Alaska CCS Opportunities and Railbelt Grid

Alaska Miner's Association

November 5, 2024

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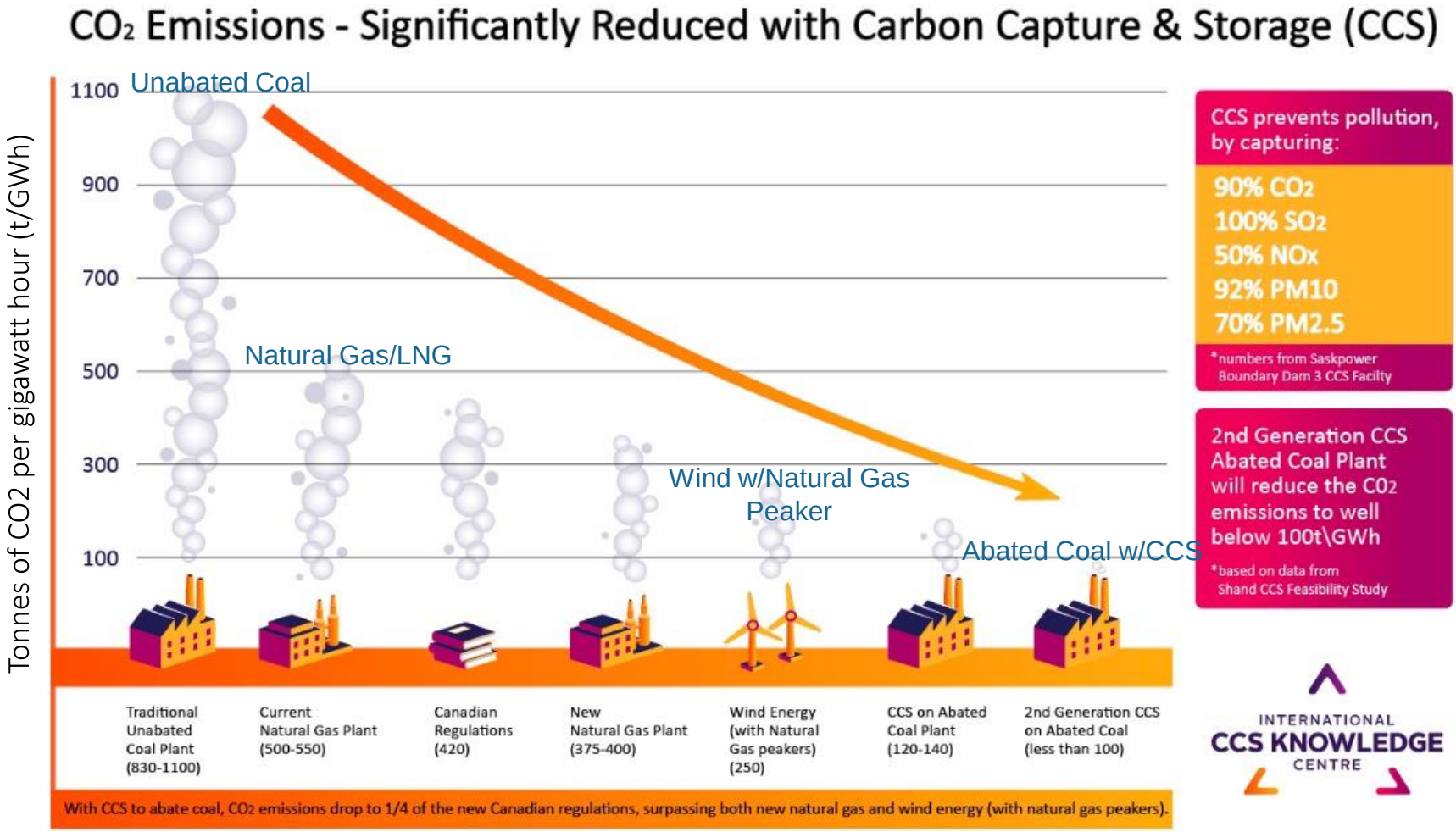
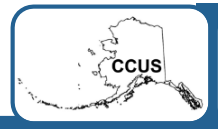
Why CCUS?

- World faces dual challenge of increasing energy demand and risks of climate change
- IPCC finds the cost for clean energy security globally more than doubles without CCUS [1]
- Carbon (CO_2) Capture and Storage (CCS) also removes other pollutants
- CO_2 Use (CCUS) like agriculture can make electricity net-zero emissions, supports food and energy security
- Coal-fired power with CCS
  - 2 to 4 times cleaner than Natural Gas
  - 2 times cleaner than Wind with Natural Gas Peakers



[1] Intergovernmental Panel on Climate Change

Alaska CCUS Activities



Institute of Northern Engineering
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- **DNR developing regulations** following May 2024 passage of **Carbon Storage law,** HB50
  * $1 mm geological database for carbon storage assessments
  * Coordinating public engagement between Alaska CCUS projects
- **AOGCC seeking Class VI injection well primacy** from EPA
- **UAF performing $11 mm Alaska Railbelt Carbon Capture and Sequestration (ARCCS) CarbonSAFE Phase II storage assessment** with EERC and ARI
  * Evaluates CCS from new biomass-coal power plant and two natural gas CEA power plants
- **US DOE, Japan MITI studying CCS Import to Alaska**: transportation, costs, economics
- **Hilcorp performing US–Japan CCS Commercialization study** with Sumitomo and K Line
- **Santos & Repsol** developing **Pikka Oilfield CO_2 scope 1 and 2 emissions neutral**, mainly offsets
- **AES (ASRC Energy Services), Santos, and Repsol** performing **$3 mm Direct Air Capture study**
- **AES leading $62 mm North** to the Future Carbon Capture and **Sequestration Hub**, DAC and PSC
- Globally **CCS saw a 48% increase in CO_2 capture capacity** from 2022 – 2023

Railbelt Power System Analysis

- Coal is Lowest Cost Fuel ~ $4/MMBtu
  - $7 to $10/MMBtu natural gas now
  - $20 to $35/MMBtu diesel
  - Imported LNG $15 to $25 /MMBtu[1], similar price as diesel
- Coal Supply Local and Abundant.
  - The USA has 27% of the world's coal, with half of that in Alaska [2]
- LNG Import brings Price and Supply Risk, e.g.
  - Pakistan received only two-thirds of contracted LNG supply in recent years [3]
  - LNG tankers redirected to spot market
  - Rolling blackouts

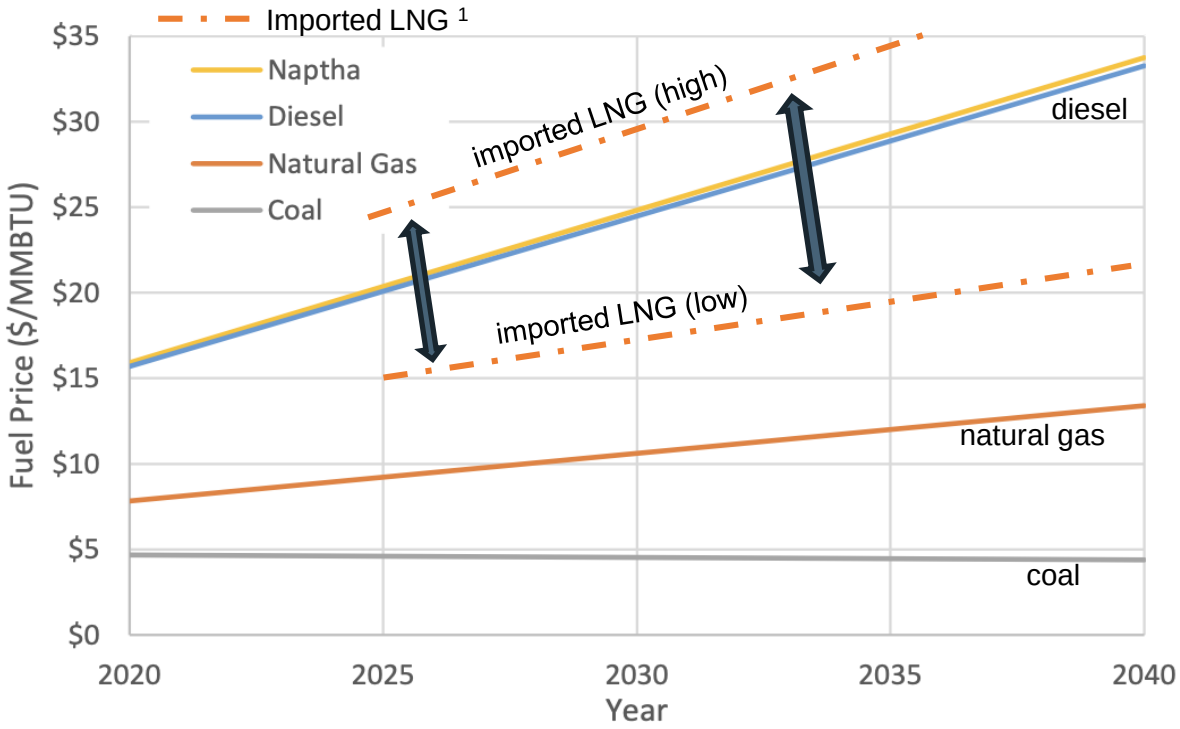


Figure 5. Assumed fuel price trajectories (2020$)

