

Ari Peskoe:

Welcome everyone. I'm Ari Peskoe, director of the Electricity Law Initiative at Harvard Law School. Thank you for joining us today. You've probably seen recent headlines. New York Times, a New Surge in Power Use is Threatening US Climate Goals. Washington Post, Amid Explosive Demand, America is Running Out of Power. From my vantage point, these headlines reflect repeated miscalculations, those who fought the future now regret not planning for it. I'm pleased today to be joined by decision-makers from four states that have been planning for the future with forward-thinking energy policies that embrace technological progress.

Keith Hay is the director of policy at the Colorado Energy Office. Katherine Peretick is a commissioner at the Michigan Public Service Commission. Doug Scott is the chair of the Illinois Commerce Commission. Joseph Sullivan is vice chair of the Minnesota Public Utilities Commission. We'll put their bios in the chat in a moment. Thank you to our four panelists for joining us today to share your expertise. So let's dive in and discuss how your states are advancing the public interest amidst these shifting dynamics for electric utilities. I want to start with reliability.

That's of course issue number one, keeping the power flowing as a team sport. Numerous entities take on various responsibilities across timescales, ranging from long-term infrastructure development to real-time operations. To help orient us in this discussion, can you talk about the most important job that states have in maintaining a reliable power system? And I'll start with Chair Scott.

Doug Scott:

Thanks, Ari. Great to be with you and all my friends on the panel. I'm looking forward to the discussion. I think the most important thing that we can do as states is to help to get the incentives right, to balance the reliability and sustainability and clean energy goals that we've got in our state. And as you mentioned, our state has some very aggressive ones. We're not vertically integrated. We're a competitive state, so it's a little more difficult for us because we don't have some of the same resource planning and some of the other tools available that some of the other states have. But what we've tried to do is align the incentives to plan for a reliable clean energy future. And that means things like subsidizing our nuclear plants to keep them operating. That's a huge source of power and the largest source of clean energy in our state.

We actually set up a system where if the nukes are doing very well, they will actually rebate money to Illinois ratepayers, which actually happened a couple of years ago, but then they will get subsidies in times when the economics aren't right for them. A lot of work going on to try to make sure renewable energy is a huge commitment to renewable energy in our state, both community solar, rooftop solar, utility scale wind and solar, and also converting old coal plants to solar and storage facilities. So trying to make sure that their incentives are there for all of the clean energy sources to be able to work and as well as doing things like reliability studies off ramps in case of emergency times where we actually need additional power.

And then also, things like making sure the interconnection system in the state works so that all of the new clean energy can get online. So a lot of steps, a lot of different players in the state involved, but it basically comes down to making sure that people will want to locate clean energy in our state.

Ari Peskoe:

All right, thank you. And let's turn to Commissioner Peretick.

Katherine Peretick:

Yeah, thanks. So in Michigan we actually are a vertically integrated state. Well, mostly. We're actually 10% deregulated, but that's another topic for another day. So we have a little bit more planning to do around the generation side. And I think there are probably three big areas that I see as our job for planning for the future of generation reliability of resource adequacy, making sure that there's enough generation to cover the load. The first is the planning side, and in Michigan we have the ability to have our utilities file IRPs or integrated resource plans. We also have them file distribution plans, so to make sure that the distribution system is ready for the changing load as well. And also we just started filing transportation electrification plans too. So getting all three of those types of plans to coordinate together. But through that IRP planning process is really where we find the biggest usage of getting everything right, getting the plans in place for the future.

And those IRPs, we plan 5, 10, 15 and up to 20 years into the future to make sure that there's enough generation to meet the expected load. The second piece is actually accurately evaluating the investments and projections that the utilities are making via these rate cases, and then holding the utilities accountable to these planned investments. What did they plan on doing? Are they actually maintaining the system properly and is a reliable operation of both the generation and the distribution systems and gathering enough data, checking, holding accountable?

Then the third is really acting as a convener and requiring discussion and cooperation among the parties who are involved. So that's one of the biggest tools that I think is not talked about enough actually that public service commissions have the ability to do, is force people to get into a room and talk to each other. And when you actually do that and when you hold these technical conferences or other sorts of workshops or work groups, you can get a lot of people talking to each other who might not always do so naturally, and we see a lot of really positive results from those processes.

Ari Peskoe:

Thank you for that and I appreciate the mention of accountability, which I think is so critical here and definitely a tool that states have. Keith, I want to turn to you again on this question of the state's role in reliability.

Keith Hay:

Yeah, thank you, Ari. And Colorado too is a vertically integrated state. I think a lot of what Commissioner Peretick expressed is similar to what we're doing here in Colorado, but I'd actually take a step back and say that one of the things that we did to help ensure reliability is to pass legislative pieces of framework for utility planning. So for example, in 2019, we adopted a requirement that the utilities get to an 80% greenhouse gas emissions reduction by 2030. And so that gave us that legal framework for our non-PUC jurisdictional utilities as well as giving guidance to our utilities commission around what they need to look for in what we call electric resource planning, but other places call integrated resource planning. And so I think the first thing that we did was begin to set up that framework, and that was not just the requirement for emissions reductions on the generation side, but similarly, requiring the utilities to do transportation, electrification plans, distribution system plans.

