



**BOARD OF DIRECTORS
REGULAR MEETING
May 17, 1918 8:30 a.m.
Friday Harbor OPALCO Office**

TRAVEL



***Via Island Air* (note \$4.50/pp charge for passenger loading in FH;
same-day cancellations charged in full)
360 378-2376***

To:

Leave Eastsound 7:45 a.m.
Leave Lopez 8:00 a.m.

Arrive FH 8:15 a.m.

Return:

Leave FH 2:00 p.m.

Arrive Lopez 2:15 p.m.
Arrive Eastsound 2:30 p.m.



Via Ferry:

To:

Leave Lopez 6:55 a.m.
Shaw 7:15 a.m.
Orcas 7:35 a.m.

Arrive FH 8:15 a.m.

Return:

Leave FH 2:20 p.m.

Arrive Orcas 3:10 p.m.
Shaw 3:25 p.m.
Lopez 3:45 p.m.

**Orcas Power & Light Cooperative
Board of Directors
Regular Board Meeting
Friday Harbor
May 17, 2018 8:30 a.m.***

**Time is approximate; meetings are scheduled around the ferry schedule; if all Board members are present, the meeting may begin earlier or later than advertised.*

PAGES

WELCOME GUESTS/MEMBERS

Members attending the board meeting acknowledge that they may be recorded, and the recording posted to OPALCO's website.

- Member Comment Period
 - *Members are expected to conduct themselves with civility & decorum, consistent with Member Services Policy 17. If you would like answers to specific questions, please fill out the Q&A card for post-meeting follow-up.*
- Ashley Slater, PNGC VP of Government Affairs

ACTION ITEMS

- 3-4** ○ Officer Elections
- 5-8** ○ Consent Agenda
- 9-10** ○ Bylaw Revision – Electronic Board Action

DISCUSSION ITEMS

- 11-13** ○ Washington D.C. Legislative Update: PNGC
- 14-16** ○ 81st Annual Meeting Recap
- 17** ○ Rates Discussion: Long-Range Financial Plan (Preliminary for Friday Session)

REPORTS

- 18** ○ 2018 Q1 Financials
- 19-20** ○ General Manager

APPENDIX

- 21-25** ○ BPA
- 26-31** ○ PNGC
- 32-42** ○ Rock Island Article (NRECA)

ADJOURNMENT

Executive Session: Legal, personnel

MEMORANDUM

May 11, 2018

TO: Board of Directors
FROM: Foster Hildreth
RE: Officer Elections

The purpose of this memo is to formalize the election of officers to the OPALCO board in keeping with our Bylaws and regulatory requirements.

Article V Section 2 of the Bylaws states *“The officers shall be elected by ballot, annually by and from the Board of Directors at the first meeting of the Board of Directors held after each annual meeting of the members.”*

The Board is encouraged to discuss potential officers and those who are interested in serving. After discussion staff will distribute voting forms. Attached, please find a sample copy of the ballot that will be distributed to the board for voting at the May 17th meeting.

The following board positions are to be elected:

President
Vice-President
Secretary-Treasurer

Vote forms will be collected by staff and tallied, staff recommends the board motion to approve the slate of officers as elected, which becomes effective immediately.

ORCAS POWER & LIGHT COOPERATIVE
Board Officer Ballot

I hereby vote to elect the following officers to the Board of Directors for the 2018-19 year:

PRESIDENT_____

Bylaw Article V – Officers Section 5 President

The president:

- a) Shall be the principal executive officer of the Cooperative and shall preside at all meetings of the members and of the Board of Directors; and*
- b) Shall sign with the secretary any deeds, mortgages, deeds of trust, notes, bonds, contracts or other instruments authorized by the Board of Directors to be executed, except in cases in which the signing and execution thereof shall be expressly delegated by the Board of Directors or by these bylaws to some other officer or agent of the Cooperative, or shall be required by law to be otherwise signed or executed; and*
- c) In general, shall perform all duties incident to the office of president and such other duties as may be prescribed by the Board of Directors from time to time.*

VICE-PRESIDENT_____

Bylaw Article V – Officers Section 6 Vice President

In the absence of the president, or in the event of his inability or refusal to act, the vice president shall perform the duties of the president and, when so acting, shall have all the powers of and be subject to all the restrictions upon the president and shall perform such other duties as from time to time may be assigned to him by the Board of Directors.

SECRETARY-TREASURER_____

Bylaw Article V – Officers Section 7 Secretary

The secretary shall:

- a) Keep the minutes of the members and the Board of Directors in one or more books provided for that purpose;*
- b) See that all notices are duly given in accordance with these bylaws or as required by law;*
- c) Be custodian of the corporate records and of the seal of the Cooperative;*
- d) Keep a register of the post office address of each member, which shall be furnished to the secretary by such member;*
- e) Have general charge of the books of the Cooperative in which a record of the members is kept;*
- f) Keep on file at all times a complete copy of the bylaws of the Cooperative containing all amendments thereto, which copy shall always be open to the inspection of any member, and at the expense of the Cooperative, forward a copy of the bylaws and of all amendments thereto to each member; and*
- g) In general, perform all duties incident to the office of secretary and such other duties as from time to time may be assigned to him by the Board of Directors;*
- h) The secretary or the Board of Directors may delegate to another or others any of the duties hereinbefore assigned to this officer.*

Bylaw Article V – Officers Section 8 Treasurer

The treasurer shall:

- a) Have charge and custody of and be responsible for all funds and securities of the Cooperative;*
- b) In general, perform all duties incident to the office of treasurer and such other duties as from time to time may be assigned to him by the Board of Directors.*
- c) The treasurer or the Board of Directors may delegate to another or others any of the duties hereinbefore assigned to this officer.*

Voting Board Member Signature

Date

Printed Name

MEMORANDUM

May 11, 2018

TO: Board of Directors

FROM: Foster Hildreth

RE: Consent Agenda

All matters listed with the Consent Agenda are considered routine and will be enacted by one motion of the Board with no separate discussion. If separate discussion is desired, that item may be removed from the Consent Agenda and placed as an Action Item by request of a Board member. The minutes will reflect the approved consent agenda.

The Consent Agenda includes:

- Minutes of the previous meeting
- Approval of new members {as required by Bylaws Article I Section 2 (d)} (see attached)
- Capital Credit payments to estates of deceased members and/or organizations no longer in business as shown below:

May		
Customer #		Amount
65992	\$	338.31
<hr/>		
Total	\$	338.31

- RUS 219s *Inventory of Work Orders* of projects completed from the Construction Work Plan totaling 1,080,295.20. These forms are submitted to RUS for approval of loan funds.
 - Inventory AP1803 *Submarine Cable Vault and trench*
 - Inventory AS1803 *Line system improvement*
 - Inventory 201803 *69kV circuit switcher; URD replacement*

Staff requests a motion to approve the Consent Agenda.

Orcas Power & Light Cooperative

Minutes of the Board of Directors Meeting

Thursday, April 19, 2018

President Vince Dauciunas called the meeting to order at 8:25 a.m. at the Lopez Island Fire Hall. Board members present were Winnie Adams, Peter Garlock, Mark Madsen, Brian Silverstein and Jerry Whitfield. Randy Cornelius was absent. Staff present were General Manager Foster Hildreth; Manager of Engineering and Operations Russell Guerry; Manager of Finance and Member Services Nancy Loomis, Counsel Joel Paisner, Rock Island Communications SVP Gerry Lawlor, Rock Island Communications accountant Chris Schmidt, Consultant Jay Kimball and Executive Assistant Bev Madan (serving as recording secretary).

President Dauciunas read the following statements to those present: *“Members attending the board meeting acknowledge that they may be recorded, and the recording posted to OPALCO’s website. Members are expected to conduct themselves with civility & decorum, consistent with Member Services Policy 17. If you would like answers to specific questions, please fill out the Q&A card for post meeting follow-up.”*

Welcome

Members in attendance included Jim Lett, Sandy Bishop and Chom Greacen, as well as District 2 candidates Jeff Struthers and Rick Christmas.

Dauciunas thanked Adams and Cornelius for their years of dedication and service to OPALCO. They were presented with panels 1 and 2 of the new Community Solar array on Decatur Island as this is their last meeting as directors.

Consent Agenda

- **Motion** was made and seconded to approve the Consent Agenda, including March 16, 2018 minutes, new members as listed with the Board materials, capital credit payments totaling \$10,622.15 and RUS 219s totaling \$662,901.33. Motion carried by voice vote.

RESOLUTION 2-2018 CORPORATE DEBT LIMIT

In the process of processing loan documents for the 2018-2021 Construction Work Plan, RUS is requiring OPALCO to update the corporate debt limit to accommodate the new loan facility. Currently, the debt limit, as set by the Board in 2012, is \$100M. RUS defines the maximum debt limit to include the face value of all original loan facilities from all lenders, regardless of the current loan balances. The RUS corporate debt limit is viewed to be the maximum amount that the Board believes advisable to finance the construction, acquisition and operation of electric transmission, distribution and service facilities. The new debt limit will cover an additional \$18.2M requested in the new loan. Current loan balances equal \$53.8M. Staff presents loan draws as part of the budget; by 2022 the amount borrowed will be decreasing.

