



## BOARD OF DIRECTORS REGULAR MEETING

Thursday, February 20, 2020 8:30 a.m.

OPALCO Friday Harbor Office

### TRAVEL

#### Via Ferry:

##### To:

Leave	Lopez	7:10 am	Arrive	FH	7:40 am
	Shaw	7:00 am			8:10 am
	Orcas	7:20 am			

##### Return:

Leave	FH	2:05 pm	Arrive	Orcas	2:55 pm
				Shaw	3:10 pm
				Lopez	3:30 pm

#### Via Air:

##### To:

Leave:	Lopez	7:45	Arrive	FH	8:00
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Return:	FH	2:30	Arrive	LZ	2:45
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#### Sequence of Events

- OPALCO Board meeting
- Executive Session

**Orcas Power & Light Cooperative**  
**Board of Directors**  
**Regular Board Meeting**  
**February 20, 2020 8:30 A.M.\***  
**OPALCO Friday Harbor Office**

*\*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.*

**WELCOME GUESTS/MEMBERS**

*Member 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 and decorum, consistent with Member Service Policy 17. If you would like answers to specific questions, please fill out Q&A card for post-meeting follow-up.*

**ACTION ITEMS**

- Consent Agenda
- EV School Bus Update
- Rural Energy Savings Program (RESP) – Fiber to the Premise (FTTP) Addition

**DISCUSSION ITEMS**

- Resource Inadequacy

**REPORTS**

- General Manager
- Rock Island Snapshot

**APPENDICES**

- None

**EXECUTIVE SESSION**

Legal, Personnel, and Competitive

**ADJOURNMENT**

## MEMORANDUM

February 14, 2020

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 – attached.
- **Approval of New Members** – attached {as required by Bylaws Article I Section 2 (d)}

### NEW MEMBERS – January 2020

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

1. Ackerman, Paul
2. Brasino, John
3. Cullinan, James E
4. Harris, Gregory
5. Island Barberia
6. Langley, Bourke J & Sala Langley, Kathleen
7. Mathisen, Heidi & Brauer, R Klaus
8. Payton, Jessica L
9. Prieto, Antonio
10. Sanchez, Constance J & Buchanan, Alan H
11. Smith, Rick

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

12. Ashcraft, William & Carol Lyn
13. Boes, Oz
14. Brown, Mason & Kussman, Laura
15. Carson, Tibellie & Kosoric, Nikola
16. Davoust, Marc-Antoine
17. Evans, Michael P
18. Gates, Lisa & Waldron, Charlie
19. Halabisky, Bruce & Loney, Tiffany

20. Ibsen, John & Rebecca
21. Immel, Michael K
22. Jurgens, Jonathan
23. Russell, Mary & Picard, Michael H

#### **District 3** (Lopez, Center, Decatur, Center, Charles)

24. Bailey, Nicole M
25. Hurst, Donald
26. Ivelia, Vince & Leslie
27. Jackson, Gregory & Carol
28. Keeler, Max
29. Nichols, Laine
30. Thomas, Glan & Leslie
31. Vinton, Ryan & Angela

#### **District 4** (Shaw, Crane, Canoe, Bell)

*None*

- **Capital Credit** payments to estates of deceased members and/or organizations no longer in business as shown below:

<b>February</b>	
<u>Customer #</u>	<u>Amount</u>
65159	1,069.96
72385	620.57
68804	583.54
66169	650.58
64083	810.69
61767	71.63
689	1,043.77
68914	508.13
28220	43.49
5551	1,861.42
68714	2,674.80
64850	208.95
95459	40.66
61682	223.29
14878	1,846.88
31990	396.93
62613	2,043.12
66652	726.39
65979	833.45
34910	1,129.90
25300	672.80
65895	2,043.64
1100	4,265.56
<b>Total</b>	<b>\$ 24,370.15</b>

- **RUS 219s** *Inventory of Work Orders* of projects completed from the Construction Work Plan totaling \$727,779.52. These forms are submitted to RUS for approval of loan funds.
  - Inventory 201912 - \$696,221.61 for system protection and conversion projects.
  - Inventory AS1912 - \$31,557.91 for projects associated with system improvements.

Staff requests a motion to approve the Consent Agenda.



**Orcas Power & Light Cooperative**

**Minutes of the Board of Directors Meeting  
Thursday, January 23, 2020**

President Vince Dauciunas called the meeting to order at 8:20 a.m. at the Lopez Family Resource Center. Board members present were Vince Dauciunas, Mark Madsen, Jerry Whitfield, Jeffrey Struthers, Rick Christmas and Brian Silverstein. Peter Garlock attended via Zoom. Staff present were General Manager Foster Hildreth, Manager of Engineering and Operations Russell Guerry, Manager of Finance and Member Services Nancy Loomis, Public Relations Administrator Suzanne Olson, and Executive Assistant Kelly Koral (serving as recording secretary).

**Members/Guests**

Scott Finley	Ande Finley	Sharon Abreu	Chuck Schietinger
Michael Hurwicz	Deborah Giles	Cathleen Burns	Connie Holz
Valerie Yates	Jim Blomquist	Marguerite Greening	Heather Nicholson
Chom Greacen	Sandy Bishop	Jeff Dyer	Nathan Donnelly
Chris Greacen			

**MEMBER COMMENTS**

The members each had time to express their interests/concerns regarding Resolution 2-2019. Each Board member then commented on their position on whether or not to rescind the resolution. The Board concluded discussion with a statement of appreciation for member participation and emphasized their continuing concern about resource inadequacy in the region.

- **Motion** was made to rescind Resolution 2-2019 and to consider member input going forward. Motion seconded and carried by voice vote.

Break 10:15 – 10:33

**CONSENT AGENDA**

- **Motion** was made and seconded to approve Consent Agenda, including December 19, 2019 minutes, new members as listed with the Board materials, capital credit payments totaling \$4,150.69 and RUS 219s totaling \$205,771.70. Motion carried by voice vote.

**GENERAL MANGER**

General Manager's report was reviewed including 2019 Year in Review and review of the low income program. The PAL program is now being administered by the Family Resource Centers on the various islands. Barbara Schultheiss, Executive Director of the Lopez Family Resource Center joined the meeting to share the challenges of running the Center and how much she appreciates being able to assist upwards of 800 people with the PAL and EAP.

**EXECUTIVE SESSION 11:30 – 12:30**

The GM evaluation was conducted.

**ADJOURNMENT**

Meeting was adjourned at 12:45 p.m.

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Vince Dauciunas, President

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Brian Silverstein, Secretary-Treasurer

02/04/2020 12:22:20 pm

Page: 2

## RUS Form 219 Inventory Of Work Orders

Period: DEC 2019

System Designation: WA O9

Inventory: 201912

Loan		Work Order		Bdgt (3)	Gross Funds Required		Deductions		Contrib In Aid Of Constr and Previous Advances (8)	Loan Funds Subject To Advance By RUS (9)
					Cost Of Construction: New Constr Or Replacements (4)	Cost Of Removal: New Constr Or Replacements (5)	Salvage Relating To New Construction Or Replacements (6)	Retirements Without Replacements (7)		
Project	Year	Construction (1)	Retirement (2)							
0000	2018	3315	3315	1	0.00	0.00	0.00	-114.17	0.00	114.17
					0.00	0.00	0.00	-114.17	0.00	114.17
316	2018	2303		1	724,330.71	0.00	0.00	0.00	0.00	651,309.54
								AFUDC: 73,021.17		
					724,330.71	0.00	0.00	0.00	0.00	651,309.54
603	2018	3230	3230	1	44,175.48	944.59	57.30	0.00	0.00	44,797.90
								AFUDC: 264.87		
					44,175.48	944.59	57.30	0.00	0.00	44,797.90
<b>Grand Totals:</b>					\$ 768,506.19	\$ 944.59	\$ 57.30	\$ -114.17	\$ 0.00	\$ 696,221.61

02/04/2020 12:22:20 pm

Page: 3

# RUS Form 219 Inventory Of Work Orders

Period: DEC 2019                      System Designation: WA O9

Inventory: AS1912

Loan		Work Order		Bdgt (3)	Gross Funds Required		Deductions		Contrib In Aid Of Constr and Previous Advances (8)	Loan Funds Subject To Advance By RUS (9)
					Cost Of Construction: New Constr Or Replacements (4)	Cost Of Removal: New Constr Or Replacements (5)	Salvage Relating To New Construction Or Replacements (6)	Retirements Without Replacements (7)		
Project	Year	Construction (1)	Retirement (2)							
1600	2018 3128			1	31,975.07	0.00	0.00	0.00	0.00	31,557.91
								AFUDC: 417.16		
					31,975.07	0.00	0.00	0.00	0.00	31,557.91
<b>Grand Totals:</b>					\$ 31,975.07	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 31,557.91

Minor Construction Work Orders

Work Order: 3128 - REROUTE EXISTING 3-PH AROUND NEW FIELD PROJECT

02/04/2020 12:22:20 pm

Page: 5

## RUS Form 219 Inventory Of Work Orders

Period: DEC 2019

System Designation: WA O9

Inventory : 201912

## Budget

Loan	Project	Amount
1	0000	114.17
1	316	651,309.54
1	603	44,797.90
<b>Total:</b>		696,221.61

**BORROWER CERTIFICATION**

WE CERTIFY THAT THE COSTS OF CONSTRUCTION SHOWN ARE THE ACTUAL COSTS AND ARE REFLECTED IN THE GENERAL ACCOUNTING RECORDS. WE FURTHER CERTIFY THAT FUNDS REPRESENTED BY ADVANCES REQUESTED HAVE BEEN EXPENDED IN ACCORDANCE WITH THE PURPOSES ON THE LOAN, THE PROVISIONS OF THE LOAN CONTRACT AND MORTGAGE, RUS BULLETINS, AND THE CODE OF FEDERAL REGULATIONS RELATIVE TO THE ADVANCE OF FUNDS FOR WORK ORDER PURPOSES. WE CERTIFY THAT NO FUNDS ARE BEING REQUESTED FOR REIMBURSEMENT OF CONSTRUCTION WORK IN A CBRA AREA.

