

DRAFT



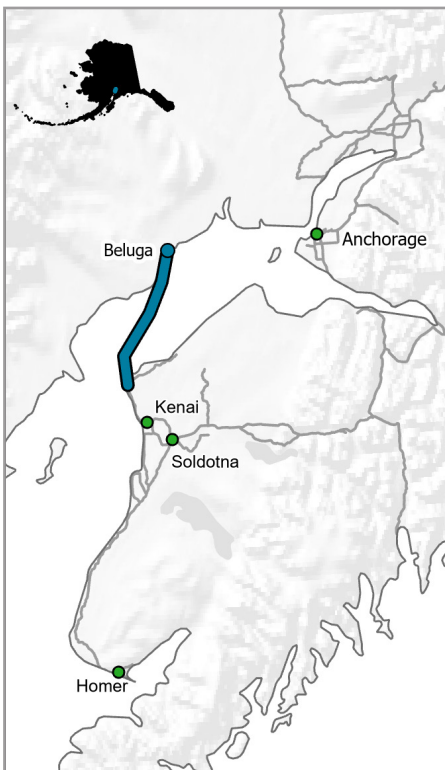
SUBMARINE HVDC LINE & BESS*

Improving Railbelt Resiliency and Transfer Capacity



PROJECT SUMMARY

Status: In grant negotiations with DOE; anticipated award Q3 2024
Scope: Subsea HVDC Line between the Kenai Peninsula and Beluga with AC/DC converters
2 BESS Units: Central (Anchorage & Mat-Su) and Northern (Fairbanks)
Cost: \$413 Million
**BESS, if feasible, after HVDC*



PROJECT OVERVIEW

The Alaska Energy Authority (AEA), in collaboration with the Railbelt utilities, has been selected for a \$206.5 million grant from the Department of Energy (DOE) through the Grid Resilience and Innovation Partnerships (GRIP) Program. The grant requires a dollar-for-dollar match and will fund the construction of a high-voltage direct current (HVDC) subsea line across Cook Inlet from the Kenai Peninsula to the Beluga substation to connect the converter station with Soldotna. Two converter stations will be constructed at the terminal ends of the HVDC line, to convert alternating current to direct current, and vice versa at the other end. In addition, if feasible, build a battery energy storage system (BESS) in Fairbanks and expand the Anchorage BESS.

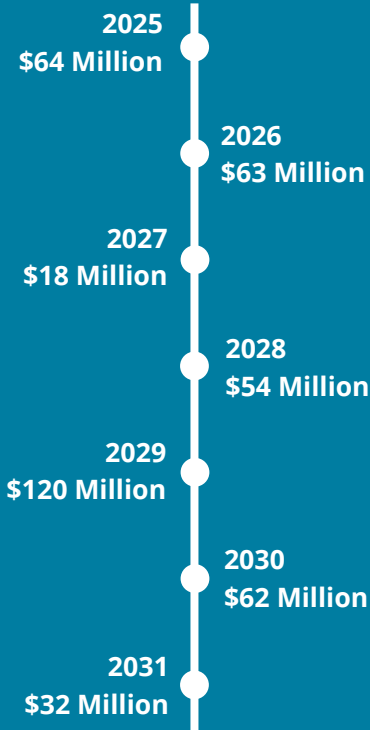
Benefits

- Adds redundancy along the Railbelt by creating an alternate path for generation to flow north and south along Railbelt
- Decreased line loss will contribute to lower energy prices
- Increases resiliency of the grid (BESS able to support load for a couple hours)
- Reduction of natural gas generators spinning

Opportunities

- Potential for development of renewable resources in an area of the state that were previously uneconomical due to lack of proximity to transmission
- BESS will enhance resiliency and eliminate small signal instability events and increase frequency control
- Increases effectiveness of additional renewable resources

DRAFT BUDGET



Total \$413 Million



PROJECT STATUS

This project is expected to take eight years to complete (including design, permitting, and construction) and will provide an alternative path between the Central and Southern regions of the Railbelt, increasing transfer capability and improving resilience along the Railbelt. The addition of an alternative path of electricity will also relieve the burden of the existing capacity-constrained transmission lines which enables the construction of additional renewable resources on the Kenai Peninsula and reduces the occurrence of transmission disruptions during maintenance or construction activities on the existing line. As Alaska's grid brings on more renewable resources, the incorporation of BESSs are vital for utilities to regulate and manage the energy load. Many renewable resources, such as solar and wind, are non-firm (unpredictable) sources of energy that may not provide power to the grid when required. BESS's increase resiliency and allow utilities to store renewable energy and deploy at a later time to follow the natural demands of the grid.

FUNDING PLAN (\$MILLIONS)

FISCAL YEAR	FEDERAL SHARE	STATE FUNDS OR SOURCE TBD	EXISTING AEA REVENUE BONDS
2025	32.70	12.70	20.00
2026	31.50	6.50	25.00*
2027	8.80	8.80	-
2028	26.80	21.80	5.00*
2029	60.00	60.00	-
2030	30.95	30.95	-
2031	15.75	15.75	-
Subtotals	206.50	156.50	50.00
Total	413.00		

Total Project Cost: \$413 million (\$206.5 million federal share and \$206.5 million match)

Secured Sources for Match: \$20 million AEA bonds (existing) and \$12.7 million FY2025 appropriation

***Other Sources for Match:** Potentially \$30 million from AEA bonds (existing) for BESS depending on timing, Railbelt utilities, additional state appropriations, tax credits, and bond covenants