- **Motion** to approve Resolution 1-2018 *Corporate Debt Limit* which will raise the current debt limit to \$120M was made and seconded; motion carried by voice vote.

BYLAW REVISION

Draft revisions to Article IV *Meetings of Directors* Section 2 *Special Meetings*, Section 3 *Notice* and Section 6 *Board Actions* were presented. At times documents from outside agencies need to be processed in an expedient manner and can’t wait for the next Board meeting. Revisions to the bylaws were presented in the hopes of expediting document processing and/or decision making when time does not allow waiting for the subsequent Board meeting. After discussion it was determined that more edits are to be made and the draft revisions are to be presented at the May meeting.

VOTING DELEGATES NWPPA

- **Motion** was made to name Dauciunas the voting delegate with Struthers the alternate. Motion carried by voice vote.

CRC

- **Motion** was made to name Hildreth the voting delegate with Loomis the alternate. Motion carried by voice vote.

WASHINGTON STATE RENEWABLE ENERGY SYSTEM INCENTIVE PROGRAM

A per-kWh production incentive is paid annually to members with grid-tied renewable systems; this program is administered for the State of Washington by Washington State University. The current process relies on the utilities and solar installers to work with WSU to administer the program for credit forecasting and payouts. In March, WSU has informed us that OPALCO has reached its allowable allocation (~\$250k) for incentive payouts thanks to the high number of new and existing

interconnected systems, which includes OPALCO’s pre-certified community solar participants. No additional payouts are to be made to OPALCO member-generators at this time.

At this point, staff will be working with local installers and members to attempt to influence the legislature for additional payouts to OPALCO members. One of our approaches is to encourage the legislators to remove the incentive caps and another is to allow access to unused funds.

REPORTS

General Manager

- Annual Meeting logistics were discussed, and schedule of events reviewed
- Community Solar has nearly sold all the units available
- Decatur Tap and Substation discussed

The Board convened Executive Session at 11:30 am and resumed the open meeting at 12:04 pm

Submarine Cable Project

- **Motion** made to authorize the General Manager to pursue negotiations with Sumitomo pursuant to discussion in Executive Session.

ADJOURNMENT

Meeting adjourned at 12:05 p.m.

Vince Daucinas, President

Jerry Whitfield, Vice-President

NEW MEMBERS – April 2018

District 1 (San Juan, Pearl, Henry, Brown, Spieden)

1. Asmuth, Diane & David
2. Atchley, Noah & Claire
3. Baisch, Stacie
4. Barr, Barry & Zubiria, Sofia
5. Boden, Claire
6. Brozio, Glen
7. Deshon, Daniel & Jennifer
8. Easley, Daniel
9. Friday Harbor Drug LLC
10. Johnson, Sheryl L.
11. Mungal, Wendy
12. San Juan Shindigs
13. Smith, Rick
14. Stravers, Kevin
15. Wells, David G
16. Wenner, Zachary & Marina
17. Zamudio, Paola

District 2 (Orcas, Armitage, Blakely, Obstruction, Big Double, Little Double, Fawn)

18. Adams, Avery
19. Adiego, Joann
20. Aigner, Renae
21. Burriss, Josh
22. Capdeville, Nathan
23. Cruceau, Irina & Kabbara, Samer
24. Dreamboat Harbor LLC
25. Earnest, Jeanne
26. Eron, Jule
27. Gable, Lincoln & Meagan
28. Hibbard, Brian
29. Hinck, Matthew & Seebergh, Jill
30. Huffstodt, Lily
31. Mallon, Matthew & Jones, Megan
32. McQueen, Tracy
33. Moore, Jessica L
34. Seaforth, Kayla
35. Smith, Kenneth
36. Snyder, Curtis & Tate
37. Storey, Anna
38. Wiltfong, David

District 3 (Lopez, Decatur, Center, Charles)

39. Barker, Richard & Tina
40. Brown, Leonard
41. Buffum, Derekk
42. Gentry, Michael & Kruse, Brooke
43. Grayson, Blake & Erika
44. Hill, Katherine
45. Petrossian, Robin & Tony
46. Severs, Joseph & Marci
47. Whitney, Bill

District 4 (Shaw, Crane, Canoe, Bell)

48. Turnbull, Daniel & Walters, Margaret
49. Woodruff, Thomas & Kane, Elyse

MEMORANDUM

May 11, 2018

TO: Board of Directors

FROM: Foster Hildreth

RE: Draft Bylaw Revision *Article IV Meetings of Directors Section 2 Special Meetings*

These revisions were discussed at the April Board meeting and staff was directed to revise some of the language. OPALCO's attorney drafted language for board consideration to allow streamlined conference call and email actions. It's important to note that any board actions will be memorialized for the record at the next regular board meeting. Counsel has drafted the following revisions (highlighted in yellow) to Bylaws Article IV Section 2 *Special Meetings*, Section 3 *Notice*, and Section 6 *Action by Written Consent and Telephone or Other Electronic Means*:

Article IV Section 2. Special Meetings.

Special meetings of the Board of Directors may be called by the president or any three (3) directors. The person or persons authorized to call special meetings of the Board of Directors may fix the time and place for the holding of any special meeting of the Board of Directors called by them. Any corporate action to be taken at a special meeting of the directors of the Cooperative, may be taken by conference call or other electronic means. This includes any action required or permitted by the articles of incorporation, bylaws, or the laws under which this Cooperative is formed. Further, any director may participate in a special meeting by conference call or other electronic means of communication by which all directors participating in the meeting may hear one another's responses (or observe, in the case of an email and/or electronic exchange). Any action taken shall be memorialized in the meeting minutes of the subsequent Board meeting.

Section 3. Notice.

Notice of the date, time and location of any special meeting of the Board of Directors shall be given at least five (5) days previous thereto, by written or electronic notice, delivered to each director. If mailed, such notice shall be deemed to be delivered when deposited in the United States mail, addressed to the director to his or her address as it appears on the records of the Cooperative, with postage thereon prepaid. If sent by electronic transmission, the notice is deemed to be delivered when sent, addressed to the director at his or her electronic transmission address as it appears on the records of the Cooperative. ~~In the alternative, any special meeting of the Board of Directors can be posted on the Cooperative's website.~~ The attendance of a director at any meeting shall constitute a waiver of notice of such meeting, except in case a director shall attend a meeting for the express purpose of objecting to the transaction of any business because the meeting shall not have been lawfully called or convened.

~~Article IV Section 6. Actions by Written Consent and Telephone or Other Electronic Means.~~

~~Any corporate action required or permitted by the articles of incorporation, bylaws, or the laws under which this Cooperative is formed, to be voted upon or approved at a duly called~~

~~meeting of the directors or of a committee of directors, may be accomplished without a meeting if unanimous written consents of the respective directors, setting forth the actions so taken, shall be signed, either before or after the action taken, by all the directors or committee members, as the case may be. Action taken by unanimous written consent is effective when the last director or committee member signs the consent, unless the consent specifies a later effective date. Further, any director may participate in any meeting by telephone, or other electronic means of communication by which all directors participating in the meeting may simultaneously hear each other during the meeting with the consent of all of the directors personally present at the meeting. Any director participating by telephone or other electronic means shall be counted for purposes of the quorum.~~

Staff requests a motion to approve the bylaw revisions as presented.

MEMORANDUM

May 11, 2018

TO: Board of Directors

FROM: Foster Hildreth

RE: Washington D.C. Legislative Update

Ashley Slater, PNGC VP of Government Affairs, will attend our May Board meeting to provide us with a legislative update. The focus will be to discuss proposed legislation related to the operations of the Columbia River system. Ashley and various stakeholders crafted legislation known as H.R. 3144, that would protect our access to renewable, clean, and reliable federal hydropower while mitigating hydropower impacts and protecting Endangered Species Act listed salmon populations.

Recently the House passed H.R. 3144, now this will go before the Senate. Ashley will be at the meeting to discuss the next steps of navigation of H.R. 3144 through the Senate.

Attached please find background information in support of H.R. 3144.

Congress of the United States
Washington, DC 20515

Support local collaboration and critical infrastructure
Support H.R. 3144

Dear Colleague:

We urge you to support H.R. 3144, a bipartisan bill to provide for operation of the Federal Columbia River Power System (FCRPS) and maintain current salmon mitigation measures as spelled out in the 2014 biological opinion (BiOp) until a court-ordered review of alternatives is complete. This legislation upholds the fifth and most comprehensive BiOp undertaken nationwide. After two decades of investments, billions of dollars of upgrades, habitat restoration efforts, and the largest fish reclamation program in the country, the FCRPS is experiencing record fish returns proving that dams and fish can co-exist.

