



# Kasigluk, Alaska

**Location** Kasigluk, Old Kasigluk, and Nunapitchuk, Alaska

**Description** Small, remote communities on the western coast of Alaska

**Customer** Alaska Village Electric Cooperative on behalf of villagers

**Number of turbines** 3

**Annual electrical consumption** 2,705,005 kWh

**Average wind speed** 15 mph

**Cost per kWh to utility customers without wind power** 37 cents

## Remote Alaskan villages fight rising diesel prices with wind

Only accessible by small aircraft and snowmobiles in the winter, the tight-knit communities of Kasigluk, Old Kasigluk, and Nunapitchuk are known for their fishing, snowmobiling, and high fuel prices. The small villages' remote locations made reliable and affordable energy a challenge for Alaska Village Electric Cooperative (AVEC) and the 500 or so Yup'ik Native Alaskan families it serves.

**“The skyrocketing cost of diesel last year resulted in the average AVEC consumer paying a fuel charge of almost 37 cents per kilowatt-hour. Now residents of Kasigluk and Nunapitchuk are paying 12 cents less, thanks to the wind turbines.”**

—MEERA KOHLER, CEO AND PRESIDENT, AVEC

AVEC is a non-profit electric utility owned by the residents of 53 remote villages throughout western Alaska. To power these homes, AVEC used more than 150 diesel generators that cumulatively ran more than 400,000 hours per year—equaling 950 diesel truck trips around the world. The five million gallons of diesel fuel used to power these villages was stored in bulk fuel tank facilities that needed regular maintenance, repairs, and upgrades. With skyrocketing fuel prices and storage expenses, electricity became so expensive that villagers often had to make difficult decisions between powering their homes and purchasing food. That's why AVEC took the bold initiative to start introducing wind power to some of the remote villages that it serves.



### The wind turbine for Alaska Village Electric Cooperative: Northern Power™ 100

AVEC chose the Northern Power 100 because it had:

**PROVEN RELIABILITY** Even in the most extreme weather conditions, its advanced technology and gearless design assured minimal maintenance—a must in remote villages difficult to access by conventional means.

**SMOOTH POWER TRANSFER** Our proprietary system controls and power electronics send smooth, clean power to Kasigluk's diesel grid with a tieline to Nunapitchuk's to support the existing system.

#### Results\*

Energy produced per year	593,000 kWh
Percentage of electrical needs met	21.9%
Electricity savings	\$201,000 per year
Diesel fuel displaced	45,048 gallons
Economics	5-year payback
Carbon emissions offset	432 tons per year**

\*These are estimated results based on average wind speeds in a specific area. Wind speeds vary and therefore, actual results may vary.  
 \*\*CO<sub>2</sub> offset estimated by using EPA's eGRID 2007

#### Immeasurable relief for Kasigluk and Nunapitchuk

With more manageable electricity costs, the Yup'ik people won't be forced to abandon their cultural pride and ancestral homes in favor of affordable power elsewhere. Using the wind that has blown across the tundra since their ancestors first settled the area has led to long-term improvements that will help Kasigluk and Nunapitchuk survive in the face of urbanization and a volatile energy future.

**“I am very happy to have wind power. I have seen a big decrease in my electric bills.”**

—ROBERT NICK, NUNAPITCHUK ELDER



Planning and installation services for the AVEC installations were performed by St. George Construction (STG).

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