



Transmission Electrifies the Future

By **Kathy Shea**, Eversource Energy

Though rarely recognized, our electric grid is one of the most life-sustaining and critical systems in the world. It works largely in the background, providing reliable and efficient power at all times.

Securing America's energy future requires us all to work together toward achieving a best-in-class electric system — one that consistently delivers the highest level of reliability and resiliency, while also providing customers with an affordable, diverse and environmentally sensitive fuel mix.

To reach that collective goal, we will need a diverse portfolio of resources, including energy efficiency, demand response, conventional generation, renewables and imports, along with a strong and highly interconnected delivery system. To secure a successful and cost-effective portfolio, transmission must play a critical role, both as a facilitator to resource development and access, and as insurance against unforeseen but inevitable market changes and system challenges that would otherwise increase reliability risks and result in higher costs to customers.

The New England Experience

Eversource owns and maintains a large portion of the New England high-voltage electric grid, and New England as a whole has a significantly more reliable and efficient system today than it did 15 years ago.

With the focus on deregulation in the 1990s, the region had invested little in transmission. Our infrastructure, on average, was more than 30 years old, and largely designed and constructed for a different regulatory and technological world. By 2005, transmission system constraints existed region-wide. In 2006, the U.S. Department of Energy labeled New England as a "congestion area of concern," and saw congestion and out-of-market costs exceeding \$600 million annually. At this time, there also were more than 7000 MW of generator retirements on the horizon and the shale gas boom was beginning. And a lack of infrastructure was exposing customers to reliability risks, increasing costs and not supporting clean energy goals.

Many stakeholders worked to address our region's challenges, such as population density, lack of available rights-of-way, and constraints on the supplies of natural gas and electricity from outside the region. For example, ISO New England and the utilities began a comprehensive planning process to develop infrastructure to resolve many critical reliability needs. The New England states led the development of RGGI, the nation's first carbon trading program. FERC and NERC ensured accountability with mandatory, nationwide reliability standards.

Most long-standing reliability issues and major transmission constraints have now been addressed or eliminated, drastically reducing risks to customers. The modern focus on the grid, instead of exclusively on generation facilities, has made utilities more dynamic and capable of adapting to new technologies,

changing economic conditions and consumer preferences. As a result, I think utilities are better investments now than ever.

At the same time, transmission and other improvements have reduced congestion and out-of-market payments by more than 90%. Customers will continue to reap these cost savings into the future, as a strong transmission system remains a key catalyst for competitive markets.

Finally, our robust transmission system has delivered significant environmental benefits. In New England, power sector emissions have been reduced by nearly 25% since 2000, driven by forward-thinking state policies and a cleaner fuel mix facilitated by a more robust regional transmission system.

Today the region can claim a reliable delivery system, but the needs will continue to evolve. Retirements and construction of new generation will continue. We face continued threats from severe weather, physical and cyber-attacks, and significant fuel security challenges. The grid must stand ready to accommodate new technologies and continue to bring greater benefits to customers and communities.

Facilitating a Best-in-Class Electric System

Transmission must be an integral part of the dialogue on policies that will guide our nation's energy future. Transmission will bring us resiliency to deal with challenges of severe weather, outages or disruptions, fuel security, unexpected load growth and retirements. A strong system also allows our nation flexibility in generation, access to the resources that are needed when they are needed, and the ability to make the right decisions for affordability and environmental concerns. Transmission also helps sustain and enable new technologies and distributed resources, such as energy storage and wind and solar development, which are changing the face of the electricity business. With a robust transmission system, our energy future will also grow stronger, supporting development of new resources and deployment of new technologies, close to load and in remote areas.

As president of WIRES, I promote transmission investment across North America through what I believe is the "go to" organization on all things transmission. For over a decade, WIRES has had a diverse membership of investor-owned, publicly-owned and member-owned companies as well as transmission customers, RTOs, and service and technology companies. Together, we are working hard to highlight the many benefits of building transmission lines and the role of the high-voltage grid as a key facilitator and contributor to the provision of reliable, affordable, and sustainable energy that customers across the nation can depend on, today and well into the future. **TDW**

Kathy Shea is president of transmission for Eversource Energy and president of the international trade association WIRES.