

Rachel Johnson, Cherryland Electric Cooperative ([00:14](#)):

Welcome to Co-op Energy Talk. I'm Rachel Johnson, the member relations manager here at Cherry Land Electric Cooperative, and we have spent a lot of time on this podcast talking about grid reliability and some of our concerns about power supply availability. Uh, a lot of those podcasts, we've really focused on the summer months and our concerns about our, the, not just ours in cherry land, but generally like the grid system's ability to meet the demand for electricity at that time. But it's important to note that those concerns don't just disappear when the summer is over. In fact, what we're increasingly seeing is that some of our greatest risk happens during the winter. Uh, and recently we saw that kind of come to a head. So just days before Christmas, winter Storm, Elliot created some dangerously cold conditions in the US from Texas to Tennessee up through the Midwest in parts of the East Coast.

Rachel Johnson, Cherryland Electric Cooperative ([01:01](#)):

Uh, for those of you who didn't know this, all of those grid systems are interconnected with one another, which means something that happens in one can often impact the other. So, while many of you were at home enjoying time with your family, celebrating the holidays, many of us working in the electric utility industry were sitting uncomfortably close to needing to take measures we've never taken before in order to keep the lights on. In fact, some regions were even forced into rolling blackouts. So, for example, duke Energy had about 11% of their customers, or 500,000 customers in the Carolinas, uh, experienced rolling blackouts December 23rd into December 24th. In addition to that, the Tennessee Valley Authority, uh, had their first time ordering rolling blackouts in 90 years. And that's obviously something that we're very concerned with because those are the neighbors we are interconnected with, and we were impacted here in Michigan as well.

Rachel Johnson, Cherryland Electric Cooperative ([01:47](#)):

And while our members may have not felt that impact, those of us who were, uh, monitoring it, felt it. So in this podcast, I sat down with Wolverine Power Supply, cooperatives Chief Operating Officer, Zach Anderson, in order to just talk about the storm, talk about why it caused so many issues, and then talk about the impact it had for Wolverine and also for our friends and neighbors across the Eastern seaboard. And, um, and then dig just a little bit into kind of how the markets operated during that time and what we learned from the experience. So, uh, a really good podcast talking in general about that storm, but really an important reminder to, uh, to us and to all of our listeners about how tight the margins are on the grid system right now, and some of the solutions we need to be pursuing going forward to make sure that we can prevent rolling blackouts in the future. So, please, uh, enjoy this podcast listening as Zach and I discuss Winter Storm Elliot, and if you have any questions after the podcast, feel free to reach out to me.

Rachel Johnson, Cherryland Electric Cooperative ([02:41](#)):

Well,

Rachel Johnson, Cherryland Electric Cooperative ([02:42](#)):

Thank you so much for joining us, Zach, and talking about what happened over the holidays. Um, I wanna kind of go back to December 23rd. We all knew this storm was coming. I mean, everybody knew literally, it was like the top news story for the day or two before it happened, that travel was gonna be grounded and, you know, the entire United States was gonna be impacted by, by the storm. So we were all prepared for it. Here at Cherry Land, we had really focused on preparing for weather related outages, right? Like trees and ice causing power lines to come down. And that really largely didn't happen in our

area. However, we had this other energy event that happened during that time where we really didn't have the amount of energy available to meet the demand for energy during the holidays in certain parts of the, um, Eastern regional grid systems. So can you first start by explaining to our listeners or reminding our listeners of who the regional grid operators are and how they operate?

Zach Anderson, Wolverine Power Supply Cooperative ([03:30](#)):

Yeah. So when we talk, and I appreciate the opportunity to talk about this, and, uh, thanks for the time, but as we talk about what this event is, I think it's important that we orient ourselves to what the markets are, as we often refer to them as markets. Well, there's really two pieces to this. And so I've, I've brought this up before on a podcast, but really if you think of everything from the Missouri River all the way to the East Coast and the Atlantic Ocean, that's one big large interconnected grid. And within that grid, there are other, um, markets underneath that, that work to manage it. And they really have two key roles. So think of it as air traffic control meets a stock exchange. So the air traffic control element of it is scheduling the power plants and the power lines to be what's in service, what's outta service?

