PROVIDING POWER IN RURAL ALASKA

PRESENTED BY

ALASKA VILLAGE ELECTRIC COOPERATIVE

TO

THE HOUSE ENERGY COMMITTEE

FEBRUARY 5, 2026

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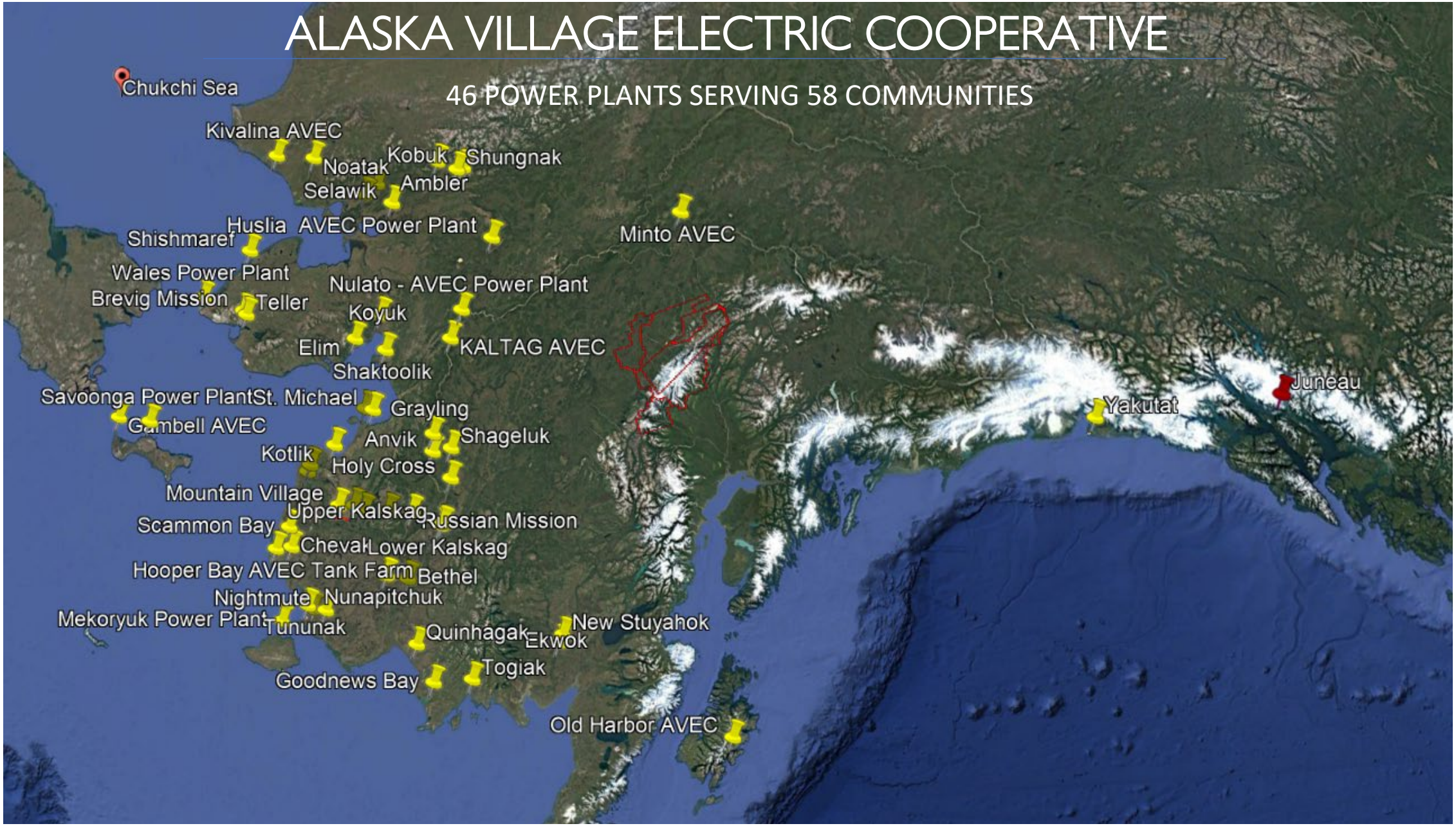
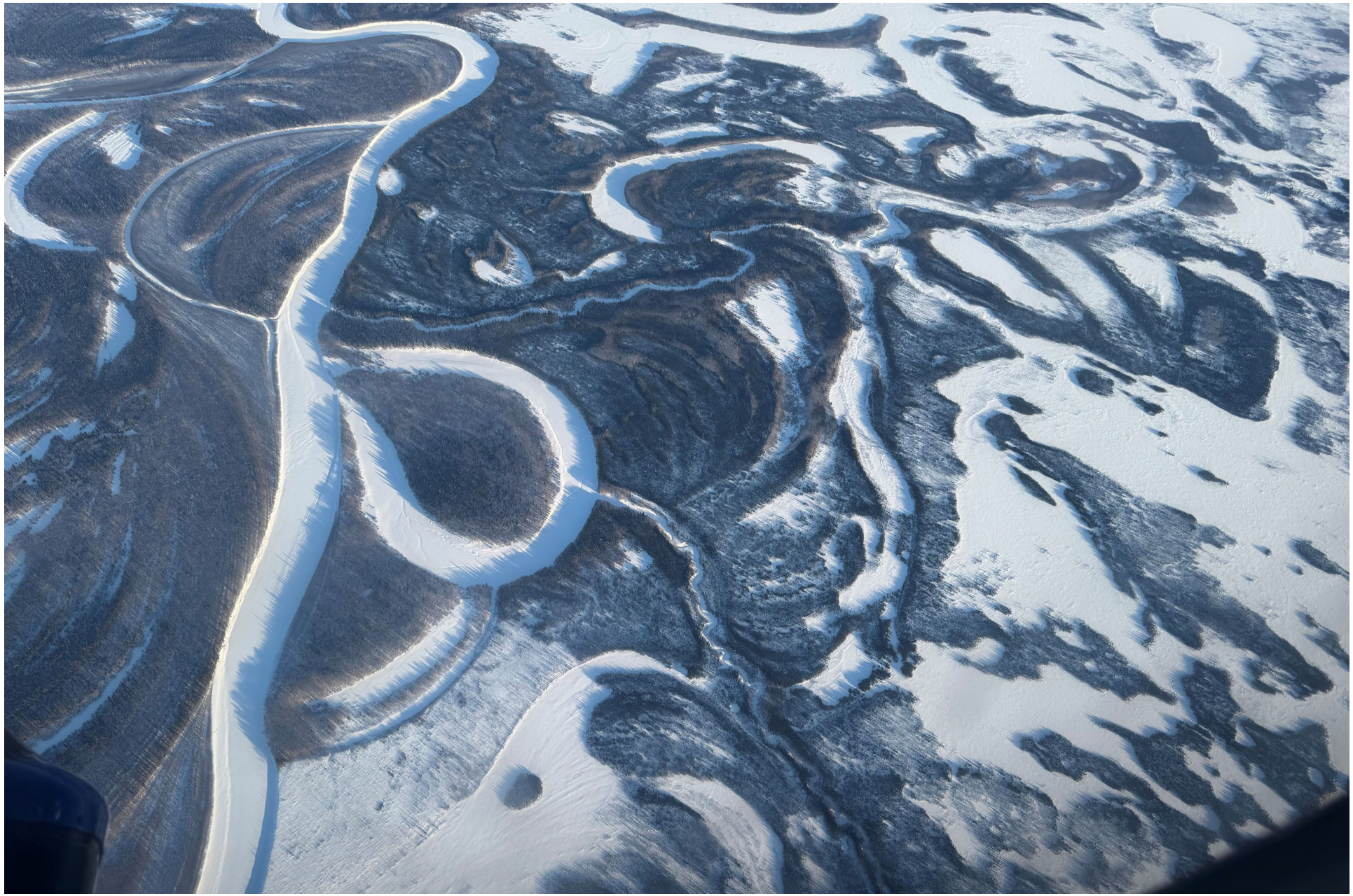
Hooper Bay, AK

