

DOE Tribal Energy Conference

2022 In Person Version (Whoot Whoot)

November 2022

Forest Button, Manager, Project
Development

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Alaska Village Electric Cooperative, Inc./
Stebbins Native Corporation Renewable
Energy Joint Venture

(ASRE)

Stebbins / St. Michael Renewable Energy
Project



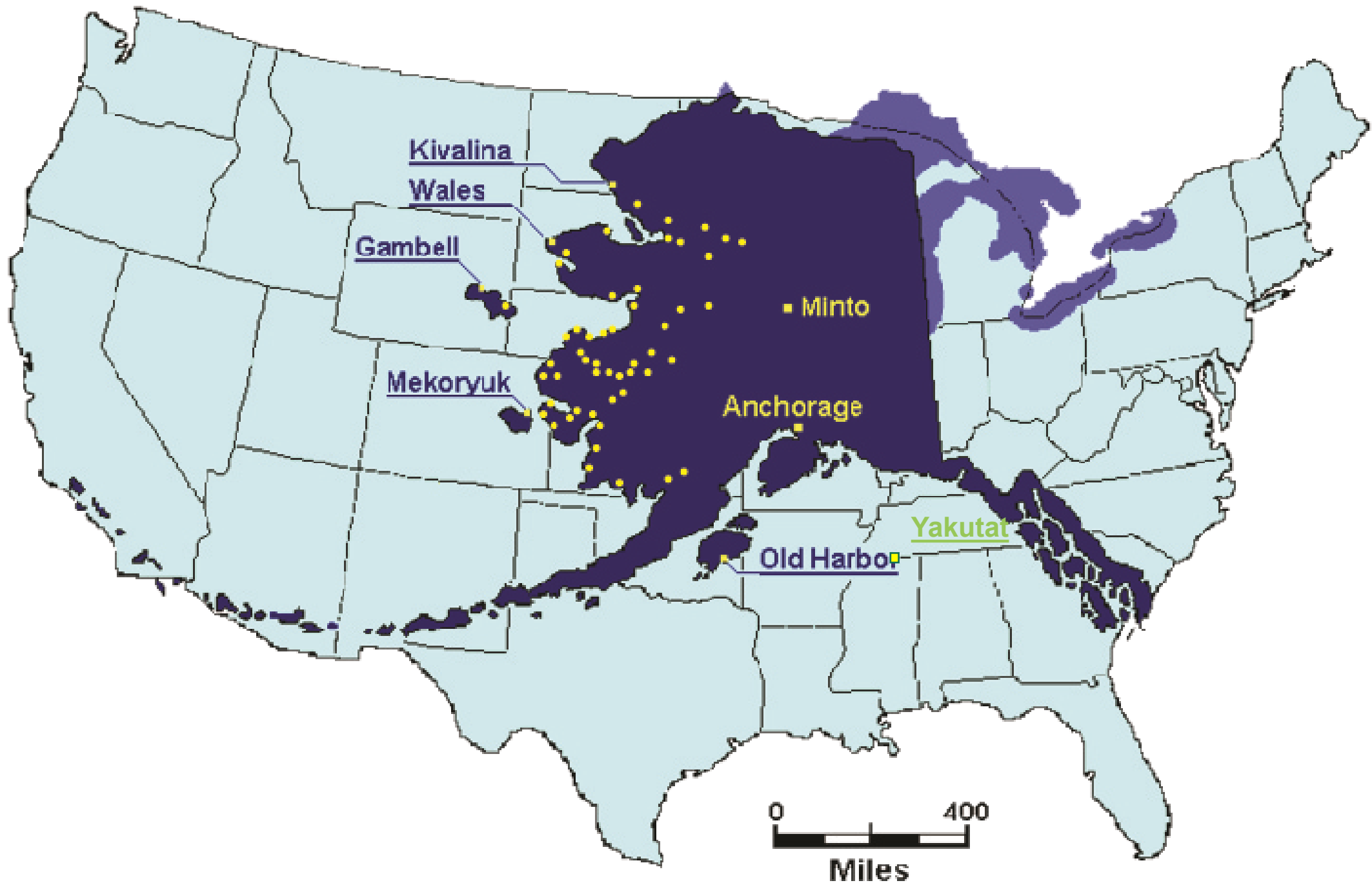
Alaska Village Electric Cooperative

Member owned, not-for-profit

