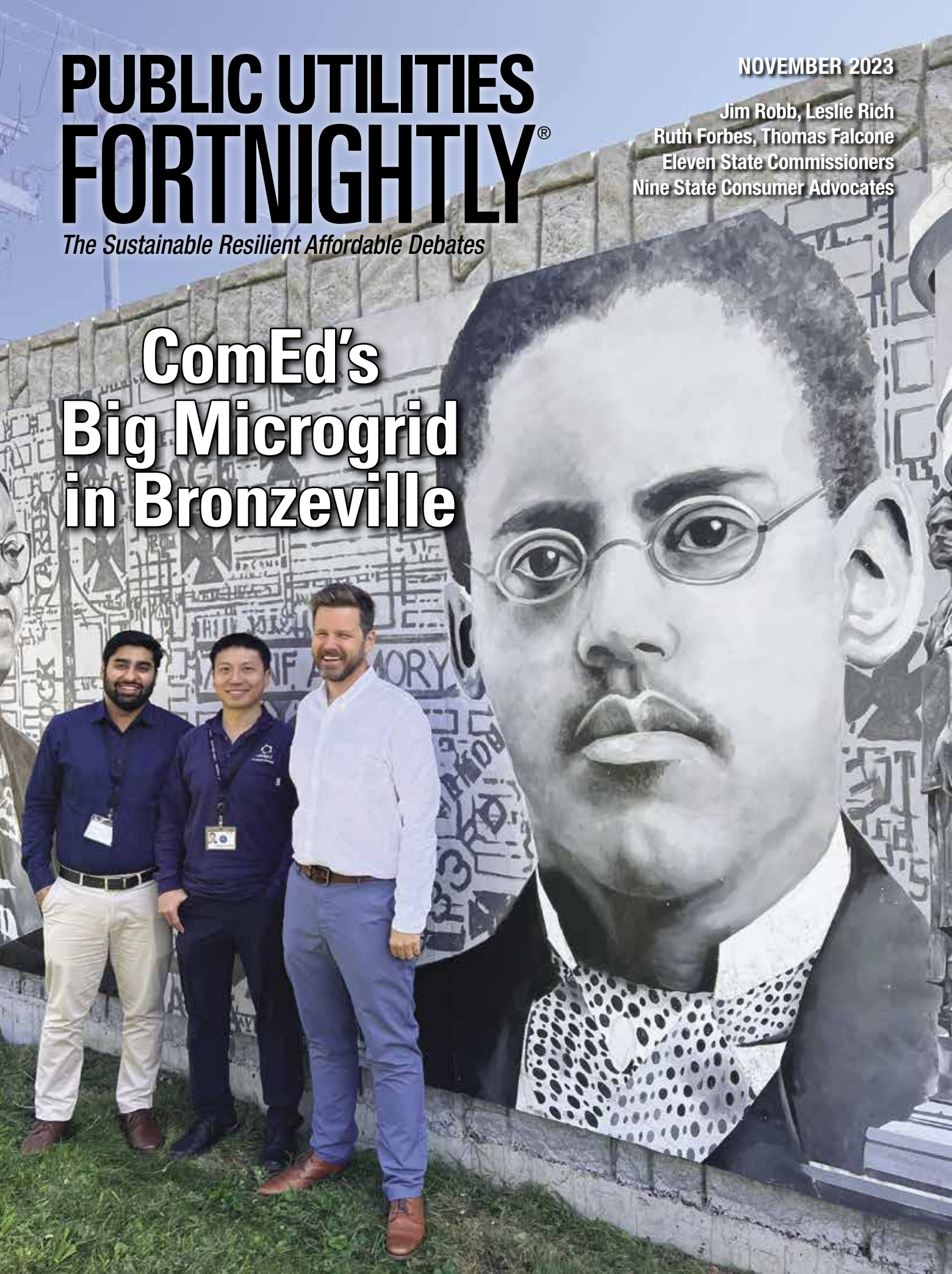
PUBLIC UTILITIES FORTNIGHTLY®

The Sustainable Resilient Affordable Debates

NOVEMBER 2023

Jim Robb, Leslie Rich
Ruth Forbes, Thomas Falcone
Eleven State Commissioners
Nine State Consumer Advocates

ComEd's Big Microgrid in Bronzeville



Ten Commissioners Talk Transition

Conversations with Arizona's Lea Márquez Peterson,
Connecticut's Michael Caron, Florida's Andrew Fay, Indiana's Sarah Freeman,
North Carolina's Floyd McKissick, Jr., Ohio's Daniel Conway,
Rhode Island's Abigail Anthony, Utah's Thad LeVar,
Virginia's Jehmal Hudson, and Washington's Ann Rendahl,
all with PUF's Paul Kjellander.
Feature sponsored by Itron.

Each year, Itron surveys utility execs for its annual Resourcefulness Insight Report. This year, Public Utilities Fortnightly pitched in and surveyed state utility Commissioners to add another dimension to the annual report.

In discussions with ten Commissioners from every end of the country, PUF's Paul Kjellander in late July asked about what's driving the energy transition in their states, their state's policies, barriers for the transition to overcome, and risks, also the role of consumer-owned energy. Each of the five NARUC regions were represented by one or more of the conversations. Three of them were from the Western Conference, two each from the New England Conference, the Mid-Atlantic Conference, and the Southeastern Association, and one from the Mid-America Conference.

This report is a good read every year. Though with Commissioner views folded in this time, the 2023 edition might be the most insightful yet.

Commissioner Lea Márquez Peterson

Arizona Corporation Commission

PUF's Paul Kjellander: What do you see as the primary reasons driving the energy transition for utilities in the State of Arizona?

Commissioner Lea Márquez Peterson: I was appointed in 2019, and the Commission had started the conversation about transition years before. I stepped into the middle of the debate on whether we mandate a clean energy transition in the State of Arizona.

After about four years of debate, we did not mandate it, but have fully supported the utilities' commitments that they've made individually based on their own diverse energy resources mix.

They're continuing to move in that direction. Ultimately, they're all one hundred percent carbon-free by 2050.

Some of them are moving more rapidly than others, but it's being led by the decarbonization efforts, the requests from customers, and large companies that continue to come to Arizona.

They've made a commitment to close their coal plants by 2031, 2032. That's driving it. Also, the need for a balanced portfolio, and to keep a lower cost of generation top of mind.

PUF: Are current policies or legislation in Arizona hindering or helping approval of the energy transition projects?

Commissioner Lea Márquez Peterson: We've been very supportive, and I have been very supportive of all source RFPs, because we want them to focus on all generation types at an equal footing and of course, being as affordable as possible for the ratepayers. We're assisting in that we've embraced all source RFPs.

PUF: As far as your region is concerned, the west, what do you see as the greatest risk for the energy transition?

Commissioner Lea Márquez Peterson: We're in the middle of some very important dialogue occurring across the western region. Some states are moving faster at a different timeline, perhaps than states like Arizona.

I stepped into the middle of the debate on whether we mandate a clean energy transition in Arizona. After four years of debate, we did not mandate it, but have supported the utilities' commitments. They're all 100% carbon-free by 2050.

Interconnectivity certainly impacts all of us. In Arizona, we're impacted if California has rolling brownouts or if Texas has outages.

I think some of the greatest risks we have though, are the development or the need for transmission for energy transition projects. We also have committed to reserve margins, and they're vitally important right now, especially in the heat of the summer, when we're seeing one hundred eighteen-degree days and so on, here in Arizona.

We need to assure our Arizona ratepayers that electric service is reliable. They aren't going to have the rolling brownouts, and that they have adequate air conditioning, which is life and death in Arizona.

PUF: What do you see as the top barriers that your utilities are facing in relation to the energy transition?

Commissioner Lea Márquez Peterson: The need for more transmission is top of mind, as are some of the permitting challenges. I also think ensuring reliability with the introduction of so much variable generation is one of the top barriers. It's just a matter of the balance that's needed.

Certainly, we are growing dramatically in solar and wind and

We have committed to reserve margins, and they're vitally important, especially in the heat of the summer, when we're seeing 118-degree days here in Arizona.

all renewable sources, but we need alternate sources for generation and storage to handle reliability when the sun goes down and the wind's not blowing. We're always engaging in that balancing conversation about what is happening in Arizona.

PUF: As a regulator, what do you see as the biggest challenges as you look at approving some of the energy transition projects that may show up?

Commissioner Lea Márquez Peterson: We don't approve specific projects except in the context of a rate case to determine prudency and whether the projects are used and useful. One of our greatest tools, though, is our integrated resource plans.

The utilities present IRPs to us, which provide about a fifteen-year outlook. These planning efforts have a lot of stakeholder and community involvement.

That's a great way to look at proposed projects, descriptions, and purchase power acquisitions. We acknowledge those types of plans, but it's a very important process in Arizona.

PUF: How important are consumer-owned assets as far as the energy transition, and how do you envision regulating them, or how do you see their treatment within the regulated utility structure?

Commissioner Lea Márquez Peterson: It's interesting. Before customer-owned resources, the grid was really a one-way grid from utility to consumer. Today, it flows both ways, and it's even getting more technologically advanced with some new programs and EVs coming on the market.

The Commission does not currently regulate consumer-owned assets per se. Arizona has a well-developed solar PV market for residential and commercial properties.

Customer-owned batteries are being implemented gradually.

Customers receive monthly bill credits for self-generated energy and any over-generation is compensated once a year at the market cost of comparable generation.

We've been very supportive of demand-side management programs offered by utilities, including virtual power plants, as they're called now, and bring-your-own-device tariffs. Consumer-owned assets play a huge role in the energy transition and will continue to grow. ❍

The prices that power plants pay for natural gas were down 22.7% in September year-over-year.

Commissioner Michael Caron

Connecticut Public Utilities Regulatory Authority, NARUC President

PUF's Paul Kjellander: What do you see as the primary reasons driving the energy transition for utilities in the State of Connecticut?

Commissioner Michael Caron: There's a question of whether this is a transition or is it really an evolution? While it's a subtle distinction, I think it's important.

Transition suggests that this is going to happen, and somebody has an idea how this is going to happen. Evolution is more organic, and it follows the path to least resistance, and that may be based upon technologies. We had our NARUC theme for the past three years of Connecting the Dots, find the least-cost way and the shortest way to the next dot, and make sure that it works for you.

I find it more of an evolution and would prefer that people see the move toward clean energy as an evolution. That it's not necessarily a top-down transition in any way. Those tend to crash and burn ultimately. It's better if you find support, it creates its own momentum, and moves along.

In our state, when our Chair, Marissa Gillett, came from Maryland, she came primarily to start working on grid modernization. She came up with a novel concept called the Equitable Modern Grid Docket, which created eleven sub-dockets within it.

These sub-dockets included subjects such as heavy-duty electric vehicles, non-wire solutions, energy storage solutions, energy affordability, and bill redesign. It was ambitious. Almost four years later, we've completed several of them and have, in fact, begun going into annual compliance reviews.

After tropical storm Isaias, the legislature passed a bill called, Take Back Our Grid Act, which provided several new authorities for the Connecticut PURA to pursue this energy transition evolution. Part of it included performance-based regulation. It was driven both by the administration and the legislature.

PUF: Do you see current policies or legislation in your state as supporting or hindering approval of energy transition projects?

Commissioner Michael Caron: Very supportive. Chair Gillett has a close relationship with the Chairs of the Energy and Technology Committee.

They passed another bill this past session, Senate Bill 7, that provided Connecticut PURA more authority over not just the electric utilities, but also gas and water to some extent. Senate Bill 7 from 2023 has provided more discretion to the PURA to develop performance-based concepts.

