Deep Energy Makeover for POSS Camp

Tanadgusix Corp. St. Paul Island, AK

St. Paul Island, Alaska

- Population ~500
- Pribilof Islands, 750 air miles from Anchorage and 200 miles north of the Aleutian Chain

Tanadgusix Corporation (TDX)

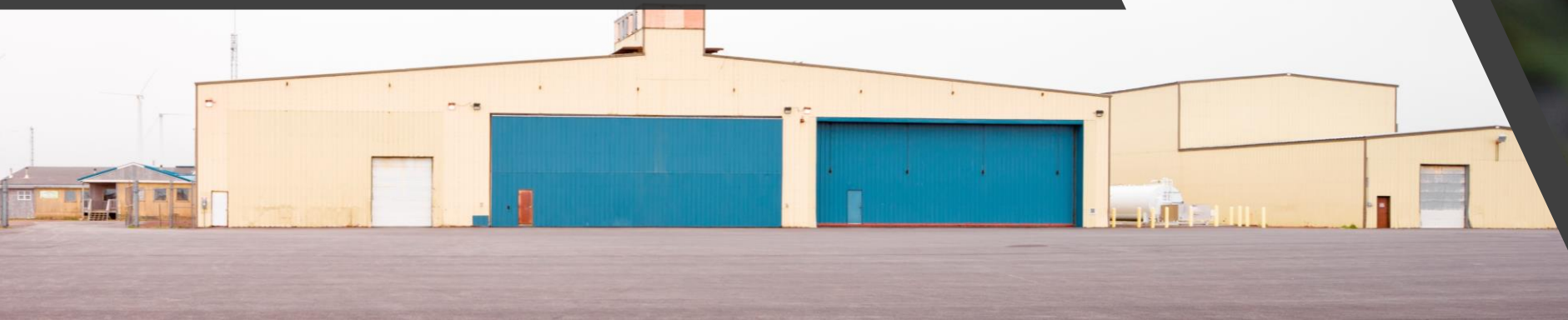
- TDX is an Alaska Native Village Corp. with a mission to provide economic well-being for the shareholders and descendants who are the indigenous peoples of St Paul
- 600+ employees around the US and internationally
- Business sectors include: commercial, industrial, and public

Project Goals

- Reach 80% of all energy consumed provided by renewable sources by 2025
- Increase efficiency and safety of POSS Camp facilities
- Training, employment, and educational opportunities for community members and outside investment on St. Paul

POSS Camp

- “Petroleum Offshore Supply Camp”
- First Native-owned and operated independent wind-diesel hybrid plant in the US
- Can run “diesel’s off,” and store excess energy to use as heat



Specific Improvements

- 4th Vestas V27 Wind Turbine to be installed
- POSS Camp
  - Thermal system upgrades
  - Building envelope upgrades
  - Electrical retrofit
  - Wind to heat system
  - Energy efficiency upgrades

Accomplishments

- FAA and NEPA approval of project activities
- Focused scope and budget with the help of DOE representatives

In-progress Activities

- 4th Wind Turbine to be installed summer 2020
- Further engineering review of thermal system upgrades to be implemented
- Lighting improvements to be installed soon to decrease safety risk and increase electrical efficiency
- Reconsidering of envelope priorities to include the “drying in” of the three main high bays

Thermal System Upgrades

- Redesign of thermal storage tank in progress
- Additional insulation of lines
- Reconfiguration of heating elements
- Possibly additional storage tank

USCG Bay Roof Challenges

- The envelope upgrades and Drying-in of roof has considerable challenges.

Overview of Energy Improvements

- Reduce electricity use by 54%
- Reduce thermal load by approximately 23%
- Almost double wind energy contribution (from 34% to 67%)
- Reduce diesel costs by an estimated $239,000/year, net annual savings of nearly $200,000
- Increased revenue from leasing 28,000 ft^2 of climate-controlled space