

Utility Execs on Decarbonization and Customers

Conversations with CMS Energy's CEO Patti Poppe,
Duquesne Light Company's CEO, Steve Malnight,
and Portland General Electric's CEO Maria Pope.
With an introduction by Jan Vrins and Dan Hahn of Guidehouse.



utilities are heavily invested in a decarbonization journey as a pathway to a clean energy future for their customers and the communities they serve. More utilities are setting net-zero targets by 2050 or earlier. They will need to change their strategy, investment and divestiture plans, business and regulatory models, products and services, and operations and people to capitalize on the opportunities of their decarbonization journey.

Recently, we, meaning PUF’s Steve Mitnick and Guidehouse’s Dan Hahn and Jan Vrins, talked with inspiring utility CEOs about what they are doing to help their customers decarbonize, the impacts they are seeing, and the most promising paths to decarbonization for their companies and their customers.

We heard from CMS Energy’s CEO Patti Poppe, Duquesne Light Company’s CEO, Steve Malnight, and Portland General Electric’s CEO Maria Pope on their perspectives and tangible actions their companies are taking to meet their decarbonization and their customers’ decarbonization goals. We hope you find the conversation interesting and meaningful as you think about how you are helping your customers decarbonize for the future.

– By Jan Vrins and Dan Hahn of Guidehouse

Patti Poppe

CEO, CMS Energy

PUF’s Steve Mitnick: How was the drive to decarbonize a customer centric strategy?

Patti Poppe: It is an obvious customer centric strategy because our customers absolutely care about the planet and what we can do to preserve it. Maybe this is not something that people reinforce all the time but it’s good for their pocketbooks as well.

When we think of our customers, they are fundamental to our Triple Bottom Line, serving people, the planet, and profit. As we protect our customers’ pocketbooks and the planet, that leads to the prosperity of Michigan, and decarbonization is fundamental to that equation.

Our version includes retirement of coal, but it also has a significant demand management component, which requires customer engagement. That means that customer centric is not just a feel good, nice to do. It’s business imperative for our future.

Jan Vrins: A lot of utilities are shifting to renewables and battery storage. Officially they’ve done that for several decades. You mentioned demand side management, and demand response.

How else is your company helping your customers decarbonize? How far as a utility do you want to go? You have a lot of heavy manufacturing in your customer base. Would you look at some of those production plants?

Patti Poppe: We have an essential role to play. We set our targets for a net zero methane for 2030 and net zero carbon by 2040, and we know our customers play a significant role in that.

Starting just with our own system, retiring our coal, replacing it with renewable energy, energy waste elimination, smart demand response, and energy efficiency programs prevents the replacement

We know hydro storage – Ludington Pumped Storage is teaching us what it means to have excess power at night from our wind farms – they’re converting that to energy on demand on a peak.

of our coal plants with any kind of fossil fuels.

We can prevent building fossil fuel assets as our coal plants retire. That’s a fundamental. From a customer perspective, the energy that’s flowing into their homes is lower carbon.

We have a large business customer who produces polysilicon that then goes into solar panels. That energy we produce, and our customer powers their operations with, is lower

carbon than the Chinese polysilicon producers.

The solar panels made with polysilicon from our customer are fundamentally lower carbon. It is a holistic ecosystem. Our business customers are asking us for creative solutions for them to achieve their net zero goals, their one hundred percent renewable goals.

We built a wind farm for General Motors. We’ve partnered with Boyne Resorts, which also owns famous ski properties, like Big Sky in Montana, as well as several Michigan ski resorts. We’ve coauthored their net zero plan with them. We’re going all the way with our customers to decarbonize our own system, as well as theirs.

Jan Vrins: How does the drive to decarbonize address some



Utilities have an opportunity to orchestrate and optimize supply and demand. This orchestration formula is the path to a clean and lean energy future.

of the aspirations that we've seen coming from investors that are focused on the Environment Social Governance or ESG?

