



**Recent Advancements in the Carbon Capture and Storage
(CCS) Regulatory Framework in Brazil: Progress and Prospects**

**6th International Workshop on Offshore Geologic CO₂ Storage
Legal, Regulation & Accounting Session – Wednesday 13 September**

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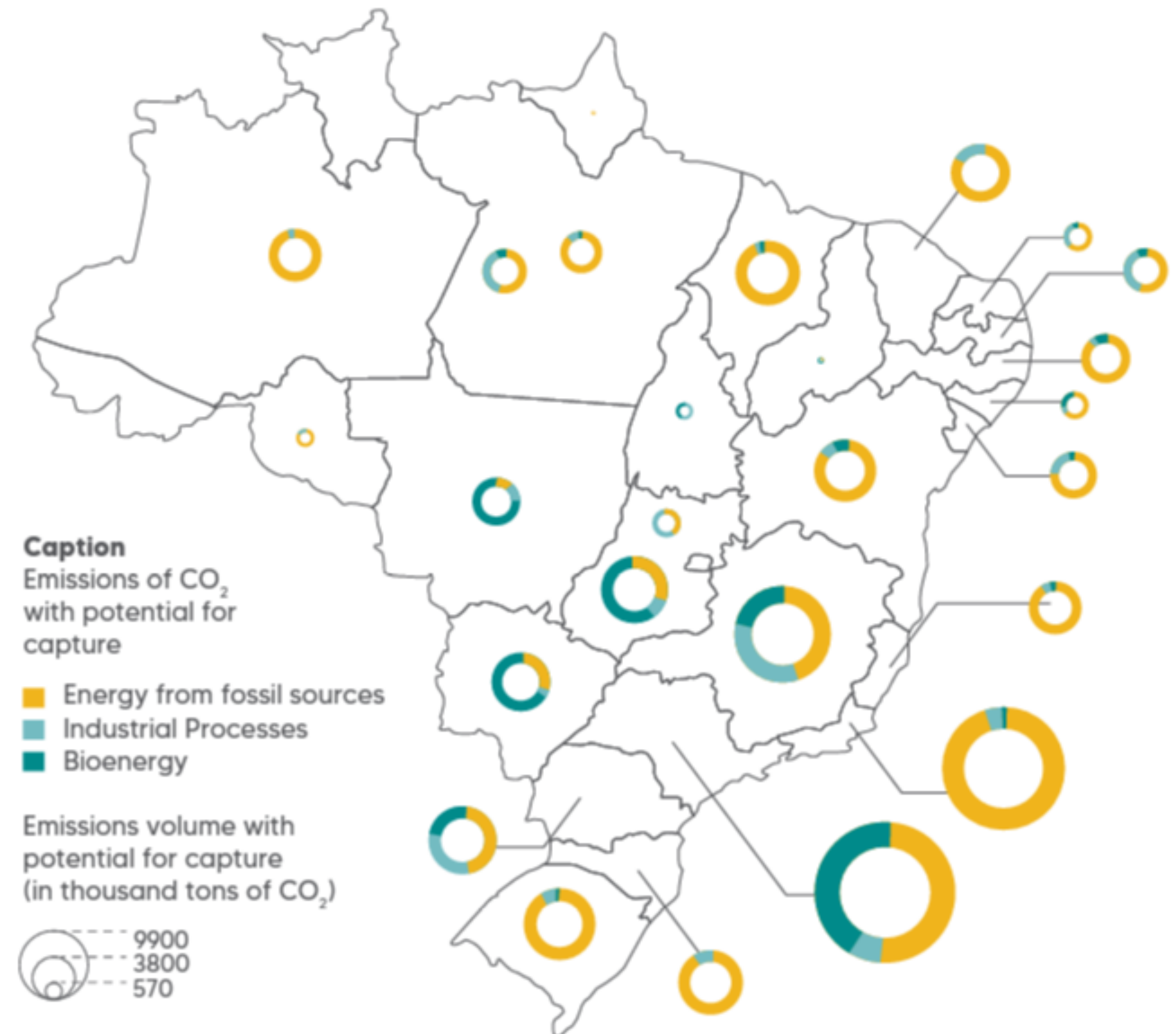
CCS: a growing market in Brazil