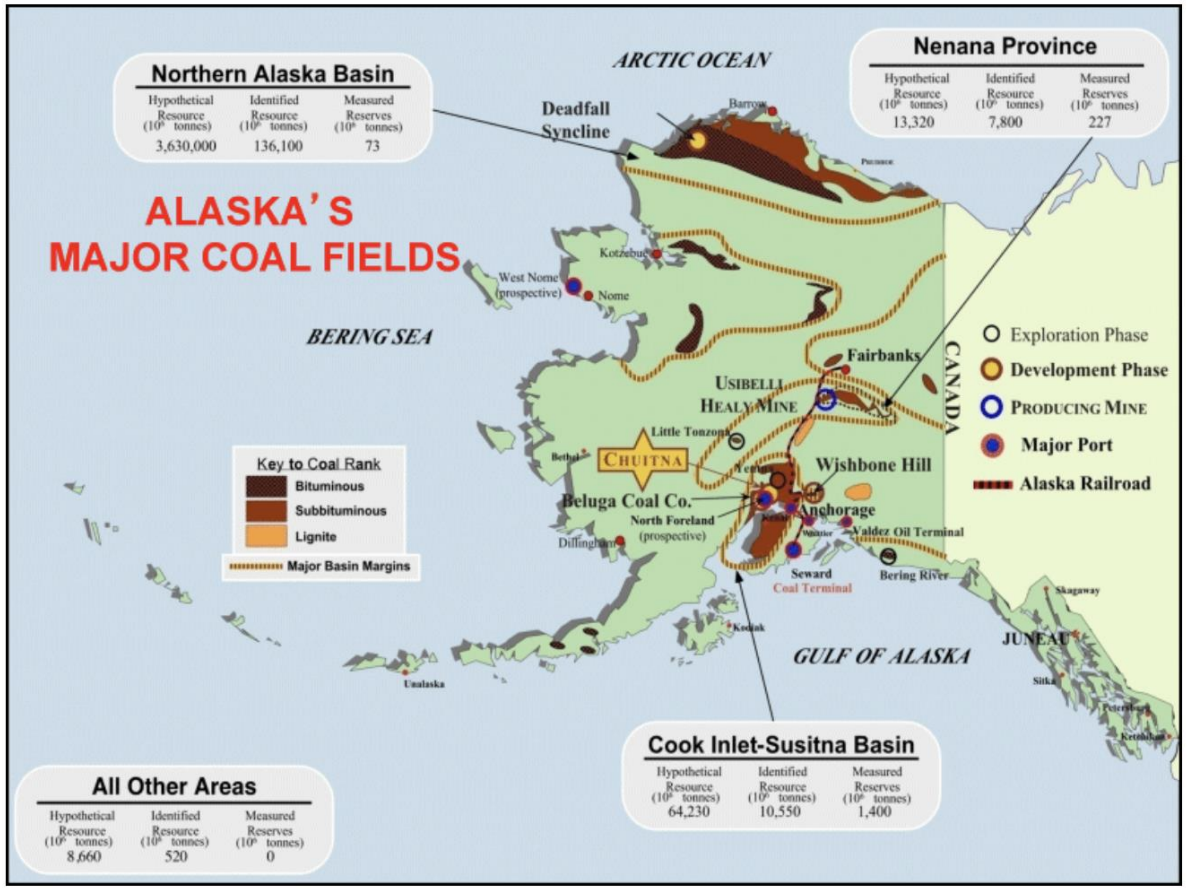
Fuel price forecasts from the Alaska Energy Authority, ref. *NREL Renewable Portfolio Standard Assessment for Alaska's Railbelt, 2022*, NREL/TP-5700-81698, https://www.nrel.gov/docs/fy22osti/81698.pdf

[1] Imported LNG price estimate from UAF study *"**Cook Inlet Region Low Carbon Power 2024**", Paskvan et. al.*
[2] www.usibelli.com/coal/abundance
[3] Bloomberg, Stephen Stapczynski and Faseeh Mangi, ***How Energy Traders Left a Country in the Cold***, December 14, 2023, https://www.bloomberg.com/features/2023-how-commodity-traders-switched-off-pakistan-energy/

CCS Technology Application: Alaska Coal

- **Coal the most abundant fossil fuel in U.S.**
- **27% of the world's coal is in the U.S.**
- **Half of all U.S. coal resource is in Alaska**
  - Thousands of years of coal in Alaska
  - Abundant, secure, low cost energy

- **With CCS, coal can provide clean, reliable, affordable power**



from www.usibelli.com/coal/abundance

Is CCS required in Alaska? … the Answer is changing

- **New EPA rules *require* CCS on coal-fired plants by 2032**
  - **But Alaska, separate from United States, is excluded from this rule**
  - 13 States objecting to Rule, Alaska included
- **Natural gas plants may see new Carbon rules after November (Elections?)**
  - Will Alaska natural gas plants also be exempted?

New EPA Rules as of April 25, 2024

BSER At-A-Glance

FINAL CARBON POLLUTION STANDRADS FOR NEW AND EXISTING FOSSIL-FUEL FIRED ELEECTRICITY GENERATORS			
Existing 111(d) Steam Generators		**New Source and Reconstructed 111(b) Stationary Combustion Turbines**	
Coal-Fired Boilers	**Natural Gas and Oil-Fired Boilers**	**Phase I** Date of promulgation or initial startup	**Phase II** Beginning in Jan 1, 2032
Long-term subcategory: For units operating on or after January 1, 2039 **BSER**: CCS with 90 percent capture of CO_2 (88.4% reduction in emission rate lb/MWh-gross) by January 1, 2032	**BSER:** routine methods of operation and maintenance with associated degree of emission limitation: **Base load unit standard:** (annual capacity factors greater than 45%) 1,400 lb CO_2/MWh-gross **Intermediate load unit standard:** (annual capacity factors greater than 8% and less than or equal to 45%) 1,600 lb CO_2/MWh-gross. **Low load units:** (annual capacity factors less than 8%) a uniform fuels BSER and a presumptive input-based standard of 170 lb CO_2/MMBtu for oil-fired sources and a presumptive standard of 130 lb CO_2/MMBtu for natural gas-fired sources. Compliance date of January 1, 2030	**Low Load Subcategory (Capacity Factor <20%)**	
Medium-term subcategory: For units operating on or after Jan. 1, 2032, and demonstrating that they plan to permanently cease operating before January 1, 2039 **BSER**: co-firing 40% (by heat input) natural gas with emission limitation of a 16% reduction in emission rate (lb CO_2/MWh-gross basis) by January 1, 2030		**BSER**: Use of lower emitting fuels (*e.g.*, hydrogen, natural gas and distillate oil) **Standard**: less than 160 lb CO_2/MMBtu	EPA is not finalizing a Phase II BSER for low load units
		Intermediate Load Subcategory (Capacity Factor 20% to 40%*) *Source-specific upper bound threshold based on EGU design efficiency	
		BSER: Highly efficient simple cycle technology with best operating and maintenance practices **Standard:** 1,170 lb CO_2/MWh-gross	EPA is not finalizing a Phase II BSER for intermediate load units
For units demonstrating that they plan to permanently cease operating before January 1, 2032 Units are exempt from the rule. Cease operations dates finalized in state plans for exemption purposes are federally enforceable.		**Base Load Subcategory (Capacity Factor >40%*)** *Operation above upper-bound threshold for Intermediate Subcategory	
		BSER: Highly efficient combined cycle generation with the best operating and maintenance practices **Standard**: 800 lb CO_2/MWh-gross (EGUs with a base load rating of 2,000 MMBtu/h or more) **Standard**: 800 to 900 lb CO_2/MWh-gross (EGUs with a base load rating of less than 2,000 MMBtu/h)	**BSER**: Continued highly efficient combined cycle generation with 90% CCS by Jan 1, 2032 **Standard**: 100 lb CO_2/MWh-gross EPA's standard of performance is technology neutral, affected sources may comply with it by co-firing hydrogen.
For new and existing units installing control technologies, a 1-year extension is available in situations in which implementation delays are due to factors beyond the EGU owner/operator's control. For existing units with cease operations dates, a 1-year extension is available in situations in which the unit is needed for reliability through a reliability assurance mechanism, provided appropriate documentation is submitted.			
Major Modifications 111(b) Coal-fired Steam Generators: Standards of performance for coal-fired units that undertake a large modification (*i.e.*, increases hourly emission rate by more than 10%) mirror the emission guidelines for existing coal-fired steam generators.			

Interested parties can download a copy of the final rule from EPA's website at Greenhouse Gas Standards and Guidelines for Fossil Fuel-Fired Power Plants

https://www.epa.gov/stationary-sources-air-pollution/greenhouse-gas-standards-and-guidelines-fossil-fuel-fired-power