We've already completed Phase 1 of the Performance-Based Regulation docket, and it created the overall goals and criteria. Phase 2 just began in spring. We expect to finish at least the first part, three sub-dockets, developing the criteria and metrics for the utilities to strive for and to be graded upon.

I would prefer that people see the move toward clean energy as an evolution. That it's not necessarily a top-down transition in any way. Those tend to crash and burn ultimately. It's better if you find support, it creates its own momentum, and moves along.

In the Senate Bill 7, there is a requirement for study by the Department of Energy and Environmental Protection to assess ability of siting small modular reactors, for instance, among others, not limited to SMRs, at the current nuclear station in Connecticut.

PUF: How do you see performance-based regulation impacting the transition as it relates to innovative technologies or approaches you might want to use going forward?

Commissioner Michael Caron: That's a great question. It's an effort to align the activities and culture of the utilities to that of the State of Connecticut's public policies, if that's a transition or an evolution.

For instance, if you wanted to see more distributed energy resources developed, we would tie some performance measures from the utilities onto how much DER they develop and interconnect. That could be another criterion for probably basis points in their ROE of how many new connections they've created per year.

If they can document those, it would be positive for the environment that the utility works with, if that makes sense. Ultimately, it will help the utilities help themselves.

PUF: As you look at the energy transition, what do you see as the greatest risks within the New England region as a whole?

Commissioner Michael Caron: For Connecticut, in New England in general, it is time, and we seem to be running out. I say that because most of our power comes from gas. We are gas constrained.

No one's building any new pipelines into New England. The pipes we have are full. At peak loads during the summer, it gets tight.

But the real scary part is in the winter because especially during cold snaps, people in the residential firm contract requirements turn up their heat and consequently, there's less gas on the spot

Senate Bill 7 provided Connecticut PURA more authority over not just electric utilities, but also gas and water to some extent. It has provided more discretion to the PURA to develop performance-based concepts.

market at a highly elevated price for the electricity generators. We are then anywhere from four to seven days of extended cold snap from possibly having rolling blackouts in New England.

Our RTO, ISO New England, has assured us that we are fine for now, but they often warn in the autumn of the extended cold snaps and the possibility of rolling blackouts.

Also in 2024, we have a required must-run facility closing in Everett, Massachusetts, which is supplied by a liquid natural gas buoy and provides extra gas into the system in New England. But the main reason that buoy is there is for the Everett plant, and when that closes in 2024, there'll be no economic reason for the LNG buoy to remain, so we have serious issues to deal with over the course of the next one or two years.

PUF: What do you see as the top barriers for utilities in the State of Connecticut as it relates to the energy transition or evolution?

Commissioner Michael Caron: I don't think there is one necessarily unless it's of their own making. I think there's an opportunity here for them and there are a lot of options. Again, it's connecting a lot of dots.

I spoke with a utility executive earlier this summer in Houston, and they're getting a lot of offers for hydrogen projects. Whether that's a blend or developing a new pipeline system or new pipe.

Obviously, hydrogen is such a light element, it's easy for it to escape, so we might have a problem with that. Hydrogen has its problems, but it also has its promise, for instance.

In Connecticut, there shouldn't be any barriers if we work together and make sure we understand what each can accomplish, both from the regulatory side and the utility side.

PUF: As a regulator, what do you see as the biggest challenges as you look at approving some of the energy transition projects?

Commissioner Michael Caron: My personal fear is that, again, if you're talking transition versus an evolution, the transition says we must electrify everything and it's going to be strictly renewable, meaning wind, solar, offshore wind, and there's just not the space for it. You can't site many of those projects in the first place.

Offshore wind, of course, the economic dynamics have changed and changed significantly to where developers may very well walk away, and that will leave another time lag gap in when you can get more new bids out there.

In terms of a transition, do we chase the wrong generation, I guess is the best way to put it. For instance, and I've said this

often, nothing has reduced greenhouse gas emissions in the United States and throughout the world more than the use of natural gas.

If we preclude the use of natural gas going forward for the next twenty-five to forty years, I think we do ourselves a disservice, as well as becoming over-reliant on just electrification for all our energy needs.

That worries me to some extent. In fact, I saw an op-ed that suggested electrifying everything is a fool's errand because, one, it's too expensive, and two, it's not necessarily feasible. Three, you need more technological developments that don't exist yet and we've got a perfectly good grid. It just needs adjustments. Follow those paths of least resistance. So, low cost, feasibility, and reliability.

PUF: How important do you view consumer-owned assets as it relates to the energy transition? How do you envision regulated utilities as far as the treatment of those consumer-owned assets?

Commissioner Michael Caron: It seems simple, but the devil's in the details, and it becomes more complicated as we all work through it. In Connecticut, we have what's called the Connecticut Green Bank run by a gentleman for many years now, CEO Bryan Garcia.

He's done a great job of finding financing for these projects, getting solar onto people's roofs, and creating an accounting so we know how many megawatts of solar are out there, which helps the RTO manage what goes on during the day.

Some of the challenges for the ISO New England, other RTOs, and probably for the regulators, is that we have so much power coming online in the time of the day when we don't necessarily need it. For engineering, what does that do in terms of prices and to some extent, investment in larger generation to back up all that renewable intermittent power?

We are gas constrained. No one's building any new pipelines into New England. At peak loads during the summer, it gets tight. The scary part is winter during cold snaps. We are from 4 to 7 days of extended cold snap from possibly having rolling blackouts in New England.

It's usually followed by either battery storage and, frankly, natural gas, which, again, we're constrained, so I don't know that we have enough gas resources to fill the new generators if we need them, and that leaves us at a bit of a disadvantage. I guess I don't have any solutions.

We'll have to follow through logically and rationally and make sure we find the best way forward for the State of Connecticut and New England in general. ❍

Chair Andrew Fay

Florida Public Service Commission

PUF's Paul Kjellander: What do you see are the primary drivers of the energy transition for utilities in the State of Florida?

Chair Andrew Fay: We are the Sunshine State. So, when we think of renewables in Florida, we think solar. What we have seen is this significant decrease in overall cost for solar panels. Going back a decade, we've seen that as solar panel costs decline, an increase in demand follows.

We've also seen some emerging technology that enhances what you can get out of these panels. Those advancements, along with the decrease in costs, are really what is driving the renewable transition in Florida.

There's also recognition that our utilities want to be responsive to their customers, and Florida customers have a strong interest in solar. We hear it as Commissioners when we travel across the state and visit different regions.

I think the utilities are hearing similar feedback and interest from their customers. So, the other main driver is the commitment by utilities to be responsive to what they're hearing from their customers.

PUF: Are policies, legislation, statutes in the State of Florida helping or hindering the energy transition?

Chair Andrew Fay: As a lawyer, the law is the first place I go to see what will drive our decisions. Overall, I think our statutes and policies are supportive of the energy transition and adoption of solar. I hate to mainly focus on one type of renewable, but for Florida, that is over ninety percent of our renewable generation.

In 2021, Florida surpassed our friends from North Carolina in overall solar generation capacity, and we are now ranked third in the country. I think the rapid pace of this expansion showed that with the right economics, our policies have proven to be supportive of the transition.

As for the statutes and rules, we do have interconnection requirements that drive our net metering policies. In addition to the interconnection requirements, we have language in our statutes that require the Commission to reduce the reliance of fossil fuels for generation. That language has proven to be critical in some of our decisions.

PUF: What do you see are some of the greatest risks for the energy transition within your region?

Chair Andrew Fay: Florida, and the Southeast in general, keeps a close eye on anything that may impact the reliability of our grid, especially hurricanes. We're always thinking of the resiliency of the assets that are part of our grid, and how they may be impacted by storms.

Long term, the typical forms of generation have been built with the concept of resiliency in mind. There are still some unknowns about the long-term viability and resiliency of renewables – mainly solar – to withstand some of that severe weather.

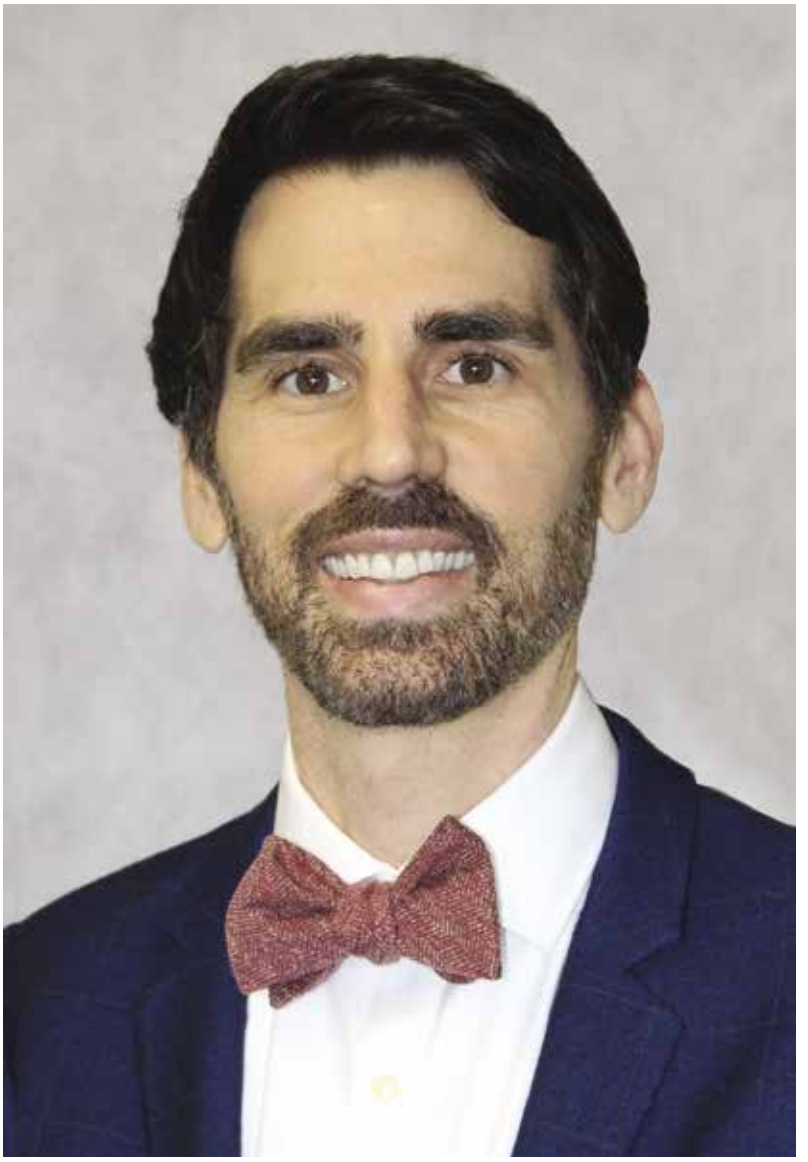
Anything that impacts reliability in the Florida grid is taken very seriously. Just because we have had very good reliability in the past, doesn't mean we should let our guard down. Florida customers typically have a very high expectation of reliability. Even after severe storms, customers want the grid to be back up and running quickly.

Anything that impacts overall reliability is concerning and must be thought out before implementation. That might be in part because of what we saw in Texas. There are a lot of thoughts about what happened in Texas, but in general, I believe Commissions are being a bit more strategic about how they adopt and utilize renewables.

PUF: What do you see as barriers that utilities in the State of Florida are facing in relation to the energy transition?

Chair Andrew Fay: Solar fields are unique in the way they're built out and the complexities of integrating those components into the grid. It's not uncommon for those sites to be more rural, agricultural areas. Integrating that resource into the grid is something utilities must be extremely thoughtful about to make sure the investment is worthwhile.

