Department of Energy
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FINDING OF NO SIGNIFICANT IMPACT

COMBINED POWER AND BIOMASS HEATING SYSTEM AT FORT YUKON, ALASKA

DOE/EA-1922

AGENCY: U.S. Department of Energy (DOE), Office of Energy Efficiency and Renewable Energy (EERE)

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: DOE is proposing to provide federal funding to the Council of Athabascan Tribal Governments (CATG) to implement a community Combined Power and Biomass Heating System[1] (Proposed Project) to be constructed by the Gwitchyaa Zhee Utility Company (GZU), an entity that is owned and operated by the Gwitchyaa Zhee Corporation (GZC). GZU also has been selected to receive financial assistance via grants from the Denali Commission and the U.S. Department of Agriculture Rural Utility Service (RUS) High Energy Cost Grant Program.

DOE, in cooperation with the Denali Commission and RUS, has completed an Environmental Assessment DOE/EA-1922 (EA) to evaluate the potential environmental impacts of providing federal funding to implement a community Combined Power and Biomass Heating System and wood harvesting program in Fort Yukon, Alaska. The analysis provided in the EA supports DOE's determination that providing federal funding for the Proposed Project will not significantly affect the quality of the human and natural environment. The EA is hereby incorporated into this FONSI by reference.

The Proposed Project involves the construction of a new combined heat and power (CHP) plant containing a diesel-fueled electrical generation plant with a heat recovery system and a high efficiency boiler fired by wood chips, a wood chip storage area, a shop to protect and work on equipment, biomass harvesting equipment, and a district heating loop to distribute heat to local buildings. The proposed CHP plant would replace the existing diesel-fueled power plant in Fort Yukon, and offset 80 to 100 percent of the diesel fuel oil currently used to heat buildings to be

[1] Prior to the issuance of this FONSI, DOE authorized CATG to use a percentage of the federal funding for preliminary activities, which include system design, boiler permitting, negotiation of landowner agreements and donations, and preparation of this EA. These activities are associated with the Proposed Project and do not significantly impact the environment nor represent an irreversible or irretrievable commitment by the DOE in advance of this finding for CATG's Proposed Project.

served by the heat distribution system. To provide fuel for the new boiler, approximately 1,600 to 2,000 green tons of woody biomass would be harvested each year from surrounding private lands owned by GZC. Operation of the proposed Combined Power and Biomass Heating System would help stabilize volatile fuel prices and provide economic development in Fort Yukon through the development of a local wood products industry.

DOE places a strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. As set forth in section 2.2.5 of the EA, CATG has committed to incorporating mandatory project design criteria (e.g. applicant committed measures) which are intended to ensure that the potential for adverse impacts to natural and cultural resources are minimized if not eliminated. CATG's commitment to obtain and comply with all appropriate federal, state, and local permits required for the project and to minimize or avoid potential environmental effects to biological resources, soils, wetlands, air quality, noise and cultural resources through the implementation of applicant committed measures detailed in section 2.2.5 of the EA, shall be incorporated and enforceable through DOE's financial assistance agreement.

Context of Potential Impacts

CATG's Proposed Project seeks to implement a community Combined Power and Biomass Heating System in Fort Yukon, Alaska. The proposed Combined Power and Biomass Heating System involves the construction of a new CHP plant, a wood chip storage area, a shop to protect and work on equipment, biomass harvesting equipment, and a district heating loop to distribute heat to local buildings. The new CHP plant would be constructed on a partially developed site owned by the GZC within Fort Yukon near the airport. Construction and acquisition of all project components would disturb approximately 10 acres within Fort Yukon and would take 12 to 18 months.

To provide fuel for the new CHP boiler, approximately 80 to 100 acres of forest would be harvested per year during the first 40 to 50 years of the Proposed Project to provide the approximately 1,600–2,000 tons of wood chips needed to operate the biomass boiler. The woody biomass would be harvested each year from surrounding private lands owned by GZC. For the first five years, all harvesting would take place within five miles of Fort Yukon. The harvested trees would represent approximately 33 percent of the annual sustainable harvest area on GZC owned lands within the five mile radius. For the remainder of the Proposed Project, biomass harvesting would occur within 10 miles of the community.

