalents	42,613	(132,222)	
Cash and cash equivalents, beginning of year	6,705	138,927	
Cash and cash equivalents, end of year	\$ 49,318	\$ 6,705	
Supplemental data: Amounts included in Accounts Payable—Administration related to work in process Cash paid during the year for interest, net of interest capitalized	$\frac{\$ 2,558}{\$ 4,524}$	\$5,567 \$3,612	

The accompanying notes are an integral part of these financial statements.

## Notes to Financial Statements

#### **1. Summary of Significant Accounting Policies**

#### **Description of Business**

ISO New England Inc. (the "Company" or "ISO") commenced operations on July 1, 1997 as the New England electric transmission independent system operator for the New England Power Pool ("NEPOOL") in compliance with the requirements of the Federal Energy Regulatory Commission ("FERC"). On May 1, 1999, the competitive marketplace opened in the ISO New England Inc. control area. During the period from July 1997 through January 31, 2005, the Company was operating under the Interim ISO Agreement and administered NEPOOL's tariff.

On February 1, 2005, the ISO became the Regional Transmission Organization ("RTO") for New England, with enhanced responsibilities as the transmission provider for New England and new governing documents (Transmission Operating Agreement, Participants Agreement, Market Participants Service Agreement, ISO New England Transmission, Markets and Services Tariff) in place of the existing governing documents (the Interim ISO Agreement, NEPOOL Tariff).

#### **Cash Equivalents**

The Company considers cash on hand and short-term marketable securities with original maturities of three months or less to be cash equivalents. The cash equivalents at December 31, 2007 and 2006 were held in overnight repurchase agreements and also in direct and indirect obligations of the United States, with original maturities of three months or less.

#### **Accounts Receivable and Accounts Payable**

In the course of bulk power transactions administered by the Company on behalf of the NEPOOL Participants, amounts for energy purchased and sold among Participants become payable to and receivable from such Participants. The Company summarizes and prices the energy transactions each week and provides an invoice or remittance advice to each Participant that summarizes the amount either receivable from or payable to each Participant.

Accounts payable on the balance sheet are segregated between (i) the amounts owed for energy transactions and transmission, for which the ISO functions as paying agent, which are included in accounts payable as "settlement, net," and (ii) the administrative expenses incurred by the Company in the course of operations. The reference to "settlement, net" is used due to the nature of billing and payment for the amounts owed for energy transactions and transmission markets, and represents the customer's net amount due, less any amounts which may have been owed to them.

The net unbilled receivables, which have been determined as a result of the settlement process, include those amounts that will be billed and included in the invoice or remittance advice to Participants in the next weekly invoice issued. The net payables and receivables for those energy transactions stated above are settled with the Participants in the subsequent week.

#### **Restricted Cash on Deposit**

The balance of approximately \$8.9 million and \$26.4 million at December 31, 2007 and 2006, respectively, recorded as restricted cash on deposit represents the Congestion Revenue Fund and net proceeds from tax-exempt bond financing. The balance is offset by liabilities on the Statements of Financial Position. The restricted cash on deposit at December 31, 2007 and 2006, were held in overnight repurchase agreements and also in direct and indirect obligations of the United States. Additionally, the net proceeds from the tax-exempt bond financing are held at cost. The fair market value as of December 31, 2007 and 2006, were approximately \$8.9 million and \$26.4 million, respectively.

#### **Property and Equipment in Service and Work in Process**

Property and equipment is stated at cost, net of accumulated depreciation.

The Company applies the provisions of Statement of Financial Accounting Standards No. 71, "Accounting for the Effects of Certain Types of Regulation" ("FAS 71"), which requires the Company to capitalize the interest and fees associated with the 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.

In addition, the Company follows the provisions of the Statement of Position 98-1, "Accounting for the Costs of Computer Service Software Development" ("SOP 98-1"), in capitalizing internal software development costs.

#### Depreciation

Depreciation is generally computed using straight-line methods over an estimated useful life ranging from three years to 25 years (e.g., computer hardware, software and accessories—three to five years; software development costs—three to five years; furniture and fixtures and machinery and equipment—seven years; building and leasehold/building improvements— 10 years or remaining life of the lease; vehicles—three years; building—25 years). Capitalized interest and fees is amortized over the same useful life of the asset to which it pertains, principally software development costs and building. No depreciation is recorded for assets classified as work in process until the assets are placed into service (Note 3).