The latest BiOp is an unprecedented example of local collaborative undertaken by the agencies, state governments, sovereign Northwest tribes, local governments, utilities, irrigators, and farmers. This collaboration led the Obama Administration to conclude that “The 2008 BiOp biologically and legally sound, is based on the best scientific information, and satisfies the ESA jeopardy standard.”[\[1\]](#)

Unfortunately, constant litigation continues to reject common sense. The Ninth Circuit granted a “spill order” on April 3rd that will cost an estimated \$40 million to ratepayers. Spill is the amount of water that goes over the dam instead through the turbines to produce electricity. This order requiring additional spill to the maximum gas levels is controversial as to the benefits and will likely increase power costs, decrease grid reliability, take away resources from other fish and wildlife restoration efforts, increase sedimentation, and ultimately may actually harm the very fish this spill is supposed to help.

For two decades the four Lower Snake River Dams have been targeted to supposedly help endangered salmon. The plaintiffs are seeking to increase the costs of dam operations in a veiled attempt to force their removal and unfortunately eliminate a carbon free alternative to natural gas power plants -- all in the name of endangered salmon and orcas. The National Oceanic Atmospheric Administration—the BiOp’s coordinating agency—stated that “no one salmon recovery action on a single river, such as breaching dams on the Snake, would itself bring about the recovery of Southern Resident killer whales.”[\[2\]](#) It is also important to note, that each of the four lower Snake River dams have an average fish passage rate of 97% and only four of the 13 Columbia Basin Salmon and Steelhead stocks migrate through the Snake River dams.[\[3\]](#)

While detractors of the legislation focus on harvesting an endangered species, they often ignore the other benefits. All four of these dams are multiple-use facilities that provide navigation, which facilitates a river barge system that enables over \$20 billion in trade and commerce. There are new recreation opportunities like the growing river boat industry out of the Port of Clarkston. And of course the carbon free, base load energy that can power a city the size of Seattle every year and can ramp up production to provide reliability that intermittent sources like wind and solar cannot.[4](#)

H.R. 3144 will simply keep in place the BiOp that was approved by the Obama Administration which requires the Bureau of Reclamation, BPA, and the Corps of Engineers to operate the system in a manner consistent with the Endangered Species Act, keeping the management of the system in the hands of the scientists and wildlife professionals and not the courts, until the completion of a new BiOp in 2022.

We ask that you support this critical legislation. If you have any questions please reach out to Andrew Neill with Congresswoman McMorris Rodgers or Chris Huckleberry with Congressman Schrader.

Sincerely,

CATHY McMORRIS RODGERS
Member of Congress

KURT SCHRADER
Member of Congress

[1] https://www.salmonrecovery.gov/Files/BiologicalOpinions/Appendix%201_09_10_09%20.pdf

[2] [http://www.westcoast.fisheries.noaa.gov/publications/protected_species/marine_mammals/killer_w
hales/killerwhales_snakeriverdams.pdf](http://www.westcoast.fisheries.noaa.gov/publications/protected_species/marine_mammals/killer_whales/killerwhales_snakeriverdams.pdf)

[3] <http://nwrivernpartners.org/value-of-snake-river-dams>

4 [https://www.bpa.gov/news/pubs/FactSheets/fs200901-
Power%20benefits%20of%20the%20lower%20Snake%20River%20dams.pdf](https://www.bpa.gov/news/pubs/FactSheets/fs200901-Power%20benefits%20of%20the%20lower%20Snake%20River%20dams.pdf)

MEMORANDUM

May 11, 2018

TO: Board of Directors

FROM: Foster Hildreth

RE: 81st Annual Meeting Recap

Consensus from staff is that this was the most successful annual meeting in recent memory. Members appreciated the change to the interisland ferry, the information booths, and more time to interact with staff and fellow members.

Staff, Board of Directors, the Conservation District, and Rock Island were able to informally answer a host of questions and had fruitful conversations.

Attendance was 294 total attendees (compared with 279 in 2017), 178 of whom were members (166 members in 2017). Members attending were able to receive prizes donated by vendors, industry partners, and our subsidiary Rock Island.

We are pleased to report that we saved ~\$30k as compared to 2017, primarily driven by the change to the interisland ferry.

<u>Description</u>	<u>Increase (Decrease)</u>	<u>Comments</u>
Number of Members Who Attended	12	
Total Attendance	15	
Annual Meeting Apparel	(\$1,241)	Shirts for members to identify staff
Annual Report	(\$3,616)	Less annual reports printed for distribution
Ballot Postage	(\$2,336)	More members view the ballot on-line versus sent in the mail
Ballot Service	(\$1,315)	Less members voted (uncontested election)
Catering and Lunch Bags	(\$4,062)	Engaged 3 caterers and purchased 50 less lunches over 2017
Charter Boat	(\$3,000)	Friday Harbor member transport to Orcas not necessary
Ferry Passenger and Vehicle Fees	(\$2,231)	No fares for inter-island ferry
Friday Harbor Lodging	(\$1,981)	Prior overnight stay for ferry set-up not required
Vendor Provided Door Prizes	(\$2,474)	Vendors paid for all door prizes
Member Souvenirs	(\$1,512)	2017 higher due to 80th anniversary theme
Photography	(\$1,646)	Meeting not videoed
Staffing	(\$4,758)	Event streamlined
Miscellaneous	\$259	
Total	<u>(\$29,913)</u>	



ORCAS POWER AND LIGHT COOPERATIVE 2018 DIRECTOR ELECTION

Eligible Voters:	11,209
Paper Ballots:	808
Web Ballots:	939
Duplicate - Paper Removed:	5
Duplicate - Web Removed:	1
Final Paper Ballots:	803
Final Web Ballots:	938
Total Returns:	1,741
Percent Returned:	15.53%

Certified by Survey & Ballot Systems

4/19/2018

Melissa Fiala

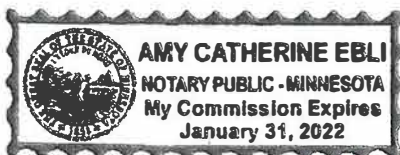
Date

Quality Assurance Specialist

4/19/2018

Notary Public

Date





ORCAS POWER AND LIGHT COOPERATIVE 2018 DIRECTOR ELECTION

DIRECTOR, DISTRICT 2

Vote for: 2	Votes	Percent	
Jeffrey (Jeff) Struthers	1,611	93.8%	DECISION
Richard (Rick) Christmas	1,356	79.0%	DECISION
Total Valid Ballots:	1,717		
Total Unexercised:	24		
Total Invalid:	0		
Total Ballots Cast:	1,741		

MEMORANDUM

May 11, 2018

TO: Board of Directors

FROM: Foster Hildreth

RE: Rates Review - Long Range Financial Plan

As a follow-up to the March rates work session, Friday's work session will be to detail the long range financial plan based on the 2020-2040 capital projects Long Range Plan (reviewed in March).

In preparation for the meeting on Friday, we will have a high-level summary recap of the long-range planning materials presented in March.

As in the past, it is helpful to keep in mind the following documents:

- Integrated Resource Plan (IRP) – *most important*
<https://www.opalco.com/wp-content/uploads/2015/12/Integrated-Resource-Plan-IRP.pdf>
- Mission Statement
<https://www.opalco.com/about-us/mission-and-values/>
- Strategic Directives
<https://www.opalco.com/wp-content/uploads/2015/12/board-strategic-directives-jan-2015.pdf>

The following is a summary timeline of the steps necessary to the future rate planning:

- a. ✓ Strategic Long-Range Vision: February 2018
- b. ✓ Long-Range Capital Projects Plan: March 2018 Work Session (March 16th)
- c. ✓ Long-Range Financial Plan (Equity, Cash, Debt): May 2018
- d. Cost of Service Analysis (COSA): August 2018
- e. Rate Structure Review that Supports the COSA: September 21, 2018 Work Session
- f. Rate Structure Approval: October 2018

MEMORANDUM

May 11, 2018

To: Board of Directors

From: Foster Hildreth, General Manager

Re: 2018 First Quarter Financial Report

Please see attached the full 2018 1st quarter financial report. Included in the report package are the Statement of Revenues and Margins (along with a notable driver analysis), Balance Sheet, Statement of Cash Flows (GAAP), and capital projects budget tracking.

The warmer weather experienced in Q1 of 2018 is the primary driver of the overall revenue variance of -5% (\$493k) lower than budgeted. This was partially offset by the related decrease in purchased power of 4% (\$137k). All combined resulted in a decreased margin of (\$317k).

For more detail, please note the following key points:

- Through Q1, YTD Heating Degree Days (HDD) were down ~8% below normal budgeted levels (Actual of 707 vs. budget of 770). Actual kWh sales were 629k kWh below budget (70.5M vs. budget of 71.1M). We expect weather and heating fluctuations to produce dramatic sales revenue volatility and have budgeted based on those assumptions. We will continue to monitor revenue and expenses closely. At this time, staff does not believe a mid-year rate increase will be required.
- Q1 YTD power purchases were down \$137k due to lower kWh consumption. Actual kWh purchases were 394k kWh below budget (71.8M vs. budget of 72.1M).
- Excluding purchased power, Q1 YTD operating expenses were approximately \$78k under budgeted amounts.
- Rock Island Communications Q1 Financials included in separate packet.

