

Carbon Management Legislation and Opportunities

House Finance Committee



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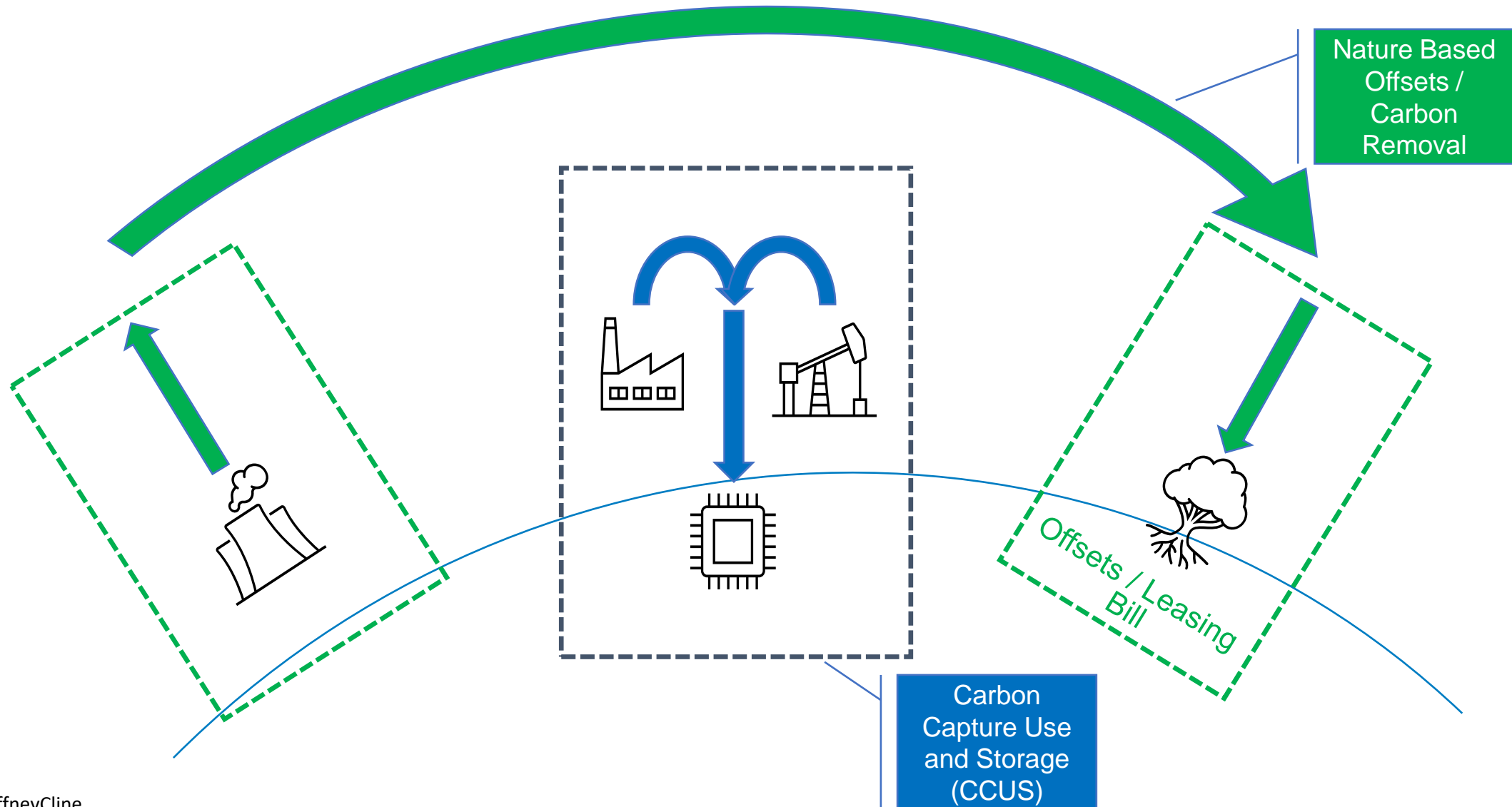


- **Alaska's Opportunities in Carbon Management**
 - **What is carbon management?**
 - **What are Alaska's opportunities?**
- **HB 49 – Carbon Offset Projects on State Land**
- **HB 50 – Carbon Capture, Utilization and Storage**



Alaska's Opportunities in Carbon Management

Carbon Management - simplified



Carbon Management



Different emissions, different carbon management tools:

Scope 1: Emissions made directly, such as running a power plant or vehicles

Scope 2: Emissions made indirectly, such as buying electricity to power an office building

Scope 3: Emissions associated with a business's value chain

Carbon Management - not so simple!





Frameworks for Alaska to engage in two areas of carbon management:

- 1) Carbon capture, utilization and storage (CCUS) – ‘the below-ground’**
- 2) Carbon offset programs on state land – ‘the above-ground’**

Bills are NOT:

- New taxes on industry or Alaskans**
- Emissions limits**
- A “cap and trade” system**
- Locking up land**