Energizing Rural Alaska since 1968

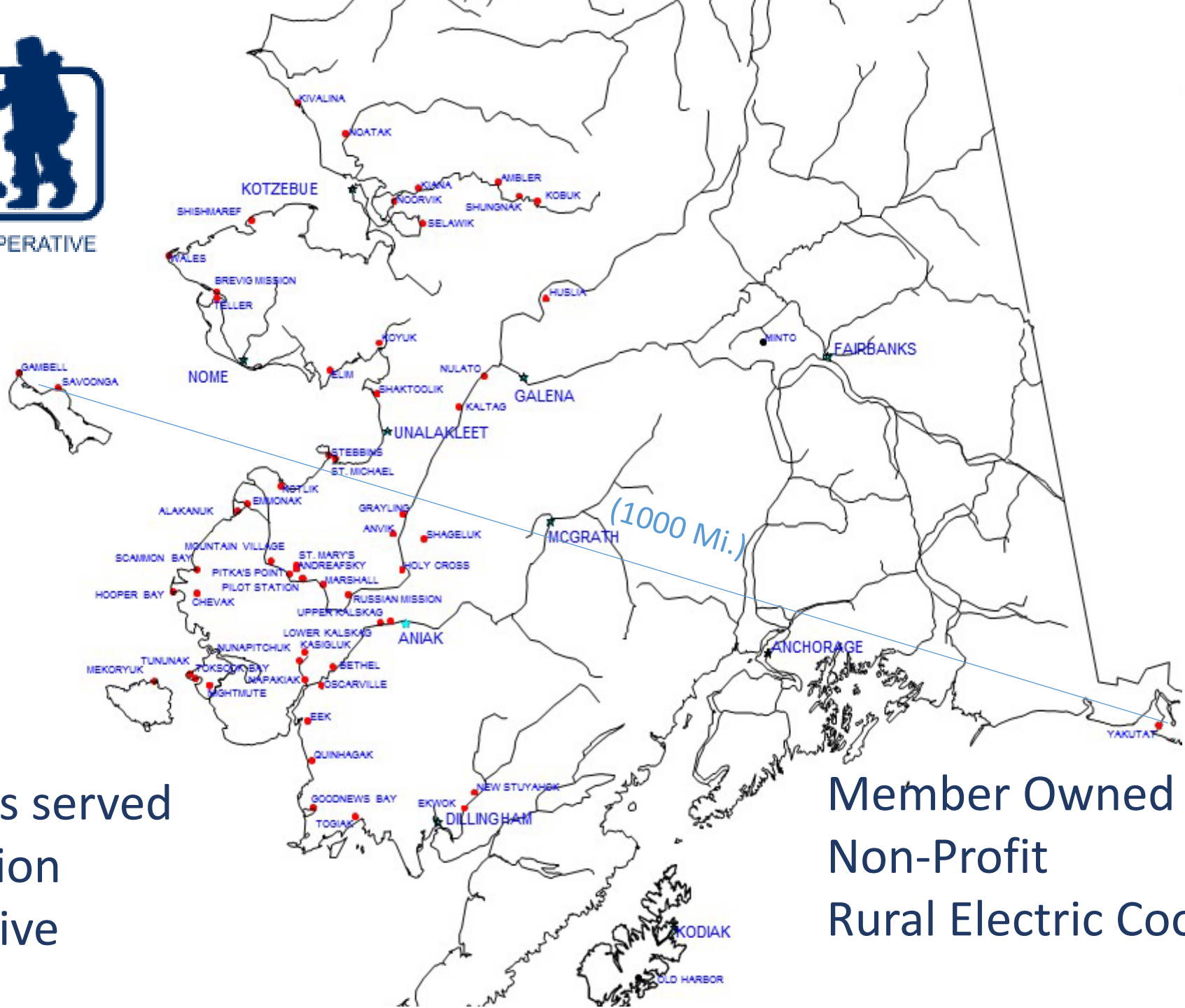
- 58 Member Communities
- 11,500 Services
- Population Served: 32,000
- 92% Alaska Native
- Smallest: Anvik 79 → Largest: Bethel 6,469
- 9.1 million gallons of diesel / \$38.8 million (\$4.26)
- 85 FT / 59 PT Employees
- 49 Power Plants
- 32 Wind turbines serving 20 communities
- 3 Solar arrays serving 4 communities
- Two tug and barge sets