#### **Deferred Charges and Regulatory Assets and Liabilities**

The Company applies the provisions of FAS 71, which requires regulated entities, in appropriate circumstances, to establish regulatory assets or liabilities, and thereby defer the income statement impact of certain charges or revenues because it is probable to be collected or refunded through future customer billings. The Company incurred costs with the purchase of land located at Sullivan Road. A portion of these costs, which were deferred, have been included in the current year's ISO Tariff filing and therefore amortized. The remaining cost, also deferred, will be collected in future tariff filings.

The following table is a detail of the deferred charges and regulatory assets balances as presented in the Statements of Financial Position:

Deferred charges	2007	2006
Land located on Sullivan Road	<u>\$ 136,000</u>	<u>\$ 151,000</u>
	\$ 136,000	\$ 151,000
Regulatory assets-current	2007	2006
Projected 2007 under collection true-up	\$ 826,000	\$ -
2006 under collection true-up	<u>\$ 1,309,000</u>	<u>\$                                    </u>
	\$ 2,135,000	\$
Regulatory assets, net of current portion	2007	2006
Projected 2006 over collection true-up	\$ -	\$1,309,000
Asset related to pension benefit liability (Note 5)	<u>\$10,887,000</u>	\$ -
	\$10.887.000	\$1.309.000

#### **Income Taxes**

The Company is an entity organized as a non-stock corporation under the General Corporation Law, as amended, of the State of Delaware. In a letter dated November 10, 2004 (the "Determination Letter"), the Internal Revenue Service (the "IRS") determined (i) that the Company is generally exempt from Federal income tax under Internal Revenue Code ("IRC") Section 501(c)(3), and (ii) that contributions to the Company are deductible under IRC Section 170. The Company is in its advance ruling period with respect to its status as a private foundation or a public charity. The Company's advance ruling period ends on December 31, 2008. In the IRS Determination Letter, the IRS stated that, during the advance ruling period, the Company will be treated as a public charity, and not as a private foundation. The Company must submit IRS Form 8734 to the IRS by March 31, 2009, so that the IRS can determine whether the Company has met the requirements of the applicable public charity support test during its advance ruling period. If the Company does not meet the public support requirements, the IRS will classify the Company as a private foundation for future tax periods.

#### **Security Deposits**

The NEPOOL Participants are required to comply with the Financial Assurance Policy under ISO's Transmission, Markets & Services Tariff. In the case of non-investment grade rated Participants that meet certain criteria, the Company's Financial Assurance Policy requires these Participants to put in place alternate forms of financial assurance. There are several options allowed under the Company's Financial Assurance Policy for compliance, one of which is to post cash as collateral. The cash collateral deposits at December 31, 2007 and 2006 were approximately \$290.4 million and \$194.5 million, respectively, and are recorded in deposits payable.

#### **Revenue Recognition**

The Company recovers its operating and debt service costs pursuant to the ISO's Transmission, Markets & Services Tariff, which provides for recovery of expenses through three schedules. Scheduling, System Control and Dispatch Service (Schedule 1), Energy Administration Service (Schedule 2) and Reliability Administration Service (Schedule 3) recover related costs through a pre-approved rate applied to each month's activity. Schedules 1, 2, and 3 are subject to true-up through subsequent years' rates, and any over or under collection is recorded as deferred charges or deferred income and will be recovered under future Tariff filings.

#### **Deferred Asset/Income**

Deferred asset/income represents the amount of the ISO Tariff for Schedules 1, 2, and 3 that was over/under collected from 2004 through 2007. The over/under collection amount of the ISO Tariff will be returned to the Participants through the true-up mechanism provided for within the ISO Tariff.

#### Concentrations

The Company's top 10 participants represented approximately 51% or \$56,400,000 and 52% or \$55,900,000 in tariff revenues for the years ended 2007 and 2006, respectively. The Company's top 10 participants represented approximately 66% or \$12,300,000 and 68% or \$12,100,000 in accounts receivables as of December 31, 2007 and 2006, respectively.