Carbon offsets markets

“The voluntary carbon market: 2022 insights and trends” report by Shell and BGC

2021

Compliance market soared to



The voluntary market reached



~\$850bn in value

~\$2bn in value

2.5x value of 2020

4x value of 2020

~15 GtCO₂ transacted volume

~500 MtCO₂ transacted volume

2022

was a record-breaking year for both compliance and voluntary carbon markets

During which, approximately

166Mt

of carbon emissions were covered by retirements

Voluntary markets expected to be

5x

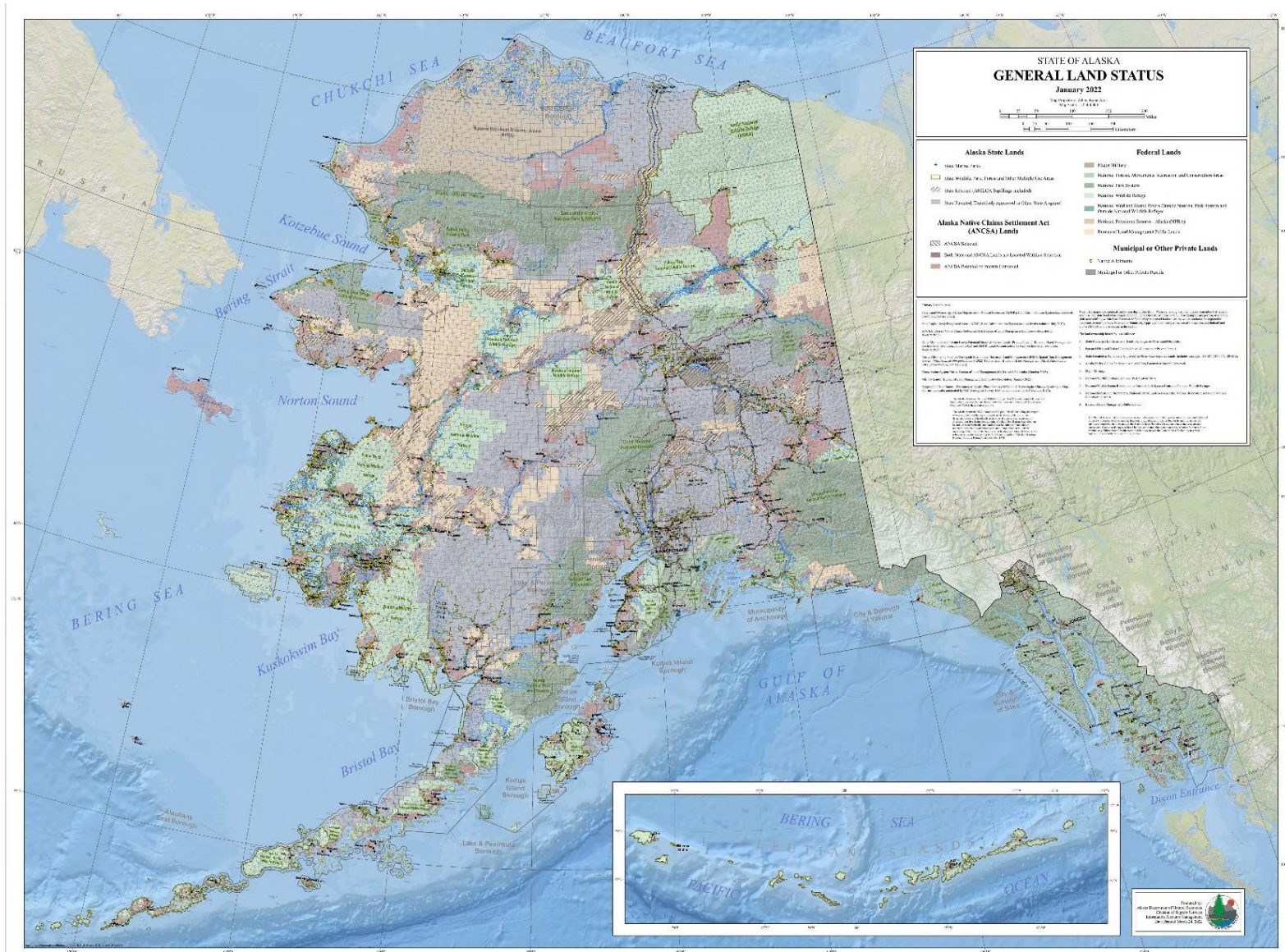
bigger by 2030

Reaching a market size of

\$10-40 bn in value
and **0.5-1.5 GtCO₂** in scale⁴

That is comparable to the emissions of the aviation industry, which reached ~1 GtCO₂ in 2019⁵.

Carbon offsets - State resource base



Carbon offsets - opportunities



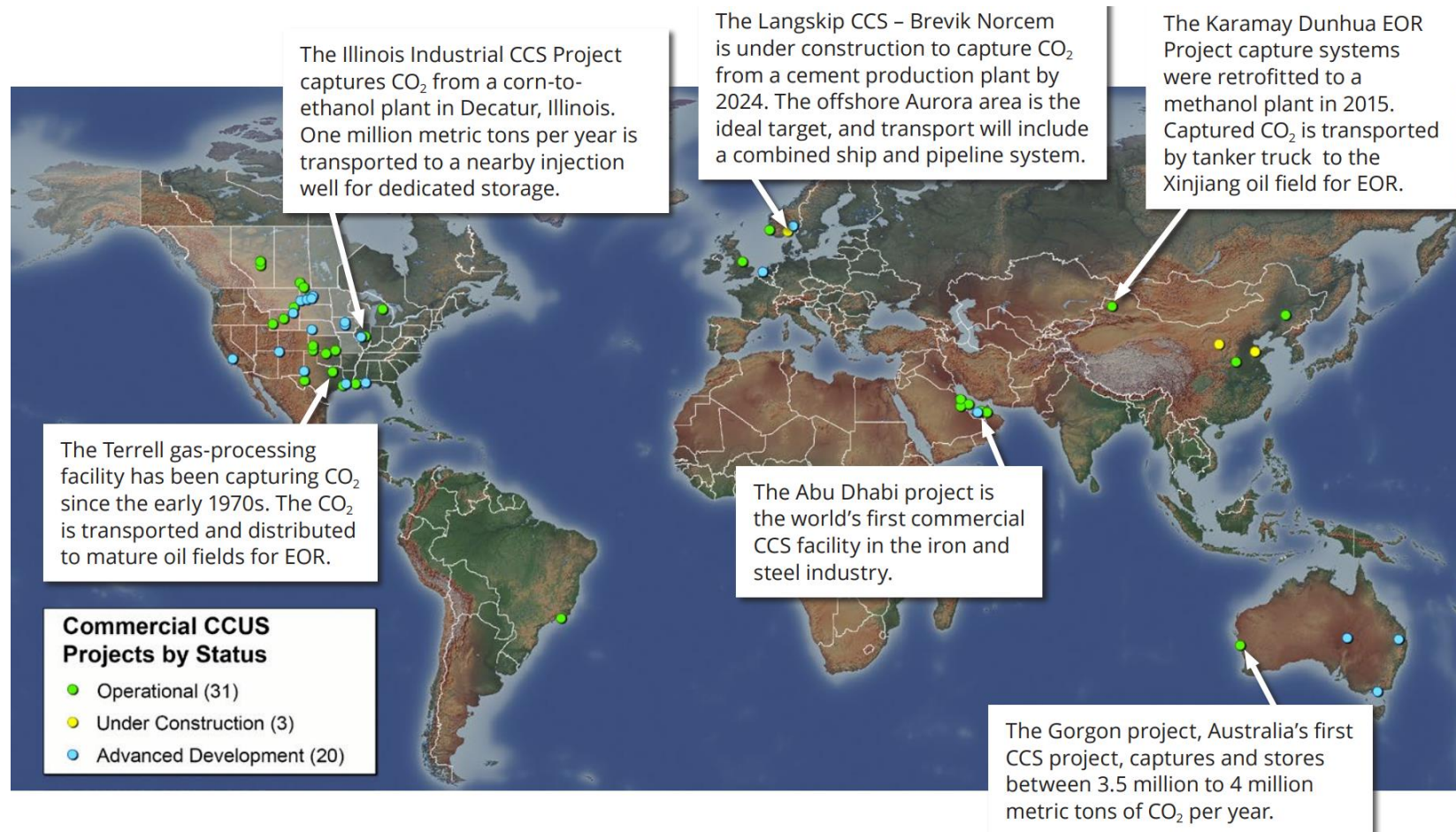
- Alaska has the resources
 - Forest carbon potential:
 - 100 million acres of uplands
 - Tens of millions of acres of forested State lands
 - Kelp potential:
 - 60 million acres of tide and submerged lands
- New source of State revenue
- Constitutional responsibility for maximum use