The other potential barrier is making sure that resource is responsive and available for peak load. It's apparent that a lot of renewables can be intermittent, whether that be wind, solar or other forms of renewable generation.



Florida, and the Southeast in general, keeps a close eye on anything that may impact the reliability of our grid, especially hurricanes. The typical forms of generation have been built with resiliency in mind. There are still some unknowns about the long-term viability and resiliency of renewables – mainly solar – to withstand some of that severe weather.

Florida's peak is in the summer months in the afternoons between four and six p.m. If the sun is not shining during that time and we have large investments in solar, are those investments worthwhile? Are they responsive for what we might need to curtail some of that peak load?

Realistically, there are a wide array of storage options that may help better align generation to demand. I presume utilities are looking at these options, but they'll need to be scalable throughout Florida to make sure they're worthwhile investments.

PUF: From a regulator's perspective, what do you see as the challenges in the energy transition?

Chair Andrew Fay: Sometimes as Commissioners, the biggest

challenge is not presuming that similar projects or programs are identical. Each program has specific economics and benefits that make it unique from a previously approved program.

That is probably the most challenging part, in that you take a lot of these programs and projects and must make sure you dissect them and look at all the components to make sure the program is worthwhile. They still need to provide a net benefit to the customers. It's not enough to just want more solar or renewable energy.

There's a cost-effectiveness measure that we look at, which of course, when costs are driven down, tends to be more favorable. There are also questions about the impact of fuel volatility at the time of review. There's a lot of evaluation that goes into making sure a project or program makes sense.

For Commissions, it's the reality that not any two projects are identical, so we've got to spend the time to make sure that we look at each one that comes in and ensure the decision we make is consistent with what is required of us.

PUF: Where do consumer-owned assets fit into this energy transition as far as significance and impact within the utility structure?

Chair Andrew Fay: I'm glad you asked. It's a big issue in Florida. There's been a lot of discussion about it within our legislature and the Commission.

Like most states, we have interconnection agreements required by statute. Florida has seen significant growth in the use of these interconnections. If we go back to 2018, when I started with the Commission, we had a little over twenty-eight thousand interconnection agreements.

We put out some information a few weeks ago with updated data on those agreements, and we're now sitting at a little over one hundred fifty thousand. That's exponential growth over that time and it shows that customers have a strong interest in purchasing consumer solar systems to install on their properties.

That is probably the most challenging part, in that you take a lot of these programs and projects and must make sure you dissect them and look at all the components to make sure the program is worthwhile. They still need to provide a net benefit to the customers. It's not enough to just want more solar or renewable energy.

The future regulatory debate around this topic is going to be interesting because as you see technology change, there will be different considerations about what goes into net metering. It's possible you'll see regulatory changes to adjust for what those impacts may be.

That's something that maybe doesn't take place today, but there's a possibility that on the regulatory side, the Commission or state will want to make changes down the road. Either way, I believe it will continue to be a big part of the overall renewable transition for the State of Florida.

Commissioner Sarah Freeman

Indiana Utility Regulatory Commission

PUF's Paul Kjellander: What do you see are the primary drivers for the energy transition for utilities that operate in the State of Indiana?

Commissioner Sarah Freeman: In Indiana, it's the economics that drive the transition, with renewable resources typically coming in at lower cost than do traditional fossil fuels. Indiana does not have a renewable portfolio standard that dictates any type of portfolio on behalf of our utilities, so it's all about the economics.

The transition really took off in Indiana in 2019 when NIPSCO issued its first all-source RFP, and that came back with an all-renewable portfolio, which lined up nicely with their goal of being coal free by 2028. We still see this transition continuing today, because NIPSCO recently took another step down that path.

NIPSCO filed with us a petition for a Certificate of Public Convenience and Necessity for a two-hundred-megawatt solar project that it anticipates will qualify for the federal Bonus Energy Community Tax incentive.

Our other investor-owned utilities have followed suit with varying degrees of commitment to this all-source RFP approach, but of course the economics have changed between 2019 and 2023. The results of these RFPs are different in 2023 compared to what we saw with NIPSCO in 2019, but economics are still the primary driver.

Following that, I would say consumer preference has affected the generation choices of our utilities, especially as the state and our Economic Development Corporation feature utility service in their economic development discussions with prospective companies and employers.

So, in lieu of a state-mandated renewable portfolio standard,

we have utility-driven targets designed to address some of the concerns from shareholders, customers, and the investment community, while looking at affordability for their customers, as well.

PUF: Are current policies or legislation in the State of Indiana hindering or helping approval of energy transition projects?

Commissioner Sarah Freeman: As I mentioned, the State of Indiana does not have a renewable portfolio standard or similar policy. Overall, any policies are resource neutral, so they don't hinder the energy transition.

To the extent any policies do present a challenge, it's at the local level where some communities have put up regulatory barriers to the siting of wind and solar projects in their jurisdictions.

To counter that, the Indiana General Assembly recently enacted legislation allowing communities to be certified as renewable-ready communities, saying, "Our doors are open to your projects. We've streamlined this process and made it simpler to locate wind or solar projects in our communities."

In addition, the biggest policy shift in Indiana was the codification during the 2023 legislative session of what we call our five pillars. A few years ago, the general assembly created the 21st Century Energy Policy Development Task Force.

They've been meeting regularly over the past several years and developed and now codified a statewide energy policy based on these five pillars, and that'll be what drives the energy transition going forward.

To the extent any policies present a challenge, it's at the local level where some communities have put up regulatory barriers to siting of wind and solar. To counter that, the Indiana General Assembly enacted legislation allowing communities to be certified as renewable-ready communities, saying, "Our doors are open to projects."

The five pillars they identified are reliability, resilience, stability, affordability, and environmental sustainability. All five will be considered in the context of both the generation resource mix and energy infrastructure.

Reliability is what we traditionally think of, focusing on resource adequacy and operating reliability. Resilience is the ability of a system to adapt, withstand, and recover from a major event.

Stability is looking at the system's ability to maintain equilibrium under normal and abnormal circumstances. Affordability, which we usually talk about mostly with respect to residential customers, explicitly states that it's looking at all customer classes: residential, commercial, and industrial, with a goal of achieving affordability without sacrificing reliability or resilience.

Finally, environmental sustainability factors in state and federal environmental regulations, as well as customer demand for non-thermal generation. All five pillars are going to be driving decisions going forward.

We currently, by rule, require all our utilities to address all five pillars in any pleadings they file with us in docketed proceedings. I don't think this in any way will hinder the transition, but it will ensure that Hoosiers continue to receive reliable and affordable utility service.

PUF: That local community, we're open for your business approach statute, were there incentives attached to that from the state, or what was the motivation behind it?

Commissioner Sarah Freeman: It was to help things move forward. Similar legislation was enacted a few years ago for broadband-ready communities that did not have incentives tied to it either and it was successful.

Communities like to have an additional marketing tool because these can be lucrative projects for landowners. They can contribute to the tax base, as well. They can diversify land use.

Communities that welcome this transition see the value it can provide, especially through the pocketbook, and are more than ready to sign up.

PUF: What do you see as the greatest risks in your entire region as this energy transition unfolds?

Commissioner Sarah Freeman: Resource adequacy. I could just stop there. Put a big period after it.

The State of Indiana is located in both MISO and PJM territories, so we're active in both of those RTOs and the regional state committees, as well. But resource adequacy and the reliability of the grid that flows from those are the biggest regional concerns at this time.

All the regulators who serve on the Organization of MISO States Board of Directors are heavily involved in ensuring, both through our roles as state economic regulators, and through our involvement in the RTO planning world, that resources remain sufficient to meet the needs of our grid throughout the middle of the United States of America.

Another way that in Indiana we deal specifically with this concern is through a statutory reporting requirement that's imposed on the public utilities that file integrated resource plans with us.

This requires these utilities to file an annual report that provides resource adequacy information for the next three resource planning years. This gives us both a baseline and a rolling comparison going forward to make sure we have adequate resources in Indiana to keep the power on, but also to be a good neighbor to other states in the region as we participate in our regional markets.

PUF: What do you see as challenges for utilities in the State of Indiana as they look at the energy transition?

Commissioner Sarah Freeman: Indiana is a coal state. We still have active mines that provide good employment for Hoosiers, as well as coal to our utilities that operate a traditional baseload fleet.

There is, understandably, a desire within the coal industry and community to protect their businesses and employees as they exist today. But I'm seeing efforts to diversify their enterprises to provide services other than lumps of coal as fuel to energy utilities.

This industry recognizes the transition that's taking place and in discussions with them, I'm learning more about the changes they're making to move along with the transition while remaining a viable enterprise.

Another challenge is the fact that a traditional baseload generation plant is a significant financial contributor to its local economy through salaries paid to its employees, but particularly through property taxes. If that turns into a brownfield site that's left unused rather than repurposed, then there's an additional challenge.

The five pillars they identified are reliability, resilience, stability, affordability, and environmental sustainability. All five will be considered in the context of both the generation resource mix and energy infrastructure.

But I do feel that the Indiana Commission maintains good lines of communication with all these players, so we're able to work with them and evaluate these challenges in order to keep the lights on while remaining affordable.

PUF: What do you see as the biggest challenges that regulators face as they look at the energy transition in the State of Indiana?

Commissioner Sarah Freeman: For me as a decision maker, as an economic regulator, affordability is that big challenge right now, and then I'd say followed closely by the fact that each day only contains twenty-four hours. If I could somehow stretch that out, I would do it.

Talking about affordability, the costs, particularly costs associated with renewable energy projects, are creeping upward due to supply chain issues and inflation-related challenges, which means these projects are yielding incrementally smaller savings to ratepayers, and that makes decisions more difficult.

With respect to not having enough time in any given day, and I think this applies equally to all parties – regulators, utilities, consumer advocates – none of us have enough time to address all the issues that come before us.

I'll make my usual plug for what I consider to be an elegant fix to this challenge, which is for petitioners, and by that, I mean utilities, to present in their case-in-chief the most robust case possible to iron out as many issues as possible with consumer advocates and other intervenors before filing their petitions with us.

This can reduce or at least simplify opposition to any given project, which in turn can eliminate the need for the utility to file rebuttal, all of which gives more time to the decision maker, to the regulator, to reach the most just and reasonable outcome in any given proceeding.

I reiterate it to our regulated utilities all the time. You are bringing this case to us, so bring us your very best case. Your first step should be your best step. Make it as noncontentious as possible and we'll all be happy Midwesterners at the end of the day.

PUF: How do you see consumer-owned assets in the energy transition in the State of Indiana and with respect to how they're treated by utilities?

Commissioner Sarah Freeman: Consumer-owned assets are going to be critical to this transition, and our Commission is doing the best job we can to prepare ourselves to be ready to address that part of the transition when it reaches a critical mass, which in Indiana is not quite yet.

Our Commission is in the early stages of a multi-year rulemaking process to implement FERC Order 2222 and that will guide our regulation of some of these types of assets. We're also investigating EV penetration and charging infrastructure in a separate docket right now.

I'm sharing these examples to say that the issues are on our radar, and we're going to continue to work closely with our stakeholders to be ready to move when these assets do reach that critical mass in our jurisdiction. ❍

Commissioner Floyd McKissick, Jr.

North Carolina Utilities Commission

PUF's Paul Kjellander: What are the primary drivers of the energy transition for the utilities in the State of North Carolina?