\_\_\_\_\_  
SIGNATURE (MANAGER)\_\_\_\_\_  
DATE\_\_\_\_\_  
SIGNATURE (BOARD APPROVAL)\_\_\_\_\_  
DATE**ENGINEERING CERTIFICATION**

I HEREBY CERTIFY THAT SUFFICIENT INSPECTION HAS BEEN MADE OF THE CONSTRUCTION REPORTED BY THIS INVENTORY TO GIVE ME REASONABLE ASSURANCE THAT THE CONSTRUCTION COMPLIES WITH APPLICABLE SPECIFICATIONS AND STANDARDS AND MEETS APPROPRIATE CODE REQUIREMENTS AS TO STRENGTH AND SAFETY. THIS CERTIFICATION IS IN ACCORDANCE WITH ACCEPTABLE ENGINEERING PRACTICE.

\_\_\_\_\_  
INSPECTION PERFORMED BY\_\_\_\_\_  
FIRM\_\_\_\_\_  
LICENSE NUMBER\_\_\_\_\_  
DATE\_\_\_\_\_  
SIGNATURE OF LICENSED ENGINEER

02/04/2020 12:22:20 pm

Page: 6

## RUS Form 219 Inventory Of Work Orders

Period: DEC 2019

System Designation: WA O9

Inventory : AS1912

## Budget

Loan	Project	Amount
1	1600	31,557.91
<b>Total:</b>		31,557.91

**ENVIRONMENTAL CERTIFICATION**

- 1 ☐ WE CERTIFY THAT CONSTRUCTION REPORTED ON THE LISTED WORK ORDERS (EXCEPT CERTIFICATION "2" BELOW), IS A CATEGORICAL EXCLUSION OF A TYPE DESCRIBED IN 7 CFR 1970 WHICH NORMALLY DOES NOT REQUIRE PREPARATION OF A BORROWER'S ENVIRONMENTAL REPORT.
- 2 ☐ WE CERTIFY THAT CONSTRUCTION REPORTED ON WORK ORDERS \_\_\_\_\_, IS A CATEGORICAL EXCLUSION OF A TYPE THAT NORMALLY REQUIRES A BORROWER'S ENVIRONMENTAL REPORT WHICH IS ATTACHED.

SIGNATURE (MANAGER)

DATE

**BORROWER CERTIFICATION**

WE CERTIFY THAT THE COSTS OF CONSTRUCTION SHOWN ARE THE ACTUAL COSTS AND ARE REFLECTED IN THE GENERAL ACCOUNTING RECORDS. WE FURTHER CERTIFY THAT FUNDS REPRESENTED BY ADVANCES REQUESTED HAVE BEEN EXPENDED IN ACCORDANCE WITH THE PURPOSES ON THE LOAN, THE PROVISIONS OF THE LOAN CONTRACT AND MORTGAGE, RUS BULLETINS, AND THE CODE OF FEDERAL REGULATIONS RELATIVE TO THE ADVANCE OF FUNDS FOR WORK ORDER PURPOSES. WE CERTIFY THAT NO FUNDS ARE BEING REQUESTED FOR REIMBURSEMENT OF CONSTRUCTION WORK IN A CBRA AREA.

SIGNATURE (MANAGER)

DATE

SIGNATURE (BOARD APPROVAL)

DATE

**ENGINEERING CERTIFICATION**

I HEREBY CERTIFY THAT SUFFICIENT INSPECTION HAS BEEN MADE OF THE CONSTRUCTION REPORTED BY THIS INVENTORY TO GIVE ME REASONABLE ASSURANCE THAT THE CONSTRUCTION COMPLIES WITH APPLICABLE SPECIFICATIONS AND STANDARDS AND MEETS APPROPRIATE CODE REQUIREMENTS AS TO STRENGTH AND SAFETY. THIS CERTIFICATION IS IN ACCORDANCE WITH ACCEPTABLE ENGINEERING PRACTICE.

INSPECTION PERFORMED BY

FIRM

LICENSE NUMBER

DATE

SIGNATURE OF LICENSED ENGINEER

## MEMORANDUM

February 14, 2020

TO: Board of Directors

FROM: Foster Hildreth

RE: Electric School Bus Charging Stations

Staff has been moving forward with schools on both Lopez and Orcas to assist in funding and construction of charging equipment for electric school buses in their respective districts. Staff is encouraging San Juan School District to do the same.

OPALCO sees the value in supporting pilot vehicle electrification projects like these for future generations. The schools are encouraged to install charging infrastructure which can be expanded for future bus purchases and controlled for demand response and peak shaving purposes.

At our December meeting, the Board approved the use of Restricted Funds totaling \$40k for the capital costs of the connection infrastructure. After meeting with both Lopez and Orcas School District representatives to understand the service requirements for connectivity, the capital cost for interconnection of the charging infrastructure is estimated at \$50k per installation, for a total of \$100k for both schools. This includes all primary electrical facilities, communications, the interconnection transformer, and interconnection metering (grid connection costs only).

Staff will work with all the school districts as they migrate to vehicle electrification. Note, the grant submittals and associated costs are preliminary, and staff will work with the school districts to ensure success of the project. Staff is also hoping to integrate these charging stations as one component of future demand response and outage mitigation.

Staff recommends a motion for assisting school bus electrification in the County not to exceed \$100k without further Board approval.

## MEMORANDUM

February 14, 2020

TO: Board of Directors

FROM: Foster Hildreth

RE: Rural Energy Savings Program (RESP) - Fiber to the Premise (FTTP)

RUS has approved the addition of a key new measure: FTTP! FTTP is a requisite foundation for energy efficiency measures we have forecast for the future.

In September, the Board passed Resolution 3-2019 in support of RESP 2.0 and the RUS approved OPALCO for another \$15M in funding (at 0% interest) for our Switch it Up! program in addition to the \$5.8M awarded through RESP 1.0. The RESP 2.0 application included an expanded list of possible measures for member efficiency gains through the program, to be implemented over time. One of the largest barriers to embracing energy efficiency, conservation measures, renewable energy and smart grid technology is having a “real-time” communication platform to allow smart devices to be connected, monitored and controlled. FTTP will increase our members’ readiness for cost-saving connected (smart) devices in the home: appliances, programmable thermostats, remote control of dispatchable resources such as water heaters, heat pumps, electric vehicle charging, and smart inverters. Each measure that we add will meet the test of a durable and cost-effective energy efficiency improvement that will remove barriers to entry for our membership, save money on energy costs, help prepare our members for the coming transactive power landscape - and reduce carbon emissions in our service territory.

Every FTTP measure approved through the Switch it Up! program will be paired with an efficiency measure or smart device to increase efficiency, awareness and/or member control of energy use. The FTTP measure will be available using funds from RESP 1.0 and RESP 2.0 totaling \$20.8M.

OPALCO is positioned to provide this service in partnership with our wholly owned subsidiary, Rock Island Communications. Rock Island was originally set-up in 2015 to assist our members connect to the internet via a combination of wireless and fiber deployments and we have reached many of our deployment targets. However, we now realize the important role “real-time” FTTP communication systems play to achieve energy efficiency and conservation goals. Rock Island already has the technical expertise and staff capacity to get FTTP installed quickly, and to help connect/install smart devices in member homes. Staff is working with legal counsel to ensure compliance in all practices and procedures including implementation with Rock Island.

The updated list of measures available through RESP/Switch it Up! would be:

1. Ductless Heat Pumps
2. Heat Pump Water Heaters
3. EV Chargers
4. **FTTP - NEW FOR 2020**

Staff recommends the Board approve adding FTTP to the list of measures available through our Switch it Up! program.



## MEMORANDUM

February 14, 2020

TO: Board of Directors

FROM: Foster Hildreth

RE: Navigating Resource Inadequacy

The whole OPALCO community must keep a strong focus on where our reliable power is going to come from. We will continue to take action toward a sustainable energy future and strengthen the health and resilience of our cooperative. New information and studies will continue to be released and we must keep our eye on the ball to stay on top of the new regulatory and environmental realities.

OPALCO is strongly committed to carbon reduction. However, the realities of climate change and carbon reduction legislation are putting greater pressure on our ability to provide reliable and affordable power with serious implications for cost and resource adequacies.

### Reality Check:

- The Pacific Northwest (PNW) region is facing a deficit of up to 35k gigawatt hours of power generation loss solely from the decommissioning of coal plants. This doesn't include the new demand from electrification of heating and transportation or increase demand for clean sources from utilities like Puget Sound Energy (PSE).
- Natural gas and hydro power have been the market go-to resource for firming intermittent wind and solar in the region.
- However, carbon reduction legislation (Clean Energy Transformation Act (CETA), cap and trade, etc.) is now imposing constraints and penalties on the use of fossil fuels as a firming agent. Investing in new Natural Gas (NG) generation is losing feasibility.
- Industry experts (e3 and others) are predicting loss of load probability (black outs) on an increasing basis given capacity constraints and climate change.

- Where is our power going to come from? When the sun doesn't shine and the wind doesn't blow, PNW utilities are going to be hard pressed to gather (and pay for) the resources they need to provide reliable power to their consumers.

#### Collaboration Building:

NWEC: In January, the Board rescinded Resolution 2-2019 (Lower Snake River Dams (LSRD)), but our concerns about the availability of reliable energy resources in the region remain. Staff have been actively engaging with the community to begin the discussion of how we will build our energy future including meetings with NW Energy Coalition (NWEC), Orcas Women's Coalition Energy Action Team (OWC) and a presentation at the February board meeting of the Pacific NW Generating Cooperative (PNGC). In every discussion, we find common ground in our concerns where our community will get reliable energy in the future.

Staff met with the Northwest Energy Coalition (NWEC) (via video conferencing) on Friday, January 10<sup>th</sup> P to discuss technical aspects of the NWEC report on replacing the energy resources of the Lower Snake River Dams. As a result, there was a greater mutual understanding, while acknowledging areas of disagreement: primarily the limitations of applying NWEC's narrowly focused report as a solution for the exponentially more complex big picture of resource replacement in the region. However, our areas of agreement were significant:

- Resource adequacy and reliability are a top priority.
- NW hydro system is the backbone of the energy system in the northwest, even without the LSRD.
- In our region, resource inadequacy is real – there are important questions to answer.
- Demand Response (DR), Energy Efficiency and Conservation (EE&C) are important.
- Mutual respect for BPA's role in balancing and firming renewable resources.
- All committed to the importance of engaging with all audiences on these critical issues.

OWC: OPALCO then met with OWC to go into depth on the challenges of resource inadequacy. Discussion focused on OPALCO's plan for our energy future. Questions included consideration of other resources such as hydrogen, conservation and tidal; the need for broad communication and human-centered story telling for real behavioral changes; how OPALCO collaborates with policy makers and the need for systemic change in building codes, permitting and law making in concert with the County Comp Plan vision. Everyone in the room expressed their willingness to collaborate on solutions for a healthy, reliable, energy future.