Patti Poppe: We've been talking ESG for a long time, and that's what our Triple Bottom Line is. Investors truly appreciate our transition plans. We meet with investors and there are a lot of interests in those utilities that are transitioning in a deliberate and public way.

They want to see the plan. There are a lot of companies talking about 2050 goals. We're able to talk about 2020 results, like what we've already done, with almost a forty percent reduction in carbon emissions. We have a plan to be net zero methane by 2030 and net zero carbon by 2040, which is a decade ahead of international targets.

When we meet with our investors who are ESG focused, we've got a lot going for us on the environmental standpoint,

but we also have a lot going for us on social and governance.

That's why CMS is one of the most widely held utilities by international and particularly European investors, because of our ESG performance. It's not just our commitments, but our documented plan that's been approved by the Commission as well as our performance to date.

PUF: How can your company be successful including financially successful? You have EPS bills while you're decarbonizing. Can those two be harmonized?

Patti Poppe: Yes, we are people, planet, profit. It is a three-legged stool. We have a no big bet capital plan, which is predominantly biased to investment in a smarter grid. We like to think about it like this: A customer pays a certain amount on their bill. Their total bill is our total revenue. In the past, a utility would earn only on those capital assets in that cost. There are a lot of costs in a customer's bill that have nothing to do with utilities earnings.

We have internal targets to grow our net income as a percent of revenue through lowering costs on fuel for customers that has a better return for investors because of the degree of investment that we're making.

In that stack of a customer's bill, we want to earn more while protecting customers from a higher bill. We call that our clean and lean approach. It's not just a clean transition, not just decarbonizing at any cost, it's decarbonizing at the lowest cost.

Our modular renewables replacing fossil fuels reduces fuel costs. For us, it reduces some

high cost power purchase agreements with zero carbon emitting supply resources and eliminates energy waste. That fundamentally lowers the total cost of the system.

Our clean and lean approach is a winning strategy. I would argue to some degree it prevents what's happening in California right now.

There's a risk that the curtailments create a narrative that there is too much renewable energy. I'm going to suggest that it's the lack of a sophisticated demand management system and not policymakers not appreciating the utilities' obligation and rightful role as system orchestrator.

When a utility is a system orchestrator, it can see and optimize the resources that are available and flatten the demand curve with technology for the benefit of all. Some public policies sub-optimize the grid by underestimating the importance of the

utility to both see and control distributed resources including distributed demand management. Wirelessly communicating thermostats combined with smart meters and the right digital platform allow the utility to flatten the demand curve without public appeals but rather, by design, automatically.

It may not be flat but soften it and prevent the peak. Technology can prevent the peak that is causing the necessary curtailment in California. We can let technology help us decarbonize and provide reliable and affordable energy for customers. That's the Triple Bottom Line in action.

Jan Vrins: I agree with that because that's the orchestration that you and I spoke about, but I see utilities playing a more important role in doing what you described. I agree also that you can do a lot in terms of managing demand side through technology.

There will be other new solutions. What about battery storage? What about using access renewables, that you still might have during the day when the sun shines and you have a lot of production of renewable power, creating hydrogen, which gives you even more 24/7 energy supply. What about battery storage and hydrogen as a renewable fuel and over time a potential alternative to natural gas?

Patti Poppe: I agree that storage helps. For us, storage is a larger and larger part of our go forward plan. We're going to be reissuing our next iteration of our Clean Energy Plan a year from now.

We are not finished with the modeling, but we're seeing storage materializing. The electric vehicle penetration, as it grows, creates an opportunity to leverage the mobile storage, when and where we needed to serve a peak day.

Combined with our commitment to solar, is our commitment, or our interest, in storage technology. We have decades of experience with storage at our Ludington Pumped Storage Facility where we've just done a major upgrade.

We are doing a major upgrade there to get to twenty-four hundred megawatts of pumped storage. It'll be the largest pumped storage in North America. It acts as a battery. We've been dispatching that battery into MISO and pre-MISO, dispatching Ludington daily.