CCUS - global demand

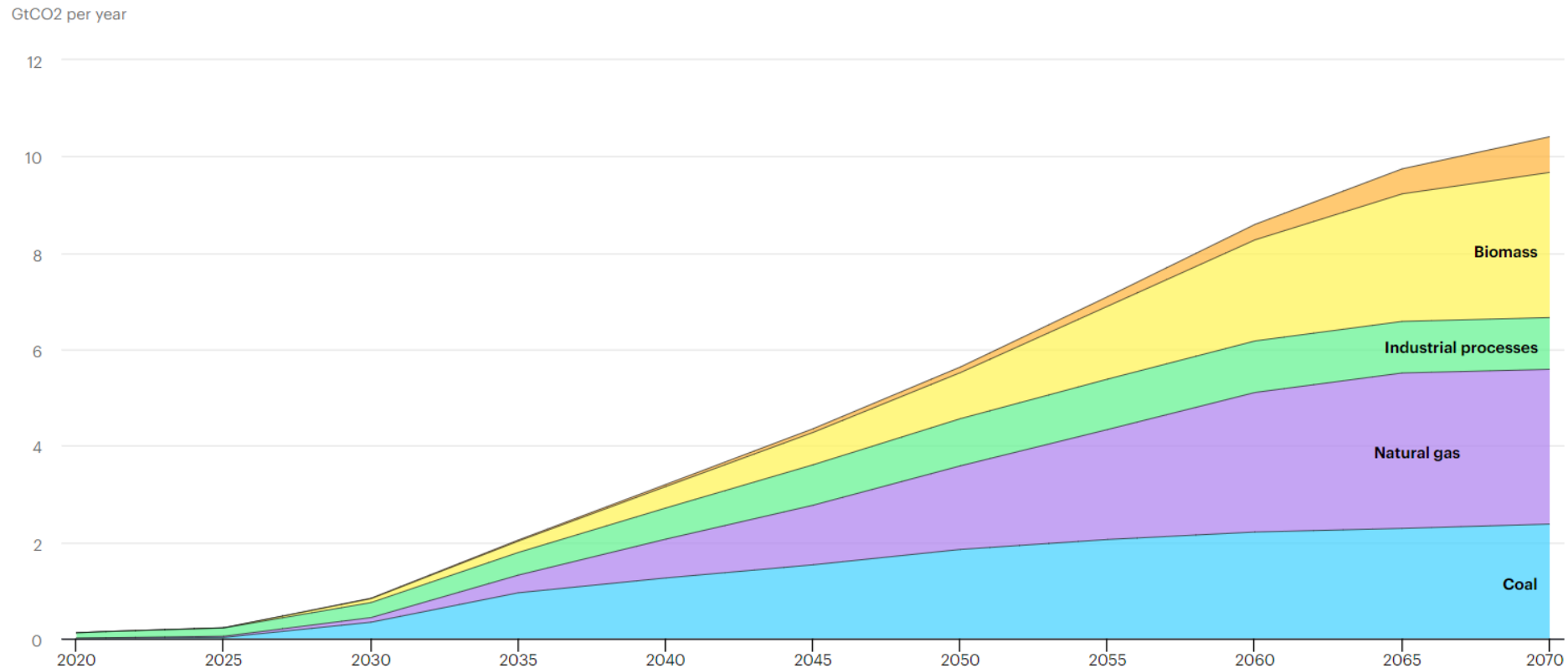
There is a growing trend of CCUS projects around the world as companies compete to provide oil and gas to competitive markets in foreign jurisdictions that have implemented carbon taxation, and more companies include environmental targets in their corporate goals and performance.



Carbon markets



World captured CO₂ by source, 2020-2070



- Approximately 35 commercial CCUS facilities today globally
- Targeted growth: 2,500 facilities to reach International Energy Agency (IEA) scenario of net zero carbon emissions by 2070

IEA. Lic

● Coal ● Natural gas ● Industrial processes ● Biomass ● Direct air capture

Source: [International Energy Agency](https://www.iea.org/)

Net zero greenhouse gas (GHG) initiatives of North Slope companies



ConocoPhillips Emissions Reductions Targets and Performance

- Reduce methane intensity by 10% and routine flaring to zero by 2025.
- Reduce Scope 1 and Scope 2 Greenhouse Gas (GHG) intensity by 40–50% (gross operated and net equity) by 2030
- Net zero Scope 1 and Scope 2 emissions by 2050

[Emissions Reduction Targets | ConocoPhillips](#)

ENI's Strategy Against Climate Change

- 35% reduction in net Scope 1, 2, and 3 emissions by 2030
- 55% reduction in net Scope 1, 2, and 3 emissions by 2035
- 80% reduction in net Scope 1, 2, and 3 emissions by 2040
- Net zero Scope 1, 2, and 3 emissions by 2050

[Net Zero al 2050 | Eni](#)

Exxon 2030 Greenhouse Gas (GHG) Emission Reduction Plans:

(Relative to 2016 level and apply to Scope 1 and Scope 2 GHG emissions from operated assets)

- 20–30% reduction in corporate-wide GHG intensity
- 40–50% reduction in upstream GHG intensity
- 70–80% reduction in corporate-wide methane intensity
- 60–70% reduction in corporate-wide flaring intensity

[Advancing climate solutions | ExxonMobil](#)

Hilcorp

"We have to operate to the same high standards as everyone else. We may be private, but we have capital providers, we have partners, we have lots of other people involved in business with us. They're feeling those pressures (i.e. ESG, emissions reductions), and we have to be responsive to those as well." — Greg Lalicker, Hilcorp CEO.

[How America's Biggest Privately Owned Oil Company Takes A Divergent Approach To The Energy Transition \(forbes.com\)](#)

Repsol Path Towards Decarbonization

- 55% reduction in scope 1 and scope 2 emissions in operated assets by 2025
- 30% reduction in scope 1, 2, and 3 net emissions by 2030
- Net zero by 2050

[Net zero emissions by 2050 commitment | Repsol](#)

Santos Path to Net Zero

- 26–30% reduction in scope 1 and scope 2 absolute emissions (from 2020 baseline) by 2030
- Actively work with customers to reduce scope 1 and scope 2 emissions by > 1 million tons of carbon dioxide per year by 2030
- Scope 1 and scope 2 absolute emissions at net zero by 2040.
- **Santos has committed to net-zero emissions (scope 1 and scope 2) for the Pikka Project**

[Santos to be net-zero emissions by 2040 | Santos](#)

[Santos Announces Pikka FID | Santos](#)



HB 49 – Carbon Offset Projects on State Land



- Tasks DNR with exploring carbon offset opportunities that align with Alaska's resource and land interests, responsibilities
- Enables carbon offset projects on state land and shorelines
- Caps project terms at 55 years, protects existing land use by Alaskans



- Provides a process for third parties to lease state land for carbon management purposes (Section 4)
- Establishes the Carbon Offset Program at DNR to undertake state projects (Section 6)
- Authorizes the use of the 3 state forests for state-sponsored projects (Sections 7, 10)