PNGC: Vince Dauciunas and Foster Hildreth made a presentation to the Board of PNGC on February 4<sup>th</sup> regarding the topic of Resource Inadequacy in the region. As PNGC member co-ops complete their Integrated Resource Plans, PNGC is consolidating their plans into a vision for where and how to provide the power resources necessary to meet the aggregate demand. Resource inadequacy is the fundamental driver for how any and all of us will meet the power needs of their constituencies.

Next Steps:

The annual meeting (April 18<sup>th</sup>) will be the launch of OPALCO's 20/20 Vision campaign and the start of our targeted efforts to engage and educate our members about our plan (Integrated Resource Plan (IRP)) to position our Co-op for a healthy and sustainable energy future. The communications strategy includes all the usual channels with additional layers of outreach and member meetings to bring more people to the table for broad dialogue, collaboration and ownership in our energy future.

For further insights, please see the Resource Inadequacy and OPALCO's Vision for Power (IRP) quick facts in our growing library online:

<https://www.opalco.com/newsroom/quick-facts/>.

Attached please find a draft of the Resource Inadequacy presentation that staff will be reviewing at the Board meeting.

# RESOURCE INADEQUACY

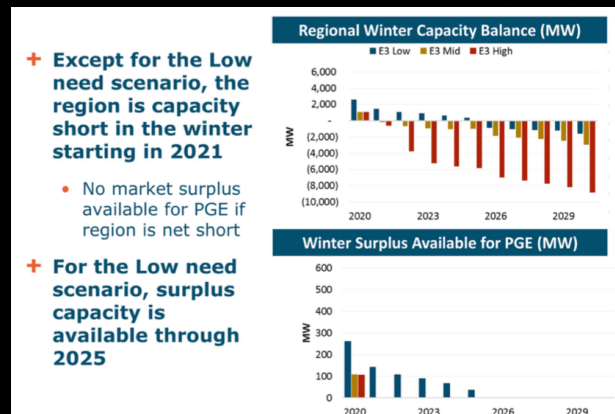
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OPALCO

Board Meeting  
February 2020

# Resource Inadequacy Overview

- **Capacity shortfall is imminent.** Industry experts (e3 and others) are predicting loss of load probability (black outs) on an increasing basis given capacity constraints and climate change.
- The Northwest will **need new capacity in the near term** to maintain an acceptable level of Resource Adequacy after 35 TWhr/yr planned coal retirements
- **Firm capacity is needed** to meet the new paradigm of reliability planning under deep decarbonization
- **CETA precludes using natural gas** for firming intermittent wind and solar in the region
- Renewable overbuild is the most economical solution to completely replace carbon-emitting resources but requires a 2x buildout that results in **curtailment of almost half of all wind and solar production**
- **Electricity system must be designed to withstand prolonged periods of low renewable production** once storage has depleted

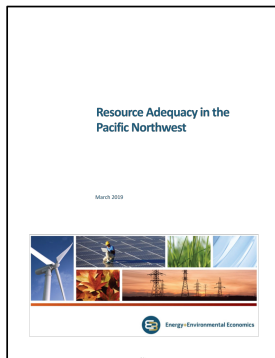


## NWPCC



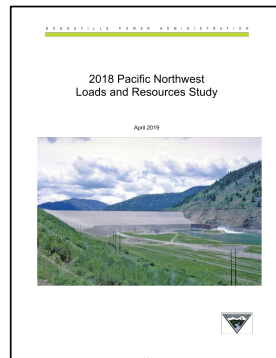
Feb 2016

## E3



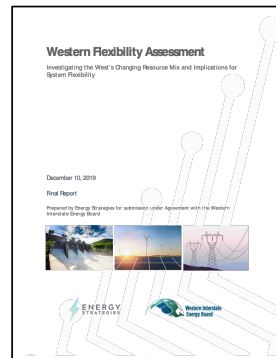
Mar 2019

## BPA



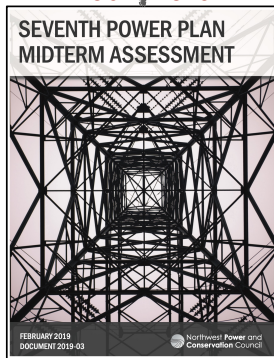
Apr 2019

## Energy Strategies



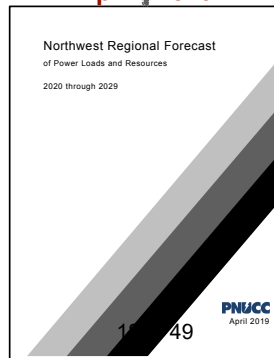
Dec 2019

Feb 2019



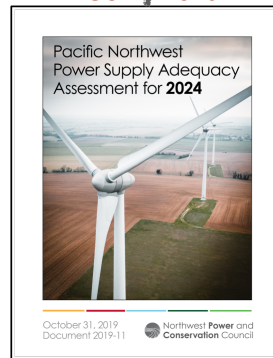
BPA

Apr 2019



PNUCC

Oct 2019



NWPCC

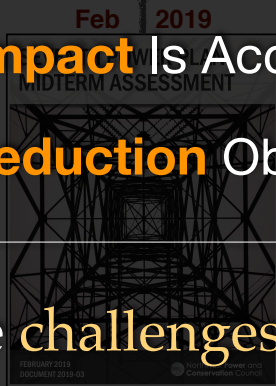
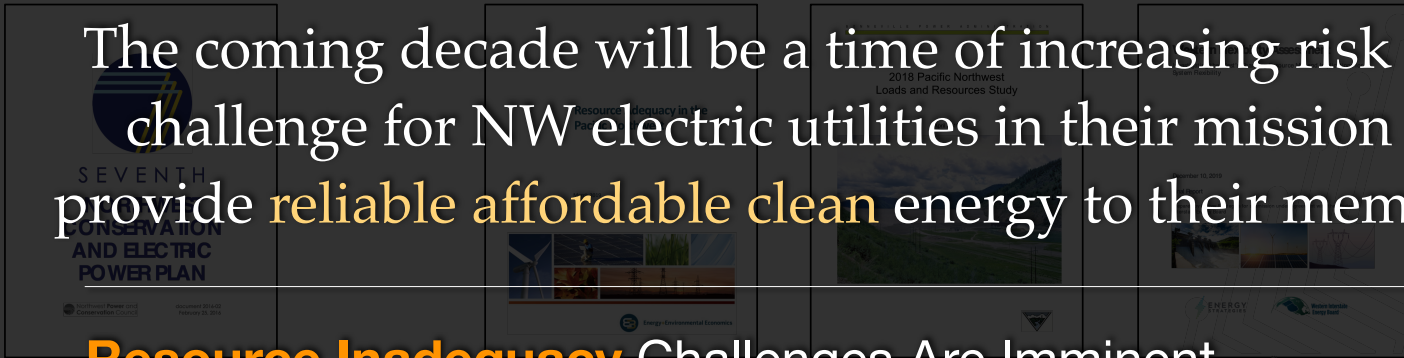
The coming decade will be a time of increasing risk and challenge for NW electric utilities in their mission to provide **reliable affordable clean** energy to their members.

**Resource Inadequacy** Challenges Are Imminent

**Climate Impact** Is Accelerating

**Carbon Reduction** Objectives Are Clear, But No Plan/Funding

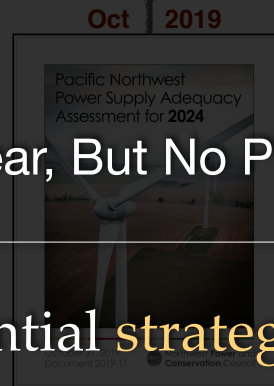
What are the **challenges** and our potential **strategic responses**?



BPA

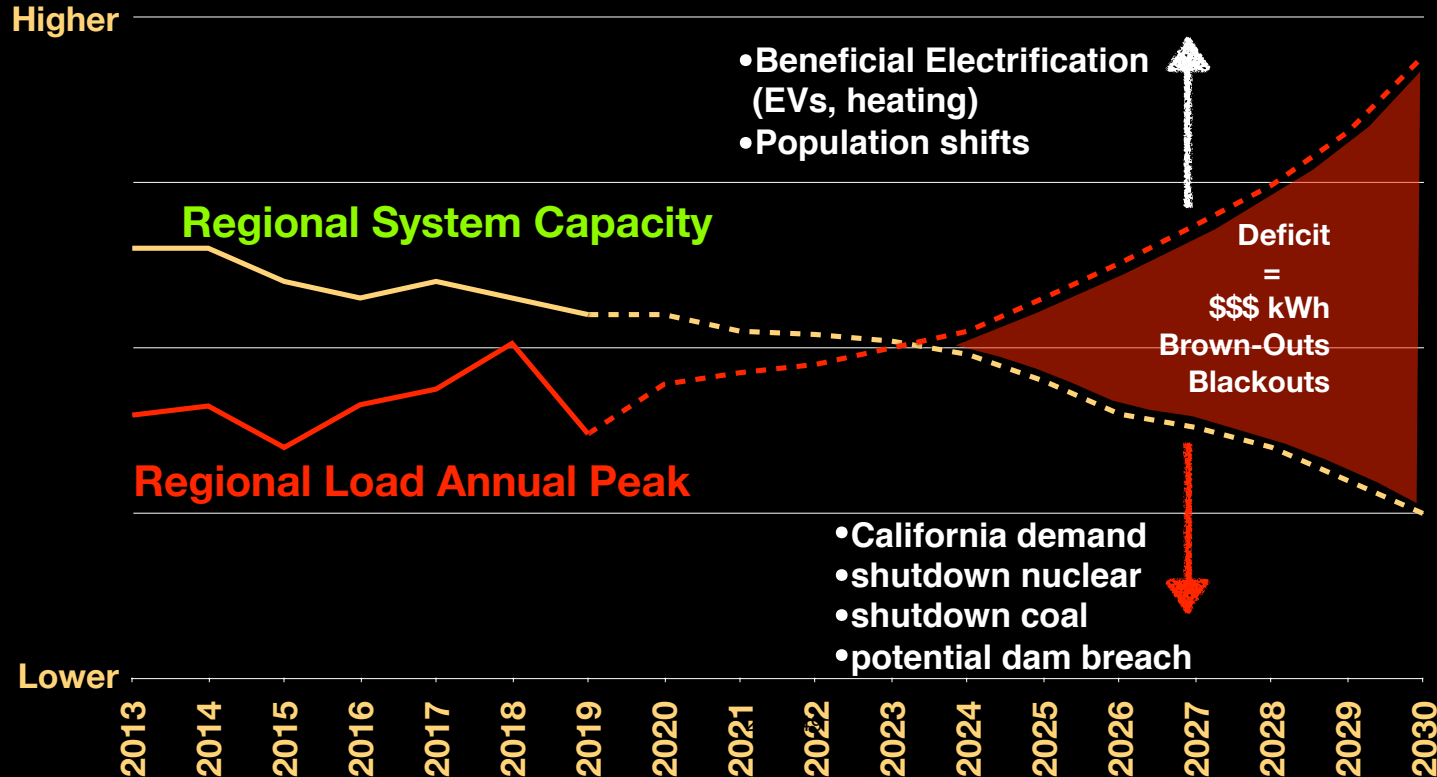


PNUEC



NWPPCC

# NW Energy Capacity is Declining, Load is Increasing





# Challenge: Resource Inadequacy

- Increasing **Load**
  - Electrification of heating and transportation
  - Regional growth
  - Underwhelming DR and EE&C
- Decreasing **Capacity**
  - Carbon reduction legislation
  - Accelerating coal plant retirement
  - Increased spill
  - Reduced capacity factor of wind/solar in our region
  - Potential dam removal

