Kogoluktuk Hydro

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Background

The Kogoluktuk hydroelectric project is a proposal to build a 4 MW (http://elibrary.ferc.gov/idmws/File_list.asp?document_id=13647407) “run-of-the-river” hydropower system along the Kogoluktuk River in western Alaska. In combination with an intertie, which would connect the project to the current grid in the village of Amber, the project could potentially provide electricity to Kobuk, Ambler and various mining projects in the region. The cost of the project, including the intertie, has been estimated at $50-60 million. The price per MWh would be considerably more than from a large hydro project such as Bradley Lake or the proposed Susitna Dam (/Issues/RenewableEnergy/Susitna-Hydro-Dam.html). However, this power would replace the diesel fuel now used to generate power. This fuel has recently been subject to volatile and rising prices.

In 2007, 97% of the energy in the Northwest Arctic borough (http://www.nwabor.org/forms/EnergyPlan.pdf) came from the combustion of diesel fuel. Much of this is brought in by barge up the Noatak and Kobuk Rivers. However, periodic low flow

rates in these rivers often necessitates flying in the fuel, which leads to very high fuel costs for the communities of Noatak, Ambler, Shungnak and Kobuk. As a result, development of a number of potential hydropower projects (ftp://ftp.aidea.org/RENEWABLE%20ENERGY%20FUND/RFAOctober08/74_HydropowerFeasibilityStudies,KobukRiverValley,AK_AVEC Upper%20Kobuk%20AEA%20Grant%20Application.pdf) has been considered for the area.

Historically, analyses of hydroelectric potential in the area found that a hydro project would be economically unfavorable, given the low flow of rivers in the winter. However, new technologies, combined with the rising cost of diesel, have engendered a new look at this resource. The most recent cost-benefit analysis (2007) (http://www.iser.uaa.alaska.edu/Publications/AES_Crimp_Colt_Foster.pdf) determined that a relatively large project serving Ambler, Shungnak, and Kobuk could be economically favorable using current assumptions for diesel prices, constructions costs and the number of MWs that could be generated.

Relation to Mining

The Kogoluktuk River is located not far from the Upper Kobuk Mineral Project (/Issues/MetalsMining/Ambler-Upper-Kobuk-Mineral-Project.html) (formerly known as Ambler). The Federal Energy Regulatory Commission (FERC) application for the project states, “The primary use for the power will be for mining operations in the vicinity of the project.” However, if the Ambler deposit is developed it would require many times the

amount of power this project could produce and there are no other large-scale hard rock exploration projects nearby (/mines/), though placer mining exists in the region. This means that the power would most likely serve the only the villages, and that the cost would not be offset by an industrial consumer. Power for the Upper Kobuk Mineral Project would mostly likely (http://akenergyinventory.org/hyd/SSH-2006-0256.pdf)(2.9 MB) come from diesel or wind.

Current Status

The preliminary FERC license expired at the end April 2012, an extension is dependent on state funding.

Further Reading

> Cosmos Hills Hydro-Electric Hydrologic Network Project website (http://www.cosmoshydro.org/index.shtml)

> Alaska Village Electric Cooperative, Cosmos Hills Hydropower Study: Reconnaissance Report (2010) (http://akenergyinventory.org/hyd/SSH-2010-0004.pdf)

> Alaska Village Electric Cooperative permit application to FERC (2008) (http://elibrary.ferc.gov/idmws/File_list.asp?document_id=13647407)

> Application for Renewable Energy Fund Grant, Alaska Energy Authority "Upper Kobuk Valley, Alaska; Ambler, Shungnak, Kobuk, Kiana Hydroelectric Feasibility

Studies" (2008) (ftp://ftp.aidea.org/RENEWABLE%20ENERGY%20FUND/RFAOctober08/74_HydropowerFeasibilityStudies,KobukRiverValley,AK_AVEC/Upper%20Kobuk%20AEA%20Grant%20Application.pdf)