

DIANE REHM: Thanks for joining us. I'm Diane Rehm. Last week's heat wave put to the test the ability of power companies to meet demand for electricity. The federal government promotes energy efficiency and conservation programs to reduce demand. In the private sector, new technology such as storage batteries offers some hope.

Joining me to talk about managing the nation's power needs: Coral Davenport of National Journal magazine and from a studio in Denver, Jon Wellinghoff, chairman of the Federal Energy Regulatory Commission, and John Shelk, president and CEO of the Electric Power Supply Association. You're invited as always to be part of the conversation, join us at 800-433-8850, send us an email to drshow@wamu.org, follow us on Facebook or send us a tweet. Welcome to all of you. Thanks for being with us.

CORAL DAVENPORT: Good morning. It's good to be here.

CHAIRMAN JON WELLINGHOFF: Thank you.

MR. JOHN SHELK: Good morning.

REHM: And, Chairman Wellinghoff, if I could start with you, how well do you think that power companies did last weekend quite recently with this heat wave?

WELLINGHOFF: Well, I think the grid did amazingly well, including all of the individual companies that have generators, as well as all of the consumers who participated with their loads and modifying those loads in ways to make the grid more reliable and more resilient. I think we did very well given the stress that was put on the grid by the very high heat wave.

REHM: And, John Shelk, what about that stress today as compared to, say, a decade ago?

SHELK: Well, demand for power really does change throughout the year and particularly in the high summer months, and it varies from year to year. Overall demand during the year has actually flattened down, but we have seen about a dozen days every year like the ones we've experienced recently that really stressed the grid.

REHM: I'm interested in this demand response program, Chairman Wellinghoff. Tell us how that works.

WELLINGHOFF: Well, it's a program that in part has been enabled by the Federal Energy Regulatory Commission, my commission, by approving rules in the areas where we have markets, and that includes the mid-Atlantic area, D.C., Maryland, Virginia, Pennsylvania, all the way to New Jersey and all the way up to Chicago where actually consumers can bid into those markets and receive compensation for providing value to the grid.

And the value they provide is modifying their loads upon signals by the grid operator when we have times of stress or either at other times as well. It doesn't have to be at that time either. So there's no government support per se. It's actually a market base program where consumers are

compensated for the actual value that they provide to the grid just like generators are providing that value when they generate to the grid.

REHM: And exactly how they provide that value do they turn air conditioning or heat on?

WELLINGHOFF: When – let me give you a great example.

REHM: Sure.

WELLINGHOFF: Wal-Mart, for example, Wal-Mart has a lot of refrigeration equipment, a lot of freezers and coolers that they have. They can precool that. They can precool, say, all of the frozen turkeys that they have in their coolers. And by doing that, then they can lower the amount of energy that they use at a peak time, and they can get compensated for it.

So it's a very good program for somebody like Wal-Mart because ultimately it doesn't change their business model. It doesn't change what they do in business per se, except they have to put in equipment. They have to pay for a certain kind of equipment to make sure that they can get the grid signals, and they can in fact reduce their load when they need to but still maintain, you know, those turkeys cold enough to sell.

REHM: All right. So that's in the commercial and what about the residential?

WELLINGHOFF: Well, in the residential, for example, there's nine megawatts, which is a very large amount of energy, up in New Jersey, that's aggregated by a number of residential customers by a utility there. And what they do is they just modify their thermostats by a very small amount during certain periods of the day. And again, consumers can compensate for that by precooling their house. I used to do it when I lived in Las Vegas where I would cool my house from midnight to 8:00 a.m. in the morning, and then I'd let the house sort of float over the period where you had a peak period.

So you can actually have effectively storage in all the wall board in your house by cooling it down at night and not using so much during the day. And if you get compensated to do that, you are in fact are providing a service to the grid, and that service not only helps you reduce your costs and manage your energy costs but reduces costs for the entire grid, makes the grid more reliable and more resilient.

REHM: John Shelk, how well do you think this is working?

SHELK: Well, demand response is a relatively new program. And while it's helpful as a supplement when we have stressed conditions as we've had lately, it's important to point out that over 95 percent of the resources that the grid operators called on last week consists of supply coming from the actual power plants. So under this new federal program, the amount of demand response is expected to double to about 10 percent in these grids.

