



This RAND paper was developed to communicate the results of a tabletop exercise (TTX) conducted as part of a broader event, a workshop called "Critical Minerals in the Arctic: Forging the Path Forward," which RAND cosponsored with the Wilson Center, the University of Alaska, and the U.S. Department of Energy's Arctic Energy Office.



renewable wood energy that are currently used in Alaska as a primary or secondary fuel for heating purposes. ??? Compare the cost per British thermal unit (Btu) of the various alternative sources of energy used in Alaska, and identify situations where renewable wood energy is an economically viable replacement for existing sources of energy.

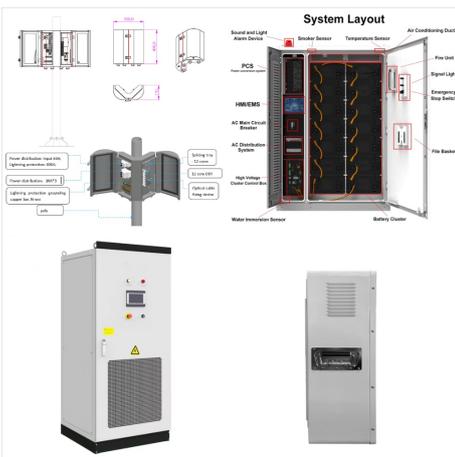


Wind turbines spin on Alaska's Fire Island in 2022. Cook Inlet Region, which owns most of the island, built the 17.6MW project a decade ago and is looking at options to triple the power output.

ALASKA'S RENEWABLE ENERGY POTENTIAL FOR ECONOMIC DEVELOPMENT



Despite significant renewable potential, Alaska's deep economic ties to oil make it challenging to shift focus, with fossil fuels generating over 70% of its electricity. Projects like geothermal exploration on Augustine Volcano and tidal power pilot programs highlight efforts to diversify energy sources amidst a declining natural gas supply.



Sustainable Energy Solutions for Rural Alaska 3
ACEP Alaska Center for Energy and Power
ADCCED Alaska Department of Commerce,
Community and Economic Development AHFC
Alaska Housing Finance Corporation AIPPA Alaska
Independent Power Producers Association ANCSA
Alaska Native Claims Settlement Act ANTHC
Alaska Native Tribal Health Consortium ???



Alaska's Abundant Resource Potential Alaska's oil and gas resources are well known, but equally prodigious is Alaska's renewable energy potential. Wind energy???particularlyly in the Yukon???Kuskokwim Delta??? and throughout coastal Alaska???is able to greatly reduce the need for imported energy in many isolated communities. And NREL

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It is also important to remember that all ocean energy development efforts must incorporate just and equitable approaches for energy transitions," said Elise DeGeorge, a senior project leader at NREL and a co-author of the ???



This study estimates the technical and economic potential for renewable energy development on tribal lands. Renewable energy technical potential "represents the achievable energy generation of a particular technology given system performance, topographic limitations, environmental, and land-use constraints" (Lopez et al. 2012).

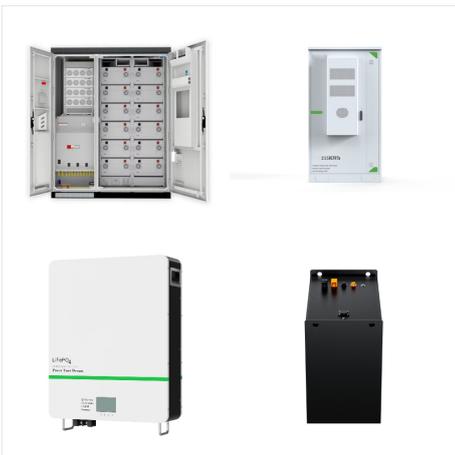


WHEREAS, clean and renewable energy is part of Alaska's energy infrastructure and future. It includes generation from renewable sources such as wind, solar, hydro, tidal, biomass, geothermal, and hydrogen sources, but it also includes nuclear, natural gas, and carbon capture technologies as well as energy storage; and WHEREAS, with Alaska's abundance of ???

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and realize Alaska's potential for renewable energy generation, use of both government-sponsored and private financing opportunities is necessary. The purpose of this paper is to provide an introduction to a variety of ways in which tribal and corporate entities may participate in the development of renewable energy projects in Alaska.



Alaska Clean Energy Week. in Alaska and encourage all Alaskans, local governments, corporations, and small businesses to support common sense solutions to address the United States' evolving economic and energy needs and tap into Alaska's limitless potential to develop clean, sustainable energy solutions for our future. Dated: September 23

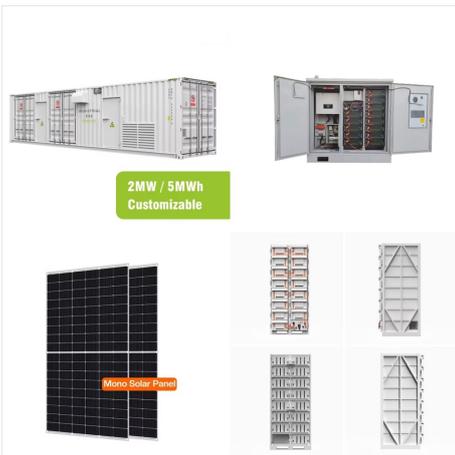


Each stage of economic development has been accompanied by a characteristic a special focus on renewable energy use as a central economic and environmental issue. Figure 1. Global Energy Consumption by Source, 2011 (without air), methane gas is generated, which is yet another potential fuel (methane is CH₄, the main component of

