

A Way of Reducing Carbon Dioxide Emissions with CCS

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Causes of Climate Change



Causes of Climate Change

- **Transportation**

Greenhouse gas emissions from transportation primarily come from burning fossil fuel for cars, trucks, ships, trains, and planes.

- **Electricity production**

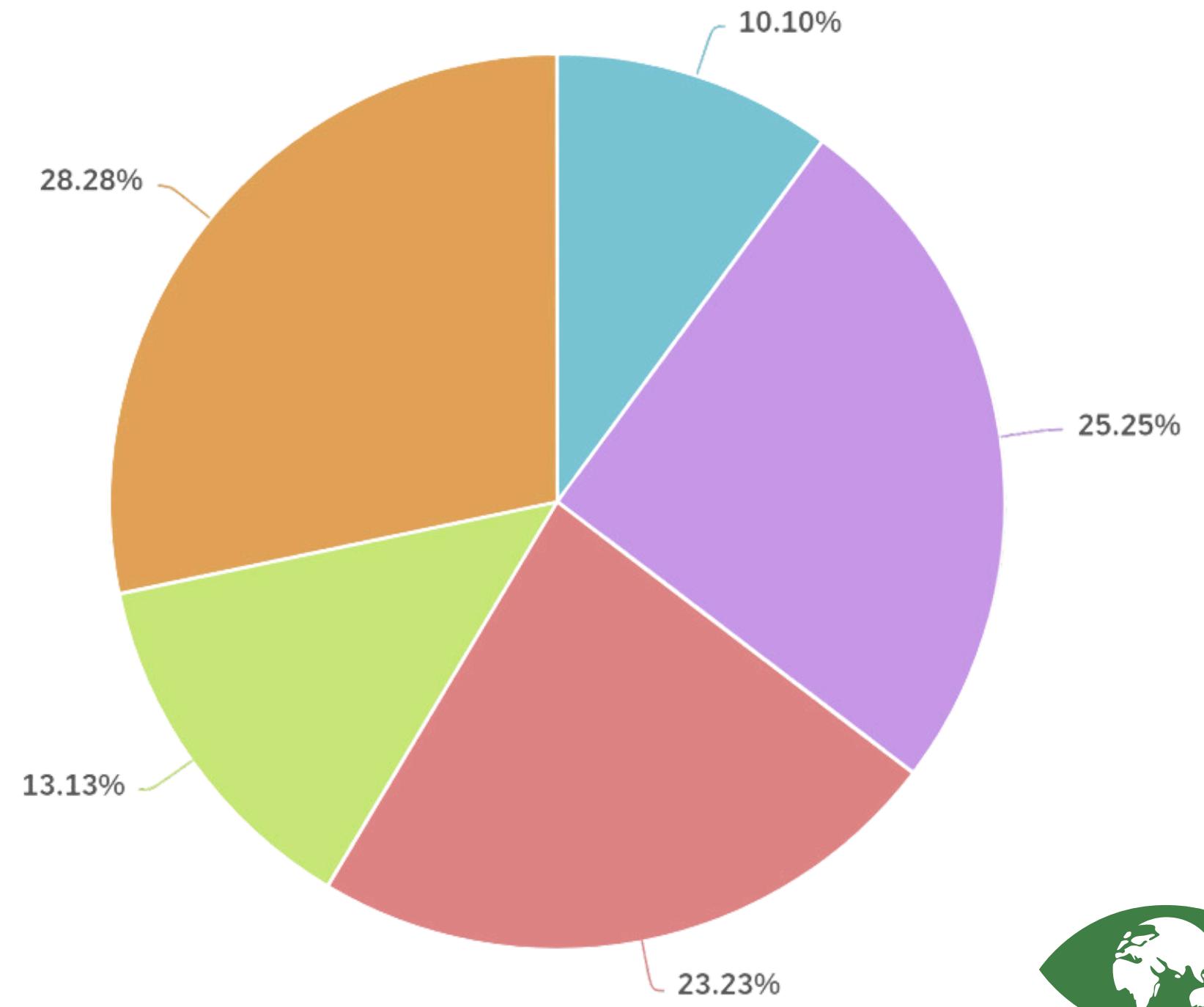
Electric power includes emissions from electricity production used by other end use sectors. In 2022, 60% of the electricity comes from burning fossil fuels, mostly coal and natural gas

- **Industry**

Greenhouse gas emissions from industry primarily come from burning fossil fuels for energy, as well as greenhouse gas emissions from certain chemical reactions necessary to produce goods from raw materials.

