



Department of Energy  
November 2022  
Presented by: Sean Glasheen



# Nuvista Kwethluk Energy Storage



Department of Energy Office of Indian Energy

Energy Infrastructure Deployment on Tribal Lands

Tribal Energy Development Organization (TEDO) Partners:

Nuvista Light & Electric Cooperative, Inc.

Kwethluk, Incorporated

Organized Village of Kwethluk

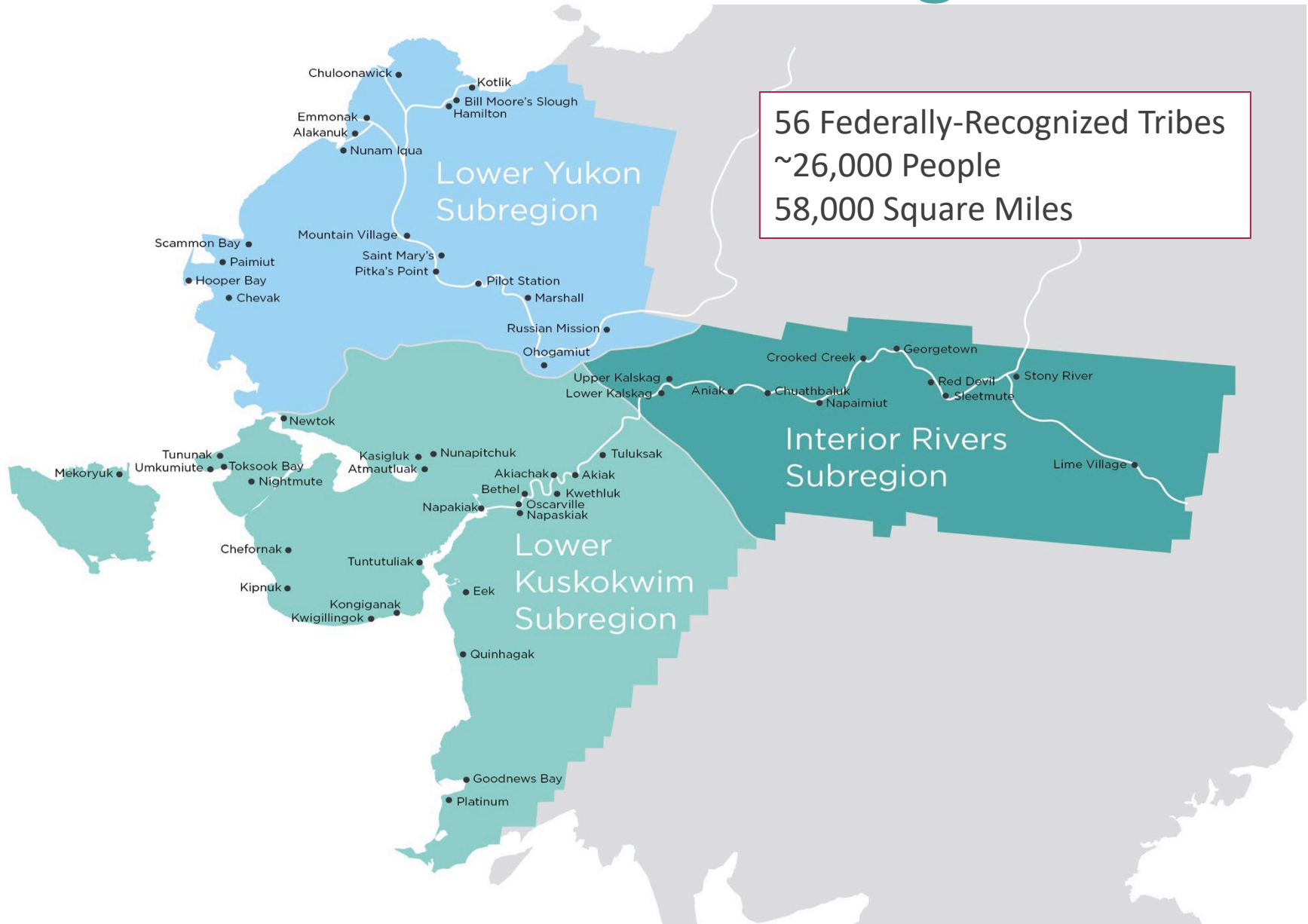
Period of Performance: 10/01/2019 through 9/30/2023

# About Nuvista



Nuvista is a non-profit cooperative created by regional leaders of the Yukon-Kuskokwim Delta to help **our people** find energy opportunities that **carry our culture** and traditional **way of life** into the future.

