

# Investing in an Energy –Efficient Future

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Thank you. It sounds like yesterday was a very full agenda – I'm sorry I had to miss it.

There is always something new to learn at these events – especially when you draw from a variety of backgrounds and expertise, such as we have here today.

I hope that I can bring something new to the table as well, and I'm honored to share the podium this morning with Jon Wellinghoff [FERC commissioner].

I appreciate this opportunity to share with you my vision for what I believe is one of the most promising developments of the 21<sup>st</sup> century – energy efficiency.

- Why the time is right for energy efficiency to become what I call the “fifth fuel”
- What it will take for this country to tap energy efficiency's full potential.

## **Why energy efficiency, and why now?**

I can give you three good reasons.

First, demand for energy is growing.

- The Department of Energy estimates a 40 percent increase in U.S. demand for electricity by the year 2030.
- One driver of that demand is our love affair with all things electronic – the energy-consuming appliances, plasma TVs, computers and other electronic devices that make our lives easier, and more enjoyable.
- A recent Consumer Electronics Association study revealed that the number of electronics products per household has doubled since 1997, and they now consume 11 percent of residential electricity.
- To meet that kind of growth in demand, we will need to both build new generation and improve energy efficiency.

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- More aggressive energy efficiency efforts could cut the growth rate of worldwide energy consumption by more than half over the next 15 years, according to a recent study by the McKinsey Global Institute.
  - As the “fifth fuel,” energy efficiency can be as useful in meeting our growing energy needs as coal, nuclear, natural gas or renewable energy.

Second, prices are rising.

- Duke Energy’s rates remain about 20 percent below the national average, and we will continue to keep rates as low as possible for our customers.
- However, we’ve seen double-digit increases in electricity prices in much of the country – up to 80 percent in some areas that are emerging from temporary deregulation price caps.
- New plants will be needed to serve growing demand, putting more pressure on prices.
- We also need to restore our aging transmission and distribution networks, and make reliability improvements.

Third, the pressure is mounting on environmental issues as well.

- The mindset toward climate change is shifting in the business community.
- Utilities and other industries are acknowledging their role and stepping up to help solve this global problem.
- Earlier this year, I joined 10 other business leaders who took a stand as part of the U.S. Climate Action Partnership (USCAP) – a coalition of businesses and environmental groups calling for a nationwide limit on CO<sub>2</sub> emissions.
- We advocated a carbon emissions cap-and-trade model, which Congress is currently considering, along with other potential solutions.
- The important point is that we must find a way to lower our greenhouse-gas and other emissions – and energy efficiency will be part of the solution.

Electric utilities have the expertise, the infrastructure, the customer relationships – and a responsibility as well – to make efficiency a significant part of the energy mix.

- But our actions as utilities alone won't make that happen.
- To bring about an energy-efficient future, three things need to fall into place –new regulatory policies, new cutting-edge technologies, and new ways of thinking about energy and how we use it.

**First, we need regulatory and legislative policy that puts energy efficiency on a par with energy generation.**

We're in business to serve our customers by selling them all the electricity they need at a fair price, and we've traditionally been rewarded for selling more of our product, not less!

- But if we can help them meet their energy needs with less electricity – and thus less cost and less environmental impact – shouldn't we be doing that as well?
- The truth is, we can provide the same – or even greater – value to our customers with energy efficiency “save-a-watts” as we do providing kilowatts.
- Pricing based on average costs for electricity – as opposed to actual, real-time costs of providing it – has led customers to under-invest in energy efficiency.
- But for the most part, state regulations do not provide utilities with the proper incentives to close that gap.
- We need a new regulatory compact that allows us to earn the same amount on our investments in energy efficiency as we do for new generation.

Duke Energy and other utilities are working to convince our state regulators that sustainable solutions will require a whole new way of thinking.

- As I speak, our energy efficiency team is finalizing a proposed plan to file with our N.C. regulators within the next few weeks.
- A “save-a-watt” model would:
  - Treat energy efficiency as the “fifth fuel” – just like generation assets.

- Price those energy efficiency “save-a-watts” based on the avoided cost of new generation.
- Allow that price per save-a-watt to be included in the rate base, once verified.
- That would allow utilities to:
  - Be impartial to investments in new generation or in energy efficiency.
  - Invest more in new technologies.
  - Expand our products and services to help customers better manage their energy costs.
  - Provide clear benefits to customers and the environment.