Commissioner Floyd McKissick, Jr.: The primary driver in our state is legislation, House Bill 951, that was passed by the North Carolina General Assembly in October 2021. It was bipartisan legislation that required the North Carolina Utilities Commission to develop a plan to reduce carbon emissions from Duke Energy's electric generating facilities by seventy percent from 2005 levels by 2030 and to become carbon neutral by 2050.

The legislation permitted multi-year ratemaking and performance-based regulations in North Carolina for the first time for Duke and it allowed for the securitization of fifty percent of the net remaining book value of coal-fired electric generating facilities that may be retired early to achieve carbon reduction goals. In addition, if new solar generation is selected by the Commission to achieve carbon reductions, then forty-five percent of the total megawatts must be supplied through power purchase agreements with third parties and fifty-five percent must be supplied by the utility or from third parties.

Essentially, the legislation allowed our Commission to craft a carbon plan, which would establish targets for the amount of electric power that would be generated by coal, gas, nuclear, hydro, solar, and wind. It gave us a lot of flexibility.

In May of 2022, Duke submitted a proposed Carbon Plan after going through an extensive stakeholder process, which included potential intervenors and other parties. Intervenors had a chance to respond to what Duke had proposed and to submit their own plans. After a lengthy hearing, the Commission adopted a Carbon Plan at the end of 2022, which will be updated every two years.

The Commission also established a new rule, which essentially says that rather than having a separate Integrated Resource Plan and a separate Carbon Plan, we will now have a Carbon Plan Integrated Resource Plan that's submitted as one document. So, the utility is not submitting two documents seeking to do the same thing. The first progress report and information will be submitted around September 1.

Bipartisan legislation required the Commission to develop a plan to reduce carbon emissions from Duke Energy's electric generating facilities by 70% from 2005 levels by 2030 and to become carbon neutral by 2050.

PUF: Does the plan get into the issues of carbon pricing?

Commissioner Floyd McKissick, Jr.: It does not get into carbon pricing. It does say that we have about eight thousand four hundred megawatts of coal-generating facilities that must be retired. We're looking at retiring them by 2035.

It looks at what targets might be established for solar. It looks at some transmission constraints in the state that are problematic, and what we are going to do in terms of addressing those transmission constraints.

There are approximately fourteen transmission projects in what we refer to as the Red Zone that will enable more renewables, in this case solar, to get onto the grid. It has that kind of detail in it.

It also allowed for seventy-five million dollars for near-term development actions, which included pursuing an early site permit for a small modular reactor or advanced nuclear. We do get into some of those types of goals, and also instructed Duke

One of the greatest risks I see is that we don't know, in terms of transmission-related issues, how quickly they can be addressed and resolved. If we're looking at bringing in renewables at the volume and magnitude necessary to accomplish this transition to cleaner energy, then we need to make certain that we have transmission capacity to do so.

to go back to do more work when it comes to potential onshore and offshore wind projects.

There are three tracts off the coast of North Carolina that are capable of being developed for offshore wind. There are no wind projects in North Carolina currently, except for an Avangrid project that provides wind power to Amazon.

PUF: Is current legislation in the State of North Carolina hindering or helping approval of the energy transition projects?

Commissioner Floyd McKissick, Jr.: The House Bill 951 has been a great enabler to help us focus attention and giving us the authority to accomplish the goals, which have been statutorily established, of achieving a seventy percent carbon emissions reduction target by 2030 from 2005 standards and getting to carbon neutrality by 2050.

Were it not for the passage of HB 951, our Commission would not have had the authority and ability to attain these aspirational targets, however, now there's a legislative mandate to accomplish these goals. It has set us on the right path.

Overall, this transition will work more smoothly because we have this authority. It gives us a chance to get data and information from definitive sources, including experts who are being put forth by intervenors and Duke Energy, which allows us to evaluate the data and it better enables us to chart a course.

Right now, we've chosen the course that reserves for us a lot of optionality, which is critical and important, because we don't know how rapidly new technologies will advance and become economically viable in the near or long term, such as battery storage, advanced nuclear, hydrogen, and offshore wind.

PUF: What do you see as the greatest risks, as you look at the path you're on with regard to the energy transition, in your region as a whole?

Commissioner Floyd McKissick, Jr.: One of the greatest risks I see is that we don't know, in terms of transmission-related issues, how quickly they can be addressed and resolved. Because if we're looking at bringing in renewables at the volume and magnitude necessary to accomplish this transition to cleaner energy, then we need to make certain that we have transmission capacity to do so.

In North Carolina, for solar, the best sites are in the eastern part of our state which is more rural, and where land is more easily available. At the same time, those rural areas are more isolated from the transmission capacity needed to transmit that power to the central part of our state.

It's extraordinarily constrained.

We need to work vigorously to make the necessary upgrades. I mentioned we have what we call Red Zone projects, and we need to make sure they happen as rapidly as possible.

The same transmission upgrades identified as enabling solar to become a greater contributor, are upgrades that we most likely would also need, as well as others, to take advantage of the potential for onshore and offshore wind.

You can get that wind to the shore, but we still need transmission capacity to get the power into the center and the heart of our state where it's needed. Transmission capacity is a serious constraint that we need to address, which can substantially impact how quickly solar can become a greater contributor.

From what I've read nationally right now, North Carolina, in terms of total solar being generated, is among the top five states in the United States, with California being the largest contributor in terms of electric generation capacity. So we're doing well now. To achieve our targets, we're going to have to be more aggressive and strategic to make certain the capacity is there.

PUF: What do you see as the biggest barriers that your utilities are facing in relation to the energy transition?

Commissioner Floyd McKissick, Jr.: The utilities are probably sitting back and wanting to make certain that we're making strategic and well-conceived decisions that will enable them to do what they deem is necessary to move toward the energy transition we all know is coming in a timely manner.

One of these greatest uncertainties is the cost of the clean energy transition and how it will impact rates. There are regulatory uncertainties, as well as infrastructure uncertainties, as Duke evaluates its options as it closes plants that burn coal.

The Mountain Valley Pipeline is a project that has received a lot of national attention. But there's a proposed extension, called the Southgate Extension to the MVP, that would come down into North Carolina, that would potentially provide natural gas to our state. Some of the areas it could potentially serve, Duke would contend, would be good sites for replacing coal with natural gas.

Now, is that going to happen? I honestly don't know. Is there regulatory uncertainty as well as legal uncertainty? That's clearly the case.

For the most part, Duke understands the goals of the Carbon Plan and was active in working with the legislature when HB 951 was passed. Duke understands that we need to work collaboratively to come up with a scope of enablers that will allow Duke to reach the goals set forth in the Carbon Plan without there being obstacles that would be problematic in terms of getting there.

PUF: What do you see as the biggest regulatory challenges as you look at this energy transition?

Commissioner Floyd McKissick, Jr.: Making certain that the pathway we chart is feasible and reasonable, and that assumptions made in modeling are realistic assumptions. Also, looking at new technologies that may be emerging, the viability of getting them and bringing them online in a timeframe that will help us to address the targets we have set for carbon reductions.

Let's say we're talking about a 2030 timeframe for carbon reductions, and we might extend it by two years, which was permitted in HB 951. Let's say we decide we want to use small modular reactors in some instances.

SMRs may not be available to us based upon the timeline being projected today, and where we stand today, until maybe 2032. Let's say we're looking at hydrogen as a potential alternative, but we don't know when that will become commercially feasible. We don't know if we will encounter problems if we decide to pursue offshore wind.

I like to think that in terms of installing solar on homes, we would encourage systems with battery storage that could potentially be controlled by the utility in times of peak demand. It's not something we've dealt with in North Carolina. It's an open book in terms of what we might do to better utilize consumer-owned resources.

In terms of legal constraints, we're in a good place and good position. The Commission has never had greater authority to move forward with initiatives that will allow this transition to occur. But we don't know, in terms of modeling, what will or will not occur or whether the solar we envision will be built at the magnitude we may project.

We need to be mindful of what we might be able to do in terms of energy efficiency or demand-side management. What's going to occur with electrification? Our governor has set a target of one million two hundred fifty thousand electric vehicles registered in North Carolina by 2030 or so.

In the past year, electric vehicle registrations increased fifty-four percent. If electrification is occurring at the pace set as a target, what does that do to demand? What does it mean in terms of using time-of-use rates to encourage those adopting EVs to charge at times when they don't put undue pressure upon the grid? These are all uncertainties we will inevitably face and none of have a crystal ball that will help us make good decisions. There is a lot of uncertainty that will only be resolved over time.

There are issues that are interrelated, and we need to deal with them. But the modeling and assumptions we need to make and the validity of the data that we receive, as well as the evolving

landscape, presents a complex web of technical issues we need to understand and wrestle with, that may change our assumptions and our plans as we move forward.

PUF: How do you view the role of consumer-owned assets in this energy transition?

Commissioner Floyd McKissick, Jr.: What we do in terms of consumer-owned assets is critical, and I like to think that in terms of those installing solar on homes, we would encourage systems with battery storage that could potentially be controlled by the utility in times of peak demand. But it's not something we've dealt with in North Carolina at this time. It's kind of an open book in terms of what we might do or what we can do to enable us to better utilize consumer-owned resources moving forward. ❍

Commissioner Dan Conway

Public Utilities Commission of Ohio

PUF's Paul Kjellander: What are the primary reasons driving the energy transition for utilities in the State of Ohio?

Commissioner Dan Conway: Ohio is no longer vertically integrated. Our electric utilities began their restructuring journey in 2001 as a result of state legislation, which required electric utilities to exit the generation business. Generation services are subject to competition at the retail level in Ohio, and consumers choose their generation supplier on a competitive basis.

We have a default service supply for those who don't choose their supplier. The default service option is procured through a competitive wholesale process, so it ends up having a similar result, which is a competitive basis for the supply that serves them.

Ohio is a choice state. The investor-owned utilities in Ohio were required to join regional transmission organizations and transfer operational control, planning, and oversight of their transmission facilities to the RTO.

All our IOUs chose PJM as their RTO. Our rural electric cooperatives and our municipal electric utilities are still vertically integrated, but the PUCO doesn't regulate them. There are some minor respects in which we regulate the electric cooperatives, but for purposes of this discussion, they're not regulated by us.

Customer choice and competition are primary influences on the type of generation, including renewables, that consumers obtain in Ohio. Competition is a big driver.

Environmental laws have had a significant impact. Renewable portfolio standards have had some impact in Ohio, although that driver in Ohio has been capped because of recent legislation.

Technological changes have been a big factor also. The improvements to natural gas combined-cycle technology and the horizontal fracturing technology used to extract natural gas supplies have been huge drivers in the change in the resource mix, both in Ohio and in PJM.

The competition policy implemented at the national level, at the regional level by PJM through its bulk power markets, and the retail competition policy adopted by Ohio, which were harnessed to the technological changes regarding horizontal fracturing and combined-cycle technology, all caused a huge change in the generation mix within Ohio and PJM.

What we see are storm clouds on the horizon that are going to affect reliability, resource adequacy, and prices because of state and federal initiatives that are pushing for a rapid transition away from thermal resources into renewable resources.

It facilitated in a more rapid fashion than would have occurred in a vertically integrated approach, the transition from coal-fired generation to its replacement essentially, which has been natural gas combined cycle.

We still have a significant amount of coal-fired generation in Ohio, but it's half of what it was twenty years ago. Conversely, the fraction of our generation resource mix and PJM's that's represented by natural gas combined cycle has essentially taken up that slack and then some because of nuclear retirements.

The retirement of coal plants in Ohio and elsewhere and effectively the replacement by natural gas, has been driven by technology changes, environmental law changes, competition, and the other factors I mentioned.

