

**Department of Energy Quadrennial Energy Review: Electricity Distribution and End-Use
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Joel Schmidt, Vice President – Regulatory Affairs, Alliant Energy**

Good morning. I'm Joel Schmidt, Vice President of Regulatory Affairs at Alliant Energy, a Midwest U.S. energy provider that generates and supplies electricity and natural gas to approximately 950,000 electric customers and 410,000 gas customers in Iowa and Wisconsin.

Today, we are experiencing change in the energy industry at a pace never before seen. Technology continues to transform our lives, changing the way we live, work and communicate. Indeed, technological advancements are reshaping our landscape and challenging us to do things differently.

At Alliant Energy, we have prepared for this exciting future by consistently looking ahead to developments in the industry, while positioning for further changes. Our ultimate goal is to provide our customers with reliable, cost-effective and increasingly clean energy. To deliver the energy future customers desire, we are:

- Advancing cost-effective clean energy through growing investments in renewable resources, including wind and solar.
- Developing innovative customer solutions that provide flexibility and additional customer options.
- Modernizing our system by building a smarter and stronger power grid.

We serve customers across a diverse region that covers more than 53,000 square miles and serves more than 1,200 communities. Whether in a city, a small town or a rural area, expectations remain the same: Customers count on us to provide secure and reliable power backed up by a robust power grid that is increasingly interactive and dynamic. Doing this requires new thinking, new investments and new ways of operating the business.

Our thoughtful approach allows us to move to a cleaner, more resilient energy system, while managing impacts on our customers, employees and local economies.

Advancing clean energy

We have been transitioning our system to combine traditional energy sources with increased investments in renewables. Since 2008, we have invested more than \$1 billion in wind and have been utilizing wind resources for two decades. We have retired or repurposed more than one-third of our traditional generation capacity since 2010 and are adding highly efficient, cost-effective, natural gas-fired generation that complements our growing investments in renewable energy. These steps, together with improvement in the operations and efficiency of our generating facilities, have led to substantial emission reductions: SO₂ and NO_x emissions are expected to be reduced by approximately 90% and 80% respectively from 2005 levels by 2025. Mercury emissions are expected to be reduced by approximately 90% from 2009 levels by 2025. And CO₂ emissions have been reduced by approximately 15% from 2005 levels.

As we transition to a clean energy future, we continue to work closely with the employees, communities and customers that are impacted by the retirement or conversion of some of our traditional generation facilities.

Providing innovative customer solutions

Our company and our states have long led energy efficiency and demand response efforts. We are developing energy solutions that provide customers with greater control over their energy use and we are learning how to best incorporate renewable and other technologies in a cost-effective way.

As we transition our system, we are strengthening existing relationships and forging new partnerships. For example, we are collaborating with the Electric Power Research Institute (EPRI) on a pilot project that will test several solar and energy storage technologies in our Madison, Wisconsin headquarters.

In Cedar Rapids, Iowa, we are partnering with the Indian Creek Nature Center where we will operate a solar array that will reduce the energy needed from the power grid to the facility. In Beloit, Wisconsin, we will begin supplying solar energy to customers later this year from a repurposed former ash disposal site.

While we are dedicated to providing more options to help accommodate customer demands, we are mindful of our responsibility to serve all customers, at every income level, in a reliable and affordable manner.

In our service area, more than 50 percent of our customers have a household income of less than \$50,000 a year while almost 25 percent have household incomes that are less than \$25,000 a year. This is why it is so critical for us to provide affordable energy so that all customers can have more options and the opportunity to benefit from clean energy resources.

Building a smarter and stronger power grid

Created over the last century as a one-way flow system, the power grid is evolving into a system that must increasingly integrate the two-way flow of energy. Increased customer participation in energy management and the growing electrification of our society require the grid to be more reliable, robust and resilient than ever before. In order to accomplish this evolution, the communications infrastructure must also evolve in parallel to allow the grid and its customers access to more real-time data for analytical and decision-making needs.

To modernize the power grid, we plan to invest \$1.8 billion over the next four years. These investments will allow us to continue to economically power our communities with the reliability and resiliency we've always provided, even as we integrate more technologies, including distributed energy resources.

Given the growing demands on our distribution system, we are looking ahead to the coming decades and evaluating ways to improve reliability while controlling customer

costs. Some of the infrastructure upgrades we are evaluating include improvements that will allow for easier integration of new distributed generation technologies such as a higher operating voltage standards and increased sensors in the field and in our substations.

As we transition, we must continue to work together as an industry to promote economic competitiveness, environmental responsibility, system resiliency and affordability. We also believe that there's a need for continued and increased collaboration with the Department of Energy and others to help bring down the cost of new technologies. We need new approaches to deploying these technologies in ways that work for everyone, including Alliant Energy's more rural, diverse, and distributed customer base. As well, states should continue to have authority over retail electric service decisions given that they are closest to the energy needs of their residents.

Finally, we must all recognize the critical role of the power grid and the shared responsibility we have to modernize it. The grid is the backbone of our entire electric system and we expect it to be the catalyst for future value creation from new and emerging technologies. Integrating more distributed energy resources will require regulatory policies that enable this exciting transformation while addressing the impact on our customers and communities.