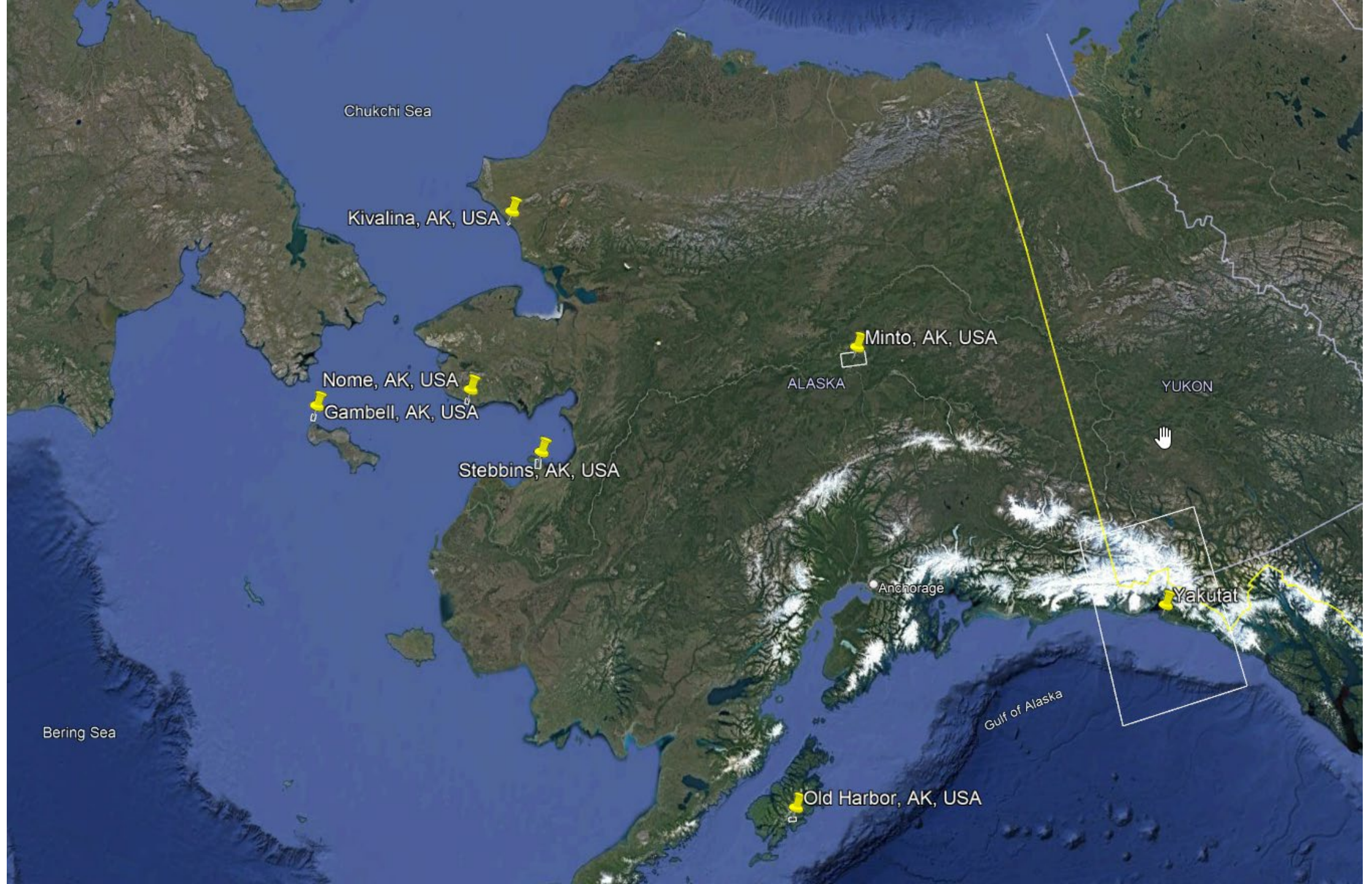


ALASKA VILLAGE ELECTRIC COOPERATIVE



58 Communities served
32,000 population
92% Alaska Native

Member Owned
Non-Profit