Greenhouse Gas Emissions by Economic Sector in 2022

Agriculture Electric Power Industry Residential & Commercial Transportation



source: Sources of Greenhouse Gas Emissions by EPA



Causes of Climate Change

- **Agriculture**

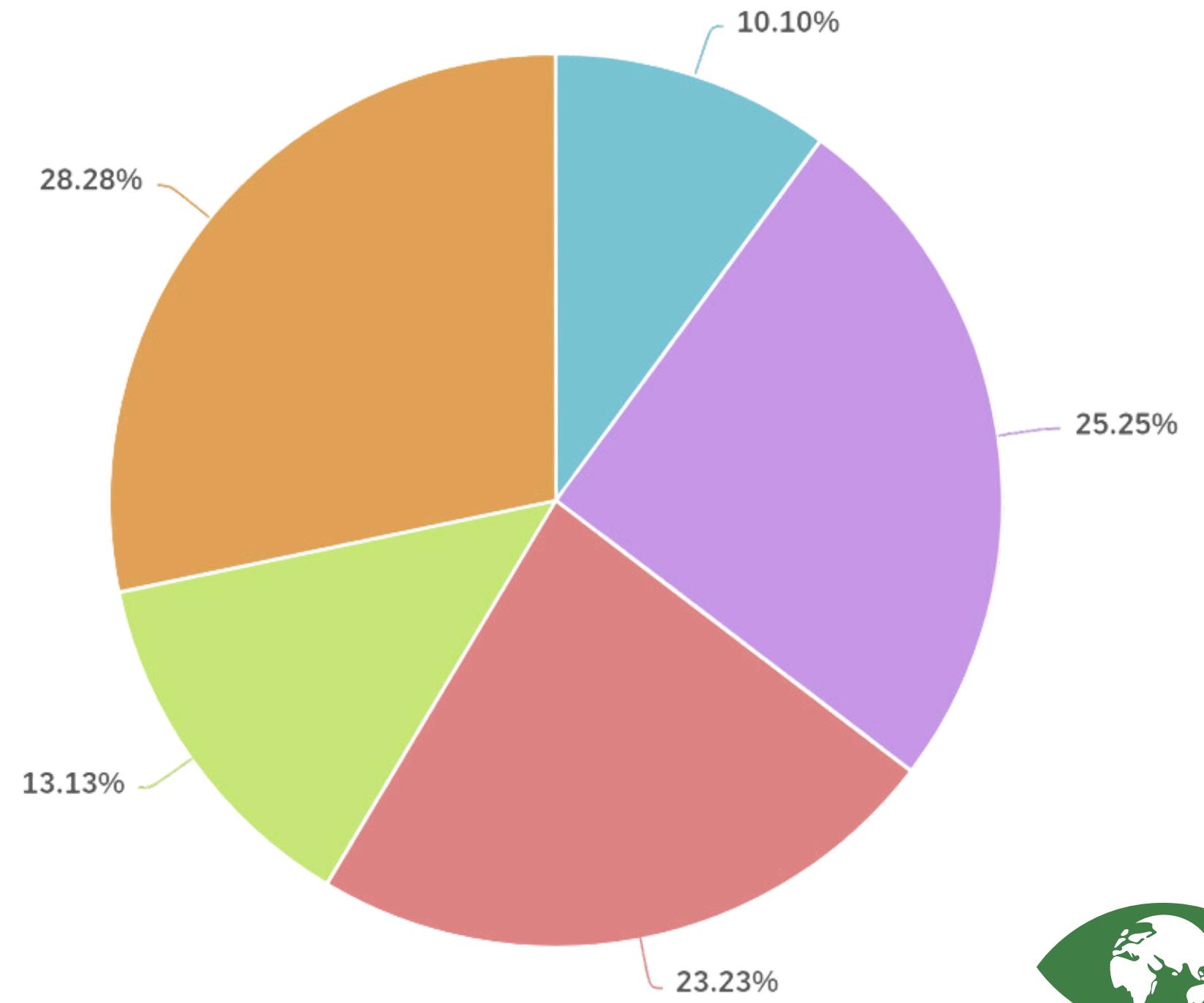
Greenhouse gas emissions from agriculture come from livestock such as cows, agricultural soils, and rice production. Indirect emissions from electricity use in agricultural activities like powering buildings and equipment are about 5 percent of direct emissions.