Zach Anderson, Wolverine Power Supply Cooperative ([04:20](#)):

Where am I getting my power supply from, and how am I moving it to serve the load that I have? That's the air traffic control bit of it. And then there's this market bit, which is really important as we dig into what happened over the holidays. And that's setting a price, literally a price in, in two ways. They call it a day two market. So that means they're setting a price for tomorrow, today by forecasting what the load will be and what generation resources are needed to meet that load. And as we talk about this more, that creates, uh, a challenge when you get to then the second part, the day two, which is the real time, what's going on right now, and there's a five minute price that's set every hour, every day of the year based on what's really happening. What is the actual load right now, and what resources do I have to meet that load? So again, two pieces. The air traffic control, what do I have available for generation, what power lines are in service to, uh, deliver the electricity that's needed by consumers? And then the market piece of it. And that comes into what do I see coming for the day ahead? And then what's happening real time right now today?

Rachel Johnson, Cherryland Electric Cooperative ([05:24](#)):

And the, and the market piece follows, and we've talked about this on the podcast before, but kind of like the basics of economics, right? Mm-hmm. <affirmative>, the, if you have a higher supply, then you do demand, your prices are probably a little lower if you have low, if you start to get into those margins where you don't feel that you have a lot of supply, you're gonna start paying more for supply in order to meet demand. So, I mean, I realize it's more complex than that, but generally following, like if you've taken an economics class, you generally understand how the pricing of markets work. Yes.

Zach Anderson, Wolverine Power Supply Cooperative ([05:48](#)):

It's supply and demand in its purest

Rachel Johnson, Cherryland Electric Cooperative ([05:50](#)):

Sense. Sounds so simple, but it's, as we've learned, not as simple as it sounds. So let's talk through what happened on December 23rd, and can you just kinda walk us through why the shortages happened, what occurred, and kind of, you know, what, what that looked like from your perspective as someone who works in making sure we have the right power supply to meet the demand for our members?

Zach Anderson, Wolverine Power Supply Cooperative (06:10):

Yeah. So this is a really a large issue, and you started with it in the open, Rachel, that this was a weather driven event, as many of the events that we see are weather driven. What's interesting about this one is that the weather forecast was extremely accurate days in advance. So everybody saw this coming. And what everybody saw coming was a major cold front moving from west to east across the country that would literally take temperatures that may have been in the, in the forties in some areas, and dropped it down into the single digits or maybe even the fifties, and dropped it into the teens and around 10 degrees for some southern regions. And so this was a really widespread cold front that impacted basically the entire eastern United States. And why is that problematic? Well, as that cold front moves south, if you think of areas in the south, like Georgia and Tennessee and Kentucky, they get cold-ish <laugh>, they don't get Michigan cold, right?

Zach Anderson, Wolverine Power Supply Cooperative (07:04):

<laugh>. So they're not equipped in the same way as we are from a heating standpoint. They don't have the natural gas and propane and wood heating infrastructure. They rely largely on electric heat. And so, why am I talking about the south in a Michigan story? Well, this is really where it started. It actually started in what's known as the Tennessee Valley Authority, the TVA and so the TVA is one of those regional grid operators. It got really, really cold in Tennessee. They were having some generation issues. And so Tennessee started having problems, and that cascades into other areas. So Tennessee's neighbors like Miso and pjm, a couple of markets that Wolverine operates in on behalf of its members, they started to have issues too, because if one area gets short, it starts looking to its neighbor to provide more generation. When that neighbor may or may not have that generation, it starts going to its neighbor.

Zach Anderson, Wolverine Power Supply Cooperative (07:57):

Mm-hmm. <affirmative>. And the problem starts to really cascade out from there. So it, it started with, it got cold and really cold in the South where they're not as equipped to handle it from a, I'm talking homes, businesses standpoint. And that led to really high electric demand, electric demand that exceeded anyone's forecast. So then once the forecast is low, now you're looking for generation resources that weren't planned for the day prior mm-hmm. <affirmative>. And so now the markets start looking and they say, okay, I've exhausted everything I've scheduled for today. Where can I get this, this generation? And that's kind of a setup for what

Rachel Johnson, Cherryland Electric Cooperative (08:33):

Happened. And I think it's important to reiterate something you kind of said when we were talking about regional grid systems. While there's all these different markets within the kind of eastern half of the United States, the reality is it's all interconnected. And that works really well in general because it does allow for, take for example, the Tennessee Valley Authority to have a small issue, borrow some, we always call it sugar. Borrow some sugar from the neighbor, right? I've heard you, you say that before and be fine, but when you have something like this that impacts the entire eastern part of the United States, eventually there's no neighbors left to borrow sugar from, right? Um, so we have this issue where you had not only, we expected high demand because we expected that cold front in the eastern part of, or sorry, southeastern part of the United States, to increase the demand for electricity, for heat, but it was even more than we had anticipated. What else happened? So we did the demand side, do the supply side,