**Secondly, in order to become a premier supplier of energy efficiency – we will need to invest in sophisticated new technology.**

In the year 2000, the National Academy of Engineering chose the electrification of America and the developed world as the greatest engineering achievement of the 20<sup>th</sup> century – ahead of air and space flight, television, the computer and the Internet.

I believe that turning the electric grid into a digital communications and energy efficiency network could very well be one of the greatest advancements of the 21<sup>st</sup> century.

Yesterday you heard about some of the new technologies that will allow us to take energy efficiency to the next level.

In addition to the operational benefits, new technologies will make energy efficiency more cost-effective to administer and more practical to implement than the energy efficiency programs of the past.

The electric distribution grid will be the backbone of a successful energy efficiency program.

For example, “smart” meters:

- Can be much more than a cash register to record energy usage.

- Can provide two-way communication between customers and their electric utilities, to monitor and control that usage.
- Can support real-time pricing, billing, change-of-service, outage communications and broadband.
- We can also make the grid itself more energy-efficient.
- For example, by improving the efficiency of the nation's estimated 40 million distribution transformers, we can save approximately 8.5 billion kilowatt-hours of electricity a year.

With the right investments in technology in place:

- Energy efficiency can become the default offer for all customers.
- Time-of-use pricing would be the standard.
- Customers could choose to actively manage their energy usage or stay with the default offer.
- Utilities could glean useful data from the transmission and distribution system, which would enable us to measure and verify our energy efficiency results.
- Investments in new technologies will also allow customers to keep the comforts and conveniences they have become accustomed to, while operating their homes and businesses much more efficiently.

**Which leads to the third requirement for an energy-efficient future – a changing mindset on the part of not only regulators and utilities, but also customers.**

Traditionally, investments in energy efficiency have been mostly focused on consumer education.

- Think back to the conservation campaigns of the 70s and 80s (if you're old enough to remember!).
- They were designed to make energy efficiency "top of mind."

- We changed the temperature of the thermostat, hot-water heater and refrigerator a few degrees to save energy.
- Those were the days of ice-cold tile floors in the morning, cold showers and warm beer!

Let me contrast that with an example of how we're using technology today to help one of our large commercial customers keep the beer cold – and save energy in the process.

- A beer distributor wanted to save money on their energy bill, a large part of which was storing the product within a fairly narrow temperature range, to ensure quality.
  - We were able to put them on a demand-response system that automatically allows the product temperature to "float" within that range, during periods of high demand on our system – producing "save-a-watts" that replace unneeded kilowatts.
  - And once the system is up and running – they don't have to think about it.
- A lasting and sustainable shift in the way we use electricity will require that "back of mind" approach – where customers can take energy efficiency for granted, the same way they take for granted that the lights will come on when they flip a switch.
- We've given this a lot of thought at Duke Energy, and we believe that "changing minds and changing habits" is so important that we made it the theme of this year's annual report.
- With energy efficiency technologies and programs wired into every home and business, all customers would have universal access to the benefits – more control over their energy costs, and of course the benefits to the environment.
- Our current business model is built on universal access to electricity within a region. In the future, it will also be built on universal access to energy efficiency products and services.
- Standard service could include those energy efficiency technologies, as well as green power. Instead of having to "opt in" to energy efficiency, customers would have to "opt out" of those programs and services.
- That's the paradigm change that will allow energy efficiency to become a viable part of our energy mix.

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**Clearly, there is no “silver bullet” to solve today’s energy challenges.**

- And no power system in the world can rely on efficiency alone to meet growing consumer needs.
- Instead we need a “silver buckshot” approach.
- To ensure adequate supply, fair and reasonable prices and minimal impact to the environment, we need a diversity of fuel sources – nuclear, coal, natural gas, renewable energy and the “fifth fuel” – energy efficiency.
- The save-a-watts it generates – assuming the right regulatory framework and investments in new technologies – will help ensure a reliable, affordable and clean supply of energy to fuel a growing economy.

**Now I think I have a few minutes left to take your questions, before I turn it over to Jon.**