

Asia and the Future of CCS

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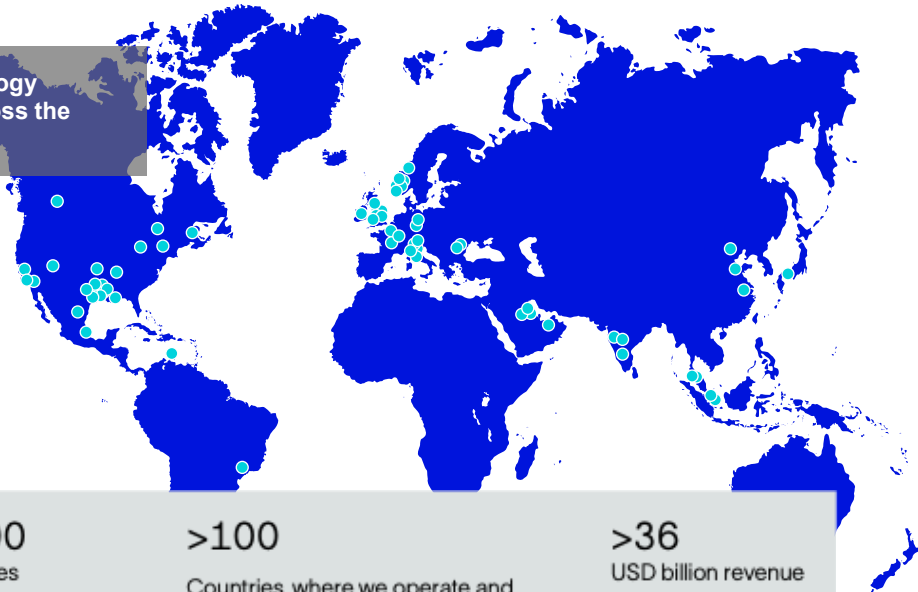


About SLB



SLB creates technology that unlocks access to energy for the benefit of all. This has been SLB's mission for 100 years by focusing on decarbonizing industry, innovating in oil and gas, delivering digital at scale, and developing and scaling new energy systems that accelerate the energy transition.

>70 Technology Centres across the globe



>109,000
Core employees

>100
Countries where we operate and employees representing almost twice as many nationalities

>36
USD billion revenue



About Aker



Aker ASA is an industrial investment company that exercises active ownership to create value. Since the company was founded in 1841, Aker has been a driving force in the development of knowledge-based industries, combining in-depth industrial competence with capital markets expertise and financial strength.

ENERGY	AkerBP, Aker Solutions, Solstad Maritime & Solstad Offshore, AKER HORIZONS
DIGITALIZATION	COGNITE, aize, omny
SUSTAINABLE PROTEINS	AKER BIOMARINE, Aker QRILL Company, Gaia Salmon
MANAGED ASSETS	ICP Industry Capital Partners Infrastructure Asset Management, Real estate: Aker Property Group, Other equity investments, including: AKASTOR, RUNWAY, seefee, SALMAR, Philly Shipyard, AMSC ASA

European CCUS showing plenty of promise



- Ambition** **70** MTpa of CO2 capture capacity planned to be online in EU (ex UK) by 2035
- Projects** **Cement industry** stands out
- Policy** Inclusion of **carbon removals in EU ETS**
- Drivers** CCUS now included in German **CCfD scheme**

With the UK leading the way?



Ambition **57** MTPa of CO₂ capture capacity planned to be online in UK by 2035

Approach Hynet, Teeside and Peak Clusters representing a **geographic approach**

Policy Inclusion of **carbon removals in UK ETS** by 2029

Drivers Proposition of 15 year **CCfD scheme**

SLB Capturi delivering FOAK projects

✓ Delivered: Twence CCU

- Capture capacity: 100,000 tonnes CO₂ per year
- First of a kind modular carbon capture project
- CO₂ will boost local greenhouse production

Waste to energy

Twence, Netherlands



✓ Delivered: Brevik CCS

- Capture capacity: 400,000 metric tons CO₂ per year
- Creating local employment and strong partnerships
- CO₂ transport by ship to permanent storage as part of Northern Lights

Cement

Heidelberg Materials, Norway



Delivering Kalundborg CCS

- Design capture capacity of 500,000 tonnes CO₂ per year
- Five Just Catch™ units at wood chip-fired Asnæs Power Station and straw-fired Avedøre Power Station
- First full-scale CCS value chain in Denmark

Power stations

Ørsted, Denmark



Delivering Oslo CCS

- Design capture capacity of 400,000 tonnes CO₂ per year
- Space-efficient Just Catch™ 400 design fundamental to enable a viable, cost-effective solution
- CO₂ transport by ship to permanent storage as part of Northern Lights

