



ENERGY PROFILE: ARCTIC VILLAGE

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Arctic Village, Alaska Energy Profile



Arctic Village, Alaska (Wilder, 2015)

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Introduction	2
Community Appropriate Sustainable Energy Security (CASES)	Ξ
Arctic Village, Alaska	3
Regulation and Governance	3
Ownership Structure	Э
Institutional Arrangements	Z
Regulatory Commission of Alaska (RCA)	Z
Power Cost Equalization Program	Z
Policy Environment	Z
Vashraii K'oo (Arctic Village) Community Plan 2019-2021	Z
Alaska Energy Pathway Toward energy independence	4
United States Energy Policy Act	5
Historic Shift and Embeddedness	5
Relationships	5
Local Capacity and Innovation	5
Community Energy Plan	5
Community Energy Champion	5
Human Capital	5
Community Investments	e
Energy Programs and Incentives	6
Community Energy Source Potential	7
Priorities	7
Vulnerabilities and Security	7
Power Disruptions	7
Fuel Supply	7
Infrastructure	7
Renewables Integration	7
Economic Vulnerability	8
Security	8
References	8

Introduction

Community Appropriate Sustainable Energy Security (CASES)

The Community Appropriate Sustainable Energy Security (CASES) Partnership is an international research initiative involving 15 northern and Indigenous communities and public and private sector project partners from Canada, Alaska, Sweden, and Norway.

Hosted by the University of Saskatchewan, the overarching goal of the CASES initiative is to reimagine energy security in northern and Indigenous communities by co-creating and brokering the knowledge, understanding, and capacity to design, implement and manage renewable energy systems that support and enhance social and economic values.

The CASES Partnership facilitates the sharing of experience so that not all communities have to experience the same challenges or recreate solutions, thereby expediting the learning experience and accelerating renewable energy innovation.

In Alaska, the CASES project activities are led by the Alaska Center for Energy and Power at the University of Alaska Fairbanks with collaboration from the Institute of Social and Economic Research at the University of Alaska Anchorage.

Arctic Village, Alaska

Arctic Village is a Neets'aii Gwich'in community located in northeastern Alaska in the Chandalar River, approximately 290 miles north of Fairbanks. Arctic Village is located on the southern border of the Arctic National Wildlife Refuge (ANWR), a region that has been protected by the US federal government since 1960 (Arctic Village Council et al., 2019).

The current population of Arctic Village is estimated to be 194 residents, of which the majority are Neets'aii Gwich'in (Arctic Village Council et al., 2019).

Regulation and Governance

This section describes the current energy system ownership structure in Arctic Village, including utilities and other services providers.



Ownership Structure

Electricity in Arctic Village is supplied by Arctic Village Electric Cooperative through diesel generators.

Institutional Arrangements

This section outlines the key regulations and standards currently in place that impact energy in Arctic Village. This includes programs, policies, and regulations from various levels of government.

Regulatory Commission of Alaska (RCA)

Utilities in Alaska are regulated by the Regulatory Commission of Alaska (RCA). Most utilities in the state providing services to ten or more customers require a certificate issued by the RCA to operate (Regulatory Commission of Alaska, n.d.). The RCA then regulates the rates, services, and practices of the utilities.

Power Cost Equalization Program

For communities in Alaska, a program of interest is the Power Cost Equalization (PCE) program. The PCE is a state subsidy program that provides economic assistance to residents in communities in rural Alaska where the cost of electricity is three to five times higher than for customers living in urban areas of the state such as Fairbanks, Anchorage, and Juneau (Alaska Energy Authority, n.d.-a). The PCE is administered by the Regulatory Commission of Alaska and the Alaska Energy Authority. In Arctic Village, there are 89 residential customers and 5 community facility customers in the PCE program (Alaska Energy Authority, 2022). In fiscal year 2021, the average annual PCE payment per eligible customer in Arctic Village was \$1,797, with an effective residential rate of \$0.25 per kWh.

Policy Environment

This section outlines key overarching policies or plans in the region that influence the direction of Arctic Village's energy system.

Vashraii K'oo (Arctic Village) Community Plan 2019-2021

The community of Arctic Village published its Community Plan in 2019. It was prepared by Arctic Village Council, community members of Arctic Village, and the Tanana Chiefs Conference Planning and Development Program. The plan outlines the community's goals and priorities for the future.

Alaska Energy Pathway Toward energy independence

Alaska's state energy plan was published in 2010. Its objective is to provide Alaskans with affordable power, to achieve 20% energy efficiency improvements by 2020, and generate

50% of its electricity from renewables by 2025 (Alaska Energy Authority, 2010). This plan outline's the state's overall energy policy, therefore has implications for what is done at the community level.

United States Energy Policy Act

At the federal level, the Energy Policy Act covers energy production in the United States including energy efficiency, renewable energy, oil and gas, coal, Tribal energy, nuclear, motor fuels, hydrogen, electricity, climate change technology, and energy tax incentives (US EPA, 2013).