We know how to leverage storage. We're somewhat agnostic about the technology, whether it's hydro, hydrogen or lithium ion. We definitely know hydro storage. There's no doubt that Ludington Pumped Storage is teaching us what it means to have excess power at night from our wind farms. Then they're converting that to energy on demand on a peak.

Jan Vrins: For the gas side of the business, which is significant, what do you see as the most prominent aspect to meet your decarbonization goals?

Patti Poppe: It starts with replacing infrastructure. It makes the system safer, reduces emissions, and makes the system more resilient. That's an obvious first step.

Then we're utilizing new technologies, whether it's biodigesters

or some other form of methane capture. We have a detailed plan on how to get to zero methane in our system, which is renewable natural gas. Now our system will require less than a Bcf of renewable natural gas to fulfill our zero-methane target. We feel like there's a clear and specific path for our system to get there.

PUF: What are the most promising paths to meeting your goals and the timeframe that you've set, which I know you've publicized. But talk about timeframe because that's important.

Patti Poppe: Our path to 2040 net zero is published and specific. We certainly see the retirement and elimination of coal as a fuel source, while fully leveraging new renewables. We're adding five thousand megawatts of solar by 2030 and another gigawatt by 2040.

Storage will help over time. The mix of renewables might

The regulated utility is the only choice to optimize the whole. It is our construct. We can optimize for everyone and have total lowest cost transition.

go down and storage may go up. Our current plan only has about four hundred and fifty megawatts of storage. That will be a key part, but one of the most important parts, and under-covered in the clean energy stories is the demand management and energy efficiency.

Utilities have an opportunity to orchestrate and optimize supply and demand. This orchestration formula, I believe is the path to a clean and lean energy future. We need to observe closely peak demand patterns to recognize that the utility must play the role of system orchestrator, assuring that we have softened that curve so that we can, at a lower cost, decarbonize our energy system. Clean and lean is the winning formula.

Jan Vrins: Since you are serving all the large car manufacturers, do you see electrification of transportation where ten years from now, you will have a significant number of electric vehicles on the roads? They can connect to the grid. They can play a role in demand side management. Do you see that as part of that orchestration wall, where you build these then start to use electric vehicles when they're not being used after five p.m., because they're sitting on a parking lot potentially for peak demand between five p.m. and seven p.m. when people get home?

Patti Poppe: Yes. Now they see that potential too. The automakers have gotten religious about the potential of electric vehicles and its demand and desire for customers to have optionality there. The number of models that will be coming out in the next couple of years and the price parity of those models will be a significant game changer in adoption rates.

EVs will continue to have an important role, and I would suggest



Jan Vrins

that fleets might happen first. It could be for the last mile delivery, and even the mid mile for companies like Amazon, FedEx, UPS, and school buses. I think the school bus is the perfect demand side resource that you could have because they don't demand the power on a hot summer day when they're not in school.

To have a sitting stored power in a school bus reduces their operating costs over time and provides a resource to the grid. We're just getting started in seeing what the decarbonization of the transportation system is going to enable for a more economically matched curve of energy supply and demand.

The critical role is that the utility must be the orchestrator. A lot of different players play an individual role and on a hot day or a hot week, there's no one responsible to orchestrate the distribution system.

That's not the transmission system but with the distribution system, if its properly equipped with smart technologies, a utility can both control and optimize the grid.

That can better match the supply and demand curve. We've talked a lot about flattening the COVID curve, and we have to plan the energy demand curve so that we have a total lower cost system. EVs can be a key enabler to them.

PUF: It's hard for our friends in California to deal with the politics and regulation there, but in Michigan, is the state government open to you?

Patti Poppe: It's not too late. But it could be if we sub-optimize and don't think in systems thinking.

