Tapping into Earth's natural heat

Qulliq Energy wants proposals on geothermal feasibility

by Derek Neary
Northern News Services
Nunavut

Qulliq Energy Corporation is embarking on a hunt for deep heating.

The power corporation is seeking a company to carry out a geothermal feasibility study to show whether it would be worthwhile to use natural underground sources of heat to power and heat communities. The tender will be awarded on Nov. 22 and the successful proponent will be required to submit a final report by March 16, indicating the most promising locations in the territory for geothermal energy.

This is QEC's first examination of geothermal potential in Nunavut.

Alison Thompson, chair of the Canadian Geothermal Energy Association and president and CEO of Calgary-based Borealis GeoPower, which is bidding on the Nunavut project, said going into each of Nunavut's communities and listening to residents will be a key step in the probe.

"Try and understand what historical data they have, anything from rivers not freezing over in winter to patches of earth that may warm quicker," she said. "There's a rich knowledge that people living in Nunavut have ... those factors shouldn't and can't be discounted."

The company which undertakes the geothermal study will also rely on existing data compiled by the Geological Survey of Canada, although the existing data for Nunavut is lesser than for southern Canada, Thompson acknowledged.

One of the critical components to viability will be the depth that must be drilled to access the earth's natural heat, as deeper drilling means higher costs, she noted. However, even though the cost of geothermal in Nunavut may be higher than elsewhere in Canada, it still may be cheaper than continuing to use diesel, Thompson said.

Geothermal also doesn't create the pollution associated with fossil fuels and is a reliable source of heat and power, she suggested.

"Much like an oil and gas well that never quits, it just keeps coming up over and over again," she said of geothermal. "It's just a really interesting opportunity. I'm so grateful that Nunavut is taking that step forward ... it's an energy resource that's available. You don't need to rely upon imports."

Qulliq Energy Corporation (QEC) has previously looked at the feasibility of providing hydroelectric power in Iqaluit, but the estimated $356-million project to generate and deliver up to 12.5 megawatts has been on hold since 2014. QEC president Bruno Pereira said earlier this year existing demands to replace aging power plants are the priority, so more money won't be spent on hydroelectric for the foreseeable future.

That doesn't mean exploring other options is a waste of time and funds, according to Anne Crawford, a former president and CEO of QEC.

"I really think it's important that we do an inventory of renewables for Nunavut, and all Nunavut communities, because if there are viable renewables in Nunavut and we put funds into them, they will then liberate funds to deal with more difficult communities and it has the potential to be a positive cycle," Crawford said. "Because we don't have a grid, we've got to do it community by community, and that's going to be different options for different communities."

ᐅᑯᐊ Borealis GeoPower-ᑯᑦ ᓇᖁᑎᓂᖅ ᐱᓇᓱᒪᖅᖢᖅᑐᓄᑦ ᑎᒥᖅᑎᑎᕐᕕᐅᓕᑦ ᐃᑯᒪᖅᑎᓕᓵᕆᐅᔪᓐᓇᑎᒃ ᑲᓇᖅᑐᖃᓕᖅᑎᑦᓯᔪᓐᓇᖅᑐᑦ ᓄᓇᕗᑦ ᒪᓕᒪᓐᓂᑦ ᖃᐅᔨᓴᖅᓯᐊᕈᒪᓪᓗᒍ ᓄᓇᕗᒥᑦ ᐃᒪᓕᖅᑐᒥᓂᑦ ᐃᑯᒪᖅᑎᑎᒃ ᐊᐅᓚᐅᑎᑎᖅᑐᑦ ᐃᖏᕐᕋᑎᑦᑎᐊᕐᓇᖓᒪᓪᓗᒍ ᖃᐅᔨᓴᖅᓯᐊᕈᒪᓪᓗᒍ "Sustainaville"-ᒥ ᐊᐅᓚᐅᑎᑎᓕᕆᔨᒃᑯᓐᓂᖅᑐᖅ ᓂᐊᕐᓯᒪᓂᖅ ᐱᓕᕆᔨᒃᑯᑦ ᑕᒪᑎᑎᓕᐅᖏᓪᓗᑕ ᑕᒪᓐᓇᐅᔪᓐᓇᖅᑐᖅ ᐱᑎᕐᕕᒃᓴᓂᖅ.

photo courtesy of Borealis GeoPower

***Borealis GeoPower, one of the companies hoping to land a contract** with the Government of Nunavut to study geothermal options in the territory, performed field work at its "Sustainaville" geothermal project near Valemount, B.C. earlier this year.*

Geothermal has been considered elsewhere in the North. A study found geothermal potential in Fort Liard, NWT – enough to serve the entire hamlet's electrical needs – but the project hit a roadblock when the community and the Northwest Territories Power Corporation couldn't reach terms on a power purchase agreement. In Yellowknife, voters rejected a $49-million community energy system proposal in 2011. It would have involved pellet boilers and geothermal heat from the defunct Con mine to heat 39 buildings downtown.

Cam Bay geese died of natural causes

More than 1,000 birds perished after fighting strong winds, drinking sea water

by Derek Neary
Northern News Services
Ikaluktutiak/Cambridge Bay

More than 1,000 starving geese couldn't overcome fog and strong winds near Cambridge Bay in August, according to veterinarians who examined the remains of some of the birds.

The snow geese, greater white-fronted geese and cackling geese, mostly young specimens, died Aug. 16-20 at Long Point Beach.

Three of their carcasses, scavenged and decomposing, were shipped to the University of Calgary's Department of Veterinary Medicine for a wide range of testing.

The lab results showed that the birds had little to no fat and shrunken chest muscles. In addition to being malnourished, it was also detected that one of the birds had a toxic amount of salt in its brain. It's suspected that the starving birds were consuming significant quantities of sea water due to being dehydrated.

> ***"It appears likely that these young geese were not in good enough condition to complete the crossing."***
>
> *Amélie Desmarais*

"Geese have salt glands that allow them to drink salt water but those are not fully developed in juvenile birds, making them more susceptible to intoxication from drinking salt water," explained Amélie Desmarais, a spokesperson with Environment and Climate Change Canada.

Sustained strong winds and fog at the time further worked against the frail birds.

"It appears likely that these young geese were not in good enough condition to complete the crossing from Victoria Island to the mainland under those conditions," Desmarais added.

Bobby Greenley, chair of the Ekaluktutiak Hunters and Trappers Organization, told Nunavut News in late August that he believed exhaustion and environmental conditions were major factors in the death of the geese.

"I'm thinking it's just all natural. They couldn't make the distance across the ocean. Big winds, big waves when they landed – they're just so tired they couldn't keep their heads up, maybe," Greenley said at the time.

Based on extensive testing, veterinarians eliminated other potential causes of death, such as avian influenza, botulism, avian cholera, Newcastle disease, duck viral enteritis, lead or other heavy metal intoxication, according to Desmarais.

"In conclusion, this mortality event appears to have been due to natural causes," she stated.

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