Low Carbon Biomass-Coal Power with CCS
Results and Conclusions

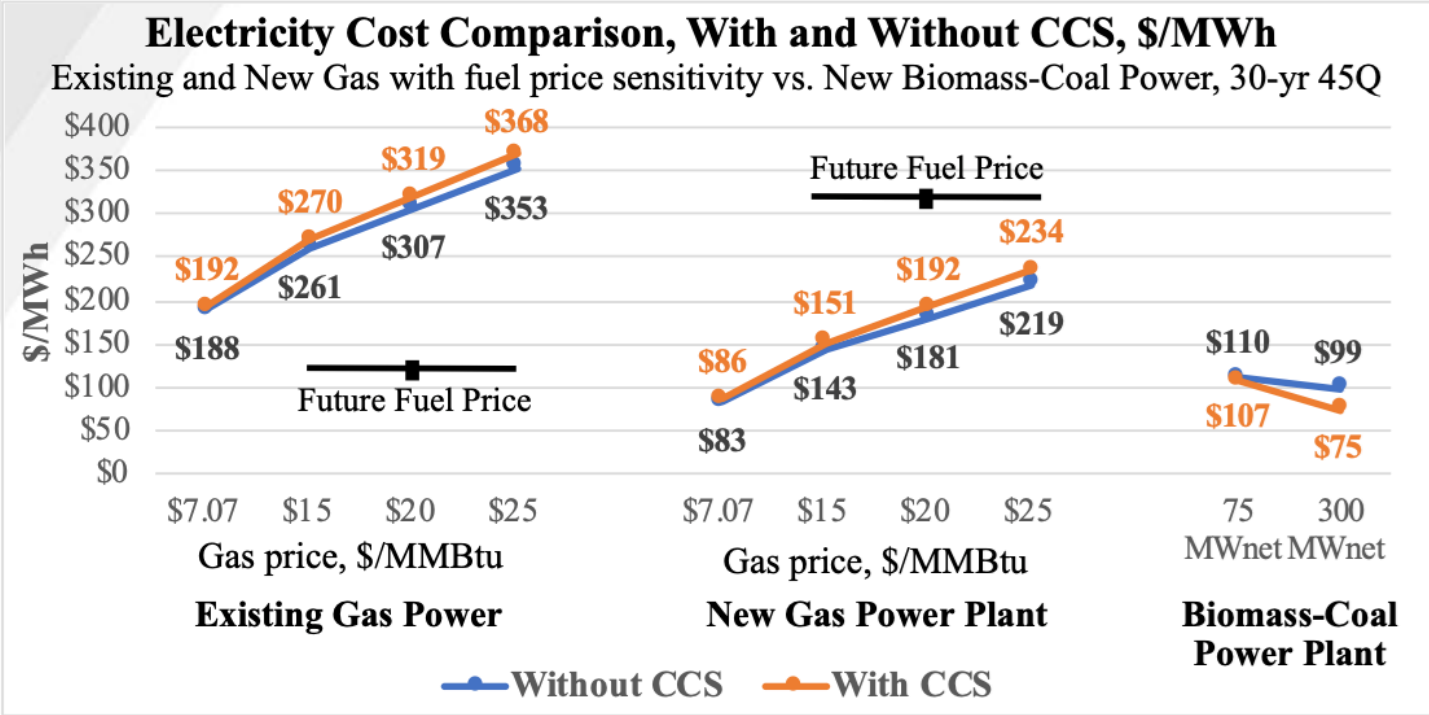


Figure 14. Electricity Cost Comparison, With and Without CCS, $/MWh
Existing CEA G&T Gas and New Gas Power with fuel price sensitivity
vs. New Biomass-Coal Power, 30-year tax credit scenario.

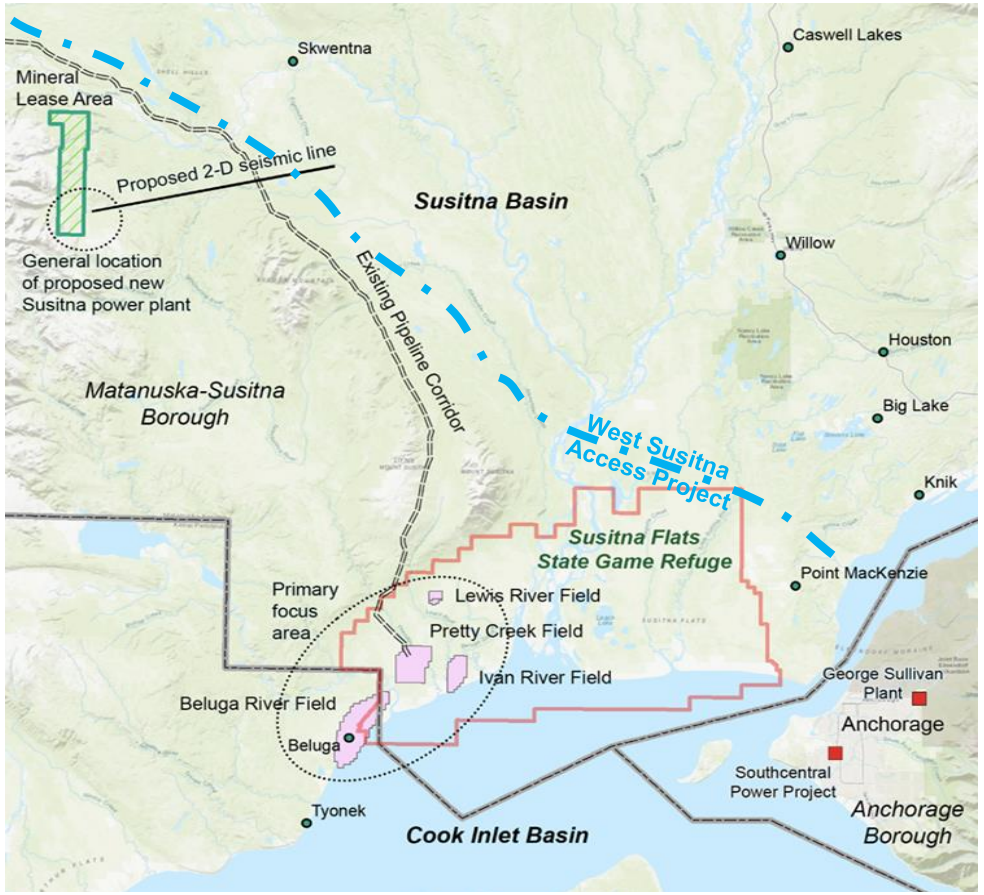
- Biomass-coal power with CCS is attractive:
  - Affordable, reliable, clean, energy security
  - Lower CO_2 emissions than natural gas
  - Hundreds of years of local fuel supply
  - Lower cost than natural gas power
  - CCS lowers coal-fired power cost since credits exceed CCS costs
- Lowering Railbelt electricity cost lowers Rural electricity cost through Power Cost Equalization

ARCCS Project

Determine Northern Cook Inlet CO_2 storage volume

- Feasibility Study estimated Beluga River Field has 60+ years storage for 300 MW net biomass-coal power plant with CCS
- ARCCS will assess carbon storage hub capacity using DOE CarbonSAFE Phase II framework
  - Evaluates ~ 20 mile radius around Beluga River Field and nearby gas fields
  - Acquires 2D seismic adjacent to coal lease
  - CO_2 capture and transport from
    - A new Terra Energy Center biomass-coal power plant and
    - Two Chugach Electric's natural gas power plants in Anchorage
  - ARCCS from Sept. 16, 2024–Sept. 15, 2026

Alaska Railbelt Carbon Capture and Storage (ARCCS) Project



ARCCS Project
Anticipated Community Benefits

- If CO_2 storage volume confirmed, anticipated ARCCS benefits include:
  - Supports decarbonizing existing natural gas power plants
  - Supports developing potentially lower cost Railbelt energy with long term coal reserves, improves energy stability, and reduces future Railbelt power price increases
  - Provides Statewide rural communities benefits through Alaska Power Cost Equalization by enabling lower cost Railbelt energy investments
  - Provides jobs in construction, operations, technical, and management in CO_2 economy
  - Encourages students to follow a STEM Education path, preparing themselves to address challenges to improve energy efficiency and economic and environmental benefits

ARCCS Project Support to determine CO_2 storage volume of northern Cook Inlet

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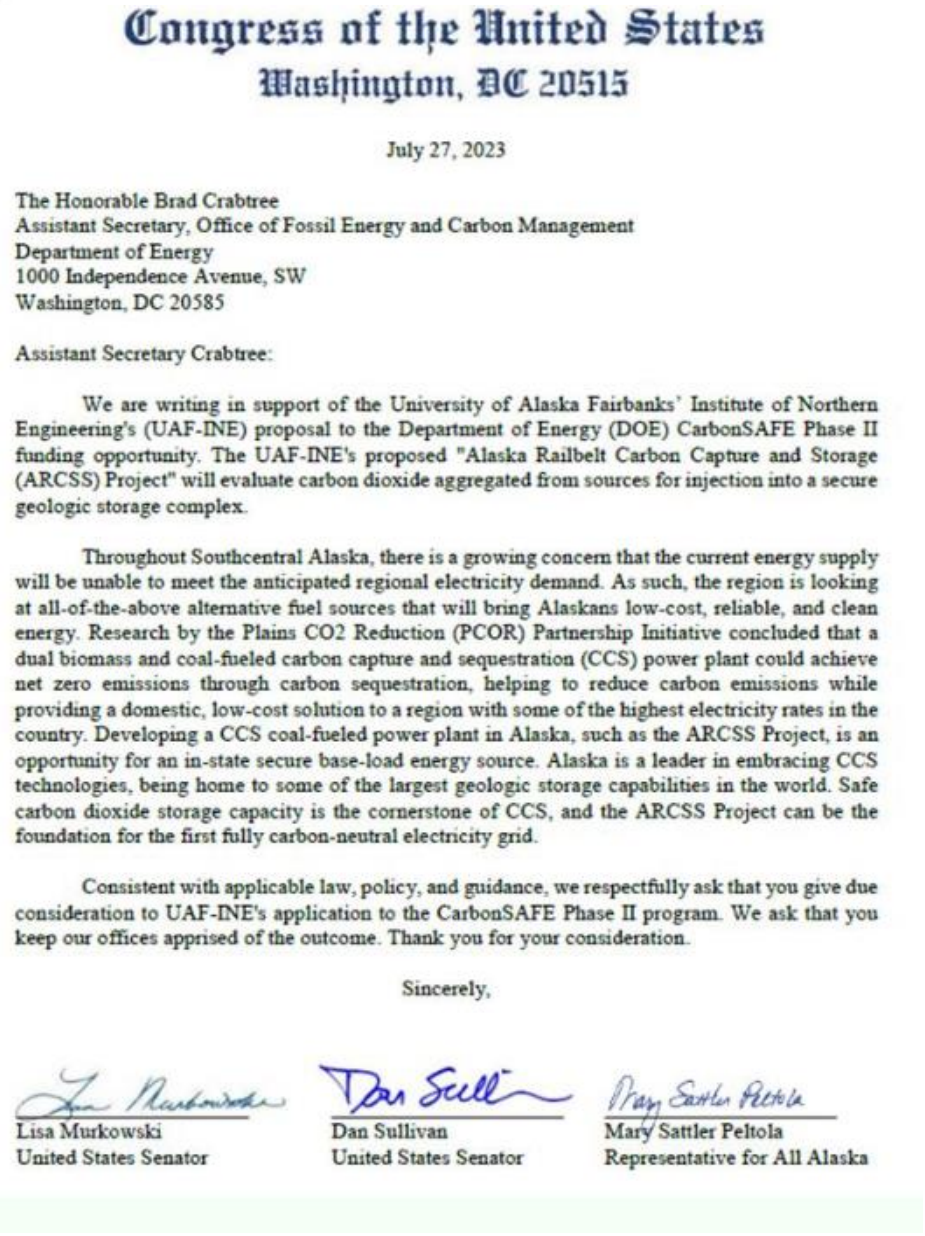


Congress of the United States
Washington, DC 20515

July 27, 2023

The Honorable Brad Crabtree
Assistant Secretary, Office of Fossil Energy and Carbon Management
Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Assistant Secretary Crabtree:

We are writing in support of the University of Alaska Fairbanks' Institute of Northern Engineering's (UAF-INE) proposal to the Department of Energy (DOE) CarbonSAFE Phase II funding opportunity. The UAF-INE's proposed "Alaska Railbelt Carbon Capture and Storage (ARCSS) Project" will evaluate carbon dioxide aggregated from sources for injection into a secure geologic storage complex.

