

An aerial photograph of a coastal town at dusk. The town is illuminated with warm lights, and a river winds through it. In the foreground, several tall, white wind turbines stand on a grassy hillside. The sky is a mix of blue and orange, suggesting sunset or sunrise. The overall scene is a blend of natural beauty and modern infrastructure.

Tribal Energy Conference
2021 Pandemic Virtual Version
November 2021

Forest Button, Manager,
Project Development & Key Accounts

Toksook Bay

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

(ASRE)

Stebbins / St. Michael Renewable Energy
Project



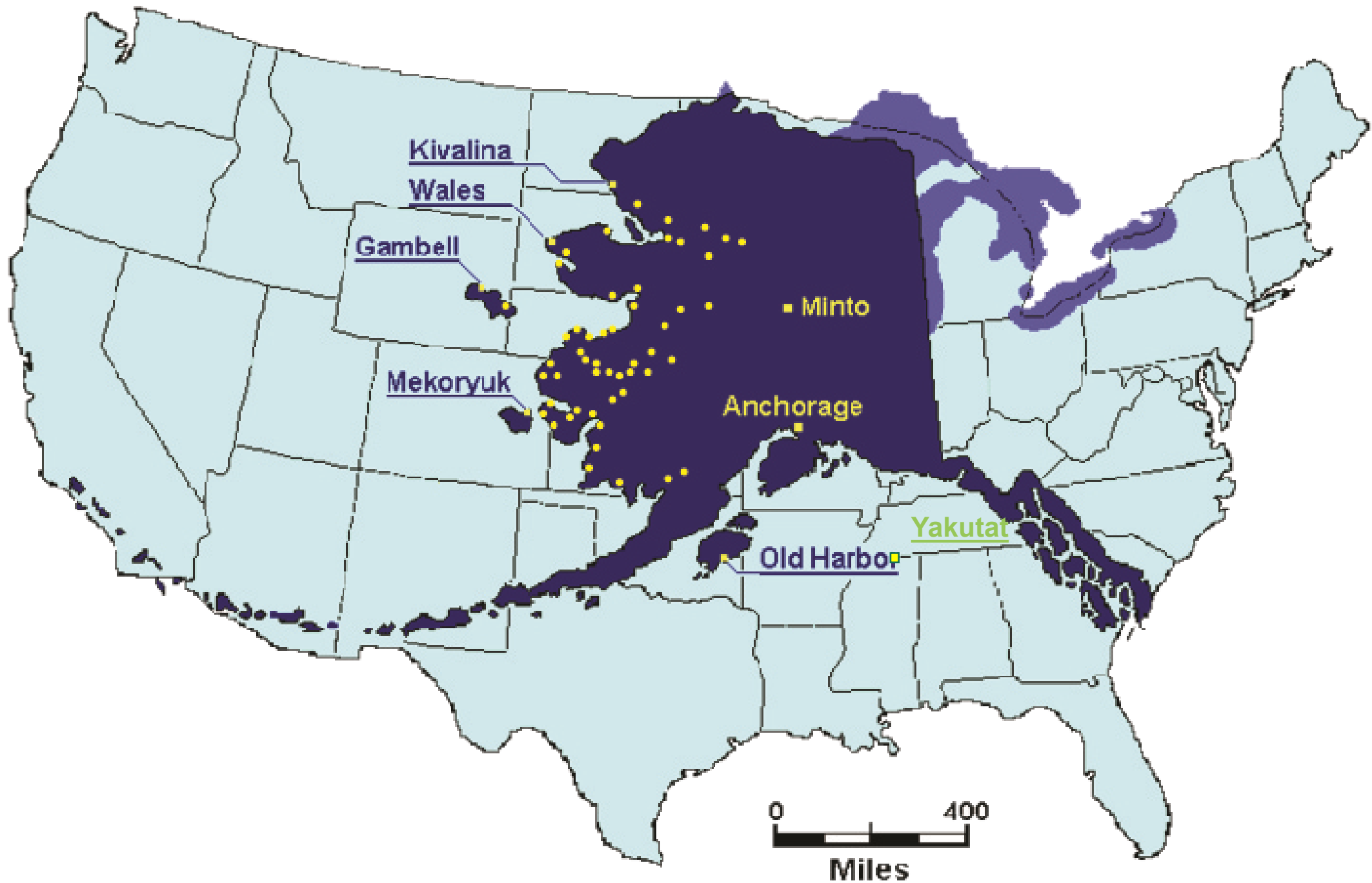
Alaska Village Electric Cooperative

Member owned, not-for-profit

Energizing Rural Alaska since 1968

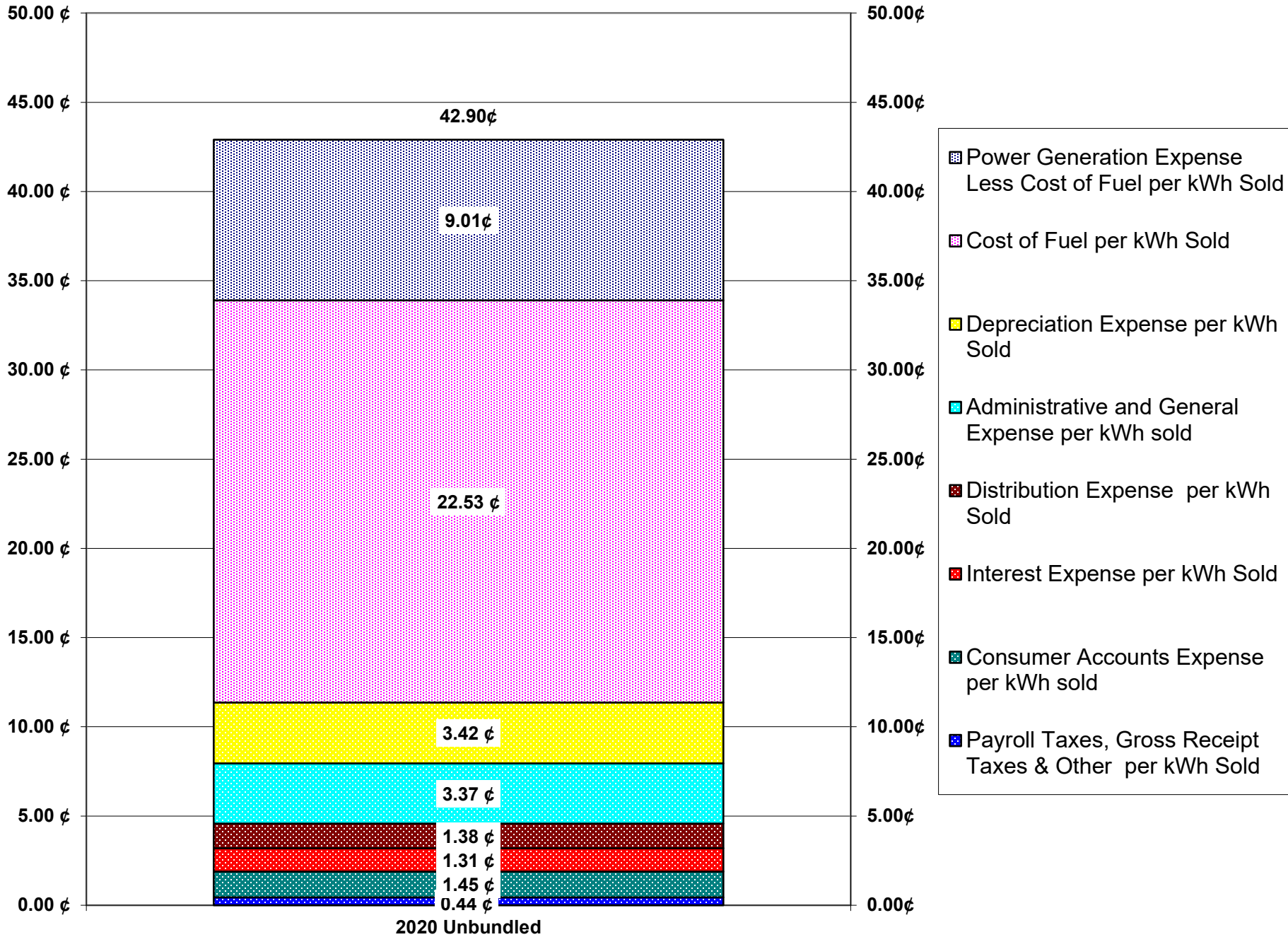
- 58 Member Communities
- 11,500 Services
- Population Served: 30,194
- 94% Alaska Native
- Smallest: Oscarville 64 → Largest: Bethel 6,469
- 9.1 million gallons of diesel / \$20.4 million (\$2.90)
- 85 FT / 59 PT Employees
- 49 Power Plants
- 32 Wind turbines serving 20 communities
- 3 Solar arrays serving 4 communities
- Two tug and barge sets