- **Residential & Commercial**

Greenhouse gas emissions from the commercial and residential sector come from fossil fuels burned for heat and the use of gases for refrigeration and cooling in buildings, and non-building specific emissions such as the handling of waste.

Greenhouse Gas Emissions by Economic Sector in 2022

Agriculture Electric Power Industry Residential & Commercial Transportation



source: Sources of Greenhouse Gas Emissions by EPA





Effects of Climate Change



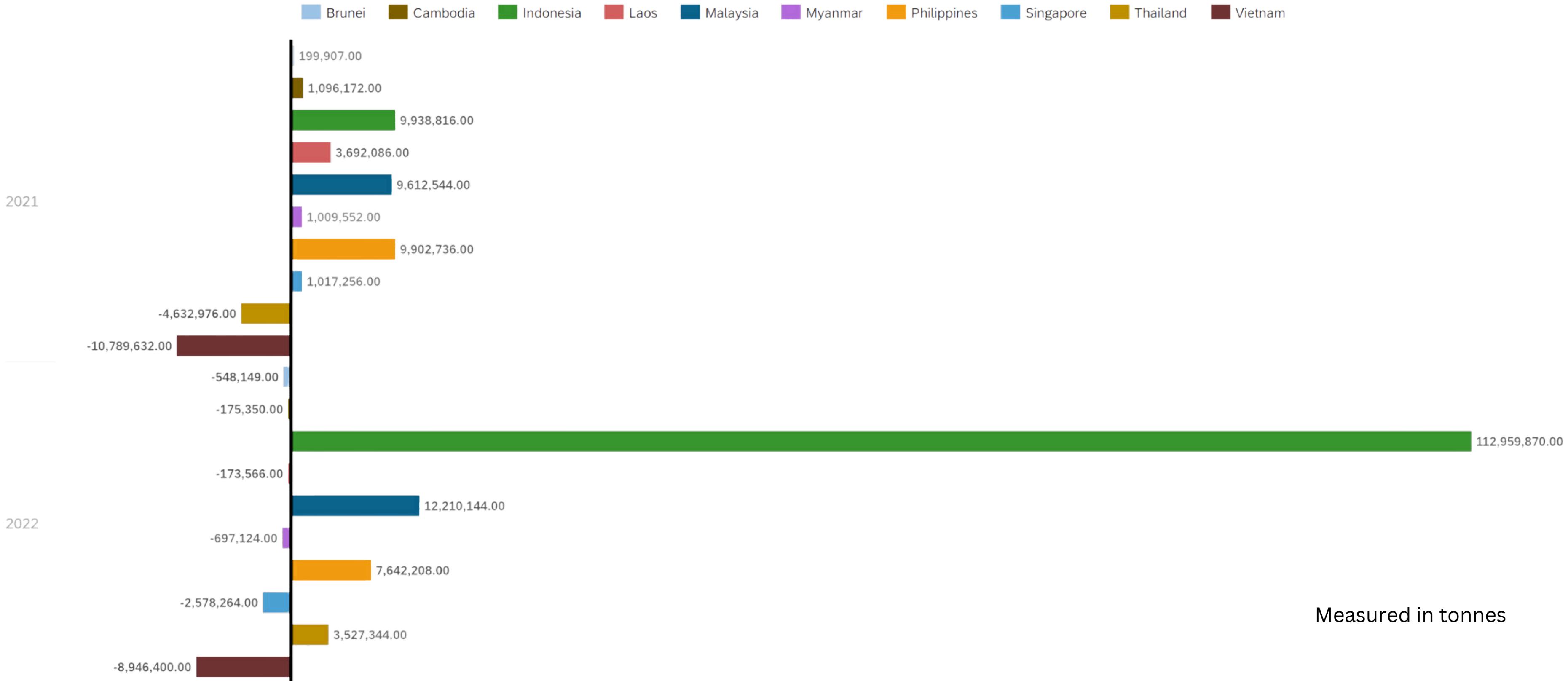
Effects of Climate Change



- Hotter Temperatures
- More Severe Storms
- A warming, rising ocean
- Health Risks
- Poverty and Displacement
- Loss of species



2021-2022 carbon dioxide emissions in ASEAN countries.





