Good afternoon and thanks for joining us I'm Judy Simpson. Today on the program we're going to continue our look at smart grid upgrades that Vermont Utilities are making to the Electric System. If utilities tell us they're making the system more efficient and more reliable. What will these changes mean for you and me. Both George Twigg and Chris Burns are with me to discuss how the smart grid will help consumers manage the way we use electricity and manage our costs at the same time. Welcome to both of you. George you are with Efficiency Vermont tell us a little bit about the work you do.

George: Sure Efficiency Vermont is a statewide efficiency program that helps Vermont Homes and businesses home these are reduce energy use and save money. I work there helping to develop programs including some work around smart grid.

Judy: And Chris you're with the Burlington Electric Department.

Chris: Yes we are the electric utility that provide services to the city of Burlington and we too provide a suite of similar energy efficiency programs our business and residential customers.

Judy: Before we discussed smart grid future Chris remind us a little bit about how the electric grid works today?

Chris: Think of it as a highway system for electricity. Sometimes you see a power plant like our wood chip plant in the Intervale and you think that's providing all of Burlington well it's a little bit more complicated than that. It's actually a regional grid and all of New England states are attached two surrounding states and also we are connected two Quebec. The power plants and distribution lines are all centrally controlled and we do this for reliability.
and cost savings. It's an interconnected system then when it comes down into a utility like Burlington Electric or two green mountain power or Central Vermont then those lines going to substations and those utilities will distribute the power to the homes and businesses.

Judy.: We have a graphic that shows how that works.

Chris.: Exactly.

Judy.: What does it mean to make the electric grid smart?

Chris.: Three years it's been a pretty simple system. With the advent of new sensors and the ability to get more data from the power plants to the substations and communication from the meters on the building back to the utility. It's going to allow the utility to do things much more quickly. Are going to be able to manage outages more quickly. Was going to know it almost instantaneously we're also going to be more precise in knowing where it is. We are not going to guess we're going to know from this meter to this meter it's out. We're also going to have better control on things like power quality which means those sags surges that would happen that affect a lot of equipment today. We just think it's going to help us do a better job.

Judy.: Really what it is is more communication between utilities and their customers.

Chris.: Exactly.

Judy.: That's the big picture of it so George what changes will actually see and experience of my own home?

George.: The first thing you'll see on your home may just be a different meter. When this will happen will depend on that you served by. People who are in the Vermont Electric cooperative territory most of them already have smart meters. They're not necessarily seeing a lot of changes except that their old meter with a dial has been replaced by meters a digital display.

Judy.: So it all depends on what utilities and what process there in converting will depend on when we get these meters.

George.: That's right but there's a collaboration among the utilities to try to coordinate and learn from each other about what works well.
Judy.: So how will customers be able to use the information from their smart meter to be more energy efficient.

George.: One of the things we're looking at right now are a couple of pilot programs to figure out what types of information feedback is most useful. The smart meter can provide information about energy usage and much more detail and if you think about under your current electric bill you get one month snapshot. It's hard to really tell from that snapshot what's using a lot of energy and where you might have opportunities for savings. With smart grid you'll be able to see your usage in much more detail and you'll be able to see where some of those savings opportunities will be. That information will come back to consumers it could be in the form of a website like what we're seeing on the screen now where you can track your usage and get suggestions for how you can reduce your usage and save money. There also devices called in home displays. We have one here today. This is something that could be a lot like an electronic thermostat you might have in your home. It will again show you information about how much energy are using what it is costing you.

Judy.: Can you show me how that works?

George.: Sure. This is a very simple interface. You can locate your cost information. It will show you how much are you saying that and how much are bill is expected to be at that current rate over the course of the month. You can also look at exactly how much energy are using at any given time. Again a very simple thing especially knowing that not everybody has access to the Internet it's something that simple and attaches to your smart meter. It helps you see on an instant basis what your energy usage is looking like.

Judy.: Can you eventually be able to tell what appliances are using how much energy and if you make a change in some of your own personal habits of home that it will save you some money?

George.: Yes potentially I think with some of the web based tools that were seeing it can help you pick out is this my water heater that's using a lot of energy or is it the refrigerator the lighting? In some ways is sort of like with your electric bill today currently it's like going to a grocery store and you pick up a lot of things and put them in your shopping basket. You bring it to the checkout and just get one bill for everything but you don't know how much each item costs. Smart grid will help you to have a better sense of what those different things our costing and how you can save on each of them.
Judy.: So it sounds like Chris it's really pulling the consumer into the whole energy usage and energy efficiency programs more effectively.

Chris.: I think so you have as we talked before we went camera a lot of this is still to come. A lot of our customers have said what are you going to know about what we use and how we use it? We're not going to know much more than we know today we're not going to know which appliances are on in a house but we're going to be able to guess. Just like were able to look at a profile of usage and get a good idea that you have electric heat or electric hot water but we don't know when you use it. With this it's going to give everybody some more definition and as George mentioned earlier at some point there will be time and day rates were folks can say I have enough data now to model my usage and maybe a time and a rate will work for me and I will save some money that way that these are things that are out there are few years. We also discussed the idea that some of the major appliances and homes refrigerators washing machines dishwashers dryers window air conditioners those types of things. Eventually we will be able to talk to them year and the meter talk to it and consumers may be able to take advantage of the allowing special rates not to let these things cycle to ring utility peak periods. How we describe it is setting a platform for the future. These things are not here yet but we do envision this happening.