We now have here in Colorado what we refer to as clean heat plans. And so that's actually a requirement for our gas LDCs to begin to reduce greenhouse gas emissions. And we are working through the process of how that will impact the electric side of the ledger. And so creating that legal framework was an important first step. And of course that then really flows into all of the different plans that the utilities have to bring forward. And some of those do go before our public utilities commission, but even

for our non-jurisdictional utilities, they're presenting those plans to different state agencies so that we are making sure that we're on track to hit the targets in those plans.

And then the final piece of that framework for us is we now have all of our utilities doing resource adequacy reporting annually to my office, and we are then taking all of that information, aggregating it and sharing it back out to the public utilities commission, to the general assembly, to other interested stakeholders, trying to make sure that as we're doing that front end planning, we're also doing that back end look to make sure that we're on track with resource adequacy as we go forward, thinking about the potential load growth in the state. And I'd be happy to talk about some modeling that we've done that looks at the future and the load growth we might expect as part of this conversation.

Ari Peskoe:

Yeah, we'll definitely get into that. I want to let Commissioner Sullivan jump in here as well. And the state's role here is for reliability.

Joseph Sullivan:

Thank you Ari, and thank you for having me here on this conversation. I'm looking forward to it. In Minnesota, Minnesota similar to Colorado and Michigan is a vertically integrated state, and where the rubber hits the road in Minnesota is really at the resource plan. We, like Michigan, do resource planning for. Well, we do it mandatory for our investor-owned utilities and it's advisory for our co-ops and munis. Our co-ops and munis though, take resource planning that's done at the commission very seriously though. So those are very robust records that are developed around there as well. But we also do IDPs for the distribution plan. We do transportation electrification plans as well. We're actually rolling up the transportation electrification plans into IDPs now because there's so much overlap there. And ultimately, the long-term vision is that IDP will roll up into the resource planning as well.

But I think the best way to look at reliability from my perspective is through that resource planning frame. And we have the most recent resource plan that we've done that is sticking in my mind is Xcel Energy's plan. Well, we're in the middle of doing Otter Tail's plan right now, but Xcel's plan, it's extremely comprehensive. We look at the state's policy framework. We have a 100% carbon-free energy by 2040 framework in place. We have a conservation framework. We have all the key critical policies as well as an electrification framework that's built into our conservation standard. But with the resource planning, we really scrutinize every hour of the year, so 87/60, and we look at what are the resources that are going to be necessary that we have within the four corners of our state or really the zone in my cell that we're in, since we share a significant chunk of our resources in our state with North Dakota and South Dakota and part of Wisconsin.

But we look at what are the resources within our zone within the four corners of our zone that we can deploy. I mean, I think that I look at it from that resource adequacy perspective. Can we serve the needs of the state of Minnesota if the S hits the fan, and can we do that as needed within our zone? And that for me is resource adequacy. And if a resource plan, a run doesn't show that we can do that, I pull it out. I don't even want to look at it. And the last resource plan that we had, we had something like 90 scenarios for Xcel. Of those, probably 70 was looking at resources that were outside of the zone. So we just removed those from the stack, now we're down to 20, and then we just narrow down based on what does the state policy of the state call for, what do we and our judgment think is important.

A couple of those plans didn't include the nuclear facilities, and our view was is that those nuclear facilities are critical for resource adequacy and ensuring reliability. So now we're down to four or five, and that's how we make that decision. It's extremely resource-intensive. There's a lot of modeling that goes into it, but that for me is once we get to that spot, we've ensured the policy goals of the state.

We've ensured that the utility is going to be reliable 87/60. And that's how I look at reliability, is really through that vantage in that public process. And then at the end of the day, what we approve is going to come back to us through our acquisitions process and when the utility is out to implementing that resource plan.

Ari Peskoe:

So I want to zero in on demand growth, the potential for demand growth, and let me be the first person in this panel to say AI, which I think is now an obligatory term you have to use on one of these panels. And just say, broadly speaking, I think there's sort of two ways to think about meeting growth and consumption. You can use existing infrastructure more efficiently or you can invest in new infrastructure. So I'm just wondering how are you thinking about your policy options for enabling growth? Some of you have talked a lot about the planning that goes into it, but what else? What are the other policy tools when you're thinking about growth? And let me start again. Let me go right back to Commissioner Sullivan on this one.

Joseph Sullivan:

Sure. Thank you, Ari. When I think about, first of all, just reusing existing infrastructure, making better use of existing infrastructure, one of the things that we focused on the transmission side in Minnesota is optimizing the existing infrastructure, optimizing the existing transmission through grid enhancing technologies, making sure that we're using ambient adjust in line ratings, that we're reconducting as necessary. Our utilities have just recently brought us about \$200 million in, I would call it that low-hanging fruit of grid-enhancing technologies. Almost all of those projects don't need to come back to the commission for, I think 17 of the 19 don't have to come back to the commission for approval. So optimizing that existing system to make sure that we're getting the wind and solar and storage resources onto the system as fast as we can. In terms of future demand growth, what we're seeing, I totally accept that we're going to have a lot of demand growth.