You run the risk of sub-optimizing. We need to think of the electric grid as a system. You have to have a party who is

responsible for optimizing that system. There is no one better positioned, equipped, or accountable than a utility with regulator oversight. We can make a clean and lean energy transformation.

The regulated utility is the only choice to optimize the whole. It is our construct. We can optimize for everyone and have total lowest cost transition.

Jan Vrins: We see that this model is shifting. We do our yearly state and future of the industry, with Public Utilities Fortnightly. It's now with Guidehouse, and basically with Navigant. We always ask the question, what's the most attractive new business model in this energy cloud distributed environment with high renewables and distributed resources?

We see it's shifting from three years ago, which was mainly still asset developer and owner. Now we're seeing it's shifting to more of the facilitator, the orchestrator supporting transactive platforms, demand response, a third party for this patient. It's clear that the industry executives are shifting their thinking about

The regulator has an opportunity to create a system that is both reliable and affordable. The regulation has to track with that transformation.

– Patti Poppe

what's the most attractive business model longer term.

Patti Poppe: The regulator has an opportunity to create a system that is both reliable and affordable. The regulation has to track with that transformation. When I talk about our customer cost stack, a higher percent of the revenue going to earnings allows the utility to not demand more capital investments, but instead keep cost low for customers while growing earnings.

Our regulator has an essential role to properly incentivize a utility to take those actions. That's a different way than we've been talking about this, the notion of a higher net income while keeping customer bills flat to just growing less than inflation, is possible during this transition, if orchestrated. But if it's sub-optimized, then customers will pay the price.

Jan Vrins: In light of everything you've just described, and in light of that critical orchestration role of utility as we evolve the total system and with higher renewables, resources, battery storage, and EVs, will we see a reregulation again?

In other words, in that type of a system, it's advantageous. If you're a vertical integrated utility, then you can manage demand and supply from the generation side all the way through the distribution side. For instance, if you're in a heavy unregulated environment, it can still be done. But then you need sophisticated systems and data analytics to manage that across.

If the orchestrator has access to all that information, all that

data, it becomes a lot easier. Back to the question, whether the unregulated business model in California and other places, where you have generation separate from transmission, separate from distribution, is that the right business model for an environment that has high levels of renewables, high levels of redistributed resources?

Patti Poppe: I completely agree with you. You're onto an important fundamental here. The reregulation is necessary. I'll just talk about within our own company and we're fully regulated.

Our generation is regulated. We have changed our organizational structure for our electric engineering team. We no longer have supply engineering and distribution engineering. We have

electric grid, integrated engineering.

I can't have my generation guys fighting for capital with the distribution guys. That's again, a sub-optimized system. No, we don't do it that way.

We have an integrated grid team who optimizes the spend across the system as we orchestrate the system and optimize the system. That is not the same thing that's true in a deregulated environment, you have a sub-optimized, perverse incentive to invest in generation if you're an IPP and a profit maximizing IPP versus a regulated utility that has the responsibility to integrate the whole system. This is no time for silos. This is the time for integration. ○

Steve Malnight

CEO, Duquesne Light Company

PUF's Steve Mitnick: How is the drive to decarbonize a customer-centric strategy?

Steve Malnight: There are many incredible transformations happening in our industry right now centered completely on the customer. When you think about our industry, for almost its entire history, the idea was the customer didn't have to engage with energy, and we built the systems to make sure they didn't have to engage.

Now with technology choices that are available for customers, with the ability to understand and control their energy use through technology, suddenly customer engagement is the future of the energy industry.

A lot of customers are going to make choices around the decarbonization path. They're going to make them because they have a particular value or priority in their lives around decarbonization. They're committed to that as a goal. But more and more it's because it's a cheaper way to buy energy and generate energy, or they're going to want to drive electric vehicles because they're just better cars.

As a utility, we do not have a history of being customer centric. That is the key for utilities to survive and thrive into the next century. How do we understand what our customers need and want? How do we make sure we're there to deliver? Start to look toward decarbonization options, and you're going to see where customers want to go.