More recently, we've seen changes in technology, environmental and tax policies. Tax policy has provided significant subsidy flows for renewable technologies and led to an explosion of proposals to bring online utility-scale solar and wind renewables and increasingly storage resources in Ohio and PJM.

If you look at Ohio as a representative of PJM, it mirrors what's been happening on a region-wide basis in PJM with regard to the replacement of coal by natural gas and with the emergence more recently of wind and solar and storage technologies.

The net result of these drivers has been that the thermal units in the generation fleet, both in Ohio and regionally, are either

rapidly retiring in the case of coal, or their new entry, in the case of natural gas, has been plateauing.

The proposals that we've gotten for the renewables that fill up the interconnection queue, both in Ohio and PJM regionally, haven't been nearly the same rate of exit from the pipeline into the in-service category for those new resources.

The challenge of bringing sufficient amounts of new renewables online and replacing both nominally and functionally what's being subtracted on the thermal side, both in Ohio and regionally, has become an increasing risk. It's become a real concern of those responsible for keeping their eye on reliability and resource adequacy.

PUF: What do you see as the greatest risks of the energy transition in your region?

Commissioner Dan Conway: The greatest risk is the current predictable course of change in our generation fleet over the next five to ten years, that we continue to see retirement of the existing dispatchable thermal fleet before we have a replacement generation resource lineup of renewables or thermal.

There are proposals for other types of thermal resources, such as small modular nuclear reactors and the like. Can we continue to retire the existing fleet at the rate we're doing it, while facing replacement resources that nominally may not be able to provide the replacement sources of energy and will not supply the replacement amount of capacity or dispatchability that the current retiring fleet provides?

That's a huge challenge. We face a reliability and resource adequacy crisis if we continue along the current retirement and replacement trajectories. It's a big problem.

We're a restructured state, so our IOUs aren't in the generation business anymore. Their role comes in the initiatives to build out the transmission facilities regarded as critically important to adding large amounts of renewables, solar and wind. In addition to the challenges of siting, we have to be concerned about the costs we're going to incur to provide these new facilities.

To be clear, I don't have any preference for any type of resource as far as fuel source that drives it. I welcome renewable technologies. I also am an advocate of maintaining thermal resources that are dispatchable.

But I'm not agnostic about the ability of whatever we have in our fleet to accomplish its intended purpose, which is to provide energy upon demand by customers, to always meet their needs and preferences and in a manner that maintains the reliable and adequate operation of the system.

I'm concerned about the risks we currently face with the rapid retirement of thermal resources. It may be that in the future the technologies will be able to be deployed at a scale that substitutes for the attributes that the current fleet provides.

We need to keep our eye on the reliability and resource-adequacy objectives. That's to pay close attention to affordability too. We need to keep our eye on all those things as we go from existing, established technologies to those of the future.

PUF: What do you see as some of the top barriers within Ohio regarding the energy transition as it relates directly to the utilities operating there?

Commissioner Dan Conway: We're a restructured state, so our IOUs aren't in the generation business anymore. As a result, our electric utilities don't have a primary role in the subtraction and/or addition of generation resources.

They do have an interest in the emerging initiatives. I would say where their role comes in currently under the Ohio structure is in the initiatives to build out the transmission facilities that are regarded as critically important to being able to continue down the road of adding large amounts of renewables, solar and wind.

At this point we have, as do all the states, siting requirements that are and will be an ongoing factor in this area. In addition to the challenges of siting enough transmission facilities to accommodate the policy-driven expectations of additional renewables at large scale, we have to be concerned about the costs we're going to incur to provide all these new facilities.

Siting and costs are both challenges. Those are areas which our utilities in Ohio are going to be on the point, along with PUCO and our consumers.

PUF: You mentioned newer legislation in your state. What impact is that having on approval of energy transition projects in your state? Is it supporting or hindering?

Commissioner Dan Conway: What I see in Ohio is a microcosm of what's happening around the country, with the pursuit and development of massive amounts of renewable projects, both in amount of capacity and energy, as well as the number of the projects. As we see that happening, it inevitably has a significant impact on the locales where the facilities are going to be located.

Typically, that happens in less populated areas, but which still have a significant population. In Ohio, the more rural areas have been the sites for the development of solar and wind projects. As these projects have proliferated, the amount of concern and resistance at the local level has escalated.

That is a challenge for developers and for those policymakers who are attempting to drive rapid, large-scale expansion of renewable generation resources. I don't think Ohio's experience is unique.

So, there has been legislation in Ohio, which has provided a larger role in the siting process than previously existed, to local governmental entities at the county level and down to the township level. But the county level provides a stronger, more impactful voice for residents where projects are being developed. It's not a prohibition but provides for input and influence on the results of the siting proposals for renewable projects.

It brings the people who are affected most into the process of how the projects are sited. We've continued to site projects in Ohio even under the new legislation, but it's going to have an impact on the pace and the breadth of the development of renewable resource projects.

Developers must adapt to this environment, not restricted to Ohio, to address concerns of local populations about how, where, and other issues that arise, and provide confidence that the way they do business is going to be consistent with the needs and wants of the local populations.

PUF: Focus on consumer-owned assets and what role they might play in the energy transition in Ohio. How do you envision your role in regulating consumer-owned assets or their treatment by utilities?

In Ohio, rural areas have been sites for solar and wind projects. As projects proliferated, resistance at the local level has escalated. Legislation in Ohio has provided a larger role in siting to local governmental entities at the county to township level. Developers must adapt to this environment, not restricted to Ohio, to address concerns of local populations.

Commissioner Dan Conway: The availability and potential of consumer-owned generation resources is significant. It depends on a lot of factors as to what it achieves. Where there's a great deal of potential, is say, a rooftop or customer-sited solar farm at scale because of the weather, environment, and geography.

To the extent that retail prices are lower or higher will affect the extent to which you penetrate those areas. If retail prices are relatively low, you'll have less. If retail prices are relatively high, you'll have more.

I'd put Ohio in the middle of the pack in that regard, maybe lower, as far as prices. As far as weather and geographical environment, I don't know if we're in the middle of the pack.

But there have been technological changes that made it more practical to deploy, for example, solar technology in latitudes and in weather environments like Ohio than used to be the case. There's a lot of potential for customer-owned, customer-sited resources.

Ohio does have a net-metering rule and interconnection rules for customer-owned, customer-sited generation resources, and we continue to refine our approaches in those regards. Our general approach on the compensation side is, if you want to take your surplus energy that you're not using at a customer-sited facility and deliver it back to the grid, at the state level, to the extent

that we manage the pricing for that power, it's on a metric which corresponds to energy only.

We don't provide a full-in offset to whatever the all-in rate is for electricity in the jurisdiction where the customer is located. It's focused and based on the generation piece of the rate.

On the interconnection side, we look at our interconnection rules in our effort to make sure they are customer friendly and allow for interconnection of the customer's facilities to the extent they need and want to sell power back to the grid.

To what extent is the customer-owned, customer-sited generation going to be a driver of the resource mix going forward? From the state's perspective, it's too soon to tell in Ohio, both because of the retail pricing ceilings as far as compensation and because of the geography. But there is significant potential over time.

Then there's FERC Order 2222, designed to provide opportunities for customer-sited, customer-owned generation to be aggregated and connected electrically and economically with the wholesale market that PJM operates. We keep front of mind the need to make sure we understand what the impacts are on the distribution networks where this is occurring, and that we don't do anything to adversely impact the reliability or allow the cost of this being imposed on the rest of the distribution network's customers.

PUF: What do you see as the biggest challenges from a regulator's perspective in Ohio?

Commissioner Dan Conway: It is twofold. One we've covered, which is the impact on Ohio consumers of their generation service, the reliability, adequacy, pricing, which depends so much upon our regional bulk power market that PJM administers.

We are affected by what's happening in our region and at the federal level from a policy standpoint. What we see, going forward, are storm clouds on the horizon that are going to affect reliability, resource adequacy, and prices because of state and federal initiatives that are pushing for a rapid transition away from thermal resources into renewable resources.

We don't regulate generation directly. I'm not sure if we ever will. But we are very interested in generation and transmission and will participate vigorously in both the regional and the FERC's discussions on these matters.

The distribution service level, that's the second part. We have concerns about the impact of some federal and regional initiatives on our ability to make sure our distribution networks remain in sound condition and operate how we need them to serve all our customers. Not just the ones who benefit from the regional and federal initiatives. That's a challenge that we see requiring our continued attention going forward. ❍

Commissioner Abigail Anthony

Rhode Island Public Utilities Commission

PUF's Paul Kjellander: What do you see as the primary drivers of the energy transition for utilities in the State of Rhode Island?

Commissioner Abigail Anthony: The energy transition for the electric company started years ago when the legislature advanced and passed a lot of laws promoting distributed generation, renewable energy standard, and energy efficiency. Not long after, more programs were introduced and we started doing long-term contracting, which is how we got the offshore wind farm. In part, these were economic strategies for the state – addressing volatility and economic development and the need to be clean.

Over the years, all those programs have expanded. Notably, in the last couple of years, our legislature accelerated our renewable energy standard to one hundred percent by 2033. The biggest changes though, will be driven by Rhode Island's Act on Climate.

The Act on Climate requires net-zero emissions economy-wide by 2050, and that will significantly expand our use of the electric system and will also be a driving change for our natural gas distribution system. We're either going to need to figure out how the gas distribution network can deliver a low- or zero-carbon product, or we're going to have to do something else with the gas distribution network.

The same will be true of the delivered fuels and transportation systems. All other systems will need to get clean or get on electricity. That's going to drive change.

PUF: In terms of policies and legislation, how would you characterize potential impact on the energy transition in the State of Rhode Island?

Commissioner Abigail Anthony: As I mentioned with the electric system, a lot of the legislation that has been passed in recent years is supportive of transitioning the electric system.

The underlying policies for regulation of the electric and gas systems are generally supportive.

What's going to be the toughest place for the State as a whole, not necessarily here at the PUC, but a lot of transition is going to need to happen in those unregulated sectors. Transportation and heating in Rhode Island, we have a lot of heat using unregulated fuels and there is little policy to guide any transition in those sectors. There's going to need to be a lot of policy work to figure out how to internalize the cost of climate change and carbon in the unregulated sectors.

PUF: In your entire region, what do you see are some of the greatest risks as you look at the energy transition?

Commissioner Abigail Anthony: One of the greatest risks in Rhode Island is balancing the upfront costs of new investments that have benefits that accrue over time with the interim volatility of a transition. The risk is that if we don't do a good enough job managing that – if regulators, developers, and the market don't provide solutions – we'll lose the public's trust in the transition.

We're going to need to show our ratepayers and the people of Rhode Island that we're trying to address climate change in the least-cost way. Losing the public's trust is a risk to the longevity and success of this important policy.

PUF: What do you see as the top barriers for utilities as they try to navigate the energy transition?

Commissioner Abigail Anthony: One of the barriers is that because we have a lot of maturity with our approaches to climate, we've done a lot of the easy work. The low-hanging fruit of energy efficiency has been procured.

It's harder to find cost-effective savings. Distributed solar has taken advantage of low-cost land and is experiencing increasing development and interconnection costs.

Now, we have to move onto the second stage, harder work. Mature demand-response programs, targeted load growth, and strategic use of the gas system.

Our utility is at the forefront and their challenge is to find effective approaches. The low-hanging fruit is gone, and they've been told they have to find a path to one hundred percent. They're in a new stage of programs and operations, which are at the forefront.

PUF: As a regulator, what do you see are the biggest challenges you face in your role?

