



DENALI COMMISSION

Testimony before the U.S. Senate Committee on Indian Affairs

Hearing: "Unleashing Indian Energy: Examining DOE Programs"

September 10, 2025

Thank you for your leadership and dedication to advancing energy security for rural and Tribal communities in Alaska and throughout Indian Country. My name is Jocelyn Fenton, and as Director of Programs at the Denali Commission, I am privileged to present the insights and experiences of our agency, our partners, and the Alaskans we serve.

The Denali Commission was established by Congress in 1998 to address the infrastructure, energy, and economic development needs of rural Alaska - one of the most remote and logistically complex regions in the United States. With over 200 isolated communities not connected to a road system - many dependent on diesel microgrids and lacking access to basic water, sewer, or port infrastructure - the Commission has served as a federal partner for over 25 years.

Through flexible authorities, a collaborative governance structure co-chaired by the Governor of Alaska, partnerships with Alaska Native communities, local and municipal governments, tribal consortiums, and place-based approach, the Denali Commission has supported federal investments that impact rural American communities otherwise out of reach. Over the years, the Commission has provided more than \$2 billion to support core infrastructure such as clinics, energy systems, and waterfront facilities – while also evolving to address emerging challenges including protecting existing infrastructure from Alaska’s extreme conditions to supporting sanitation backhaul, victim services, and broadband readiness by enabling local entities to pursue larger-scale investments.

In addition to Federal appropriations, the Denali Commission receives annual transfers from the Oil Spill Liability Trust Fund (OSLTF) on the interest from the investment of the Trans-Alaska Pipeline Liability Fund as well as transfers directly from other agencies and through congressionally directed spending.

In alignment with Presidential Executive Orders *Unleashing Alaska's Extraordinary Resource Potential*, *Unleashing American Energy*, *Declaring a National Energy Emergency*, and *Deploying Advanced Nuclear Reactor Technologies for National Security*, our efforts are guided by national priorities and strengthened by the partnerships that make real change possible in Alaska's rural and Tribal communities.

The Urgency and Uniqueness of Rural Alaska

Rural Alaska is composed of approximately 200 small, isolated villages spread across 395,000 square miles of remote, rugged wilderness that includes wandering rivers and eroding coastlines. These communities, predominantly Alaska Native, are characterized by their traditional subsistence lifestyles, small size, economic hardship, and their reliance on a fragile, islanded infrastructure system. Most villages – the average size of which is less than 500 people – are not connected by road or electric transmission lines and are accessible only by air or water. Winter in these areas brings months of prolonged darkness and extreme cold, further intensifying the challenges of daily life. Population density in rural Alaska is just 0.2 people per square mile, compared to the national average of 98.

Each village depends on its own local infrastructure to generate electricity, store and distribute fuel, provide clean water, and manage waste. Central to this infrastructure are bulk fuel tank farms—storage facilities that hold the diesel and gasoline required for electricity generation, heating, and transportation. These tank farms are the linchpin of village survival, yet they are aging, vulnerable, and increasingly at risk.

There are few jobs in the villages, cash is chronically limited at both the household and institutional levels, and costs for all goods and services are significantly higher than the national average due to the combination of costly transportation logistics to these remote

locations, small population sizes, and few opportunities for economies of scale. The limited cash flow of bulk fuel storage owning and operating entities within Alaska villages means there's very little local funding for tank farm projects. Most, if not all, of the funding needed to fortify facilities and protect communities is expected to be federal or state, and that funding has been decreasing. Meanwhile, the condition of existing facilities is deteriorating faster than the rate that others are repaired or rebuilt.

The village power system is generally made up of a diesel powerhouse, sometimes the integration of power from locally available renewable sources, above ground distribution lines, and a bulk fuel tank farm which stores seasonally delivered fuel not just for generating power but also for heating buildings and for transportation. It is imperative that federal agencies begin to consider tank farms a component of the community power system in rural Alaska. Electricity in rural Alaska is generated locally through isolated microgrids, usually powered by diesel generators. These same fuels heat homes and businesses and power the vehicles essential for subsistence activities, including boats, snowmachines, and all-terrain vehicles. Given the high transportation costs and limited delivery windows due to seasonal conditions, fuel must be delivered in bulk and stored safely onsite. Without secure and code-compliant fuel storage, communities face existential threats to health, safety, and economic viability.

A 2016 study by the Institute of Social and Economic Research found that public investments in tank farms saved more than \$2.00 per gallon on fuel in some communities. Despite these benefits, the cost burden remains staggering. According to the Alaska Village Electric Cooperative, rural households spend about 27% of their annual income on energy—nearly four times more than urban households.

There are roughly 400 bulk fuel tank farms across rural Alaska, operated by electric utilities, fuel distributors, and institutions like schools. The Alaska Energy Authority (AEA) estimates that more than \$1 billion is needed to address deficiencies across the system, ranging from minor maintenance and improvements (M&I) to full-scale rebuilds (Bulk Fuel Upgrades or BFUs). This growing backlog stems from aging infrastructure, insufficient operational and administrative practices, and environmental challenges like erosion,

flooding, and permafrost degradation. Decades of limited public investment and chronically constrained cash flow among facility owners have compounded the problem - creating a snowball effect where the funding needed to build, repair, and maintain safe, code-compliant fuel storage far exceeds the funding available.

