DECARBONIZATION ROADMAP

CHUGACH
POWERING ALASKA'S FUTURE

CCUS

Solve the CO2 sequestration problem (i.e. where and how)

Establish commercial viability of utility scale carbon capture for natural gas plants

Establish long-term, sustainable supply of natural gas

Install a CO2 transportation system (a pipeline)

Install carbon capture equipment on combined cycle natural gas power plants

NUCLEAR

Establish the viability of SMRs or micro-nuclear power generation

Offset power from thermal with nuclear

Achieve long-term carbon reduction using carbon capture

BEES

Shape the grid with beneficial electrification and energy conservation

Final System Design

RES

Demonstrate how small scale Re can be regulated at power plant level for immediate carbon reduction

Develop new forms of renewable power

Determine how much renewable (variable) power can be regulated on the existing system

Pursue renewable energy projects with aspirational power levels

RFP

Solve the thermal regulation problem

Resolve high-IBR penetration problem

Install solar and wind to the extent possible using existing resources

Analyze system design, economic, and operational characteristics of large scale RE projects

Establish the commercial viability of new LDES technologies

Achieve a **firmed renewable energy system** design at the regional scale

H_2

Establish the viability of H2 burning, utility-scale power plants

Solve large scale H2 storage problem

Establish viability of utility-scale H2 production (Done)

Demonstrate how H2 can regulate renewables (variable power)

Scale up with increased energy storage capability

Achieve a firmed renewable energy solution at Railbelt scale

Create new microgrids with BTM/FTM ESS as SDES/LDES solutions with added resilience characteristics

Eliminate energy flow restrictions between the regions

GRID DEVELOPMENT

HYDRO

Construct new hydro to match renewables for power regulation and system stability