Throughout Southcentral Alaska, there is a growing concern that the current energy supply will be unable to meet the anticipated regional electricity demand. As such, the region is looking at all-of-the-above alternative fuel sources that will bring Alaskans low-cost, reliable, and clean energy. Research by the Plains CO2 Reduction (PCOR) Partnership Initiative concluded that a dual biomass and coal-fueled carbon capture and sequestration (CCS) power plant could achieve net zero emissions through carbon sequestration, helping to reduce carbon emissions while providing a domestic, low-cost solution to a region with some of the highest electricity rates in the country. Developing a CCS coal-fueled power plant in Alaska, such as the ARCSS Project, is an opportunity for an in-state secure base-load energy source. Alaska is a leader in embracing CCS technologies, being home to some of the largest geologic storage capabilities in the world. Safe carbon dioxide storage capacity is the cornerstone of CCS, and the ARCSS Project can be the foundation for the first fully carbon-neutral electricity grid.

Consistent with applicable law, policy, and guidance, we respectfully ask that you give due consideration to UAF-INE's application to the CarbonSAFE Phase II program. We ask that you keep our offices apprised of the outcome. Thank you for your consideration.

Sincerely,

Lisa Murkowski
United States Senator

Dan Sullivan
United States Senator

Mary Sattler Peltola
Representative for All Alaska

ARCCS Cost Share Commitments from:

- State of Alaska Office of the Governor
- Alaska State Legislature
- Advanced Resources International
- State of Alaska Department of Natural Resources
  - Division of Oil and Gas
  - Division of Geological and Geophysical Surveys

ARCCS Project Support Letters from:

- The Alaska Congressional Delegation
- Hilcorp Energy Corporation
- Chugach Electric Assn.
- Cook Inlet Region Inc.
- Matanuska Susitna Borough
- Alaska Native Science and Engineering Program
- Alaska Energy Authority
- Nova Minerals Ltd
- U.S. Gold Mining Inc.
- Flatlands Energy Corporation
- Friends of West Susitna
- Blueprint Alaska

NREL Railbelt 80% Renewable Power Study

Achieving an 80% Renewable Portfolio in Alaska's Railbelt: Cost Analysis

Paul Denholm, Marty Schwarz, and Lauren Streitmatter

National Renewable Energy Laboratory

Technical Report
NREL/TP-6A40-85879
March 2024

Suggested Citation
Denholm, Paul, Marty Schwarz, and Lauren Streitmatter. 2024. *Achieving an 80% Renewable Portfolio in Alaska's Railbelt: Cost Analysis*. Golden, CO: National Renewable Energy Laboratory. NREL/TP-6A40-85879. https://www.nrel.gov/docs/fy24osti/85879.pdf.

- **Scenarios**

  1. No new Renewables: adds fossil power, fixed and variable costs including fuel

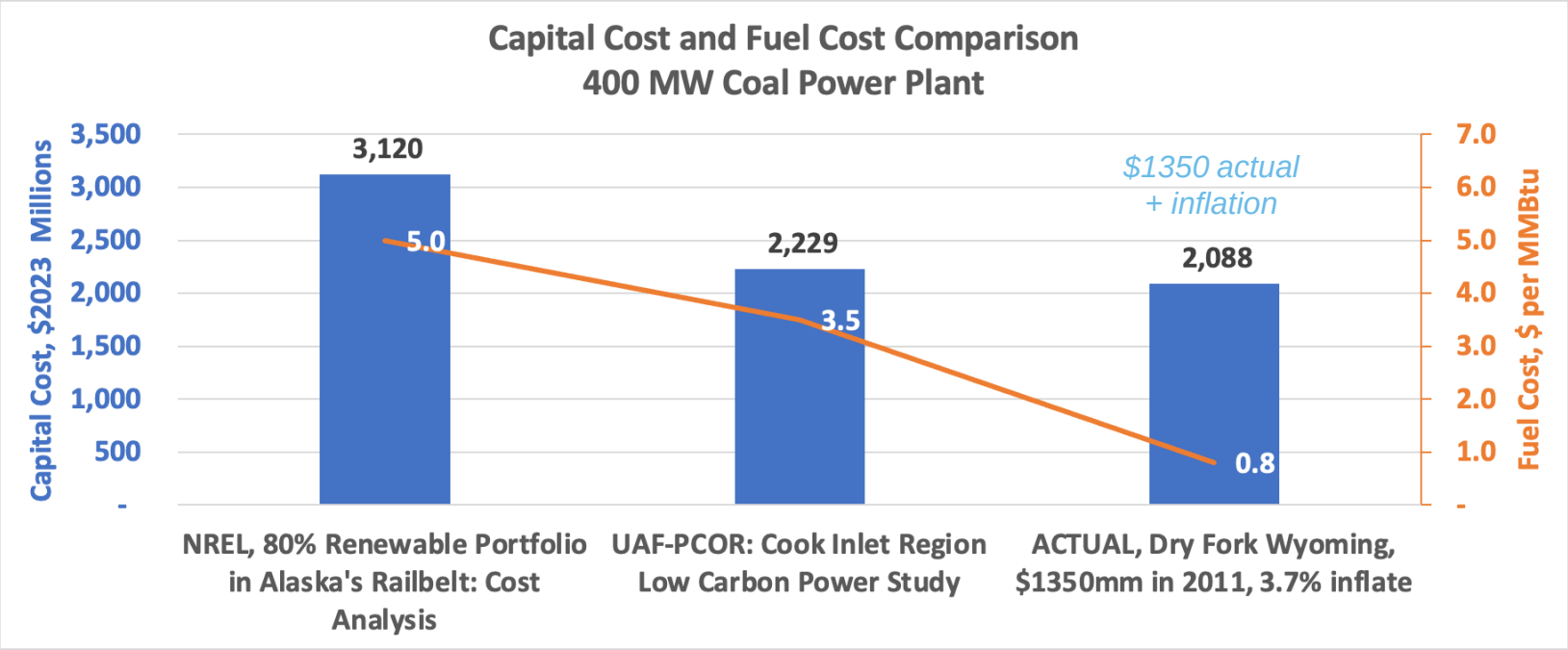
  2. Reference, Seeks Lowest Cost, allows Renewables: wind, solar, geothermal, tidal, hydropower, biomass, landfill gas + **storage**

  3. 80% Renewables Required by 2040

- **Scenarios 2 and 3 results ~ identical**
  - Wind and Solar competitive, less than 8 cents/kWh, decreasing with time
  - Avoids fossil fuels costs
  - Wind and Solar Capacity equals Fossil by 2040

- **Coal with CCS Not Included in this Analysis**

Capital and Fuel Cost for Coal Power Plant



- **NREL capital cost 140% of UAF estimate**
  - Coal capital cost not worked in detail. NREL capital based on 2010 RIRP[1].
  - Coal cost-competitive in “No new RE” scenario with new coal plants installed to meet power demand
- **NREL fuel cost 142% of UAF,** 617% of Actual fuel cost for Wyoming coal plant PRB

[1]Alaska Railbelt Regional Integrated Resource Plan (RIRP) 2010.

- **Questions?**

- **Website: http://INE.UAF.EDU/Carbon**
- **Follow-up: fpaskvan@alaska.edu**

Outline

- CCS history – University of Alaska (UAF) Institute of Northern Engineering (INE)
- Why CCS?
- Alaska-wide CCS screening results
- TEC power plant feasibility study
- ARCCS carbon storage volume assessment