Zach Anderson, Wolverine Power Supply Cooperative ([09:24](#)):

<laugh> the demand side, and you say, okay, we thought the load was going to be this, and it's that. So in really simple terms, myo, I'll pick on them. They serve the majority of Michigan. They thought their load was going to be around a hundred thousand megawatts. It was really closer to 110,000 megawatts. So forecast was off by 10%. And that happened in, in multiple regions. So you look around and you say, okay, we've got a forecast problem. What do you do? So what do you do is you start looking for what generation is available right now that can fill in the gap that I have. And so this introduces challenge number two. So you've got a forecasting issue. And then as you go to look for those cups of sugar just to carry that through, there were not enough cups to go around. And so, uh, again, Tennessee Valley Authority, it spreads into the, the its neighbor PJM spreads into its neighbor miso, where they're all looking for resources, and the resources are having problems coming online.

Zach Anderson, Wolverine Power Supply Cooperative ([10:31](#)):

And specifically, it really was two things. One, natural gas. So we'll talk about that more, but natural gas generation struggled in this event. The other was, and this was much more localized, thankfully, there was a lot of wind online, especially in the west. So as you think of this, through the Great Plains, the wind performed really, really well. Michigan, we had some challenges through the event period. Our wind farms in particular, it was literally too windy, meaning the wind speeds locally were so high that to protect the turbines they had to turn down or in some cases turn off. So while wind sort of behind that cold front picked up and, and helped sustain the grid, we had some local challenges with that. So really to bring that to a, a fine point, two issues, as they looked for resources to fill this gap in terms of the forecast, natural gas was struggling and wind wasn't performing in all areas. So again, that creates your forecast is short. Now, I don't have the resources to fill in, fill in those gaps.

Rachel Johnson, Cherryland Electric Cooperative ([11:35](#)):

And, um, I wanna dig into the, the natural gas piece, but also obviously solar not producing a ton. Clearly not the northern part of the, I don't know if any of you were hanging out, looking out at the snow, but we didn't ha So when you think about resources as like, you have all these different types of resources, coal, nuclear, natural gas, wind in the, as solar in this scenario, we had some that just literally weren't available because of the conditions like solar. So that automatically took some available generation off. Then you've got wind that maybe is, um, that, that we're getting so much wind, we can't necessarily take it all into the grid in that spot. But let's talk through natural gas because we've, we've said for a long time that the, the, as we move forward with more renewables, natural gas is this flexible thing that's gonna help us manage that. But what happened with natural gas in this event?

Zach Anderson, Wolverine Power Supply Cooperative ([12:20](#)):

So the challenge for natural gas is, has always been and will continue to be that the fuel is not on site. So the fuel to power a natural gas power plant is coming via a pipeline from somewhere else, probably close by to the plant, but it's coming from somewhere else, and it's reliant on some other party that's not the power plant owner to get that fuel delivered in the real time. So I want, I'll step back just a moment and say that Wolverine's generation throughout the entire event, because we've, um, worked closely with our pipelines in Michigan, is actually very much blessed as it pertains to pipeline and gas storage. So people may not know this fun fact about Michigan. We are the number one state in the, well, really, if you look at North America, we have the most natural gas storage within Michigan of any other state.

Zach Anderson, Wolverine Power Supply Cooperative ([13:16](#)):

So Texas is number two. And if you think about how large Texas is and all the producing that they have in Texas, from a gas standpoint, Michigan because of our unique geology is number one in gas storage. So being number one in gas storage means we have a lot of pipelines that want to get that gas into storage. So typically in historically, Wolverines fared pretty well in being able to secure gas for our power plants. That's not the case in a lot of other states in a lot of other location. So there were a few things that happened in natural gas. Wellheads froze i e gas that was being pulled, pulled out of the ground, couldn't be pulled out of the ground because it froze gas. In order to move in. The pipeline needs what's known as line pack. So that's the physical thing that moves gas within the line is line pack.