I don't think that the sky is falling. We've dealt with demand growth in the past. In the fifties and the sixties, everybody was getting air conditioners and growth was at seven or eight or 9% per year. I mean, that's significantly more than what we're seeing now. I mean, if you have a spot load addition of 1000 or 2000 or 3000 megawatts, that's a lot. I'm not going to say Minnesota is a big system, but if you put on a data center that's 10% of the entire system, that's a lot. And we've got to deal with that. But first of all, I think if we plan for it and we have the processes and we use the processes that we have, I think we're going to get through it. And I'm not going to put my hair on fire. We can deal with this and it's a good problem to have.

So that's one thing. It's a good problem to have and we'll plan for it. And I think that one of the things that we need with demand growth is we need some more transparency and looks at what's coming, what's likely to come. Some of the things that I want to see are utilities, and maybe there needs to be some risk sharing for our utilities because if a small utility, they can't be the one holding the bag if a 1000 megawatt load drops out. So maybe there's some risk-sharing tools that we need to use.

But I guess with demand growth, my view is that we can deal with it. I mean, I'm obviously concerned. I want to make sure that we get it right. I want to make sure that this load does not island itself and that the resources that are, some of these companies are so big and they can build a generation themselves. I don't think that's a good thing for the system. I want to make sure that the system is able to support it, but I don't want to go backward on our climate goals. So I come back to planning, and we can plan for this.

Ari Peskoe:

Keith, I know you mentioned before you had done some analysis or your office had done some analysis. Maybe you could give us a quick overview of what you found on that.

Keith Hay:

Yeah, happy to, Ari. And I guess I would start by saying in response to the initial question in Colorado, it's going to be both and it's investing in the existing infrastructure and upgrading that. And we know we're going to need new infrastructure. We recently completed a study of a bunch of scenarios that would look at different pathways to getting to a carbon-free grid by 2040. And as part of that, we were showing something around a 40% load growth between now and 2040. And so as we looked at that, one of the things we recognized is, yeah, we are going to need both a lot more wind and a lot more solar. And if we are going to have the levels of wind and solar that the modeling suggests we need, we're going to need additional transmission investment. Our public utilities commission here recently authorized Xcel Energy to build a large project here in the state called the Power Pathway, more than a billion-dollar transmission investment, but that's not going to be sufficient to get us out to 2040.

And so we're going to need additional transmission investment. But I think a big part of what we are seeing and really where the distribution system planning is going to become essential to what we do is how that load is going to look a lot different from the load in the past. I agree with Commissioner Sullivan, we've seen load growth in the past around air conditioners. But I think what's different today is a lot of this may be bidirectional. We expect to see EVs moving power back and forth. We already have solar doing that. We expect more battery growth on the residential and commercial side. And so doing the planning on the distribution system to understand when and how those new loads and new types of loads that the utilities will be able to manage are coming at us.

And so that's going to be a real piece of where we see going forward the need for additional investment. And that's part of why my office has been working over the better part of this last year with some of our utilities with conservation groups and developers on legislation that would help create a pathway to accelerate the level of investment so that it really does align with the need we have for distribution system investment.

Ari Peskoe:

Great. And Chair Scott on this one, demand growth in Illinois?

Doug Scott:

Thanks. So I agree with everything that Joe and Keith have said, and those are very similar to some of the things that we're working on as well. I'll just highlight three other things that we're doing in this area. One is part of demand growth is overall demand and we have a huge commitment and we've just recently redoubled our commitment to energy efficiency as a way to try to curb some of that demand growth that we've been having. Also looking at beneficial electrification plans, trying to work with the electric utilities as they start to plan out either a more load growth, just naturally be more load growth because of electrifying transportation sector. And then also some changes in the building sector where there's more electrification going on as well.

And then the third part of that that I wanted to mention is a renewable energy access plan that was also part of the Climate and Equitable Jobs Act, which asks the commission to look at not only where are the areas where all of the new renewables that we're building are likely to go, what makes the most sense for that, but also where the additional transmission that's going to be needed could also go in the state. And the idea, as Keith said, is to try to see if we can expedite that and make sure that we're doing as

much planning in advance as we can to try to make sure that the renewables and the transmission that we're going to need are actually in place and can happen as they're needed.

Ari Peskoe:

Commissioner Peretick?