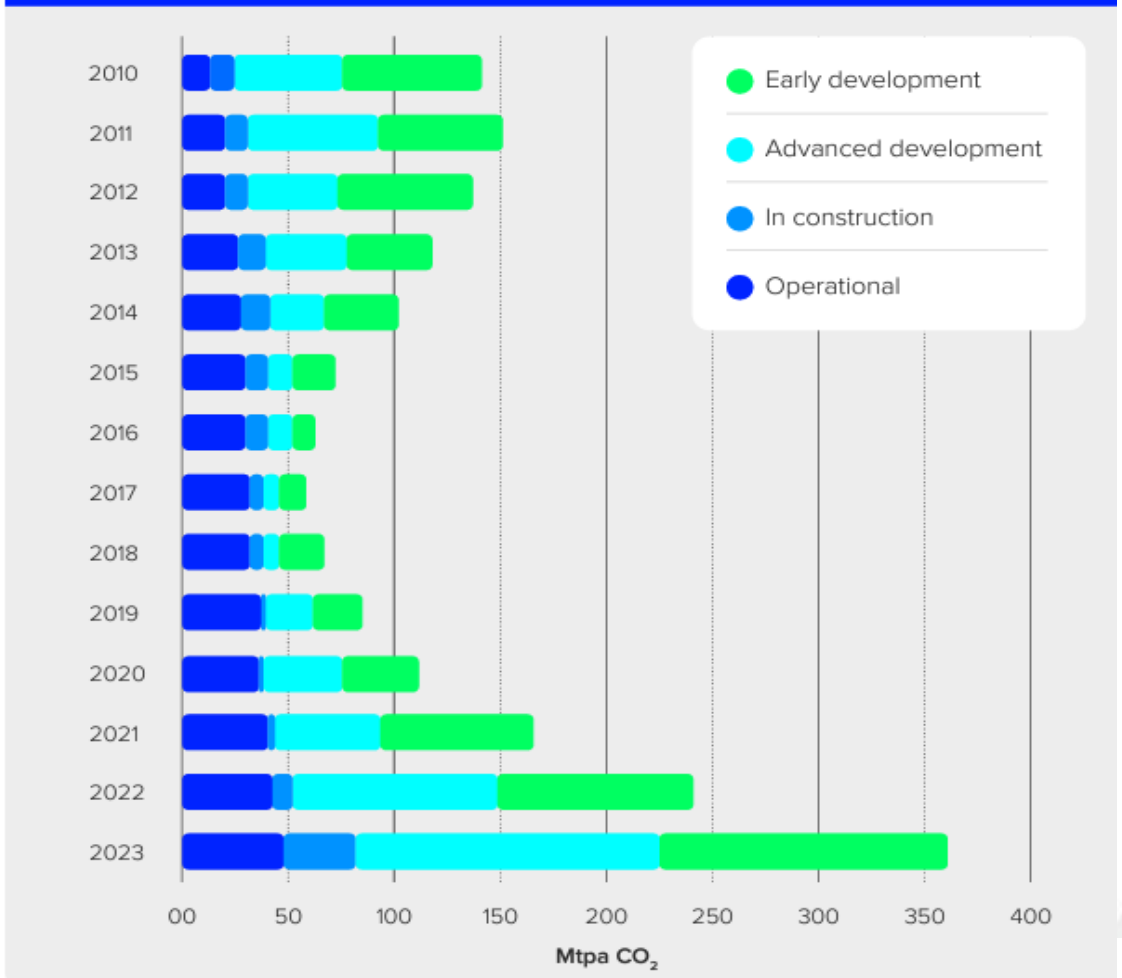
UAF-INE History with CCUS

- 2019, UAF began Carbon Capture Use and Storage (CCUS) work at request of Congressional Delegation
  - Joined Plains CO_2 Reduction Partnership, PCOR, led by EERC at U. North Dakota
- 2022, UAF started Alaska CCUS Workgroup with industry, government, academia, and stakeholders
  - Supported Carbon Storage Bill HB50 passage to Law
  - Hosting Discussions, Performing Studies
  - *Alaska CCUS Workgroup and a Roadmap to Commercial Deployment*, SPE Paper 213051,
    - item #6 at http://INE.UAF.EDU/Carbon
  - *Power Generation CCUS Feasibility Study* →
    - item #9 at http://INE.UAF.EDU/Carbon
- 2024—2026, ARCCS Project determining CO_2 storage capacity for northern Cook Inlet

CCS Extending Track Record

- CCS successfully employed since 1970s
- In 2024, the U.S. EPA declared CCS technically and economically ready for deployment
- **Global CCS Institute Annual Report** key changes from 2022 to 2023:
  - **48% increase** The CO_2 capture capacity of all CCS facilities under development has grown to 361 million tonnes per annum (Mtpa) – growth of 48% since the 2022 report.
  - **198 new facilities** added to the development pipeline Currently 41 projects in operation, 26 under construction, plus 325 in advanced and early development

Figure 3.1-1: Capacity of commercial facilities since 2010



From: https://status23.globalccsinstitute.com/

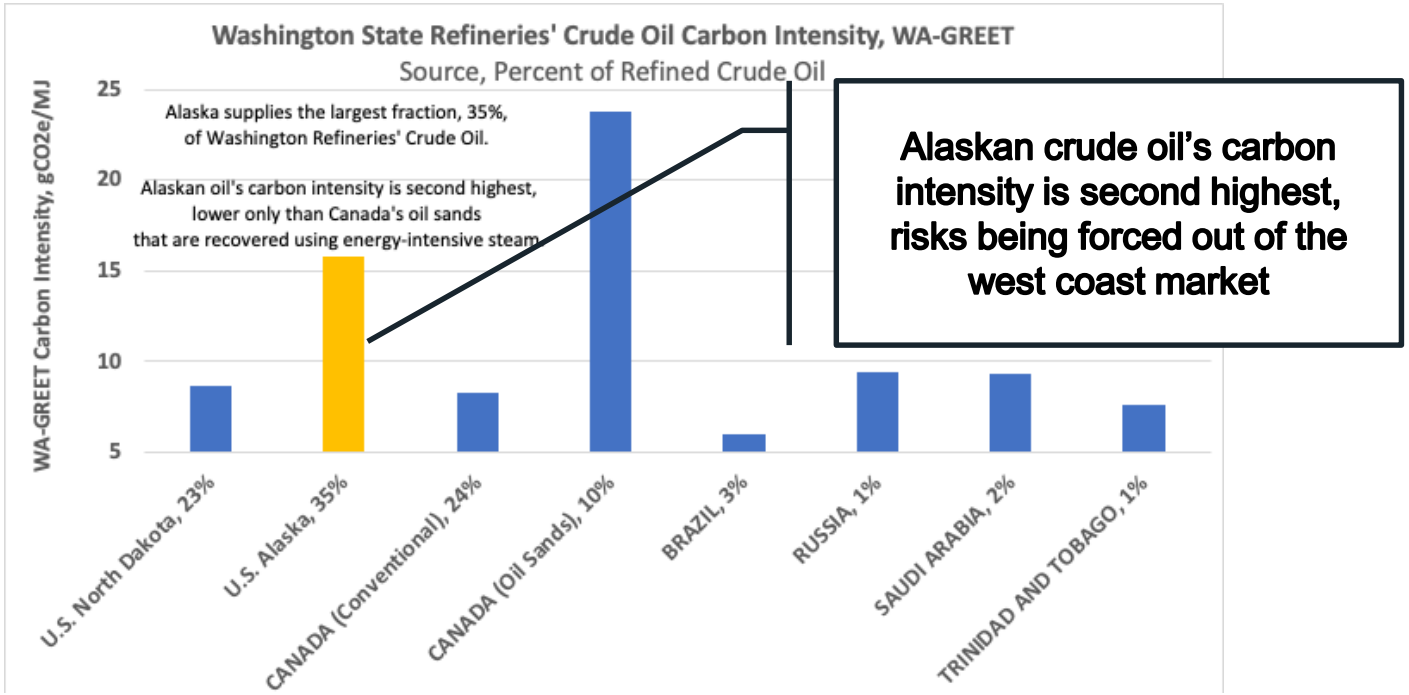
Global CCS Institute Annual Report for 2023 https://status23.globalccsinstitute.com/

Figure 3.1–3:
CCS project pipeline by industry and year of operational commencement.

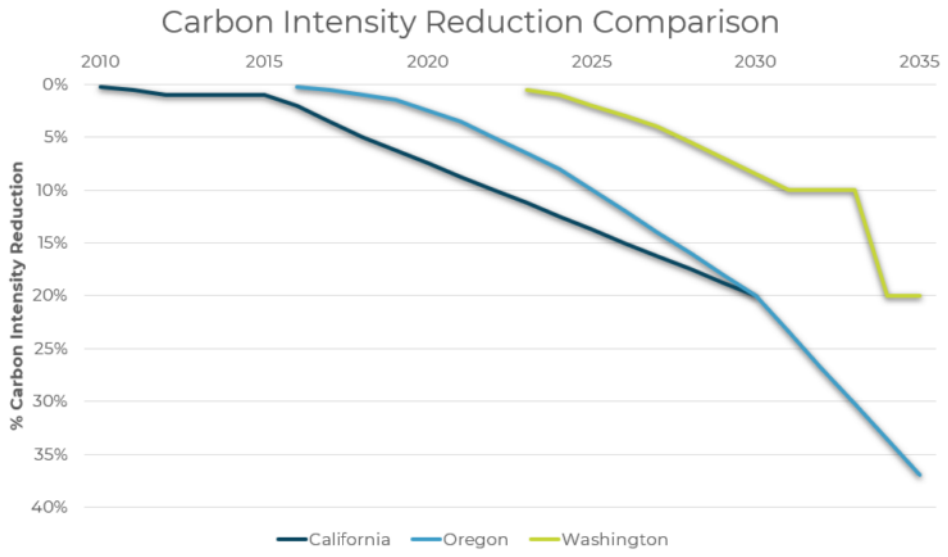
Why CCS? Voluntary or Forced CO_2 Emissions Reductions

- **Producers may reduce CO_2 emissions voluntarily or forced by State or Federal regulations**
  - California, Oregon, and Washington adopted their own clean fuel standards.
  - Washington, passed by the Legislature in 2021, requires fuel suppliers to reduce the carbon (CO_2) intensity of their products 20% below 2017 levels by 2038. (WA-GREET model)

➢ Carbon Capture and Storage, CCS, is one of the most cost-effective ways to reduce crude oil carbon intensity. CCS may enable Alaskan Crude to remain acceptable to the market.



Source: WA-GREET 0.7a July 15, 2022, Paskvan calculations.



Source: https://www.usgain.com/resources/education-center/what-should-you-know-about-washingtons-clean-fuel-standard-cfs/