ALASKA VILLAGE ELECTRIC COOPERATIVE

46 POWER PLANTS SERVING 58 COMMUNITIES



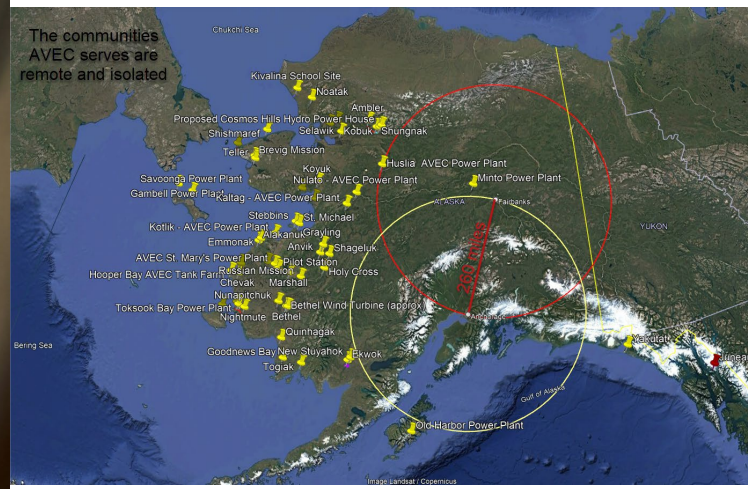


COOPERATIVE: OWNED BY THE MEMBERS WE SERVE

8,500 Members

11,500 Metered Locations

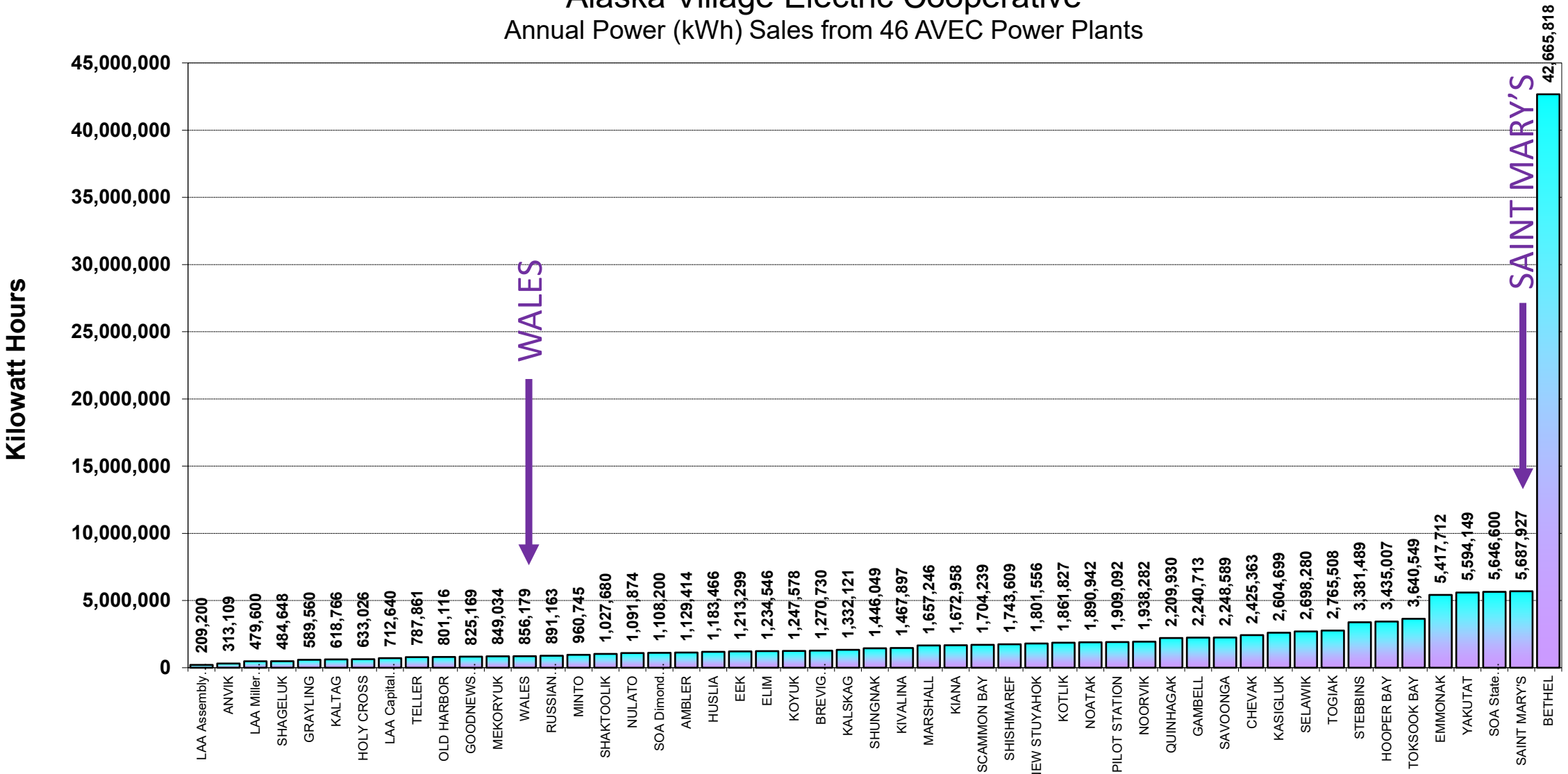
31,000 Population




Savoonga, AK

Alaska Village Electric Cooperative

Annual Power (kWh) Sales from 46 AVEC Power Plants



CAPITAL PROJECTS IN MANY PLACES

- ANVIK- 3-phase conversion and power plant upgrades to integrate solar and energy storage
- BETHEL- 3.8MW Power Generation Module Installation
- BULK FUEL UPGRADES- Tank farm replacements in Kivalina, Kobuk, Noatak, Quinhagak and Wales, and assisting AEA with Eek, Russian Mission, Quinhagak and the non-AVEC community of Tuluksak
- CYBER SECURITY- installing high speed internet connections with firewalled routers to allow separation of IT, OT and 3rd party networks in all power plants
- GAMBELL- Replace (3) 100kW Wind Turbines
- GOODNEWS BAY- Power Plant voltage conversion, switchgear and engine replacements in preparation for installation of (2) 100 kW wind turbines
- HUSLIA- Line Extension for 40 lot subdivision to allow homes to be moved away from river erosion
- MARINE POWER FEASIBILITY STUDY- Evaluation of all AVEC communities' potential for hydrokinetic power generation
- MEKORYUK- Replace (2) 100 kW Wind Turbines
- MINTO- Power plant and tank farm replacement
- NEW STUYAHOK- Power Plant upgrades and 500 kw solar array with energy storage
- NORTHWEST ARCTIC BOROUGH- Power Plant upgrades to accommodate Tribal IPP sola battery projects in Ambler, Selawik, Kiana, Noorvik and Kivalina
- OLD HARBOR- Design support for Tribal IPP Owned 250kW run-of-river hydro project
- SHUNGNAK-KOBUK –Intertie replacement with proof-of-concept AC/DC overhead line

MOBILIZATION AND FREIGHT COSTS ARE HIGH

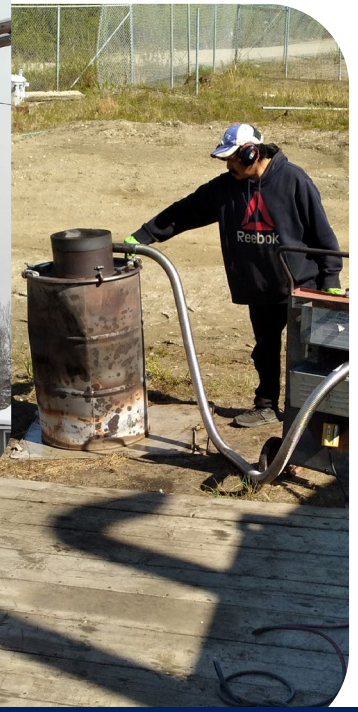
All workers, materials, equipment, tools, and fuel must be flown or barged in, (except for Minto).

There is limited infrastructure on the receiving end in most communities.

We work at the forefront of technology. However, due to community size and location, many methods of getting work done hasn't changed much in 50 years.

2. An 8000 lb. generating unit is placed upon a sled by block-and-tackle and manpower.

SHARING DEDICATED, TALENTED STAFF MAKES IT WORK



- **48 Full-time employees in Anchorage**
- **24 Full-time travelling technicians**
- **11 Full-time employees in Bethel**
- **2 Full-time Operators in Yakutat**
- **120 Part-time local Power Plant Operators**

Able to share in-house expertise, mechanics, linemen, construction, engineers, project managers, accountants, member's service representatives, purchasing, warehouse, and logistics. With local power plant operators on the front line of operations.

Fuel Delivery:

- Typically, May-Oct
- Lighterage Barges fill from Tankers and deliver to coastal and river communities
- Bulk Fuel Storage, strive for 14 month's supply.
- Some communities are Fly-in only

Difficulties:

- Cost
- Aging infrastructure
- Limited Suppliers
- Weather

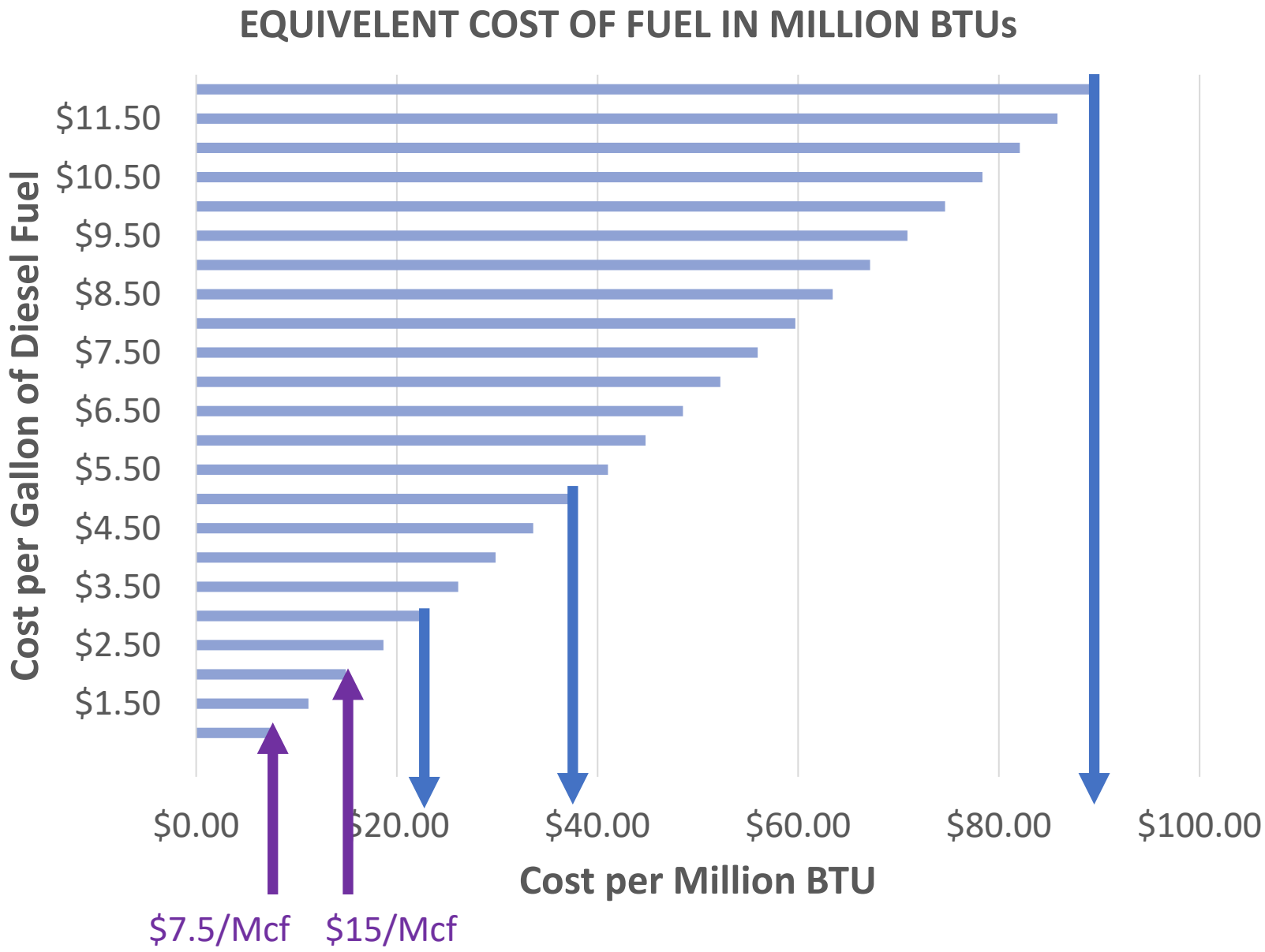
2025 AVEC Delivered Fuel Costs:

Barge Delivery:
$3 to $5 per gallon

Air Delivery:
$10 to $12 per gallon

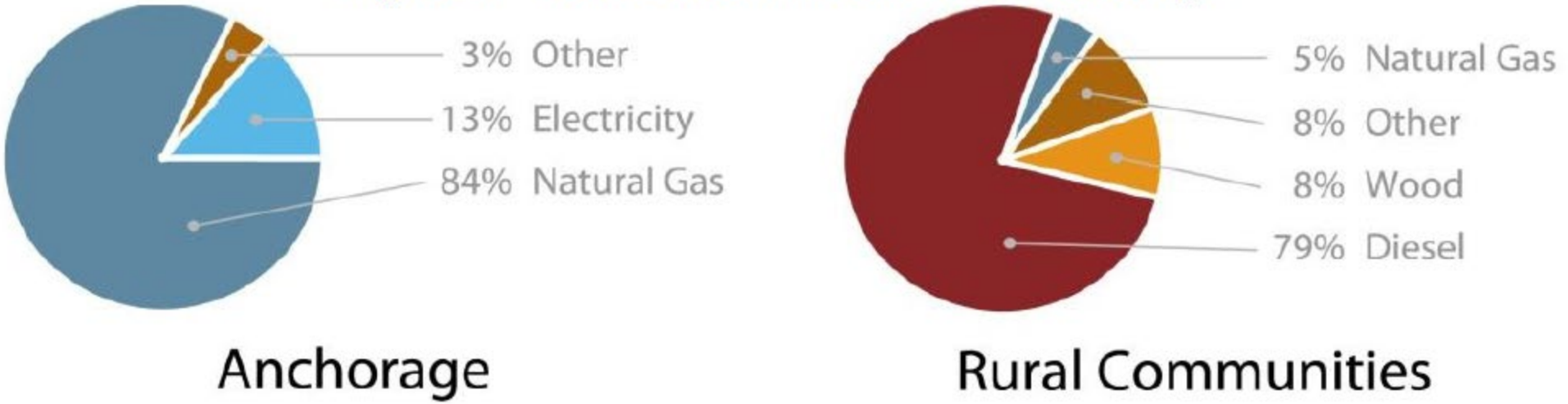
Fun Facts

- 7.5 gallons of diesel fuel provides about 1 million BTUs
- 1 Mcf of natural gas provides about 1 million BTUs