Compounding the issue, many tank farms were never built to modern standards. In the 1960s, tanks were delivered as part of Bureau of Indian Affairs school construction projects. In the 1990s, the U.S. Coast Guard and the Environmental Protection Agency identified widespread environmental and safety hazards due to aged, non-code-compliant infrastructure. The result was an urgent call for action, and for several years around 2000 there was a significant increase in federal funding for bulk fuel upgrade projects, managed primarily by Alaska Energy Authority and Alaska Village Electric Cooperative. The high levels of funding did not persist, however. Despite well over \$300 million invested by federal and state partners over the last three decades, less than half of rural Alaska's tank farms have been improved—and many of those are now aging out of their service life. The average age of a rural tank farm is 40 years, well beyond the expected 20–30-year lifespan. Some villages still use 75-year-old tanks. The growing discrepancy between rising project costs and available funding points to the need for new solutions, including more accessible financing tools that effectively meet the challenging circumstances of bulk fuel facility operations and management.

Similar to tank farm facilities, rural Alaska power systems are also facing a growing discrepancy between need and available funding. The Alaska Energy Authority estimates a statewide backlog of more than \$400M to improve the power systems keeping the lights on and water pumping in the state's villages. When electricity goes out in a village, it doesn't just turn off the lights – it causes freezers full of subsistence foods to thaw and it causes the above ground pipes pumping fresh water in and waste out of homes to freeze, creating a cascade of public health and food security threats on top of expensive and time-consuming infrastructure fixes the community cannot afford.

Diesel generation remains the backbone of energy reliability in rural Alaska, particularly during extreme conditions when other systems may be unavailable or unpredictable.

However, the region's abundant land and significant water resources - including powerful river systems and geothermal sites - offer clear opportunities to evolve toward hybrid energy systems, such as pairing diesel with hydroelectric and geothermal generation. This multifaceted approach not only increases durability and efficiency but also opens new possibilities for economic development. For example, the innovative Greensparc data center in Cordova is powered by local hydro - highlighting the potential to leverage local energy assets for high-value activities like digital infrastructure. Harnessing the intersection of Alaska's natural resources and advanced energy technologies can position communities for greater resilience and create attractive conditions for investment in industries ranging from data services to food production - all while reducing long-term energy costs and fostering self-sufficiency.

The average cost of electricity across rural Alaska villages is 47 cents per kilowatt hour and encompasses a range of \$1.50 down to 37 cents. The average residential electricity cost in Alaska's much more populous Railbelt corridor is nearly 18 cents, and the national average is 16.2¹. As a result, rural households in Alaska spend roughly 27% of their annual income on energy for power and heat, almost four times the state's urban average.

Upgrading and maintaining code-compliant, adequately sized bulk fuel tank farms is one of the most effective strategies to keep costs as low as possible and improve energy reliability. These facilities enable communities to purchase and store heating oil and diesel in bulk by barge during short seasonal windows, rather than relying on costly, year-round air shipments. Critically, bulk fuel storage remains the backbone of energy reliability - even for communities with renewable energy - ensuring backup and stability during harsh weather or supply interruptions. Innovative adaptations can make these systems more efficient, like modifying marine engines for local powerhouses because they produce both electricity and usable heat. That recovered "waste" heat warms schools, water treatment plants, and community washaterias.

¹ [akenergyauthority.org/Portals/0/Power Cost Equalization/FY22 PCE Community Report.pdf](https://akenergyauthority.org/Portals/0/Power%20Cost%20Equalization/FY22%20PCE%20Community%20Report.pdf)

Energy ties directly to all other aspects of village life: building heat, water and sewer (which can account for as much as 30-40% of community energy demand), transportation (including for subsistence hunting, fishing, and gathering activities), and communication. Without reliable power, none of these other systems can function. And without continued public investment in bulk fuel infrastructure, these costs would be even higher - a 2016 study found that such investments can save communities more than \$2.00 per gallon in fuel costs².

Recent Executive Orders underscore the urgent need for robust investment in critical energy infrastructure, including highlighting the role of advanced reactors in meeting the country's national, energy, and economic security. This has direct relevance for Department of Defense or Department of Energy application in Alaska, where the state is uniquely positioned as proving grounds for small modular and micro nuclear technologies given its many areas of energy isolation and extreme conditions.

Grant funding alone is not enough; improved public financing tools and flexible eligibility criteria are vital to meeting the unique economic and logistical challenges of rural Alaska. Recognizing bulk fuel tank farms and power generation facilities as core components of community energy systems across federal programs will help address deferred maintenance and support resilient growth.

Strategic energy infrastructure investment not only protects communities during emergencies but also enables further resource development, economic opportunity, and innovation. Alaska Native communities, long accustomed to remote conditions and scarce resources, have always embodied ingenuity and adaptability – often finding ways to “make it work” when faced with necessity. By modernizing and coordinating grant, loan, and technical assistance programs, Alaska's remote communities can remain models of resilience and self-reliance, advancing both local and national energy security.