Waste-to-energy

Hafslund Celsio, Norway



The Global Picture

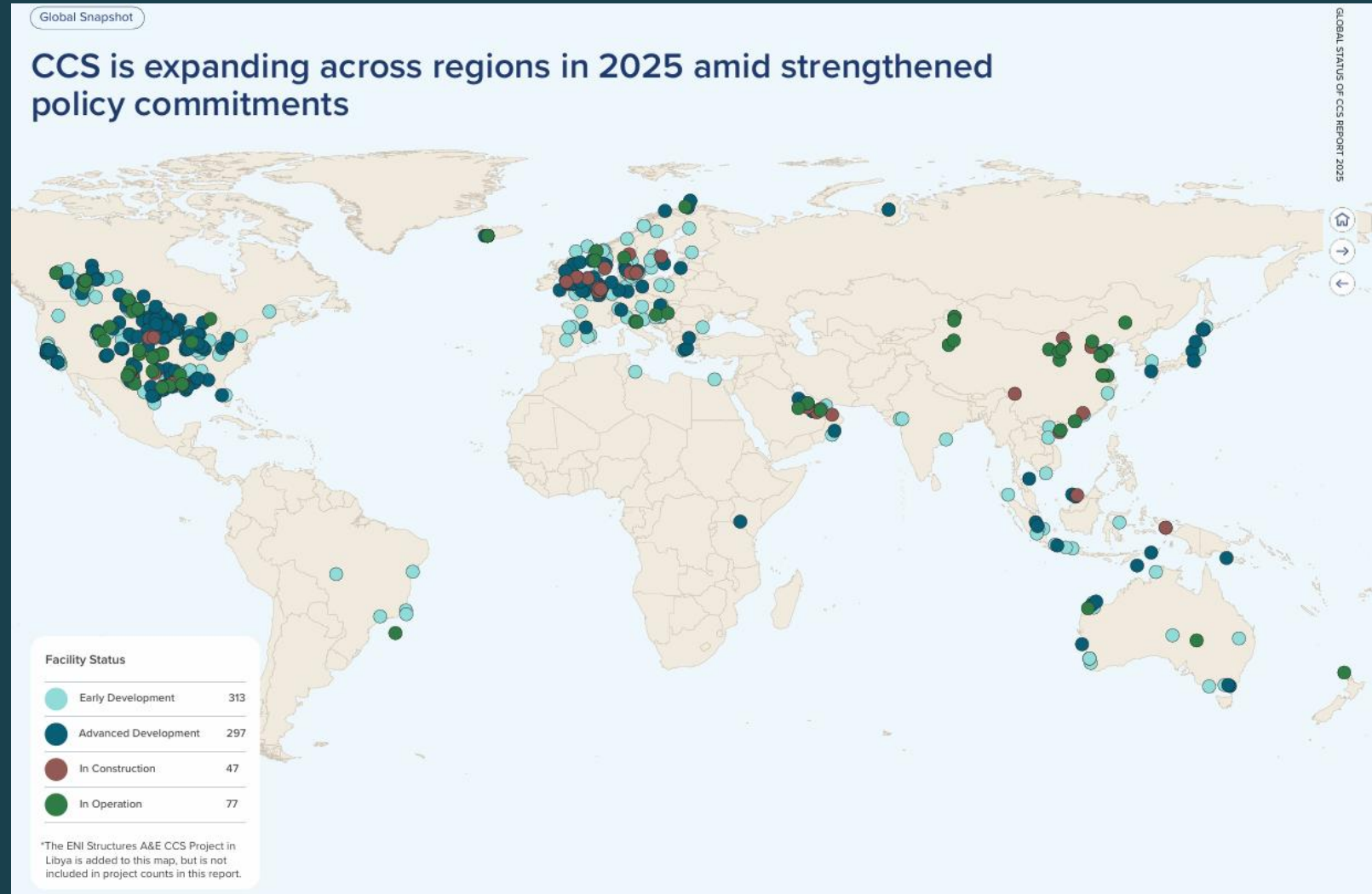
Operational Capacity: As of July 2025, there are **11 commercial post-combustion facilities** operating globally, capturing a combined **7.97 million tonnes of CO₂ per annum (Mtpa)**

North America and Asia (**specifically China**) currently lead in the number of operational post-combustion facilities, particularly within the **coal power** sector.

NAM – **Data centres** projected to require 60–90+ GW of new generation capacity by 2030, represents over half of all projected U.S. load growth – Mainly onsite G2P – Hyperscalers demand CCS ready. **BECCS** “in the money with 45Q support”

MENA region - **Building the backbone infrastructure** - With CO₂ T&S developments led by NOC’s. Initial CO₂ volumes predominantly coming from pre-combustion sources

Asia – **Regional cooperation** to link source to sink, let’s take a closer look...



Laptops stowed,
trays up, and
seatbelts buckled...