GENERAL MANAGER'S REPORT

May 2018

DASHBOARDS

Please review the dashboards at [30TUhttps://www.opalco.com/dashboards/U30T](https://www.opalco.com/dashboards/U30T). Note that all the dashboards are within board approved strategic parameters.

ENGINEERING, OPERATIONS, AND TECHNICAL SERVICES

WIP

As of 5/11/2018, there are 353 work orders open totaling \$11M. Operations has completed construction on 94 work orders, totaling \$1.2M.

Safety

Jeff Myers conducted the required annual training to all staff on fire extinguishers and hazard communications. The total hours worked without a loss time accident is 64,984.

Decatur Tap and Substation

Construction continues with the final wiring of the breakers and testing of the BPA interfacing relays.

FINANCE

2018 1st Quarter Financial Results Statements and Capital Projects

Staff will be presenting the 2018 1st quarter financial results and analysis for discussion with the board at the May board meeting.

2017 Year-End Audited Consolidated Financial Statements

Moss Adams' representative Olga Darlington will be attending the June board meeting to present and answer any questions related to the content of the finalized 2017 audited financial statements. Once the Board has formally approved the final consolidated audit report, the 2017 audit report will be available on the website.

MEMBER SERVICES

We have two highly successful low-income programs at OPALCO: Project PAL and Energy Assist Program (EAP). Project PAL is a seven-month assistance program which occurs during the winter heating season and EAP is a year around monthly assistance.

Project PAL

The PAL season wrapped up in April, crediting a total of \$47.5k on 271 accounts, compared to \$53.7k on 263 accounts last season. The average credit per account is ~\$175; to put this figure into context, this is equivalent to ~4 months of no facility charge (\$42.57).

Energy Assistance

In April 2018, 306 members received Energy Assist credits totaling \$9k, compared to 250 members totaling \$6k the same time last year. This equates to ~\$353 annually per participant or ~8 months of no facility charge (\$42.57).

ENERGY SERVICES

WSU Incentives

Staff has continued to work with Washington State University (WSU) to reach out to previous member generators in the "legacy" state production incentive program to ensure that all previous participants were aware of the legislative requirement to reapply to the program. Of those eligible for the incentives, about 85% responded to recertify their systems for incentives.

As reported in April, WSU has informed us that OPALCO has reached its allowable allocation (~\$250k) for incentive payouts thanks to the high number of new and existing interconnected systems, which includes OPALCO's pre-certified community solar participants. No additional payouts are to be made to OPALCO member-generators at this time.

Staff continues to work with local installers and members to attempt to influence the legislature for additional payouts via removal of the incentive caps and/or allow access to unused funds.

BPA Rebates

There were 23 BPA rebates given out totaling \$29.5k, including \$14.7k to the Town of Friday Harbor for major projects on the water filtration and wastewater plants. There were also 4 ductless heat pump beneficial electrification (fuel-switching) rebates totaling \$6k, and one EV Charging Station rebate for \$500.

Community Solar

Staff is finalizing the distribution of the Community Solar Units for charges on the May bills and communicating with members about the project timeline. Planning is complete and permitting is underway, and staff is continuing to work with Puget Sound Solar to ensure the project is on schedule, with an expected completion date of June 30th.

COMMUNICATIONS

Staff met with Pixelspoke to review our website and develop a solar landing page (with real time camera monitoring), enhancements to the document search engine, and adding live video feeds to the outage page.

APPENDIX: BPA Reliability Matters



Hot Springs Montana

BPA Photo by: Joe Johnson

RELIABILITY MATTERS



April 2018

A Message From The Customer Service Reliability Program Supervisor

The BPA Customer Service Reliability Program (CSRP) is excited to once again provide you with its quarterly publication of Reliability Matters. These periodicals provide you with up-to-date information happening at BPA that have important customer impacts. For us, it's a chance to spotlight some of the area's that customers should be aware of.

2017 proved to be a very busy, yet productive year. BPA initiated its Transmission Operator (TOP) services program. CSRP has been working diligently on the Transmission Planner (TP) project as well and has made great strides in moving forward to provide services. BPA aims to have fully executed TP Coordinated Functional Registration (CFR) agreements in place in the 2018 year.

As we journey together in 2018, our focus remains steadfast on reliability and providing the best and most dependable customer service possible.

Recognizing that the industry continues to change around us, CSRP continues its commitment to deliver a high standard of customer service – reliability of the region is an important topic for all of us, and when it comes to reliability, we're all in this together!

Lorissa Jones
Customer Service Reliability Program Supervisor
ljones@bpa.gov

Inside This Issue:

- A Message From The Transmission Reliability Program Supervisor
- Transmission Planner Update
- MOD-032 and TPL-007 Data Request Update
- Transmission Operator Update
- CSE Spotlight
- WECC Audit Schedule
- Annual System Review Update
- CSRP Team

Industry Activity Events:

- Next WECC Open Mic –
 - April 19th
 - May 17th
 - June 21st

WECC CALENDAR [[LINK](#)]

Transmission Planner Update:

Throughout 2017, BPA has been moving forward with the Transmission Planner (TP) Coordinated Functional Registration (CFR) project. A CFR agreement is a contract between BPA and its customer(s) to bifurcate requirements where BPA has taken on most of the TP requirements and customers are responsible for a small subset of the TP requirements.

Through many meetings and discussions with customers, BPA has determined that many of the TP requirements lean heavily or rely entirely on existing BPA products. As a result, BPA has determined that the most sensible approach for achieving compliance for TP related standards and/or requirements is to offer CFR agreements to its qualifying (in our Planning Coordinator area) customers. The CFR will allow BPA and its customers to:

- Simplify the audit process by allowing either BPA or the customer to be accountable for individual reliability standards.
- Reduce the compliance burden for each of the entities involved in the CFR agreement.
- Limit the scope of compliance to the delineated responsibilities.

TP project information and TP CFR documents is provided at the following location [[LINK](#)].

NEXT STEPS:

Action	Responsibility	No later than
Receive draft TP CFR	Customers	3/29/2018
Create the CFRs in the NERC CFR Portal	BPA	4/6/2018
Approve draft TP CFR	Customers	4/12/2018
Post Draft Customer Implementation Plan	BPA	4/26/2018
Offer CFR Contract to participating Customers	BPA	5/16/2018
Execute CFR Contract	Customers	6/15/2018
Register in the NERC ERO Portal and request access to CFR Tool	Customers	6/15/2018
Submit Implementation Plan to WECC	Customers	6/18/2018
Register as a Transmission Planner with WECC	Customers	6/20/2018
Deliver draft version of the TPIP	BPA	6/29/2018
Reminder - Customer TP CFR Working Group Session	BPA/Customers	8/23/2018
Begin to implement the procedures and processes as defined in the CFR TPIP	BPA/Customers	8/20/2018

Annual Data Request MOD-032 & TPL-007:

With the start of the new year, the annual data request for new information to support compliance with MOD-032 and TPL-007 also begins again.

The Western Electricity Coordinating Council (WECC) develops a series of power flow and dynamics simulation models which let BPA and its Customers to perform planning and operational reliability and economic studies needed to fulfill various North American Electric Reliability Corporation (NERC) and Tariff compliance obligations.

Pursuant to requirement R1 of TPL-007, BPA coordinates planning information for maintaining models and performing the study or studies needed to complete GMD Vulnerability Assessments.

Pursuant to requirement R1 of MOD-032-1, BPA established a set of common procedures for submitting data needed for developing the WECC interconnection planning models. [The BPA MOD-032 Model Data Requirements & Reporting Procedures document](#) outlines the data reporting procedures needed to support the development of power flow and dynamics simulation base case models in a manner compliant with MOD-032 that realistically simulate steady state and dynamic behavior of the transmission system.

The purpose of the Annual Data Exchange process is to ensure BPA planning models are built with accurate data to properly analyze and ensure the reliability of the interconnected transmission system. BPA, as a Planning Coordinator (PC), will create and manage a system modeling and analysis process in compliance with MOD-032 and TPL-007.

CSRP distributed the data request out to general customers on March 1, with a requested due date of March 31. Generator customers will receive the data request in the late March time frame.

All customers regardless of registration status are obligated to respond to the data request.

TOP Project:

Per the NERC Functional Model, the Transmission Operator (TOP) is responsible for the Real-time operating reliability under its purview which is referred to as the Transmission Operator Area. For nearly a decade, BPA's Reliability Program has been engaged with BPA SME's in the development of a TOP Services project where BPA would serve as the Transmission Operator for qualifying Transmission Owner customers.

Throughout 2017, BPA identified 12 utilities to whom TOP Agreements would be offered. Of the 12 Utilities, BPA has executed 10 contracts. One additional contract is expected to be completed this year.