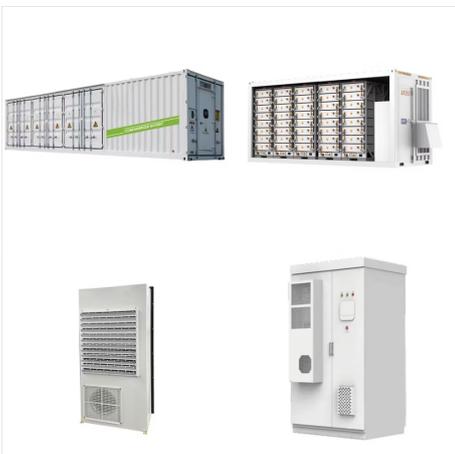
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ETIPP has connected NETC with experts from economists to hydrologists to regional partners at the Renewable Energy Alaska Project who can help Dillingham reach its energy resilience and environmental goals. Since 2021, researchers at the Pacific Northwest National Laboratory (PNNL) and Sandia National Laboratories (Sandia) have been working

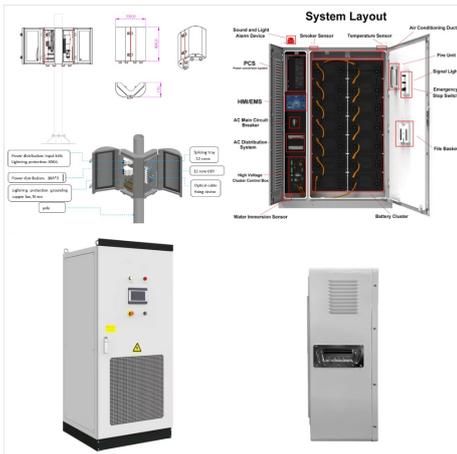


It is also important to remember that all ocean energy development efforts must incorporate just and equitable approaches for energy transitions," said Elise DeGeorge, a senior project leader at NREL and a co-author of the report, which examines ocean renewable energy opportunities in Alaska in the next 10-20 years.



With support from the U.S. Department of Energy's Water Power Technologies Office (WPTO), researchers from the National Renewable Energy Laboratory (NREL) published a study that quantifies, for the first time, the

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responsibility for renewable energy, federal energy grants and wind development conceptual guidelines (AEA). There are substantial State matching grants for financing renewable energy projects. Alaska's Renewable Energy Fund (REF), passed by the Legislature as HB 152, has spurred a level of investment where the equivalent of 6 million gallons



Based on strong interest and several requests from tribal entities across the Bering Straits region, the U.S. Department of Energy (DOE) Office of Indian Energy and the Tribal Energy Program hosted a Community- and Facility-Scale Renewable Energy Project Development and Finance workshop in Nome, Alaska, Aug. 21-22.

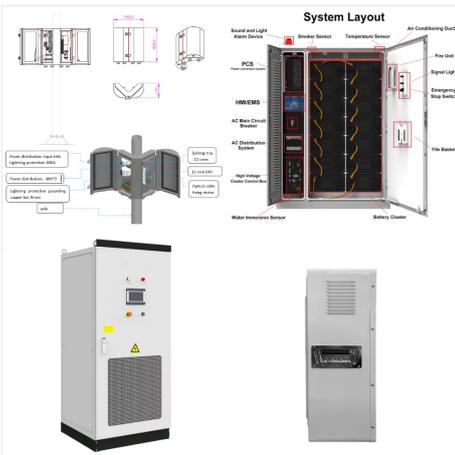


Wind generator investors should consider project economics and potential impacts of energy decisions on human health. Wind can make a modest MW contribution to meeting Alaska's renewable energy goal of 50% from renewables by 2025, a goal legislated in 2010. (DCED) Konkel S. Juneau, AK: Department of Commerce & Economic Development; 1984

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Alaska does not have a renewable portfolio standard but does have a nonbinding goal to reach 50% renewable energy by 2025. In May 2023, Governor Dunleavy signed HB62 into law, permanently extending Alaska's renewable energy grant fund, originally created to catalyze renewable energy projects in the state. The 2022 U.S. Energy and Employment



Even in the most optimistic scenario for renewable energy development, significant reliance on fossil energy in the near- to medium-term is probable. As a result, carbon management is crucial to Alaska's decarbonization efforts, and many opportunities exist. For example, Alaska could have the largest potential CO₂ storage



The Economic Potential of Alaska's Mining Industry
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 Alaska Railroad and the Alaska Industrial Development and Export Authority. It annually paid
 These minerals are critical for renewable energy and the increasingly electrified economy.

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"Despite Alaska's position as a leading producer of energy, the cost of energy in Alaska, especially in our rural communities, is extremely high," he said in a 2023 press release. Dunleavy wants 80% of the Railbelt's electricity to come from renewable energy sources by 2040???not just to achieve the state's clean energy goals but also



Five projects in Alaska have been selected under the Energy Improvements in Rural or Remote Areas (ERA) Program, announced today by Secretary Jennifer Granholm from the 2024 Clean Energy Tribal Summit in Temecula, California. The ERA program aims to improve the resilience, reliability, and affordability of energy systems in communities across the country ???



Offshore wind makes sense for decarbonizing energy production and building energy security and independence when it comes to ocean renewable energy production in Alaska's Outer Continental Shelf (OCS), ???