



White Paper Rural Alaska's Electricity Landscape

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Until as recently as forty years ago, most rural communities in Alaska did not have central station electric service. Larger hub communities like Bethel, Kotzebue, Dillingham and others received electricity when entrepreneurs established local electric utilities. Typically, those entrepreneurs formed non-profit electric cooperatives to serve themselves, although in a very few instances, for-profit utilities were established.

Alaska Village Electric Cooperative – a non-profit, member-owned utility – was established by a small statewide task force appointed by Governor Hickel to address the daunting issue of bringing electricity to the very small, remote villages scattered across the state. AVEC electrified its first villages in 1968 and now serves 53 communities.

The electric paradigm in rural Alaska is unique in the United States and, most likely, the world. There are 200+ small communities – from less than 40 to about 1,200 in population. Very few are interconnected. There are no roads and no electric transmission grid. Each community has its own stand-alone generation plant. The vast majority are diesel-fired with a very few using other fuel sources. Barrow has local natural gas and a few communities in southeast Alaska have some or most of their electricity from hydropower.

The capital cost of village electric systems is extremely high – four to five times that in the Lower-48. This is because generating capacity at each location must be at least three times the size of the peak load. Reliability can only be assured if there is generating capacity to meet the load with one generator down for scheduled maintenance and another disabled due to an unexpected breakdown.

Electricity costs in rural Alaska are astronomical. Non-fuel costs in an AVEC village are about 25 cents a kilowatthour. Fuel costs average 37 cents a kWh. That is more than seven times the average cost of electricity across the country. To a large extent, this can be attributed to the fact that there are some 150 utilities serving Alaskans – a total population of 680,000 spread across 586,000 square miles.

Contrast this to the utility serving Sacramento, California. Sacramento Municipal Utility District serves a land area covering 900 square miles. Their customers use twice as much electricity as the entire state of Alaska does.

This highlights the severe challenges faced by energy consumers in rural Alaska. Extremely high cost electricity and heating fuel cripples economic enterprise and commands 10 – 40% of household income. Consumers are forced to make impossible choices between heat, electricity, food and clothing.

Modest progress has been made to interconnect villages. By interconnecting, power plants can be shut down, fuel can be consolidated, generation efficiencies improve and larger loads make alternative energy options more viable. But, even with combined loads, the village demand is extremely low. A small supermarket in the Lower-48 will exhibit an electrical load equal to five or six larger villages rolled together.

The challenge to meet the electrical needs for rural Alaska is ever exacerbated by oppressive regulations promulgated for Lower-48 conditions. Ultra Low Sulfur diesel regulations have added almost a dollar a gallon to retail fuel costs – 8 cents a kWh. Clean Air regulations and the imminent Cap and Trade carbon requirements will likely cost rural consumers another 5 – 10 cents a kWh. Wind turbines and interties have to run the gantlet presented by inimical Endangered Species Act constraints and Wetlands limitations.

There are no silver bullets to cure rural Alaska's reality of high cost energy. Petroleum fuels will continue to dominate in providing heat, electricity and transportation needs for the foreseeable future.

Two programs that have made tremendous positive impact on rural Alaska's energy systems are the Denali Commission and the Rural Utilities Service's High Energy Cost Grant Program.

The Denali Commission alone has invested more than \$400 million in bulk fuel and generating facilities in the last ten years. USDA's RUS has pumped about \$100 million over the same period into critically needed utility infrastructure. And the job is only half done. The US government has not built up critical infrastructure like roads, bridges, power projects and transmission systems in Alaska as they have in the Lower-48. The difference is stark. Our communities are inaccessible; our citizens have exorbitantly priced yet still unreliable energy; our rural families are having to make untenable choices between necessities that are taken for granted elsewhere.

We welcome the delegation of the Obama Administration that has graciously made time to visit our communities. We hope you will walk a mile in our shoes and grasp the enormity of the challenges that residents of the United States' northernmost landmass face. Our people have etched an existence in this beautiful but harsh land for thousands of years. We need your help to continue that existence.