Katherine Peretick:

Yeah, thanks. I'm not going to repeat everything that everyone else has said. You all did a fantastic job of answering this question. I'll just add one piece in addition to agreeing with everything else, and that's on the need to adjust our projections regularly too. So we need to take the projections that we have now. Don't base everything on all of this hype that we're hearing around the data centers, around AI, around all of that. It's important, but we shouldn't be making our decisions based on hype. We need to be making our decisions based on data. We need to take those projections, take that data and then compare them to the actuals of what we're actually seeing and make our decisions based on the estimates. And also making sure that that data is transparent so we can rely on other people checking our work too. And also check to make sure that those decisions that we made align with history, with what we've seen.

Ari Peskoe:

So some of the audience members have figured this out already, but there is a Q&A feature and you can type in some questions. We are monitoring that and I have about, I believe, three or four more questions here for our panelists and then we'll try to get in some Q&A from everyone else. So I want to look back a little bit. So one of the major trends we've seen across the country is a shift away from fossil-powered steam turbines. In particular, coal-fired generation is down about 65% since 2007, and your states have all been part of that trend. So looking back, how has your state managed this dramatic shift? And maybe I'll start here with Keith.

Keith Hay:

Yeah, thank you, Ari. And it has been and continues to be a really dramatic shift. In 2010, roughly 68% of Colorado's electricity came from coal. By 2022, I think that was down to about 36%. And by 2030, we will have retired our last coal plant in the state. And so that's a pretty dramatic shift when you think about that's over the course of two decades. For many of us, that's a single resource plan historically. And so I think we've done a number of things here. One, I think coming back is that sort of legal and regulatory framework around emissions reduction planning. So putting in place that sort of long-term glide path so the utilities and others know that what's coming ahead of them.

I think another big thing that Colorado has done, and this may be a little bit outside of an expected answer, is created an office of just transition here in the state to work with our utilities and our communities that have supported coal plants over many years to figure out what this transition looks like for them and means to them. And so that's been a big part of over the last several years how we have worked through this transition. I think from the utility perspective, it's really been focusing back, as many of the commissioners have said, into that electric resource or integrated resource planning process and making sure that we are looking at system reliability, we are looking at the economics of the resource portfolios that we see coming forward.

And quite honestly for us in Colorado, that's been a really big driver of this transition. I was a commission advisor several years ago when we saw the first retirement for Xcel energy of a couple of large coal-fired units. And the commission then found it was a purely economic decision, that it really

wasn't emissions-driven, that at the end of the day it was possible to retire the coal units, bring on new wind and solar and actually save money for rate payers. And so we've been benefiting from that dividend. We are in a new planning environment, but I think broadly it's really been focused on that resource planning component as sort of the driver to make sure that we are meeting all of the different state policy goals.

Ari Peskoe:

Commissioner Peretick?

Katherine Peretick:

Yeah. So since 2006, Michigan has already retired, it's 5,509 megawatts of coal generation. That's a huge amount of generation for our state. And it's been replaced in a few ways. It's been primarily replaced with natural gas. That has replaced the majority of it. That replaced 3,619 megawatts of that 5,500 that I mentioned. And then wind, solar, and energy market purchases have replaced that remaining 34% of the coal retirements. And that's just to date. All of our remaining coal plants are planned to be retired by 2032. And that whole process looking into the past has been handled via our existing planning processes. So the IRPs that we do in Michigan, integrated resource planning. And it really is a robust process. As I mentioned, it goes from five years out to 20 years into the future, and our utilities are required to update it every five years.

But what's interesting is that they've actually come in on an average of every three years to update it. So everyone has come in sooner than no one's actually waited that five years in between those resource plans because things are really changing quickly. And I think one of the really robust pieces to that integrated resource planning is that we get a really broad range of interveners who participate in those cases. And I really appreciate you, Keith, mentioning the importance of the just transition, because that's something that we put a lot of emphasis on as well. So I really think that utilizing this IRP planning process has put us in a fairly solid place from the extensive retirements that we've had in the past. And I believe that as things are changing, it'll be able to shepherd us through that in the future too.

Ari Peskoe:

Commissioner Sullivan, tell us about the transition away from coal in Minnesota.

Joseph Sullivan:

Yeah, no, it is really interesting listening to Colorado and Michigan, our story is very similar to both of theirs and I think it's really a testament to the power of the resource planning as well as the vertically integrated utility to deliver on those public policy outcomes. Minnesota right now is 55% carbon-free. We're trending, we'll be 85% carbon-free by 2030. Our last coal power plant will retire 2030 or early 2031. That's the Boswell facility. And Minnesota in 2005 was largely coal and nuclear. That was what we were. So within 25 years, we've transitioned to what will be a deeply decarbonized system and what is already, I mean, 55% carbon free. If everybody were at 55% carbon free, if every sector were, I'd feel a lot better about the world.

So we are moving forward very quickly in a very deliberative and thoughtful way. There's just several, I mean basically we're down to the largest coal facilities that are retiring. Sherco, which is Minnesota's largest facility, unit one retired earlier this year and then we'll see unit two and unit three retire later this decade. So that's our transition and I am glad to hear, one of the things that Minnesota has been very focused on is on host communities and just transition issues. I'm actually meeting in two weeks with an organization that's been pulled together to talk about host communities and the issues that they

face. Some of these communities are receiving 60, 70% of their property taxes from those power plants and they're very vibrant, wonderful places, and they're looking at their future.