And as that happens, we have to make sure two things. One, it's integrated in a way and not overcompensate. So traditional generation, which is the backbone of supply, is maintained. And

also, there's a concern that we have environmental groups and state regulators have that unlike the good examples that Chairman Wellinghoff just gave some to be in response is not actually people reducing their demand. They're actually shifting it to diesel backup generators.

So with very hot days with poor quality, the last thing we should want is those diesel generators running. And there's an EPA rule earlier this year that permits that to happen that we and others are contesting in federal court.

REHM: John Shelk, he's president and CEO of the Electric Power Supply Association. Jon Wellinghoff is chair of the Federal Energy Regulatory Commission. I gather your position, Chairman Wellinghoff, expired, what, June 30, and you're staying in office until your successor moves in.

WELLINGHOFF: That's correct. I'm holding over, and I can't hold over until the end of this Congress session.

REHM: I see. All right. Now, turning to you, Coral Davenport, energy and environmental correspondent for National Journal, how well do you think the supply and demand program is working?

DAVENPORT: So far, as the chairman said, you know, we saw last week when we had the big heat waves in New York and New England that the demand response programs appear to work pretty well. I mean the reporting was that in the Boston and New England area, the amount of demand that was saved through the demand response programs was leading up to the amount of electricity that might have been generated by building an entire new power plant.

So, you know, we're seeing that these programs do appear to be effective, but in the long run, we're going to see, you know, over the course of several years, we're going to see, you know, the projections are that we're going to see such an increase in demand for electricity overall. You know, this is going to be part of a broader effort that's really needed to figure out how to balance the surge in demand that's coming just both with, you know, growing economy.

And also, the big thing that leads to these spikes in demand is higher temperatures, people needing to turn on their air conditioners more. I mean the projections we're just going to see more and more of that going forward in the summers. So, you know, even now, it does look like with these programs the grid and the electricity supply is stretched thin.

REHM: So does that mean you're going to see construction of more lines, more added to the power grid?

DAVENPORT: This is a huge issue. I mean, the nation's power grid is really a 20th century technology. It was built for the way electricity was produced, moved and consumed over the last century. That's really changing in the 21st century. A lot of the infrastructure is old. New forms of generation are being built. Renewable electricity is being built.

There – we're seeing a shift from coal to natural gas in, you know, and we're also seeing new technologies, the so-called smart grid. All of this is going to come into play. It's – we're going to need to – an updated grid, a stronger grid, a grid that can respond better and more reliably to the increases in demand and different kinds of generation.

REHM: What about that, Jon Wellinghoff, are we going to see the addition of newer forms of technology to the grid? For example, I was in New England this past weekend. I saw numerous windmills that work. I wonder if those are in fact going to be added.

WELLINGHOFF: Well, in fact, we're going to see additional renewable resources like wind and solar. We're seeing solar as far as distributed solar on homes grow at a very significant rate, 50 – 40 to 50 percent per year actually. In fact, in San Diego County, my understanding is that solar is growing on homes and businesses there at a rate of 5 percent per month. So we are seeing a great increase and a shift in the way that we're generating electricity.

And we're going to have to accommodate that with a shift in the grid and in the operation of the grid. And that's why things like demand response are so important because that then allows consumers in essence to participate with their loads in ways that can help smooth these things out. Certainly, solar and wind are variable to some degree.

REHM: Sure.

WELLINGHOFF: And as a result, we're going to need other types of resources like consumers moving their loads at different times. So it won't be just at peak times that we'll be using these kinds of resources, but we'll be using them 24/7. And the nice thing is, because we do have new communications technologies and we're getting the smart grid, we're getting what's called the Internet of things where everything is connected to everything else and can sense things.

Because of that, ultimately we're going to have more consumer participation in the grid. It's not going to just be a one-way grid anymore. It's going to be a multi-meshed network.

REHM: Jon Wellinghoff, chairman of the Federal Energy Regulatory Commission. John Shelk is president and CEO of the Electric Power Supply Association. Coral Davenport is energy and environment correspondent for National Journal. When we come back, I look forward to hearing your calls, your questions, your tweets. Do join us.