#### **Fair Values of Financial Instruments**

The carrying amounts reported in the Statements of Financial Position for assets and liabilities approximate their fair values.

#### **Use of Estimates**

U.S. generally accepted accounting principles require management to make estimates and assumptions that affect assets and liabilities, contingencies, and revenues and expenses. Actual results could differ from those estimates.

#### **Liquidity Information**

In order to provide information about liquidity, assets have been sequenced according to their nearness to conversion to cash, and liabilities have been sequenced according to the nearness of their resulting use of cash.

#### **2. Commitments and Contingencies**

#### **Capital Funding Tariff**

The FERC accepted ISO's "capital funding tariff" ("CFT") filing for 2007 and 2006. These filings support the ISO's loan arrangements with various banks and note holders to fund the capital and working capital requirements of the Company.

#### Legal Proceedings

The Company is party to various legal actions incident to its business; however, management believes that no material awards against the Company will result from such proceedings.

#### **3. Property and Equipment In-Service, net and Work in Process**

	December 31,		
	2007	2006	
Computer hardware, software and accessories	\$141,445,000	\$139,342,000	
Software development costs	32,982,000	30,354,000	
Furniture and fixtures	2,720,000	2,002,000	
Machinery and equipment	64,000	59,000	
Building and leasehold/building improvements	44,431,000	32,218,000	
Capitalized interest and fees	6,292,000	6,000,000	
Vehicles	10,000	10,000	
	227,944,000	209,985,000	
Less: accumulated depreciation and amortization	<u>(153,131,000</u> )	(133,792,000)	
Property and equipment in-service, net	\$ 74,813,000	\$ 76,193,000	
Work in process (WIP)	\$ 13,720,000	\$ 17,491,000	

Costs represented in WIP includes Forward Capacity Market phase I, which began in 2006 and a number of new projects which began in 2007, such as Forward Capacity Market phase II, Long Term FTR's, Security Enhancements, Compliance & CAPA Tool Project and various other market enhancement projects that have not been placed in service as of December 31, 2007. In accordance with FAS 71, the associated interest cost capitalized for the years ended December 31, 2007 and 2006 was approximately \$559,000 and \$1,095,000, respectively. A portion of which is contained in the work in process balance at December 31, 2007 and 2006, of \$445,000 and \$178,000, respectively. Of the capitalized interest included in WIP for 2007, \$6,000 has been carried over from 2006.

In 2006, the Company reached a settlement agreement with FERC and the Participants in NEPOOL to abandon Locational Installed Capacity Market ("LICAP") in place of a Forward Capacity Market. The result of this settlement necessitated the Company's disposal of assets related to LICAP. This asset disposal resulted in a loss of \$3.53 million in 2006, and is reflected in "loss of impaired asset" on the accompanying Statements of Activities.

#### 4. Credit Facilities

#### **Revolving Credit Arrangement**

In June 2004, the Company entered into a \$15.0 million revolving credit arrangement, of which the outstanding balances at December 31, 2007 and 2006 were \$6.5 million and \$7,182,000, respectively. Interest accrues on the revolving credit at either Base Rate or a London Inter-bank Offering Rate ("LIBOR") of which the Company has the option of selecting the 30, 60, 90, or 180-day rate, plus a .60% spread. Interest is paid at the earlier of the selected LIBOR term or 30 days. The arrangement expires July 1, 2009 and any outstanding balance must be paid by this date. The Company is charged an annual fee of .15% on the entire line of credit. For the years ended December 31, 2007 and 2006, the weighted average interest rate is approximately 5.98% and 5.83% respectively.

In June 2004, the Company also entered into a \$4.0 million revolving credit arrangement, which was requested as a result of the change in the billing policy under ISO's Transmission, Markets & Services Tariff to go from monthly billing to weekly billing. The outstanding balance at December 31, 2007 and 2006, was \$0 for both years. This arrangement serves as a line of credit to cover any potential payment defaults by a Participant. Interest accrues on the revolving credit at either Base Rate or a London Inter-bank Offering Rate ("LIBOR") of which the Company has the option of selecting the 30, 60, 90, or 180-day rate, plus a .60% spread. Interest is paid at the earlier of the selected LIBOR term or 30 days. The arrangement expires July 1, 2009, and

any unpaid balances must be paid as of this date. The Company is charged an annual fee of .15% on the entire line of credit. There were no borrowings for the year ended December 31, 2007. For the year ended December 31, 2006, the weighted average interest rate is approximately 8.25%.