Rural Electric Cooperative



Chukchi Sea

Kivalina, AK, USA

Nome, AK, USA
Gambell, AK, USA

Stebbins, AK, USA

Minto, AK, USA
ALASKA

YUKON

Anchorage

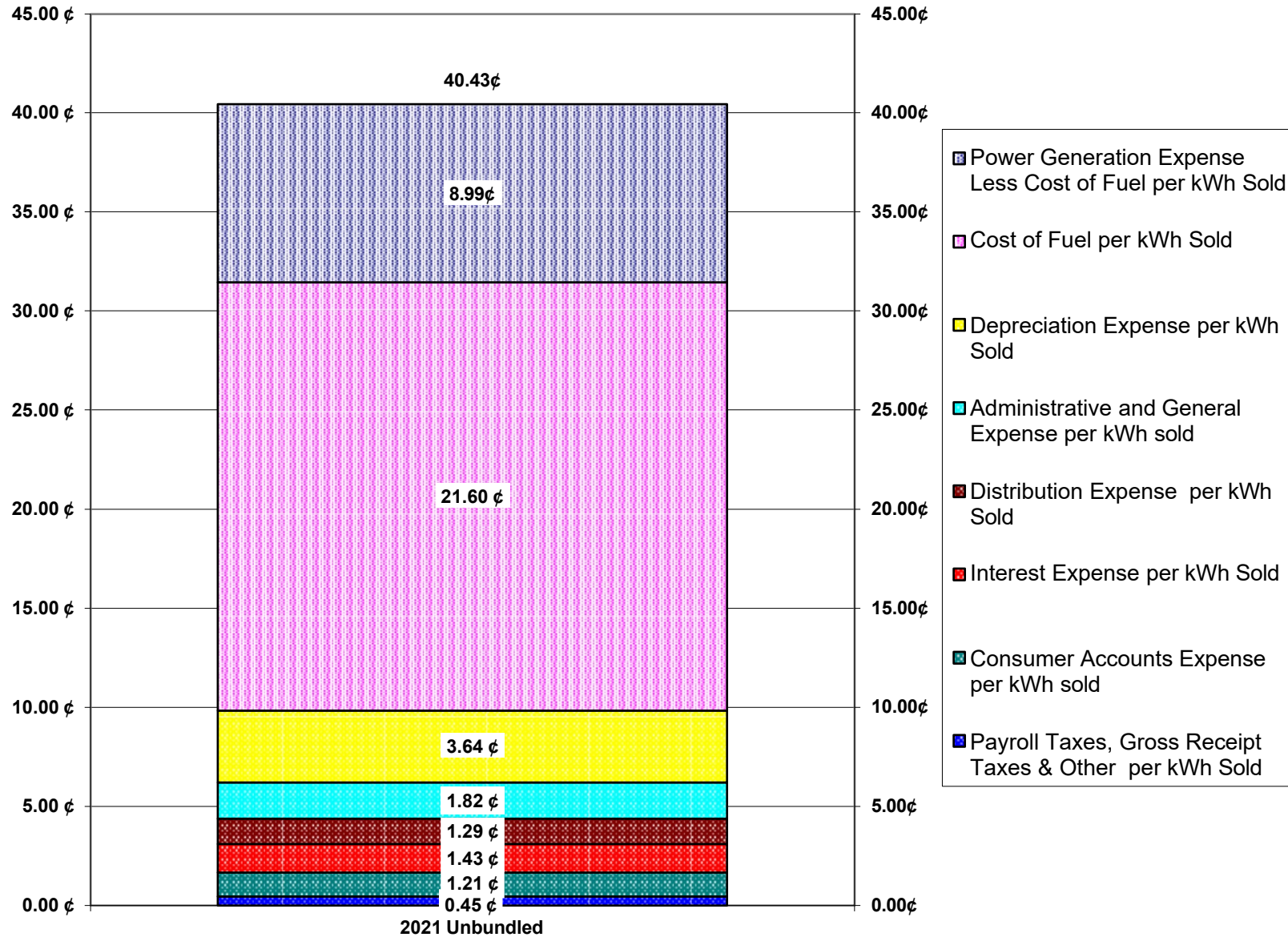
