

# **FINDING OF NO SIGNIFICANT IMPACT**

**Combined Power and Biomass Heating System  
Fort Yukon, Alaska**

**RURAL UTILITIES SERVICE  
U.S. Department of Agriculture**

**Gwitchyaa Zhee Corporation**

**Prepared by:  
Engineering and Environmental Staff  
Rural Utilities Service**

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## **A. INTRODUCTION**

The Rural Utilities Service (RUS) selected the Gwitchyaa Zhee Corporation (GZC) to receive financial assistance through a grant under the High Energy Cost Grant Program to construct a portion of the proposed Combined Power and Biomass Heating System in Fort Yukon, Alaska (the proposed Project). The U.S. Department of Energy (DOE) and the Denali Commission also intend to provide financial assistance for components of the proposed Project to the Council of Athabascan Tribal Governments (CATG) and GZC, respectively, which involves the construction of a combined heat and power plant, a district heating system, and a woody biomass harvesting program. RUS, DOE, and the Denali Commission (the Agencies) may finance the proposed Project, thereby making it an action subject to review under the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), the Endangered Species Act (ESA), and all applicable environmental laws and regulations. The Agencies determined that the proposed Project would require an Environmental Assessment (EA); DOE served as the lead Federal agency for the development of the EA in accordance with 40 CFR § 1501.3. RUS acted as a cooperating agency due to its jurisdiction by law and special expertise in accordance with 40 CFR §§ 1508.15 and 1508.26. RUS conducted an independent evaluation of the EA, concurred with its scope and content, and adopted it as the agency's EA, in accordance with 7 CFR § 1794.41. RUS has evaluated the proposed Project's purpose and need, reasonable alternatives, and potential impacts to the environment, and has concluded that the proposed Project will not have a significant impact on the human environment.

## **B. PURPOSE AND NEED**

### Applicant Purpose & Need

The intent of the proposed Project is to create a system for producing heat and electricity that relies less on imported petroleum products and stabilizes the cost of producing heat and electricity in Fort Yukon, Alaska. Fuel costs in Fort Yukon have spiked to above \$7 per gallon in the past three years, with prices as high as \$10 per gallon in remote communities. The GZC holds full economic use to approximately 214,500-acres of surface estate in the Yukon Flats; however, these expansive holdings are largely commercially unused, primarily due to the lack of economically viable markets.

The problem is further exacerbated by the deteriorated condition of the old, inefficient diesel generators used to generate their electricity. The Fort Yukon community currently uses old, inefficient diesel generators to generate electricity. The existing facility has four generator sets; two of the generator sets have exceeded their intended useful service life and the switchgear is also outdated and doesn't meet safety labeling requirements. Further, the facility itself consists of an aging, steel-frame structure with a galvanized metal roof and a slab-on-grade foundation, that shows significant age and weather related deterioration to the foundation, exterior, roofing, and insulation. In addition, the lighting is poor and many of the supporting mechanical systems such as ventilation, fuel handling, and cooling are considered inadequate and due for

replacement. The 2400/4160 volt overhead electric distribution system is also in poor condition; sections of the medium voltage switchgear have been abandoned in place, but continue to be energized, and many of the transformers are in poor physical condition and exhibit evidence of overheating and corrosion.

#### Agency Purpose and Need

RUS's High Energy Cost Program, authorized under Section 19 of the Rural Electrification Act of 1969 (7 USC 918a), provides grant funds to acquire, construct, extend, upgrade or otherwise improve energy generation, transmission, or distribution facilities serving communities with average home energy costs exceeding 275% of the national average. Grant funds may be used for on-grid and off-grid renewable energy projects, energy efficiency and energy conservation projects serving eligible communities.

### **C. PROPOSED ACTION**

The proposed Project involves the construction of a new CHP plant containing a diesel-fueled electrical generation plant (4 diesel-powered generators) with a heat recovery system and a high efficiency biomass-fueled boiler fired by wood chips that would produce up to 3.2 million British Thermal Units (BTUs) per hour. The wood chip and diesel storage areas and a shop to protect and work on equipment would be located adjacent or near to the CHP plant. To provide fuel for the new boiler, approximately 80-100 acres of forest would be harvested annually to produce approximately 1,600 to 2,000 green tons of woody biomass; equipment for the biomass harvest program will be purchased with financing for the proposed Project. The proposed Project also includes the construction of an underground district heating loop to distribute heat to nearby public facilities. As part of the proposed project, the existing GZU power plant would be abandoned. All fuel and other hazardous material would be removed and the fuel tanks, piping, and other infrastructure would be removed in accordance with Alaska and Federal regulations. Future plans for redevelopment of the existing plant site are not part of the scope of this proposed project.

