Good afternoon and thanks for joining us; I'm Judy Simpson. Over the past several months we've aired an occasional series of programs on the Smart Grid updates to Vermont’s electric grid. We've discussed issues like renewable energy the environment and safety as they relate to smart grid technology. This afternoon we're at the par series by focusing on how consumers are benefiting from smart grid upgrades. Joining me now are two guests from the Vermont Electric cooperative. Dave Hallquist is the co-op’s chief executive officer and Liz Gamache is the utilities manager of corporate services. Thanks so much for being with us. Before we get directly to smart grid maybe Dave you can give our viewers a background on the Co-op.

Dave.: Sure. The Vermont Electric Co-op serves 34,000 members in Northern Vermont. We serve the territory all the way from New York to New Hampshire border and we do get into Chittenden County. We have the Hinesburg Starksboro area. Vermont Electric Co-op was founded in 1938 as part of the national rural electric cooperative association. The program to electrify rural America in 1938 that was an executive order that was signed. 75% of the land mass in the country is actually served by electric cooperatives.

Judy.: Okay. Just so we're all on the same page when we use the term smart grid what exactly does that mean Liz?

Liz.: First of all the electric grid is the system that we use to take electricity from a generation stores across transmission lines to substations to distribution lines and ultimately to our home. What smart grid does is use technology primarily through two way communication digital communication in order to help us make the grid run more effectively and also to provide information so consumers can manage their electricity consumption more effectively.

Judy.: Why did Vermont Electric Co-op decide to install these upgrades?

Dave.: Because we serve this rural territory and it's actually pretty rugged territory we are one of the few utilities in the nation that can say 55% of our poles actually need to be climbed by the linemen. We cannot get to them with bucket trucks. So with that restoring power is difficult and because we serve such a rural area we do get exposed to higher levels of outages. We primarily chose the system to improve our average response to our customers.
Judy.: So part of the smart grid system involves new meters on customers' homes and businesses. What percentage of your customers have these new meters?

Dave.: We're over 95% at this point.

Judy.: The Co-op leads the state in smart meter deployment why is that?

Liz.: We got an early start back in early two thousands we're looking at ways that we could bring technology to use so we can operate more effectively and efficiently. We did some tests some pilot programs and eventually we were able to determine what the right technology was and in 2005 we began slowly but surely deploying our smart grid. And now we are to the 97% deployment mark. So we're making slow and steady progress along the way.

Judy.: Are these new meters different from the old meters?

Liz.: They are different in what they do. They don't actually look a whole lot different. A little bit different. This is an old analog style meter and some people might remember the analog meters had the dials across the top and a wheel that spins around and tracks for usage. This is a smart meter. It doesn't look a whole lot different but it's the digital connection so that sharing information back and forth on a periodic basis throughout the day from the consumer to our control center that VEC.

Judy.: This is new to a lot of Vermont consumers so maybe Liz you can give us a demonstration on some of the information that's available to customers.

Liz.: Sure. One of the things we're very proud of is our watt watchers program. This is something our IT staff developed to help our members or consumers take a look at their consumption patterns. Are going to the website they can login to watt watchers and you do a demo to see what their daily usage is. This is an example of a 24 hour period of time. It starts at midnight. This is a couple that are sleeping in their usage as rather low. They wake up around 6:00 AM have breakfast get ready for and then it goes back down to the base load amount. In this particular case she comes home around noon and she stays home for the afternoon. She eats lunch she does work around the house he comes home around 6:00 PM for dinner and their consumption goes up a bit. They watch TV maybe do some video games and then they go back to bed and their consumption returns to that lower base load power. They're still using some power but not the level as when they're more active during the day. Has this is an example of an hourly profile. You can also toggle and show daily views as well. With the watt watchers program our members can set alerts so they can be notified if the trigger higher usage on levels than they expect. That's a tool that sends an e-mail or a text message to the consumer letting them know that something is different than what they might have expected.

Judy.: If they decide at 6:00 we're getting ready for the day maybe part of that is putting a load of laundry or whatever. Maybe hold off and do that before they go to bed. Is that the kind of thing people can?

Liz.: That's right but I think one of the things that's really been helpful for us with this and our customers is that when things are normal there might be some opportunities to save or do things differently but it's when things are amiss that it's useful to have this information. So this is...
another normal profile family of four. Going to work in the morning school coming home and then it goes back to normal. Here's what it looks like when we have a problem. This is actually a daily graph. This member happen to call in because he got his bill and it was quite high. Very very high and he wasn't sure what was wrong. We were able to look at the consumption patterns with them and start troubleshooting. Around October 31 something happened.

Judy.: It really took off

Liz.: Yes it took off so talking it through first and nothing ring a bell then he remembered that's when the weather started to get cooler. That's when I put in a space heater in the bathroom that's not well insulated. That might have been low cost this to happen so you happen to call in and read before thanksgiving break. Our customer service Rep at some to unplug the appliance and then they checked back in four days later on Monday morning. What they saw was it went from high levels of consumption right back down to where used to be. So the culprit in this case was a space heater. In the old days before smart meters what we probably would've done is we would've sent a meter technician to check them either to make sure it was running properly. In this case it would've been. The next step perhaps calling an electrician to try to help troubleshoot the problem spending hundreds of dollars. But this is as a tool that helps us to diagnose problems solved problems in a much more timely manner and hopefully less costly manner for members.

Judy.: Yes definitely. What kind of feedback of the been getting from folks who have smart meters?

Liz.: Really positive feedback this these types of situations that help demonstrate the value of the smart meters in this particular way. We've also been able to reduce our outage time significantly with smart meters and that of course makes people happy too. The response has been very very favorable.

