

## Alaska's Railbelt Electric System: Decarbonization Scenarios For 2050

Researchers at the Alaska Center for Energy and Power at UAA project that total annual electricity demand will reach 8,704 gigawatts (GWh), about 85% more than in 2021. Peak demand equals 1,626 megawatts (MW), more than double the 2021 level. These higher loads come from population growth, electric vehicles, and heat pumps.

**Additional 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 Little Mount Susitna, plus 228 MW of residential rooftop solar. Healy unit 2 is retired. New batteries bring total battery capacity to 216 MW.

### Scenario descriptions



## Takeaways

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