Zach Anderson, Wolverine Power Supply Cooperative ([14:01](#)):

And line pack is either built by having a lot of gas in the pipe or compressors along the way to compress that gas and keep it moving in the pipe. So as demand goes up, line pack goes down. So you're pulling gas out of the pipe that reduces gas's ability to move within the pipe. The other issue that occurred was you had compressor failures. So compressors are there to move that gas along in the pipe, and those failed in some instances. So to boil it all down, about one fourth or 25% of all generation that's available in miso was unavailable during this event. And about half of that in and of itself was natural gas. So again, as miso that serves, Michigan was looking for resources. It was well short of what it thought it had. And about half of that was gas driven alone, largely around field del deliverability

Rachel Johnson, Cherryland Electric Cooperative ([14:56](#)):

Issues. Okay? So we have this issuer, like a combined issue of this higher than expected demand, and then we have less access to generating resources than we expected, which is compounded by these issues going on with natural gas delivery. And we are at this point, very at this for this particular event, very delivery, very dependent, excuse me, on the delivery of natural gas to serve these plants that we need to spin up in order to meet the demand. So we, I wanna kind of switch now and talk through what happened in terms of how the grid operators handled this event as it happened. So as we crossed over into the evening of December 23rd, you know, I mean, well know what was going on, right? We're all home with our families, people are cooking using more electricity, heating, whatever energy use starts going up, the delivery of energy starts going down. Those of us who work in the industry are all sitting at home with our families, and suddenly the grid operators start saying, Hey, we think we have a problem. So can you talk us through kind of what happened from your perspective as someone in the industry once these regional grid operators started to realize they had a problem?

Zach Anderson, Wolverine Power Supply Cooperative ([15:55](#)):

Yeah. So I, I think for us in the industry, it always feels like this is big and dramatic and everybody knows what's going on. The thing that's call it kind of cool for the average person is you don't, you have no idea that anything's going on. And so it started in a mid late afternoon and we get emergency alert number one, and there's a series of steps. Uh, any of these steps can be skipped all the way to, we've really got a problem. So the only solution is to shed load or what is known as introduce a rolling blackout to keep the broader grid online. So if everything's operating sort of as normal through an emergency event, there are a number of steps that occur in any one of these events that require largely the industry to take action before, uh, a consumer or your member consumer in particular, whatever.

Zach Anderson, Wolverine Power Supply Cooperative ([16:47](#)):

No, that an action was needed. In fact, we went all the way through, um, I think five of the steps or substeps, and we were one step away from issuing what's known as a public appeal. The public appeal would be the first thing that any of your member consumers would get. And that's, Hey, can you turn in this case in the winter, turn down your thermostat. Uh, don't heat your house as much as you might like to be comfortable. Can you turn it down to maybe 62 degrees and give us some slack that way? Can you not run your dishwasher washing machine? That sort of thing. Take action. Fortunately, we were one step away from having to issue that public appeal. And that what that means for us in the industry is we're doing everything else we can do to bring as many resources, not just Wolverine, but everyone bring as many available resources, any and all, essentially before we have to make that step and say, Hey Rachel, would you mind, uh, turning down your furnace right now?

Rachel Johnson, Cherryland Electric Cooperative ([17:42](#)):

Well, and um, two things I wanna highlight on that. One, the metaphor I've seen you use before, and it's a good one, is it's like a dock, right? So on, on the surface to all those people who are at home enjoying whatever the things they were doing for their holidays, it seemed calm. But for, for you, for people who work at Wolverine, for people who work at Cherry land, we were swimming really fast underwater, right? Trying to make sure we didn't have to get to the point where we would get to public appeals. But the other thing I personally find interesting, I've worked for the co-ops for 10 years now and we've never done public appeals. So even though we didn't get there, this is the closest it's been in my tenure with the co-ops. And, um, just a, a quick shout out to a podcast you and I did a few years ago, but we did a podcast on MISO's Max Gen Alert system and how it works, and also on how you and I were starting to see this trend of seeing increasing frequency of miso saying, man, it's getting tight.

Rachel Johnson, Cherryland Electric Cooperative ([18:29](#)):

It's getting tight, it's getting tight. And while we didn't in the, in our area get to the point of having to do public appeals, we were as close as we've ever been. And also as a part of this ongoing trend, we see, and really what I would argue is the wrong direction, right? So let's talk about what that looked like. So we didn't have to move to public appeals or rolling blackouts here, but other parts of the, of our eastern interconnected grid system weren't as lucky. So can you kind of talk through that? You'd already talked about TV a but maybe talk through what happened to our, our friends down south.

