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FROM THE ARCTIC TO THE FARM: EXPLORER STEGER TOUTS RENEWABLE ENERGY

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ST. PETER Explorer Will Steger has witnessed firsthand the harsh beauty of the Arctic and the deceptive serenity of polar ice caps. But last week, he seemed right at home on a dairy south of St. Peter, exploring a methane digester.

His visit was one of several in Steger's southern Minnesota ³Renewable Energy Expedition,² sponsored by the Minnesota Natural Legacy Campaign and the Minnesota Project. He also toured a wind turbine near Lake Benton, a biodiesel plant and an ethanol plant in Luverne.

In 1986, Steger, a Minnesota native, led a team of six to the North Pole by dog sled, the first recorded, unsupported expedition to the pole. Two years later, he led the longest unsupported dog sled journey in history in Greenland, and in 1989 lead an international team more than 3,700 miles across the Antarctic.

He said he has seen the effects of mankind's pollution in the Arctic, where no humans even exist.

³There are huge ice shelves, 1,400-feet thick and the diameter of Iowa, the whole thing collapsed into the ocean four years ago,² he said. ³More than a third of the ice there is gone and seasons are coming earlier. Carbon dioxide from fossil fuels is melting snow cover, so rather than reflecting sunlight off snow, the ground is absorbing the heat.²

But while global warming is a global issue, it all trickles down to local awareness, Steger said.

³Ask any farmer in the past 30 years and they'll tell you the weather is changing,² he said. ³The solutions to global warming could be real benefits to Minnesota farmers.²

One of those solutions may be Northern Plains¹ methane digester, which converts methane from decaying cow manure into heat or electricity. The manure sits in the digester for about three weeks in temperatures of around 100 degrees. Bacteria consume some components and accelerate anaerobic digestion. Engines then create electricity or flare gas for heat.

The dairy, owned by DAVISCO and employing about 2,500 milking cows, uses the digester to change about 4,500 gallons of manure into roughly 6,200 kilowatts of energy per day that's almost 60 percent of its total energy needs. (Mitch Davis, managing partner of the dairy, said by adding more engines, the dairy will eventually be able to produce 100 percent of its needed electricity.)

³We think these kinds of facilities are the solutions to problems in farming, not the causes,² Davis said.

Beside electricity and heat, the process also produces nutrients used as fertilizer. Davis said using natural fertilizers not only prevents chemical pollution, but revitalizes the ground.

³If this is done in a way that cleans up the environment, why bring nitrogen, phosphorus and potassium from a chemical plant in Iowa when we can get it right here?² Davis said.

He noted methane digesters have been used extensively in Europe for years, but only about 25 American dairies have signed on to the technology since the 1970s.

³Mitch is really a visionary and has the guts to make an investment in it,² Steger said.

Perhaps the technology hasn't caught on in the United States because some officials dismiss the idea that pollution causes global warming, saying the planet is simply experiencing a natural warming trend. That might be true, Steger said, but by sampling ice in the nether-regions of the planet during his expeditions, scientists have found the carbon dioxide levels are rising 100 times faster than in previous eras.

³The argument is not that the carbon dioxide is there, it's where it's coming from,² he said. ³But you don't have to be a rocket scientist to see drive through the Twin Cities and even at midnight it's packed.² Though environmental damage from burning fossil fuels may be extensive, Steger said it's not too late to make a difference dairies like Northern Plains are part of a grassroots solution.

³Once we get that American spirit and the can-do energy there's a lot of hope in that,² Steger said. ³It's not government's problem, it's our problem. We can wake up politicians by getting people engaged again.² Besides first-hand experience, Steger also has the knowledge to back up his theories. He earned his master's degree in education at the University of St. Thomas and taught secondary-level science for three years. Since 1970, he has founded a winter school near Ely, the Global Center of Environmental Education at Hamline University and the World School for Adventure Learning at the University of St. Thomas.

For more information about the Minnesota Project, visit www.mnproject.org. To learn more about the Minnesota Natural Legacy Campaign, go to www.mnlegacy.com.

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