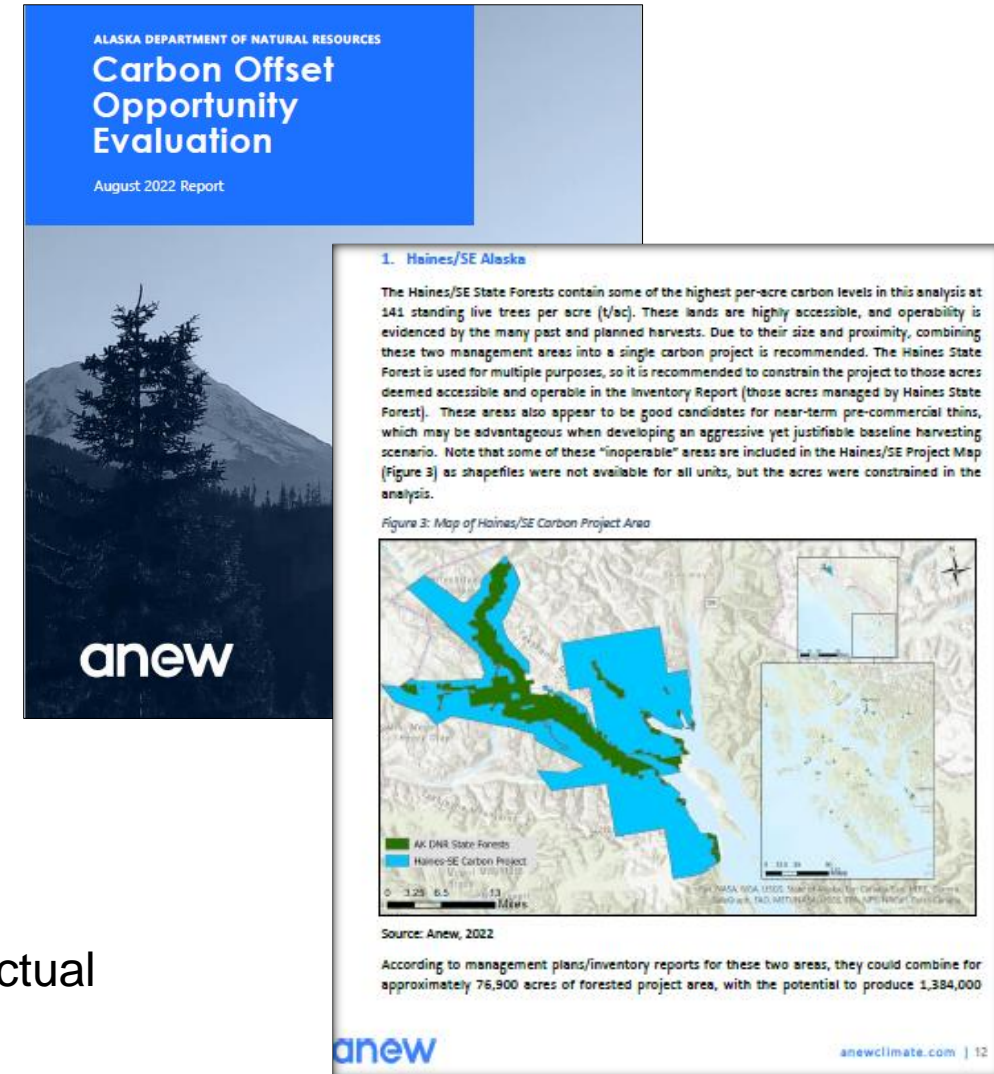


Carbon offsets - potential affirmed

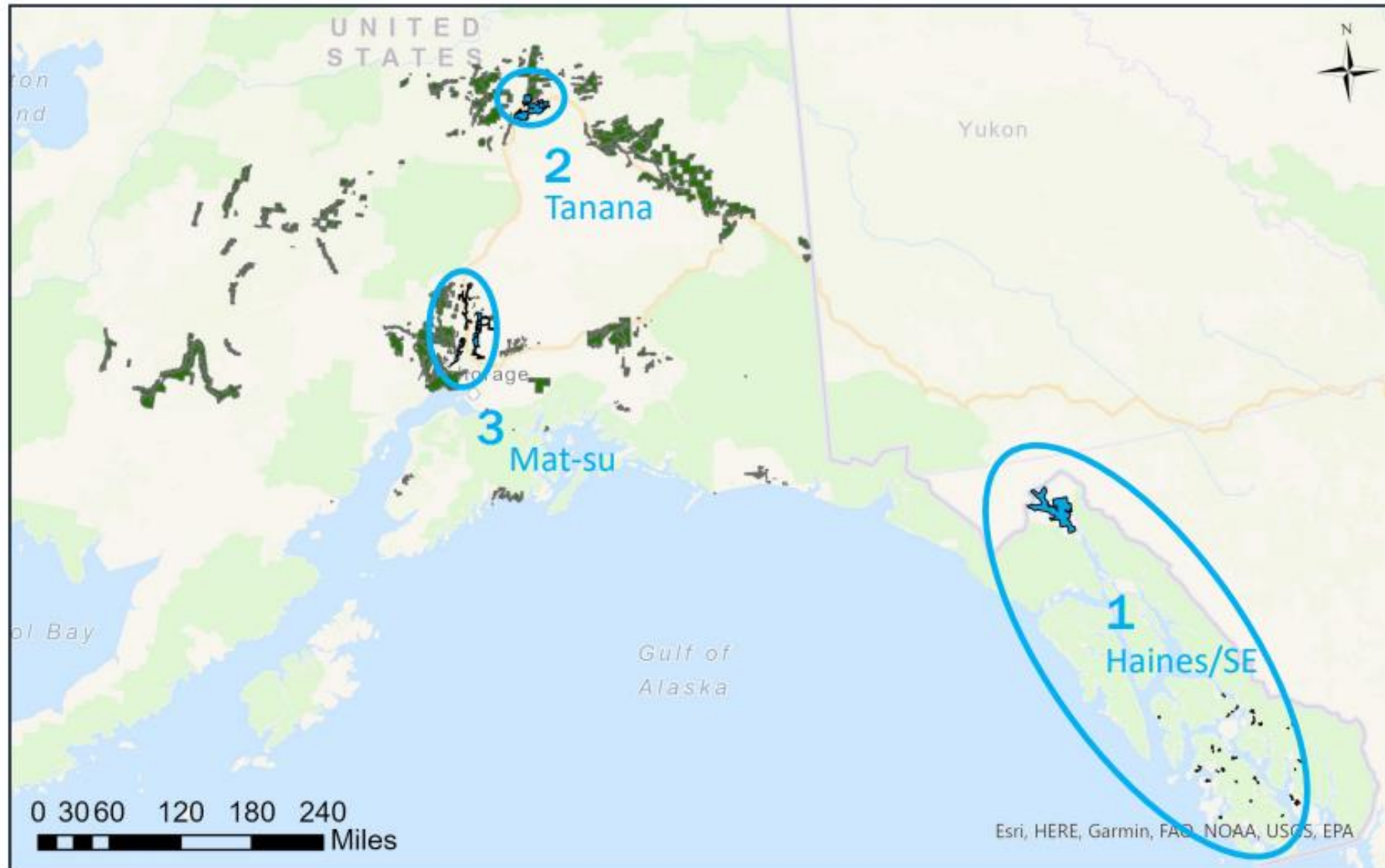
Anew report affirms potential:

- Identifies 3 'pilot' projects
- Improved Forest Management protocols – timber harvest continues
- Revenue potential of all three:
 - approx. \$81.6 million over 10 years
 - approx. \$311 million over 40 years

*Revenue potential as estimated by Anew at time of report; an actual project may have different potential depending on design, costs



