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March 2023

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?

Safety is of utmost importance to those working on the grid infrastructure, and for the community. OPALCO assures that its employees have extensive training in safety protocols, and access to appropriate safety and protective equipment. Frequent safety meetings and participation in the RESAP (Rural Electric Safety Achievement Program) provide frequent opportunities to sharpen the focus on safety. Each Board Meeting includes a report from the General Manager on safety issues and progress.

The safety of the grid is implemented by periodic tests, inspections, right of way clearing, and adherence to all operations and safety regulations and policies. Information for members can be found at <https://www.opalco.com/outages-safety/safety-center/>

Reliable, sustainable, cost-effective, renewable, and fossil free. These are descriptors of how well the current grid is operating, and goals for how the grid should evolve. Much of this is addressed at the Federal, State, and County levels by legislation and regulations. The goals range from the aspirational, to very specific. Goals are exemplified by such documents as "The Long-Term Strategy of The United States – Pathways to Net-Zero Greenhouse Gas Emissions by 2050" and Washington State's "2021 State Energy Strategy". Specific Legislation in Washington State includes the "Clean Energy Transformation Act" (CETA) and the "Climate Commitment Act" (CCA). San Juan County's recently released "2036 Comprehensive Plan Update" is notable for the increased emphasis on Climate Change mitigation and adaptation in all the elements.

*The role of OPALCO is to turn those goals and objectives into workable plans, with specific projects, timelines, budgets, and staffing.* OPALCO's current Integrated Resource Plan (<https://www.opalco.com/wp-content/uploads/2019/11/OPALCO-2020-2040-IRP-R16.pdf>) describes the current roadmap by which San Juan County's power system will evolve to meet the challenges presented by the biggest transition in the electric grid that the Nation has ever attempted!

2. The region is in a period of major energy transformation away from carbon-emitting sources.
  - o 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?

First, to the extent possible, OPALCO and San Juan County must try and secure full cost Grants, cost sharing Grants, and low interest loans (preferably in that order) from the array of opportunities that exist currently at the Federal and State level. There are billions of dollars of funds being made available. However, they are not easy to get! Application processes and eligibility requirements vary widely across agencies. Many are

competitive. Frequently, rural areas are at a disadvantage because of the cost and skills required to compete for these grants. OPALCO has had recent success with the grant process, such as the WA State Dept of Commerce grant for a San Juan Microgrid, partnering with the Pacific Northwest National Laboratory, and a Washington State CEF4 (Clean Energy Fund #4) Grid Modernization Grant, to study new renewable generation technologies.

OPALCO can explore opportunities to partner with San Juan County for those grants which are open to Public-Private joint applications.

And OPALCO must continue to manage its operations in a sound fiscal manner. Future required borrowing depends on maintaining an acceptable equity level.

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

First, evolving our current grid infrastructure to what will likely be in place in the future will require investments. To decrease San Juan County's share of GHG (Greenhouse Gas Emissions) requires electrifying more of our transportation, the heating of our buildings, and our Ferry system. The increased loads will be served by power purchased from the mainland, and from growing amounts of local generation. The way to minimize the increases in power bills is to understand that the future electric market will put as much value on *when, where, and how* power is used, as it does on how much is used. This will require our grid to be "smart" in terms of providing us with improved visibility into what is going on, and in having tariffs (how use is charged) that incentivize efficient use of power.

Second, a robust Low Income Assistance program needs to continue, and take advantage of Federal and State grants which are available to utilities which have plans to ease the energy burden on impacted households.

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?

The "Green-vs-Green" tension between Environmental protection and preservation, and the land needed for new Renewable Generation installations is very real in the US, and Globally. The "State of Washington Energy Facility Site Evaluation Council" (EFSEC) coordinates all evaluation and licensing steps for siting certain energy facilities in Washington. However, some renewable facilities are proposed in areas that may cross county or city boundaries, may be sited on or near environmentally sensitive areas, or may be considered objectionable to local populations.