Because the effects of the project are limited to the local geographic area; intermittent in duration; small-scale in nature; and the applicant committed measures listed in Chapter 2.2.5 of the final EA are designed specifically to minimize or eliminate potential environmental effects to biological resources, soils, wetlands, air quality, noise and cultural resources, DOE has

determined that there would be no direct, indirect, or cumulative effects of sufficient size or duration to be significant at the local, regional, or national level.

Intensity of Potential Impacts

The following discussion is organized around the ten (10) intensity factors described in 40 CFR 1508.27, which refers to severity of impact. The intensity of effects considered is in terms of the following:

1) Impacts that may be both beneficial and adverse:

In the EA, DOE analyzed and considered the beneficial and adverse impacts for the implementation of the Proposed Project. The Proposed Project would result in negligible to minor direct and indirect adverse impacts on the environment, and would have beneficial impacts on air quality and socioeconomics in the region. Applicant committed measures have been established to minimize or eliminate potential adverse impacts to biological resources, soils, wetlands, air quality, noise and cultural resources.

The EA evaluated adverse effects of this project separately from beneficial effects, to determine whether such potential adverse effects would have been significant in their own right, and no such effects were found to be significant. In no cases did the analysis in the EA use beneficial effects to offset the potential significance of any adverse effect. In addition, the analysis in the EA did not use any long term beneficial effects to offset the potential significance of any short term adverse effects.

2) The degree to which the proposed action affects public health or safety:

In the EA, DOE found that there would be no disproportionately high or adverse human health or environmental effects related to the proposed project. Worker exposure to health and safety risks would be minor during construction and operation activities. Biomass harvesting would occur when rivers are either frozen or at a low enough level so as to not endanger workers or equipment. No environmental health risks or safety risks associated with the Proposed Project would disproportionately affect children. Overall impacts to human health and safety from the Proposed Project would be minor. The Proposed Project would not be a likely target for intentional destructive acts that could further affect public safety. Based on the analysis in the EA and supporting record, the Proposed Project will not cause any significant effects on public health and safety.

3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas:

The proposed CHP site has no known unique or significant geographic resources or

characteristics. However, wetlands are common in the area surrounding Fort Yukon, and are present within and adjacent to some of the timber stands proposed for harvesting. Timber within those wetlands would not be harvested, and the project would avoid disturbing soils within and adjacent to wetlands. As supported by the EA, this project would not cause any adverse effects on unique characteristics of the geographic area.

4) The degree to which the effects on the quality of the human environment are likely to be highly controversial:

The Proposed Project is backed by broad-based community support. Energy cost stabilization and savings realized by the project would stay in Fort Yukon and would pay for creating jobs, infrastructure, and maintenance and replacement of the new district heating system, as needed. No public comments were received on the Draft EA when it was available for public review. Accordingly, the effects of the Proposed Project are not highly controversial.

5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks:

Applicant committed measures, an adaptive management program implementation, standard practices, and monitoring will ensure effects are within the expected parameters (EA, Chapter 2). Accordingly, the effects of the Proposed Project are not highly uncertain, nor do they involve unique or unknown risks.

6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration:

Neither scoping nor public comment for the Proposed Project raised any disputes pertaining to the appropriate scope of the Proposed Project, connectedness of other actions, or reasonably foreseeable future actions. The Proposed Project would increase the energy independence of Fort Yukon, as well as result in energy cost stabilization and savings which could motivate other rural communities in Alaska to seek similar energy independence, as well as long-term access to reasonably priced electric power. However, the impacts associated with the Proposed Project are intermittent and of small scale, and it is unlikely that the project would establish a precedent for future actions with significant effects in other communities.

7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts:

The Proposed Project would result in negligible to minor direct and indirect adverse impacts on the environment, and would have beneficial impacts on air quality and socioeconomics in the region. Because the direct and indirect impacts of the project would be small, the contribution of the Proposed Project to the cumulative effects from all reasonably foreseeable future projects

generally also would be small. DOE evaluated the Proposed Project in the context of other past, present and reasonably foreseeable actions (EA, Chapter 4). When considering other activities within the area affected, the cumulative impacts of the Proposed Project could contribute minor impacts to the cumulative adverse effects on biological resources, concentration of re-suspended particles in the air, and noise levels, but otherwise would have no more than a negligible cumulative effect. As supported by the discussion in the EA, DOE concludes the cumulative impacts of the Proposed Project would not be significant, and the proposed activities are not related to other actions, that when combined, would have significant impacts at the local or regional scale.