Zach Anderson, Wolverine Power Supply Cooperative ([18:57](#)):

Yeah. So that's perfect. And, and I think that feeling of where we are in the, in the recent reliability of the grid, it really did feel like we were going to not only move to public appeals. I would, if you would've asked me to bet in that moment, I would've bet that we were headed toward rolling blackouts. Because what we saw happen was Tennessee, the Tennessee Valley Authority, they were implementing rolling blackouts, which means they've exhausted every one of their resources, they've exhausted all their voluntary measures, they've exhausted the, the cups of sugar they can borrow from their neighbors. And as a last resort, they're involuntarily shutting people off to preserve the broader grid and moving one region to the north, which is the Pennsylvania jersey, Maryland. It actually serves, uh, the southwest corner of Michigan and into Ohio. PJ m is that r t o they were implementing voluntary load reduction into Christmas Eve.

Zach Anderson, Wolverine Power Supply Cooperative ([19:52](#)):

So they never made it to rolling blackouts, but they were seeking voluntary load reduction measures, again, turn down your furnace, that sort of thing. So it really felt like, if you think of it like a ripple on a

pond, it just felt like that ripple effect that really started in the, in the mid-south was going to ripple, ripple towards us. One other thing I can cite as an example, as I was talking to someone, um, just last week that's in the industry in Georgia, and they said their new all-time winter peak was 10% higher than anything they had ever experienced before. Mm-hmm. <affirmative>. And that was sheerly because of the fact that it got very, very cold in areas that aren't equipped or normally dealing with very, very cold.

Rachel Johnson, Cherryland Electric Cooperative ([20:31](#)):

Mm-hmm. <affirmative>. And it, you know, when we've, we've had so many podcasts where we've talked about, again, like Wes, this isn't totally a surprise, right? Like, we all saw this coming, we last summer, we were talking about how, hey, we, we really feel like we are at real risk of rolling blackouts. I don't know that we knew it was gonna happen at Christmas, right? But we saw it coming. Like we knew it was a a, a realistic thing. The part that probably keeps me up at night is, okay, a weather related event happened. We had higher heating loads than we expected, but we're also increasingly electrifying things like the demand for electricity on the grid is going up at the same time, we don't even really have the margins. We need to comfortably have resiliency against slight unexpected weather events today. Right? So in my mind, there is a real true warning here that we got lucky. The ripple didn't make it to us, but luck isn't really the best way to approach grid planning.

Zach Anderson, Wolverine Power Supply Cooperative ([21:19](#)):

Not at all. And it speaks to this point of, when you're talking about this weather forecast in this particular instance, it was incredibly accurate. I'd, I'd like to think not just patting Wolverine and cherry land on our, on the backs, but as we see more in the industry talk about this, none of this is coming as a surprise. Mm-hmm. <affirmative>, because fundamentally what's happening is the base load generation, and that means colon nuclear, the always on 24 7 fuel onsite resources, those are retiring and go going away. That's a reality of it. We've retired more of those generators than, than we've built in the last two decades. That's just a fact. We're retiring more generation than we're building of the baseload variety. Again, what's that mean? Coal, nuclear fuel onsite running 4 24 7, 365, those are going away and they're being replaced with intermittent renewable resources and natural gas.

Zach Anderson, Wolverine Power Supply Cooperative ([22:13](#)):

That's what's replacing them. And what we saw in this event is those things have their challenges. Fortunately, it was windy. So wind, wind helped in the west. That was, that was a good news story for wind in this instance. But unfortunately, regardless of your latitude, it was dark <laugh>. So solar, solar was not coming to the rescue in this case, no matter when or where you lived. Cloudy, not cloudy. It was dark. The sun had set you were getting nothing from solar, even if it existed. So wind and solar have those challenges. And then natural gas with this just in time, its struggles with the real time response. I think that's the best way I can put it, is when you put pressure on natural gas pipelines, for pun not intended, but you put this pressure on natural gas pipelines to say, okay, you've got a plan as a pipeline for the residential and commercial load that you serve every day.