And as we talk about power use and demand across the country, here's our first email that says, "Please make it a point to explain we don't actually have a national power grid. It's an ad hoc conglomeration of entities between power generation companies primarily, so they could share power during maintenance shutdowns. There is no federal involvement in these ties." Coral Davenport.

DAVENPORT: Well, the caller is right. I mean, as I said, what we call now the electric grid – the power grid is this sort of patchwork of, you know, utilities, generators, wires...

REHM: Connections.

DAVENPORT: ...connections that grew up throughout the 20th century as the U.S. was building. And at the time, there wasn't, you know, any sort of cohesive national plan to put it all together. And now we're looking at these different patchworks that are, you know, run by state and regional entities. They operate differently, they have different rules, and they're old.

And they don't necessarily accommodate all the electricity that's going to be needing to move through them in the 21st century. So all of this is this kind of old, strained patchwork of grids and generators, you know, are kind of an old, vulnerable, aging infrastructure patchwork that needs to be addressed in the 21st century.

REHM: And I would imagine that cost to modify these plants to meet new standards are going to, perhaps as Harry from Mt. Lebanon, Pa., says, "Will cause early or forced plant retirement." He also goes on to say, "Climate extremes will result in forced outages. Power starts at the plant." What about that, Chairman Wellinghoff?

WELLINGHOFF: Well, I do want to say that the grid does have problems. There's no question about it. But I don't think it's quite as bad as many people believe. We have three large interconnects in the country: the Western, the Eastern interconnect and Texas. Texas is sort of a separate interconnect on in it of itself. And within that area of the United States, we have seven regional transmission organizations that operate large parts of the grid. Now, admitted, there are parts in the West and the Southeast that do not have those regional transmission operators.

But those independent operators operate the grid in a very efficient way, especially in the Mid-Atlantic area, New England and New York, in California and the Midwest. There are operators there that operate large portions of grid and do operate very efficiently with different types of resources, including the generation resources, members of John Shelk's group, and also vertically integrated utilities that have generation and also demand response. So we are trying to rationalize this system. It did grow up, and Coral is correct.

REHM: But just let me ask, what about the question of the aging of that infrastructure, John Shelk?

SHELK: Well, I think you have to look at different parts of the system. For example, on the generation side, it's important to note that the three regional markets that Chairman Wellinghoff just mentioned that were under the most stress lately have competitive markets, many at the wholesale level and at the state level, and my members and others have invested in the last decade in very efficient, new power plants because they had the financial incentive to do so.

I think what Coral is referring to is the actual wires themselves and some of the distribution systems need to be modernized. But the actual power generation has become much more efficient and much more adaptive of new technologies, particularly in those competitive markets in the East.

REHM: And isn't there some concern about those new technologies, which make use of, perhaps, technologies that could be invaded?

DAVENPORT: Yeah. This is what – Commissioner Wellinghoff talked about the smart grid. You know, as we're – as the grid is being updated, a huge part of that is meshing those old wires with information technology. That has a lot of benefits. It can allow electricity to move more efficiently. It can allow, you know, homes and buildings to be lit and heated at the same rate for, you know, less money, less electricity and less carbon pollution.

It allows people to – it allows people in utilities to be able to monitor where the electricity is flowing and when and get real-time pricing, all that's great. But a lot of cyber security experts say it does open the U.S. up to significant cyber risk. And I recently talked to several experts in the space – in the cyber security space, and they say, basically, the more you integrate IT technology with the grid, the more you make it vulnerable to hackers.

And we have already seen reports that the Chinese and Russian governments have probably already hacked in to the U.S. grid. You know, and that smart grid IT technology has helped enable that. And the understanding right now is probably just that the Chinese and Russians have mapped the U.S. grid, kind of know what's where, you know, have a good idea of what's out there. The concern is that in the long run, you know, terrorists could hack into the grid and shut down U.S. electricity.

REHM: Which is why you wrote an article recently titled "Why the Smart Grid Might be a Dumb Idea."