And we've been very deliberate in how to work on those and work on those issues. Xcel Energy has been particularly good in trying to attract new business to them, but I think a big part of that is we see the runway and we know how long we have to act. We're not just shutting down a plant tomorrow and saying, "Okay, you're into your new world." So we're not doing that. So it's been successful. I know for a lot of those communities they are struggling and it's a challenge, especially Cohasset, which is in northern Minnesota, but it's something we're working on very deliberately.

Ari Peskoe:

And Chair Scott?

Doug Scott:

Yeah, thanks, Ari. Well, it's an interesting position because not only do we have the clean energy goals and moving away from coal, but we're also coal-producing state traditionally. And so those just transition issues that everyone has talked about, especially important for us because we not only have communities where the plants were located, but also mining communities that had several generations of families that were supported by that industry. And so the just transition pieces for us are extremely important. And there's a large section in the Climate and Equitable Jobs Act that deals with lots of different things to try to ease that a little bit for the coal communities. We've got a date certain in CEJA of 2030 for coal plants. All of the coal plants that we had in the state actually announced prior to CEJA being signed that they were going to close before 2030, except for two.

And those are municipally owned plants who have a requirement that by 2035 they have to reduce their emissions by 45%. It doesn't say how. So that could be CCS, excuse me. That could be through shutting down one of the units. It could be by using renewables or something else to supplement the coal generation. And if they don't do that by 2035, then they have to close by 2038. So we've got everybody on a schedule. We did not do a trading program or some other way to do that. CEJA actually, because of the input and the great discussion that we got from the frontline communities in Illinois, the interest was more in having the plants shut down rather than be able to operate under buying credits or some kind of trading program. And so we actually have a date certain for all of the coal plants to close.

In addition, we have a date certain for all of the gas plants in Illinois to close as well, unless they can show by 2045 that they are 100% emission-free, both on criteria pollutants as well as on GHGs. So a really tough standard that goes beyond coal to also include gas. And those will close in tranches beginning in 2030. And the two main criteria for what closes in those tranches is how clean or dirty a particular plant runs and where they're located. So an older, dirtier running peaking plant, for example, that's located in an EJ area or a disadvantaged community, those are the ones that you're going to see that'll close first. And then they will close in tranches going forward. So it's a really comprehensive plan, but again, going back to our earlier discussion also puts additional pressure on making sure that we're doing what we need to bring on renewables and keep our nuclear plants open and the things that the other panelists have talked about.

Ari Peskoe:

I want to stay on coal for one more question. We are expecting a new rule from EPA on CO2 emissions from existing plants, and that rule is going to task states with filing compliance plans. We don't yet know the specifics because the final rule isn't out yet. It sounds from your remarks already that you're probably well on your way to being able to demonstrate compliance, but I guess I'm just wondering just

what you talked a lot about your existing approaches to this issue and your existing planning processes. Do think that all of this stuff that you're already doing is going to sort of dovetail nicely with what's required in the rule? Or are you expecting some new process to figure out how to comply? And why don't we start here with Commissioner Peretick?

Katherine Peretick:

Yeah, thanks Ari. So you're going to get sick of me talking about planning, but that's really what the answer is. But I've been burying the lead a little bit in the first few questions because we had some really major and exciting new clean energy legislation that was passed in Michigan at the end of last year that we, now it's our job to implement at the Public Service Commission. And those laws are actually going to make us adjust these planning processes. And I'm going to talk a little bit about how we're doing that for these clean energy laws, but that could be expanded to the EPA rules when they finally come out as well and whatever those details are, and I think that you'll see that there'll be a lot of overlap. So our landmark clean energy legislation did a few main things.

The first is that it established a 100% clean energy standard by 2040. It increased renewable energy and energy waste reduction targets we call energy efficiency, energy waste reduction in Michigan for various reasons. We raised the cap on distributed generation. It also created a new voluntary siting process for wind and solar to the MPC. So to us, that'll be under our jurisdiction now. And it also included changes to our integrated resource planning process, which included, so in addition to some other changes, it has new requirements for our integrated resource planning process that includes incorporation of equity, affordability, public health, and environmental impact on the approved integrated resource plan.

It also sets up a few one-time initiatives for us at the Public Service Commission, including a study of our upper Peninsula's energy resources, a proceeding to expand opportunities for engagement in commission proceedings. So how more people can actually get involved and have an influence over the decisions that we make. And it separately directs a process for the commission to consider processes for improving the rate case applications and review process. And again, a lot of that is focused on public input because it is so important to make sure that we're making these changes right. And the only way we can do that is if we get as many opinions and as much input from the public and the people who these decisions are actually affecting.