Alaska Village Electric Cost Components per Kilowatt-hour Sold

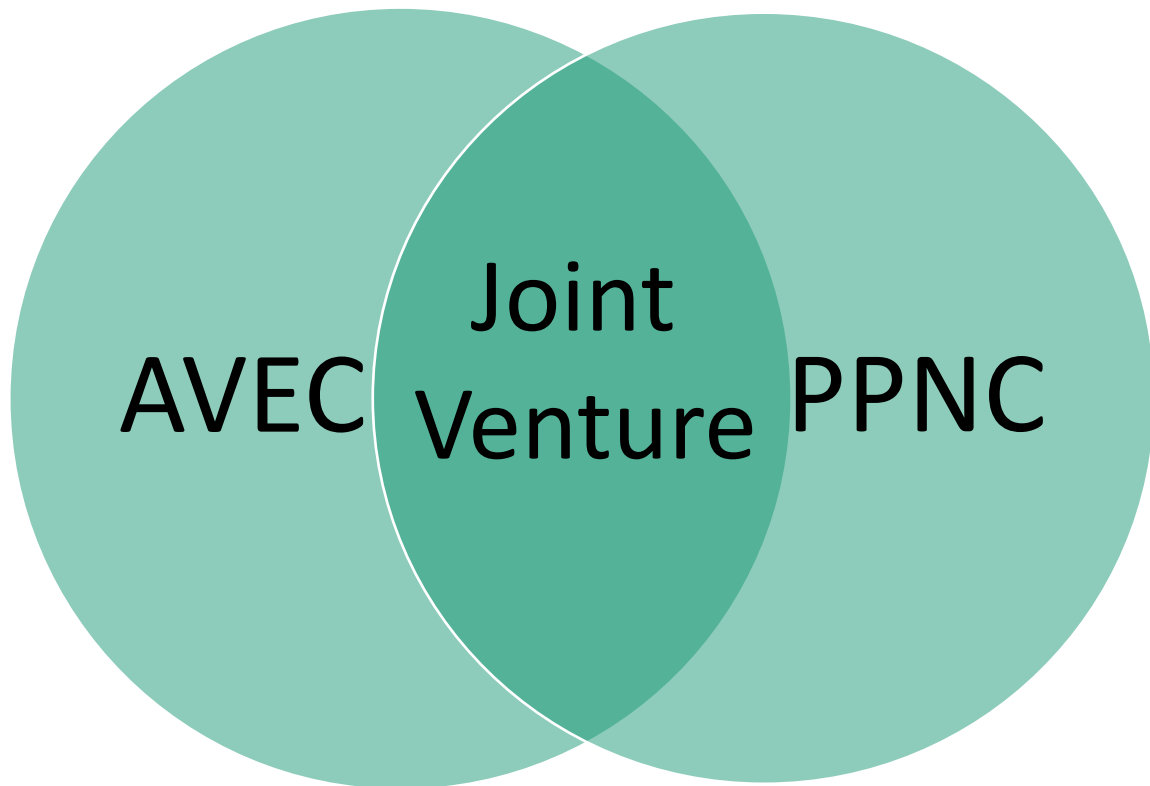


AVEC Wind Program 2020

- **32 Wind Turbines (4,800 kW)**
- **11 Wind Farms**
- **Serving 20 Communities**
- **6.94 million kWh**
- **Displaced 487,000 gallons**
- **Saving \$1.51 million**
- **5,449 tons of CO₂ avoided**



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



Project Partners:

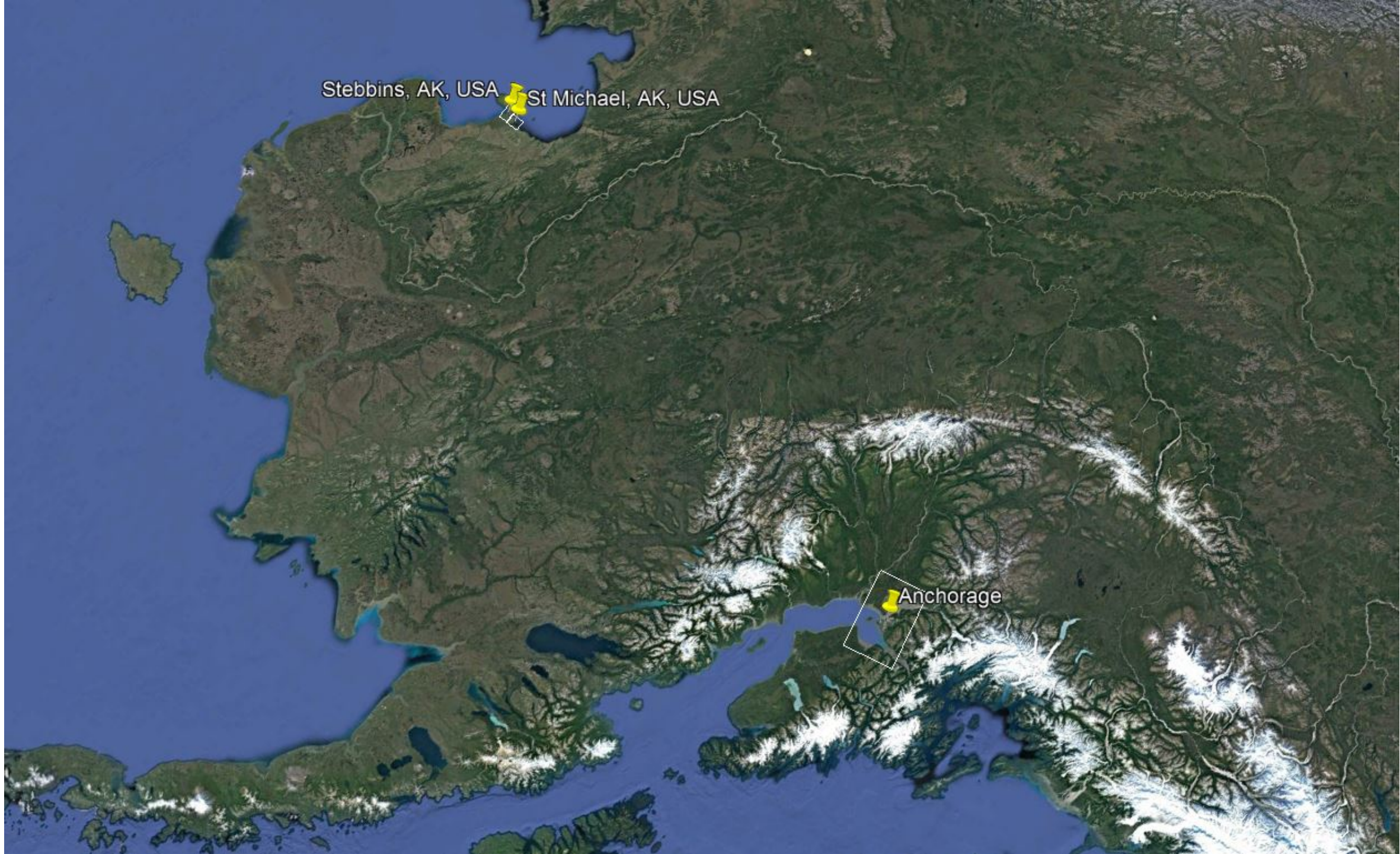
- City of Stebbins
- Native Village of Stebbins
- City of St. Michael
- Native Village of Saint Michael
- Stebbins Native Corporation
- Stebbins Community Association
- St. Michael Native Corporation.
- Denali Commission
- DOE Office of Indian Energy

Stebbins, AK, USA



St Michael, AK, USA

Anchorage





Norton Sound

Norton Bay

Stebbins, AK, USA

St Michael, AK, USA



St. Michael, AK

Population 427

Gas \$5.20

Diesel \$4.95

Electric Rate:

0-500kWh .2353

501-700kWh .4935



Stebbins, Alaska

Population 575

Gas \$5.27

Diesel \$5.04

Electric Rate:

0-500kWh .2353

501-700kWh .4935

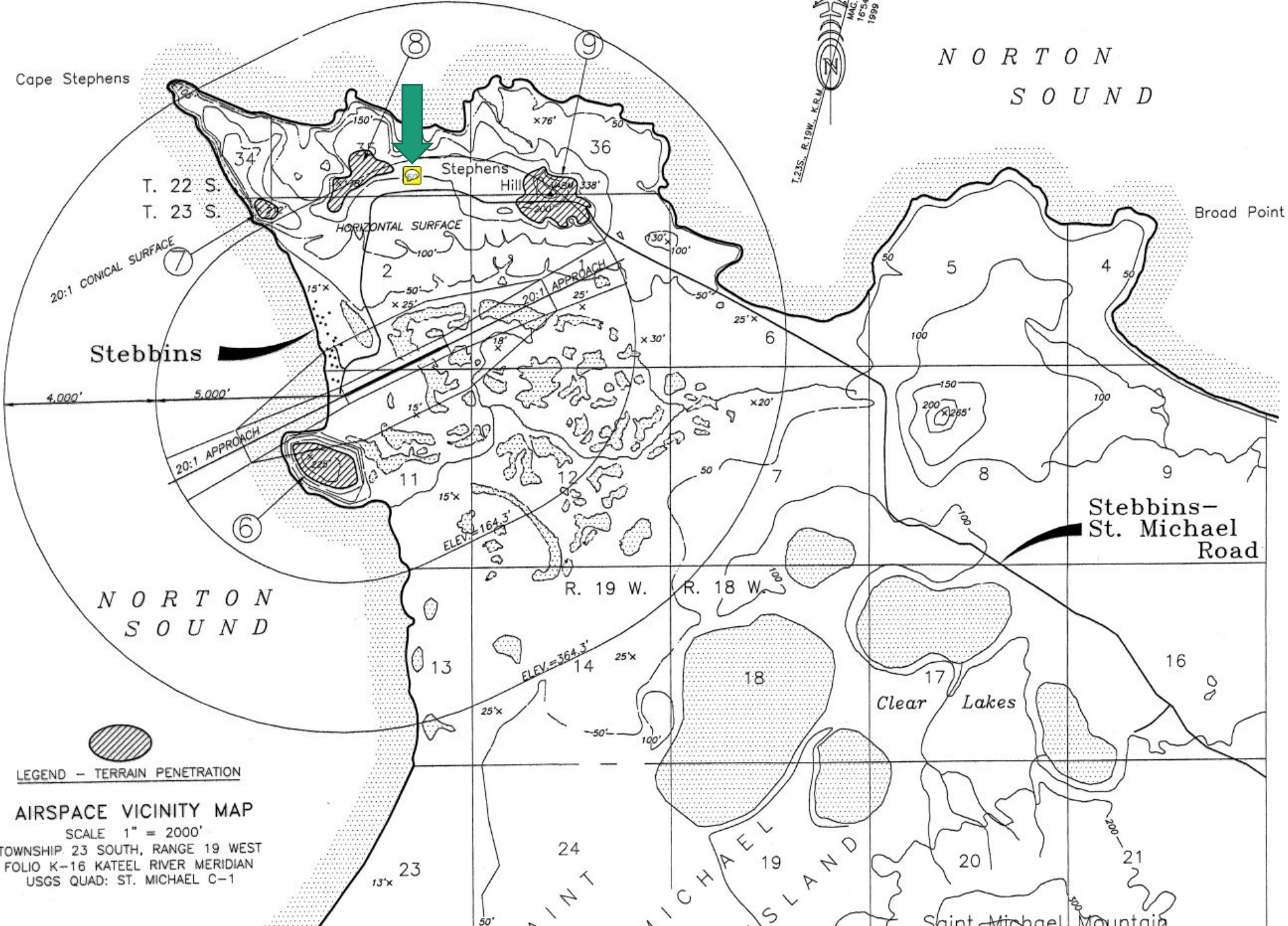
Install EWT 900kW Turbine

- Offset 104,700 of diesel
- Savings in first year \$365,403
- Lifetime savings \$11.4 million
- Project life 25 years
- NPV benefit \$6.694 million
- Provide wind to heat



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


Schedule

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

Past Projects

- Bethel – 900kW EWT
 - Online September 2018 (37 months)
 - 5,030,926 kWh
 - 363,769 gallons avoided Diesel
 - 4,000 tons CO2 avoided
 - Saving \$1.3 million
- St. Mary's/Pitka's Point – 900kW EWT
 - Online January 2019(33 months)
 - 4,982,690 kWh
 - 433,654 gallons avoided Diesel
 - 4,770 tons CO2 avoided
 - Saving \$1.2 million

DOE Tribal Energy's impact in Alaska



With collaboration, all things are possible!

Forest Button
Alaska Village Electric
Cooperative