Alaska CO_2 Sources and Storage Potential

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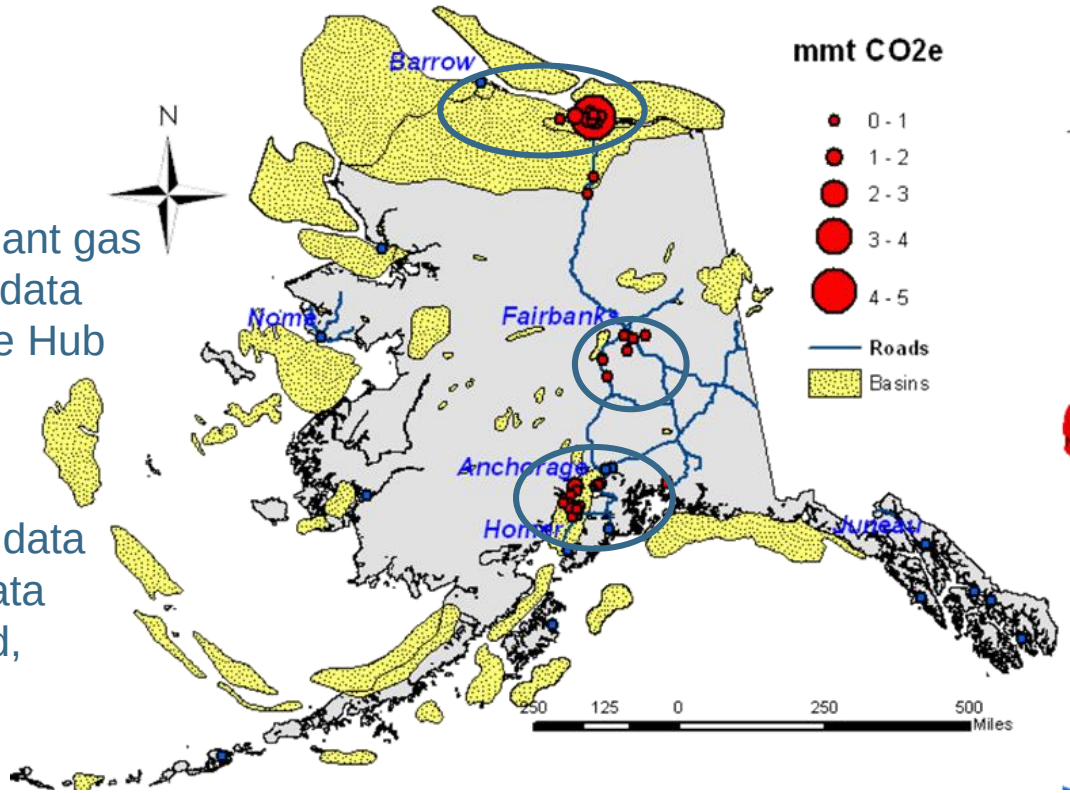
- **Alaska total CO_2e emissions: 14 MM tonnes/year**
- **Two-thirds from North Slope Oil & Gas processing**

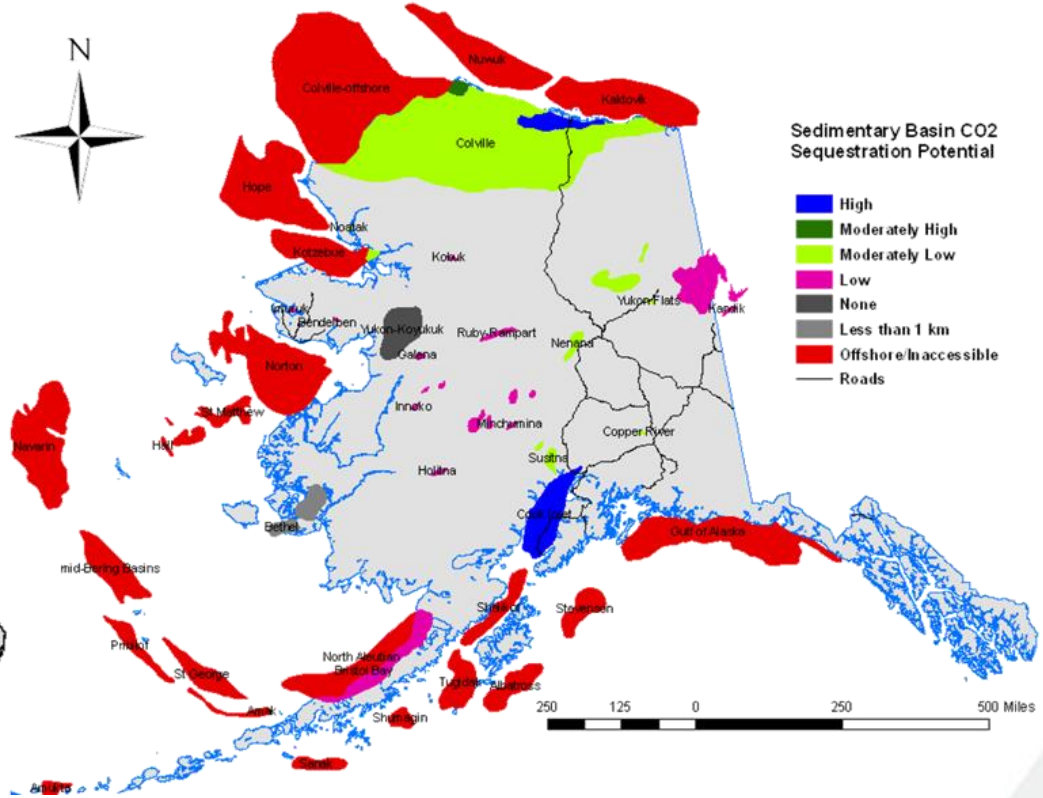
North Slope
* Natural gas fired
  * Low cost, abundant gas
* Lots of Subsurface data
* AES North to Future Hub

Interior
* Coal fired power
* Limited subsurface data
* Little Subsurface data
  Poorly understood, caprock concerns

Southcentral
* Natural gas fired
  * High cost, scarce gas
* Lots of Subsurface data
* ARCSS Project

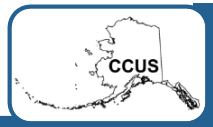


CO_2 Stationary Sources (red) & Deep Sedimentary Basins (yellow).



Sedimentary Basin Sequestration Potential (Shellenbaum and Clough, DNR, 2010)

CCUS Roadmap: Opportunities and Needs



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North Slope

Advantaged by low-cost natural gas

- Natural gas-fired capture
- Direct Air Capture (DAC)
- **Subsurface data integration & site-specific data gathering needed**
- 40 year track record of successful CO_2 storage and use, ~15 TCF
- Major Gas Sales 2015 LNG plan sequestered CO_2 back in reservoir

Interior

Existing coal plant infrastructure

- Coal-fired capture
- **Basic regional subsurface data gathering needed.**
- **Address geotechnical concerns[1]**

Southcentral

Proximity to Port, potential for import

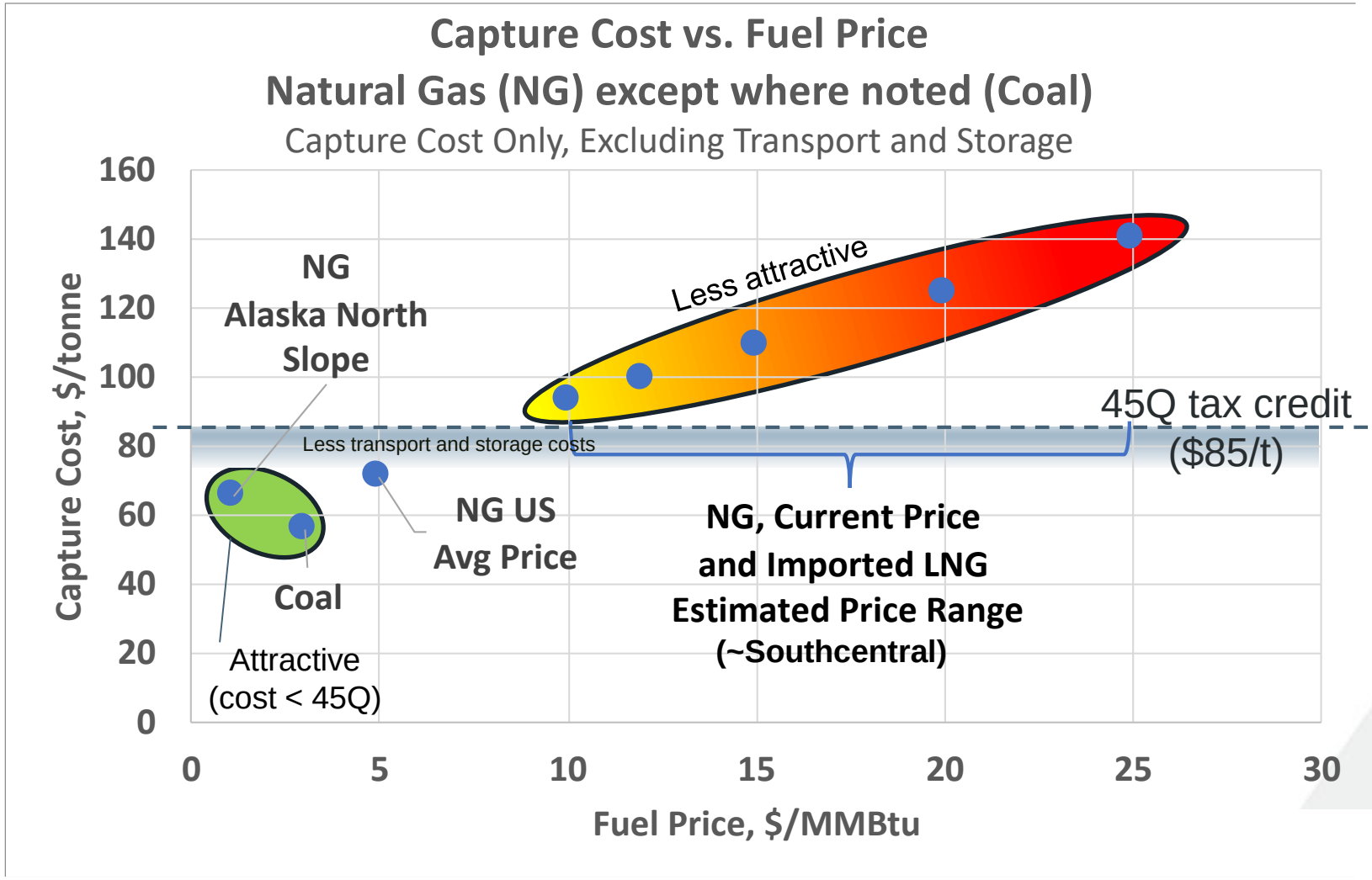
- Capture not attractive at natural gas plants or refineries due to gas supply shortage & high price
- Coal or Hydrogen power with CCS can address natural gas shortage, food security, lower emissions
- Imported CO_2 storage (US West Coast or Asia-Pacific)
- **Subsurface data integration & site-specific data gathering needed**

[1] ***Open Link***: Seismic Hazard Considerations for Carbon Sequestration in Alaska

Alaska CCUS: CO_2 Capture Cost Screening

- **Alaska Capture Screening**
  - Using typical Lower 48 costs
  - Fuel price a key cost driver
  - Capture cost only, excluding transport & storage costs
- **With Lower 48 costs and 45Q**
  - Natural gas capture attractive on North Slope
  - Natural gas capture less attractive for Southcentral. Expected to slightly increase electricity cost, and capture more technically difficult than for coal.
  - Coal capture looks attractive Statewide
- **Further work should be done for attractive projects**