Dan Hahn: I love these facts about the customer's interests, and these transformations you've mentioned. Those are a lot of the interactions you and I have had. What is your company doing to help customers decarbonize?

Steve Malnight: Having spent most of my career at a company that had electric generation and with more fully vertically

T&D utilities are the center of where the decarbonization discussion is going to happen, because we've already seen the beginning of that transformation on the wholesale side.

integrated utilities, I've had a lot of experience in the energy generation side of the house from a decarbonization path.

where the decarbonization discussion is going to happen, because we've already seen the beginning of that transformation on the wholesale side. Utilities are already committing to a hundred percent clean energy.

Duquesne Light is a T&D distribution utility. In the T&D utilities, people look at that as you're not in the center of the decarbonization discussion. From my perspective, the T&D utilities are the center of

Look at a state like Pennsylvania. It's a customer choice state. Our customers can choose to go a hundred percent clean energy, and a hundred percent solar today. There are many offerings in the market where they can take advantage of that.

But the next level of decarbonization is going to be that individual customer engagement to how they use energy, whether it's generating energy in the home, or having storage in the home.

They need to enhance their resiliency. For businesses, it will be electric vehicle fleets and generation at their sites, or community-based generation that they're transmitting over the wires.

We're looking to make sure we can empower and engage our customers on the choices they want to make. It's going to be things like first electric vehicles, which I believe will be the next



It does require us to rethink some of the products and services we sell as a utility and it requires regulators to think about a different future.

great frontier in decarbonization for our society. Transportation is generally the bigger source of carbon emissions in our society.

Duquesne Light was the first utility in Pennsylvania to file for and implement an electric vehicle program, and we've been focused on deploying chargers in our communities. We've got over a hundred chargers in the Pittsburgh area that we deployed.

We're also working with the Port Authority here, which runs the bus system, to aggressively go after electric buying in the bus fleet in our community. As a community that has air quality issues, these buses are transformative for our community. It's in carbon emissions, but also in air quality.

We're advocating for a bill in Harrisburg called PA Local Solar, which is an equitable mechanism for customers who can't put solar on their roofs because they are renters or can't access community-based solar.

At the holding company level, we see tremendous growth in customer empowerment. Last year we acquired a company

called Ten, which used to be known as The Efficiency Network.

It's a provider of customized energy solutions for commercial customers, with a focus on schools, universities, hospitals, and municipalities. They do work like responsible energy efficiency, distributed generation, and smart city products and services, that are going after empowering customers' desires to engage with energy. We see tremendous opportunity and growth in this space, as customers engage with their energy use.

Dan Hahn: How does the motivation to decarbonize that drives the aspirations of the ESG folks' investors, now meet the demands of your stakeholders, but also your shareholders?

Steve Malnight: Duquesne Light is privately held, and owned by several different funds and firms, many having their bases in Europe. They're focused across their entire portfolio on investing in companies that they see as strong on an ESG front.

I hear it directly from the people who have put money to work in the company on that desire. They recognize that companies that are responsible in the ESG front are more sustainable, in terms of how they're going to drive enterprise value as our energy industry evolves.

The energy industry has been on a clear transformation to focus on decarbonization and more sustainable choices. You can look around our industry today and see the number of utilities that several years ago, might've questioned whether or not renewable energy and low carbon energy or no carbon energy was a part of our future. Now they're all making bold commitments to move forward in our industry.

They're focused on, how do they protect the investment in our company and help it grow. These are pension funds and companies that have an obligation to protect the value of the companies they choose to invest in. They look for companies that are focused on ESG issues, because they know that's where they can get the best long-term returns and see the best growth opportunity for their investment.

PUF: How can your company be successful and at the same time be decarbonizing? It seems contradictory.

Steve Malnight: We have a great advantage as a T&D utility.



Dan Hahn

We don't own coal plants or fossil fuel power plants that are more challenged in a decarbonization environment.

