

## **The ‘Smart’ In Smart Grid Is the Consumer**

**By Fred Anderson, President/CEO New Hampshire Electric Cooperative**

Between now and the end of 2012, every member of New Hampshire Electric Cooperative (NHEC) will be getting a new electric meter that is capable of reporting its readings directly to NHEC headquarters in Plymouth. If your interest in “Smart Grid” technology begins and ends there, that’s the only change you’ll notice. But if you choose, you can use this new technology to understand and manage your energy use as never before.

NHEC’s creation of an Advanced Metering Infrastructure (AMI) is the largest single deployment of new technology in the company’s 72-year history. When the project is complete, every NHEC meter will be part of a network that wirelessly reports and receives usage data – from Derry to Pittsburg. But an electric meter, no matter how advanced, isn’t going to save energy all by itself. In the end, it’s not the technology; it’s how you use it.

Smart Grid projects are underway in states across the country as electric utilities begin to change the way power is delivered and used. For the past 100 years, the relationship between utility and consumer hasn’t changed much – the utility generates power and sends it to your home or business where you consume it. Once a month, the utility sends a meter reader to your property to record your usage and you get a bill showing that usage in one lump sum. It’s a system that has worked pretty well. In fact, the U.S. electric grid was named the greatest engineering achievement of the 20<sup>th</sup> century by the National Academy of Engineering. But nationwide, that infrastructure is overburdened, failing more frequently and unprepared for the demands of the 21<sup>st</sup> century. Here are some sobering projections from the Department of Energy: demand for electricity in the U.S. is expected to grow 30% by 2030, requiring investments totaling approximately \$1.5 trillion over the next 20 years to pay for the new infrastructure alone.

Given these facts, it’s essential that we have transmission and distribution systems that can move more and more electricity, more and more efficiently. Equally important, we will need

educated consumers who have the tools and information they need to make the most efficient use of electricity.

Here in New Hampshire, adequate power supply is not the issue. New England as a region has greater capacity than it needs. The issue in New England is the high cost of electricity and the effect it has on residents and businesses. We believe NHEC's AMI project can empower Co-op members with information and resources to make smarter use of energy and possibly save money.

The heart of NHEC's AMI project is the meter itself. Instead of a traditional meter with gears and dials, AMI meters have a digital display and are equipped with a small ¼-Watt radio. In everyday use, your AMI meter will be transmitting usage data approximately seven to 10 times a day. Each transmission is approximately 1.5 seconds in duration, meaning your meter will actually be transmitting no more than 15 seconds per day. The rest of the day, your meter is not emitting a signal. AMI meters transmit relatively weak radio signals, much less than the emissions of many other products most people use every day, like cell phones, baby monitors and microwave ovens. Given the AMI meter's location outside the home or business, the infrequency of transmissions and the relative weakness of the signal, its emissions are much less powerful than the devices listed above. In fact, radio waves from an AMI meter, at a distance of 10 feet, are only about one one-thousandth as much as a typical cell phone held to your ear.

When the AMI project is complete, every Co-op member with an AMI meter will have access to a free web portal where you can view your electric usage in monthly, weekly, daily, even hourly increments. You can see the times when you use the most power and, if you choose, use that information to try simple conservation steps. For example, let's say you decide to install energy efficient LED lights. You can place an 'energy marker' on your web portal and begin tracking the difference the very next day.

NHEC will be doing its part to maximize the two-way communications capability of AMI meters as well. Next summer we plan to launch pilot programs that will include the use of in-home

displays and dynamic pricing programs that charge a different rate for electricity consumed during certain times. Of course, enrollment in any of these programs will be strictly voluntary. Simply having a smart meter installed does not give NHEC the ability or the right to control your electric usage in any way.

AMI offers other benefits for members and the Co-op, like improved outage management. AMI meters are equipped with a capacitor that triggers a 'last gasp' notification when the power goes out, alerting NHEC to outages as they happen. Also, members will no longer receive estimated reads because a meter reader can't access your property or meter. We encourage you to learn more about the project at [www.nhec.coop/ami](http://www.nhec.coop/ami) and see how you can put Smart Grid technology to work for you.