DAVENPORT: So again, I want to be clear, there are a lot of advantages to the smart grid. And I do think, you know, as the chairman said, it's going to be an essential part of updating how we consume electricity in the U.S. And right now, there is a bill in Congress to cyber-proof the smart grid.

REHM: How do you do that?

DAVENPORT: So when I talked to experts, they say a lot what needs to happen is, you know, there's another example of patchwork here. Electric utilities are kind of doing their own smart grid work. The federal government is kind of doing its own thing. Everyone's – you know, these are all being done at micro-regional levels.

And so experts say what really needs to happen is if you're going to do the smart grid, everyone has to be sharing information. The utilities have to be sharing all of that information with the federal government. Everyone kind of has to be going in the same direction. There needs to be a lot of oversight on this.

REHM: Is that happening?

DAVENPORT: So the folks who – the advocates of this bill, the electric utilities advocate this. Say right now, because of all of the concern about government surveillance and government spying and all this Edward Snowden case, that has really frozen the prospects for this legislation to go forward. It's just – it's not going to be popular to bring up a bill right now that says, you

know, power companies should be sharing all of this data with the federal government. So that's kind of stalled the prospects for the bill at the moment.

REHM: So, John Shelk, how do you react to this notion of high-technology power grid?

SHELK: Well, there are many advantages, as we've discussed, to modernizing the grid. And thankfully, the electric power sector is really ahead of most of the rest of the economy because we have standards today that are adopted by the North American Electric Reliability Corporation that applies cyber security protections to the grid today. That entity is under the supervision of Chairman Wellinghoff and his colleagues at the Federal Energy Regulatory Commission.

And we, across the entire the electric sector, all different forms of generation, from the competitive generation I represent to public power, rural co-ops and investor-owned utilities, we all regularly communicate with the Department of Energy and the Department of Homeland Security to do the best we can on cyber security and improvements are being considered as we speak.

REHM: Chairman Wellinghoff, how safe do you think the power grid is right now?

WELLINGHOFF: I think we're relatively safe. As John said – that John Shelk just mentioned, we have what we call the critical infrastructure protection standards under this group, the North American Electric Reliability Council. They develop the standards. We put them into rules, and we enforce those rules. In other words, we make sure that the utilities and the generators all follow those rules with respect to cyber security.

For example, I was just with Nick Akins at the American Electric Power Company in Columbus, Ohio, just last week, and I saw his cyber security center. He has a state-of-the-art cyber security center for the American Electric Power Company there is Columbus and all of his affiliates which were throughout the East.

And so the utilities are stepping up. They understand there's an issue here. There's no question when you start putting in smart meters and you start putting in other smart equipment into the grid, it's going to allow the potential for people to do mischief. But I will tell you and I will assure you that the utilities are stepping up to this issue, and they are addressing it.

REHM: Coral Davenport, is nuclear energy at all a part of this planning going forward?

DAVENPORT: Nuclear energy is probably going to be part of the U.S. electricity mix going forward. Nuclear energy makes about 20 percent of U.S. electricity right now. At the moment, it's probably too expensive to build a new nuclear power plant.

REHM: And the reason I'm asking is there's a report this morning that there is steam coming out of Fukushima, one of the towers there.

DAVENPORT: And that's what I was about to say, is the – you know, since – in the kind of post-Fukushima era, and in an era where there isn't pricing on carbon emissions, it becomes – it's

become – the liabilities, the potential liabilities of building new nuclear have raised the insurance, have really kind of scared away investors so much that it seems very unlikely. Investors just don't want to put their money into new nuclear power plants right now.

REHM: All right. I'm going to open the phones – we've got lots of callers – first to Jacksonville, Fla. Let's go to Bill. Hi there.

BILL: Hi. Thank you for the lovely show. It's very nice, very informative. But my question was apart from the replacement of obsolete plants, is part of the policy an attempt to conserve our way out of true compounded demand over the next 10, 20, 30 years? And I'll take the answer off the air.

REHM: All right. Jon Wellinghoff.

WELLINGHOFF: Well, certainly energy efficiency is one part of the pie, one part of what we need to do. We can't do it all with efficiency, but a large part of what's happening is the efficiency in the country. We're seeing, of course, LED lighting coming in and taking over fluorescent lighting. And it's reducing usage substantially.