Innovation in Investments

² [2016_10_26-TrueCostElectricityFuelRuralAK.pdf \(iseralaska.org\)](#)

Efforts to enhance power generation, fuel supply chain resilience, and infrastructure access are instrumental in improving energy security and reliability for Alaska's communities. Numerous studies – including work by the U.S. Department of Energy Office of Indian Energy, the National Renewable Energy Laboratory, and independent assessments such as GAO-25-107441 – demonstrate how targeted energy investments in remote and tribal regions can improve reliability, lower costs, and stimulate local economic development. Similarly, expanded environmental review, planning, and efforts to increase access in various regions in Alaska can open up tribal community's subsistence and other natural resources while reducing transportation costs.

Over the past two decades, more than \$250 million has been invested in rural bulk fuel tank farm upgrades across Alaska. Despite this progress, aging infrastructure and deferred maintenance continue to pose significant challenges, with many villages facing persistent needs for repairs or full-scale rebuilds. Environmental factors - including erosion, flooding, and permafrost degradation - further increase the complexity and urgency of these upgrades.

Recently, a master contract approach was launched to address rural bulk fuel needs, enabling more efficient coordination of resources and project delivery. Integrating improvements across multiple sectors- such as transportation and energy - offers further efficiencies and helps address interconnected challenges like barge landing conditions and fill line reliability.

Current partnerships with government, industry, and local communities are facilitating advances in distributed energy resources and resilient infrastructure. Technology transfer initiatives, including public-private accelerators and deployment of battery storage and miniaturization innovations, are helping to bring solutions tailored for off-grid and cold climate environments. Regional collaboration - connecting Alaska tribes with other northern states (Montana, North Dakota, Minnesota, and Washington) - continues to provide opportunities for knowledge sharing and development of best practices in dual-use and expeditionary energy systems.

Learning from Partnerships

Recent progress in Alaska's energy landscape demonstrates the value of robust federal partnerships, especially through Department of Energy (DOE) initiatives tailored to rural and remote communities. Locally based technical assistance funded by the DOE Office of Indian Energy ensures that solutions are designed to meet Alaska's unique climate and logistical challenges. These efforts help projects move swiftly from concept to construction - supporting financial planning and unlocking additional streams of funding for energy infrastructure.

DOE's Arctic Energy Office has expanded regional leadership in energy resilience by funding the Arctic Energy Ambassadors program. This initiative empowers experienced local practitioners to advance energy security and foster clean energy transitions, improving outcomes for communities statewide.

Complementing DOE programs, recent interagency coordination has allowed for the rapid deployment of \$100 million in EPA funds to Alaska's highest-need rural bulk fuel facilities, paired with Trans Alaska Pipeline Liability (TAPL) interest revenue for critical upgrades. The highlight here was that diesel infrastructure was woefully omitted from most programs over the last five years but serves as a backbone to energy infrastructure in Alaska. Similarly, the Bureau of Indian Affairs (BIA) Division of Energy and Mineral Development has paved the way for facility improvements in highly vulnerable locations, such as the Scammon Bay tank farm, following major weather events like the Merbok storm.

Together, these coordinated federal investments and innovative technical support models offer scalable solutions for improving energy reliability, infrastructure resilience, and emergency preparedness in Alaska's most challenging environments.

Gaps and Needs

Despite ongoing progress, several critical gaps remain in Alaska's energy and infrastructure landscape that warrant committee consideration. These include limited access to financing tools for small tribal utilities, insufficient technical assistance resources, and inadequate capital available for urgent infrastructure upgrades – including bulk fuel tank farms and diesel power systems. The absence of simple, flexible loan

mechanisms, robust technical assistance, and integrated regional energy planning support – including new opportunities related to data centers and LNG – continues to impact project delivery and sustainability.

A key barrier is the inconsistent treatment of bulk fuel tank farm facilities in federal funding programs. For financing and eligibility purposes, bulk fuel tank farms should be recognized as a central component of rural Alaska community energy systems across all agencies – ensuring they are eligible for support alongside other critical energy infrastructure.

Other eligibility barriers persist, such as NEPA requirements for bulk fuel and power system upgrades and limited recognition of bulk fuel facilities as core rural energy infrastructure within federal funding programs. Additionally, current loan programs may not be structured or scaled for small, remote tribal and rural communities. Some federal loan programs remain underutilized despite potential opportunities for efficient deployment through entities with established local expertise and streamlined processes.

Technical assistance programs – including support for energy project development, circuit rider models, and regional ambassador programs – remain essential but often lack sufficient funding to support financial planning and governance. Long-term projects such as Alaska LNG have potential for affordable energy but face ongoing challenges in credit allocation and sustained support.

Closing

Energy security in rural Alaska is vital; it is a basic need for survival, but Alaska's villages need more than survival. Energy security is the foundation of economic prosperity, something critically lacking in most of these communities, and desperately in need of additional investments – both grants and loans – not just for the sake of these communities on the edge of America, but for the nation to ensure a strong Arctic presence. Thank you for your leadership and for recognizing the vital importance of meeting these needs now.