So as far as contemplating a new EPA rule that will have impacts on fossil generation, Michigan's planning process is well set up to handle this and will react in a similar way that we are now to this clean energy legislation. So we do coordinate closely with our Department of Energy, Great Lakes and Environment, and our new energy legislation also increases the scale of that cooperation to an even greater degree. So it includes a deeper emphasis on environmental justice analysis, on climate and greenhouse gas emissions, impacts on affordability and also on rate impacts. So Ari, you told me I could get a little bit wonky in this discussion, so I'm going to go into a little bit more detail on how our IRP process will actually change as a result of these new energy laws. I'll be quick though.

So we plan on developing a red-line version of our integrated resource planning parameters and also the IRP filing requirements, as well as a straw proposal for incorporating those new requirements. And that's on our staff to put together. And then that'll all go out for public input and public comment, and then we'll incorporate all of that and make those decisions. So using that existing process, we're just updating that to take on these new requirements. And then our staff is also directed to conduct two new engagement sessions with the public to address identification of EJ communities and EJ analysis, projected long-term forecast of greenhouse gas emissions and other pollutants, projected rate and affordability impacts for the periods of the plan, cost-effectiveness of the IRPs, any necessary updates to

the environmental justice advisory opinion, and then also how to assure alignment of our renewable energy plans, energy optimization plans, and our integrated resource plans.

We do a lot of planning here, and then we have an outline of those directives to staff, and that's all included in one of our dockets. It's docket number 21570, in case anyone wants to dive into that a little bit deeper. And if you want to follow along and provide public input, which we're always looking for good comments and good public input, you can follow that docket too and you'll be able to follow along with how we're changing everything in Michigan along the way.

Ari Peskoe:

I can tell from the questions that are already in the Q&A that we have an extremely wonky audience, so I'm sure people appreciated that. And I wish I had the legal authority to send you these written questions later and force you to answer them, but I feel fortunate that we just have this hour, so I'll try to get to some of the questions in a moment, but I want to stick with this issue of the EPA's forthcoming rule. And so let me turn to Keith on this one.

Keith Hay:

Yeah, thank you Ari. And we'll agree with the commissioner on planning and won't go deeper than that, but I think I'll make two observations. The first is that having looked at the draft rules and understanding where we are on a trajectory to the retirement of our coal plants and our emissions reductions, we don't really see a significant impact on Colorado, especially from a reliability perspective given that trajectory that we're on. I think the other thing that we are watching and looking to see where EPA goes with this is really with respect to the technologies in the forthcoming proposed rule. The modeling that we've done on the Clean Energy Pathways to 2040 here in Colorado suggests strongly that some form of a firm dispatchable generation is going to help us get to an emissions reduction at the lowest possible cost. And so thinking about things like clean hydrogen and carbon capture, those may be really important tools to our utilities to get to those really deep emissions reductions. So we're certainly watching where that final rule lands on some of those additional technologies.

Ari Peskoe:

And Commissioner Sullivan?

Joseph Sullivan:

Yeah, I think that, and just like Katherine, sorry if I'm a broken record here, but if we have enough road, if we have enough road in front of us, I'm not that worried about things because we have such a powerful and robust planning process. The thing that I worry about is sequencing of everything that needs to come together over the next five years, six years. That's what I worry, more than anything. We have in Minnesota right now. We have seven big transmission lines, three 45 KV and above lines that are in the process or about to be in the process. We have several power plants that are shutting down and we have plans for what replaces that energy, thousands of megawatts of replacement energy that has to come online and has to be sequenced with those transmission lines.

So that's what I worry about, is the mechanics of how this comes together so we meet our targets, we meet our numbers, and at the end of the day so that we keep going, looping back to the first question so that we keep that reliable system in place for Minnesotans and for our zone. That's really what I worry about. In terms of EPA, the rule itself, for me, I am not trying to be flip, but this is like, I think it's an example of a pound or an ounce of prevention is worth a pound of cure. I feel like we've done the prevention where we've planned and we're shutting our older, emitting resources down, we're doing it

quickly and we're replacing them with cleaner stuff so that Minnesotans are going to avoid having to pay for the cleanup. So that's the way I look at this question.

Ari Peskoe:

Chair Scott.

Doug Scott:

Yeah, I'll be real quick. I think based on what we did in the CEJA bill, which involved an extensive public process and a stakeholder process, and because we've got not just a goal, but we've actually got the layout of how the plants are expected to close and what timeline that's on, I would expect that with maybe the two exceptions of the two municipally owned plants where I think there are maybe some equivalency arguments we would need to make in terms of a state plan. But I feel like the way CEJA has set out what we're doing with the coal plants, I don't see any kind of real compliance problem with the federal rule.

Ari Peskoe:

I'm going to start to get into some of the issues that are in the Q&A and feel free to, I'll just maybe just... If you want to participate in these questions, feel free. If not, we don't have to go around the horn for everyone. So I want to start with activating consumers and how consumers can be part of the solution rather than a problem here. So for decades we've heard from economists that utility regulators should be setting prices that encourage efficient consumption, such as by incentivizing people to shift energy use to off-peak times. But I think in general, states have been slow to embrace those sorts of pricing plans and to allow consumers to play a meaningful role in improving the efficiency of the system. So how are you thinking about the role that consumer prices can play and what do you think states should be doing to motivate consumers to be more efficient? If anybody wants to go first on that one, I have Commissioner Sullivan if you want to start on that one or else happy to go elsewhere.