Commissioner Abigail Anthony: One challenge is the clean energy transition is putting new, and vastly different options on the table. That's not a bad thing.

The Act on Climate requires net-zero emissions economy-wide by 2050. We're going to need to figure out how the gas distribution network can deliver a low- or zero-carbon product, or we're going to have to do something else with the network.

The challenge is having internal resources and stakeholders with resources to make a good decision on what alternative is the best to choose in the near and long term. It used to be, "how much do we want to invest in the gas network?" Now the question is, "do we want to keep investing in the gas system?"

PUF: How do you see consumer-owned assets playing into the transition, also regarding how those would be treated by utilities?

Commissioner Abigail Anthony: Customer-owned assets are going to be important to achieving Rhode Island's Act on Climate goals. We've been talking about electrifying transportation.

We need to electrify a lot of the heating sector – flexibility of new appliances may be important for a smooth and reliable transition to reliance on the electric system for heating. Maintaining our old heating systems for backup may allow the transition to clean electricity without investing in new power plants to meet peak demands. ❍

Chair Thad LeVar

Public Service Commission of Utah

PUF's Paul Kjellander: What do you see as the primary factors driving the energy transition for utilities in the State of Utah?

Chair Thad LeVar: What drives any transition in Utah is the same process that's always driven Utah's resource choices: integrated resource planning. We have a good process for that, which is able to model all known potential future scenarios.

As much as we can predict the future, we're able to include those scenarios in the modeling. We have a good public stakeholder process, so everyone has a chance to weigh in on that process.

Our energy choices still flow back to that integrated planning. I like that it's integrated because we're able to evaluate generation and technology options, along with all other technology and resource options, in as many scenarios as we can put together. We try to find a least-cost, least-risk portfolio to meet the reliability, resilience, and affordability needs of the state.

Those continue to be our primary objectives: affordable electricity that's reliable and resilient. Every two years, we conduct integrated resource plans that look at a ten- and twenty-year horizon and enable us to make those decisions in a transparent and thorough way.

PUF: There is a lot in federal public policy that could be driving the push toward the energy transition. How do your IRPs stack up? Are they sufficient to help you gauge and try to predict what those next resources might be?

Chair Thad LeVar: Short answer, yes. Our process is well-developed enough to be able to do that. I can give one example from the current IRP, and I'll be careful not to say too much because it's still in front of us; the acknowledgement docket is still pending.

But the federal Good Neighbor Rule is being applied to some states that it has not been applied to in the past, by the EPA, with some stringent timelines that would require significant action in a short amount of time; it's costly and impactful.

So, PacifiCorp and the State of Utah are challenging that ruling in court, but at the same time they must have an IRP that has a path to compliance. They must look at both sides.

Over the next few months, we will be gathering lots of stakeholder comments on the way they are preparing to comply with that requirement, while at the same time the State of Utah will be joining some other states on challenging whether it's an appropriate rule.

PUF: The current policies or legislation in the State of Utah, do you see them as supporting or hindering the ability to move forward with the energy transition?

When you're trying to build things like transmission lines, you can't build them in the West without crossing over federal land. Unless significant changes occur, that takes a long time to work through the Bureau of Land Management to ultimately receive approval.

Chair Thad LeVar: Utah state law and energy policy enable us to perform an apples-to-apples comparison so we can evaluate all resources on an even playing field. When people talk about Utah's energy policy, the phrase that Utah's elected officials like to use is, "an all-of-the-above approach."

At our Commission we strive to resist one temptation. It's easy for economic regulators to try to set the energy policy for the state. You can use economic rate regulation as a backdoor to carbon regulation, to a host of other things. In Utah, we try hard not to do that. We keep our focus on economic regulation.

Policymaking takes place at the legislature, environmental regulation in other agencies. Utah was one of the earlier states to adopt a state RPS, which we've been on track to meet for a while now. It's not as aggressive as some other states' RPS, but it's been in place and transparent for a long time.

We have a robust process to develop our statutory state energy policy, and there seem to be amendments to that every year. There are also tax incentives, which come and go.

All those can either support or hinder specific technologies. But those happen in the policy arena. At least in our economic regulation arena, we try to stay resource agnostic, while modeling the impacts of potential future scenarios.

If the state or the feds pass a tax incentive for a specific resource that's going to be modeled into the integrated resource plan, we'll get results that reflect that incentive. But we endeavor not to create incentives for specific technologies within our economic regulation.

PUF: What do you see are the greatest risks of the energy transition in your region as a whole?

Chair Thad LeVar: It always involves a little bit of crystal ball gazing. We must predict the future: What fuel costs might do,

what environmental regulations might occur, what court rulings might occur? We never know what those are, so we make some guesses, but we can't let that paralyze us.

Nobody wants stranded costs, but at the same time, we must plan for reliability and resilience. Nobody can predict what natural gas prices will be seven years from now. But we have to make our best guess at potential future scenarios.

The way we do that is through the modeling I described. If the integrated resource planning has enough modeling, we can evaluate the risks and make the educated decisions, recognizing that we don't know with precision what the future holds, but we're trying to model as many possibilities as we can.

Stranded cost risk is always going to be there, as are risks of regulatory regimes that we can't picture now. But we have a process that's been in place for decades that manages those risks in a responsible way.

PUF: Are there any barriers within your state that utilities face regarding the energy transition?

Chair Thad LeVar: In the processes I've described, I don't see barriers, I see processes that we, and others, use to evaluate options.

Siting infrastructure is always a challenge. Utah has state siting laws. Local governments are all going to have different objectives and perspectives on issues.

PacifiCorp is moving forward on Gateway South, which is a significant transmission line, but it took many years to get there, among our Commission approvals, local approvals, and everything else that has happened.

If I see any barriers, it's sometimes what needs to be built, and even what the integrated resource planning process identifies as needs to be built. There are challenges that are far outside of our economic regulation that create hoops that must be jumped through.

Obviously, anything that needs to be built on federal land is a major challenge. People who aren't from the West don't appreciate how much of our land is federal land. There're a lot of complicated policy issues around that.

When you're trying to build things like transmission lines, you can't build them in the West without crossing over federal land. Unless significant changes occur, that takes a long time to work through the Bureau of Land Management to ultimately receive approval. It makes working with city and county officials in Utah seem straightforward when you look at the challenges that exist on federal land.

In Utah, federal land is around seventy percent of the landmass. But there are states like Nevada where it's closer to ninety percent.

There's a lot more interest these days in interstate transmission lines, interregional transmission lines. In our part of the country, there are more miles between population centers, so that creates an additional challenge to connecting generation and load in the West.

Federal land creates a challenge, where people who don't regularly deal with that issue, have no way to appreciate how big of a challenge the federal land is to the utilities. I put myself in that category to some degree because I'm not one of the utility personnel who is having to negotiate with the Bureau of Land Management, but I see how long it takes them to do it and all the issues they must deal with.

PUF: What are the biggest challenges you face as a regulator in the energy transition in the State of Utah?

Chair Thad LeVar: If I heard this once at NARUC, I heard it at least four hundred times: You can't let the perfect be the enemy of the good.

We have a rate structure that avoids subsidies to the extent we can, provides some transparency and durability to how this rate is going to be in place going forward, and how customers can plan whether to invest in these kinds of assets.

Utilities and regulators must make as many reasonable predictions as possible about what the future will hold, model all the options with reliability, resilience, and affordability in mind, and then make decisions. We must plan for those scenarios with the recognition that we might not be right on all our predictions, but we still have to move forward and prepare for what we know now and not be paralyzed by what we don't know.

That's why thorough modeling is important. The more thorough a full evaluation of as many potential future scenarios as possible, the more information we'll have to make the decisions about what to approve for the utility build.

PUF: What role do you think consumer-owned assets will be playing as far as the energy transition, especially their treatment in relationship to utilities?

Chair Thad LeVar: For a long time, they've been a significant portion of our planning and our resource mix. And I anticipate that's going to continue for a long time. When you're talking about large commercial and industrial customers, customer-owned assets, basically generation assets are under a well-developed structural and rate scenario.

For those large commercial and industrial customers who have significant generation resources on site, we have structures like demand charges, value for curtailment, and application of PURPA when they sell excess energy back to the utility, which have been developed and implemented over many years.

Those large customers and PacifiCorp have a history of negotiating agreements and bringing settlements to us when

they work out details on demand charges, curtailment value, how to handle the excess electricity, and whether these are qualifying facilities under PURPA.

By the time we see those, most of the negotiation has already taken place. The utility and the customers have good motivation to make this work and ensure customers who choose to build meaningful generation resources on site have a structure in place so they can make it work, without leaning on other customers, and getting the right value for what they provide to the system, whether it's selling electricity back or the ability to curtail when situations warrant.

Residential self-generation is a more controversial issue, at least in the local media. It gets on the front pages more frequently. We spent about seven years working through that between legislative changes, starting a rate case, getting halfway through the case, and then parties stipulated to starting the process over again while implementing a transition rate.

I won't belabor all those details, but that led us to 2020, when we established what we call the export credit rate for residential customer generation. Where that landed is, residential customers who have self-generation, which is almost always solar panels, pay the same base rates and minimum rates as every other customer.

We, meaning all the stakeholders who worked on stipulations earlier in the process, agreed not to implement additional fixed monthly charges for the customers who self-generate, and that we would focus everything on the correct compensation for the excess energy that they sell back to the grid. All the parties said, "We're going to agree to take all the other issues off the table and let the Commission decide what that export credit rate should be, how much that excess energy that flows back is worth."

Utah was one of the earlier states to adopt a state RPS, which we've been on track to meet for a while. It's not as aggressive as some other states' RPS, but it's been in place and transparent for a long time. We try to stay resource agnostic, while modeling impacts of potential future scenarios.

So, we went through a process, finished in late 2020, and established a rate that reflects energy costs, capacity value, and integration costs. At the time it was roughly sixty percent of the retail rate, and it's adjusted every year.

Just last month, the Utah Supreme Court affirmed the decision, so that gives us some durability. I was not looking forward to starting over if the Supreme Court told us we had to.

Durability in rates is important. Customers who are deciding whether to invest in customer-owned assets need to know the financial implications.

If there are subsidies built into the rates, they need to be transparent. Also, it needs to be transparent that subsidies may not always exist.

We have a rate structure now that avoids subsidies to the extent we can, provides some transparency and durability to how this rate's going to be in place going forward, and how customers can plan as they consider whether to invest in these kinds of assets. ❍

Chair Jehmal Hudson

Virginia State Corporation Commission

PUF's Paul Kjellander: What do you see as the primary reasons that are driving the energy transition for the utilities in the Commonwealth of Virginia?

Chair Jehmal Hudson: Well, the Virginia Clean Economy Act, which our legislature enacted in 2020, sets out various requirements relative to the energy transition in Virginia, primarily applicable to our two largest investor-owned electric utilities, Dominion Energy Virginia, and Appalachian Power Company.

The VCEA established mandatory renewable portfolio standards rising to one hundred percent for Dominion by 2045 and one hundred percent for APCO by 2050.

For Dominion, the VCEA declares the construction or purchase of sixteen thousand one hundred megawatts of solar and onshore wind, five thousand two hundred megawatts of offshore wind, and two thousand seven hundred megawatts of energy storage resources to be in the public interest.

The VCEA also contains a schedule for the retirement of carbon-emitting resources, targeting a 2045 date for most to be retired. Dominion or APCO, however, may petition the Commission for relief from these requirements if they are concerned that retiring a carbon-emitting facility would threaten the reliability or security of electric service.

