

OPALCO:

1. OPALCO's mission is to provide safe, reliable, sustainable and cost-effective essential utility services with a commitment to the utilization of renewable resources and carbon reduction. How does this mission align with your vision for the cooperative and community?

The role of all power companies is to provide safe and reliable electricity to its customers. What I like about OPALCO's coop model is its members (meaning us!) get to decide what other qualities are important. For example, we are an economically diverse community, and it is vital that utility services are affordable for everyone. Perhaps equally important, we as members recognize that climate change is a real threat to the community and all those that inhabit our islands, both today and in the future. To that end, it is imperative we help to accelerate the transition to carbon-free energy, while also becoming more resilient in the wake of energy disruptions. I appreciate that OPALCO's mission embraces all these critical elements as part of its coop model, and how we all get to participate in defining its mission.

2. The region is in a period of major energy transformation away from carbon-emitting sources.
 - a. Where will OPALCO get the capital to invest in required system upgrades and local renewable generators to keep the islands supplied with reliable power during the transition?

One major challenge with transitioning towards a carbon-free energy production lies in the capital cost for the equipment, as anyone who has installed solar power at their residence can attest. The upfront costs are significant, even if downstream costs are low. OPALCO recognizes this and will need to increase its reserves to develop zero-carbon electricity production sources. Some of this will inevitably come from its rate structure, but other opportunities may also exist, such as Washington State grants and possibly Federal grants. But other, less conventional sources of capital may also be possible, such as bonds similar to municipal and corporate bonds. It is important to recognize that members also have the opportunity to "go solar" at our homes and through participation in community solar programs. Every kilowatt-hour we generate ourselves is a kilowatt-hour of electricity OPALCO does not have to produce!

- b. How should OPALCO maintain affordability for all members while complying with legislation for decarbonization?

Affordability is a relative term; what is affordable to one person may be expensive to another. Fortunately, OPALCO already has several mechanisms in place to ensure all members have access to electricity at rates considered affordable to most of us. For instance, their *energy assistance programs* help those that struggle with monthly utility bills. In addition, OPALCO's tiered-rate structure charges less per kw-h for those that consume less power, and charges more per kw-h for those that consume more power.

It is also worth noting that electricity from solar photovoltaics is one of the least expensive ways to generate electricity today, far less expensive than coal, and even less expensive than natural gas-fueled power plants. And that is without subsidies! Therefore, the more we can generate with renewables - and in particular renewables plus battery storage - the more cost-effective power we'll have in the future.

3. Solar power requires a lot of sunny land for solar arrays. Existing county land use codes favor preserving local rural character over solar generators on open land. How do you think about these potentially conflicting approaches to land use? How can OPALCO work with San Juan County to ensure permitting certainty for these projects?

We all enjoy the beauty of the San Juans. It is why many of us moved here. So pushback is understandable when the rural character of the islands is challenged by utility-scale solar projects. We clearly need to strike a balance, because it is the only way to meet the increasing demand for power in an affordable way. Let's face it, we are not likely to get more electricity from the mainland that is also low cost. Demands on mainland power sources are also increasing, meaning rising costs are inevitable. Therefore, we need to accept generating more of our own power or face more expensive electricity. However, that doesn't always need to come from large solar arrays installed on rural farmland. We as members can do our part too, by taking advantage of OPALCO's Switch it Up program along with other financial incentives to offset the costs of installing our own solar system.

At the sametime, OPALCO must work with SJC Planning to ensure that any solar array, microgrid or other power generating technology comply with all regulations. That must happen at a very minimum. Yet as a member-owned coop, we can do better than just being compliant. We can demonstrate that generating zero-carbon energy is both good for our members and good for the environment.

4. How do you engage stakeholders who show up frustrated with the cooperative? What do you do when their claims conflict with engineering/economic reality?

One reason I am running for a Board position is because of a recent OPALCO meeting that revealed some member frustration with how OPALCO was running its business, particularly with how it was evaluating future energy sources. One challenge we face collectively is the very different messages we receive depending on where we get our information – now often dependent on political association, which is unfortunate. As an engineer who has worked in both progressive and conservative business settings throughout my career, I have found that being politically agnostic is an absolute precursor to a robust discussion. With that as a starting point, OPALCO should be fully transparent with all the facts and data they use in creating an energy resource plan. While such a science-backed strategy may not satisfy everyone, it may be able to get more members to see OPALCO's point of view, leading to a more fruitful debate. And it must also go the other way, meaning OPALCO must listen to its members, so it can better understand our positions and where they are coming from. Residents on our islands have a remarkable diversity in expertise, and it is possible that some of our members have novel ideas that OPALCO may not have considered.