*Load*

# Overview: Load

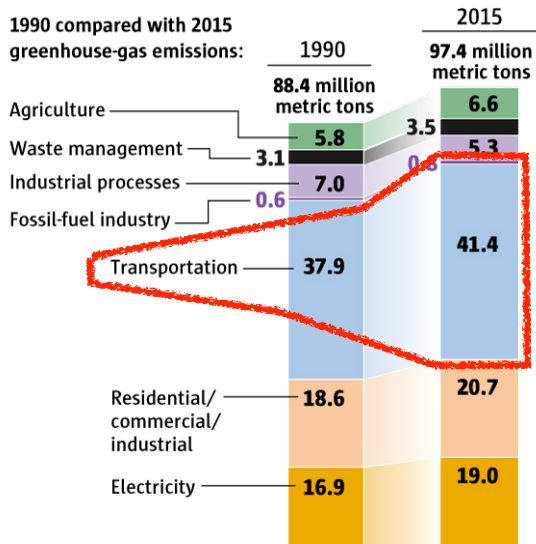
- **7th Power Plan Mid-Term Assessment:** Significantly reduced expected energy savings, Demand Response (DR) and resources
- **Load Growth:** Assumptions for electrification of transportation and heating underestimated

# Electrification of Transportation in WA

## Washington state emissions in millions of metric tons

The amount of total greenhouse-gas emissions was calculated using a measurement called the carbon dioxide equivalent, which takes into account the heat-trapping ability and impacts of various greenhouse gases.

1990 compared with 2015  
greenhouse-gas emissions:

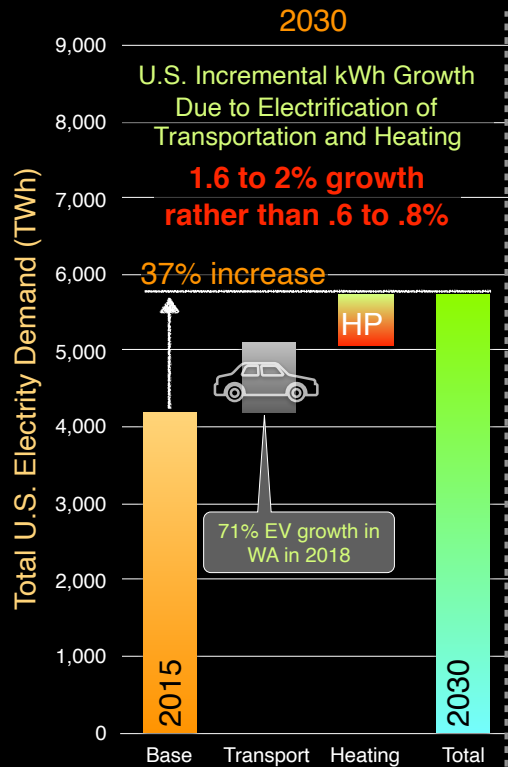


Source: Washington state Department of Ecology

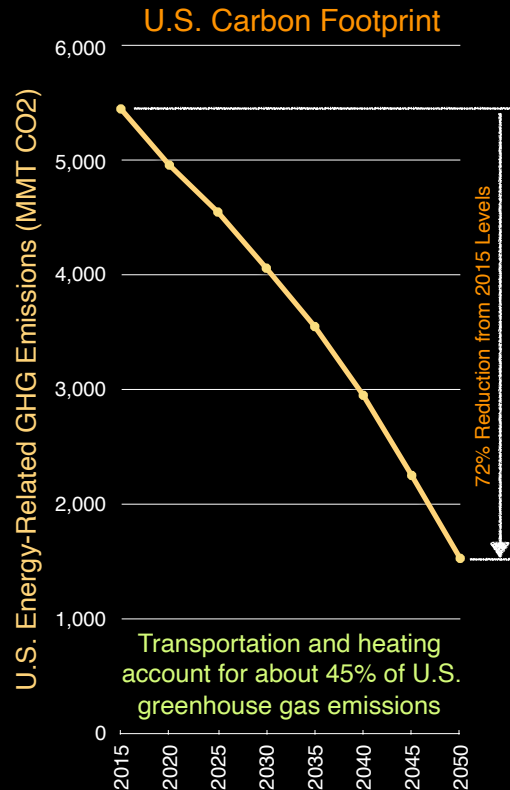
## Observations

- Transportation is the largest use of energy in the home (over 50%).
- Transportation is by far the largest source of GHG emissions in WA.
- There are currently 43,000 EVs and PHEVs in WA, growing at 71% per year.
- EVs are expected to hit capital cost parity in 2022, with EV ownership accelerating through the rest of the decade.
- Pending WA 2030 Electrification Mandate - all new vehicles under 10,000 pounds sold in WA to be electric after 2030

# Electrification of Transportation in WA



**Results**



# Resource Inadequacy Strategy: Load

- Increasing Load
  - Electrification of heating and transportation
    - Significant new H&T revenue can be used to fund new resources
  - Regional growth
    - California examples: e.g. rooftop solar on all new construction, TOU rates, dispatchable load, use hydro to firm solar/wind
  - Underwhelming DR and EE&C
    - Emphasis on dispatchable load

# *Capacity*

# Overview: Capacity Topics

- **CETA**: CETA affects capacity planning in an as yet unknown way. How does this effect capacity and LSRD replacement requirements and roadmap?
- **Natural Gas**: With CETA, new NG resources are unlikely, requiring more expensive firming options and rethinking balance and dispatch of hydro and batteries.
- **Firm Energy Resources are Declining**: being replaced by intermittent solar and wind that need firm energy to function
- **Spill**: How much will it reduce capacity?
- **Capacity Factor**: Wind/Solar capacity factors in NW require significant over-building and expense.
- **Coal plant retirements**: 35,000 GWh by 2028
- **Timeline**: What is the roadmap?
- **Cost**: What is the cost? Funding sources?

Figure 1. Cumulative Energy Impact of Retirements of Coal-Fired Generation Owned or Contracted by PNW Utilities (2020-2028) and Range of LSRD Annual Energy Production

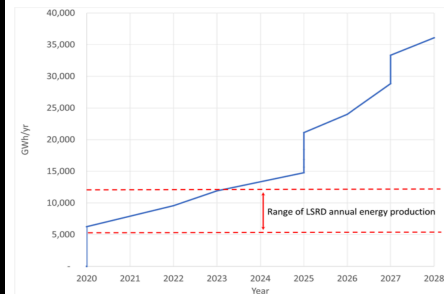


Table 13 Curtailment of wind generation (annual MWh)

Water Condition	Nameplate Wind		
	800 MW	1,000 MW	1,200 MW
Average (2009)	738 MWh	8,755 MWh	46,342 MWh
Low (2004)	204 MWh	3,494 MWh	29,574 MWh
High (2006)	890 MWh	12,519 MWh	61,557 MWh
Average	611 MWh	8,256 MWh	46,691 MWh

Figure 9 illustrates the projected exponential increase in curtailment as a function of the wind penetration level.

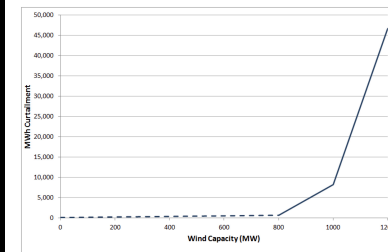


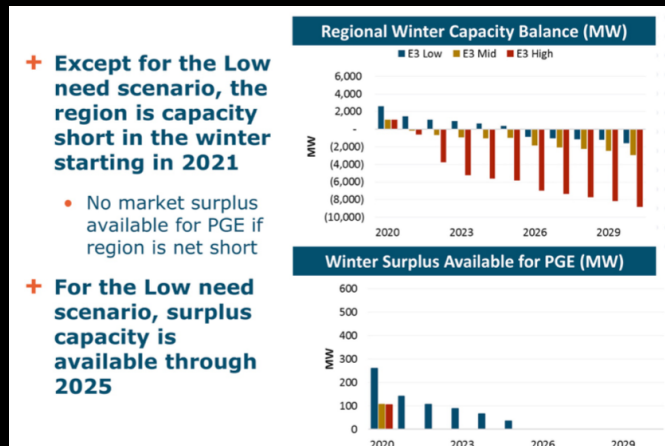
Figure 9 Curtailment of wind generation (average annual MWh)



# Resource Adequacy: E3 Report: *Resource Adequacy in the PNW*

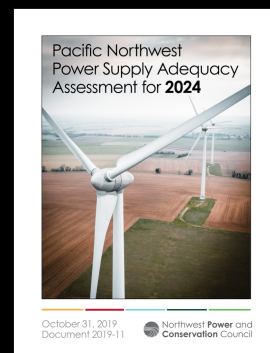
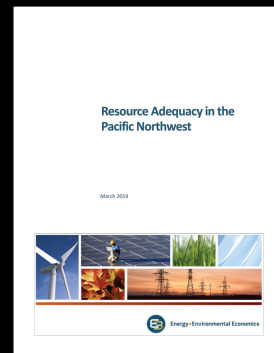
## Highlights

- Capacity shortfall is imminent
- The Northwest is expected to need new capacity in the near term in order to maintain an acceptable level of Resource Adequacy after planned coal retirements
- Firm capacity is needed to meet the new paradigm of reliability planning under deep decarbonization
- Renewable overbuild is the most economical solution to completely replace carbon-emitting resources but requires a 2x buildout that results in curtailment of almost half of all wind and solar production
- Electricity system must be designed to withstand prolonged periods of low renewable production once storage has depleted