**~200
MtCO₂/y**

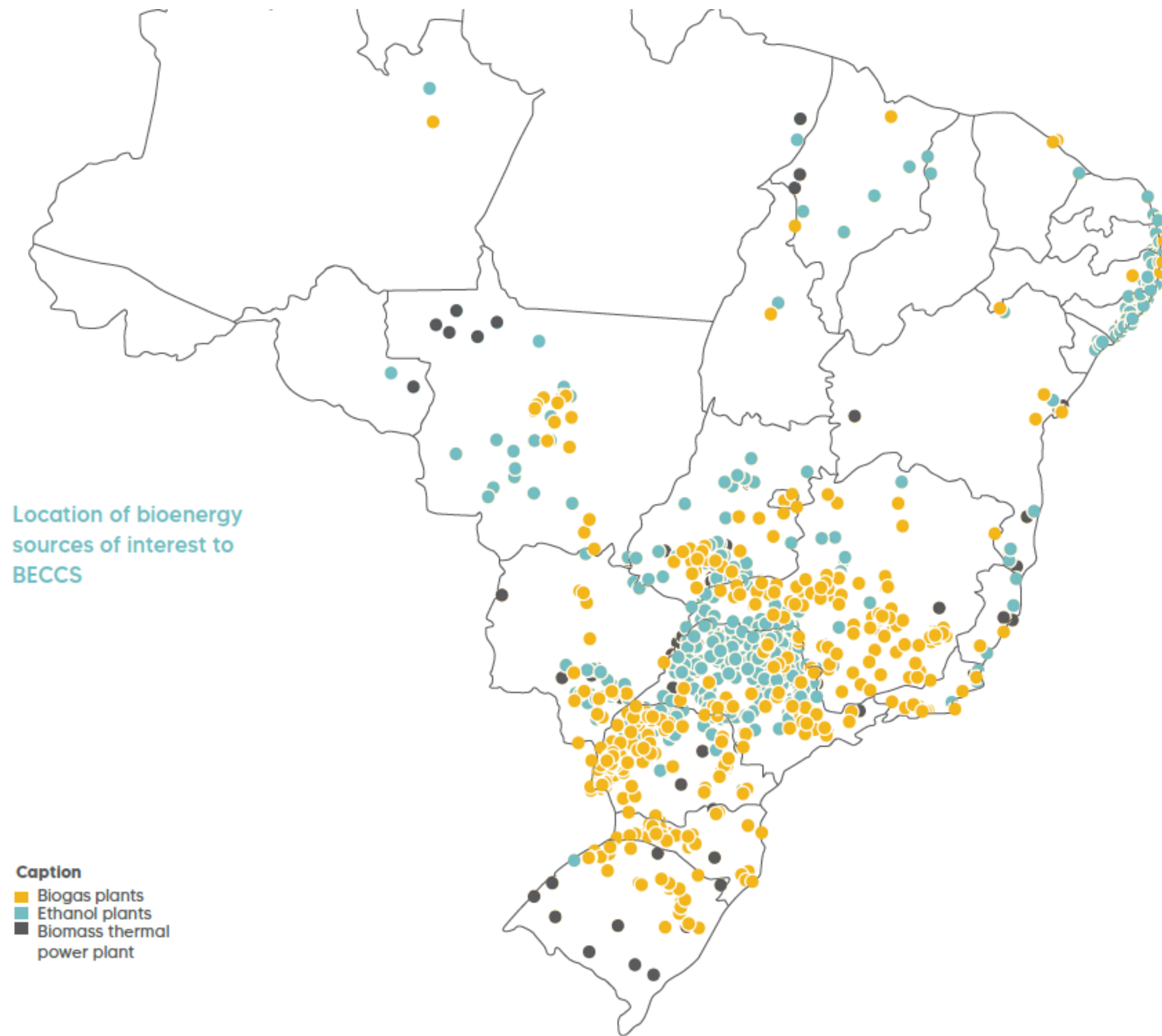
Identified potential for CO₂
capture

~40 MtCO₂/y

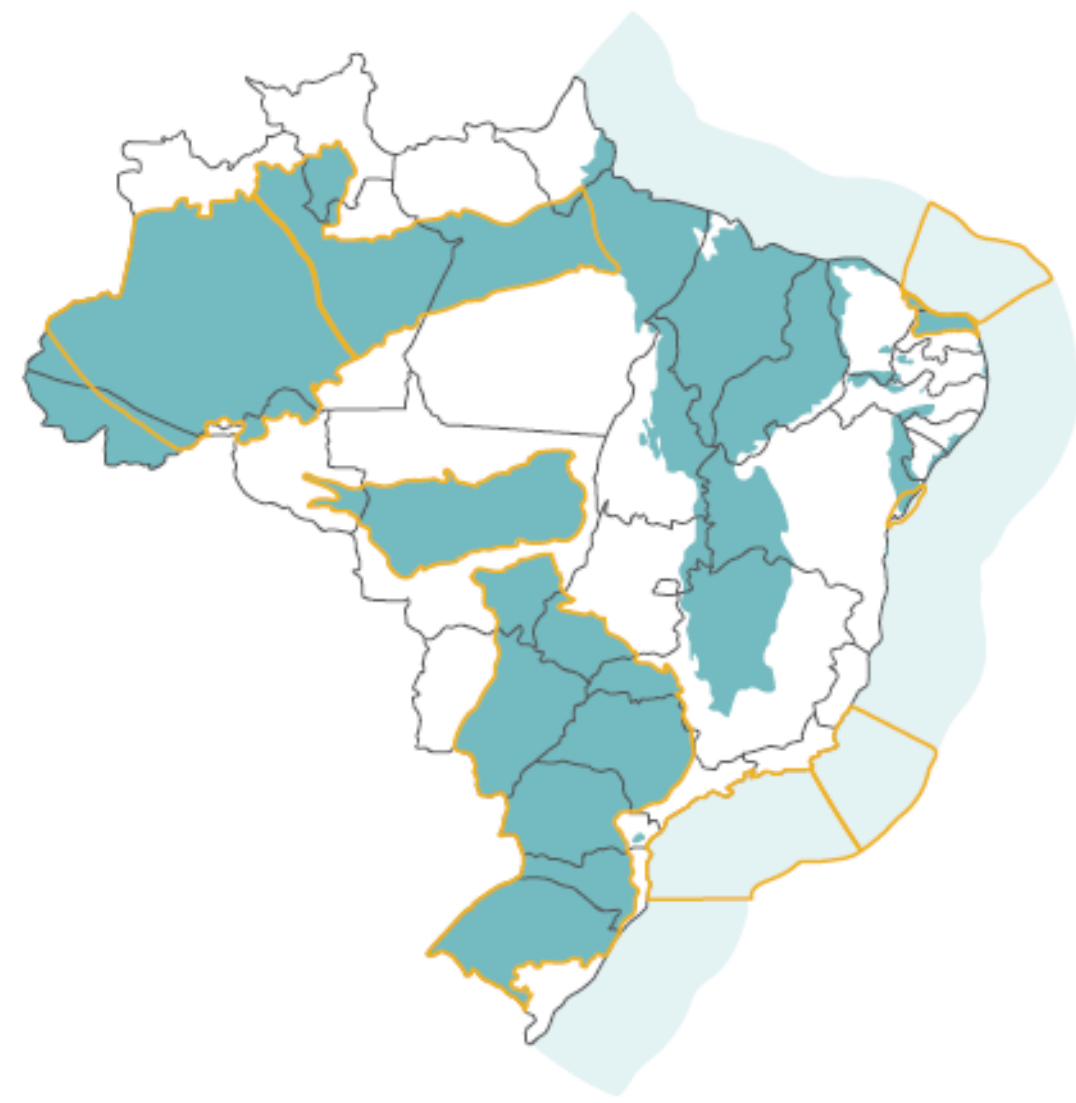
Identified potential only for BECCS



Sources of CO₂ for BECCS

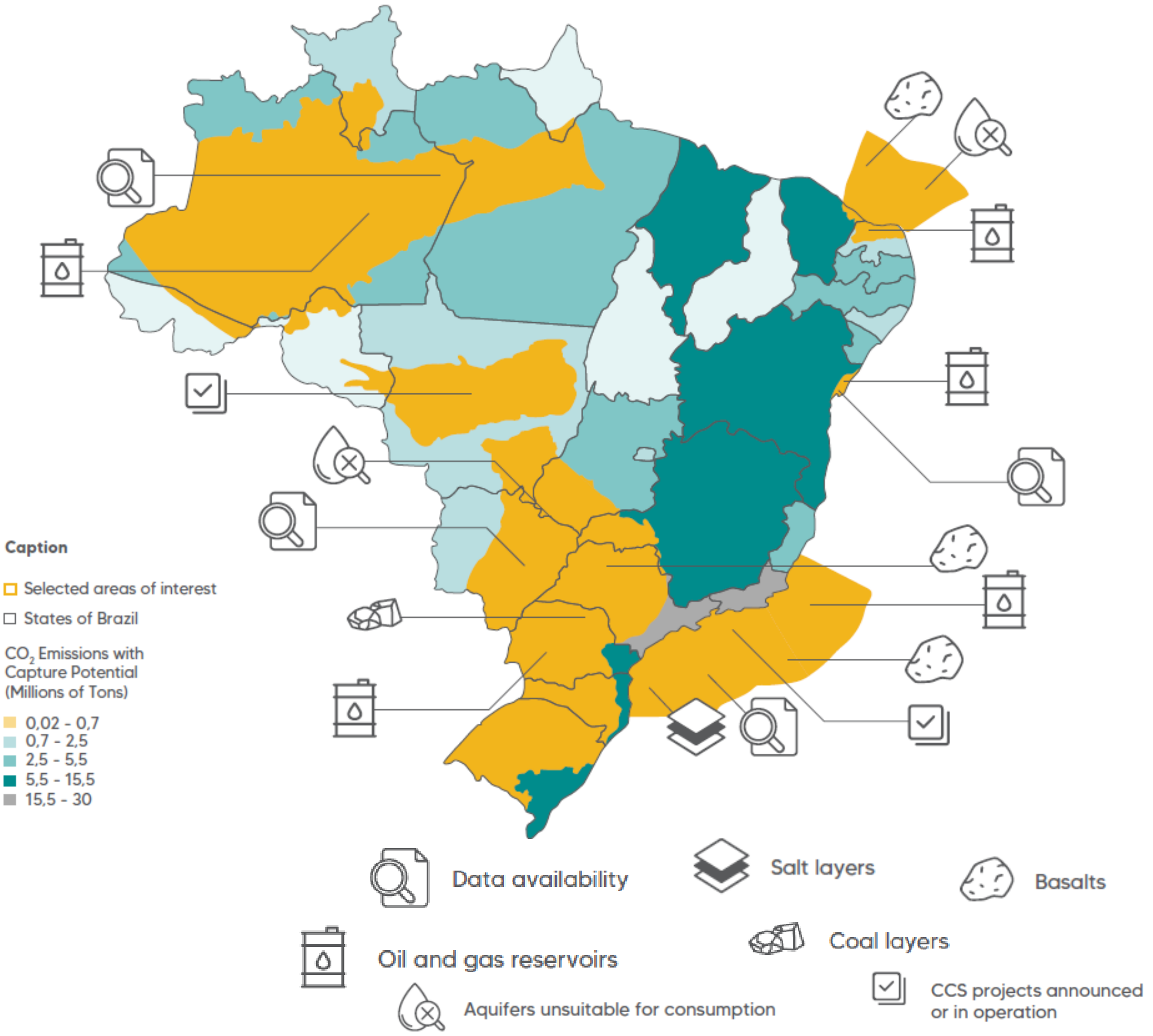


CO2 storage opportunities



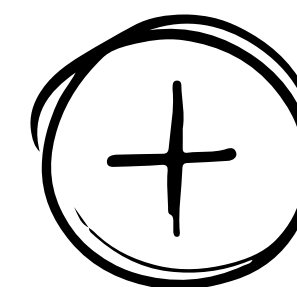
Caption

- Selected areas of interest
- States of Brazil
- Sedimentary Basins in Brazil



1st PROJECT	<ul style="list-style-type: none"> • Responsible for the project: Petrobras • Project features: Advanced Petroleum Exploration (CCUS-EOR) • Nature: commercial • CO₂ Injection sites: pre-salt fields • Total reinjected tCO₂: 40.8 million • Project start: 2008 • Perspectives and prevision: 80 million tCO₂ reinjected by 2025
2st PROJECT	<ul style="list-style-type: none"> • Responsible for the project: FS Energi: • Project features: combination of CCS with ethanol fermentation process • Nature: commercial • CO₂ Injection site: Lucas do Rio Verde (MT) • CO₂ Origin/Souce: corn ethanol production process CO₂ • Investment: US\$ 65 million dollars • Project storage capacity: 420 MT CO₂/year • Project start estimation: Dec 2024 • Project duration perspective: subject to confirmation of permeability, 20 year term minimum; up to a 55 year storage potential.
3st PROJECT	<ul style="list-style-type: none"> • Responsible organizations: SATC, ENEVA, UFC (ANEEL R&D). Diamante Energia(synthetic zeolite pilot plant). NETL (USA) and ARI (USA) support. • Project characteristics: CO₂ capture by adsorption technology, using zeolites. • Nature: Research & Development – Pilot Plant • Source of CO₂: Burning of LPG to simulate the capture in coal and natural gas thermal units. • Volume of CO₂ to be captured: 2 tCO₂/day (pilot unit). • Investments: R\$5.2 million already invested along the first phase and another R\$8.8 million is being invested in the second phase. Zeolite pilot plant: R\$5.4 million • Project Duration: Beginning of phase 2 in January, 2023 and expected end in December 2024.

Current and Planned Projects



R&D Project - DACSS
 DAC.SI -Direct Air Capture System Integration
 REPSOL SINOPEC, RCGI-USP) Senai Cetiq; e Hytron

Regulatory Framework in Brazil: Progress and Prospects

- ■ **CCS Regulatory
Framework
Bill 1.425/2022**
- ■ **Future fuels
Bill 4.196/2023**