ACTIVITIES:

In the process of coordinating work on TOP agreements, the Customer Service Reliability Program (CSRP) team has been working collaboratively with its customers, Account Executives, Customer Service Engineers, and BPA's System Operations organizations to determine the specific equipment that will be covered by the TOP contracts. As a part of these activities, BPA completed a detailed analysis to clearly understand the scope of work and requirements involved. This process has been strengthened by holding a series working sessions to clearly identify impacted equipment and processes.

The TOPIC:

In order to provide BPA with the ability to carry out its TOP responsibilities, a Transmission Operator Integrated Compendium (TOPIC) was developed. The TOP processes and procedures in the TOPIC provide guidance for implementing and sustaining TOP services. Essentially, the TOPIC documents procedures necessary for BPA to carry out its TOP responsibilities as they relate to Customers' Bulk Electric System (BES) equipment. The TOPIC is available at the following location [[LINK](#)].

The TOPIC has been posted for a review/comment period – due April 28th.

Outreach & Next Steps:

- Documenting the TOP service BPA is providing, the annual TOP Service letters were sent out on March 30th. The TOP letter addresses BPA's compliance with NERC reliability standards as part of the BPA TOP Services project. Please note that the letter is in addition to and does not replace BPA's Annual System Review (ASR) letter.
- An all TOP Customer meeting will be scheduled in the 2018 summer timeframe. The meeting will be to discuss processes/procedures within the TOPIC and how they can be improved and discuss the coming year rates (cost allocation & cost reconciliation), changes in exhibits, and talk over any potential changes in BES equipment that would have impact on customers' equipment exhibit.

Industry News!

On February 26, the Bonneville Power Administration signed a letter of intent to explore receiving reliability coordinator (RC) services from the California Independent System Operator. CAISO announced in December that it would begin offering RC services outside of its footprint in September of 2019. The non-binding document enables BPA to participate in CAISO's stakeholder process as it forms its RC service, helping BPA to reduce potential seams issues between the federal transmission system and those transmission customers who use BPA's system to participate in that RC. BPA remains committed to exploring options with Peak to ensure the highest level of reliability while the Western Interconnection makes this transition.

Page *BPA Photo*



CSE Spotlight – Kevlyn Baker:

Kevlyn is one of many BPA’s Customer Service Engineer’s (CSE) located in Vancouver, WA. Kevlyn attended the University of Portland where she received an electrical engineering degree in 2010. Starting as an intern at BPA in 2008, Kevlyn worked in the Substation Design and Transmission Field Services organizations, after which she became a full time federal employee upon graduation.

Kevlyn is currently the CSE for Clark PUD, the US Army Corps of Engineers (USACE), the US Bureau of Reclamation (USBR) and has recently taken on the CSE role for PacifiCorp. Her other responsibilities have included: being the Subject Matter Expert (SME) for metering loss adjustments, Small Generation Interconnection lead, and Non-Tariff Project lead.

Kevlyn was recently recognized and received an award for, “Outstanding Individual Performance” from the USBR, USACE, and BPA Joint Operating Committee and was part of the team for the KX26A 500/230 kV Emergency Transformer Replacement project in 2017.

Kevlyn is also a member of the Reliability Implementation Technical Subcommittee (RITS) team which is a joint Federal Columbia River Power System (FCRPS) team that coordinates reliability issues impacted by the NERC reliability standards.

Congratulations Kevlyn on your 10 year anniversary with BPA!



2018 WECC Audit Schedule:

There a number of BPA customers currently listed on WECC’s 2018 audit schedule [\[LINK\]](#). CSRP stands ready to assist you with any compliance related documentation you may need. Please don’t hesitate to ask.

ASR Success!

BPA has completed all the Annual System Review (ASR) letters for the 2017 year! Thirty-one customers participated in the 2017 ASR process. The CSRP team would like to thank all the BPA customers and the many CSE’s involved in the process.

The ASR letter has been provided to customers since 2008, and has now become a smooth and seamless process due to the work and collaboration that takes place every year.

Due to the TOP Services BPA is now offering, one significant addition to this year’s letters is the Transmission Operator (TOP) requirements. These directly address language as it relates to the TOP services project and referenced by the TOP contract number.



Meet the Customer Service Reliability Team:

- Lorissa Jones – Program Supervisor
- Denise Koehn – Reliability Standard(s) Owner
- Ken Lanhome – Critical Infrastructure Protection POC
- Donna Fields – Maintenance & Ownership POC
- Tom Daufaul – Annual System Review Letter(s) POC
- Debbie Miller – Planning Coordinator POC
- Chris Higgins – Transmission Operator POC
- Megan Walden – Customer Contract Support POC
- Cain Braveheart – NERC Reliability Standard(s) POC
- Alesia Crisman – Program Support

APPENDIX: PNGC April Newsletter

PNGC Power Pulse

April 2018

Inside This Issue

- 1 Legislative Rally
- 2 Spill and HR 3144: What Now?
- 3 Employee Spotlight: Greg Mendonca
- 4 BPA Happenings
- 4 April 2018 Agenda
- 4 PNGC Peak
- 5 Mid C Pricing
- 5 Upcoming PNGC Events

Legislative Rally 2018

Each year, NRECA invites cooperative grassroots advocates to Washington, D.C. for the national trade association's annual Legislative Conference. This is a chance for directors, managers, and employees of member-owned electric cooperatives to come from across the country to spend time on Capitol Hill talking with elected officials and congressional staff about legislative priorities impacting electric cooperatives and their members. It is truly NRECA's grassroots strength that allows the co-op program to "punch above its political weight" in our nation's capital.

This year Beth Looney, PNGC Power President and CEO, and Ashely Slater, PNGC Power Vice President of Government Affairs and Policy, went to the April 8-10 rally, which was attended by 2,200 other cooperative advocates from across the country. Ashley and Beth used the two days to run between buildings trying to meet with as many offices as possible. "PNGC has service territory in seven states, so it's both fun and challenging to get a chance to meet with everyone's congressional delegations," Slater said.



Beth Looney and Ashley Slater

Looney and Slater used the Capitol Hill meetings as an opportunity to advocate for PNGC's member owners on a variety of federal policy issues related to the maintenance of reliable, low-cost, carbon free energy. This year was particularly exciting as PNGC staff successfully elevated a Northwest issue to national prominence. This year because of the significant groundwork laid by PNGC's government affairs and policy staff, NRECA agreed to include H.R. 3144 as one of only a handful of legislative priorities for the nationwide electric cooperative advocacy effort. Activating NRECA's grassroots in support of a regionally-focused legislative effort was a great boon for PNGC. It raised PNGC's national profile within the co-op program and puts the company front and center in the effort to protect a federal hydropower resource that has served as the region's economic backbone since the 1930s. H.R. 3144 is a federal science-backed legislative fix to forced spill at the federal dams, and a remedy that

*"Grassroots advocacy is
what we are all
about...that's our real
muscle"*



PNGC has been driving to combat court-ordered spill that is harmful to both utility ratepayers and Endangered Species Act salmon species. Slater tells the story of watching H.R. 3144 getting marked-up in the House Natural Resources Committee. "In fact, the Committee rearranged the schedule in order to mark-up H.R. 3144 when they did, to take advantage of the 2,200 rural electric cooperative advocates that were in Washington D.C. right then," Slater said. "We packed the hearing room and cheered when the bill passed out of Committee on a bi-partisan vote. It was pretty remarkable to see the cooperative grassroots in action."

Watching the progression of H.R. 3144 and its journey through the legislative process has also been remarkable, Slater went on. "Going from Beth's testimony in October 2017 to this vote in the House Natural Resources Committee demonstrates PNGC's political influence, strong relationships, and deep policy knowledge."

PNGC will continue to follow H.R. 3144 as well as our other legislative priorities. "Grassroots advocacy is what we are all about," Beth Looney said. "That's our real muscle."

Spill and H.R. 3144: What Now?

On April 2, The Ninth Circuit Court of Appeals panel decided in favor of additional spill for the Federal Columbia River Power System. This decision, which undercuts the best available federal science, creates a new multi-million dollar obligation for Northwest ratepayers, on top of the Fish and Wildlife mitigation program already in place, which currently accounts for about 1/3 of Bonneville Power Administration's (BPA) rates.

BPA issued a statement in response, "...we at BPA are committed to delivering on our vast public responsibilities through a commercially successful business. We are analyzing the full impacts of this court decision and we will make more information available in the coming weeks."

As you know, we have been following this story, and on April 11, H.R. 3144 passed out of the House Natural Resources Committee (reported above), which means that it may get a stand-alone vote on the House of Representatives floor. It may still be a long shot, and the opposition is ready to list reasons why this bill shouldn't pass. However, as our own Ashley Slater stated, "Let's prove them wrong: H.R. 3144 is pro-environment, protecting our largest source of carbon-free energy. It is for rural Americans who can no longer sustain double digit wholesale rate increases, not to mention 20 more years of litigation driven uncertainty. And, most importantly, it is to prove that dams and salmon can co-exist."