#### **Term Loan**

The Company entered into a \$20.0 million term loan in 2003 and final repayment was made on the first business day in January 2007. The Company entered into a \$43.0 million term loan in 2001 and a \$24.5 million term loan in 2003, both of which have been paid off as of December 31, 2006. For the years ended December 31, 2007 and 2006, the weighted average floating interest rate is approximately 0% and 4.44%, respectively.

#### **Private Placement Debt Arrangement**

In September 2004, the Company entered into a \$39.0 million private placement loan, which is made up of ten year 5.60% senior notes. Payment is due in full on September 2, 2014, with no mandatory prepayments and interest accrues bi-annually. This loan is included in long-term debt on the Statements of Financial Position.

#### **Tax-Exempt Bond Financing**

In February of 2005, the Company entered into tax exempt financing of \$45.5 million in the form of Multi-Mode Variable Rate Civic Facility Revenue Bonds, which were issued by the Massachusetts Development Finance Agency. The proceeds of the Bonds were loaned to the Company, to assist in financing and refinancing a project located at the Main Control Center. Principal payments of \$455,000 paid quarterly, began in May 2007 with the final repayment due on February 1, 2032. Interest accrues quarterly on the \$45.5 million tax exempt bonds, at a weekly variable rate based upon the Bond Market Association "BMA" Swap Index plus an average spread of two basis points. For the years ended December 31, 2007 and 2006, the weighted average floating interest rate is approximately 3.66% and 3.46%, respectively.

The total long-term debt at December 31, 2007 and 2006, was \$83.1 million and \$87.1 million, respectively. Principal payments on the private placement debt, and tax-exempt bonds are due annually as follows:

2008	\$ 1,820,000
2009	1,820,000
2010	1,820,000
2011	1,820,000
2012	1,820,000
Thereafter	74,035,000
	\$ 83.135.000

These credit agreements contain both affirmative and negative covenants, the most restrictive of which is the maintenance of a financial ratio related to revenue and expense plus debt service. The Company was in compliance with these ratios at December 31, 2007 and 2006.

Interest incurred on the revolving credit, the term loans, private placement debt, and tax-exempt bonds for the years ended December 31, 2007 and 2006, was approximately \$4,513,000 and \$3,834,000, respectively. Interest capitalized from the term loans and private placement debt for the years ended December 31, 2007 and 2006, was approximately \$627,000 and \$805,000, respectively.

#### 5. Pension and Other Employee Benefits

The Company sponsors defined benefit pension and postretirement plans, which cover substantially all union and nonunion employees and provide retirement income, medical, dental and life insurance benefits.

The Company sponsors two defined benefit pension plans (one for union and the other for nonunion employees), each of which is funded solely by Company contributions. Benefits are determined based on years of service and average compensation.

The Company sponsors two defined benefit postretirement plans (one for union and the other for nonunion employees), which provide medical, dental and life insurance benefits for eligible employees and their beneficiaries. The medical benefits are contributory with participants' contributions adjusted annually, and participants are responsible for deductible and coinsurance amounts. Dental benefits are non-contributory but participants are responsible for deductible and coinsurance amounts. The life insurance benefits are noncontributory. The measurement date used to determine pension and other postretirement benefit obligations for the pension plans and the postretirement benefit plan is December 31.

The Company has adopted the recognition and disclosure provisions of Statement of Financial Accounting Standards No. 158, Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans ("FASB 158"). FASB 158 requires the booking of an asset, if the plan is over funded or a liability, if the plan is under funded, rather than disclosing the funded status in a note to the financial statements. The amount recorded is the difference between the fair value of plan assets and the benefit obligation. FASB 158 is effective for the Company at the end of the fiscal year ending after June 15, 2007 and the Company adopted the provision for the year ended December 31, 2007.