Carbon offsets - potential pilot projects



Source:
anew

Carbon offsets - state project parties



Project
Proponent

State of Alaska

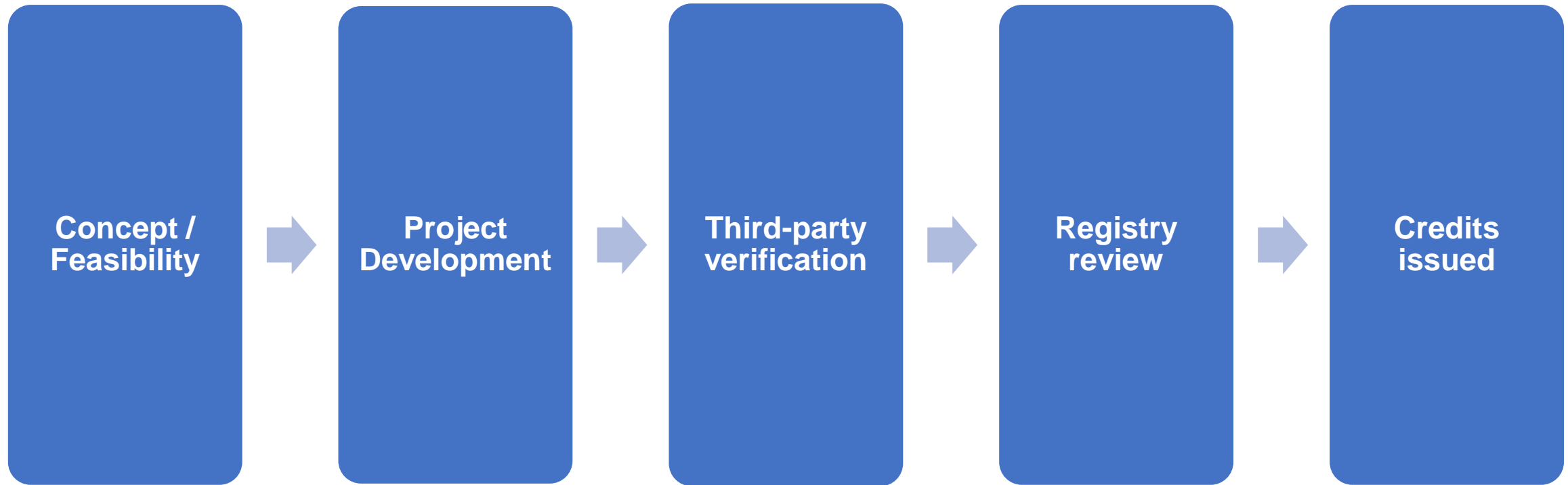
Registry

Nonprofit 'quality
control' ensuring
project, credit integrity
through scientifically
based project protocols

Buyers

Companies with
voluntary emission
reduction targets

Carbon offsets - state project process



(*Ongoing monitoring reports, inventory updates required through project term)



HB 50 – Carbon Capture, Utilization and Storage (CCUS)

CCUS - introduction



What is it?

- Carbon Capture, Utilization, and Storage (CCUS) is a process to capture carbon dioxide (CO₂), either from industrial processes or directly from the atmosphere, for the purpose of utilizing it for other activities or storing it underground in geologic formations

Why Now?

- The CCUS market is rapidly expanding, both within the U.S. and worldwide
- Federal legislation in the prior 18 months has included direct grants and tax incentives for CCUS, increasing industry interest, including outreach to the Department of Natural Resources (DNR)
- Federal funds are available for states seeking Class VI well permitting, showing federal support for state primacy
- Protracted project timelines and milestone requirements in the tax credit structure necessitate prompt action
- Sets the stage for potentiating continued development of Alaska's oil resources, and potential major gas development

What is the potential in Alaska?

- Alaska's depleted oil & gas fields, saline aquifers, and deep coal seams have significant CO₂ storage potential
- Alaska has important competitive advantages – we own the pore space & we know the reservoirs
- Fifteen other states have passed CCUS omnibus legislation that we have learned from

CCUS - where

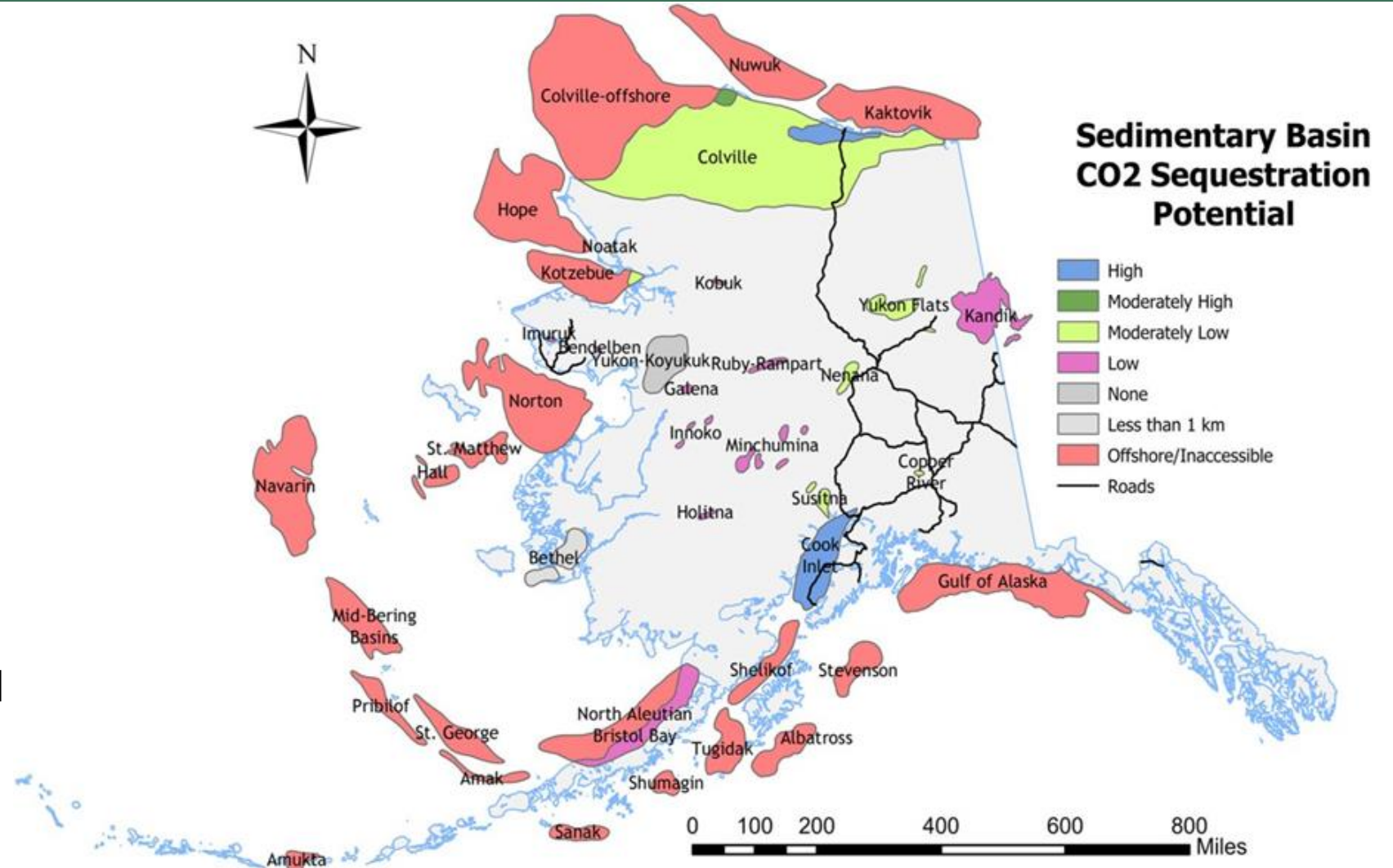


Geologic Storage
Potential: 1600+ Gt

- 2021 Global CO₂ emissions = 36.3 Gt
- Storage Targets:
 - Depleted Oil & Gas Fields
 - Saline Aquifers
 - Unmineable Coal Seams

12.4 billions barrels
through CO₂ enhanced
oil recovery (EOR)