Recommendation

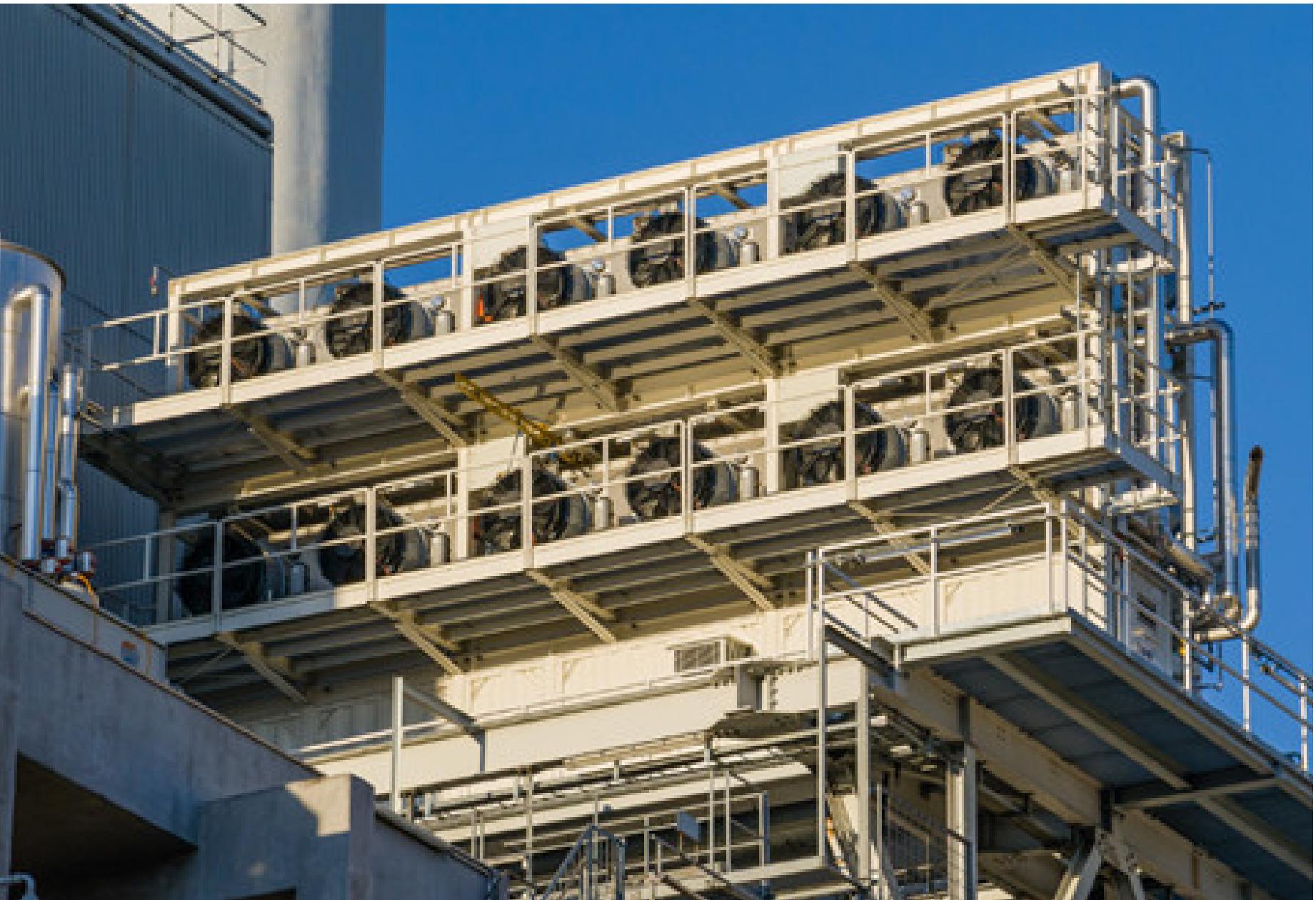


Reducing Carbon Emission with CCS



What is Carbon Capture and Storage ?

Carbon capture and storage (CCS) is a way of reducing carbon emissions by capturing carbon emissions from industrial processes, such as steel and cement production, or from the burning of fossil fuels in power generation. The collected Carbon Dioxide will then be transported from where it was produced, via ship or in a pipeline, and stored deep underground in geological formations.