The proposed Project will create a system for producing heat and electricity that relies less on imported petroleum products and stabilizes the cost of producing heat and electricity in Fort Yukon. The CHP plant would displace approximately 145,000-gallons of diesel fuel per year used to heat community and public buildings in Fort Yukon, reducing the commercial end-users' diesel fuel oil consumption by 80-100%. In the first five years of the program, an estimated \$4,080,000 would be saved on fuel not used in Fort Yukon. The savings would stay in the community instead of being exported to oil delivery companies, and would pay for creating jobs, infrastructure, and maintenance and replacement of the new district heating system as needed. Using biomass harvested from those lands for heat production would reduce the use of fuel oil in the community and create a local wood services industry, thus creating local jobs for the underserved minority community of Fort Yukon. An additional benefit of the proposed project would be the support to develop a regional forestry and natural resource program at the

CATG Natural Resources Department. In addition, the new CHP plant would replace the existing power plant in Fort Yukon, which is inefficient and in need of substantial repairs.

GZC has applied to RUS for the financing of the installation of the CHP Plant through the purchase and installation of diesel generators, the biomass boiler, heat recovery systems, and associated infrastructure under the agency's High Energy Cost Grant Program.

#### **D. ALTERNATIVES EVALUATED**

The EA considered the proposed Project and the no action alternative only. Under the no action alternative, the Agencies would not provide financing and the Fort Yukon community would not proceed with the proposed Project. Diesel fuel oil would continue to be used to operate boilers to heat public and community buildings in Fort Yukon. Annual fuel usage would continue at current levels and not be reduced by up to 145,000-gallons annually. Additionally, the No Action Alternative would eliminate the development of a local wood products industry and diminish the potential for economic development in the community.

#### **E. SUMMARY OF ENVIRONMENTAL IMPACTS**

The proposed construction of the CHP plant, access road, biomass wood storage areas, and heat distribution system would involve approximately 10 acres of new ground disturbance in Fort Yukon. The EA determined that the proposed Project would have no significant impacts, either directly, indirectly, or cumulatively on geology and soil resources, water resources, biological resources, air quality, noise, land use, cultural resources, historic properties, socioeconomics, transportation, hazardous materials and waste management, and human health and safety. In addition, RUS determined that the proposed project will not cause disproportionate adverse impacts to minority populations and low-income populations. The following subsections discuss specific resources and where there was statutorily required consultation to determine effects (protected species and cultural resources and historic properties).

##### Floodplains

The proposed site for the CHP plant, wood storage area, and much of the distribution system are located within the 100-year floodplain. Executive Order (EO) 111988, "Floodplain Management" and USDA Departmental Regulation 9500-03, "Land Use Policy", require the avoidance of projects that encroach on the floodplain unless (1) there is a demonstrated, significant need for the project, program, or facility, and (2) there are no practicable alternative actions or sites that would avoid the conversion of these lands or, if conversion is unavoidable, reduce the number of acres to be converted or encroached upon directly and indirectly. Since it is most efficient to locate the proposed CHP facility within the immediate vicinity of the major public facilities that it will be powering, it is impractical to locate the facility in an alternate location beyond the 100-year floodplain given that the majority of the developed areas of Fort

Yukon are also within the 100-year floodplain. To minimize the risk of flooding, the CHP plant would be elevated on an earthen pad about 8 feet above the base flood elevation (BFE) of 450-feet. The wood storage area would also be elevated approximately 5-feet above existing grade but not above the BFE; however, the wood storage area would be well above historic annual springtime flood elevations. In addition, the existing drainages across the CHP plant and wood storage areas would remain at pre-construction elevations to avoid disrupting the flow of floodwaters and minimize impacts to adjacent properties. The biomass harvest areas are located within areas of 100 year floodplains and wetlands. No permanent structures related to harvesting will be located within the floodplain.

#### Biological Resources/Protected Species

Based on consultation with the U.S. Fish and Wildlife Service (USFWS) Fairbanks Office and the National Marine Fisheries Service (NMFS), there are no federally listed threatened, endangered, or candidate species or critical habitat within Fort Yukon or its vicinity. Therefore, the proposed Project will have no effect on species or habitat protected under Section 7 of ESA. The Alaska Department of Fish and Game also did not identify any state protected species in or near the project area. The USFWS Fairbanks Office did however identify the forested riverine habitat in the region surrounding Fort Yukon that will be used for biomass harvesting as suitable nesting and/or foraging habitat for bald eagles and migratory birds, which are protected under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA), respectively. To comply with the BGEPA, aerial or ground surveys, as appropriate, would be conducted for bald eagle nests within and surrounding harvest areas, and no harvest activities would be conducted within 660 feet of active eagle nests or within 330 feet of any inactive eagle nest. To comply with the MBTA and avoid disturbing nesting birds, surveys for active nests would be conducted prior to any harvesting to be conducted during the nesting season, and a 75-foot buffer would be established around active nests.