PUF: It sounds like legislation in the Commonwealth of Virginia supports energy transition project approval, but legislation and policy can be a hindrance when trying to implement projects. How do you view that?

Chair Jehmal Hudson: In Virginia, energy policy is set by the General Assembly, and our role at the Commission is to implement those policies. The VCEA supports a transition to more renewable generation.

This law sets out development targets for new renewable resources for Dominion and APCO, requires them to file annual RPS plans detailing how they are complying with the VCEA, and directs them to seek approval of new renewable resources over a particular timeline.

The General Assembly also has established a policy that applies to small renewable energy and storage projects, generally up to one hundred fifty megawatts for solar, wind, and energy storage. Under Virginia law, those resources may seek a permit by rule from our Department of Environmental Quality. Those resources don't need to come to the Commission to request a Certificate of Public Convenience and Necessity.

The permit by rule option is a streamlined alternative available to resources when costs are not going to be recovered from Virginia jurisdictional customers. This policy is one way Virginia is trying to remove a potential hindrance to smaller energy projects being constructed in instances where the financial risk is not on the customer.

We are seeing a greater number of filings by developers for approval of new solar facilities. We are also seeing an increased number of transmission projects being filed with the Commission. That's because there are a lot of data centers being built in our state, particularly in northern Virginia.

PUF: As you look at these, do you see a lot of flexibility in there for regulators? I noticed some provisions for seeking exemptions or extensions.

Chair Jehmal Hudson: Yes and no. The VCEA is prescriptive in many respects in terms of filing requirements and mandates. At the same time, as the regulator, the Commission still must apply the law in every case and determine whether a given filing meets the statutory requirements and whether there are necessary conditions that should be attached to approvals.

In every case, we're also making sure that our decisions balance the interests of consumers as well as the electric utilities.

PUF: What do you see as the greatest risks as you look at the energy transition that's going on in your region?

Chair Jehmal Hudson: Virginia's two largest investor-owned electric utilities, Dominion and APCo, both participate in the PJM regional transmission organization. So, energy-wise, Virginia's concerns tend to overlap with those of other Mid-Atlantic states that participate in PJM.

I'm actively involved in the Mid-Atlantic Conference of Regulatory Utilities Commissioners and recently became the second vice-president of MACRUC. During the June 2023 MACRUC Annual Education Conference in Farmington, Pennsylvania, we explored a variety of potential risks that we as Commissioners, and utilities in our region must prepare for, both today and in the foreseeable future. MACRUC has a diversity of issues and diversity of thoughts on how to deal with them.

For example, we had discussions on gas and electric harmonization, small modular nuclear reactors, renewable energy,

the potential of clean hydrogen, congressional committee reform, PJM-specific issues, capacity accreditation, and even how to strengthen communications between federal and state regulators.

Extreme weather was on everyone's mind, especially given Winter Storm Elliott last Christmas. That storm highlighted the importance of making sure resources can and will run when needed. More broadly, we're thinking about resource adequacy and how to ensure that utilities have the amount of energy customers need as the generation mix, and the providers of that generation, evolve.

Speaking of the evolving generation mix, I'm hearing a lot of discussion around increased interregional transmission planning. Getting renewable and other energy from the point of generation to the customers who will use that energy is an ongoing challenge.

Also, transportation electrification is increasing the number of electric vehicles, and load, on the grid. The proliferation of electric vehicles raises questions like how fast will the transition to electric vehicles happen? And how do we minimize any negative impacts on the grid?

Amid all these challenges, the most important consideration of all is the consumer. Energy consumers expect and deserve reliable, affordable power. Their expectations are growing as their dependence grows.

For example, they are turning to electricity more than ever to power their vehicles and to work from home. So, the changes in sources of electricity, and who's providing it, all must ultimately support the customers who need electricity more than ever before, and who must be able to afford what they need.

The Virginia Clean Economy Act, enacted in 2020, sets out requirements relative to the energy transition in Virginia, primarily applicable to our two largest IOUs, Dominion Energy Virginia, and Appalachian Power Company. The VCEA established mandatory renewable portfolio standards rising to 100% for Dominion by 2045 and for APCO by 2050.

It's an exciting time to work in energy, but there are a lot of moving and interrelated parts to this transition. I think the sharing of information, the sharing of dialogue among my colleagues and peers at NARUC and other regional events is extremely helpful. It's a great learning experience to see how people are handling the same problems and learning about the differences in how we manage these problems.

PUF: What do you see as the top barriers for utilities in the Commonwealth of Virginia as they look at the energy transition?

Chair Jehmal Hudson: While I obviously don't want to speak

for the utilities, there are many challenges that I am aware of, most or all of which other states are also experiencing. A prime example is the challenge of getting through the PJM interconnection queue backlog, which has been an ongoing issue.

FERC recently issued a final rule to reform the interconnection process. As we move forward, we'll try to monitor closely whether this rule speeds up the interconnection queue and resolves the backlog.

I'm aware that obtaining local zoning approvals can be very challenging. We're also watching to see if projects are experiencing cost overruns and delays from supply-chain issues. Obviously, inflation has been a factor, but at times we're seeing some improvements there.

PUF: What do you see as the biggest challenges in approving some of these energy transition projects?

Chair Jehmal Hudson: While I wouldn't call them challenges, I can tell you a bit about some of the standards applicable to resources that seek Commission approval. Again, these standards are established by the General Assembly and implemented by the Commission.

First, an applicant must demonstrate that a proposed generating facility will have no adverse effect on reliability. Second, if ratepayers are going to foot the bill for a facility through regulated rates, the Commission also considers whether the cost of the facility is reasonable and whether the new resource is needed to serve load.

Third, the Commission considers the effect of the electricity facility on the environment. The Department of Environmental Quality coordinates a multi-agency review process and submits comments for us to consider. And fourth, the Commission also considers a proposed facility's economic impact and environmental justice concerns.

PUF: Does environmental justice play a bigger role than it has before?

Chair Jehmal Hudson: Yes, I would agree with that. In 2020, the General Assembly passed the Virginia Environmental Justice Act. The EJ Act formally declared it the policy of the Commonwealth to promote environmental justice and ensure that it is carried out throughout the Commonwealth, with a focus on environmental justice communities and fenceline communities.

The VCEA also contains language consistent with promoting environmental justice. Recently, more of our utilities have developed formal policies regarding environmental justice and environmental justice outreach. As I noted, when new utility infrastructure is being sited, environmental justice is one of the Commission's considerations.

PUF: From a regulator's perspective, what do you see as your biggest challenges when you look at this?

Chair Jehmal Hudson: Some of my biggest challenges, as I look at the energy transition, are trying to make sure we are making the best decisions for the Commonwealth both for today and for the future. When it comes to a rate case or a transmission line project, for example, we want to make sure we are balancing all the interests of those who come before us.

But if I talk about it more procedurally, I always want to make sure that every party has due process before us, that they are heard, and have been able to make their case before the Commission.

PUF: Are you seeing any types of projects being more aggressively pursued as you look at the energy transition?

Chair Jehmal Hudson: We are certainly seeing a greater number of filings by developers for approval of new solar facilities. We are also seeing an increased number of transmission projects being filed with the Commission. That's because there are a lot of data centers being built in our state, particularly in northern Virginia.

Consumer-owned assets, and smaller renewable facilities are important in the energy transition. The Virginia Clean Economy Act has specific RPS targets that must come from smaller resources.

PUF: How important are consumer-owned assets as far as the energy transition, and how do you envision regulating them, or how do you see their treatment within the regulated utility structure?

Chair Jehmal Hudson: Consumer-owned assets, and smaller renewable facilities in general, are very important in the energy transition. The VCEA has specific RPS targets that must come from smaller resources.

For Dominion, one percent of RPS requirements each year must come from resources sized at one megawatt or less. Of the sixteen thousand one hundred megawatts of solar and onshore wind declared to be in the public interest for Dominion, one thousand one hundred megawatts of solar generation are to be three megawatts in capacity or less.

Now, net energy metering is also available under Virginia law, and we've seen a lot of interest in net metering. Like most states, the Commission has regulations addressing interconnection, metering, and billing protocols for these facilities.

I'll also mention, as an aside, that in 2020, the General Assembly directed the establishment of shared solar programs that the Commission is in the process of implementing. The programs are available to consumers, who purchase subscriptions associated with the output of certain solar facilities.

These programs are generally aimed at consumers who cannot or prefer not to access net metering. For example, someone

living in an apartment complex could take part in a shared solar program and know they are supporting solar energy, even though they can't put solar panels on the roof of their own home. So, we're seeing innovation in consumer ownership of and support for renewable energy.

As you can see, it is an exciting time to be a Commissioner in the energy field. There's so much going on. And there's no such thing as business as usual, because so many participants, opportunities, and issues come before me every day. In Virginia, and in other states, it's a dynamic moment to work in the energy field. ❍

Commissioner Ann Rendahl

Washington Utilities and Transportation Commission

PUF's Paul Kjellander: What are the primary reasons driving the energy transition for the utilities in the State of Washington?

Commissioner Ann Rendahl: There are several. First, I want to make clear that in the State of Washington, the Commission only regulates three of sixty-four electric utilities and four investor-owned gas utilities. There are sixty-one consumer-owned utilities, municipal cooperatives, and public utility districts that we don't regulate.

Second, the legislature creates policy and requirements for all the electric utilities. Washington has been a leader in passing clean energy and climate legislation. The legislature has enacted a number of requirements that both gas and electric utilities need to follow.

From the early 2000s, the citizens passed an initiative, the Energy Independence Act, which is Washington's renewable portfolio standard and conservation standard. In 2019, the legislature passed the Clean Energy Transformation Act. In 2021, the legislature passed the cap-and-invest statute, the Climate Commitment Act.

With these statutes, there are a number of requirements for utilities and the Commission to implement and put them into effect. In addition to these statutes, the Washington legislature has passed a number of bills relating to vehicle and building electrification.

Recently, the State Building Code Council adopted amendments to the state building code requiring all new buildings to be served by electricity. The Building Code Council is currently reviewing those changes and has put compliance with the amendments on hold while they review the impact of the Berkeley decision.

However, even with the Building Code Council reviewing the amendments, the Climate Commitment Act is economy-wide and requires certain emitters, including gas companies, to reduce their carbon emissions or pay for the carbon that they are emitting.

The Clean Energy Transformation Act requires no more coal in rates after December 31, 2025. We no longer have any coal generation operating in the state, but this does apply to imports of out-of-state coal generation. The law doesn't prevent the units from operating but prevents the utilities from including the cost of that in rates for Washington customers.

We are working on performance-based regulation. The same statute that included the multi-year rate plan process also required the Commission to establish performance-based regulation. We currently have an open docket on performance-based regulation.

CETA also requires eighty percent clean energy to customers by 2030 and one hundred percent clean by 2045.

In addition to these state laws, utilities operating in the state are driven by their customers' preferences. Washington is a progressive State, and many customers want cleaner energy.

This includes large corporate, county, and local institutional goals, and preferences. As a result, several utilities have established their own emissions and decarbonization goals.

So, there are a number of drivers of the energy transition in Washington state: statutory, corporate goals, and customer preferences leading to utility goals.

PUF: Do you see current policies or legislation supporting or hindering approval of the energy transition projects within the State of Washington?

Commissioner Ann Rendahl: Obviously the statutes that I mentioned support approval of the energy transition and energy transition projects.

Under CETA, there is a requirement for utilities to file plans every four years, based on their integrated resource plans, demonstrating how they are going to meet the goals under the Act, and which plans the Commission must approve.