# Report Timeline Analysis: 3 new reports provide further insight

- **Jun 2018** NWPCC issues “*PNW Adequacy Assessment for 2023*”.
- **Mar 2019** E3 issues “*Resource Adequacy in the Pacific Northwest*”
- **Oct 2019** Northwest Power Pool “*Resource Adequacy Symposium*”

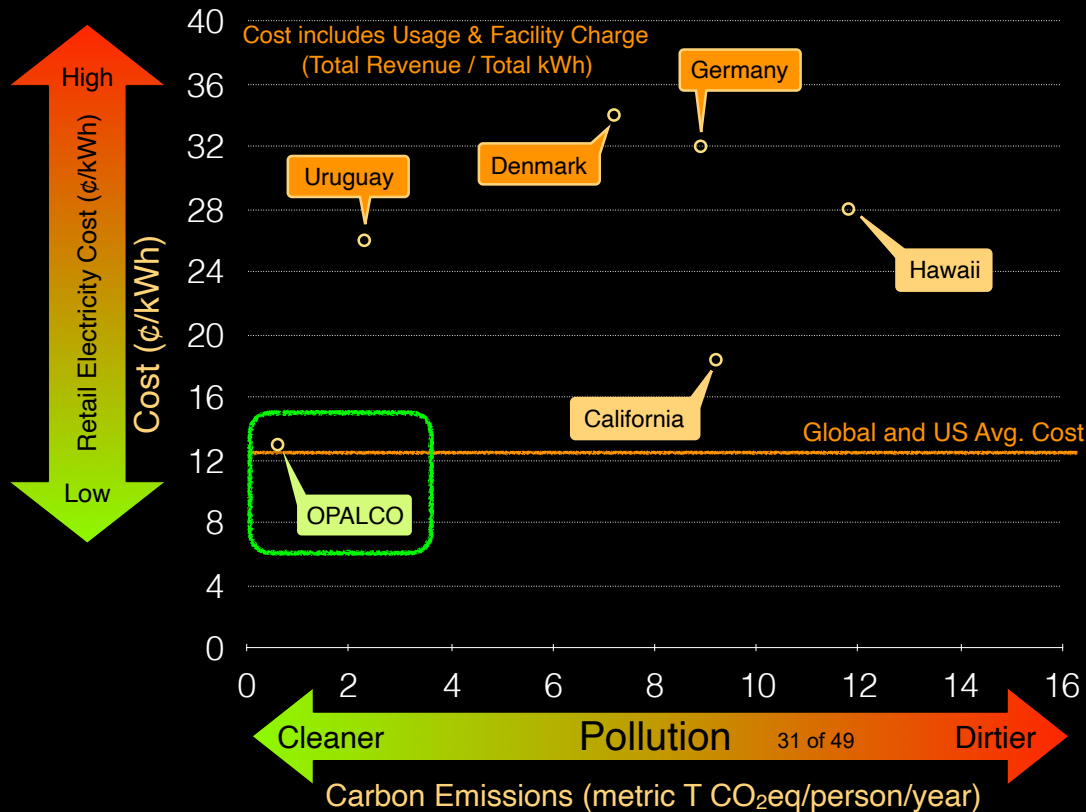


## Consensus of These 3 Reports

Serious concerns for PNW power supply adequacy from 2021 onward

- higher than expected load growth
- coal plant retirements are occurring faster than the 7th Power Plan forecast
- less than expected commitment to new generating sources
- uncertainty about achieving the expected levels of efficiency, conservation, and demand response reflected in the 7th PP
- the effects of CETA / carbon reduction legislation further complicate matters

# Retail Electric Cost and Carbon Emissions: Global View



## Notes

- OPALCO cost of energy is similar to global average
- And much less expensive and cleaner than renewable energy early adopters

## Summary: General Observations

- Since 2002, Germany has spent ~\$220 billion and has halted additional subsidies because residential electricity rates have reached 36¢(US)/kWh. While Germany gets 35% of its electricity from renewables today, they have not reduced emissions since 2009.
- The Pacific Northwest Utility Industry is not at this moment organized nor incentivized in a way that will lead to a deeply decarbonized grid, that provides the capacity and reliability that is expected.

# Resource Inadequacy Strategy: Capacity

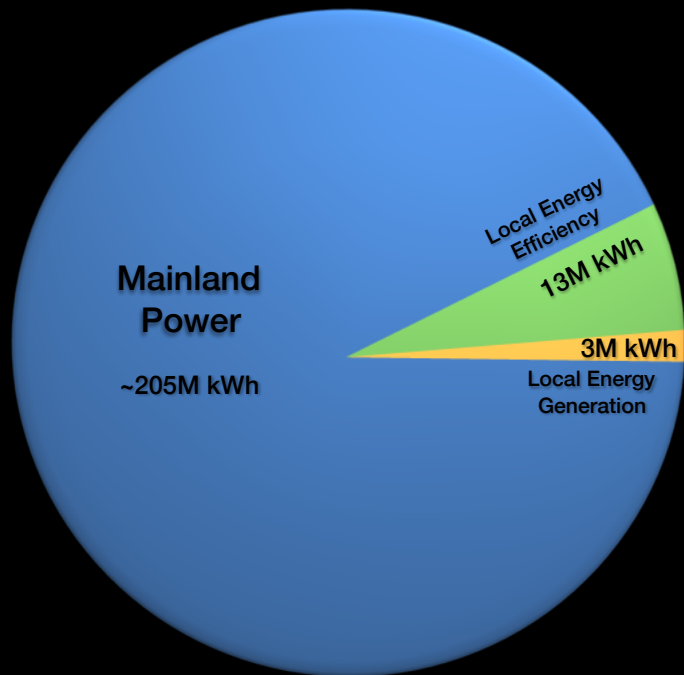
*“To our knowledge, no one has done a detailed study, which takes into account ALL factors, of the operation of a PNW power grid with renewables approaching 40% of total capacity, and, with considerable Nat Gas plants running at low capacity factors to meet peaks”*

# Resource Inadequacy Strategy: Capacity

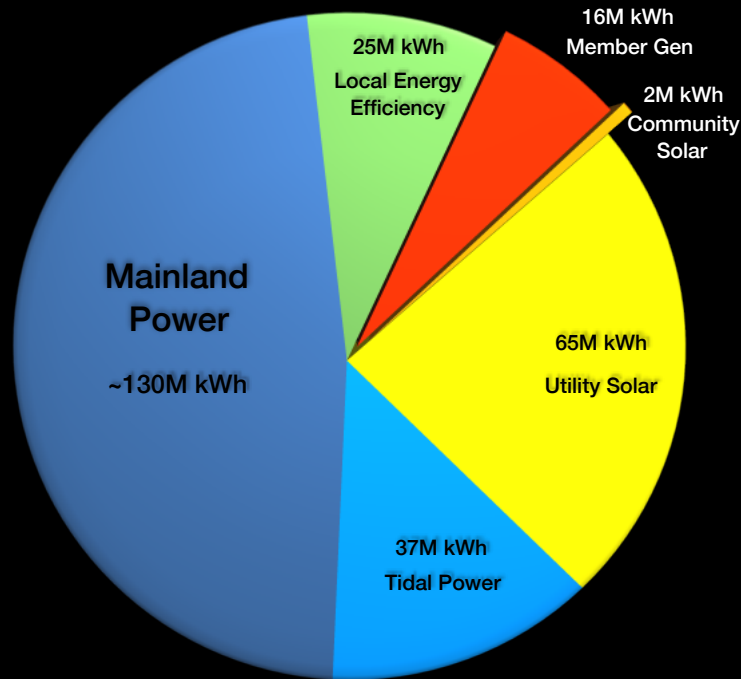
- Decreasing **Capacity**
  - CETA/Carbon Reduction Legislation
    - Utility leadership role in defining plan and funding
    - Maximize State and Federal funding for new resources
    - Carbon tax to fund renewable resource portfolio growth
  - Accelerating coal plant retirement
    - Develop IRPs and funding options
  - Increased spill
    - ?
  - Reduced capacity factor of wind/solar in our region
    - Ensure realistic regional plan through active participation and studies
  - Lack of Regional Transmission Organization (RTO)

# OPALCO Plan Reduces Mainland Power Over Half By 2040

## 2020 Energy Mix



## 2040 Energy Mix



# Local Energy Resilience: Decorbonization

- OPALCO energy is some of the cleanest most affordable in the world. Much cleaner and lower cost than California, Hawaii, Germany, Denmark. That helps members save money and reduce their carbon footprint.
- About 88% of member energy use is for transportation (53%) and heating (35%). Transitioning to electric heating and vehicles will have dramatic impact on reducing carbon emissions - about 72% reduction of CO2 emissions by 2050 (Brattle Group).
- Our ecosystem is collapsing due to climate impact - ocean warming, acidification, species northward migration (lobster, salmon, etc.). We are seeing this in river systems throughout the region, even those without dams.



# Local Energy Resilience: **Transportation + Heating**

- EVs help members save money and reduce CO2 emissions. EVs cost about 5 times less to drive compared to fossil-fuels cars, and have minimal emissions (driving), thanks to OPALCO clean energy.
- Ferries account for 68% of all WA DOT fleet carbon emissions.
- eFerries are quieter. Studies have shown sound is a major factor threatening whales.
- Heat pumps are super efficient, costing about 75% less to heat compared to fossil-fueled heating. And they have the benefit of including air conditioning for hot summers.

# Local Energy Resilience: Local Renewable Energy

- Local renewable energy will not reduce local fossil fuel emissions, since OPALCO energy is cleaner than solar and wind. But it will increase our local energy resilience and reduce our dependance on mainland power.
- Solar is not optimal in Northwest winters. Member load doubles in winter, while solar output is one fifth. Tidal energy is strong year round.
- The average net-zero solar home will, in a typical year, import power for 6,000 hours, export power for 2,500 hours, be in balance for <100 hours. The grid is the ultimate backup battery.
- Vast amount of land needed for renewables: e.g. Lopez “islanded” would require 220 acres of land for solar + storage, and cost \$1.7 Billion. (97 MW AC solar + 8 MW Inverter + 2,100 MWh battery)

*Thank You!*

## GENERAL MANAGER'S REPORT

### February 2020

#### **DASHBOARDS**

Please review the dashboards at <https://www.opalco.com/dashboards>. Note that all the dashboards are within board approved strategic parameters.

