

Arctic Winds May Power Villages

Last October, four children from Kotzebue tacked a cardboard sail onto a sled and sailed across the Kotzebue Sound to the hunting camp at Sheshaulik. Strong winds often prevent aircraft from taking off or landing on airstrips in Arctic villages.

Within a short period of time, the winds may mean something more to villages on Alaska Arctic Coast and Aleutian Chain than the whining, howling sounds of a stormy night.

A University of Alaska physicist, Professor Tunis Wentink, Jr. of the Geophysical Institute, has proposed that the remote villages harness the winds to produce electrical power.

Windmills have been used for centuries by the Dutch to pump water and grind grain. They have been used to generate power for scientific stations in the Antarctic. A gigantic windmill constructed in Vermont during the Second World War generated some 1,300 kilowatts of power.

Windmills have also been used in Alaska, at Beechy Point, Anaktuvuk Pass, Wainwright,

Flat, and Kotzebue. Professor Wentink feels that it is now possible to construct wind-driven generators in many villages at a lesser long-range cost than fossil fuel generators.

"There have been a surprising number of windmills in Alaska. This is not an experimental thing. They have been used for years and we know that they will operate in hostile climates," Wentink said.

"The initial cost of windmills is higher than generators, but over a two-year period, one can pay off the cost of the wind-driven generators on a savings in oil costs alone," he added.

"In simple terms, windmills, in the long run, will be cheaper than diesel generators in the Arctic, especially in the remote villages."

The type of windmill that Professor Wentink has in mind for the villages is a small, six-kilowatt, three-bladed device

Over a one-year period, according to Wentink's calculations, the cost per kwh at a location such as Anaktuvuk Pass would be 43.9 cents, as opposed to an annual kwh cost for diesel fuel of 24.8 cents.

The savings are more evident in the long run, over a five-year period, when the cost for wind power drops to 8.8 cents per kilowatt hour, with no reduction in the cost of diesel generated power.

"Windpower is not for all the villages. Of course, it depends on the winds. Along the Aleutian Chain and the west and north coasts of Alaska, there is no question that the windpower is a good thing to push," Wentink states.

With Wentink's proposal getting power to the villages should be a breeze.



CENTURIES OLD—Dutch windmills have been used since the fifteenth century to pump water and grind grain. The models proposed for use in

Alaska villages are much smaller and more streamlined than the traditional windmill.



This is the model which Professor Tunis Wentink, Jr. has proposed for use in Alaska's Arctic and Aleutian villages. The six-kilowatt model can pay for itself in fuel

savings alone over a two-year period. The Arctic Slope Corporation, the Arctic Slope Borough, and the State of Alaska are interested in Wentink's proposal