Yakutat

Bering Sea

Gulf of Alaska

Old Harbor, AK, USA

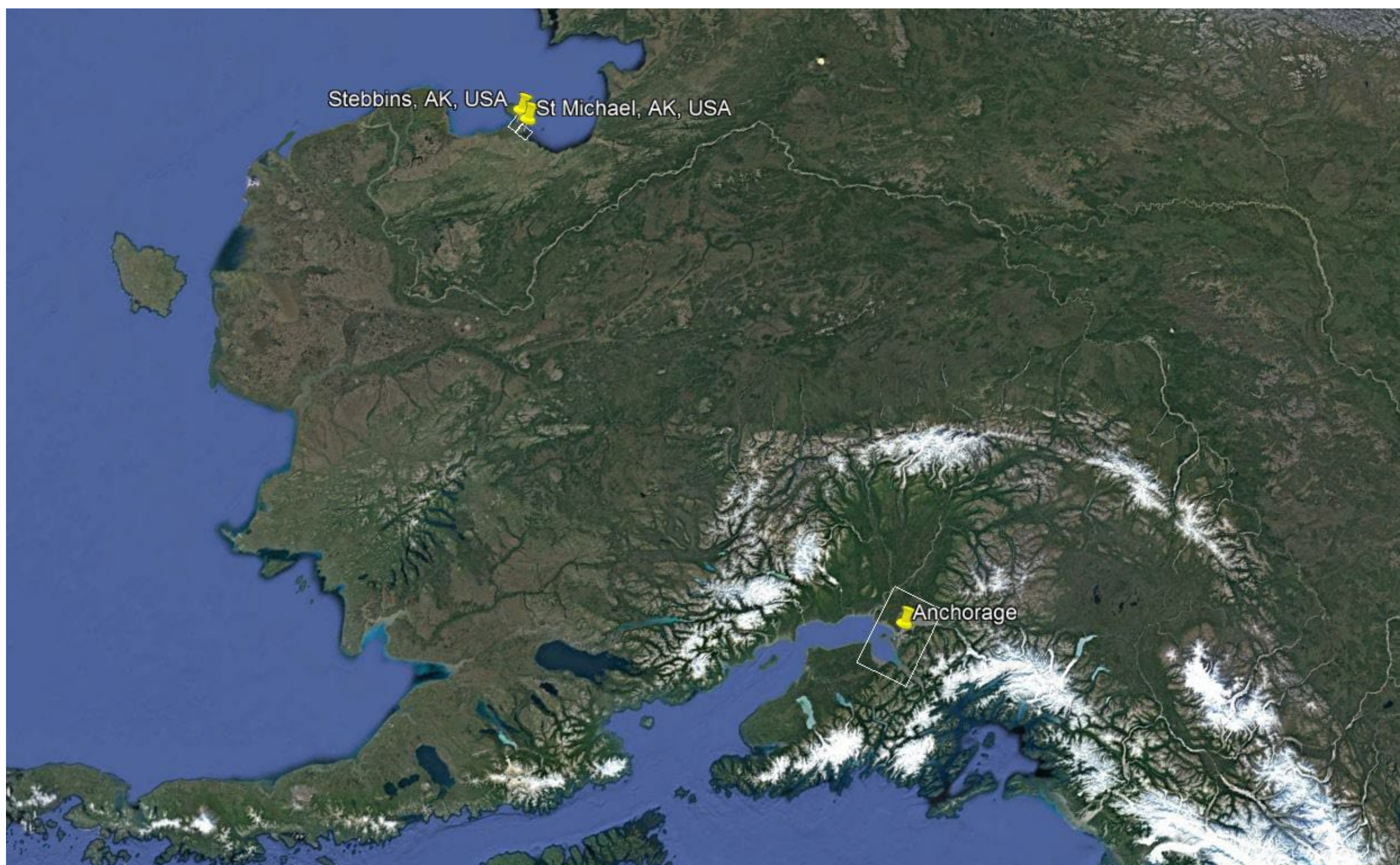
Alaska Village Electric Cost Components per Kilowatt-hour Sold