CCS Regulatory Framework Bill 1.425/2022

Essential
Concepts of CCS

Guiding Principles
and Values of the
Regulatory
Framework

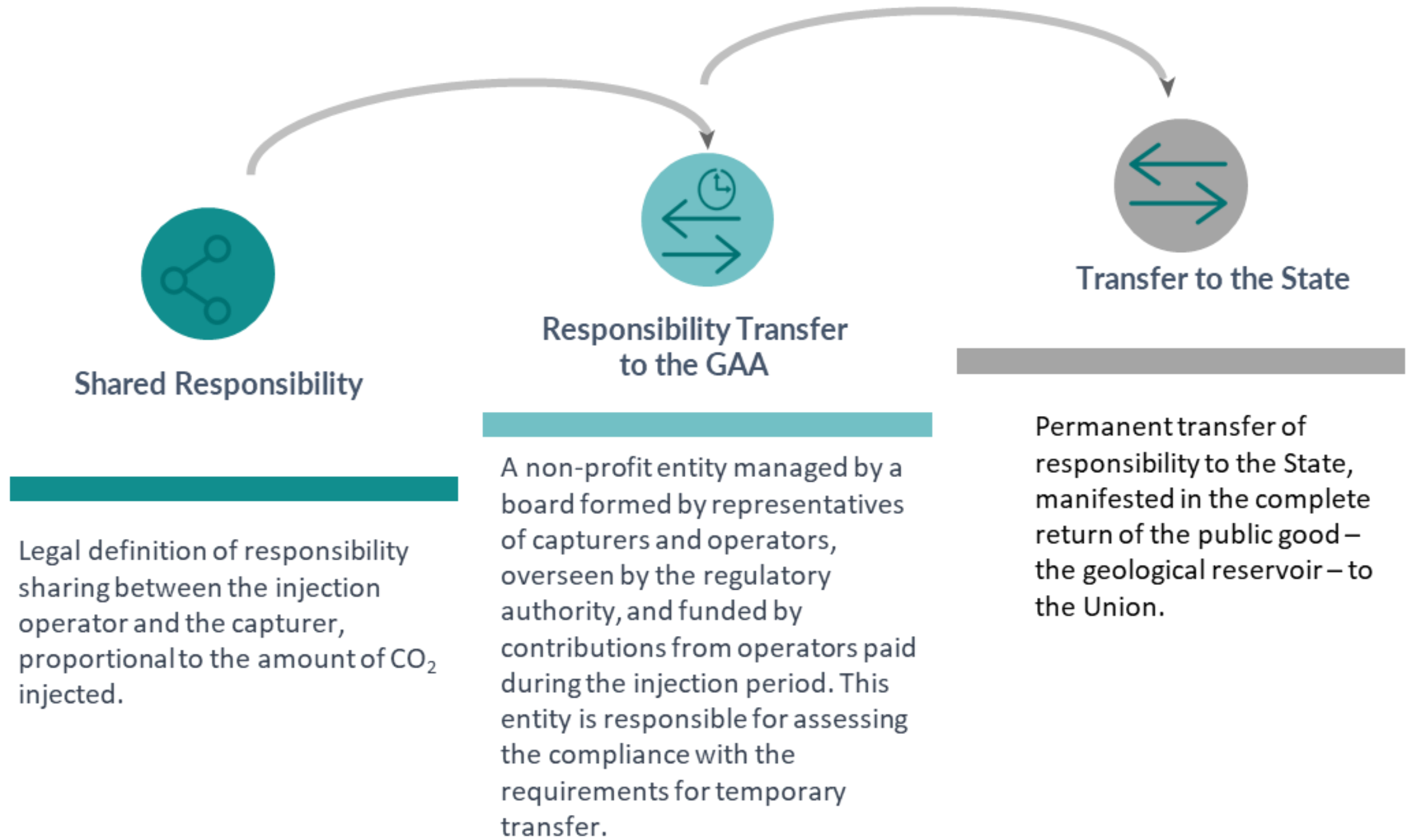
Establishes the
underlying
principles and
values for the bill