This issue is beginning to be addressed in some States and Counties by developing a *comprehensive land use map* that starts with "let's determine all the places we don't want to

put these kinds of facilities”. The result is sometimes called an “Energy Overlay Zone”, or a designation and set of conditions on where energy facilities can be located. An example of such land use designation can be found in Washington’s Klickitat County.

San Juan County should consider such a process, taking into consideration the multiplicity of factors that go into such a determination.

4. OPALCO depends on hydropower from the mainland for more than 84% of its total power supply. How important is hydropower in your vision for a future energy supply in the islands?

In 2022, 62% of Washington State’s electric generation was by hydropower. Natural Gas (16%), Renewables (11%), Nuclear (9%), and Coal (3%) provided the bulk of the other sources. By 2025, CETA (Comprehensive Energy Transformation Act) mandates that coal powered generation goes to zero. By 2030, utilities must use a portfolio of electric resources such that 80% is from renewable sources or nuclear, and any use of Natural Gas must be offset by emissions reductions elsewhere. By 2045, the portfolio must be 100% renewable or non-emitting. The reduction in supply from coal and natural gas is expected to be made up by increased amounts of wind, solar, and storage systems. Because of the intermittent nature of wind and solar, system designers must overbuild the amount of generation and increase the amount of storage to assure a reliable grid. As the amount of coal and natural gas generation decrease, the value of hydro power increases significantly, as the most reliable and available firm source to compensate for renewable variability. In addition, not just Washington, but other western states expect to utilize more Pacific Northwest hydro power to meet their energy plans.

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

- Where should this new energy come from?

Load growth will be driven by population increases, more Electric vehicles replacing gas- and diesel-powered cars and trucks, conversion of residential heating from fossil fuel to electricity, and shore charging infrastructure for the Washington State Ferry system.

Local generation in the form of solar plus storage (both short and long term) should be considered to the extent that it is economically viable and acceptable to the community. Large scale wind generation is not practical because of the low average wind energy in the County, and the amount of space required per megawatt. Tidal generation may be promising, as there are favorable locations in the waters around San Juan County, and the variability and predictability are better than solar. OPALCO as a member of PNGC (owned by 16 Northwest electric distribution cooperative utilities) should consider the possibilities of supplementing future power from BPA (Bonneville Power Administration) with other additional long-term power purchase agreements for firm renewable power, such as hybrid wind or solar coupled with storage. In the long term, OPALCO would benefit from a new undersea cable extending to the Northeast from Orcas Island which

may allow for power purchases from BP Hydro or Powerex, British Columbia power agencies, whose power is nearly 100% renewable.

- Where should new renewable projects be located?

As mentioned above, a County Energy Overlay Zone should be developed which explicitly determines where energy facilities can be sited, and under what conditions they will be permitted to operate.

- Will local resistance limit siting and permitting?

Considerable research has been done and is ongoing around the country concerning this issue. Various reports claim that progress on meeting energy de-carbonization goals is at risk because of the length and complexity of the permitting processes. Findings from some projects indicate the importance of early participation by all “stakeholders” (those potentially affected) in the proposed projects. Successful renewable energy projects have been characterized by the willingness of parties to understand the costs, benefits, and perceived risks, and to compromise when possible.

- Who pays for it?

The funding possibilities were outlined in question 2 above. Where funding assistance from Government entities is possible, it should be applied for. It is only slowly becoming apparent to the Federal and State agencies that rural areas are at several disadvantages, due to small utilities difficulty in self-funding all the costs associated with grid modernization, compliance with de-carbonization goals, investments required in renewable generation, and other mandates. Upward pressure on rates is likely.

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?

A prominent Professor of the Graduate School in the Economic Analysis and Policy Group, Haas School of Business, UC Berkeley, Severin Borenstein said in a paper “In the end, there is no good answer to the question of how a utility should recover fixed costs, but there are less bad ones”. Currently, OPALCO’s budget for 2023 shows Power costs at ~30% and Fixed costs at ~70% of total expenses. The current rate structure generates ~25% of total revenue from fixed fees, and ~75% from the power sales. This is typical of many electric utilities. This presents a bigger challenge going forward, as the volatility in the price of mainland energy is expected to increase as intermittent renewables become an ever-larger portion of the total energy market.