Historic Shift and Embeddedness

Little information about historic shifts and embeddedness could not be found during the document review. It is recommended that this topic be researched in further detail through interviews with those in the community.

Relationships

Detailed information on the relationships between governments, organizations, entities, and the community of Arctic Village is not found in documents and websites reviewed for this report. It is recommended that this topic be covered in future interviews and discussions with those representing the various organizations in the region.

Organizations and entities relevant to energy in Arctic Village include:

- Arctic National Wildlife Refuge
- Native Village of Venetie Tribal Government
- Venetie Village Council
- Native Village of Fort Yukon
- Council of Athabascan Tribal Governments
- Tanana Chiefs Conference
- Federal and state government agencies

Local Capacity and Innovation

Community Energy Plan

Arctic Village does not currently have a community energy plan.

Community Energy Champion

No community energy champions were identified through this document review.

Human Capital

The Council of Athabascan Tribal Government offers a variety of training opportunities open to those in Arctic Village such as carpentry, tribal management, construction,

firefighting, and accounting (Arctic Village Council et al., 2019). Additionally, The Arctic Village Council offers scholarships for community members.

To gain a deeper understanding of the human capital in Arctic Village, it is recommended that interviews be conducted with key stakeholders in the community with expertise on the local skills related to energy systems.

Community Investments

This section outlines recent energy investments made in Arctic Village.

- Department of Energy Office of Energy Efficiency and Renewable Energy Tribal Energy Program
 - In 2004, Arctic Village Council participated in a project in partnership with the Native Village of Venetie Tribal Government, Venetie Village Council, the Native Village of Fort Yukon, the Council of Athabascan Tribal Governments, the Alaska Native Tribal Health Consortium, the University of Alaska Fairbanks, the Denali Commission, the Alaska Regional Energy Authority, and the National Renewable Energy Lab. The goals of the project wer to determine the feasibility of powering remote villages with renewable energy, to collect data from existing renewable energy systems, and the offset the high cost of energy in communities (Whitwell et al., 2004)
- Department of Energy Office of Indian Energy Strategi Technical Assistance Response Team (START)
 - In 2012, Arctic Village Council recieved funding from this program for assistance in improving diesel powerhouse operations, reinstating the PCE, installing pre-pay meters for residential buildings, repairing existing solar PV systems, and exploring the feasibility of community scale solar (Department of Energy, 2012)
- Household Solar Panels
 - In 2016, two homes in Arctic Village had solar panels installed, with additional expected to be installed that year (Zak, 2016).

Energy Programs and Incentives

This section outlines energy programs and incentives available to Arctic Village for renewable energy projects, energy efficiency, or capacity building.

- US Department of Energy
 - The US DOE provides various funding opportunities for capital projects as well as training and capacity building (U.S. Department of Energy, n.d.).
- State of Alaska
 - The State government provides various programs for energy such as the Renewable Energy Fund (Alaska Energy Authority, n.d.-b).

Community Energy Source Potential

This information was not found during the document review. It is recommended that future research involves connecting with the utility to determine whether community energy source potential has been assessed, or can be done in the future.

Priorities

This section outlines community priorities for the future of energy in Arctic Village. Information below was sourced from the Arctic Village Community Plan (2019). It is recommended that future research includes interviews and community meetings to further identify priorities.

- Developing alternative energy sources
- Improving energy efficiency in homes
- Alternative heating systems
- Training and technical assistance for renewable energy

Vulnerabilities and Security

Power Disruptions

Data on power disruptions was not found during the document review. Future research should include connecting with the utility to determine if this information is available.

Fuel Supply

Data on fuel supply was not found during the document review. Future research should include connecting with the utility to determine if this information is available.

It is noted in the Arctic Village Community Plan that there have been several instances of fuel spills and leaks in the region that continue to be of concern (Arctic Village Council et al., 2019).

Infrastructure

Data on infrastructure was not found during the document review. Future research should include connecting with government agencies who may have infrastructure data for Alaskan communities.

The Community Plan notes that the community hall building is not used often due to the large amounts of dry wood required to heat it (Arctic Village Council et al., 2019).

Renewables Integration

Data on renewables integration was not found during the document review. Future research should include connecting with the utility to determine if this information is available.

It is mentioned in the Community Plan that there are some solar panels in the community, for example at the Nena Russell Clinic (Arctic Village Council et al., 2019).

Economic Vulnerability

Data on economic vulnerability was not found during the document review. Future research should include connecting with the utility to determine if this information is available.

It is noted in the Community Plan that high fuel costs are of concern for Arctic Village residents (Arctic Village Council et al., 2019).

Security

Data on security concerns was not found during the document review. Future research should include connecting with the utility to determine if this information is available.

It is explained in the community plan that residents are concerned that potential oil development in the region could impact lands, caribou, and subsistence activities (Arctic Village Council et al., 2019).

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