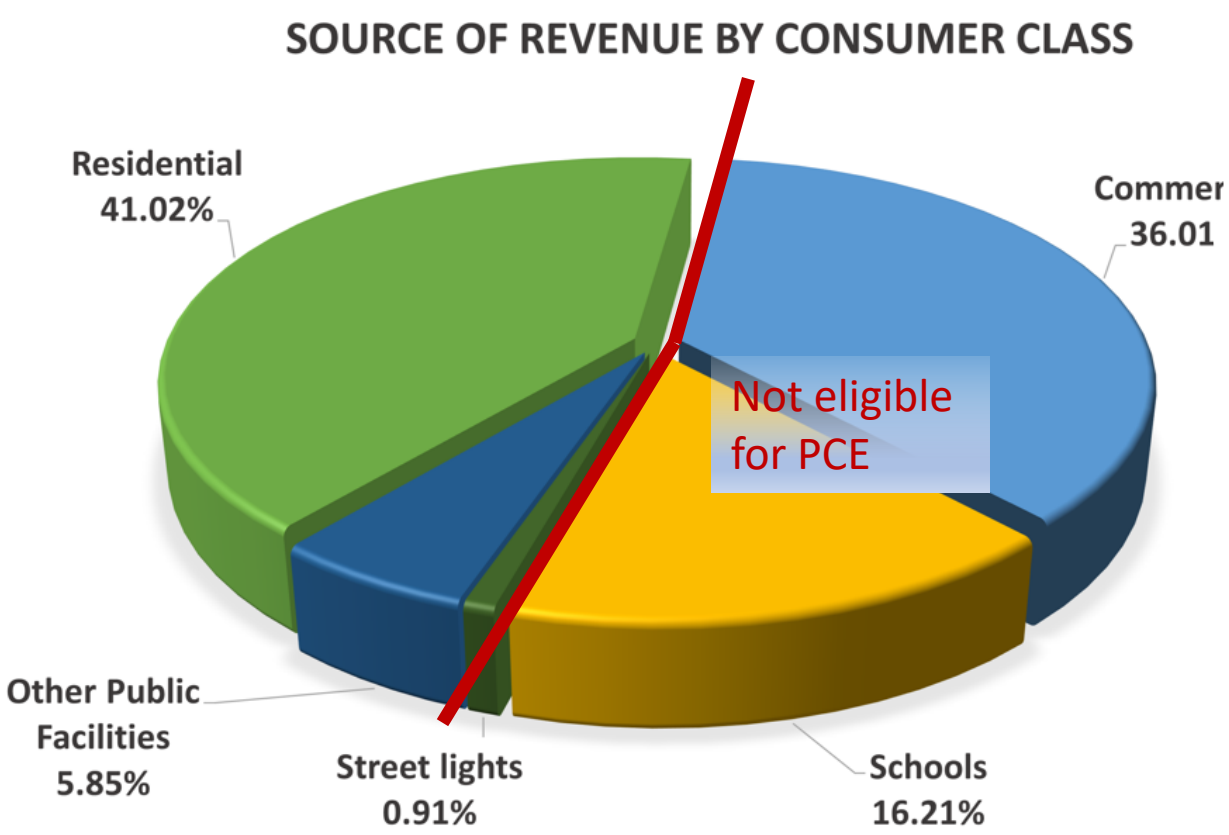
Heating is Typically more Expensive than Electricity

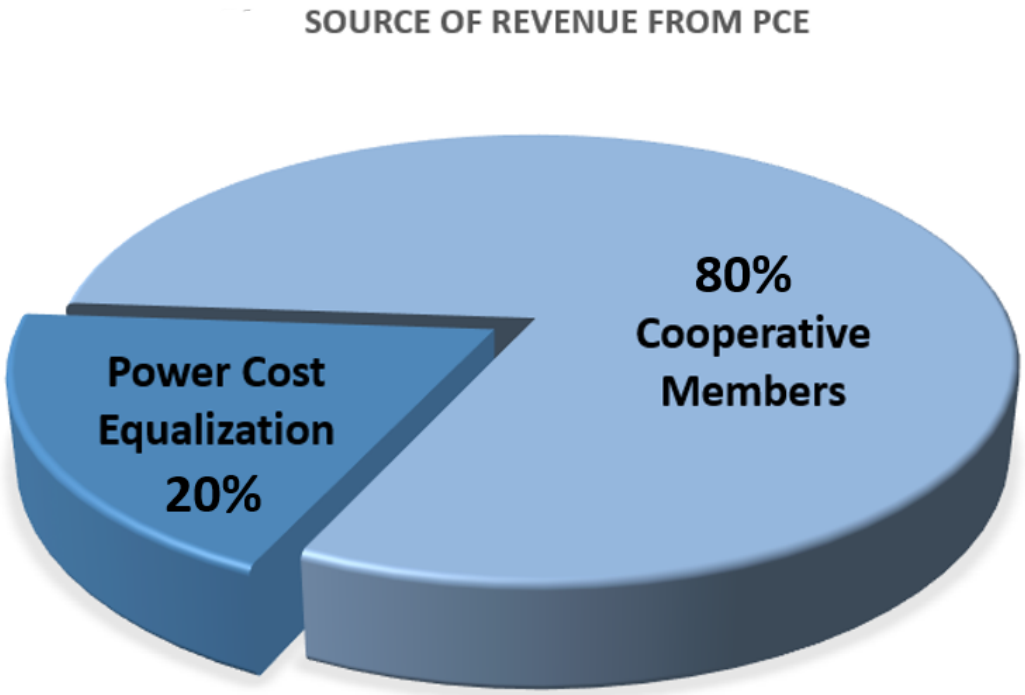
Figure 1 – How Alaskans Heat Their Buildings[1]