Zach Anderson, Wolverine Power Supply Cooperative ([23:06](#)):

So you have to do your own forecast. Natural gas companies figure out how much gas you need for tomorrow. Well, it was colder than they expected. I don't know if they missed their forecast, but just in reality, they had a lot of demand to plan for for mm-hmm. <affirmative>, their traditional demand. And then what we, what we do is we pile on top of it, kind of at the last minute, Hey, can you help out the power plants too? And we need this gas right now. And then you pile on top of that on a holiday

weekend. So weekends, holidays, evenings, this is not a normal time to buy gas. It's like trying to go to the grocery store to plan your Christmas meal and the grocery stores closed. You're too late. Yep. And that's

Rachel Johnson, Cherryland Electric Cooperative ([23:45](#)):

Where everybody's at home cooking the turkeys you didn't buy. Yep. Or

Zach Anderson, Wolverine Power Supply Cooperative ([23:48](#)):

We were literally at Wolverine calling people in church <laugh>. That is not an exaggeration. We needed gas. So we're calling our gas supplier and getting an answer of, Hey, I stepped outta church, can I call you after? Yeah. And yeah, thank goodness they picked up the phone. Thank goodness we were able to get the gas that we needed to deliver our power plants. But again, and that's something for the gas industry to really think about as they're needed more and more. Mm-hmm. <affirmative> to support the electric industry, being open 24 7 would be helpful. But right now you go for a holiday weekend stores closed, you're not getting frankly the ingredients you need to make that Christmas meal. And that's a little bit where we were on the, on the natural gas side over that weekend.

Rachel Johnson, Cherryland Electric Cooperative ([24:29](#)):

So I think it can be tempting and we hear this question a lot to think, well, can batteries solve this problem? And I mean, I'm gonna let you answer that. Can batteries solve this problem, Zach? Or what is the, what, why, why? Just talk us through whether they could've fixed this for us in this event.

Zach Anderson, Wolverine Power Supply Cooperative ([24:42](#)):

So batteries can't fix it to, to give batteries credit. They can help for a few hours. The challenge is for a few hours, if you've got a two to four hour problem, batteries can help supplement what's going on. They can, they can support reducing the intermittency of renewables. Maybe you stored up some solar during the day so that you've got some additional kilowatt hours to produce over the evening peak. So they can help with that. But literally today's technology, you need to either overbuild those batteries because you have this two to four hour typical duration or you just need to disperse a lot of batteries into the system that are ready to go all throughout the day. And it's incredibly economically inefficient cuz you're really just over-building to make it up. So can they help in fits and starts? Sure. And, and absolutely they, they will, but one we don't have them yet. And two, when we see these types of cold weather, hot weather, um, events, you need something that can run for hours and hours and hours and probably days, not just a few hours over an evening peak.

Rachel Johnson, Cherryland Electric Cooperative ([25:47](#)):

So if I say that back to you, basically had we used the battery technology available to us today, and assuming we'd installed it in a reasonable way, it may have helped for two hours, but what we really had was a multi-day problem. So after a couple hours, we would've still been into rolling blackouts, we would've still been into these significant generation shortfalls regardless of whether there were batteries available. Correct. So, um, we've talked a lot about the reliability side of this, but you had mentioned at the beginning of the podcast that the RTOs also play this important market functionality. So beyond this reliability thing, can you talk about price volatility and cost factors that you saw happening inside this, this event? Cuz I, I just think that's also really, uh, important thing for our members to understand because we are not-for-profit electric cooperatives. Any money that Wolverine



spends or makes gets returned directly to cherry land, which gets returned directly to our members in the form of lower rates and um, and margins.

Zach Anderson, Wolverine Power Supply Cooperative ([26:38](#)):

Yeah. So in these events, if I rewind the clock to the previous major winter storm in February of 2021, known as uri, uh, Texas has gotten a lot of attention and they had rolling blackouts and those rolling blackouts in and of themselves were bad. But along with rolling blackouts comes what's known as scarcity pricing. So what scarcity pricing means is essentially there's no more generation to, um, meet that period's demand. So you're essentially trying to incent people to reduce their load through an economic means. Problem is, we don't have a good way to send that signal to member consumers today to say, if you change your behavior right now, you will save this much money. Part of that problem is just the fundamental signal, where do I go? How would I know that? Two, because we take it upon ourselves to plan from a power supply perspective.