# Yukon-Kuskokwim Delta Region



# Nuvista's Focus



Our mission is to achieve a **more resilient** and connected region while **empowering** our communities with access to **affordable, sustainable** energy infrastructure.

Our approach focuses on **locally-driven** energy planning and education, community **energy efficiency** efforts, energy **generation and transmission** projects.



# TEDO Partners



**Kwethluk, Inc.** is the village corporation for the community formed under the Alaska Native Claims Settlement Act (ANCSA) to manage money and lands of the people of Kwethluk. Kwethluk, Inc. owns and operates Kwethluk Light Plant, the electric utility.

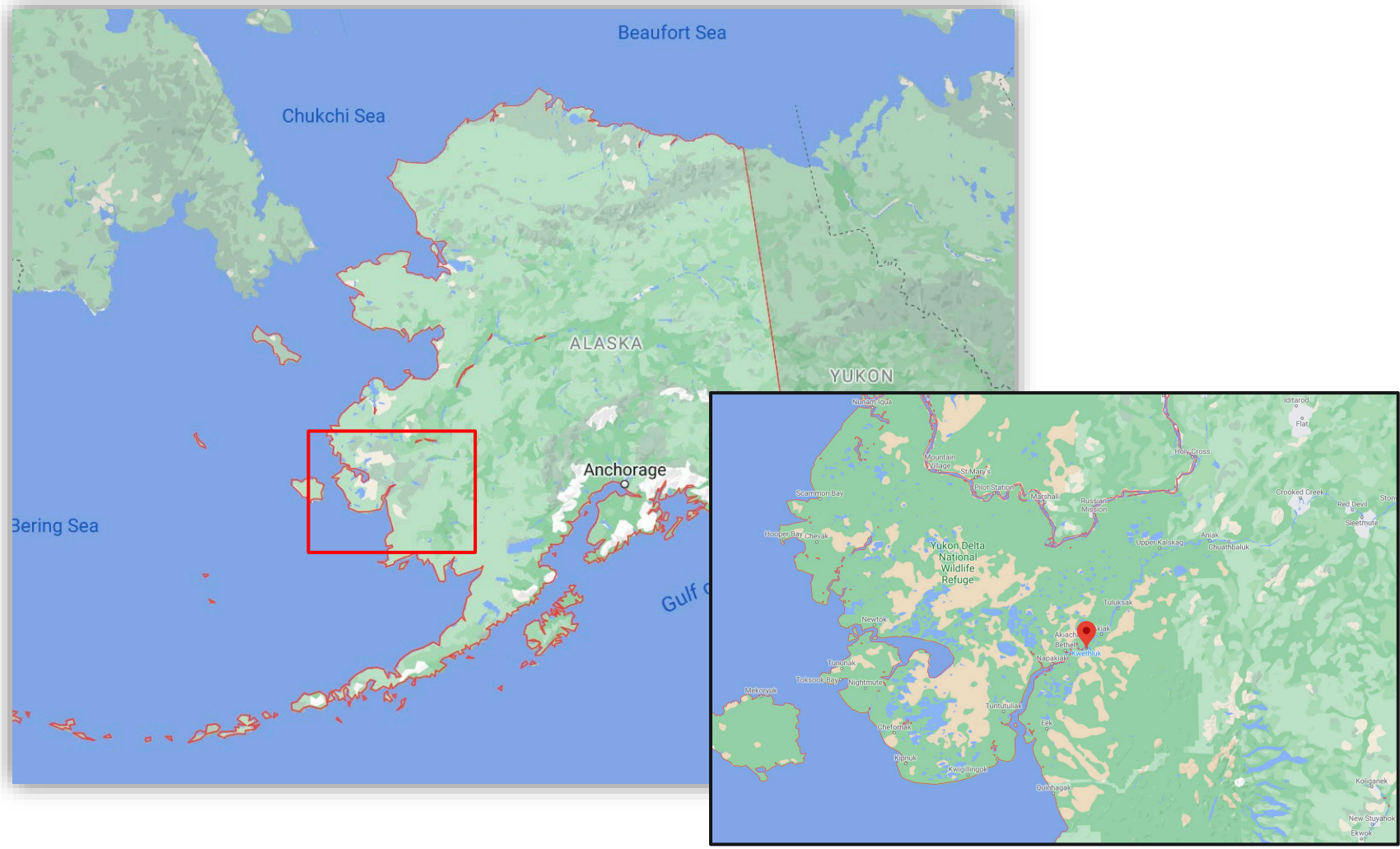
**Organized Village of Kwethluk (OVK)** is the federally recognized Tribe of Kwethluk and is governed by a Tribal Council.