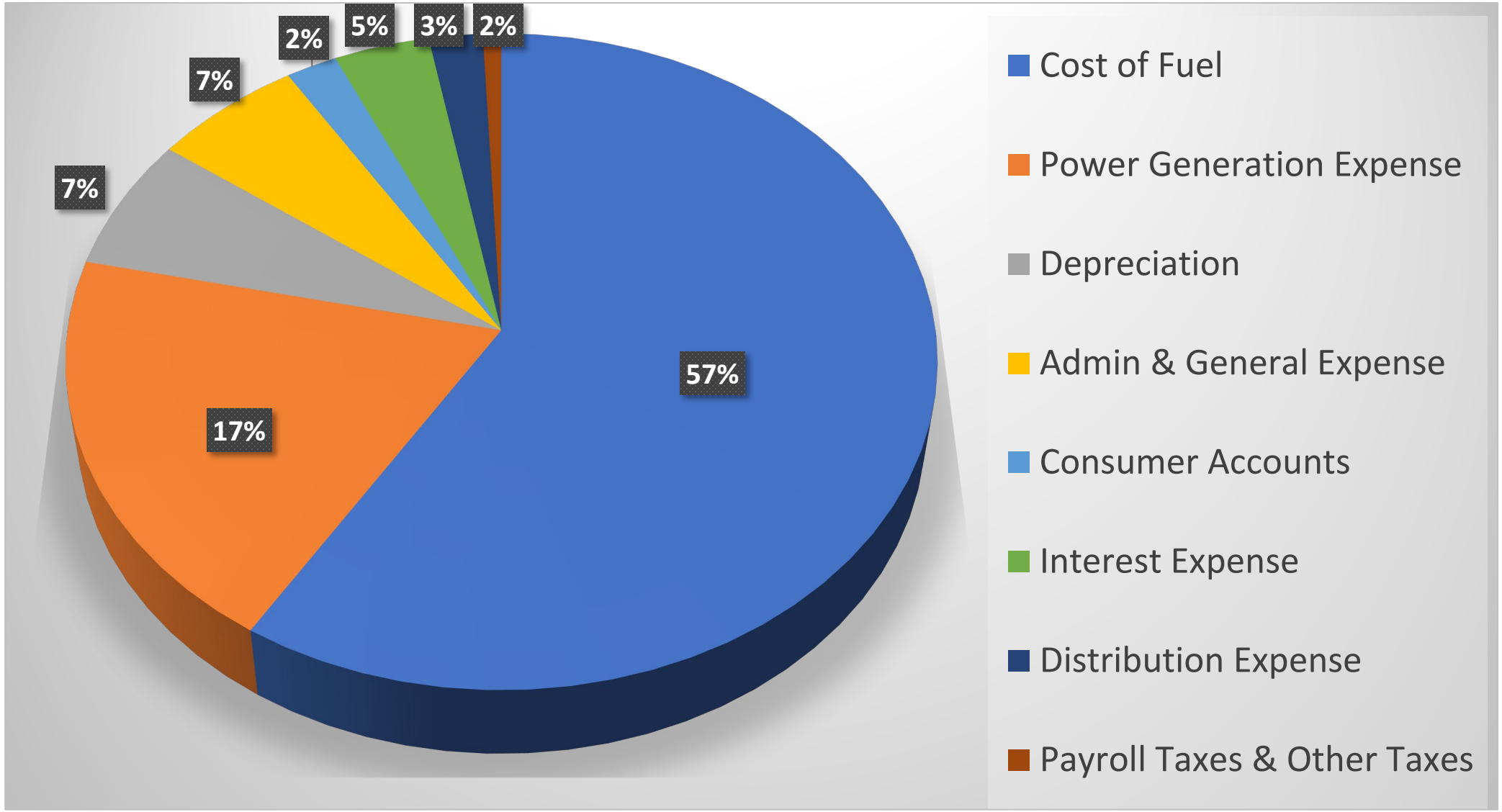
Graphic taken from: “Energy for a Sustainable Alaska, The Rural Conundrum”
A Commonwealth North Study Report, February 2012