We're seeing new heating and cooling systems that are much more efficient than we've seen in the past. So certainly there's no question that efficiency will be part of our energy future, a bigger part of our energy future. But that's one thing that is only part of the whole picture.

REHM: And yet, John Shelk, you talked about cheating in terms of the plans that the government has in place now, the use of diesel generators and the like. How widespread is that, do you think?

SHELK: Well, I would differentiate between the use of the diesel generators, which we've heard is anywhere from 25 percent to as much as half of the demand response. We're hoping to get better data on that and convince the EPA to regulate those sources like they regulate power plants. I think the difference I would draw is between the conservation and efficiency that Chairman Wellinghoff talked about.

Once that's in place, that's long term. That's there forever. These temporary reductions in demand are problematic because the program is designed to pay people to reduce power below what they otherwise would have used. So you're kind of trying to prove a negative. Well, what would they have used if they weren't paid to reduce their demand? And there have been some cases – and to Chairman Wellinghoff's credit, the commission has prosecuted these cases where people have attempted to cheat.

And the important point there is to remember that demand response is not free. Other consumers – residential consumers – are paying the Wal-Marts of the world to reduce demand. So if they're being paid, they reduce demand. We have to make sure that that's actually happening. Consumers are getting value.

REHM: And you're listening to "The Diane Rehm Show." Let's go to Exeter, N.H. Hi there, Patty. You're on the air.

PATTY: Hi. Thanks for taking my call.

REHM: Sure.

PATTY: I – it's sort of obvious to me, but it doesn't seem to get talked about very much, was that temperature, air-conditioning temperature seems to be treated as a free good. And in New England we have very short summers, and when you go inside a store or office, you freeze.

And it seems to me, especially in power, when the temperature is over 90 and everyone needs the air-conditioning, that it would be worthwhile trying to encourage these big power users to add 4 degrees or 6 degrees or, oh my gosh, even 8 degrees to that 68-degree temperature. And I would expect that would make a difference in terms of stressing the system when everybody needs their air-conditioning.

REHM: I think you have a good point. John Shelk.

SHELK: Well, that's a very good point, and that's part of what state-based demand response programs do. And in the few states, relatively few states that permit retail competition, you know, most of the country, we're all stuck with the monopoly utility. But in those parts of the country, including New England and New York and the Mid-Atlantic, where customers have choices and they can go to somebody other than the local utility, that retail provider can offer that type of demand management system. And that is very helpful.

I know in our office in Washington, when we get a notice from the building landlord on a hot day, as has happened the last week, people turn off lights and turn off the air-conditioning. The trick has been, as Chairman Wellinghoff can explain, making sure that consumers see the price on a hot day. And there's always that tension between seeing the actual price on a hot day, which is high, and then wanting people to have, you know, lower bills overall. So there's a little bit of tension that if people saw the price on a hot day, they probably would do more to conserve.

REHM: All right. To Kitty Hawk, N.C. Bruce, you're on the air.

BRUCE: Well, good morning, everybody.

REHM: Hi there.

BRUCE: There's an old saying that solve the problem, don't relieve the symptoms. The problem is the demand. And the beautiful part of this is we have a lot of opportunities today to do positive things. We have to teach people to turn things off when they're not using them. We have solar panels that the prices have been down so significantly that they can be installed on houses and buildings at a low cost, which will take – keeps them and off the grid and will not require the power to travel through the grid because the power would be generated locally and used locally.

REHM: What do you think, Coral?

DAVENPORT: Well, I think one of the things that happens with the demand response program and also things like the smart grid is it kind of integrates those decisions into the system without a consumer having to sort of decide for themselves, well, I'm going to, you know, change my thermostat or turn off my lights.

You can set the smart grid and say, well, you know, in a smart grid or smart metering home to say, you know, I don't want to pay more than this, or I don't want to use more than this much electricity, or I only want to run my dishwasher or washing machine when the rate is at, you know, at a certain level.

REHM: At its lowest.

DAVENPORT: Right. So it might automatically turn on at, you know, two in the morning.