The battle is not over and we will continue to work with others in public power to shape and influence this conversation.

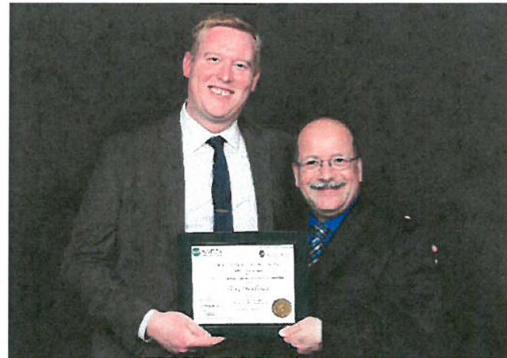
Employee Spotlight: Greg Mendonca

Greg Mendonca is PNGC Power's Vice President of Power Supply, and has been a part of the team for years. Starting in 2006 Greg has been a Real Time Trader (when PNGC had a 24 hour trading floor), a Resource Analyst, as well as the Manager of Term Planning, and the Manager of Resource Planning.

In his role as Vice President of Power Supply, Greg works on the Members' behalf on a variety of issues including the development of the integrated resource plan, current rate case issues, power purchase planning, new resource investigation, BPA issues, and so much more. "I wear many hats at PNGC, but that's because we deal with so many moving pieces," Greg said. "The power industry is constantly changing, and it's our mission to stay ahead of the curve by being informed and involved in power policy discussions and our future as a cooperative."

Greg came to PNGC with a wealth of education, obtaining his Bachelor of Arts in Accounting, as well as a Master of Business Administration, from Oregon State University. Recently, Greg completed an intensive program in electric utility management with the University of Wisconsin – Madison. The Robert I. Kabat Management Internship Program (known as MIP) is a series of educational workshops offered by the National Rural Electric Cooperative Association in conjunction with the University. The most exclusive educational programs in the nation for electric cooperative management, the program guides participants through all facets of the electric utility industry, including the many changes in the industry that are on the horizon. "The program was intense, but it really highlighted focusing on providing Member value as a part of day-to-day decision making," Greg said. "Well worth it!"

Greg lives in Portland with his wife, Jess, and their two young children, Cora and Miles.



Above: Greg receives his certificate of completion of the Robert I. Kabat Management Internship Program.

Below: Greg, his wife Jess, and their two children

BPA Happenings

April 20	Strengthening Financial Health: Leverage and Financial Reserves Policy
April 23	TC-20 Tariff Customer Workshop
April 24	BP-20 Rate Case Kickoff and Generation Inputs Workshop
April 24	Balancing Reserves Business Practice Review Meeting
April 24-25	Distributed Energy Resources Utility Cross-share
May 1	Quarterly Business Review
May 2	Commercial Business Process Improvement Customer Call

April 2018 Board Agenda

The following topics were covered during our April 3, 2018 Board meeting:

Information Session:

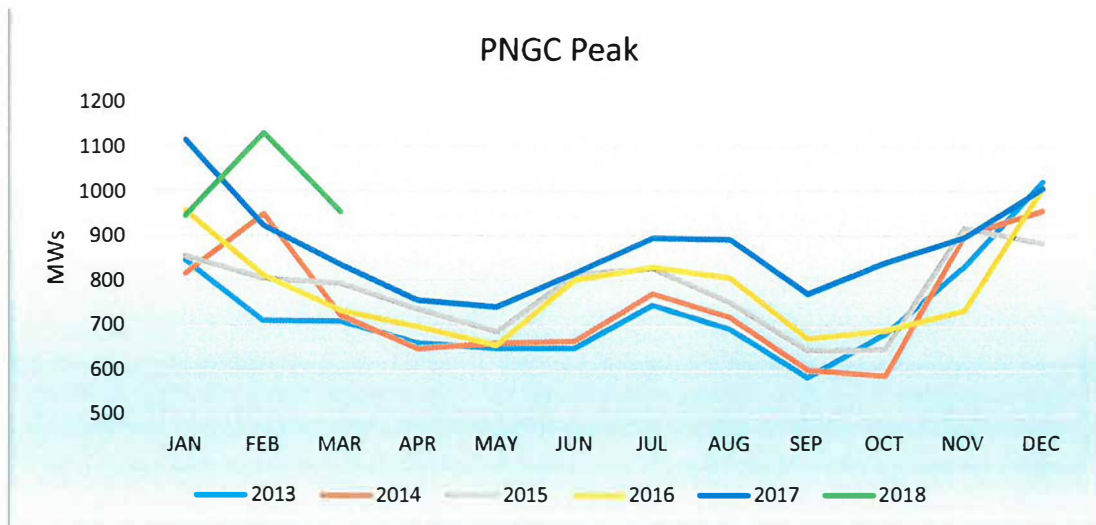
- Open Floor
- Guest Speakers: Brett Sims and Elaine Hart, PGE: "The Portland General Electric IRP Process"

Staff Reports:

- Guest Speakers: Christopher McKey and Jeff Atkinson, Energy West (UEC Consultant)
- Director Duties and Standards of Conduct
- PNGC Newsletter
- Government Affairs Update
- Load Forecast Update
- External Power Supply Considerations (Part 2)

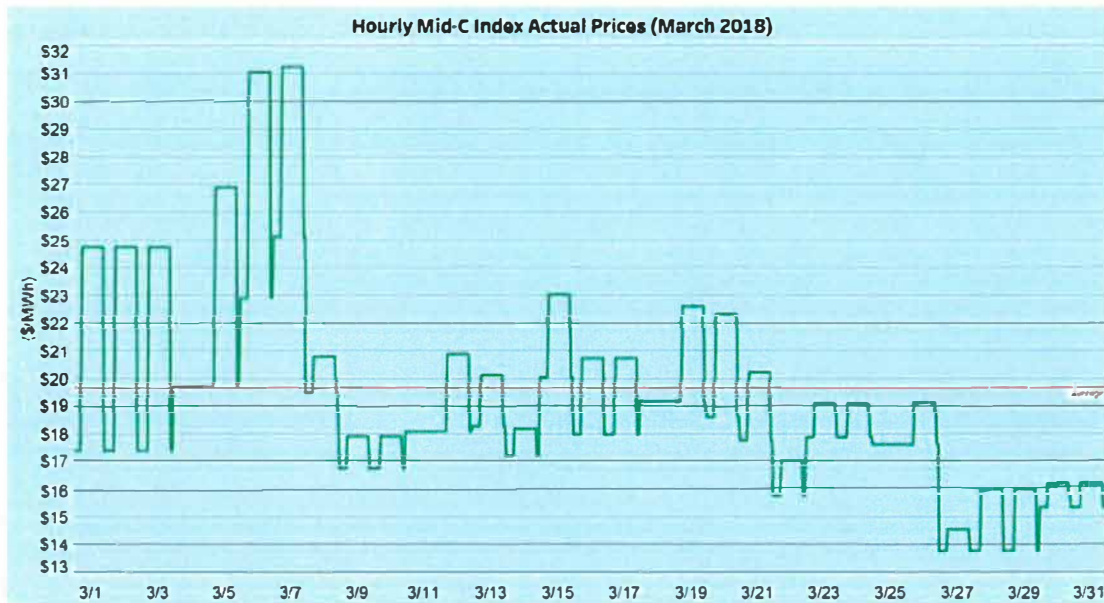
PNGC Peak by Month & Year

The graph below compares PNGC Power's peak demand by month for the last 5 years.



Mid-C Pricing

The graph below shows Mid-C Pricing for the month of March 2018



Upcoming PNGC Events

April 21	Blachly-Lane Annual Meeting
April 21	Umatilla Electric Annual Meeting
April 21	OPALCO Annual Meeting
April 30	Board Training with Tom Traynor (PNGC Offices)
May 1	PNGC Board Meeting (PNGC Offices)
May (3, 8, 10, 15, 17)	Lane Electric Annual Meetings
May 12	Northern Lights Annual Meeting
May 21-23	NWPPA Annual Meeting (Boise, ID)



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About PNGC Power

PNGC Power is a Portland-based electric generation and transmission (G & T) cooperative owned by 15 Northwest electric distribution cooperative utilities with service territory in seven western states (Oregon, Washington, Idaho, Montana, Utah, Nevada and Wyoming). The company creates value for its member systems by providing power supply, transmission, and other management services. PNGC Power is an aggregator of geographically diverse loads in the region.

APPENDIX: NRECA Article re Rock Island Communications

Technology Advisory

Broadband Case Study: Orcas Power and Light Cooperative & Rock Island Communications

Cooperative Profile

Orcas Power and Light Cooperative (OPALCO) provides electric service to approximately 12,000 members living and working in San Juan County, an area comprised of twenty islands off the coast of northwestern Washington State. Residents rely on island ferries for transportation. The cooperative buys power from Pacific Northwest Generating Cooperative, mainly supplied by Bonneville Power Administration, and delivers it via submarine cables connecting the islands. Given their unique topography, it is not surprising that these island communities face unique challenges with the delivery of electric power; however, access to reliable, high-speed telecommunications has proven to be even more problematic. A major wake-up call came in 2013 when a break in the islands' sole telecom provider's undersea fiber cable interrupted landline, data and cellular telephone communications, including 911 emergency service, for ten days.