AVEC Wind Program 2021

- **32 Wind Turbines (4,800 kW)**
- **11 Wind Farms**
- **Serving 20 Communities**
- **6.82 million kWh**
- **Displaced 497,191 gallons**
- **Saving \$1.48 million**
- **5,578 tons of CO₂ avoided**





Stebbins, AK, USA

St Michael, AK, USA

Anchorage



Norton Sound

Norton Bay

Stebbins, AK, USA

St Michael, AK, USA



Stebbins, Alaska Population 575

Gas \$5.27 Diesel \$5.04

Electric Rate:

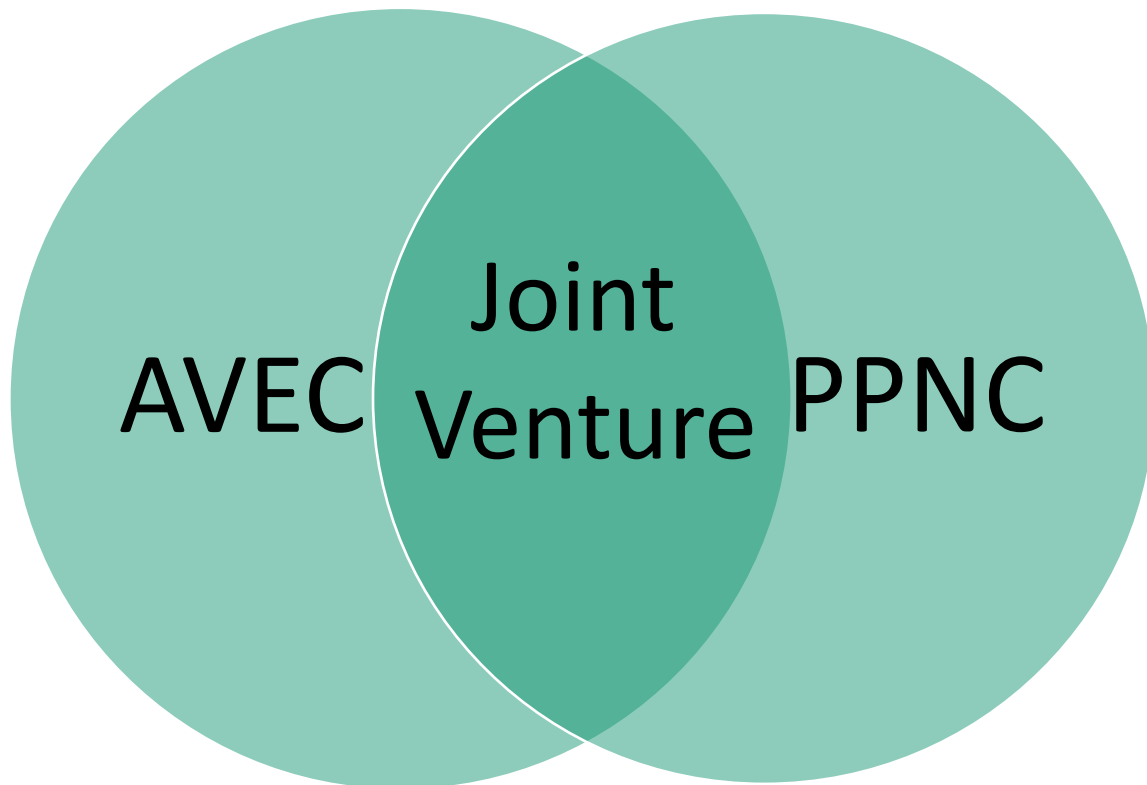
0-700kWh 0.50/0.23

An aerial photograph of St. Michael, Alaska, showing a coastal town with buildings, roads, and a large body of water. The town is situated on a peninsula, with a large bay to the east and a smaller bay to the south. The land is green and flat, with a grid-like street pattern. Several buildings with red roofs are visible, along with a large white cylindrical structure, possibly a water tower or storage tank. The water is dark blue, and there are several small islands in the distance.

St. Michael, AK Population 427
Gas \$5.20 Diesel \$4.95

A fortified trading post called "Redoubt St. Michael" was built by the Russian-American Company at this location in 1833; it was the northernmost Russian settlement in Alaska.

- Partnership between AVEC and SNC
 - To benefit the communities of Stebbins and Saint Michaels



Project Partners:

- City of Stebbins
- Native Village of Stebbins
- City of St. Michael
- Native Village of Saint Michael
- Stebbins Native Corporation
- Stebbins Community Association
- St. Michael Native Corporation.
- Denali Commission
- DOE Office of Indian Energy
- FEMA