#### **Finance**

Budget Variance  
Cash  
Power Cost  
TIER/Margin  
Debt/Equity  
Capital  
WIP  
Expense  
Capital Projects  
Purchased Power

#### **Member Services**

Disconnects  
ECA  
PAL  
Energy Assist  
Community Solar  
Service Additions  
Member Generation  
Revenue Dist. – Prior Year  
Revenue Dist. – Current Year

#### **Outage**

Historical SAIDI - Graph  
Historical SAIDI - Figures  
Outage Stats – Monthly  
Outage Stats – Rolling 12 Mth  
SAIDI by Category  
Outage Summary  
Outage Summary - Monthly

#### **ENGINEERING, OPERATIONS, AND INFORMATION TECHNOLOGIES**

##### **WIP**

As of February 12, 2020, there are 347 work orders open totaling \$5.31M. Decatur Energy Storage System is \$817k of the balance. Operations has completed construction on 101 work orders, totaling \$1.48M.

##### **Safety**

John Spain, Safety Coordinator of Columbia REA, conducted sling safety and rope splicing. The total hours worked without a loss time accident: 218,978 hours.

##### **Grid Modernization Projects**

- **Decatur Battery Energy Storage System (ESS) – WA DOC CEF2 Grid Modernization (~\$1M Grant)** – Staff submitted the design milestone to WA DOC and is awaiting funding. Construction walkthrough has been scheduled for the final week of January with an updated commissioning in early Q2.





- **Microgrid – WA DOC CEF3 Grid Modernization (Grant \$ Amount TBD) – WA DOC** has awarded the grant funds and staff is negotiating with WA DOC on the contract.

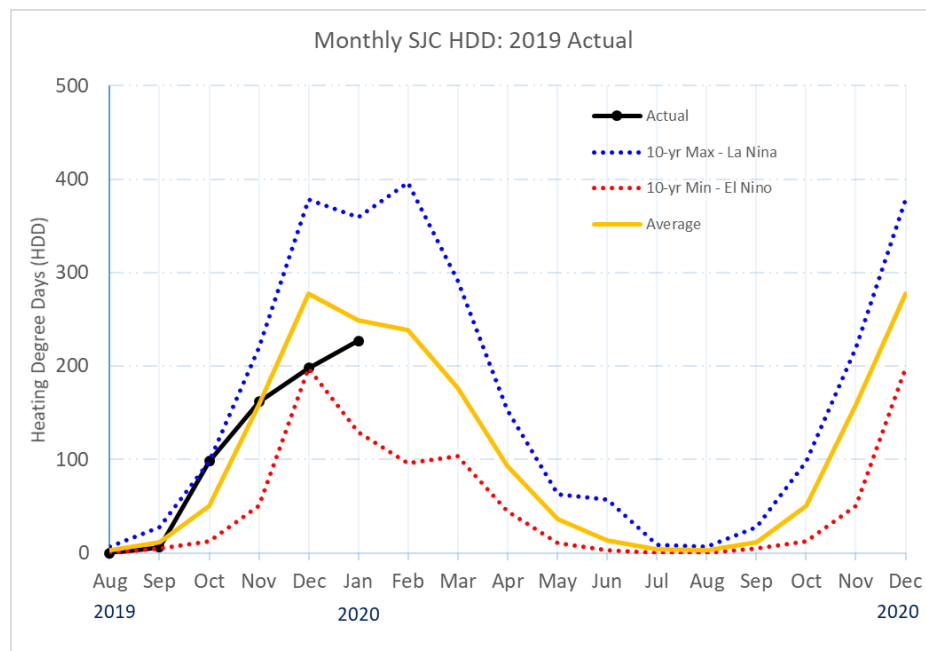
## **FINANCE**

### **2020 Budget Tracking**

Energy (kWh) purchases, sales were slightly higher than budgeted in January 2020. Note, staff will incorporate with budget tracking snapshot once 2019 year-end and 2020 budget spreads are finalized.

### **Heating Degree Days (HDD)**

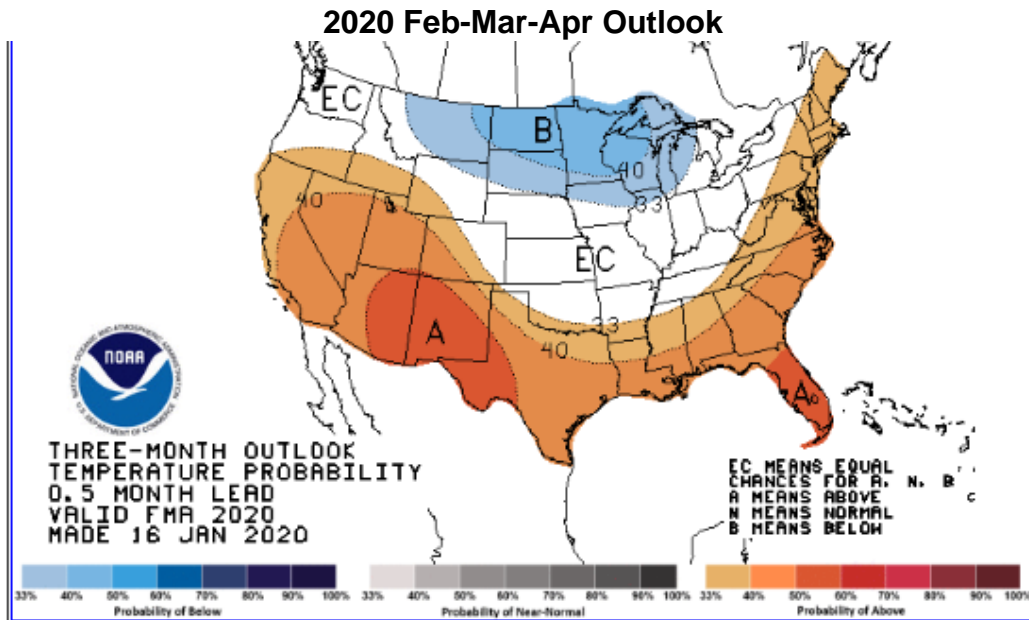
This winter HDD trended towards a neutral weather cycle (in between El Nino and La Niña), driven by prevailing winds. HDDs have been very volatile this winter as compared to historically averages as October surprised us as the coldest October in the last 20 years, while December was the warmest in the last 17 years. January HDD settled just below the 11-year average.



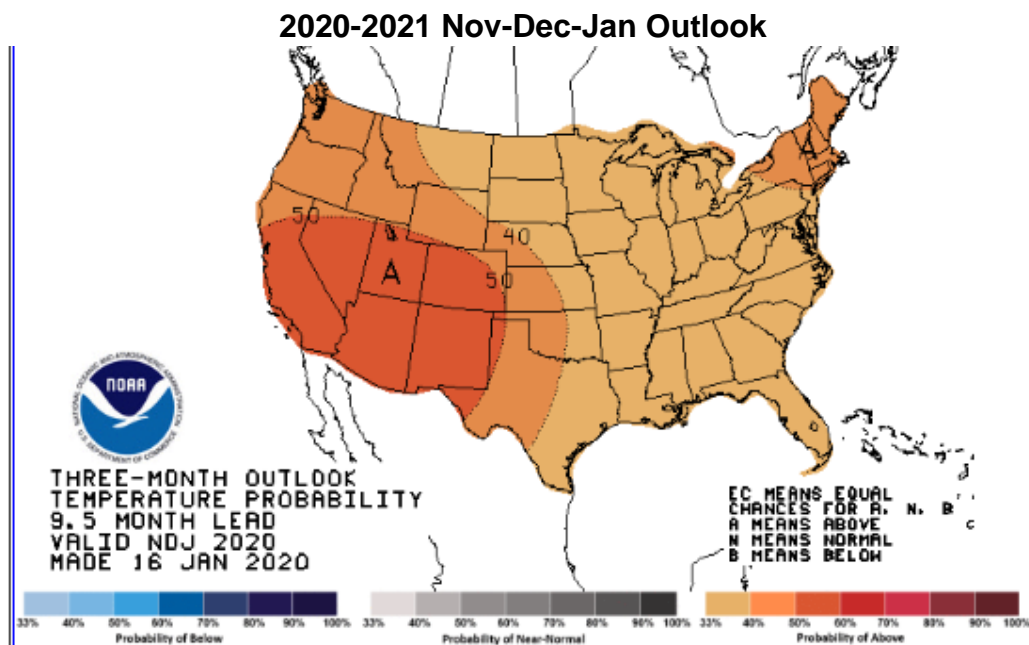
\*11-year max, min, avg is 2009-2019

## Weather Forecast

Finishing out the 2019-2020 winter season, the NOAA '3-month outlook temperature probability' for Feb-Mar-Apr 2020 shows a probability of 'near-normal' temperatures in our region. Looking towards next winter, predictions show a probability of 'above average' temperatures in our region. We continue to monitor these predictors on a monthly basis.



Source: NOAA National Weather Service



Source: NOAA National Weather Service

## Monthly ECA

The calculated amount for the January ECA was a bill credit of (\$.012794) per kWh which returned \$296,738, or \$12.79 per 1,000 kWh, note this is also the 2020 YTD figure. The February 2020 billing period ECA will be a bill credit of (\$.001185) per kWh.

## **MEMBER SERVICES**

### **Energy Assistance**

During January 2020, 368 members received \$~12.9k from the Energy Assist program, compared to 338 members receiving \$~12.5k in January 2019. There were 48 members awarded \$9,400 in assistance through the PAL program by the local Family and Community Resource Centers. In January 2019 the volunteer PAL Council awarded \$8,125 to 50 members.

### **Switch it Up!**

There are now 135 projects in various stages of participation for a total of ~\$1.15M in play. 85 projects are complete and billing.

### **Energy Savings**

In January 2020 there were 26 rebates paid to members totaling ~\$23.2k. This includes 6 self-funded ductless heat pump fuel switching rebates and 5 electric vehicle charging station rebates. The countdown for remaining rebates has been updated on the website, as well.

### **EV Rebates**

#### **Only a limited number of EV Rebates are available!**

This year we budgeted for rebates for Electric Vehicle (EV) Charging Stations if you decide to invest in one – but the rebates are limited. If you install a Level 2 240V AC Charging Station at your home or business, we will help you offset the cost of the charger and installation up to \$500. This program is first come, first served, so please be sure to send us an application right away after your installation is complete! See below for an estimated status of how many rebates are left, and if you have any questions or want to know more, feel free to [contact us!](#)



### **Community Solar**

During the January 2020 billing cycle the Decatur Community Solar array produced 5,920 kWh, and 1 kWh per solar unit was credited to member participants. A total of ~\$675k was distributed to 275 accounts, including an additional ~\$70 for the PAL and Energy Assist programs. Note that the Energy Assist program gained one solar unit when a participant closed their membership, donating the unit to the program.