The Impact of Power Cost Equalization

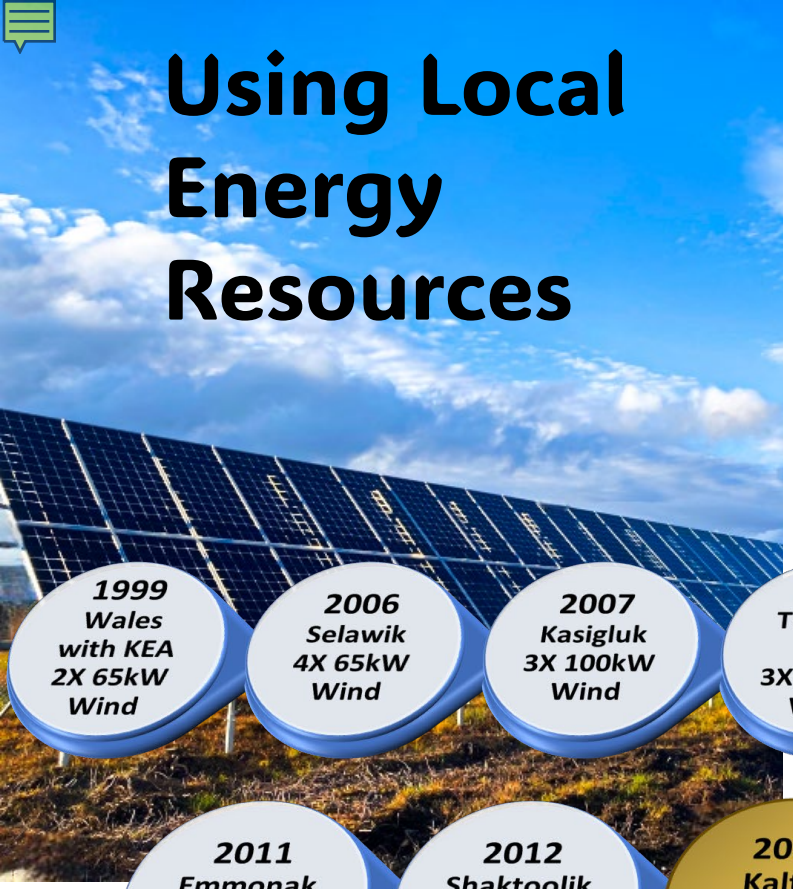




WHERE AVEC SPENDS ITS MONEY



Using Local Energy Resources

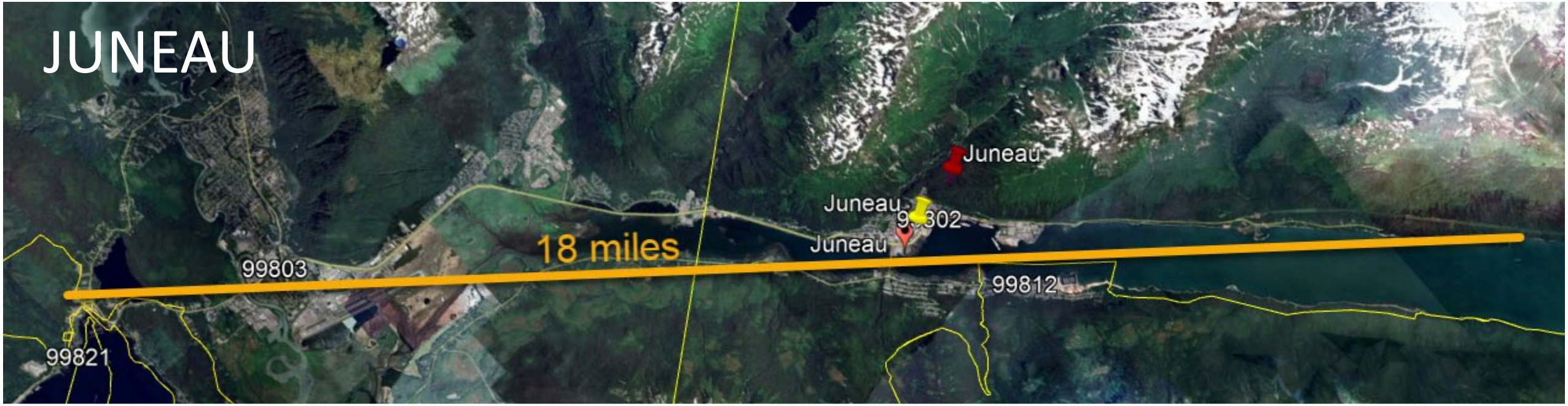


- 1999 Wales with KEA 2X 65kW Wind
- 2006 Selawik 4X 65kW Wind
- 2007 Kasigluk 3X 100kW Wind
- 2007 Toksook Bay 3X 100kW Wind
- 2008 Savoonga 2X 100kW Wind
- 2009 Gambell 3X 100kW Wind
- 2009 Hooper Bay 2X 100kW Wind
- 2010 Chevak 4X 100kW Wind
- 2010 Mekoryuk 2X 100kW Wind
- 2010 Quinhagak 3X 100kW Wind
- 2010 Toksook Bay 1X 100kW Wind
- 2011 Emmonak 4X 100kW Wind
- 2012 Shaktoolik 2X 100kW Wind
- 2012 Kaltag 10kW Solar