At the risk of the dreaded *TL:DR (Too Long – Didn't Read)* reaction, I'll add a summary of what was written in "Principles of Public Utility Rates", 2005, by James C. Bonbright.

#### Bonbright's Eight Criteria of a Sound Rate Structure

1. Simplicity, understandability, public acceptance, and feasibility
2. Freedom from controversies concerning interpretation
3. Effectiveness in yielding the total revenue requirements of the utility
4. Revenue Stability
5. Stability of the rates with few changes
6. Fairness
7. Avoidance of "undue discrimination"
8. Efficiency of the rate design

Now, keeping these criteria in mind, let's look at several methods that utilities use for residential rates:

- Simple (or fixed) – the rate at which customers pay a flat rate per kWh
- Tiered (or step) – rate changes with the amount of use (some go up to encourage energy conservation, others go down to encourage electric use for GHG reduction)
- Time of use (TOU) – different rate depending on the time of day
- Demand rates – based on the peak demand for electricity a consumer uses over some time period
- Tiered within TOU – different rates depending on how much they use at a specific time of day
- Seasonal rates – charged for those that do not use their facilities year-round (e.g., a cottage)
- Weekend/holiday rates – generally different rates than during normal times. among the few residential rate structures offered by modern utilities.

With the addition of local generation and storage systems, additional considerations are:

- Time of generation (TOG) – different rate depending on the time of day that power is added to the grid.
- Tiered within TOG – different rates depending on how much power is added to the grid at a specific time of day.
- Seasonal TOG – different rates depending on how much power is added to the grid depending on month of the year.
- Demand Response Incentive – compensation for decreasing load or allowing storage system discharge at negotiated times and durations.
- EV Charging Incentive – pricing based on when an EV is charged or discharged to the grid
- The potential complexity of 3<sup>rd</sup> Party DER (Distributed Energy Resources) Aggregation to forecasting loads and supply, operating the grid, and the economics of these systems.

OPALCO will continue to evaluate its tariffs as the power system evolves. This includes carefully evaluating what other utilities are proposing. The challenge will be designing tariffs that are *accepted by members as fair, while producing the needed revenue to operate and maintain the grid, and shielding members from the price volatility which will be inevitable, as more of the load will be served by market purchases over and above that which BPA will provide.*

It is unclear, at this time, what price signals will be made available to utilities to help them design rates. This is evolving as the type and amount of generation sources changes. What is clear, is that the price of power will be more volatile than it has been!

7. What role should the Co-op play in state and regional public power affairs? How do you see OPALCO influencing public policy and elected officials?

As a utility that is responsible for complying with energy legislation, it is important that OPALCO share its knowledge and experience with those who are drafting legislation and regulations. This is not easy to do! I'm reminded of an observation from an American journalist, "For every complex problem, there is a solution that is clear, simple, and wrong!". The mandates in CETA (Comprehensive Energy Transition Act), CCA (Climate Commitment Act), and others pose significant challenges for utilities in terms of timetables, costs, and other factors. OPALCO has established good relationships with our State Senator and House Representatives. Membership in PNGC allows OPALCO to join with 15 other Pacific Northwest Cooperatives in making our views known at the State and National level. Building consensus for energy policies with other Cooperatives, and the Public Power community (Public Utility Districts) is important.

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 housing problem is a challenge. The San Juan County Housing Advisory Committee is tasked with "Recommending affordable housing goals, strategies, and programs to meet the housing needs of the County. Assisting the Council in creating a permanent, local funding source to complement federal, state, and private funds, and performing other related powers and duties". It will be important to follow this Committee's work, and evaluate the recommendations.

I would be in favor of investigating building something like "cluster housing". "*Cluster development*"<sup>1</sup> refers to a development approach that concentrates housing into a portion of available land, while preserving a portion of the land for open space uses, such as conservation, recreation, or agriculture." A small cluster might consist of from two to twelve units. There are several bills concerning improving the ability to permit and build ADU's (Accessory Dwelling Units) being considered in the state legislature this session.