REHM: So does that mean that each homeowner is going to have to have a device installed within that home in order to be aware?

DAVENPORT: Those are called smart meters, same thing. So there are some markets where this is being integrated. I know in Boulder, Colo., they've got a market like this where people can look at these so-called smart meters, see exactly what the rate is. And that has shown that people are likely to – when they see what the costs are, they're likely to turn down their thermostat or, you know, turn off their thermostat, turn off their lights.

REHM: So you're saying it's in Colorado. Nowhere else yet?

DAVENPORT: People – I mean, there are still efforts to try to push this through in other markets, but there's no federal law on this.

REHM: Short break. We'll be right back.

REHM: And as we talk about providing sufficient power across the country, here's an email from Otto, who says, "SolarReserve is building a solar thermal plant in Nevada. The sun shining on 10,000 square miles of the Western desert will provide all the electricity the entire country uses with no pollution. Rice University Smalley Institute is working on a nanotechnology wire that will transmit electricity 10 times better than copper wire. A combination of these two inventions will save the world." What about that, Jon Wellinghoff? Is solar being incorporated as extensively as Otto indicates he believes it should?

WELLINGHOFF: Well, certainly, consumers are voting with their pocketbook in many homes and businesses. I know that major big-box stores are putting on solar and Wal-Mart, for example, has committed to go to all renewables, I think, by 2050, putting on solar on their stores, Costco, Lowe's and a lot of others, those entities, as well as a lot of residential consumers.

So, yes, I think, we're seeing solar put in, but we do have to figure out how to integrate it in with the grid and still keep the grid reliable. And that's where, I think, storage comes in. And I see a lot of advances in what Otto is saying they're not only technology on the solar side but there's advances on the storage side that, I think, are going to be very, very useful to integrate those types of technologies like solar.

REHM: Coral Davenport, how quickly do you see that moving if Otto says this solar thermal plant in Nevada could really provide enough energy for the entire country?

DAVENPORT: There's a couple of problems with solar. One is there are markets where the cost of solar is rapidly going down and is comparable with the cost of coal and natural gas and more traditional forms of energy. In those markets, we'll see solar take off just because that's the market working. One of the biggest challenges to using solar in a more widespread way is the challenge of storage. Solar, obviously, is intermittent, and there still doesn't exist a technology to store all the electricity that solar produces during the day and then use it at night.

So until solar can be sort of a, you know, base load, if you can generate all that solar energy, you know, from the desert sun and then store it in a giant battery so that it could also light up homes at night, that would be the breakthrough that would -- that scientists say would allow solar to really be a more mainstream source.

REHM: Here's another email from Eric in Charlotte, N.C., who says, "We installed a small direct burial system and cut our consumption of energy by 56 percent. Why are we not helping individual families more to reduce demand? This is a U.S.-made, locally installed system." John Shelk.

SHELK: Well, I think, this is where the design of the markets matters. We have a system, as you noted at the outset, that's very different region to region, state to state. And in those parts of the country where consumers have choices, they have both the means and the incentive to adapt and adopt new technology. So from our perspective, the more parts of the country that expand their regional markets and, at the state level, permit consumers to do these sort of things, the better we can do.

And our members, for example, are leading the way on solar, both the thermal type you talked about earlier and also on rooftop solar. But the specific example the caller mentioned, oftentimes, the question becomes, what's the relationship with the local utility if they need backup service? And that's an issue that's being debated.

What kind of fees should be assessed at the local level so if that technology happens not to work, then people are leaning on the local utility, and how do you work through that? But those are manageable issues. But the bottom line is more competition will give consumers choices and incentives to adapt new technologies.

REHM: All right. And here's an email from Emily in Cincinnati, who says, "I'm frustrated with the chairman's implication that there are incentives to use solar. Yet here in Ohio, solar incentives have expired and not been renewed. In places like California and Florida, there are

state incentives, and you see the growth in alternative electricity production. Why are there not better incentives from the federal government?" Chairman Wellinghoff.

WELLINGHOFF: Well, again, I think, like John Shelk just mentioned, I mean, there are different incentives in different places like the – Emily's email indicates. But I think that we need to go to a market-based system and ultimately let solar compete with these other technologies, and it will drive down costs. In fact, this – the evidence shows that the costs are being driven down by market forces for solar, like these other technologies.