Zach Anderson, Wolverine Power Supply Cooperative ([27:29](#)):

Members typically, unless it's the extreme of the extreme, don't see that effect on their electric bill. There, there's no line item that says, Hey, there were scarcity pricing last month and you paid this much more for your power supply. It's all part of the bill and it's a small part of the bill because we try to plan to have stable power supply costs throughout the year. So it's really, uh, a risk mitigation item that we're taking a look at from the Wolverine perspective to try to reduce our risk in terms of could there be this maximum scarcity pricing and what are the things that we can do to try to avoid it? Recognizing that, so everyone knows you can't a hundred percent ensure this risk, but we try to do everything we can. And that's a long way of saying if we're doing our jobs well the member never feels it. So it's, it's hard to say one, if you sent the signal, would anybody see it? And two today nobody's seeing it. So it's really more of an industry issue that everybody's wrestling

Rachel Johnson, Cherryland Electric Cooperative ([28:24](#)):

With. But we did see during that period of time, very high pricing. So you guys were operating inside a market where if you were contributing into it, you may have been contributing at high prices, but if you were buying from it, you're also buying at high prices. And as you pointed out, like we've done, you all have done a good job of building our power supply in a way that we have hedges against that. But it doesn't change the fact that it was not only a real reliability issue that impacted people's general comfort and wellness, but it also had economic impact that that will be felt by consumers and utilities period, right?

Zach Anderson, Wolverine Power Supply Cooperative ([28:55](#)):

Mm-hmm. <affirmative>. So fortunately for us, because of our portfolio, we, we performed well and there was no member impact from this event from a financial perspective, which is good news. But that has not been the case in all of these events throughout the country where there have been bankruptcies and long-term, essentially what they become is a, is a payment on their bill. You, your members see an availability charge. Well there's some co-ops in this country now that have essentially a, a winter storm URI penalty that'll be on their bill for the next 20 to 30 years. You just, oh, you pay for your meter at \$30 a month and oh, by the way, you get to pay \$25 or \$40 per month for the next 25, 30 years to pay for that scarcity event in that, in that prior winter storm.

Rachel Johnson, Cherryland Electric Cooperative ([29:43](#)):

Yeah. And it's, um, I mean I'm, I'm so glad and grateful that we didn't get to that point with this storm and have to go through that now with our members, but I still think it's important to recognize this warning for what it was. Mm-hmm. <affirmative>. So just to kind of wrap things up for today, can you talk through what you think are the key takeaways from this Winter Storm Elliot event that you would like our listeners and, you know, leaders and regulators and legislators to hear as we figure out how to learn from this event and, um, you know, mitigate the risk of something like this in the future?

Zach Anderson, Wolverine Power Supply Cooperative ([30:16](#)):

Yes. So fundamentally I think it's important that everyone's aware that we are undertaking the single largest change in the history of, of the grid that serves everyone. And so, what do I mean by the grid? It's, it's the power grid that's been built nationally where you have generators, you have transmission lines, and those delivered to homes and businesses. We are undergoing the single largest change in the history of that grid. And that's being driven by baseload plants retiring. So coal and nuclear is going away and that's being replaced by renewables and natural gas. The challenge that we're in right now is we're in this transitional phase, if you will, between the old and the new. And we're trying to operate the new wish. We're not in this new world yet, but this new wish, using the same tools that we always have, dispatching the market in the same way, looking for generation real time and expecting that because it has in the past, it'll continue to show up in the future.

Zach Anderson, Wolverine Power Supply Cooperative ([31:17](#)):

And you can't count on it when you're counting on offsite fuel and you're counting on is it sunny right now? Is it windy right now? Those types of things are things that we as an industry have to grapple with. And I think it's important finally to bring it back to we see this transition coming, we know it's coming, we're trying to manage it, but it's important that we take the time we invest in the transmission because the location of the generation is changing, whether it's natural gas or renewable, it's not being built where the power plants of the past were built and we need more transition to transmission, excuse me, to be able to better share the cups of sugar with our neighbor. We need more highways to be able to share between our neighbors to make all this work. And lastly, we need technology again.

