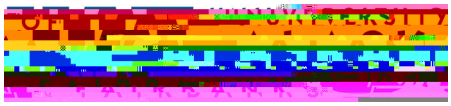
Alaska's Railbelt Electric System: Decarbonizaəon Scenarios For 2050

Researchers at the Alaska Center for Energy and Power at UA8,70ğ gigawa3 (GWh), about 85% more than in 2021. Peak demand equals 1,626 megawağs (MW), more than double the 2021 level. These higher loads come from populaəon growth, electric vehicles, and heat pumps.

Addiəonal baseline resources include the Bernice-Beluga HVDC line, upgrading Kenai-Anchorage transmission to 230 kilovolts (kV), the Dixon Diversion hydro project, and 30 MW of new wind at Liğle Mount Susitna, plus 228 MW of residenəal rooƉop solar. Healy unit 2 is reəred. New bağeries bring total bağery capacity to 216 MW.

Scenario descripəons



Takeaways

These scenarios are illustraəve. They demonstrate what is possible, not necessarily what is opəmal. A low-carbon grid in 2050 with 70-95% carbon-free generaəon is possible, but