5. It's estimated that OPALCO's load growth will double between now and 2050 due to the electrification of heating and transportation. Questions:

- a. Where should this new energy come from?

To the extent possible, we should generate as much power ourselves, independent from the mainland. This could come from a combination of more members adding solar power at their homes, along with increased member participation in regional community solar projects. OPALCO can continue to be responsible for larger grid-scale solar arrays as they are today. Moreover, I've been interested in innovative zero-carbon power generation technologies for many years now, and I'm amazed at how many are both commercially and economically viable. For example, tidal and wave technologies are now operating as large-scale power plants in parts of the world where that makes sense. Geothermal energy is a significant energy source for island communities such as Iceland and even Hawaii. Whether these and other innovative technologies are suitable for our island communities is worth exploring, particularly as they progress from prototype stage to commercially ready systems.

And as we all know, renewable sources such as solar photovoltaics require battery storage for the system to become a continuous power source. While still expensive for home solar

pv systems, costs are coming down rapidly. OPALCO should encourage and financially support implementation of solar+storage for home systems, while also taking advantage of larger-scale storage projects as a way to provide continuous baseload power.

All that being said, I suspect that even an ambitious approach to renewables will likely fall short of projected power needs for the San Juans. Importantly, I do not see diesel, propane or biogas generator sets playing any role in our energy future, for a variety of reasons. Therefore, any power requirements not met from our own generating capacity will need to come from our connection to the mainland. This means OPALCO must continue to work to ensure the submarine cables are in good shape, and contracts with suppliers such as the Bonneville Power Administration are there to meet our future power needs cost-effectively.

b. Where should new renewable projects be located?

As mentioned above, residential solar should be encouraged through financial incentives from State and Federal programs. Beyond this considerable opportunity, OPALCO should continue to explore more community and utility-scale solar, particularly where rural land is not suitable for agricultural use. Also, newer zero-carbon technologies such as geothermal, tidal energy and others are worth exploring to determine whether these are a good fit for our region.

c. Will local resistance limit siting and permitting?

Like any development, there will likely be significant pushback on new projects, both due to member concerns about visual impacts, along with County concerns about environmental impacts. This could be one of the greatest challenges we face, as none of us want to negatively impact our views of the water, trees and mountains. Yet at the same time, the only way to ensure cost-effective and reliable power is with developing new sources of energy. This involves a very delicate balance, one that requires member engagement and a forward-looking planning department.

d. Who pays for it?

OPALCO will continue to be the developer of many large-scale projects, and as such requires capital reserves funded through its rate structure, State and Federal programs. OPALCO can also use grants to support and offset costs borne by residential and commercial members interested in installing their own solar systems. This might also

include community solar projects for those members that cannot install solar photovoltaics on-site.

6. OPALCO's current rate structure collects almost half of the revenue to cover fixed costs through the kWh (energy use) charge. As we become more energy efficient and embrace more renewable energy, OPALCO won't collect enough kWh revenue to cover fixed costs. How would you address this rate structure dilemma?

This is an interesting question and requires a much better grasp of OPALCO's financial situation to provide a reasonable answer. I think it is also important to understand how OPALCO arrived at this conclusion, considering increased revenue from the rapid growth in demand even if supplied with lower cost renewables. In my opinion, one role of a Director is to fully comprehend OPALCO's financial position, including revenue sources, operating costs, capital reserves and discount rate to name a few, both today and in future projections with the buildout of more renewables in the future. This requires a deep-dive financial analysis, one that I have enjoyed doing numerous times throughout my career. I also appreciate that OPALCO's status as a non-profit organization means such a financial analysis is different than that of a "for-profit" company. I am very much interested in learning more about this, both to help where I can within OPALCO, but also to be a better financial steward to us as members.