Zach Anderson, Wolverine Power Supply Cooperative ([31:59](#)):

That, that battery element, it isn't where it needs to be today. Would it have helped during this event? Anything helped if you, if you turned down your water heater, turned down your thermostat, any of that stuff would've helped during this event. But we shouldn't be relying on this. And I, I would be remiss to say when we're successful as an industry, and whereas a country, it's having surplus, it's having the ability to meet the needs of the consumer without them ever having to think about it and just go about their business. We're in a, we're in a position now where we don't have surplus. We have just enough that's getting us by in these extreme events. And every day that goes by, every generator that retires, we get a little bit closer to needing more and more from the end use consumer to keep the lights on 24 7,365 mm-hmm. <affirmative>. And that's a real, real big challenge for our industry right

Rachel Johnson, Cherryland Electric Cooperative ([32:49](#)):

Now. I, um, I really appreciate you taking the time to come on and talk about this. And I wanna reiterate something you said earlier cuz I think it's so important, which is Wolverine has invested in new generation, Wolverine has invested in a diverse portfolio. Wolverine does have enough resources to serve our members, but at the end of the day, we are still a part of a larger grid system, which means we are exposed to all the vagaries of a larger grid system. And to your point, we, and we can't solve this

problem alone. I, and I think that can be really uns, it's unsettling to me, and I think it can be unsettling to our members and, and certainly our podcast listeners to think, well, okay, but what do we do? Well, unfortunately, you and I can't do this alone, right? We, we've done everything right at Wolverine and at Cherry Land and it doesn't change the fact that still at the big picture policy and grid planning and regulatory rulemaking level, we need to make sure we're paying, we're attending to the timelines and the technologies, whether they're developed or not developed in the timeline to get them developed to building transmission.

Rachel Johnson, Cherryland Electric Cooperative ([33:49](#)):

And also I think to understanding the timeline to, in, to build anything new right now, whether that's supply chain issues or permitting issues or whatever, like, it just takes a really long time to do these things. And, um, you know, I'm, I'm grateful that our members made it through this most recent event unscathed, but I think that it's still important to understand that this risk still exists and, and it, and it could still happen at some point in time in the future.

Zach Anderson, Wolverine Power Supply Cooperative ([34:12](#)):

And, and I, I appreciate that because this is an opportunity for us to communicate what we are doing, communicate what the issues are, and advocate for things to be, to be different. And that's not just you and I having a conversation in our, in our Michigan co-op world, Wolverine and our members are advocating and raising attention to this issue both at a local and a national and a regional level to say, here's what's going on, but really trying to bring forward some solutions. Mm-hmm. <affirmative>. So we're really focused on that right now at Wolverine is to try to bring forward, to not only say, here's what the problem is, but here's some solutions mm-hmm. <affirmative> talking about we're using the same market tools that solved yesterday's issues when we're moving towards a a tomorrow problem. Mm-hmm. <affirmative>, are there things that we can do as an industry in the, in the region differently to help us better manage through those events?

Zach Anderson, Wolverine Power Supply Cooperative ([35:01](#)):

That's important. And then you take it to trying to recognize that, to your point, we are an exporter in every one of these events. Our members have been supportive and allowed us to invest on your behalf to be able to have the resources that we need so that we are the ones that are frankly out there giving the cup of sugar when the neighbor needs it. And we've done that in a way that's been sensible financially, but recognizing early that these challenges were coming to have the plants built to be able to do this so that we're in a position to say there are challenges we have, the resources we need and we can advocate from a position of, of we've made investments and others can make these investments too and and be successful in this, in this world that we're transitioning to.

Rachel Johnson, Cherryland Electric Cooperative ([35:44](#)):

Well, thank you again for coming in Zach and talking about this. I'm confident this will not be the last time we talk about something like this. And I think, um, just even having this conversation today, I think it's gonna be really important that we ha do some future podcast on what are some of those potential solutions that we are equipped and ready to start to really kind of push the public conversation on. Because it's not fair to anyone to not be upfront and transparent about what's going on and give them the, the tools and talking points they need to hopefully advocate for themselves. Cause ultimately at the end of the day, the people impacted by decisions made on the electric grid are homeowners and business owners and all of the, the members that depend on us to keep the lights on. So thank you.

Absolutely. Thank you for the work that you have done to do that, and we'll look forward to continuing to talk about some of those solutions in the future. Thank

Zach Anderson, Wolverine Power Supply Cooperative ([36:24](#)):

You for this opportunity

Rachel Johnson, Cherryland Electric Cooperative ([36:25](#)):

And for all of our listeners out there, uh, this is, uh, again, another episode of Co-op Energy Talk. If you have any questions, feel free to reach out to me. And if you have any topics you'd love us to discuss on this podcast, please let me know because we want it to be useful information for you. And we know that the decisions and and transformation happening in the electric grid today have big impact for our members. So if you have any questions or topic ideas, give us a call and, uh, look forward to talking to you in the next episode of Call Energy Talk.