Joseph Sullivan:

Sure. No, I'm happy to start. I'm in general in terms of TOU rates, I think they work best when you have flexible load already, like an EV, those kinds of investments. I'm pretty comfortable with them. I am worried about the impacts on we're seeing more heating load coming. I'm worried about TOUs when people rely on that for their source of heating. I'm cold now, I'm not cold at eight o'clock tonight. That kind of thing. So I am interested in TOU rates for sure, and we're in the process right now of all of our utilities have either pilots or they have TOU rates in place. Our co-ops have been really great and we look to our co-ops as a source of innovation, our co-ops and our munis, they do some really interesting innovative stuff with TOUs. One of the things that I think about a lot though is we have extremely effective conservation framework in Minnesota that makes people's bills more affordable.

I mean, Minnesota's conservation framework is saving the equivalent of 15% of the state's energy use. So I mean, it's a massive amount of energy that we save per year through our conservation framework, and that is what is really making the price of energy not reflected in the bill that they pay. So I am a big believer in the power of conservation frameworks that flow through the utility and have the scale of utility. We run really good conservation programs and that does make our bills more affordable. We have our rates in Minnesota are now kind of in the mid-pack nationally, but some of bills for electricity are some of the lowest in the country for all of our utilities.

So that's the way that I think about affordability. Maybe it's kind of an old fuddy-duddy kind the way my grandpa thought about it, but that is kind of the way that I do think about. I'm interested in TOUs, I'm

interested in giving people access, but at the end of the day I kind of come back to these, in my view, kind of tried and true, make sure that people are reducing the number of kilowatt-hours that they're taking in every month.

Ari Peskoe:

Commissioner Peretick, do you want to get in on this issue please?

Katherine Peretick:

Yeah, thanks. Yeah, I totally agree. Commissioner Sullivan, I really like your focus on conservation and energy efficiency and waste reduction. I think that's always a good thing. I will talk a little bit directly about TOU rates because we have in Michigan directed full TOU rates for our two largest utilities, and we tested this out first via a pilot program, which included a couple different structures, a couple different methods for TOU, including an opt-in versus an opt-out program. And I think a few different levels of price differentials as well. Then after testing, we did order both of our two largest utilities to do full implementation of TOU rates for exactly the reasons that you noted, Ari. We believe that incentivizing people to shift energy use to off-peak times encourages efficient consumption and will overall reduce the cost of electricity to customers, both from allowing them to shift their own usage, but also from reducing the use of and need to build any new peaking plants too.

So we've seen some really good results. This is relatively new, so we don't have the most robust data yet. Consumers Energy has, their TOU rates have been in place since 2021, and for DTE, it's only been in place since summer of 2023, so less than a year now. So we don't have a large amount of clean data yet, but for consumers that's been around for a few more years, we have seen a definitive drop in peak usage even though we have a relatively small price differential. But I think really importantly, we've seen an even larger drop in peak usage and a larger customer bill savings for low-income customers. And I know that there's always concern about low-income customers when it comes to TOU rates, and I absolutely share that concern. Lots of times, lower income customers are less able shift their usage. Maybe they don't work a traditional nine-to-five job, they can't shift.

It is sometimes more difficult. Or like Commissioner Sullivan, like you said, I'm cold now. I need to run my furnace, or I'm hot now, I need to run my air conditioner right now, right in the middle of the day. And they also tend to have less efficient homes too, which even exacerbates that problem. But I will say from the data that we have collected since 2021, we have seen a larger reduction from the lower income customers. And part of that, getting into a little bit of the why, in Michigan at least, I don't know if this is true in other states, but I would suspect that it is, lower-income customers on average actually use more energy per month and per day than the average residential customer. And higher usage customers actually benefit more from these TOU rates.

More usage occurs outside of those peak hours, so you're actually reducing your bill during those peak hours that was a reduction in rate, and it allows for more shifting of energy to the off-peak periods, shifting of more energy to off-peak periods. So those are just some statistics that we've been able to collect and analyze since 2021. I'm really looking forward to getting more of this and trying to dig a little bit deeper into this once we get more data, but I'm excited at least about the impact that we've seen so far.

Ari Peskoe:

I would like to, if it's okay, I want to move on to another topic, because we only have a few minutes left and there's just a lot of questions and a few questions have been about transmission. And I know three out of the four states here are part of multi-state, at least one multi-state regional transmission

organization. So I want to know what you think the state's role is in building out our transmission system, or is this something that should just be outsourced to PJAM or MISO or one of the other RTOs? There was a mention earlier, I believe from Commissioner Sullivan, about grid-enhancing technologies. And so I'm curious where some of the values of these technologies are really in their implementation at the RTO level. And so what can states be doing to move forward on GETs. And then one more question, again, feel free to address any one of these is... I forgot the last one. So let's stick with those two. The state's role in transmission development and grid-enhancing technologies. If anyone wants to kick us off on this one.