7. What are three things you don't know about running a utility that you plan to learn first?
 - 1) OPALCO's 20-year "Integrated Resource Plan" (IRP) was published in 2019, before COVID, remote work, supply chain disruptions, inflationary impacts and the more recent and dramatic shift away from Federal policies supporting clean energy and electrification of transportation. I am quite interested to see if the existing IRP is still as relevant today as it was when it was released more than 6 years ago.
 - 2) OPALCO is part of a larger group of utility cooperatives known as the Pacific Northwest Generating Cooperative (PNGC). This organization greatly expands OPALCO's purchasing power when it comes to obtaining power from major producers such as the Bonneville Power Administration. I would like to learn more about how OPALCO can better leverage our role within the PNGC to develop the resources and partnerships we need to meet future electricity demand.
 - 3) While I have been professionally involved in clean air projects based on EPA regulations, I am less knowledgeable about how Federal and State regulations determine what power generation coops such as OPALCO can and cannot do. A

better understanding of regulatory requirements and constraints will be one of the first things I would take on.

8. The high cost of living in the islands (especially housing) and a very competitive labor pool in the industry has made it challenging to hire and retain staff. What ideas can you offer for hiring and retention of qualified employees?

The rapid growth of renewable energy throughout the country has led to a shortage of qualified technicians, mechanics, electricians and all those required to install and maintain these resources. Yet the renewable energy industry is anticipated to be a major employer of talent over the next several decades. Coops such OPALCO can be competitive in its hiring practices, and we can also be creative in developing the much-needed talent. One successful model I have seen elsewhere is for OPALCO to partner with local high schools and community colleges to establish new educational and vocational programs. These help to attract and encourage individuals - individuals who already live here - to gain the skillsets necessary to participate in the high-paying job opportunities that will come with the renewable energy buildout throughout the islands.

9. A severe winter event causes regional scarcity and wholesale price spikes which will be showing up on member bills. What questions do you ask management as the problem unfolds? What do you communicate to members?

Admittedly, I did not appreciate the direct link between spike in demand due to weather events and the associated spike in electricity cost, which I now know is due to the extra cost of supplying the unusually high load from the mainland. Many of these events are predictable to some degree, and one thing OPALCO could do is alert members to be better prepared, allowing us to take action ourselves, such as charging EVs at night or waiting a day to use the laundry dryer. Additionally, OPALCO can use its Rock Island Subsidiary to "Alert" internet-connected members. All these actions can mitigate any energy spike, thereby softening the blow when the bill comes. Members have much to gain in knowing about potential energy spikes and should be engaged on how best to be informed, and understanding what actions have the largest impact.

10. Member engagement is key to a successful cooperative. How would you encourage greater participation from members?

I would start with a more informative website, where many members get much of our information. The website today is easy to navigate and very effective, but could include more information about current challenges, updated IRPs, and proposed ideas about our energy future. We could also get members involved in key decisions through voting, surveys, on-line discussion forums - all ways to help with engagement.

ROCK ISLAND:

11. How important is access to communication technology throughout San Juan County?

Anyone that has a computer recognizes the significance of high-speed internet capability. It is the foundation in how we live and work today. Rock Island has done a remarkable job providing fiber connections for many of us, and is continuing to work so that everyone has access. At the same time, high-speed wifi technology is changing, as cellphone and satellite companies do their best to offer such services. I believe at the end of the day, most people will purchase reliable high-speed internet at the lowest possible cost, regardless of who provides it. To that end, Rock Island needs to be aware of all the alternative technologies (as I'm sure they are) and continue to strive to offer the best service at cost-competitive pricing.

12. Rock Island provides internet connections to nearly 60% of the OPALCO membership. How should Rock Island and OPALCO prioritize reaching the balance of the membership with access to broadband?

The first question to answer is what is preventing the remaining 40% of Rock Island membership from internet connection. For example, is it cost? Availability of fiber? Or some other reason? Based on such an analysis, Rock Island can develop a strategy and plan for those that want internet but currently don't have access to it.

13. Who should pay for the cost of internet connections?

Like electricity, the cost of internet connection should be borne by those that use it. However, the reality is some members of our community may not be able to afford it. Rock

Island and its parent OPALCO can develop rate structures and assistance programs to help those that need it, similar to those for electricity.

14. What would you bring to the Co-op to help Rock Island realize its full vision?

My background is a combination of engineering, business and sustainability, having spent the last 38 years working in industry, academia and the national labs. Many of my roles involved thinking strategically about future products and services based on evolving regulations, materials technologies, and growing momentum towards a more circular economy. I believe that my experience and expertise align well with the requirements of OPALCO's Board position. This is a pivotal time for OPALCO, Rock Island and our community, and it would be an honor and privilege to use whatever skills I possess to support OPALCO and the membership to move us in the right direction as we take on our current and energy challenges.