Gigatons = 1 billion tons = Gt





45Q (CCS) Tax Credit - Inflation Reduction Act Enhancements

- Deadline to start construction 1/1/2033
- \$85/ton for CCUS from industrial facilities and power plants stored in geologic formations
- \$60/ton for utilization of captured CO₂/CO for enhanced oil recovery (EOR) or to produce low and zero-carbon fuels, chemicals, and building materials
- \$180/ton for direct air capture (DAC) carbon stored in geologic formations and \$130/ton for DAC carbon used in EOR

CCUS - explained

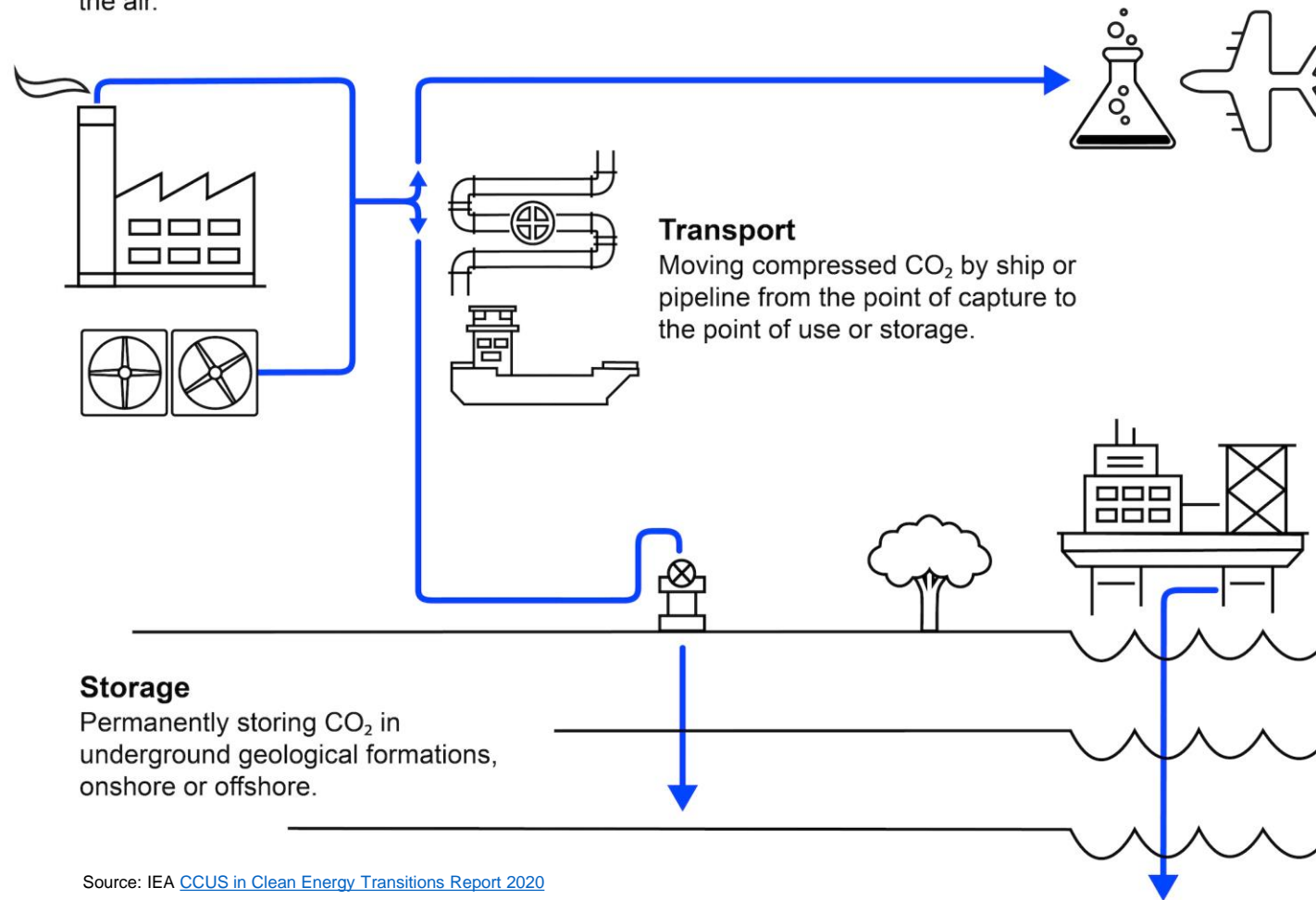


Capture

Capturing CO₂ from fossil or biomass-fuelled power stations, industrial facilities, or directly from the air.

Use

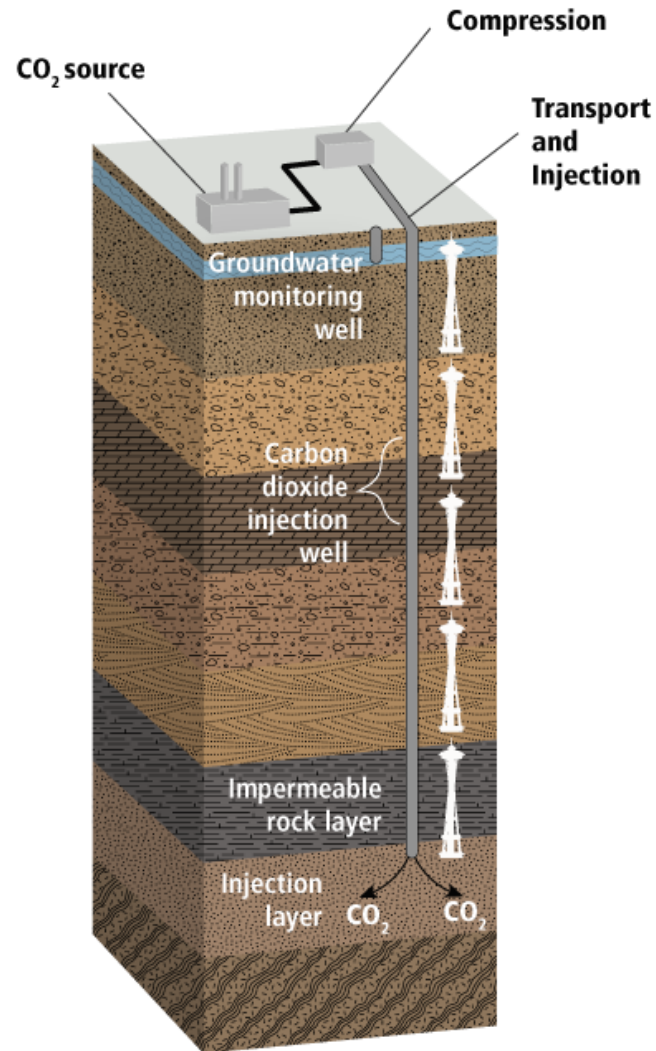
Using captured CO₂ as an input or feedstock to create products or services.