#### Cultural Resources and Historic Properties

Fort Yukon contains two properties currently listed on the National Register of Historic Places; the Old Mission House and the Sourdough Inn. These properties are located .25-.5-miles from the proposed location of the CHP plant, and would not be directly affected by the proposed Project. Based on consultation with the Alaska State Historic Preservation Office (SHPO) on February 14, 2012, RUS determined that the proposed Project the activities within the community of Fort Yukon, including the CHP plant, wood storage, and distribution system, will have no effect on historic properties. The biomass harvest areas proposed for this project are located on islands or other areas that are historically subject to periodic flooding and the associated deposition and scouring of sediments. Therefore, it is unlikely that there are buried or above-ground cultural resources or other historic properties at the harvest sites. Further, given that soil disturbances during biomass harvesting will be minimal, RUS determined that there is minimal potential for effects on potential buried historic properties. As part of the proposed Project's adaptive management plan, GZC and CATG Natural Resources Department would determine if the harvest areas contain sensitive tribal cultural resources. If such

resources are determined to occur, harvesting would be excluded from those areas. In recognition of the minimal potential effects and established protocol for future harvests, the SHPO concurred with RUS's proposed finding of no adverse effects to historic properties on January 30, 2013.

## **F. AGENCY AND PUBLIC INVOLVEMENT**

The availability of the draft EA for public review was announced in the *Fairbanks Daily News-Miner* on February 24-26, 2013. The draft EA was made publicly available electronically on the DOE Websites, <http://energy.gov/nepa/public-comment-opportunities>, and, [http://www.eere.energy.gov/golden/Reading\\_Room.aspx](http://www.eere.energy.gov/golden/Reading_Room.aspx), and in hard copy at the Fort Yukon Library and the GZC and CATG offices in Fort Yukon. The thirty (30) day public comment period concluded on March 26, 2013, during which time two comments were received from the USFWS and the Alaska Department of Fish and Game (ADF&G). The USFWS corrected the draft EA's statement regarding the presence of the federally-listed candidate Kittlitz's murrelet; no listed or candidate species (including the Kittlitz's murrelet) or critical habitat is located within the Fort Yukon area. The USFWS also made comments regarding migratory birds and bald and golden eagles, and proposed avoidance measures for tree clearing activities associated with biomass harvesting that should be implemented to ensure that there are no impacts to these protected avian species. The ADF&G provided further clarification regarding Fish Habitat Permits, and reaffirmed their comments made during the scoping period that were integrated into the draft EA. The comments and responses have been integrated into the Final EA, which is available on the DOE's website, <http://energy.gov/nepa/ea-1922-combined-power-and-biomass-heating-system-fort-yukon-alaska>.

## **G. FINDING OF NO SIGNIFICANT IMPACT**

RUS has concluded that the proposed Project would have no significant impacts to the human environment. RUS has concluded that the proposed Project is not likely to affect federally listed threatened and endangered species or designated critical habitat. The proposed Project will have no adverse effect on historic properties listed or eligible for listing on the National Register of Historic Properties. Minority and low-income populations will not be adversely or disproportionately affected by this proposed Project.

In accordance with National Environmental Policy Act, as amended (42 U.S.C. § 4321 et seq.), the Council on Environmental Quality Regulations (40 CFR §§ 1500-1508), and RUS's Environmental Policies and Procedures, as amended (7 CFR Part 1794), RUS has determined that the potential environmental impacts of the proposed Project have been adequately addressed and that no significant impacts to the quality of the human environment would result from construction and operation of the proposed Project. Any final action by RUS related to the proposed Project will be subject to, and contingent upon, compliance with all relevant federal and state environmental laws and regulations. RUS's action will not result in significant impacts

to the quality of the human environment; therefore, an Environmental Impact Statement will not be prepared for the proposed Project.

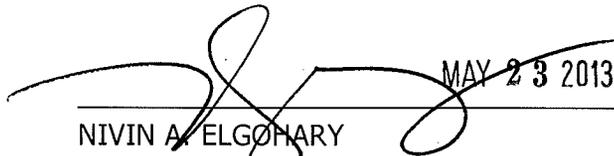
#### **H. RUS LOAN REVIEW AND RIGHT OF ADMINISTRATIVE REVIEW**

This FONSI is not a decision on the Gwitchyaa Zhee Corporation's High Energy Cost Grant Program grant application and therefore not an approval of the expenditure of federal funds. Issuance of the FONSI and its notices concludes RUS's environmental review process in accordance with NEPA and RUS's Environmental Policies and Procedures. Final grant approval is dependent on the conclusion of the environmental review process in addition to financial and engineering review of the proposed Project. Issuance of the FONSI and publication of notices will allow for these reviews to proceed. There are no provisions to appeal this decision; legal challenges to the FONSI may be filed in federal district court under the Administrative Procedures Act.

#### **I. APPROVAL**

This Finding of No Significant Impact is effective on signature.

Dated:

  
MAY 23 2013  
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NIVIN A. ELGOHARY  
Assistant Administrator  
Electric Programs  
Rural Utilities Service

#### **Contact Information**

For additional information on this FONSI and EA, please contact Ms. Emily Orler, Environmental Protection Specialist, at USDA, Rural Utilities Service, 1400 Independence Avenue, SW., Stop 1571, Washington DC 20250-1571, (202) 720-1414, or [emily.orler@wdc.usda.gov](mailto:emily.orler@wdc.usda.gov).