We own the transmission and distribution grid that moves energy from any kind of generating source to all of our customers. As I think about how decarbonization is going to impact our industry, what's clear to me is there are going to be a lot more devices, generating sources, vehicles, and home-automation devices that are going to be connected to the grid and are going to need the connectivity and dependability of the grid.

The grid is one of the first real network economy systems. We all know that the value of that network only increases as the number of devices increase on it. The more customers come to rely on us, not just for turning lights on, but controlling business building systems, powering the transportation fleet of cars and buses, trucks, and transport vehicles, the more the grid provides value. The opportunity is there for T&D utilities to grow and thrive as businesses.

It does require us to rethink some of the products and services we sell as a utility and it requires regulators to think about a different future where we are not incentivizing utilities just to sell more energy and transport more kilowatt hours over the system, but instead build an integrated system that offers the most value to all customers and to society.

That's going to be a significant transition in our industry. I'm a firm believer and I have a lot of faith in the grid as an incredibly valuable asset for the future. I'm excited to be a part of providing that for the Pittsburgh region.

PUF: What advice would you then give to regulators?

Steve Malnight: Whenever we look to a future that's different from our past, it's clearly the future that the utility industry faces. But it's not what we're used to. For decades in our industry you could always count on the future looking a lot like the past, and we can't say that today.

In a world where we know things are going to be changing, it's critical that we focus on that and the utilities, regulators, consumer advocates, and others partner together to understand and explore the different ways we can think about products and services that the grid provides for our customers.

We have to recognize that all customers are not going to be the same. A customer who's taking advantage of solar on the roof, has storage and an electric vehicle in their garage, and is moving energy back and forth over the grid throughout the day, looks nothing like our traditional residential customer.

Our objective is to make sure customers understand the choices that are available. We should do everything we can to empower them to make choices that work.

— Steve Malnight

We are going to need to explore a way to have the business model evolve to recognize that each of those types of customers need different things from their utility service in receiving different products and value and may need to have different pricing structures to best enable them to achieve goals.

Now's the time for us to start trying some things. There's a sense of maybe we just wait until things are well developed.

If you look at places like California where there was a reluctance to change the policy and now you have a large community of customers who are sold on the model of the regulatory structure but not changing the pricing structure, the regulators are going to have to work with utilities to evolve the pricing model. It's going to be hard.

Now's the time to ask and start taking some small steps to smart piloting new approaches and thinking about how we can evolve and change so that customers can know the lay of the land as they make those choices going forward.

Dan Hahn: What are the most promising tasks to meet your goals around decarbonization and the timeframes?

Steve Malnight: We're in a slightly different position than many utilities because customers here can already take advantage of a hundred percent clean energy should they so choose. We also have roughly seventy percent of carbon-free generation with the nuclear facilities in southwestern Pennsylvania.

As we go forward from Duquesne Light's perspective, our objective is to make sure customers understand the choices that are available. We should do everything we can to empower them to make choices that work, whether it's clean energy on their rooftop, clean energy in their community or clean energy from a supplier.

Electric vehicles are going to become a growing choice for our customers, and we hope to see that happen quickly as those

vehicles can transform our communities and make a big difference on not only carbon emissions, but air quality.

We're looking for ways to increase and modernize our grid to ensure we're ready for when customers want to take advantage of these options. It's about encouraging customers to make the choices that work for them and to do it at their own pace. We're doing everything we can to make sure they know about options and to be ready. ○

Maria Pope

CEO, Portland General Electric

PUF's Steve Mitnick: How is the drive to decarbonize a customer-centric strategy?

Maria Pope: As we move through this historic time period with the pandemic, economic uncertainty and social unrest, it's important to remember that crises present opportunities.

There's no question that customers want a clean energy future. For Portland General, our focus remains on ensuring that we are delivering on customers' expectations. Today, we have a number of programs that build upon our number one renewable program in the nation, with a quarter of our customers participating in one hundred percent green energy.