So, yes, it's good to jumpstart these technologies initially with some types of subsidies. But I personally believe that subsidies should be reduced and then eventually eliminated so that we can all compete on a market-based system, so consumers can see prices in those markets and then respond those prices and make decisions based upon that.

REHM: Coral Davenport.

DAVENPORT: There are a patchwork of – again, patchwork of state programs to incent renewable energy production. I think it's about 27 or 28 – I'm sure that commissioner will know the most up-to-date number -- states that have some kind of renewable electricity standard that mandates that electric utilities generate some percentage of their electricity from renewable sources.

And in those states, because of those states standards, production of renewables is going up, cost is going down. They're being widely integrated into the economy. And there have been several efforts to pass similar legislation at the national level. Those have failed repeatedly in Congress.

REHM: All right. Let's go to Oklahoma City. Jean, hello.

JEAN: Hi. I just wanted to state that our power company here offers a program called Smart Hours, which my husband and I have been on since the very first. We were one of the first houses. And our electricity between June 1 and Sept. 30 is very high between 2:00 and 7:00 and then very low between 7:00 and then two o'clock in the afternoon, Monday through Friday.

Weekends are the low power. And if any holidays fall during the week, it's also low. And we are so much more comfortable. We can have the house cool at night, so I can sleep. And then when we hit two o'clock, everything goes off, and we just cruise until 7:00. We're extremely comfortable.

REHM: And, Jean, let me ask, has the price of your electricity consumption gone down?

JEAN: A lot. A lot. My husband's an engineer. So he likes to be as low as possible. They also have a program that we pop on the computer, and it can give us an hour by hour consumption level. And it'll tell us what the price will be the next day, the history that we've used, the amount of wattage we've used. And my husband works out of the house.

REHM: Well, sounds as though Jean's city, Oklahoma City, has offered something that should be available to every consumer.

DAVENPORT: That's a version of the smart meter.

REHM: Exactly.

DAVENPORT: And so, you know, there have been a lot of pieces of legislation in Congress offered up that have some element of this kind of smart grid. You know, Smart Grid National Program right now, there's a Democratic-sponsored bill in the House that would require all large utilities to have some kind of demand response, smart grid/smart meter program. This bill has no chance of getting anywhere. It's...

REHM: Why not?

DAVENPORT: It's a Democratic-sponsored bill in the Republican House.

REHM: And the Republicans don't like it. Why?

DAVENPORT: In general, there has been some bipartisan coalition around the concept of energy efficiency, of saving energy. The smart grid/smart metering programs have triggered a lot of opposition in conservative – among conservative Tea Party Republicans who say, especially, you know, this is a government-mandated program.

The government can – government and electric utilities can monitor what we're doing. It's kind of a form of government control. The government is going to control our energy use. It just – it comes with this sort of political aura of government overreach, government control, government reaching interior life and that gets in the way of its progress.

REHM: Commissioner Wellinghoff, how do you feel about that?

WELLINGHOFF: Well, I think we should look at developing a national policy, bipartisan policy, that gets government out of the control of consumers and allows consumers to respond to market prices. Like John was talking about, if we can get consumers and have them – have those market prices available to them and let those markets work, we can improve the efficiency overall at the grid, the reliability, resilience of the grid and lower costs for consumers.

REHM: But would you be in favor of the kind of bill that Coral Davenport just put forward that Democrats have been pushing?

WELLINGHOFF: Well, I would, again, be in favor of a bill that said we need to allow consumers to have choices in markets.

REHM: That's different from what Coral has outlined.

WELLINGHOFF: Yes.

DAVENPORT: Well, there – I mean, there have been a lot of efforts to move – to put together a legislation that would, in some way, increase the use of smart meters or smart grid. And it's like the commissioner was talking about, that would give consumers, like the caller, the ability to see what they're paying and make their own choices dependent on the market. So a lot of variations of this concept have been out there for a while.

REHM: All right. To Joe in Midland, Mich. Hi there.