To address these challenges and at the same time enhance its electric operations, OPALCO established a wholly-owned, for-profit subsidiary, Rock Island Communications, to build a broadband communications network that integrates fiber-optic and LTE wireless technology.¹ The network is designed to address public safety needs, support electric system operations, manage outage risks and help the island communities of San Juan County overcome their physical separation from the rest of the state, and their virtual separation from the rest of the world, with scalable, high-speed connectivity. The financial model and deployment methods successfully developed by Rock Island are unique enough (rural isolation, limited broadband service, and seasonal component) that other electric cooperatives with similar characteristics should consider trying to replicate them to raise their odds of success.

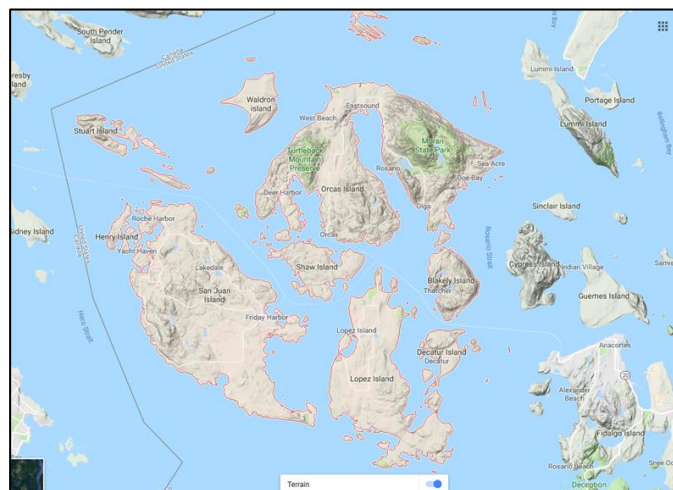


Figure 1. The islands of San Juan County, WA.
Map data ©2018 Google

¹ LTE is short for Long Term Evolution, a technology standard and upgrade path that enables higher wireless broadband speeds and capacity to keep pace with increasing demands.

Business Drivers of Broadband Investment

OPALCO's need to better communicate with its crews, electrical substations and submarine terminals was the main driver behind its investment in an expanded broadband telecommunications infrastructure. According to General Manager Foster Hildreth, the cooperative sees the world before and after the submarine cable break as two distinctly different eras. Management's perception after the catastrophic 2013 communications cable failure was that they could no longer rely on others to "deliver critical infrastructure and satisfy cooperative safety, quality, and service levels."

System operations and maintenance were not the only motivating factors, however. Another serious incident that had occurred a few months earlier lent support to OPALCO's decision to enhance communication coverage across the communities it serves. One of the co-op's linemen came into electrical contact with a high-voltage line while working in the field and was seriously burned. Fortunately, the crew was working in an area with just enough cellular coverage that the accident did not result in a fatality. The possibility of a less fortunate outcome in future incidents where communications coverage might be weak or nonexistent was not lost on the cooperative, for which safety is the highest priority.



Figure 2. Ferry serving San Juan Islands, WA.

Photo courtesy of ORCAS Power and Light Cooperative.

Project Overview and Deployment Approach

OPALCO was an early adopter of fiber as a utility solution to connect its offices and substations. In the early 2000s, OPALCO began providing access to its fiber network to public safety agencies, government entities, schools, and public libraries to help meet their connectivity needs. After the cable failure, studies focused on improving communications were performed to both enhance internal operations and provide more reliable, high-speed communications to the broader community. These culminated in a 2014 action plan that became the basis for the cooperative's broadband initiative. A key factor in moving forward was the co-op's approach to managing the financial risk of the project. OPALCO acquired Rock Island, the then-largest independent Internet Service Provider (ISP) operating in San Juan County, in an effort to expand customer base, "get closer to subscriber break-even targets right from the beginning," and provide start-up cash flow.² Rock Island Communications became the new "Rock Island."

For General Manager Hildreth, one central challenge stood in the way and had to be overcome. "Fiber network builds are very capital intensive and no matter how much demand for broadband services exists, they are inherently too slow to market. Add in the necessary, operational cash-burn for on-boarding and technical support efforts, and you have a recipe to get upside-down on your investment very quickly."

Rock Island took an approach to the upfront investment that centered on sharing the deployment risk with the communities to be served. The company devised a very fast method to map, design, and estimate the cost of fiber to every home in the county, with the ability to group homes into "fiber-hoods." This enabled organized groups such as homeowners' associations to understand the cost breakdown and how they could share middle-mile construction, while also seeing fiber-connection costs to each home. Rock Island offers an incentive of \$1,500 toward Last Mile construction with the balance payable by each subscriber. The more individuals a fiber-hood recruited to get onboard, the less each would need to pay, and this created a community-wide effort to engage and encourage higher levels of participation.

This fiber approach, along with the deployment of LTE fixed wireless in partnership with T-Mobile, delivered immediate cash-flow to the new Rock Island entity. The LTE network enabled a broader reach into the community, delivering faster speeds and better service levels than incumbent providers, which in turn allowed Rock Island to convert the customer base very quickly. It also provided a much-needed communication network for the first responder community — both voice and data.

² Rock Island had been operating in the area since 1996 with a robust customer base and cash flow, but primarily as a reseller of CenturyLink DSL. With its acquisition by OPALCO it became the core of the new Rock Island Communications.

Rock Island Communications by the Numbers

- 382 miles of fiber
 - 27.4 miles of overhead distribution fiber.
 - 142.4 miles of underground distribution fiber.
 - 212 Miles of Transport/Backbone
- 38 LTE Sites online/5 under construction
- 7 major fiber submarine crossings.
- 6 redundant long-range peer-to-peer (P2P) radio connections.
- 4,700 customers and growing (40% market share).
- 40 full-time employees
- 20 islands served
- 2 retail locations on two islands

Rock Island is now in its third year of building what it envisions to be a world-class, fiber-based hybrid (fiber to the home and LTE wireless) communications network encompassing San Juan County.

Broadband Business Case

It is difficult to fully quantify the internal and community-wide personal and business benefits of a reliable, high-speed system like Rock Island's. For the cooperative itself, expansion of fiber and the addition of 38 new LTE wireless sites throughout the service territory have improved safety and communication for crews in the field. The expanded network has also enabled greater automation of the electrical system through the use of intelligent devices that can now be monitored and controlled remotely. Hildreth states that the most practical means for judging Rock Island's investment in broadband is positive cash flow, which is expected to occur by mid-2018. He expects enhanced returns on the investment down the road, noting:

"It has given us a leap forward in preparing our grid to be able to incorporate more distributed energy resources and member devices on our system. One of the biggest challenges utilities will face in embracing more and more member renewables and devices will be the need for real-time, high-speed, two-way communications. OPALCO now has the ability to dynamically balance energy and voltage fluctuations as energy usage, intermittent generation and storage patterns evolve. This project provides us with the perfect platform to meet our current and future needs."

The capital cost of the Rock Island broadband initiative was on the order of \$25 million, with projected annual operating costs of \$3 to \$6 million by 2022. The project has been funded by operating revenue from customer subscriptions to the service, a loan/line of credit from CoBank and direct investment in construction build-

out by subscribers. Annual revenue was \$3.6 million in December 2017 with a target to generate \$8.7 million by 2022.

Rock Island has also been significantly aided by a parallel investment of equipment and expertise by T-Mobile. Gerry Lawlor, Executive Vice President of Rock Island, explains that OPALCO also looked into grant opportunities. However, he says the broadband buildout was “slightly late for Obama-era grants, given they were looking for shovel-ready projects.” Rock Island has fully repaid its initial borrowings from parent OPALCO and now funds itself directly via revenue and its line of credit with CoBank. Lawlor estimates that a conservative target for market penetration is 60 percent of San Juan County.

The cooperative also believes that the long-term economic development effects of broadband availability in San Juan County, while not easily quantifiable, will be significant. In recent surveys, 35 percent of seasonal residents (second homes account for roughly 40 percent of the total housing stock in San Juan County) reported spending more time and money in the county as a direct result of improved connectivity – and given the seasonal nature of the county’s economy, stable and reliable services during the compressed, revenue-generating season are a critical issue.



Figure 3. Rock Island Communications personnel pull fiber.

Network Architecture

The network relies on OPALCO’s Power Grid Control Backbone, the fiber network the co-op uses to manage its electrical system, as its core. The transport and distribution network is an active-Ethernet fiber-to-the-premise (FTTP) network supplemented by an LTE fixed wireless network for hard-to-reach locations. As of early this year, about 32 percent of Rock Island’s customers are served by FTTP and 53 percent are served via the LTE wireless, with the remaining 15 percent being served by legacy DSL and public wireless. Rock Island is providing its fiber-connected subscribers with 1Gbps (gigabits-per-second) service with the ability to increase to 10Gbps at every location on the fiber network.