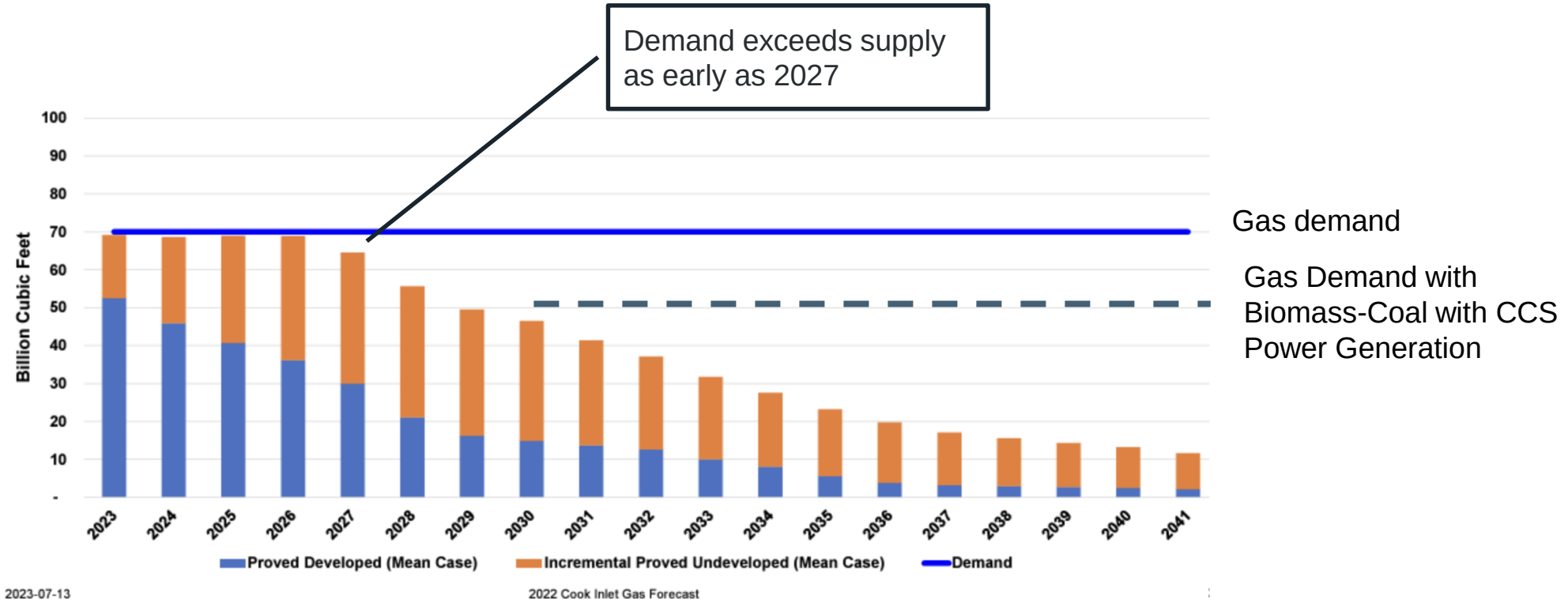
Based on SPE paper 213051 Table 1, Paskvan et. al. [1]



[1] Cost methodology benchmarked against NETL, U.S. Department of Energy National Energy Technology Laboratory, 2015, "Cost and performance baseline for fossil energy plants volume 1a: Bituminous coal (PC) and natural gas to electricity" revision 3. July 6, 2015, DOE/NETL-2015/1723.

Alaska Railbelt Faces Natural Gas Shortage

- **Alaska Railbelt seeking energy alternatives and energy security due to imminent natural gas shortfall.**



Gas demand

Gas Demand with Biomass-Coal with CCS Power Generation

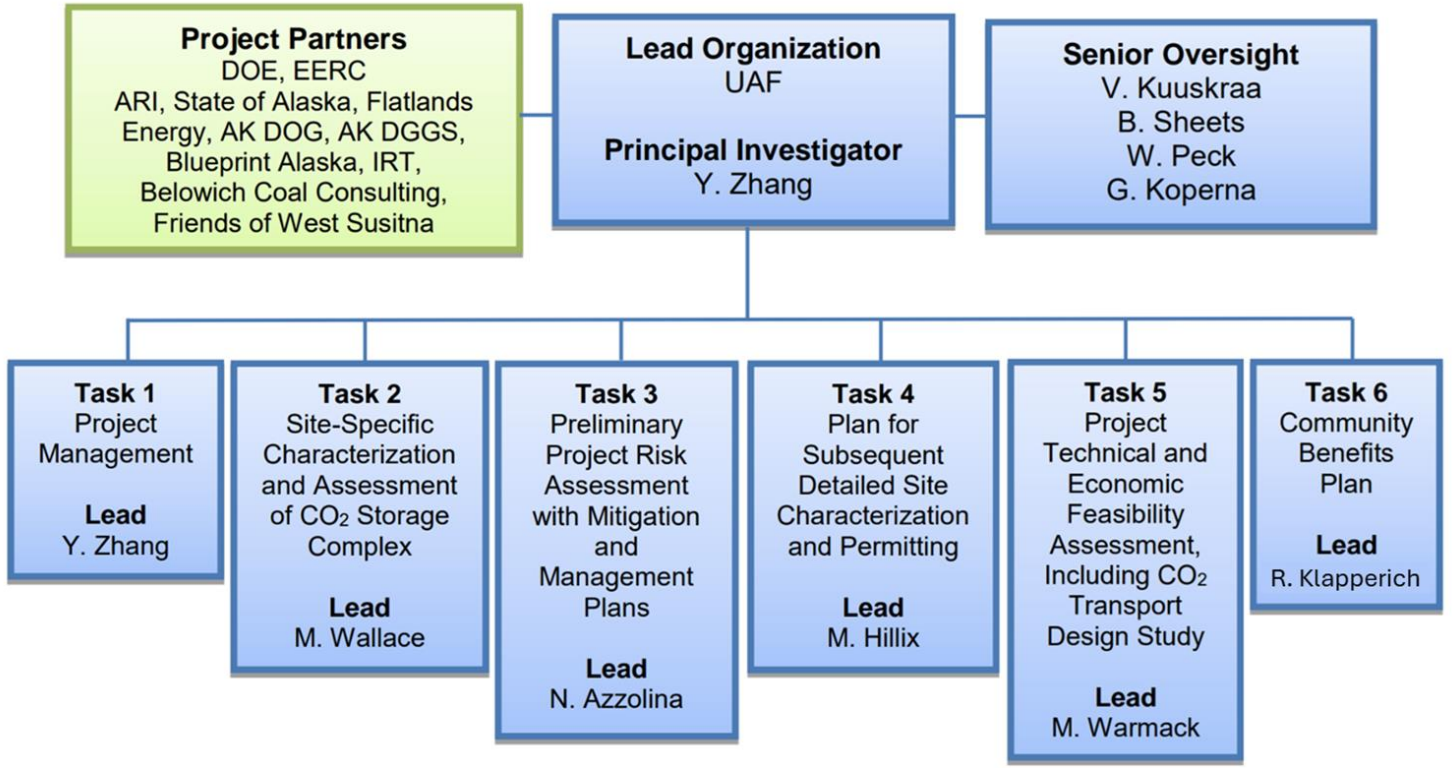
Figure 4b. Cook Inlet Proved Developed+Proved Undeveloped Mean Forecast, Truncated, DNR.

Low Carbon Biomass-Coal Power with CCS Technical & Economic Feasibility Study

- **Cook Inlet Region Low Carbon Power Generation with Carbon Capture, Transport, and Storage Feasibility Study**
  - Download item #9 http://INE.UAF.EDU/Carbon
- **Evaluates technical and economic feasibility of low carbon (CO_2) power generation biomass-coal-fueled power plant with CCS in Southcentral for the Railbelt Grid**
- **Cost of electricity from biomass-coal power compared to natural gas power**
  - With and without CCS
  - At current and future natural gas fuel prices

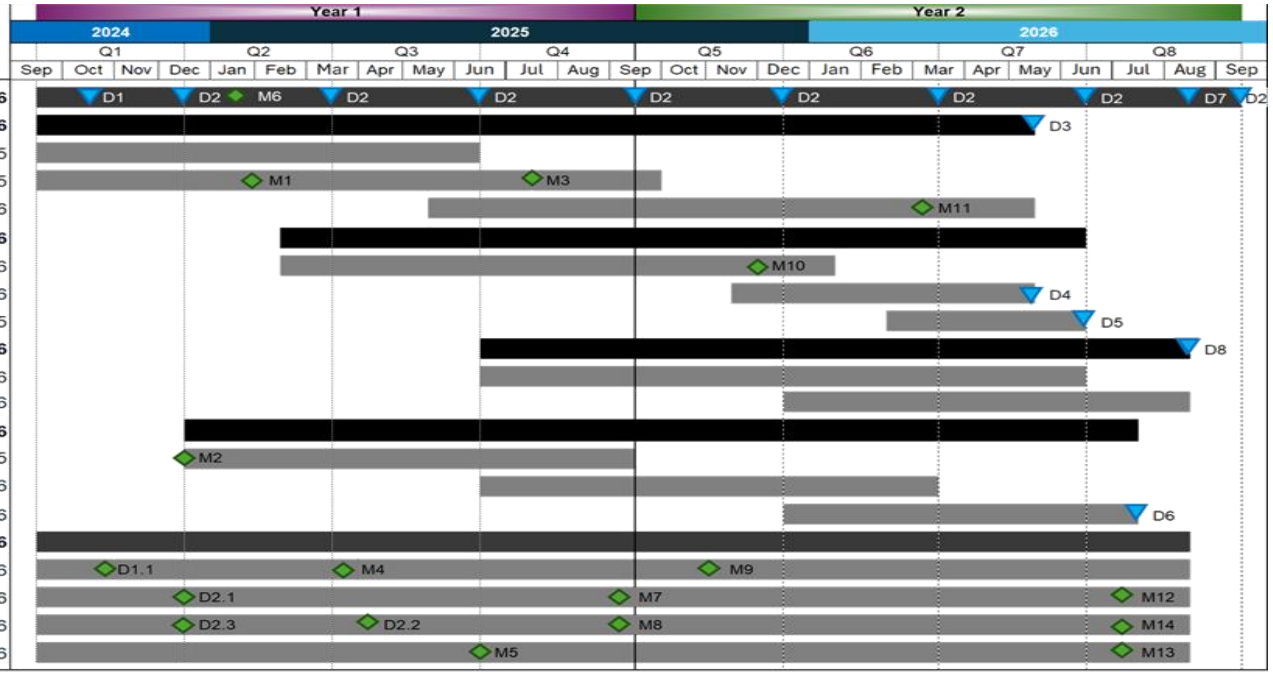
ARCCS Project Overview

- **Objectives: To accelerate wide-scale deployment of CCUS by assessing and verifying the feasibility of using the proposed storage complex in southcentral Alaska for the safe and cost-effective commercial-scale storage of anthropogenic CO_2 emissions.**
- **Main Organizations:**