These could serve as temporary housing for new hires until such time as rental or permanent housing became available.

<sup>1</sup> See: (American Planning Association) <https://www.planning.org/blog/9227411/active-living-opportunities-through-cluster-housing/>

ROCK ISLAND:

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

It is difficult to overstate the importance of communication technology, and its availability to all citizens!

Today, internet access is almost essential for day-to-day living. Mobile, or cell phones, are used by 72% of the population in the United States. The United States, and Washington State have made universal internet access a goal. The Washington State Broadband office goals are among the most aggressive in the nation<sup>1</sup>.

The Executive Summary of “Connecting America: The National Broadband Plan” says:

*“Like electricity a century ago, broadband is a foundation for economic growth, job creation, global competitiveness, and a better way of life. It is enabling entire new industries and unlocking vast new possibilities for existing ones. It is changing how we educate children, deliver health care, manage energy, ensure public safety, engage government, and access, organize and disseminate knowledge.”*

Here in San Juan County, “Rock Island’s deployment has given us a leap of progress in preparing our grid for the foreseeable future, of balancing more member devices on the system, more local distributed power, and positioning OPALCO to serve as a balancing authority as we move toward a more transactive energy world when members will take control of their energy usage, local generation and storage.”

“High-speed, two-way communications is an important solution to the biggest challenge facing utilities today, as they embrace more and more renewables and local distributed power.”

<sup>1</sup> State speed goals - [Washington Statewide Broadband Act](#)

- By 2024: 25/3 megabits per second (Mbps) scalable to all residences and businesses.
- By 2026: 1/1 gigabit per second (Gbps) all anchor institutions.
- By 2028: 150/150 Mbps all residents and businesses.

2. Rock Island provides internet connections to nearly 50% of the OPALCO membership. How should Rock Island and OPALCO prioritize reaching the balance of the membership with access to broadband?

First, keep doing what has been working successfully! The “Fiberhood” concept, where groups of homeowners organized to share costs, allowed for rapid initial deployment of fiber connections, and spread the “middle mile” burden among all.

Second, as covered in Question 3 below, when grant money is available, expand the “middle mile” fiber network into areas where there may be the desire for a connection,

but where there is no organization such as a Homeowners Association to facilitate cost sharing.

Third, look for grant opportunities that specifically target assistance to Low Income users. The Washington State Broadband Office administers a number of these programs.

Fourth, encourage potential users to utilize OPALCO's "Switch It Up" program where Rock Island can work with a potential user to install fiber to their home or business. To be eligible for this measure, they must also install a smart energy efficiency device.

### 3. Who should pay for the cost of internet connections?

Russ Elliott, director of the Washington State Broadband Office (WSBO) "estimates it will take at least \$3 billion to achieve Washington's 2024 and 2028 goals", and "there is no way to do this work without federal funding."

Similarly, for rural counties in Washington State, to come close to meeting those same goals, it is going to require some combination of Federal and State funding, and cooperation with San Juan County. Rock Island and OPALCO are actively seeking those grants which are being made available, especially ones targeted at rural areas, and Electric Cooperatives.

As Rock Island's profitability increases, it will be possible to continue investing and expand the "middle mile" infrastructure, bring more possible connections closer to residences, businesses, and institutions.

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

First, recognition that the benefits Rock Island has brought to the people of San Juan County has been the result of the hard work of the Management and Staffs of OPALCO and Rock Island. And the strong support given to Rock Island as evidenced by the more than 6,500 subscribers to its products and services!

As an OPALCO Board member since 2011, I have participated in virtually every aspect of the Rock Island evolution, from early investigations, acquisition of the 700MHz spectrum, business planning, and many technical discussions. My background in business and engineering, and experience with the development and use of computational, communication, and measurement equipment has allowed me to contribute to the overall team effort. I continue to keep abreast of developments in the technology, markets, competition, and regulatory environments, to provide knowledgeable oversight as a Board member.