The following table sets forth the plans' benefit obligations, fair value of the plans' assets, and the plans' funded status:

	Pension Benefits Years Ended December 31,		<b>Other Postretirement Benefits</b>		
			Years Ended	December 31,	
	2007	2006	2007	2006	
Change in benefit obligation:					
Benefit obligation at beginning of year	\$52,003,000	\$47,544,000	\$ 5,097,000	\$ 3,985,000	
Service cost	3,392,000	3,329,000	665,000	577,000	
Interest cost	2,976,000	2,618,000	340,000	226,000	
Benefits paid	(1,194,000)	(923,000)	(212,000)	(144,000)	
Change in plan provisions	-	-	(18,000)	-	
Plan participants' contributions	-	-	29,000	19,000	
Actuarial (gain) loss	311,000	(565,000)	860,000	434,000	
Benefit obligation at end of year	\$57,488,000	\$52,003,000	\$ 6,761,000	<u>\$ 5,097,000</u>	
Change in plan assets					
Fair value of plan assets at beginning of year	42,763,000	35,247,000	5,066,000	4,075,000	
Actual return on plan assets	2,446,000	4,675,000	262,000	551,000	
Employer contributions	3,443,000	3,764,000	769,000	565,000	
Plan participants' contributions	-	-	29,000	19,000	
Benefits paid	(1,194,000)	(923,000)	(212,000)	(144,000)	
Fair value of plan assets at end of year	47,448,000	42,763,000	5,914,000	5,066,000	
Funded status at end of the year	(10,040,000)	(9,240,000)	(847,000)	(31,000)	
Transition obligation	-	937,000	-	586,000	
Net actuarial (gain) loss	-	8,274,000	-	(639,000)	
Prior service cost		29,000		84,000	
Net amount recognized as non-current liability	\$ <u>(10,040,000</u> )	\$	<u>\$ (847,000</u> )	<u>\$                                    </u>	

The 2007 pension liability was recorded based upon requirements of FAS 158, whereas, 2006 pension liability was classified based upon the requirements of FAS 87. The Company has determined that the pension liability is probable of recovery through the ISO Tariff and has recorded a regulatory asset as of December 31, 2007.

As of December 31, 2006, since the fair value of the plan assets exceeded the accumulated benefit obligation no minimum pension liability is required. The accumulated benefit obligation was \$41,271,000, the projected benefit obligation was \$52,003,000, and the fair value of plan assets was \$42,763,000 as of December 31, 2006.

	Pension Benefits Years Ended December 31,		Other Postretin Years Ended	rement Benefits December 31,	
	2007	2006	2007	2006	
Components of net periodic benefit cost:					
Service cost	\$ 3,392,000	\$ 3,329,000	\$ 665,000	\$ 577,000	
Interest cost	2,976,000	2,618,000	340,000	225,000	
Expected return on plan assets	(3,290,000)	(2,756,000)	(397,000)	(320,000)	
Amortization of transition obligation	125,000	125,000	56,000	56,000	
Amortization of net actuarial loss	228,000	446,000	-	-	
Amortization of unrecognized Prior Service Cost	2,000	2,000	51,000	51,000	
Amortization of unrecognized gain			0	(24,000)	
Net periodic benefit cost	\$ 3,433,000	\$ 3,764,000	\$ 715,000	\$ 565,000	

		Pension Benefits Years Ended December 31,			<b>Other Postretirement Benefits</b>			
	Yea				Years Ended December		nber 31,	
	2	007	2(	006	2(	007		2006
Prepaid benefit cost at beginning of year	\$	-	\$	-	\$	-	\$	_
Employer contributions	3,4	33,000	3,7	64,000	70	69,000		565,000
Net periodic benefit cost	_(3,4	<u>33,000</u> )	_(3,7	(64,000)	(7	15,000)		(565,000)
Prepaid benefit cost at end of year	\$	_	\$	_	\$	54,000	\$	_

The following table sets forth the amount expected to be amortized into net periodic benefit cost over the next fiscal year ending December 31, 2008:

	Pension Benefits	Other Benefits
Expected amortization of transition obligation	125,000	56,000
Expected amortization of net actuarial loss	235,000	_
Expected amortization of prior service cost	2,000	15,000

The primary economic assumptions used to value these liabilities are summarized in the following chart. These assumptions are selected as the measurement data based on prevailing economic conditions.