Judy.: Dave maybe you can tell us about how important it is to have these meters when it comes to an outage? Back in the day you have to wait for people to call and say we don't have power and take it from there.

Dave.: This technology I can't say how much we're excited about this technology in terms of how we respond outages. In the old days people would call in and in many utilities that still how it's done today that don't have smart meters. People would call in the print tickets and you have people sorting tickets trying to figure out where the outage was and it took hours and hours to figure out specifically where the outage was in a big storm. With this system the system automatically does it reports where the outage is. With GPS truck tracking so we know where the closest truck is. In a major storm this cuts are average time in half and I also want to add were able to cut our number of outages that you experience in half over the year using that data from the system because it's so rich in data you can quickly analyze what the top causes and failures are. Not only have we cut are outages in half in the past three years we cut our average response time in half as well when you do have an outage. It's very powerful.

Judy.: Has been hardly is getting people to utilize this technology as far as looking their accounts up and seeing where they're using power.
Liz.: Different people have different levels of interest so people who are interested in getting more involved in managing their consumption it's been easy and valuable for them. Other people are not as interested and that's okay this is a tool that it's there it's optional and for those who want to use it it's a big help.

Judy.: Can you actually eventually decide when you want to use your utilities and when you'll save money using utilities?

Liz.: I'd like to say that what we're doing with smart grid is just scratching the surface of what the future holds. As we develop the smart grid and smart network we will have more options available where consumers can make decisions on how and when their appliances should run. It might also be a collaboration with utilities where we work together to try to shift the load so we're using energy in non-peak times. For example in the middle of the night run a dishwasher instead of at a peak time during the afternoon for example.

Judy.: What about businesses what kind of feedback have you been getting from business partners?

Liz.: That has been strong as well. Jay peak resort is an example of where smart meters have come in handy.

Dave.: We're very excited about Jay Peak because jay peak has just put in their new water park home and they have internal fiber communication loops. We're going to tap into those loops two allow and be able to talk to the motors and have them owners talk to each other one motor will not come on wall another one is on and it will reduce their costs. But then for the grid and our members we can reduce our costs by reducing their peak which reduces our transmission bill. We're going to do that through they have a lot of these motors that that are optional. They could shut down it doesn't necessarily affect customer experience. So during a peak event we could shut all of these non-critical motors off and it's a very sophisticated use of technology. This is as Liz talks just scratching the surface. We're beginning to realize we have incredible potential as we start to utilize this technology. We're at the point now where were deployed in using the technology we've invested in.

Judy.: What about for a smaller business?

Liz.: Again it's analyzing your data and looking for opportunities so whether it's a small business or a residential consumer once you start to know how you're consuming you can find opportunities. We're happy to work with our customers directly to find ways to use more efficient appliances or do things differently. Efficiency Vermont is also available to help as well.

Dave.: I would add the small business’ that Jay Peak is a prototype. Once we develop this technology with jay peak we can start rolling this down to smaller and smaller businesses and as the technology advances in the home what's called home area networks where you can start buying appliances that automatically communicate with the grid. We’re starting at the jay peak level where we're going to communicate with devices but ultimately you look at companies like Best Buy. Best Buy is actually starting to look and sell technologies that will to the same thing at the residential level. It's going to be a 10 year path of migration but just stay tuned this technology will be coming to your home.
Judy.: What are some of the questions that you get from folks when you start talking about smart grid?

Liz.: When we started putting out the meters it was before the term smart grid existed or smart meter was something that people recognized so initially for us it was just a technology improvements and enhancement. Now the primary questions that I say we get are how can this help me to save and that's where it's a residential level it comes in handy to have those conversations of analyzing patterns and finding saving opportunities.

Judy.: Did it cost of extra for people to have the meter installed?

Liz.: No actually it was a benefit for the organization and members are owners in a cooperative. We paid for the smart meter deployment because we had operational savings so there was no cost in rates to our members.

Judy.: So why do you think your Co-op has been out front on this technology and you've actually received national recognition too?

Liz.: I think it's a testament to many of the very smart folks and we have working out of Johnson Vermont. The visionary leadership that saw an opportunity and made smart choices to use technology wisely. We were able to do something in Northern Vermont that could be done anywhere but we did in a way that worked was practical and a common sense approach and we did it.

Dave.: I would also add as I really can't emphasize enough that how the cooperative model works well here because we have a board of directors selected for our membership and I've had incredible support from the Board of Directors for roll and technologies that help improve the member experience. That idea as I speak to people our Board of Directors our board has been very good throughout this.

Judy.: Do you think because you're in such a rural area of the state that it was even more popular to be able to say if we can cut back on outages or sending trucks out even?

Dave.: Yes that clearly was the driver.

Judy.: So you no longer have to have people go out and read meters?

Liz.: That's right we read meters right from Johnson Vermont. We may have technicians go out to troubleshoot meters or do maintenance at different areas but we do not have to send them out on trucks anymore. That's a significant savings in a much greener way to do business. Our members are also able to get outage information on a regular basis too which is kind of interesting. All you have to do is log in to our website at any point in time and look at our outage center and you can see if there's an outage and we provide estimated restoration times. It's useful information that helps people to plan better.

Judy.: Where can people get more information?

Liz.: Our website www.vermont electric.coop
Judy.: I want to thank you both for coming in and showing us some of these grades and examples is really very interesting stuff.

Liz.: Thanks for having us.

Dave.: Thank you.

Judy.: That's our program for today; I'm Judy Simpson. We will see you again next time on Across the Fence.

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