(<https://energysavings.opalco.com/energy-savings/renewable-generation/community-solar/decatour-community-solar-project/>)



## **COMMUNICATIONS**

### **2020 Election Update**

Nominations by petition are due February 17<sup>th</sup>. To date, there are two candidates on the slate: Vince Dauciunas and Mark Madsen. The slate will be finalized on February 21<sup>st</sup> once the candidate petition window closes. Candidate Forums are scheduled as follows: San Juan – March 12; Lopez – March 16; and Orcas – March 17. The election opens March 13<sup>th</sup>.

### **Annual Meeting (April 18<sup>th</sup>, 2020)**

The theme of the annual meeting is 20/20 Vision and we will launch our story about OPALCO's plan for future power. Catering bids are coming in and door prizes/gifts will be focused on zero waste: encouraging conservation on all fronts to meet the challenges of a changing environment.



### **Debrief of Meetings with NWECC and OWC**

Staff met with NW Energy Coalition on January 10<sup>th</sup> and then updated members of Orcas Women's Coalition (OWC) about that meeting on February 10<sup>th</sup> – including showing a video of the January meeting. Five members of the community were in attendance. Discussion focused on resource inadequacy and OPALCO's plan for our energy future. Everyone in the room expressed their willingness to collaborate on solutions for a healthy, reliable energy future.

### **Switch it Up**

Staff sent an email survey to about 45 members who completed a Switch it UP project in 2019. To date, we have 27 completed surveys – a great response! The survey closes on 2/14 and we'll share results in March. The results will help us to prepare for the launch of our 2020 Switch it UP season with improvements to better serve our members and increase participation.

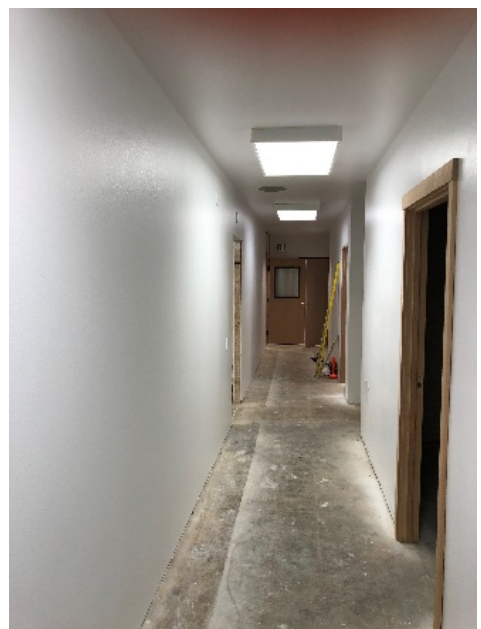
### **Logo Refresh Update**

The goal of this project is to give members a strong signal that something is very different at OPALCO just in time to get them engaged and feeling proud of our push for local renewable development and a healthy and sustainable energy future. Timed to support our 20/20 Vision campaign, the new look and feel will reflect the evolution of the Co-op today and its vision for the future. Staff received seven proposals for the logo refresh project: four local and three from the greater PNW. SomeLab of Orcas Island was selected and a work group convened that includes representation across departments and Rick Christmas as board liaison.



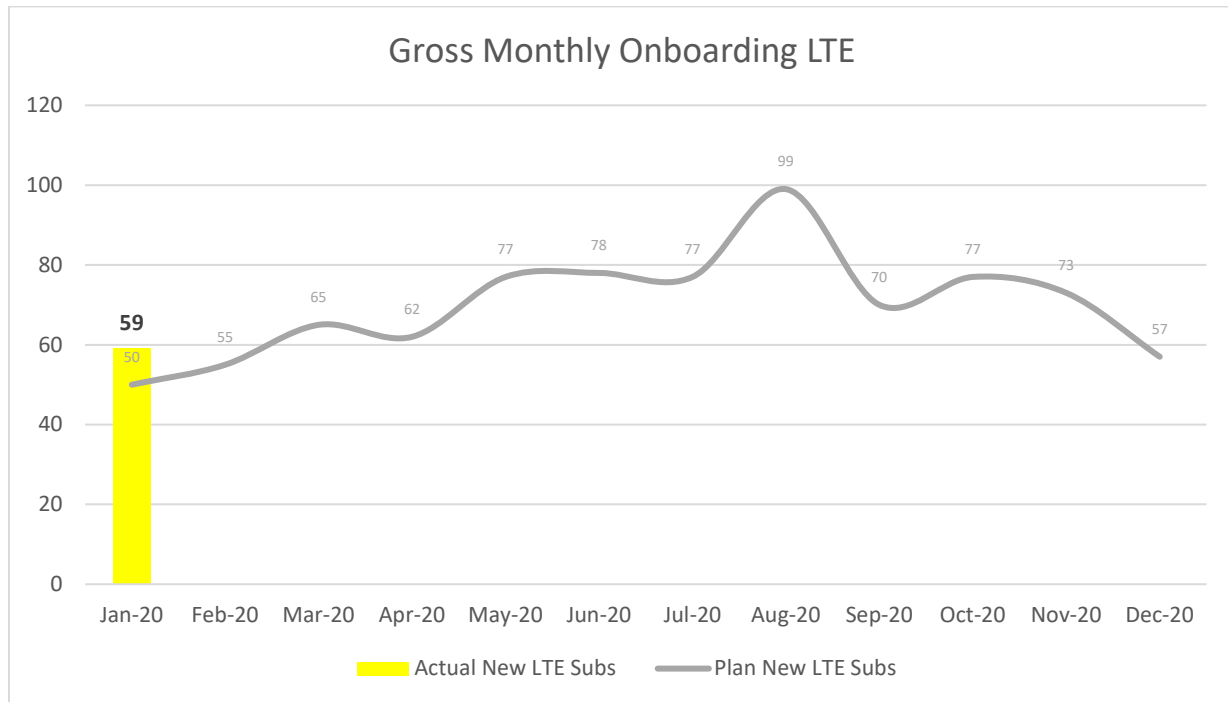
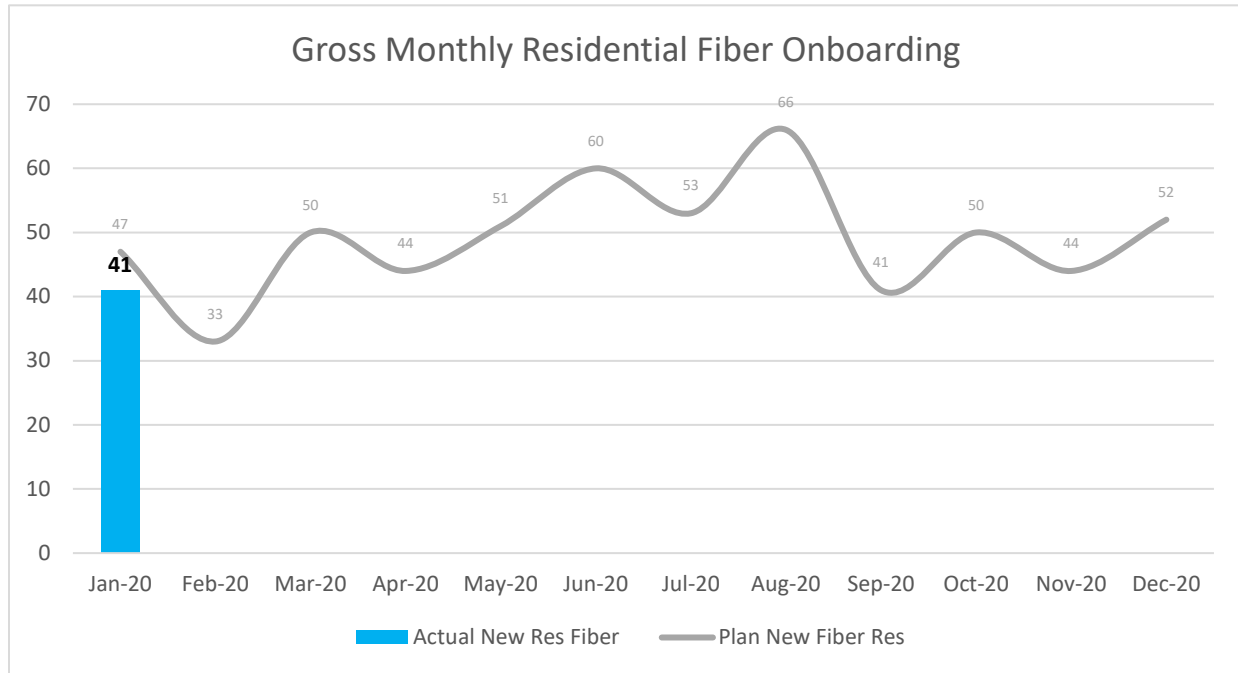
## Eastsound Bathroom/ADA Remodel

See below from top left: bathroom walls and counters, new septic tank in place, conference room, hall. Construction is on schedule and staff expect to move back into the building in mid-April.