Weighted-average assumptions used to determine net periodic benefit cost for the following years ended:

	<b>Pension Benefits</b>		Other	Benefits	
	12/31/2007	12/31/2006	12/31/2007	12/31/2006	
Discount rate	5.75%	5.50%	5.75%	5.50%	
Expected long-term rate of return on plan assets	7.50%	7.50%	7.50%	7.50%	
Rate of compensation increase	3.50%	3.50%	3.50%	3.50%	
Health Care cost trend rates—initial	-	-	8.00%	5.00%	
Health Care cost trend rates—ultimate	-	-	5.00%	4.00%	
Ultimate year	-	-	2010	2007	

Weighted-average assumptions used to determine benefit obligation for the following years ended:

	Pension Benefits		Other Benefits	
	12/31/2007	12/31/2006	12/31/2007	12/31/2006
Discount rate	5.75%	5.75%	5.75%	5.75%
Rate of compensation increase	3.50%	3.50%	3.50%	3.50%

A one percentage point change in the assumed health care cost trend rates would either increase the Accumulated Post Retirement Benefit ("APBO") as of December 31, 2007 by approximately \$304,000 or decrease the APBO by approximately \$277,000. Additionally, a one percentage point change in the assumed health care cost trend rates would increase or decrease the net post retirement cost for 2007 by approximately \$62,000 and \$55,000, respectively.

ISO's pension plan and postretirement benefit plan weighted-average asset allocations and expected returns by asset category are as follows:

	Target Allocation 2008	Percentage of Plan Assets at December		Weighted Average Expected Long-Term
		2007	2006	Rate of Return-2008
Equity Securities	60%	59%	60%	5.10%
Debt Securities	40%	41%	40%	2.40%
Total	100%	100%	100%	7.50%

The forward-looking estimates of total return are generated through combined assessment of current valuation measures, income, economic growth and inflation forecasts, and historical risk premiums. The long-term bond forecast is derived from the expected long-term return of a portfolio of corporate, government and high yield debt instruments. The equity forecasts are based on the long-term real returns of a portfolio of US large cap, US small cap, international developed markets and emerging markets equity securities.

The Plan's investment portfolio is to be invested to provide benefits for qualified employees of ISO New England Inc. Investments are to be compatible with the liquidity requirements determined by the plan's actuary. An optimal target allocation of 60/40 between equities and fixed income investments is to be kept with an allowance of fifteen percent (15%) over/under deviation from the optimal allocation target.

The Company expects to contribute \$3,570,000 to its pension plan and \$749,000 to its postretirement benefit plan in 2008.

The following benefit payments, which reflect expected future service, as appropriate, are expected to be paid:

	Pension Benefits	Other Benefits
2008	\$ 1,248,000	\$ 307,000
2009	\$ 1,355,000	\$ 342,000
2010	\$ 1,507,000	\$ 420,000
2011	\$ 1,648,000	\$ 505,000
2012	\$ 1,899,000	\$ 553,000
Years 2013–2017	<u>\$13,321,000</u>	<u>\$ 4,083,000</u>
Total	\$20,978,000	\$ 6,210,000

#### 6. 401(k) Savings Plan

The Company has a 401(k) Retirement and Savings Plan open to substantially all employees. This savings plan provides for employee contributions up to specified limits. The Company matches employee contributions up to 3% of eligible compensation and provides a 50% match on the next 2% of eligible compensation. The matching contributions for the Company were \$1,508,000 and \$1,427,000 for 2007 and 2006, respectively.

#### 7. Leases

The following is a schedule by year of future minimum rental payments for all noncancelable-operating leases:

2008	46,000
2009	46,000
2010	46,000
2011	27,000
Total minimum lease payments	\$165,000

The Company currently houses its back-up facilities at a separate location for a nominal annual payment.

Additionally, the Company was leasing office space in one other building. The lease had an initial term of six years with an automatic month-to-month renewal option ending on July 31, 2007. The company terminated this lease on July 1, 2007, paying an early termination payment of \$37,000, representing 50% of the last month's rent.

For fiscal years 2007 and 2006, rental payments for operating leases were \$511,000 and \$944,000, respectively.

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