JOE: Good morning. And my comment is, you know, you talk about the smart grid and, as was just mentioned, people having choices, but they still just have one wire coming into their house to provide them with electricity. So they really don't have a lot of choice. And, you know, as far as the price, you can go back in history, to the late '50s when Ronald Reagan, for instance, was a spokesman for GE and the onset of nuclear power in this country each stated that it was going to be too cheap to meter because the fuel cost was negligible.

Yet we come up with all these new technologies, and just like nuclear, nobody wants this stuff around their house. They – you have windmills and the people who fight against them who say it causes sickness. They're disassembling hydropower throughout the country because it disrupts the fish migration in rivers. And you can go on and on talking about things that would keep the price of electricity down, but it goes up because all these power generators and companies are in it for profit. And they're in to increase profits and increase their investments.

REHM: All right. And you're listening to "The Diane Rehm Show." John Shelk, would you like to comment?

SHELK: Yes. The caller's question actually illustrates the point that Chairman Wellinghoff and I both have been making about the differences in state policy. Unfortunately for the caller in the state of Michigan, consumer choice is capped at 10 percent of the electricity market. There are over 10,000 businesses and consumers on a waiting list, and they're paying very high rates because of that monopoly approach at the state level.

If you look across the border to Ohio or to my home state of Illinois, where customers and businesses have choice, the rates have actually come down about 20 to 25 percent in the last year. The city of Chicago, for example, aggregated all of the load of all the customers in Chicago, put it out to competitive bid and saved consumers, I believe, it was around 20 to 25 percent. So the caller is right. He needs choice, and it's up to his state legislature and governor to provide it.

REHM: So here's a tweet from Thomas, who says, "What can constituents and consumers do to press the issue of the country's archaic grid to executives and representatives?" Coral.

DAVENPORT: Well, Congress is about to go on their August recess. I think over the next few weeks we're going to be seeing, as always, a lot of town hall meetings, a lot of lawmaker meetings with constituents. This traditionally tends to be the time where constituents will come

and, you know, make their case about what policies they'd like to see to their lawmakers. This particular Congress has continued to be gridlocked on all manner of policy issues.

But I will say, I do think that energy efficiency – again, the idea – not necessarily a smart grid, that's – that comes with some political difficulties, but energy efficiency as an issue is one that there is bipartisan support on. There is a bipartisan bill in the House and the Senate on energy efficiency. It's – in the Senate it's Jeanne Shaheen in – of New Hampshire, Democrat, Republican Rob Portman of Ohio, both pretty heavy hitters. Republican Harry Reid...

Senate Majority Leader Harry Reid has said he would like to actually to be able to bill – bring that bill to the Senate floor. That's actually a piece of legislation that's aimed at increasing energy efficiency, saving consumer's money, you know, getting more energy, more power for less money, less pollution.

REHM: And I wonder, as consumers and voters meet with their elected representatives, whether that will be something at the top of their priority list. One last quick question, several emails like this one saying, "There's a new liquid metal battery for grid-level storage. Please comment on its viability." Coral, what do you know about this?

DAVENPORT: I know that there is a lot of research being done on grid-level storage for renewable electricity. I haven't heard of that particular technology. I know that there – in labs around the country, this is a very high-priority research issue. The question is, can it be made cheaply enough? Can it be installed throughout the grid? Are they safe?

But, I mean, scientists at the Energy Department say, you know, once you get kind of a commercial scale, readily available form of renewable electricity technology – storage technology, that can be the breakthrough. The question is, is it cheap? Is it scalable? Can you get the materials? Can you install it? Is it small enough?

REHM: John Shelk, quickly, what do you make of that?

SHELK: I think that there's a potential there, but it's probably a decade or more away on storage and so we have to make sure. In the meantime, we have policies in place to keep the supply and the demand side resources we're going to need to deal with things like the recent heat wave and storage will come about down the road.

REHM: All right. Well, thank you all so much for joining us, John Shelk, president and CEO of the Electric Power Supply Association, Jon Wellingshoff, chairman of the Federal Energy Regulatory Commission, and Coral Davenport, energy and environment correspondent for the National Journal. And thanks for listening, all. I'm Diane Rehm.