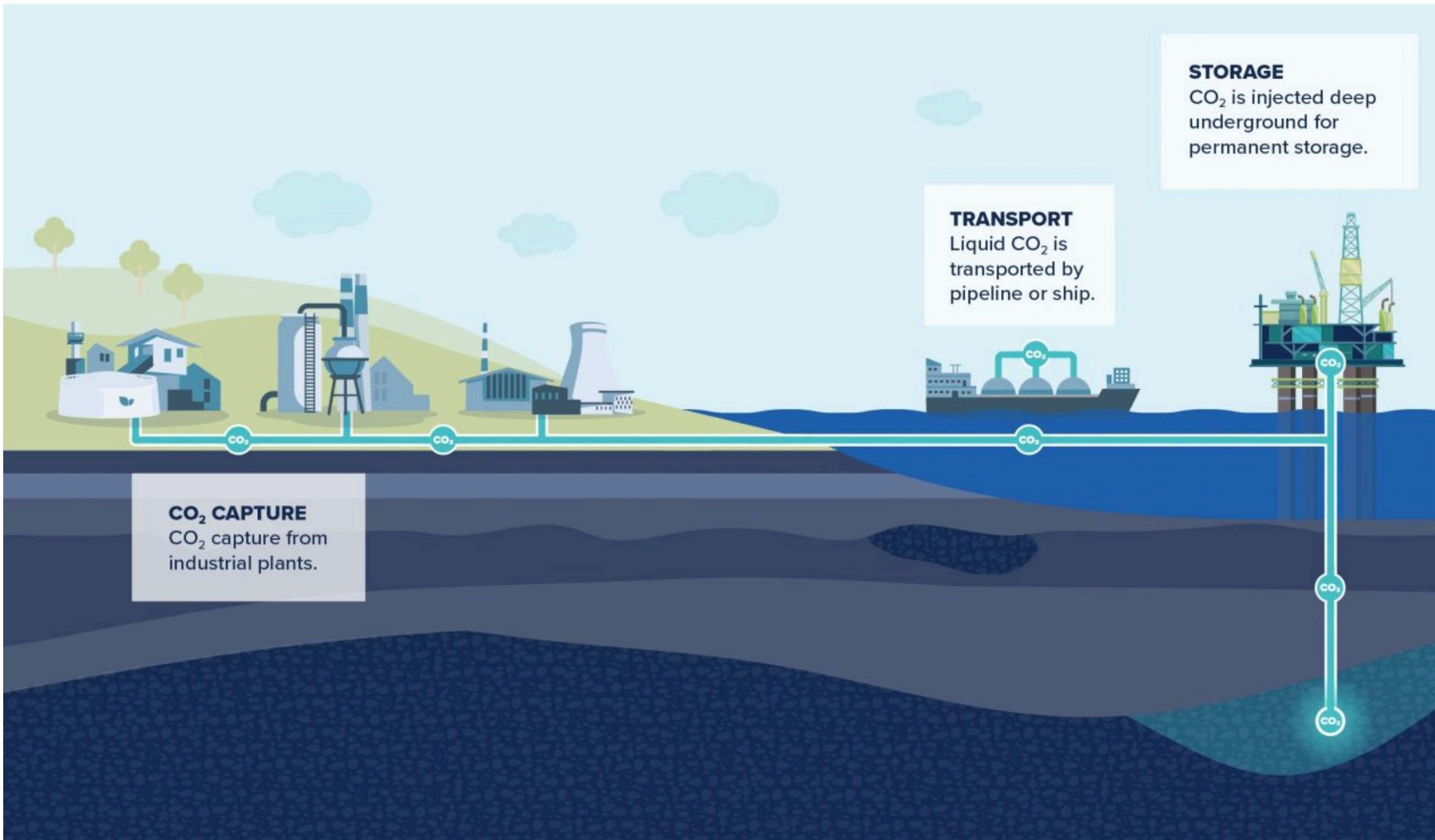


Reducing Carbon Emission with CCS



Three steps for the CCS process:

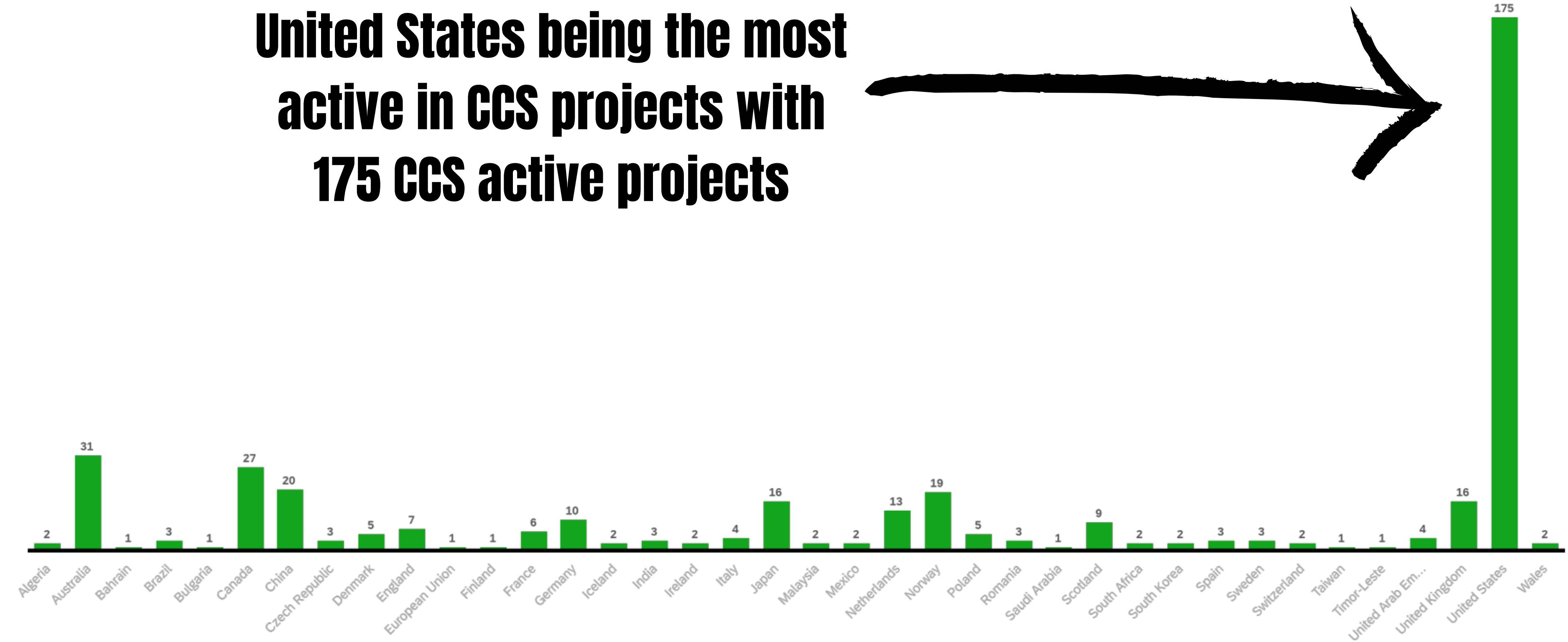
- **Capturing the Carbon Dioxide for Storage**
- **Transport**
- **Storage**