# Kwethluk, Alaska



Yup'ik: "Kuiggluk" translates to "bad river"



# About Kwethluk



- Population: 756 (2018) and has grown 5% since 2000
- Median age of residents is 23.8 years old
- Median Household Income: \$47,500
- Unemployment rate: 26%
- Price of gasoline: \$7.12/gal, heating fuel: \$6.06/gal (Nov)

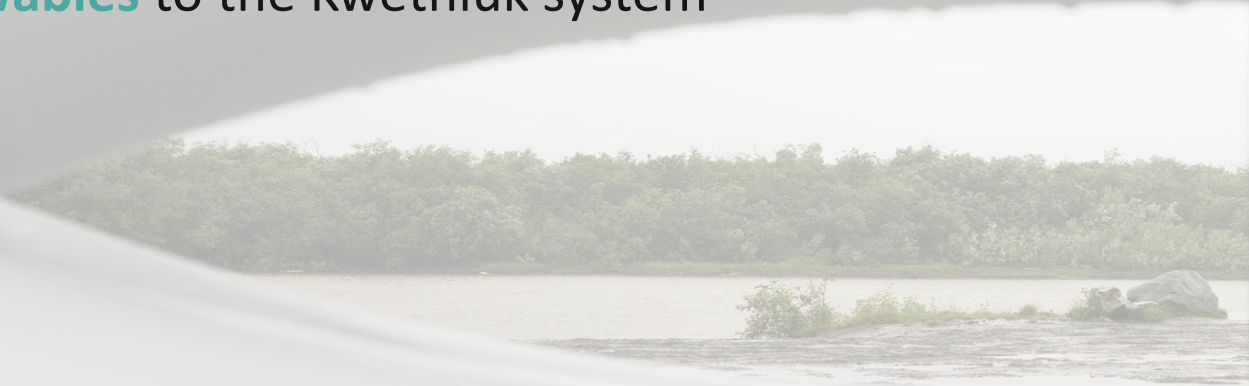




# Project Overview

Installation of an ABB 500/670 kW E-Mesh PowerStore battery energy storage system (BESS) into the Kwethluk power plant with 2 primary goals:

1. Improve the Tribal community's energy **resilience** and energy **security**
2. Provide **grid stability** to supplement the addition of **renewables** to the Kwethluk system





# Kwethluk's Electric System

- Kwethluk's current electrical system is a standalone diesel power plant with 3 generators
- Peak load is 450 kW
- Average load is 180 kW
- Kwethluk has an average of 9 outages per year
- **Project in progress:** installation of 4 100-kW wind turbines with an estimated production of 200,000 kWh/year for each turbine



# Energy Security & Resilience



The BESS will provide a renewable, rechargeable, non-fossil fuel emergency power back up for community facilities during outages.

In the event of an outage, the BESS will provide emergency power to:

- The **power plant**, so that operators can complete necessary repairs
- The local **clinic, Tribal buildings and offices**, and the **Headstart building**
- Residential customers to prevent the thawing of **subsistence foods** stored in freezers

The battery will provide power for an estimated 3 hours for essential services, or 1 hour at the community's average load.



## Progress To-Date

Battery energy storage system complete

### Remaining Milestones:

12 months of monitoring





# Quyana!

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