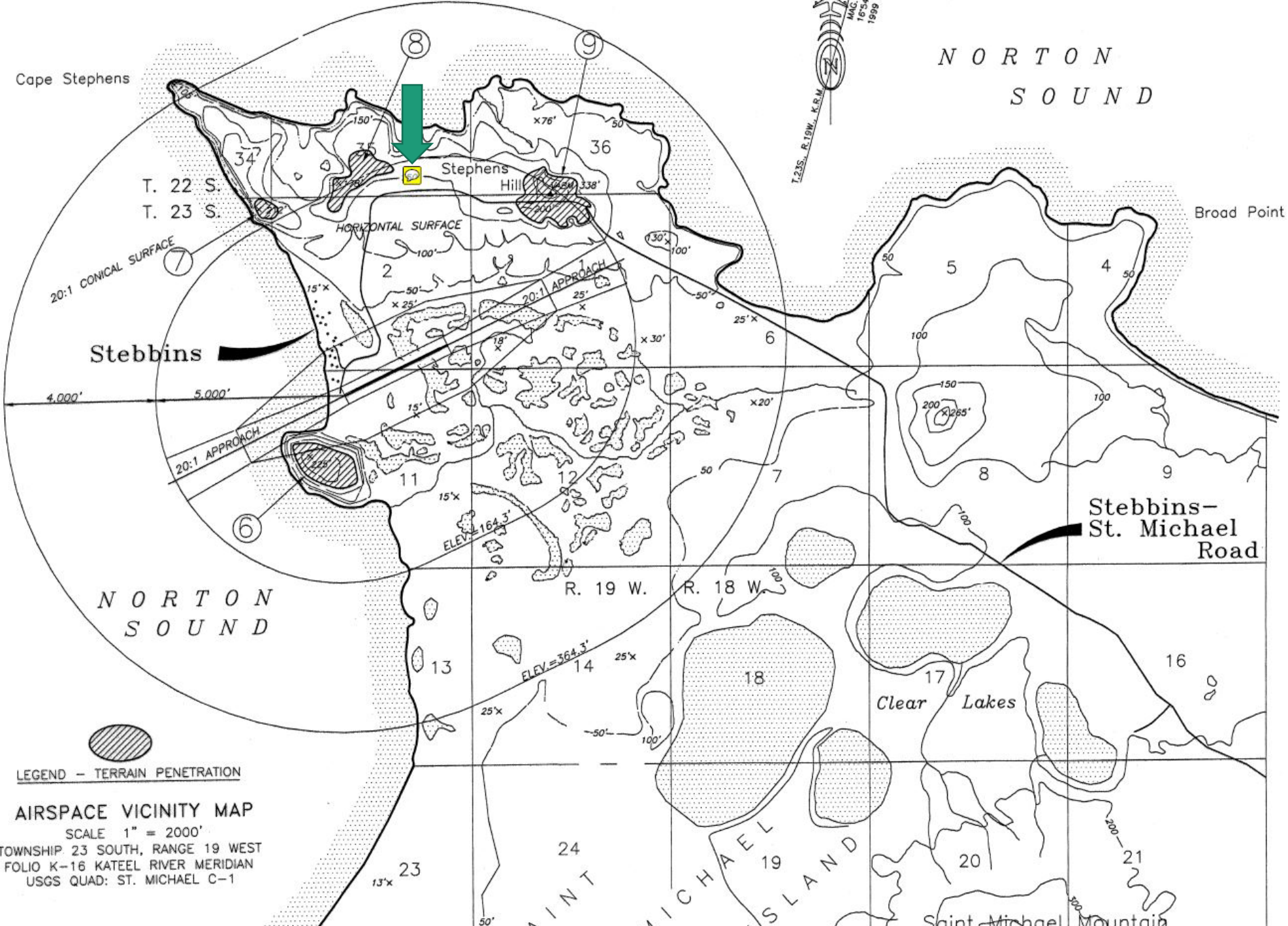
Install EWT 900kW Turbine

- Offset 104,700 of diesel
 - Savings in first year \$365,403
 - Lifetime savings \$11.4 million
 - Project life 25 years
 - Provide wind to heat
-
- \$452,384 (2022- \$4.32)



Stebbins Turbine





LEGEND - TERRAIN PENETRATION
AIRSPACE VICINITY MAP
 SCALE 1" = 2000'
 TOWNSHIP 23 SOUTH, RANGE 19 WEST
 FOLIO K-16 KATEEL RIVER MERIDIAN
 USGS QUAD: ST. MICHAEL C-1

NORTON
SOUND

Broad Point

Stebbins-
St. Michael
Road

Clear
Lakes

Saint
MICHAEL
ISLAND
Saint Michael Mountain

Schedule

- Procure Turbine 1Q2020
- Mob to site 3Q2022 / 2Q2023
- Site improvements 1Q2023 / 4Q2022
- Turbine Foundation 1Q2023 / 2Q2023
- Turbine Delivery / Installation 2Q2023 / 3Q2023
- Start up / Commissioning 3Q2023 / 4Q2023

Past Projects

- Bethel – 900kW EWT
 - Online September 2018 (49 months)
 - 6,628,189 kWh
 - 430,224 gallons avoided Diesel
 - 4,818 tons CO2 avoided
 - Saving \$1.53 million
- St. Mary's/Pitka's Point – 900kW EWT
 - Online January 2019(46 months)
 - 6,947,968 kWh
 - 604,171 gallons avoided Diesel
 - 6,766 tons CO2 avoided
 - Saving \$1.95 million

DOE Tribal Energy's impact in AVEC Villages

Toksook Bay

Thank You

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Manager, Project Development

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Cooperative**

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