Conditions and
Requirements for
Storage
Permission

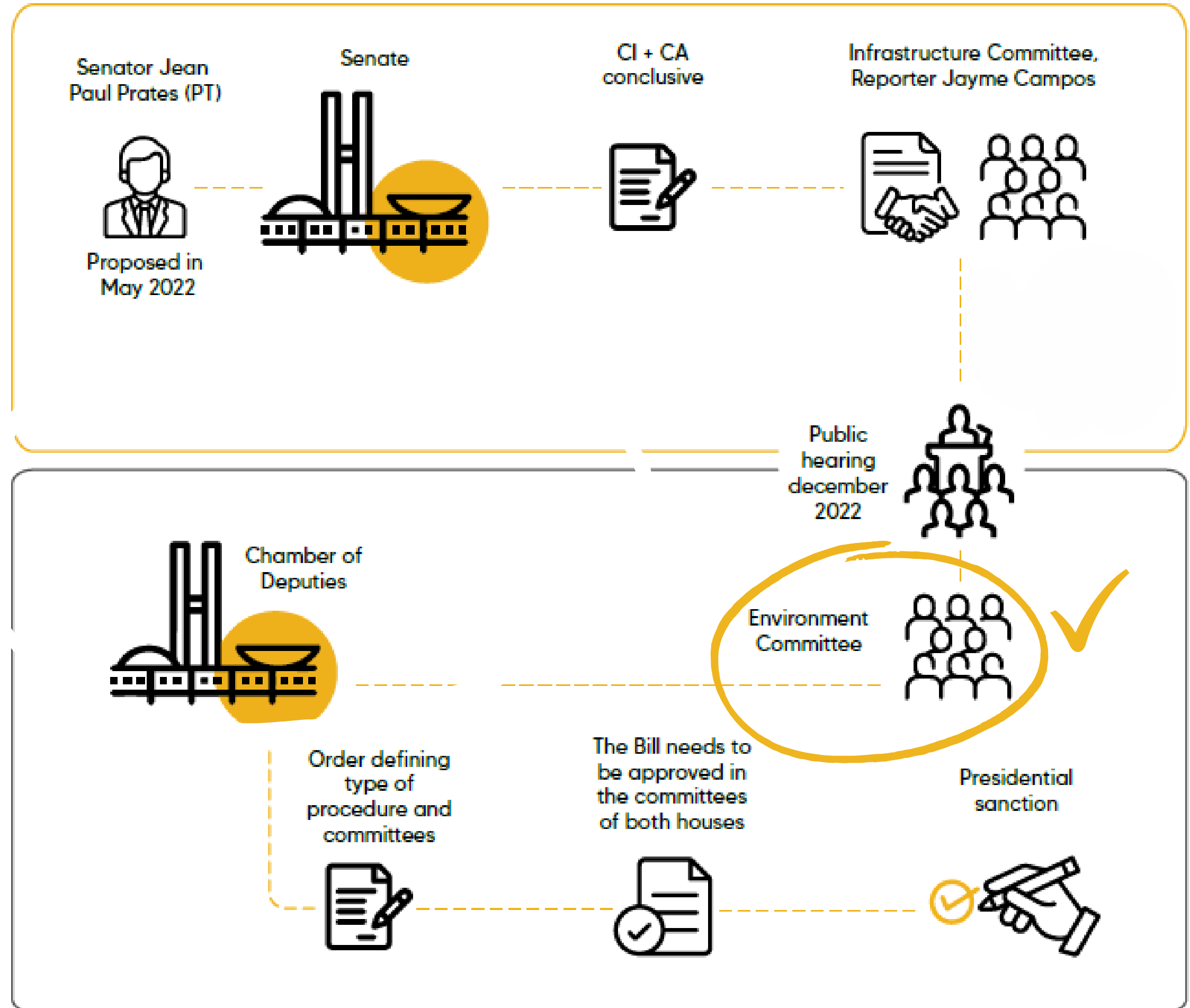
General Operator
Obligations

Long-Term
Responsibility for
the CO₂

Long-Term Responsibility for the CO₂



Expected legislative progress summary of Bill 1.425/2022






Future fuels

Bill 4.196/2023



It was presented on August 29.



Its objective is to establish a ten-year policy for the decarbonization of the energy matrix, specifically focusing on equipment and engines of the Diesel Cycle. Additionally, it provides details on the Diesel B Quality Information System for end consumers and addresses multiple initiatives like the National Sustainable Aviation Fuel Program (ProBioQAV), the National Green Diesel Program (PNDV), and also it establishes a legal framework for Carbon Capture and Storage.



The bill is now awaiting the initial directive from the president of the chamber, which will determine the legislative process it will undergo and the number of commissions it will need to pass through.

Thank you



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