- 2016 Noorvik with NAB 29kW Solar
- 2018 Bethel 1X 900kW Wind
- 2019 Saint Mary's 1X 900kW Wind
- 2021 Shungnak with NAB 225kW Solar (IPP)
- 2023 Noatak with NAB 275kW Solar (IPP)
- 2023 Stebbins 1X 900kW Wind (Pending)

AVEC'S TIMELINE OF RENEWABLE ENERGY PROJECTS 1999-2023

St. Mary's Family of Projects

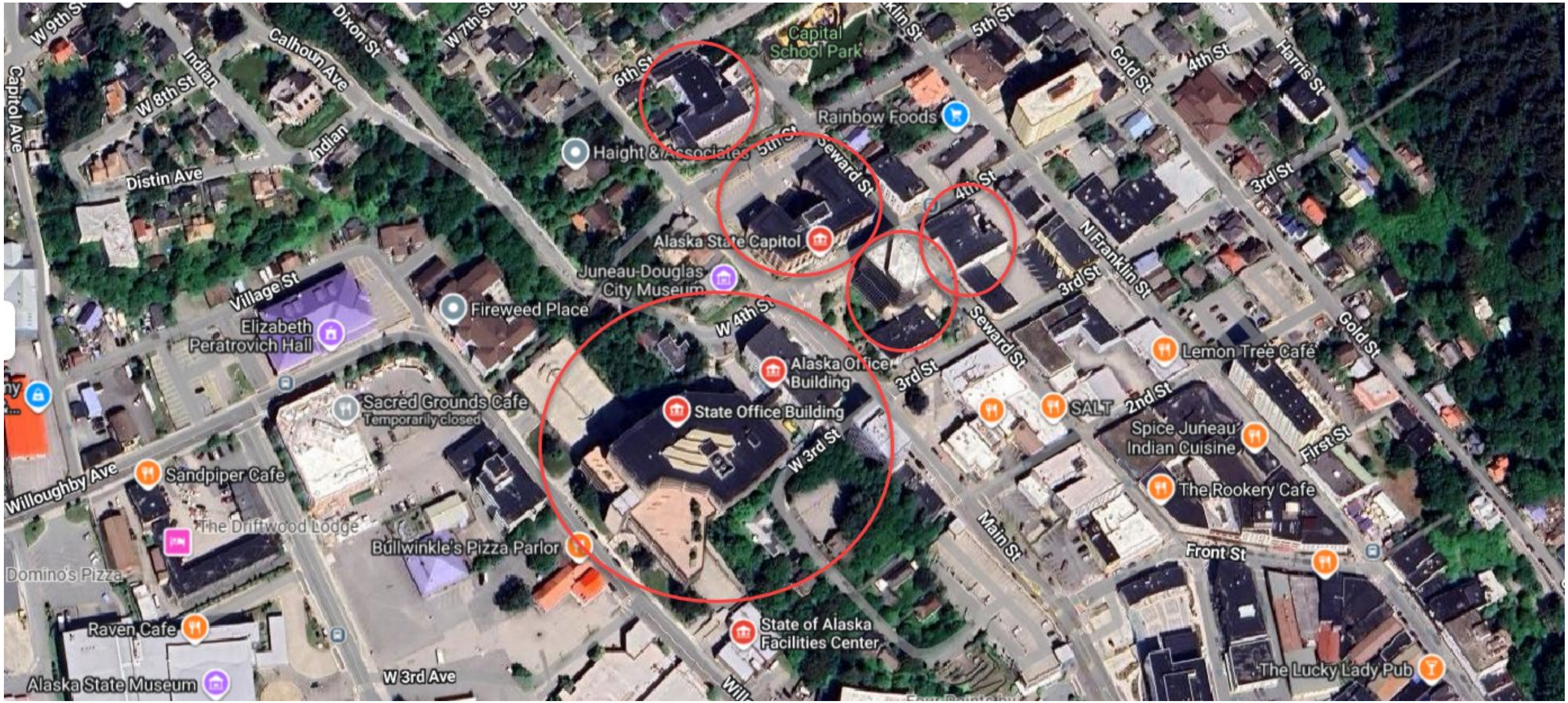
- 900kW EWT Wind Turbine and Distribution Upgrades
- 20 Mile Intertie to Mt. Village
- 3MW Power Plant in St. Mary's
- Conversion of Mt. Village Power Plant to Standby
- 35-40% Annual Diesel Displacement (without energy storage)
- GBS Energy Storage (2026)