For the Carbon Commitment Act, the utilities receive free carbon allowances for both gas and electric, which decline over time to meet the overall emissions target, but the gas allowances decline more rapidly. Utilities are going to need to incorporate their Carbon Commitment Act planning in IRP planning going

forward to ensure the least cost for customers as they manage compliance with the law.

Another aspect of supporting the energy transition is regulatory reform the legislature has enacted, and that the Commission has been working to implement.

The first element of the regulatory reform effort includes requiring utilities to file multi-year rate plans. Included in that process is the ability for utilities to include in rates investments up to four years after the rate effective date, with a process the Commission can use to review those later investments to ensure any projects that aren't meeting prudence or used and useful standards as the four years go by, result in refunds to customers.

This is a process to ensure the utilities can plan for the investments necessary to meet the energy transition and recover the costs in rates in a more timely way, by meeting some initial prudence standards, but giving the Commission and other parties the ability to have a check on that going forward, to make sure the utility is actually putting these projects into use.

We do not do pre-approval of projects in Washington, but the process I mentioned helps to address some of the issues with regulatory lag.

In Washington, utilities also have the ability to earn a return on power purchase agreements somewhere between the cost of capital and the cost of debt. That's been on the books now since 2019. However, no utility has yet sought recovery of a return on PPAs.

We are also working on performance-based regulation. The same statute that included the multi-year rate plan process also required the Commission to engage in a process to establish performance-based regulation. We currently have an open docket on performance-based regulation.

So, there are not just requirements for the utilities to make the energy transition happen, but also regulatory reform processes that the Commission is engaging in to try to make the transition more workable.

PUF: What do you see as the greatest risks of the energy transition in your region?

Commissioner Ann Rendahl: The greatest risks are cost and affordability, even with the Bipartisan Infrastructure Law, the Inflation Reduction Act, and all the federal funds coming to the utilities from those laws. Washington also has a state Clean Energy Fund that supports utility investments in the clean energy transition, but it does not cover the significant costs of investment.

Obviously, supply chain issues have been significant for utilities in the last few years. Costs are increasing and the supply chain issues are causing delays in implementation and building new resources.

Recently, costs have been pancaking due to increases in gas costs, and increased cost of investment. Customers are seeing and experiencing these increases. The Commission is very focused on managing the cost and affordability for customers.

Affordability remains a significant issue for customers after the pandemic. Even without the investments to meet the clean energy strategies, we are still seeing significant customer affordability and arrearage issues. The Washington Commission has a separate rulemaking docket open to address affordability issues.

As the utilities work to meet the statutory requirements and customer preferences, the Washington Commission must, under CETA, ensure that the benefits of the transition are being experienced by those who are most impacted. In Washington statutes, those customers are referred to as highly impacted and vulnerable communities.

Washington and other states with clean energy requirements are working with the California ISO and SPP to figure out how to determine that price on carbon in the market and ensure that our utilities can get the benefit of participating in the market, but also comply with state statutes.

We are working to make sure these communities also benefit from the transition and include equity in our regulatory review of utility planning and implementation of CETA and CCA.

Finally, I think this may be on par with cost and affordability, but I cannot leave out permitting and the need to build the necessary transmission and resources to serve load. Those are the top three risks right now of the energy transition.

PUF: As far as utilities that you regulate in the State of Washington, what do you see as the top barriers in relationship to the energy transition?

Commissioner Ann Rendahl: I think some of those same issues are barriers for utilities – cost, ensuring their customers can afford what the utility needs to build or purchase to meet load, as well as resource adequacy – being able to build or purchase the resources necessary to meet demand for electricity. The three electric utilities the Commission regulates in Washington, Puget Sound Energy, Avista, and PacifiCorp, are all subject to these requirements.

Avista is also operating in Oregon for gas and electric, and gas in Idaho. Pacific Power operates in five other states in addition to Washington. All the consumer utilities, even though most of them receive clean power from Bonneville, also face the same requirements.

Utilities all across the west are under pressure to build the capacity they need to meet both clean energy standards, and to be resource adequate. Resource adequacy is a significant issue in the west. While the west used to have surplus capacity, that is no longer the case, and every utility is looking to ensure

that as loads increase due to electric vehicles and building electrification that they have capacity to meet the existing and coming load.

Overall, utilities are working to ensure the lights stay on as we're going through this transition. These are the significant barriers that the Washington utilities are experiencing.

PUF: As a regulator, what do you see as your biggest challenges?

Commissioner Ann Rendahl: The biggest challenges are affordability, reliability, and ensuring as markets develop in the west that utilities can comply with Washington's clean energy requirements. As regulators, we are the ones who will ultimately have to determine whether to approve projects being put into rates, which puts pressure on customers for affordability.

As Commissions consider including projects and investments in rates, we need to focus on affordability, reliability, resource adequacy, and ensuring that the utilities are able to continue to provide the necessary services to customers. CETA does allow the Commission to put the brakes on, so to speak, if there are reliability or affordability issues.

The greatest risks are cost and affordability, even with the Bipartisan Infrastructure Law, Inflation Reduction Act, and all federal funds coming to utilities from those laws. Washington has a state Clean Energy Fund that supports utility investments in the clean energy transition, but it does not cover the significant costs of investment.

The law allows utilities to comply by demonstrating they have met a cost cap and allows utilities to request a pause on compliance if they can demonstrate reliability issues.

The other challenge we face is how the utilities will comply with the greenhouse gas emissions requirements and clean energy standards in CCA and CETA as they work to join day-ahead markets or an RTO. Many of the electric utilities in the west, including in Washington, are engaging, both in the California ISO's Extended Day-Ahead Market effort and the Southwest Power Pool's Markets+ effort to develop day-ahead markets.

That means a significant amount of power could be exchanged in a market. How those utilities will meet the requirements of the Climate Commitment Act and CETA, demonstrating they're meeting carbon goals while participating in markets, is a big challenge. Most markets designs are not focused on emissions,

(Cont. on page 103)

Ten Commissioners Talk Transition

(Cont. from p. 45)

but on cost, and so electricity purchased from markets, unless it's specified in some way, is unspecified power.

Washington and other states with clean energy requirements are working actively both with the California ISO and SPP to figure out how to determine that price on carbon in the market and ensure that our utilities can get the benefit of participating in the market, but also comply with the state statutes.

This is the hardest nut to crack because we are covering new ground. California has developed such requirements in CAISO, but this is new for many utilities and for SPP.

PUF: How important do you think consumer-owned assets will be in this energy transition? How do you envision those consumer-owned assets as far as regulating them and the treatment by utilities?

Commissioner Ann Rendahl: I think consumer-owned assets are going to be a significant part of the transition. In many areas they already are.

The question is how utilities manage those consumer-owned assets, or more appropriately, how they manage the energy coming from those assets or not coming from those assets, and how they manage the flow on their system to maintain reliability with the variable solar resources and batteries that folks can install.

Being able to manage the variable solar resources and batteries that consumers install in their homes and businesses is going to be critical. The demand function of balancing an electric grid is becoming more critical than in the past. Having the ability, not necessarily to control these assets, but to know what is on your system, and how to predict how the DERs will operate, is becoming an important aspect of operating an electric grid.

The ability to control would be great, but not every customer is going to agree to that. NERC is doing some work on grid-forming inverters and making sure that customers and utilities are paying attention to how the inverters in these customer-owned resources are functioning, to allow greater reliability of the system and better ability to balance the system.

Utilities are going to have to focus more on their distribution system to managing distributed assets and consider the use of virtual power plants and how those operate as the utility is managing and balancing their system. So yes, customer demand and customer-owned supply are important elements of the electric grid going forward. PUF

Statement of Ownership

United States Postal Service
Statement of Ownership, Management, and Circulation
(Required by 39 U.S.C. 3685)

1. Publication Title: *Public Utilities Fortnightly*; **2. Publication No.** 1074-6099; 3. **Filing Date:** Sept. 30, 2023; **4. Issue Frequency:** Monthly with additional issues in February, June and November; **5. No. of Issues Published Annually:** 15; **6. Annual Subscription Price:** $500.00; **Complete Mailing Address of Known Office of Publication (Street, City, County, State and Zip +4):** 3033 Wilson Blvd. Suite 700, Arlington, VA. 22201-3868; **7. Contact Person:** Kathy Thorne; **Telephone:** 240-477-5577; 8. **Complete Mailing Address of Headquarters or General Business Office of Publisher):** Same; 9. **Full Names and Compete Mailing Addresses of Publisher, Editor, and Managing Editor:** *Publisher:* Joseph Paparello, Lines Up, Inc., 3033 Wilson Blvd. Suite 700, Arlington, VA. 22201-3868; *Editor:* Angela Hawkinson, Lines Up, Inc., 3033 Wilson Blvd. Suite 700, Arlington, VA. 22201-3868; *Managing Editor:* Lori Burkhart, Lines Up, Inc., 3033 Wilson Blvd. Suite 700, Arlington, VA. 22201-3868; 10. **Owner:** Lines Up, Inc., 3033 Wilson Blvd. Suite 700, Arlington, VA. 22201-3868; **Treasury of Lines Up, Inc.**, Steve Mitnick, Joseph Paparello, Lori Burkhart, John Paparello, and Theresa Paparello, 3033 Wilson Blvd. Suite 700, Arlington, VA. 22201-3868, Plymouth Investments, LCC. 4719 Rock Spring Drive Arlington, Virginia 22207; **11. Known Bondholders, Mortgages, or Other Securities**: None; 12. **Tax Status:** Has Not Changed During Preceding 12 Months; **13. Publication:** *Public Utilities Fortnightly*; **14. Issue Date for Circulation Data**: September 2023; **15. Extent and Nature of Circulation/Average No. Copies Each Issue During Preceding 12 Months/No. of Copies of Single Issues Published Nearest to Filing Date: a. Total No. Copies (Net Press Run):** 2791/2453; **b. Paid Circulation (By mail and outside the mail):** (1) Mailed Outside-County Paid Subscriptions stated on PS Form 3541: 2215/1914; (2) Mailed In-County Paid Subscriptions stated on PS Form 3541: 0/0; (3) Outside the Mails Including Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid Distribution Outside USPS®: 0/0; (4) Paid Distribution by Other Classes of Mail Through the USPS (e.g., First-Class Mail®): 37/34; c. Total Paid Distribution [Sum of 15b (1), (2), (3), and (4)]: 2252/1948; **d. Free or Nominal Rate Distribution (By mail and outside the mail):** (1) Free or Nominal Rate Outside-County Copies included on PS Form 3541: 187/164; (2) Free or Nominal Rate In-County Copies Included on PS Form 3541: 0/0; (3) Free o Nominal Rate Copies Mailed at Other Classes Through the USPS (e.g., First-Class Mail): 0/0; (4) Free or Nominal Rate Distribution Outside the Mail (Carriers or other means): 258/0; **e. Total Free or Nominal Rate Distribution (Sum of 15d (1), (2), and (3) and (4))**: 445/164; **f. Total Distribution (Sum of 15c and 15e):** 2,697/2112; **g. Copies not Distributed:** 94/341; **h. Total (Sum of 15f and g):** 2791/2453; **i. Percent Paid (15c divided by 15f times 100):** 80.1%/92.33% **16. If you are claiming electronic copies, go to line 16 on page 2. If you are not claiming electronic copies, skip to line 17 on page 3.** (N/A) **17. Publication of statement of Ownership will be printed in the November 2022 issue of this publication. 18. Signature and Title of Editor, Publisher, Business Manager, or Owner/Date:** Joseph Paparello, Publisher September 30, 2023; I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including civil sanctions (including civil penalties).