Judy.: It's funny because we've liken this to the beginning when people started using the Internet and we have a clip from you two from 1994 that shows the host of the today show Matt Lowry and Katie Couric at the time trying to understand the new thing called the Internet we thought it would be interesting to show you that.

I wasn't prepared to translate that as I was doing that little tease that little mark with the A and the ring around it.

At?
That's what I said. Katie said she thought it was about. I've never heard it said I've done the mark but never heard it said in this I was stupid when I said it. Violence @ NBC. There is violence at NBC.GE .Com. What is the Internet anyway?
Internet is that massive Computer Network the one that's becoming really big now.
What you mean that's big what do you write to it like mail?
A lot of people use it to communicate. I guess they can communicate with NBC you writers and producers. Allison can you explain what the Internet is?
No she can say anything in 10 seconds or less.
Allison will be in the studio shortly.
What does it mean?
It's a giant Computer Network. The two computers billboard but as several universities that can go online together.
And others can access it.
It is getting bigger and bigger all the time.
It came in really handy during the quake a lot of people that's how they were communicating to tell family and loved ones that they're OK because all the phone lines were down.
I was telling Katie.
It only a phone line to operate the Internet?
No apparently not.

Judy.: Just an example of how 15 years ago this whole thing called the Internet was so new. Do you expect the same thing will be happening of smart grid?

George.: I think we're just at the beginning of being able to see what the potential is there. We looked in some of these things like that in home display is one example of how people might be able to take advantage of the information smart grid has. In the future there could be apps with your mobile phone. That can be all types of different products that communicate with the meter. The really important piece called the consumer choice. Whether it's in terms of smart grid rates or in terms of the devices use to help the consumer stay in control.

Judy.: Chris a little bit about this that this could actually help people save money at different times if they know when their appliances usage is up or down and what it actually costs them different times a day.

Chris.: Yes. This Borrows from utilities that have been offering this type of rate structure for years. Burlington Electric has offered its electric hot water customers a special rate if we can control when the tank comes on and off. I know many other Vermont Utilities do the same thing. Having smart grid in place would do give customers of all kinds of usage patterns the ability to look at their usage patterns and then through some web tools that were going to develop allow them to say OK they have different rate structures how do I know works for me for my specific situation for my home my business and how use it and you'll be able to model it and be able to say this is good for me or it's not. Before smart grid and having that level of detail about how a particular customer uses energy and when they use it was really a gas and we're taking the guesswork away. It's going to be pretty interesting.
Judy.: George what are my utility and efficiency Vermont doing to prepare to offer these new services?

George.: There are a couple things going on right now. Efficiency Vermont is working on a couple pilot programs. One is with the Vermont Electric cooperative and that's looking at where smart grid and smart meters are in place. What do people find most useful in terms of interacting with the information. Is it one of these in home displays is it a website is it actually talking to one of our customer service representatives from time to time to help coach through what this information means and how it can become meaningful to me? That's one pilot were doing we're also working on which is specifically looking at smart grid and low income Vermonters. It's really important that everybody be able to benefit from this Margaret investment because everybody is paying for it so we want to make sure that nobody gets left behind and any kind of digital divide isn't created with smart grid so that everybody has a chance to save.

Judy.: How about BED?

Chris.: We have a number of things going on as I said. Developing web tools but I think we'll be very helpful to the customer. For the other is we've partnered with UVM was engineering department two look at some social behavior studies and this has been borrowed from some health studies that have been done for smoking cessation and other issues. The idea is can you take some of the peer exchange tools that have been working through the Internet and use it to help folks become more energy efficient. What we're trying to test is not talking to somebody at efficiency Vermont or BED. Having the energy expert step aside and let the peers talk about all right what did you do to reduce your usage? How did you do it and are you willing to talk to some other folks within the group and explain your experiences and talk about why you're a highflier? Meaning is ours very efficient vs. hey I have a reasonably similar house or apartment and I'm not doing as well what's going on with you and let the peers exchange. We're going to study that group and then against a group that is not participating. It will be very interesting to see does more information help the consumer make better decisions?

Judy.: So we're heading into major heating season. What can people do right now in their own homes if they do not have smart grid to save energy?

George.: That's a good point because smart grid is focused on electricity and that's only one part of the energy equation for most homeowners. Heating is another's so as we're going into the winter efficiency Vermont and Burlington
Electric offer services to help people whether eyes their homes. A program called home performance with energy star. If you go to efficiency Vermont.com there's information about that and there are incentives available for people to learn how they can tighten up their homes either with the contract or do it yourself simple steps.

Judy.: And how about from BED'S standpoint Chris?

Chris.: I think George is absolutely right. We try to get folks to think about all the energy usage. Space heating and domestic of water can be the dominating appliances in the typical home. In the Burlington area and greater Burlington area natural gas is the dominant space heating and domestic hot water fuel. So I would encourage folks to visit the Vermont Gas website they have a suite of really good programs for their customers to help with those issues. We partner with them as does a efficiency Vermont two tried to bring the package together through all the utilities so that it makes it easier for the customer and they do not have to make multiple phone calls or multiple visits. And then the other is visit our web site. Is a lot of good tips and information. Generally 5 to 15% savings is not that hard if you pay attention to the simple stuff. The simple stuff may seem very simple that carry stuff off makes a big difference.

Judy.: And contact your local utilities thanks to both of you for being on today.

That's our program for today I'm Judy Simpson we'll see you again next time on across the fence.

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