JUNEAU
Juneau
Juneau
Juneau
18 miles
99803
99812
99821


99632
Mountain Village
18 miles
99658
St Marys City School District
St Mary's
ST. MARY'S – MT. VILLAGE

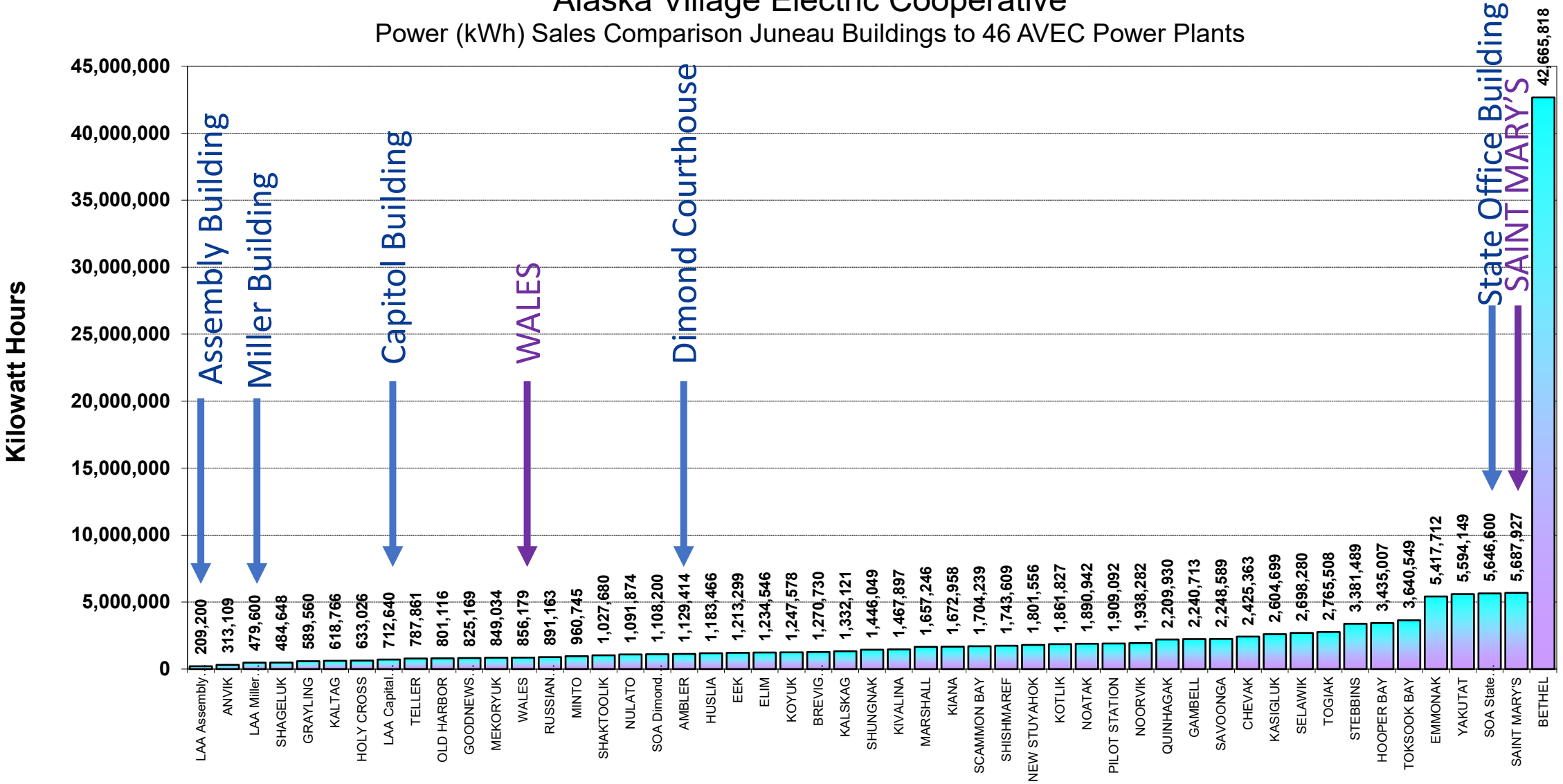
STATE LEGISLATIVE AND OFFICE BUILDINGS

Juneau, Alaska



Alaska Village Electric Cooperative

Power (kWh) Sales Comparison Juneau Buildings to 46 AVEC Power Plants



Why is electricity expensive in rural Alaska?

- Small population – AVEC's average village is ~400 people
- Small loads – AVEC's average village load is ~160 kW
- Poor economies of scale, which in turn limits economic growth

  (Expensive power = Less Consumption (less kWh Sales)= Higher cost per kWh)
- Isolated systems - reliability relies on (self) redundancy
- Utilities are capital intensive, and capital is expensive
- Remote and difficult to access, transportation and freight is expensive
- Fuel is expensive – delivery and storage costs often exceeds diesel purchase cost
- Operations and maintenance is more expensive, freight, travel, lodging, it all adds up

AVEC Strategies to Reduce Power Cost

- Improve generation efficiency
- Minimize distribution losses
- Interconnect villages to improve economies of scale
- Add renewable generation and energy storage where practical
- Capture and sell recovered heat and excess wind energy
- Promote energy education, workforce development
- Support economic growth in communities we serve

Thank you,

Bill Stamm, bstamm@avec.org
President & CEO
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