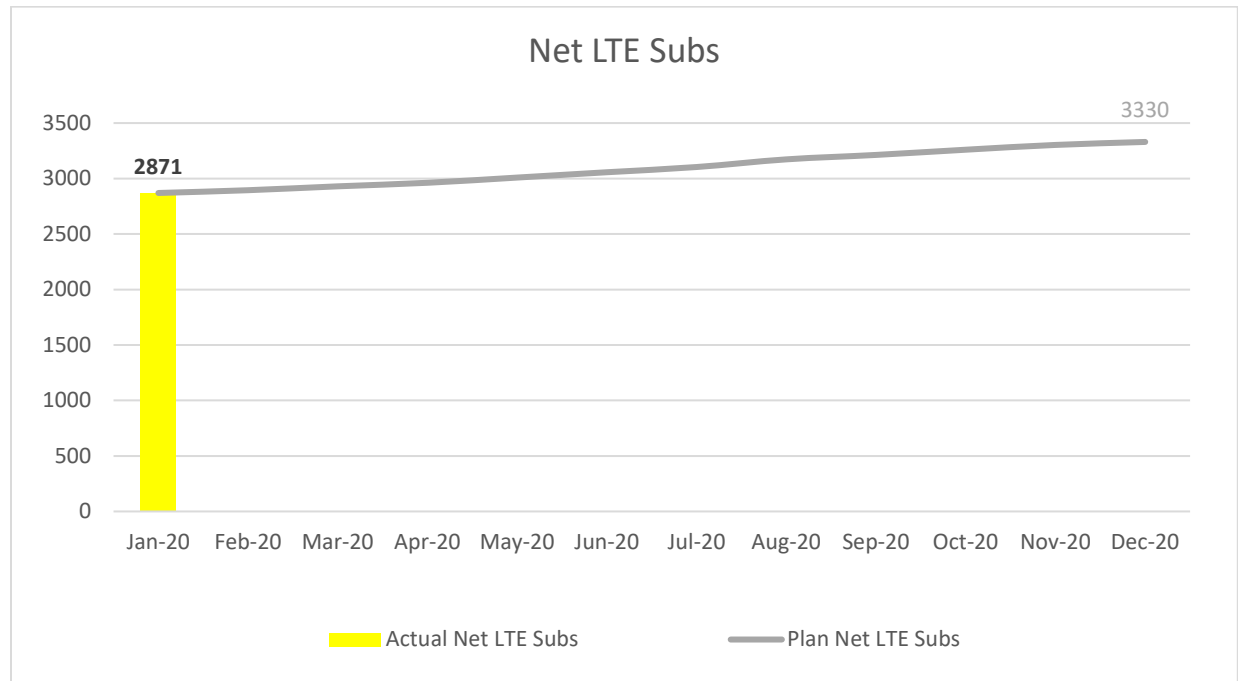
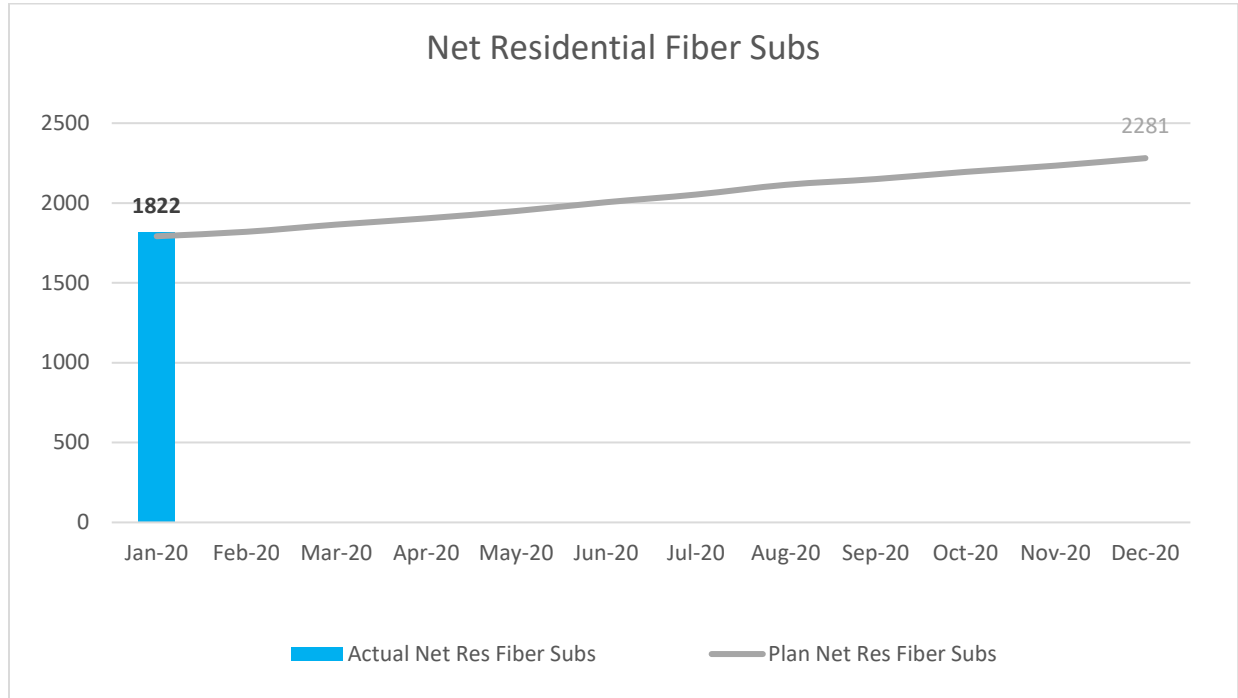


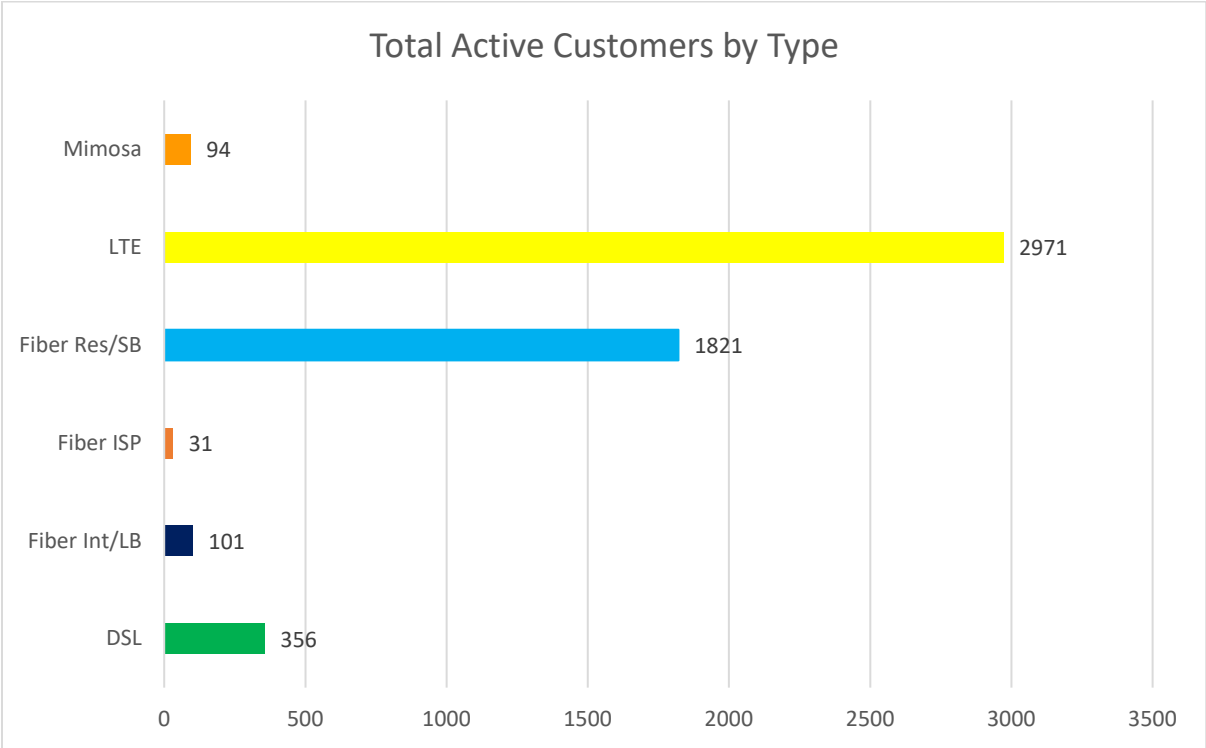
## RIC Snapshot Feb 2020 Board Meeting

### Gross Subscriber Onboarding 2020



## Net Subscribers 2020

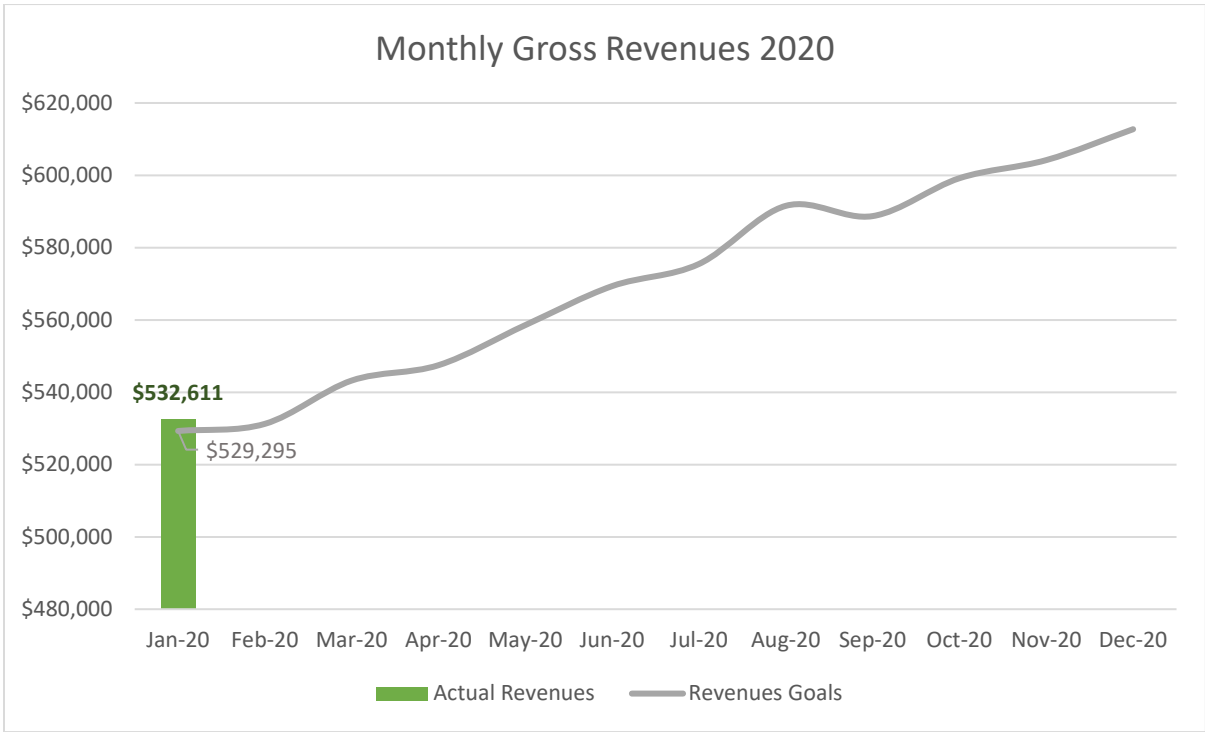




Active Customers as of Jan 31, 2020

5,374

Revenues



❖ Remaining revenues are still being closed for January Business and could influence this reported number in the future.