8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places (NRHP) or may cause loss or destruction of significant scientific, cultural, or historical resources:

An adaptive management program is being established by the CATG Natural Resources Department to continually improve the inventory model and to manage all aspects of the proposed biomass harvest and forest regeneration. Prior to harvesting a site, the GZC and CATG Natural Resources Department would determine if the area contains sensitive tribal resources. If such resources are determined to occur, harvesting would be excluded from the affected areas.

The Alaska State Historic Preservation Office under the Alaska Department of Natural Resources Office of History and Archaeology confirmed that no historic properties would be affected by the proposed CHP plant or the heat distribution system and issued concurrence in a finding of no adverse effect to historic properties from the proposed harvesting activities and use of the initial storage area.

Accordingly, DOE concludes the Proposed Project would have no adverse effects on NRHP-listed or eligible districts, sites, highways, structures, or objects and would not cause the loss or destruction of significant scientific, cultural, or historical resources.

9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act (ESA) of 1973:

There would be no significant adverse impacts to threatened, endangered, or State of Alaska sensitive species or associated habitat within the assessment areas. The U.S. Fish and Wildlife Service (USFWS) was consulted in the development of the EA, as per the requirements set forth in Section 7 of the Endangered Species Act. The USFWS Fairbanks Fish and Wildlife Office indicated that no listed or candidate species, nor any critical habitat, occur within Fort Yukon or its vicinity. In addition, no state-listed species occur in or near the project area. DOE therefore concludes that construction and operation of the CHP plant and associated facilities, as well as biomass harvesting activities, would not affect any species listed or proposed for listing as

threatened or endangered.

Additionally, to comply with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, biomass harvesting activities would incorporate USFWS survey and buffer recommendations. DOE therefore concludes that there would be no significant impacts to either migratory birds or bald and golden eagles as a result of the Proposed Project.

10) Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment:

The project proponent has committed to obtaining and complying with all appropriate federal, state, and local permits required for the project and to minimize potential impacts through the implementation of applicant committed measures (EA, Chapter 2). The Proposed Project does not violate any federal, state, or local law or requirement imposed for the protection of the environment.

FLOODPLAIN STATEMENT OF FINDINGS: A portion of the proposed activities that make up the Proposed Project are located in the 100-year floodplain of the Porcupine and Yukon Rivers; therefore, DOE conducted a floodplain assessment pursuant to Executive Order 11988, "Floodplain Management", and DOE implementing regulations at 10 CFR Part 1022, "Compliance with Floodplain and Wetland Environmental Review Requirements." This assessment is presented in the EA, Chapter 3.

The proposed location of the CHP plant, much of the heat distribution system, and the wood storage areas are within the 100-year floodplain. Because most developed areas in Fort Yukon, including the facilities to be serviced by the heat distribution system, are within the 100-year floodplain, it would not be practicable to locate the CHP plant and other aspects of this project outside of the floodplain. Therefore, alternative locations outside of the floodplain are not a viable option. Construction of the earthen pads to elevate the CHP plant and wood storage area would result in a small loss of floodwater storage area within the floodplain, which could cause an increase in the elevation of floodwater in the area. Any increase in the elevation of floodwater resulting from the presence of those facilities would be small, and associated impacts of flooding would be negligible, because the pads would be small relative to the size of the floodplain in the area and because the floodplain within and near Fort Yukon is unconfined.

The Proposed Project would be designed to minimize potential harm to or within the floodplain, would negligibly increase the risk or severity of flooding of other properties, and would only minimally affect the natural and beneficial floodplain values in the area. Therefore, DOE expects no long-term adverse direct or indirect impacts to the beneficial values of the 100-year floodplain of the Porcupine and Yukon Rivers.

CONCLUSION: Based on the EA and the above considerations, DOE finds that providing federal funding for the Proposed Project is not a major action that constitutes a significant effect on the human environment. This finding and decision is based on the consideration of DOE's NEPA implementing regulations (10 CFR Part 1021) and the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), both with regard to the context and the intensity of impacts analyzed in the EA. Accordingly, the Proposed Project does not require the preparation of an environmental impact statement.

For questions about this FONSI or the Final EA, please contact:

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