Jan Vrins: The energy transformation will take time, as we have fossil fuels in many parts of our economy and some of your plants are still under that. How will your company be successful while decarbonizing and making this transition?

Maria Pope: Decarbonizing and providing a clean energy future is at the core of what our customers expect from Portland General. We're focused on three main areas:

First, investment in new renewables and smart grid infrastructure.

Second, ensuring reliability and integration of variable resources, from central station down to the smallest distribution level. We're accelerating new technologies, artificial intelligence, and a robust system that customers can depend upon in the same way they have depended upon energy from us over the last one hundred and thirty years.

Third, beneficial electrification and the value of partnerships. Expanding the uses of clean electricity creates opportunities for growth and for customers to further electrify.

Jan Vrins: You have this big project now, since you're closing some coal plants. You're doing solar and battery storage, together with NextEra. What are you doing beyond providing renewables, energy efficiency, demand response, and how deep are you going into the customer's business? What other things are you helping your customers with to decarbonize?

As we build out a clean energy future, it's a team sport. We're working with customers to understand energy needs and have customer-sited generation and storage incorporated into the grid.

was sold out in a matter of minutes. We're currently working with high-tech, digital, and other customers on an equally sized second phase of the program.

Resiliency is also a huge piece of decarbonization. It's critical that we think of the smart grid as bi-directional, flexible, and resilient – incorporating not just the central station generation that we've depended upon – also bringing in distributed energy resources and greater levels of storage flexibility. Additionally, advanced analytics capabilities will further contribute in developing a self-healing grid.

Jan Vrins: The way you talk about that extended grid, takes you beyond the meter in terms of distribution, resource, and partnering with customers on what's happening at their premises. You have done some virtual planning pilots. That is an important part of the strategy to go beyond the meter.

Maria Pope: You're correct. There's no way that we can do this independently or in a one-size-fits-all approach. As we build out a clean energy future, it's a team sport. We're working with

Maria Pope: When it comes to decarbonization, the Wheatridge Renewable Energy Facility project you're speaking of is an exciting project in partnership with NextEra Energy Resources that combines wind, solar, and battery storage at scale. It's a first-of-its-scale in the country.

We're also working with customers on green tariff programs. Our first tranche of about one hundred and sixty megawatts

a number of customers to understand their energy needs and business profiles, and have customer-sited generation and storage incorporated into the grid.

PUF: Let's turn to investors now, as they're important too. How does the drive to decarbonize address the aspirations of ESG focused investors?

Maria Pope: This is one hundred percent aligned. At Portland General, we've long been known for being progressive and focused on our environmental footprint. We're a renewable energy leader across the country and within the industry. We also have a longstanding focus on diversity, equity, and inclusion.

PUF: What are the most promising paths longer term to meeting your decarbonization goals? Which might you be getting close to, or at net zero? What's the timeframe?

Maria Pope: There's no question that our customers and the communities we serve want us to decarbonize as quickly as possible. Projects like those I mentioned – Wheatridge, green tariffs, smart grid partnerships and more – demonstrate the most promising pathways to collaborate toward a clean energy future.

PUF: You mentioned NextEra. You're working with other utilities like Douglas County PUD.

Are you working with other entities, like BPA, or the other PUDs in the area?

Maria Pope: As we look at a clean energy future, it's going to take all of us working together. As a longstanding utility in the Pacific Northwest, we recognize that partnerships are key. Particularly, taking advantage of the robust, hydro power that has blessed our region for decades and partnering on the use of technology and market integration.



The Wheatridge Renewable Energy Facility project is an exciting project in partnership with NextEra Energy Resources that combines wind, solar, and battery storage at scale. It's a first-of-its-scale in the country.

Across the Pacific Northwest, investor-owned, municipal, public, and federal entities all have a role to play in building out a clean energy future for the region, for our customers, and for the communities we all serve. We're all interconnected. [PUF](#)

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