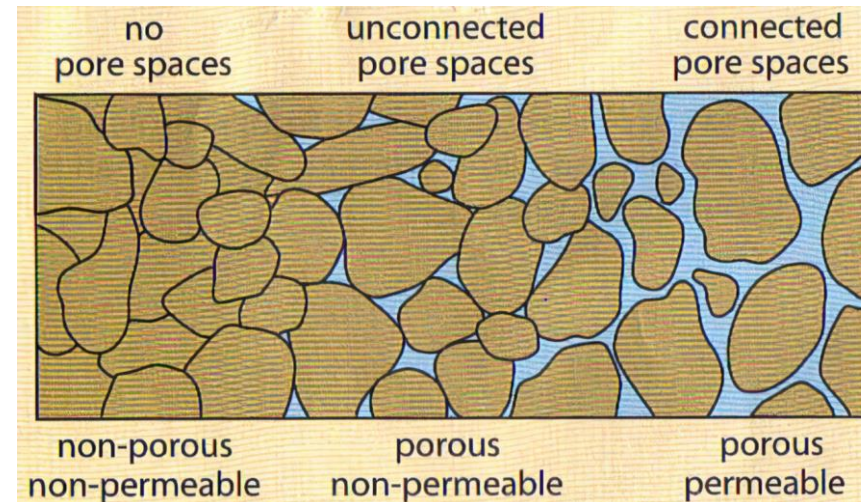
Storage

Permanently storing CO₂ in underground geological formations, onshore or offshore.

CCUS - storage as primary focus of HB 50



1. Depleted oil and gas reservoirs
2. Saline aquifers
3. Unmineable coal seams

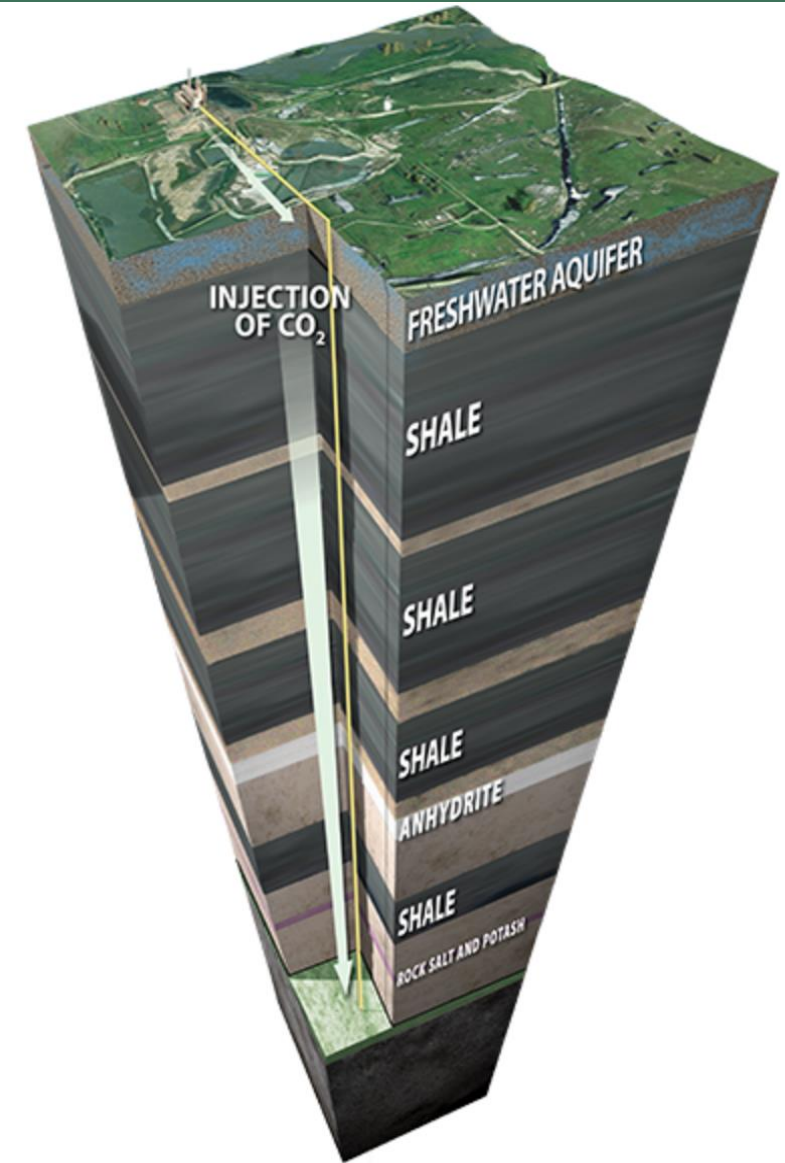


CCUS - regulatory framework



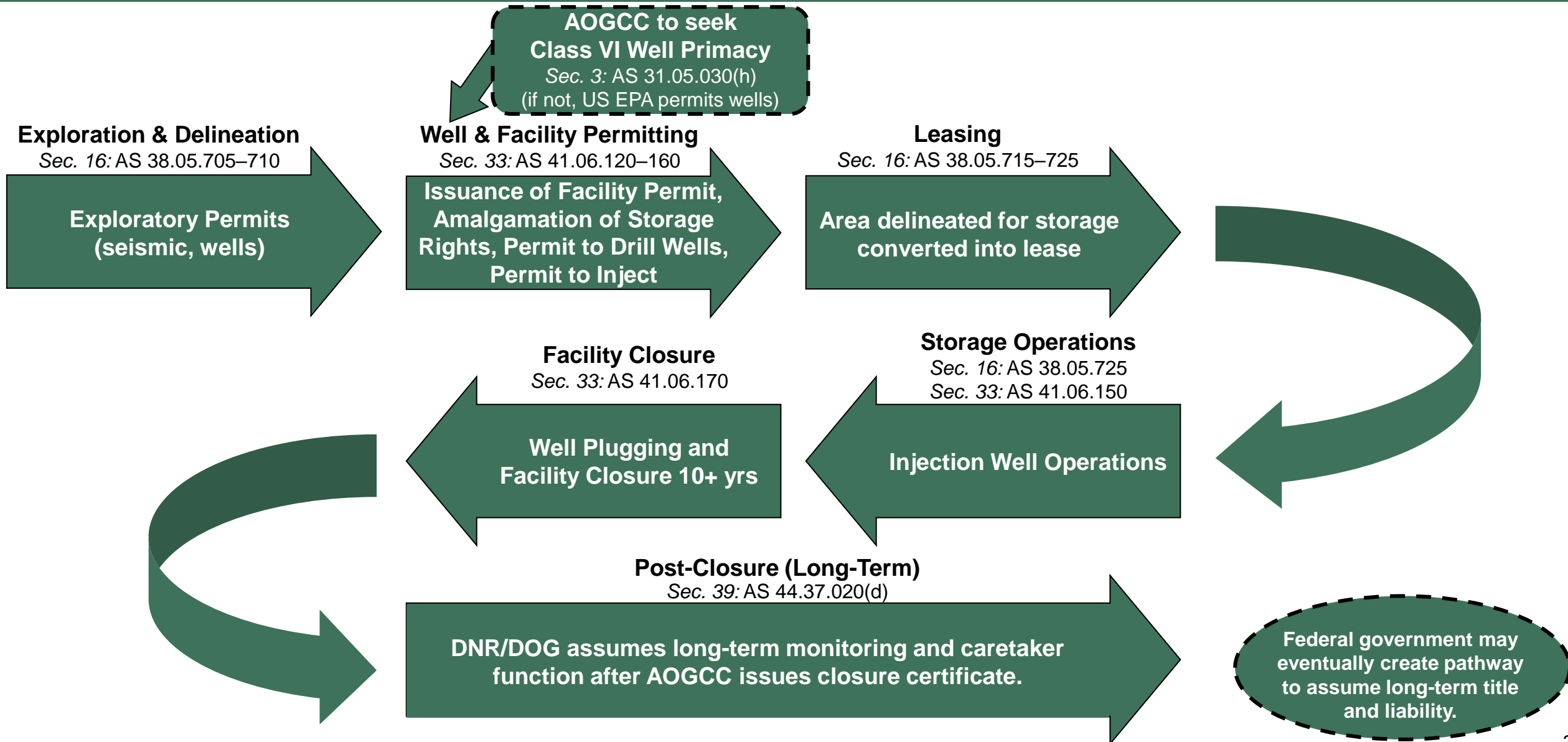
How HB 50 enables carbon storage:

- Provides for the use of public lands for CCUS
- Accounts for the amalgamation of property interests and protection of correlative rights
- Outlines relationship between other commercial minerals and reservoirs to be used for storage
- Enables permitting for CO₂ pipelines
- Defines ownership of carbon dioxide and ascription of liability
- Addresses authority for Safe Drinking Water Act SDWA Class VI well primacy

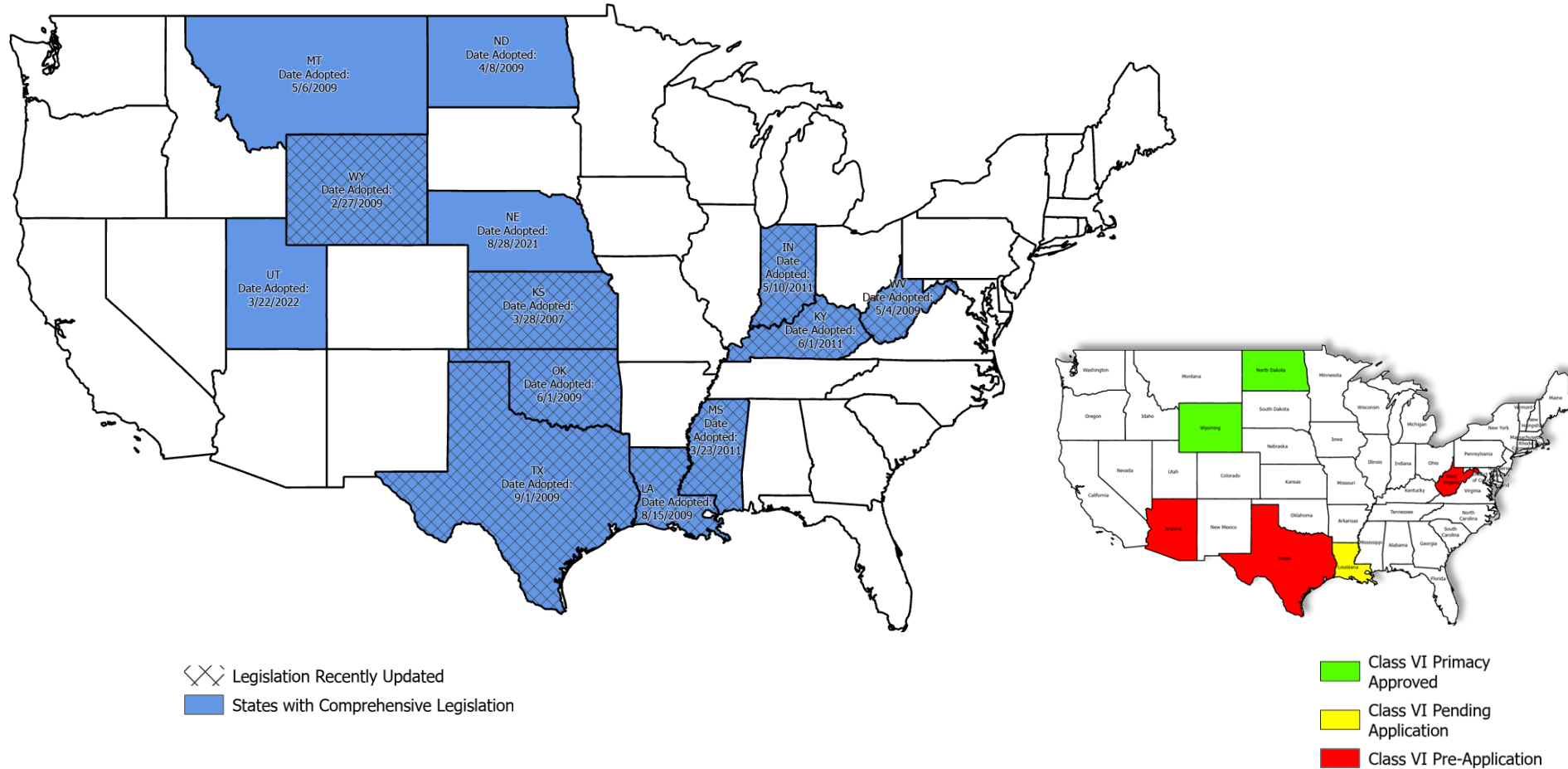




CCUS - project process



CCUS - states advancing programs



CCUS - statewide workgroup



Workgroup Committees

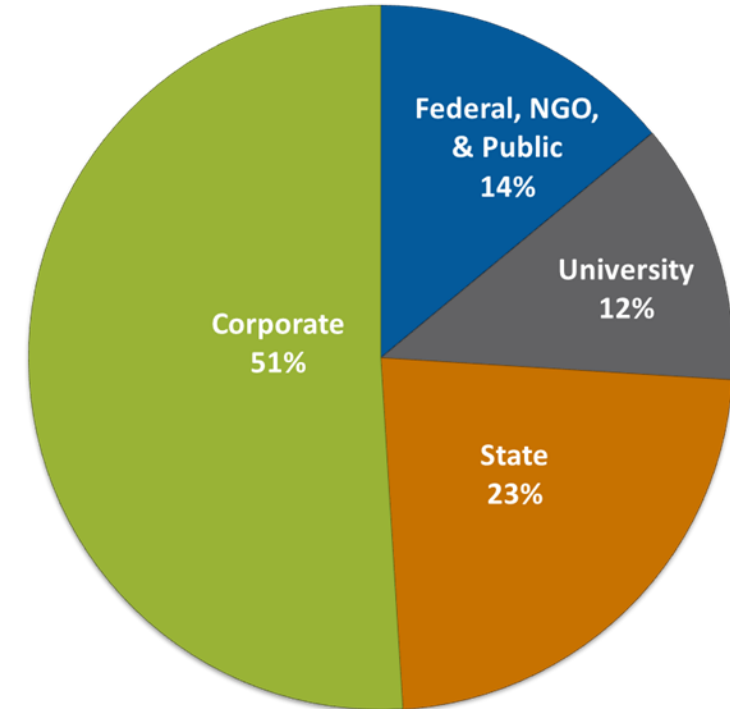
1. Regulatory framework
 1. Stakeholder white paper
2. Government engagement and funding opportunities
3. CCUS Roadmap
4. Public outreach and education



Institute of Northern Engineering
University of Alaska Fairbanks



CCUS Working Group



CCUS - opportunities



- **Bolster development of Alaska's abundant oil and gas**
- **Federal incentives are driving investment in peer states**
- **Environmental goals are driving capital to projects with carbon management options**
- **Alaska should participate in global uptick in CCUS projects**
- **Project timelines require the state to act promptly because of the federal incentives' deadlines**
- **Additional state revenue**

Thank you!



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