Doug Scott:

Well, I could start on this one, if that's okay, Ari.

Ari Peskoe:

Yeah.

Doug Scott:

So we're heavily invested, as I know Katherine and Joe are, in the RTO processes. We're into, Katherine is into RTOs, and Minnesota's also into, although slightly different because they're in MISO and SRP. So we're heavily involved in all of the processes at the RTO level. Not a great shock to anyone on the call, states don't have a great deal of authority or say so in the RTO process. So it really takes a lot of work to try to work with other states and try to tee up issues and try to make sure that the RTO is considering all of the issues that are important to the states. Recently, we did a letter with the OMS and OPSI people. Those are the state organizations for MISO and PJM to try to work on interregional transmission, looking at how important that is, not just in everyday usage, but especially in times of some of the winter storm events that we've seen and some of the other issues that have come up.

So we're really working on that, as well as, I know we've talked about this, I've talked about this with the other panelists here, but talking about inter-tie optimization between the RTOs. So all of these issues are things that I think the state role, to that part of your question, is that we just need to be really diligent and really involved in all of these processes at the RTO level because it's not necessarily that we're the people that they look to first. They'll look to us and they'll talk to us, but they may not necessarily look to us first. And so it's really incumbent on us to make sure that we're inserting ourselves into all of these different processes.

Ari Peskoe:

Anyone else on transmission? Again, what states could be doing on GETs and what your role might be in a multi-state transmission planning process. Commissioner Sullivan?

Joseph Sullivan:

Yeah, I mean, I'll just say, I kind of think of the question you have there on technology, what I'm excited about transmission and regional partnerships go, I'm going to swing for the fences here, but I mean, what I'm excited about is transmission because I do think that's that enabling technology for everything. And if we can get it right with the regional partnerships, which I sit on the organization of MISO states and collectively we all have different things that we agree about and disagree about, but I think we all do agree that the lowest cost served energy is a good thing for our ratepayers in our states. And if we can find that through line, if we can find that common denominator, I'm excited about the technology that it will enable.

I'm also excited about, I mean, I got into this because I care about climate, because I don't want to turn the earth into Venus. And I think that throughout the Mid-Continent, which is one of the largest sources of carbon emissions in the country, in the world, MISO is projecting, if you do tranche one, two, three, and four, that would lead to basically a 95% carbon reduction throughout the Mid-Continent. So transmission for me is that critical technology that we need to get and it involves regional partnerships. And anyways, so I'm swinging for the fences. I don't know if I hit it, but maybe at least a foul tip.

Ari Peskoe:

Let me ask you a quick follow-up on that then. Why do you think MISO has been more successful than other regions of the country in putting these plans together?

Joseph Sullivan:

I mean, that's a good question and I have not been in the other RTOs, so I don't really know their processes as much. But I can tell you what works really particularly well in MISO is I do think that MISO listens to its stakeholders. And I think that MISO does try to find a common denominator amongst everybody. It's not just a TO club or a generator club or whatever. I think they really do try to listen. I think that the organization of MISO states has been particularly effective and it's a plug for new Commissioner Hawkins in Wisconsin. I think he's done a particularly good job in getting us to really punch above our weight class.

So I think there's a number of factors that have led to MISO's success. And I mean, I do think there's also a collaborative relationship that we have. Minnesota and North Dakota, I think lots of folks would recognize that we don't always get along about certain things, but we work well together. And I think that's made possible because of the forums and the personal relationships that we've created and also the structure of MISO where it is, we're all kind of, nobody has the final say. We all kind of have to come together. So at least that's my meanderings on it.

Doug Scott:

I agree with Joe and I'd also say that PJM now is starting to get to the point where MISO has been for a while in terms of looking at long-range planning, and Katherine's been very involved in that. I think it's more of a, I think MISO saw the need a little bit quicker than PJM did. I think PJM now is seeing that this is something because of retirements and because of load growth and other things, this is something that they have to get into. And hopefully we'll get to the point on the PJM side where it's like Joe described it on the MISO side, but I'm sure Katherine has some thoughts on that as well.

Katherine Peretick:

We only have one minute left here. I can't get into all of those thoughts, but I totally agree with that. With everything that both Doug and Joe went through, I think there's just a huge need for this and a huge need for coordination and listening to the state's perspectives. Having the RTOs actually listen to the state's perspectives is one of the biggest ways that we can get this right.

Ari Peskoe:

I think given that we're at the hour, we're going to have to leave it there. I can't thank our four panelists enough for joining us, for sharing your expertise. And thank you all for your public service. I know you do not have easy jobs, and we're facing certainly an interesting set of issues. And thank you again for walking us through it. For those of you that are here in attendance, we will hopefully be posting this soon on the Harvard EELP website. Thank you everyone for coming. Have a great day.