The LTE network is a creative, long-term partnership between Rock Island and T-Mobile under which the partners share investment and capability, helping to address serious gaps in mobile voice and data coverage that have existed around the county and to improve public safety operations. The arrangement allows Rock Island to offer its customers a private LTE wireless solution in the home separate from T-Mobile's mobile service, even though the two use essentially the same wireless network. The significant benefit LTE has over other public spectrum Wi-Fi networks is its ability to propagate higher levels of throughput within a challenging topography, while maintaining higher levels of service. This partnership allows Rock Island to utilize low and mid-band spectrum and stay on the forefront of LTE technology as 4G and 5G networks advance. By 2020, Rock Island sites are expected to see 1Gbps-plus speeds over the LTE network as 5G (fifth generation) wireless technology is introduced.

Another aspect that has made broadband deployment successful is that Rock Island has full design/build control over the LTE sites themselves. Introducing LTE sites into an environmentally and aesthetically sensitive area like the islands of San Juan County is not a simple task, so creative site design is critical (see Figure 4). Feedback from the community has been extremely positive as the sites are well incorporated into the natural terrain, while still providing the level of coverage and performance required.

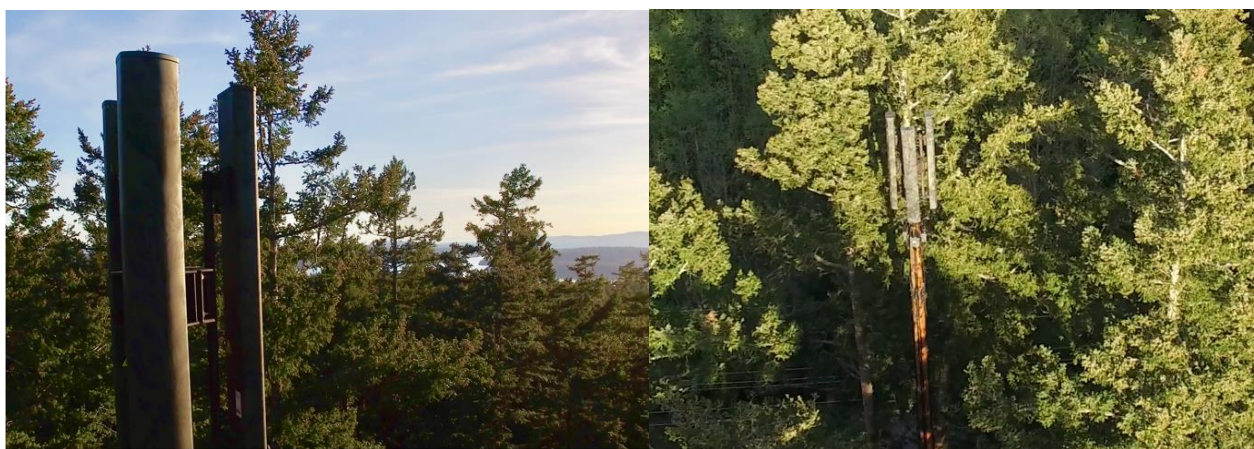


Figure 4. Sensitive Design of LTE Sites.

Broadband Business Model

Access to capital is often a key limiting factor in financing a broadband telecommunications infrastructure. Rock Island has adopted an innovative approach to financing that allows for phased build-out through sharing of middle-mile and last-mile construction costs. In essence, the approach "outsources" these costs to customers. Customer investments in construction under Rock Island's model has reached \$2.5 million to date with a steady stream continuing to support the fiber-build pipeline. Customer investments can be financed on a monthly basis through a local

lender. The decision to connect with Rock Island is reinforced once subscribers compare the monthly cost of their legacy-bundled Internet bill with an equivalent Rock Island high-speed service.

According to Hildreth, key elements of Rock Island's business model include:

- Anchoring the network with the electric co-op's existing fiber-optic backbone.
- Fiber-hoods equally sharing the cost for middle-mile build-out.
- Individual customers paying for last-mile connections alongside Rock Island's construction incentive.
- Focusing on public safety; coordination with first-responder agencies county-wide.
- Maintaining a wireless LTE Partnership with an expert technology company (T-Mobile).
- Establishing fast time-to-market and early revenues to minimize the need for start-up loans.

To make its shared-cost model work, the cooperative organizes customer groups and neighborhood associations into fiber-hoods to cover the cost of middle-mile buildout to their area, and then contracts with individual participants to cover the cost of fiber to their homes. Sites that are difficult to reach with fiber are served by the LTE wireless network. The benefit to Rock Island of such an approach is its relatively quick ramp-up in revenues, which enables deployment of the full network incrementally. In the company's view, this shared approach to investment and risk-taking addresses several critical factors for success:

- Determines real demand and priority for fiber.
- Individuals within each fiber-hood become the evangelists.
- Achieves higher take-rates within each fiber-hood (average 70%).
- Enables immediate deployment of service-level increases via the LTE Network.

Rock Island has become a full-service, retail telecommunications services provider covering broadband access, voice, co-location services, Internet hosting, email, and IT management. Moreover, the company is working with T-Mobile to begin offering TV service under its partner's Layer3^{tv} brand. The range of services being offered was developed partly as a result of Rock Island management constantly asking the questions, "How can we help the communities we serve?" and "Where can we support our business community?" It helps that Rock Island has an eye also toward the future. Hildreth readily expresses his belief that telemedicine will be key to the well-being of San Juan County residents.

Network Ownership and Operations

Ownership of the network is split between OPALCO and Rock Island — OPALCO owns the fiber backbone and Rock Island owns and operates all distribution fiber and LTE wireless sites. Rock Island Communications personnel manage the network for OPALCO up to the point where SCADA (Supervisory Control and Data Acquisition) devices are connected.

Regulatory Issues

Hildreth reports that no significant regulatory or tax issues have been encountered to date.

Market Setting

Prior to 2014, no sources of retail broadband communications with fiber speeds were available in San Juan County, according to OPALCO. The primary offering at the time was legacy DSL Internet access, augmented by limited cable and satellite.

CenturyLink is the primary alternative to Rock Island for communications services today. Rock Island is also a wholesale provider to three fairly small ISPs / cable companies operating in the local area.

Challenges and Surprises

- Rock Island initially experienced challenges implementing its customer-driven deployment strategy, e.g., organizing neighborhoods and groups. Its team has now mastered the routine of continuously processing fiber-hoods in its workflow.
- With 90 percent of the communications network being located underground in rocky terrain, deployment time and cost in the twenty islands that make up San Juan County are significantly higher than national averages. Adopting a shared-cost model for middle-mile and last-mile deployment helps to address this reality.
- OPALCO recognized that entry into a competitive business environment such as broadband communications through Rock Island would require a new team culture, a different attitude, and a “sales mentality.” Rock Island is now staffed by forty dedicated and talented people with a range of skills, reflecting technology, finance, marketing, and retail experience. The company considers its IT team, including its partners at T-Mobile, to be “top-notch.”
- One pleasant surprise — continuing demand for the services has exceeded expectations and this has had the side benefit of closing pre-existing gaps in cellular coverage throughout the communities served.

Why is this Case Important?

The cost-sharing approach Rock Island has adopted, whereby groups or associations are assembled to share the network's middle-mile deployment costs and individual homeowners or business operators pay last-mile costs, has numerous advantages over more conventional infrastructure investment models. In OPALCO's case, it is responsive to the high cost of deploying broadband. Put simply, the more people who share middle-mile costs, the lower the average group member's share becomes. There is something more fundamental going on here though. In Hildreth's words, Rock Island's approach transforms the narrative from "Let us sell you a service" to "Let's build this together." Indeed, customers have already funded about \$2.5 million of middle-mile investment to date.

Fundamental Ingredients for Success According to OPALCO

- Strong and vocal member support.
- A committed board of directors.
- Cooperative leadership that understands the importance of overlaying the power grid with fiber-optic communications to keep rates low as possible in the future.
- Members willing to help fund their individual broadband connections.
- The broadband entity's ability to generate revenue early from fixed wireless service.

Hildreth and Lawlor have expressed interest in working with other electric cooperatives to replicate their broadband expansion model. In Hildreth's view, the best fit for OPALCO's business model will be found by electric cooperatives that share the following four characteristics:

- There is a commitment to make fiber-optic improvements to the electrical grid.
- Access to commercial broadband is currently limited in the communities served and costs to deploy broadband are above the national average.
- Cooperative leadership has adopted a long-term approach to maintaining low rates and is concerned about public safety.
- Membership is willing and able to share in the cost of broadband deployment.

OPALCO's real-life experience with expansion of broadband access to homes and businesses in the remote areas in which it operates should be of significant interest to other electric cooperatives with similar challenges.

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