ARCCS Project Timeline, Deliverables, and Milestones. Two years: 9/24—9/26

Task or Subtask	Start	End
1.0 – Project Management and Planning	**9/16/24**	**9/15/26**
2.0 – Site Specific Characterization and Assessment of CO_2 Storage Complex	**9/16/24**	**5/15/26**
2.1 – Existing Data Acquisition and Analysis	9/16/24	6/15/25
2.2 – New Seismic Data Acquisition and Analysis	9/16/24	9/30/25
2.3 – Geologic Modeling and Simulation	5/15/25	5/15/26
3.0 – Preliminary Project Risk Assessment with Mitigation and Management Plans	**2/15/25**	**6/15/26**
3.1 – Preliminary Project Risk Assessment	2/15/25	1/15/26
3.2 – Mitigation Plan	11/15/25	5/15/26
3.3 – Management Plan	2/15/26	6/15/25
4.0 – Plan for Subsequent Detailed Site Characterization and Permitting	**6/15/25**	**8/15/26**
4.1 – Site Characterization Plan	6/15/25	6/15/26
4.2 – UIC Class VI Permitting Plan	12/15/25	8/15/26
5.0 – Project Technical and Economic Feasibility Assessment, Including CO_2 Transport Design Stu	**12/15/24**	**7/15/26**
5.1 – Conceptual Basis of Plants, Pipeline Infrastructure, and CO_2 Transportation Routing	12/15/24	9/15/25
5.2 – Design of CO_2 Transportation and Technical Parameters	6/15/25	3/15/26
5.3 – Technical and Economic Feasibility Review	12/15/25	7/15/26
6.0 – Community Benefits Plan	**9/16/24**	**8/15/26**
6.1 – Community and Labor Engagement	9/16/24	8/15/26
6.2 – Job Quality and a Skilled Workforce	9/16/24	8/15/26
6.3 – Diversity, Equity, Inclusion, and Accessibility	9/16/24	8/15/26
6.4 – Justice40 Initiative	9/16/24	8/15/26



Task Duration

Subtask Duration

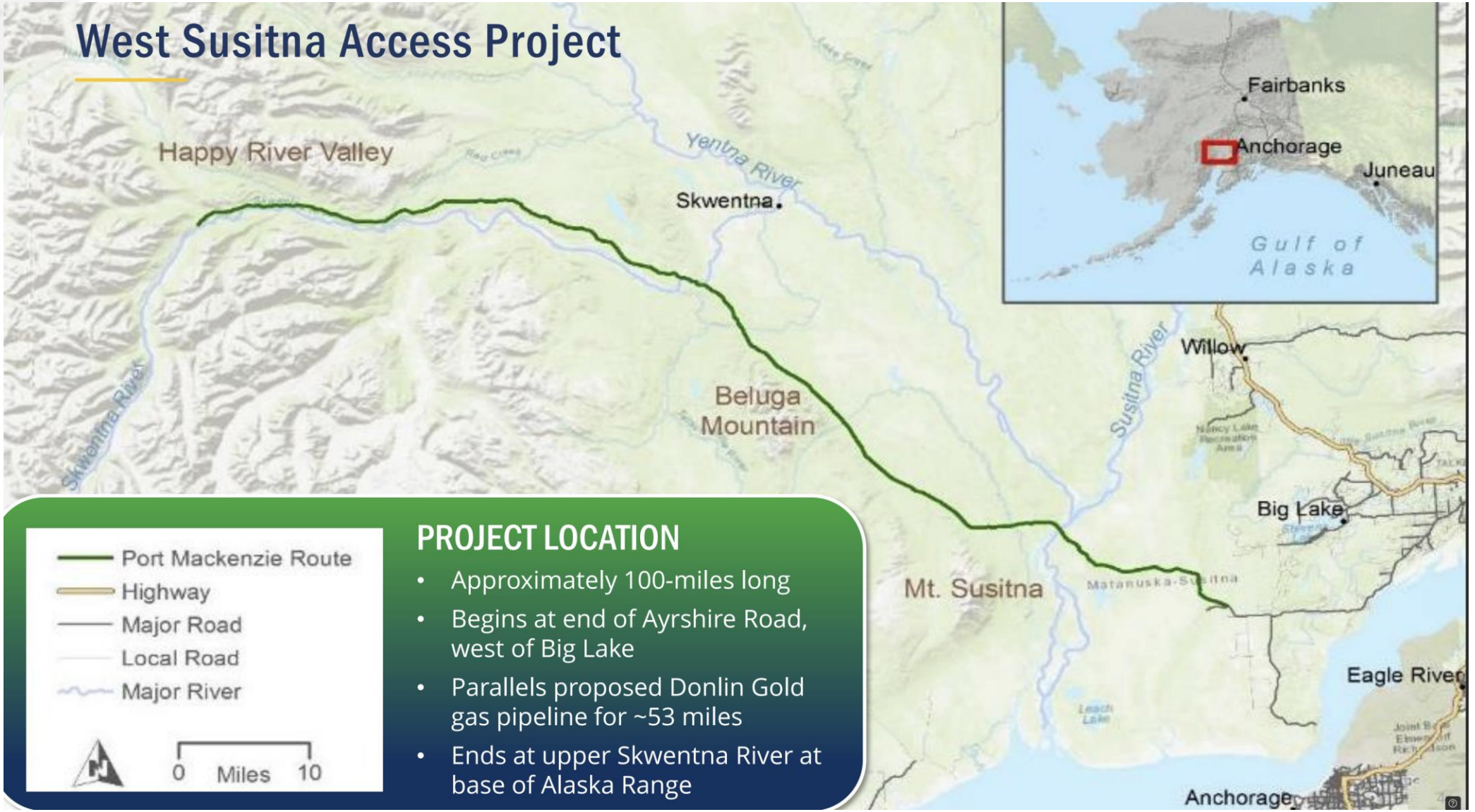
Deliverables (D)	
From Statement of Project Objectives	**Date**
D1 – Project Management Plan (PMP) Updated	10/15/24
D2 – BIL Metrics Reporting	Quarterly
D3 – Storage Complex Characterization and Assessment Report	5/15/26
D4 – Preliminary Risk Assessment and Mitigation Plan	5/15/26
D5 – Storage Project Management Plan	6/15/26
D6 – Feasibility Report	7/15/26
D7 – EDX Submission	8/14/26
D8 – Site Characterization and Permitting Plan	8/14/26

Milestones (M)	
From Project Management Plan	**Date**
M1 – Permit Development for New Seismic Acquisition	1/31/25
M2 – Conceptual basis of plants and pipeline infrastructure provided	12/15/24
M3 – Seismic Collection Completion	7/15/25
M4 – Prepare the Community and Labor Engagement (CLE) Plan	3/15/25
M5 – Initial J40 Plan	6/15/25
M6 – DOE working group participation initiated	1/15/25
M7 – Knowledge, skills, and abilities (KSA) registry framework developed	9/15/25
M8 – DEIA training completed	9/15/25
M9 – Listening Session Completed	10/15/25
M10 – Initial simulation delivered for risk assessment	11/30/25
M11 – Final case simulations completed	2/31/26
M12 – Assessment of workforce development completed	7/15/26
M13 – J40 engagement activity completed	7/15/26
M14 – CCS presentations to workforce development groups underrepresented in STEM	7/15/26
From Community Benefits Outcomes and Objectives	
D1.1 Contract with woman-owned business finalized	10/31/24
D2.1 List of pre-apprenticeship, apprenticeship, and secondary education programs partnership	12/15/24
D2.2 Presentation for Alaska Native Science and Education Program (ANSEP)	3/31/25
D2.3 Schedule outreach for each specific campus underrepresente in STEM	12/15/24

klh 10/28/24

Critical Challenges. Practical Solutions.

West Susitna Access Project



PROJECT LOCATION

- Approximately 100-miles long
- Begins at end of Ayrshire Road, west of Big Lake
- Parallels proposed Donlin Gold gas pipeline for ~53 miles
- Ends at upper Skwentna River at base of Alaska Range

Project Benefits West Susitna Access Project – AIDEA

- Provide safe and efficient road access from the existing highway system in proximity to existing port facilities and population centers in Southcentral Alaska to resources in the Fish Creek NRMU and western Yentna and Skwentna River Basins that increase job growth and economic development opportunities.

Mineral Resources

Copper, gold, silver, coal, and platinum potential; more than 3,000 active mining claims within the basin

Oil & Gas

Active oil and gas exploration in the northern Cook Inlet; nine oil and gas producing units and fields in the study area

Alternative Energy

Opportunities including geothermal and hydroelectric projects, and woody biomass resources

Recreational Resources

Opportunities for snowmachining, fishing, hunting, boating, recreational mining, and use of cabins

Forestry

700,000+ acres available for harvest; enhances emergency response & fire prevention

Agricultural Resources

More than 65,000 acres of agricultural land identified for potential agricultural uses