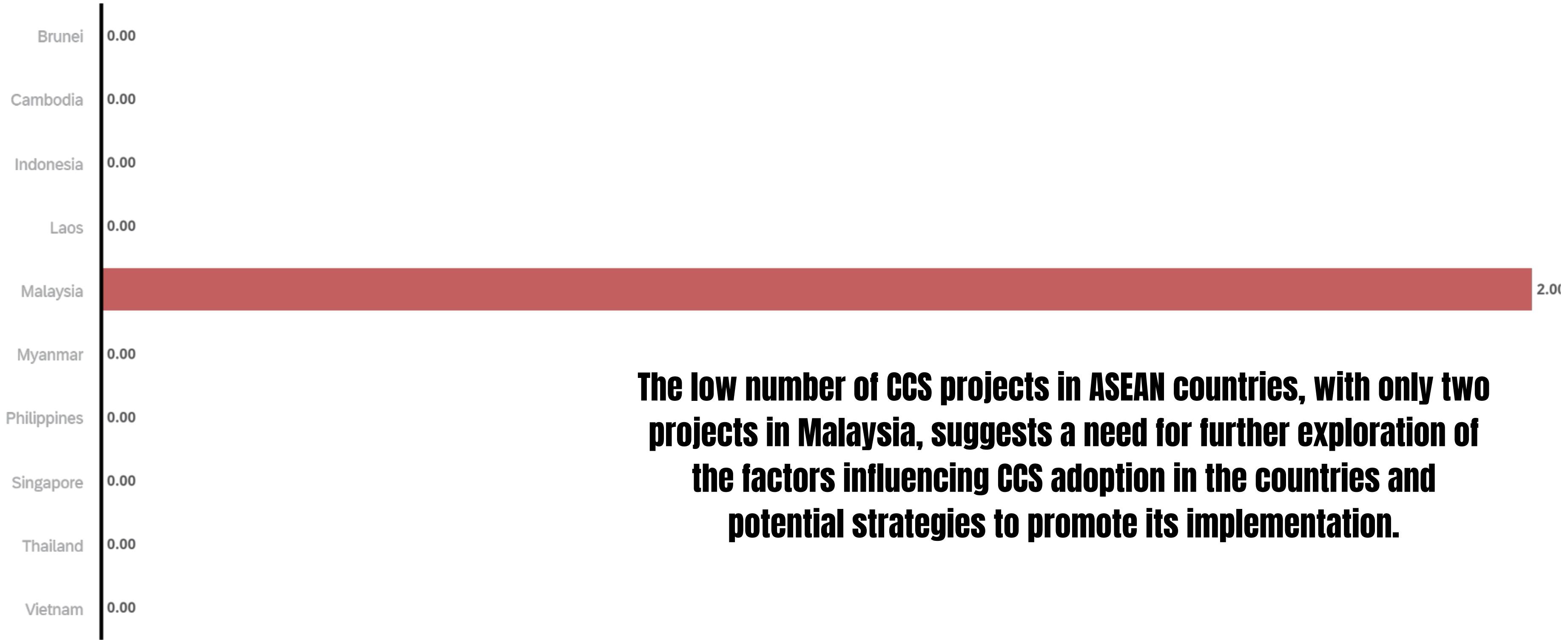
Active CCS Projects



United States being the most active in CCS projects with 175 CCS active projects



Active CCS Projects in ASEAN countries



References

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