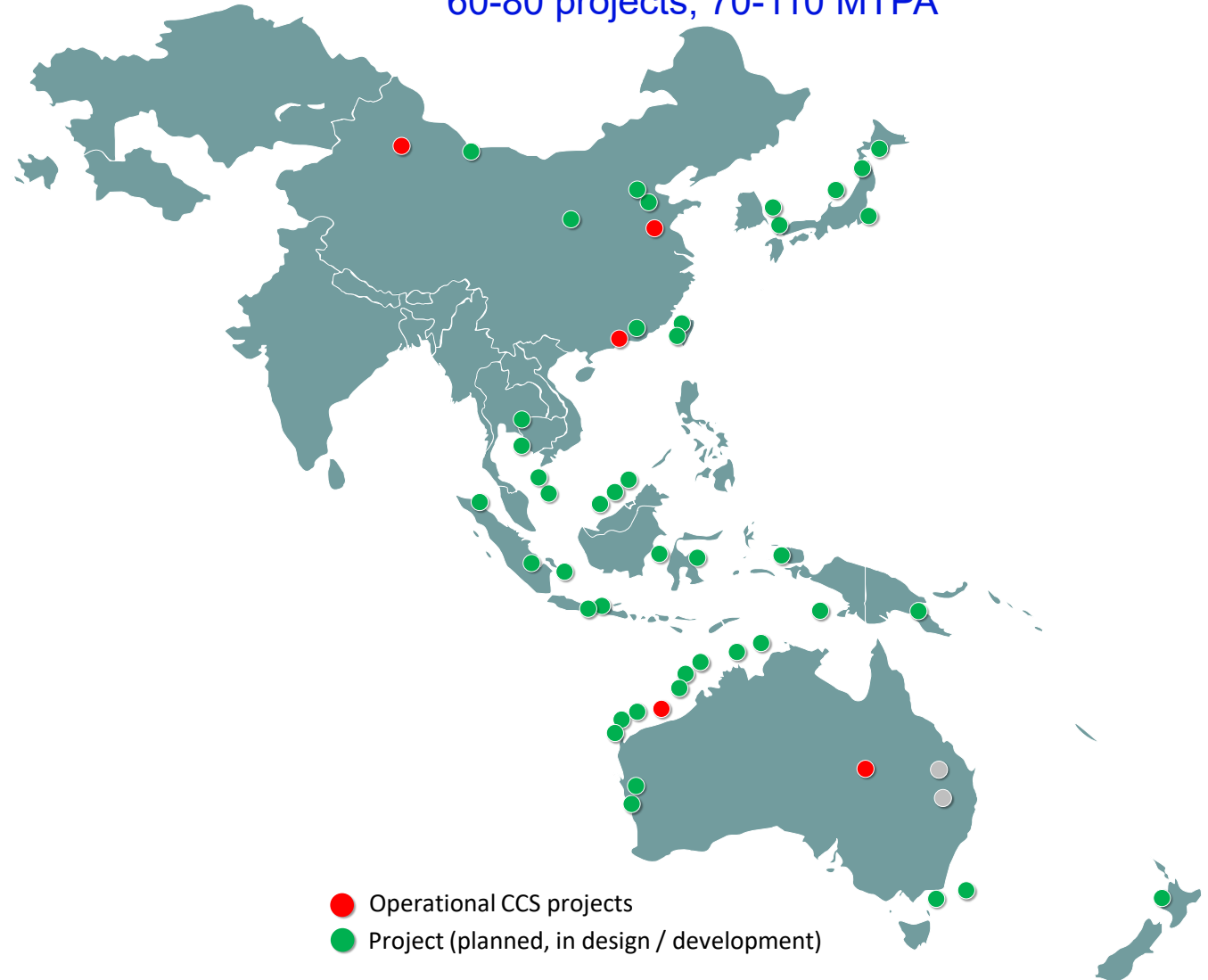
...We're off to Asia



Asia-Pacific: The epicenter of emissions — and the CCS scale-up challenge

- ≈ 60% global emissions
- Maturing regulations & policies
- Cross border CO₂
- High concentration of hard-to-abate industries

Asia CCS Hubs / Storage projects
60-80 projects, 70-110 MTPA



Asia Context

CONTEXT

- Priority of energy security, access and affordability along with the demand growth
- Emerging economies have low age industrial plants (i.e. coal) that are not retiring early – Need CCS
- Ambitious GHG reduction targets by 2030/35
- Adaptation to reality, practical routes to decarbonization

KEY CHALLENGES

- Immaturity of policies, regulations and incentives
- High costs a significant barrier
- **Complex value chain and need for regional alignment**
- Carbon markets at early stage



Asia Carbon Policies and Incentives

- Gov directly funding / supporting initial commercial projects (JP, KR, TW)
- Initial investments mainly around gas production driving initial storage projects
- JCM and CDR credit mechanisms expected to drive x-border projects
- 2026 CBAM EU / UK impact on certain products?

India

- CCTS in operation since 2024- Bridge to ETS
- \$2.2 Billion over 5 years Gov funding funds
- 2030 60\$ / ton Carbon Tax
- 2030 45% emissions intensity reduction

SINGAPORE

- 2026 45 \$ / ton Carbon Tax
- Technology funds
- 2030 50-80 \$ / ton Carbon Tax
- 2035 45% GHG reduction

MALAYSIA, INDONESIA

- MY VCM (2023)
- MY minor incentive on CCS activities
- Indonesia 2024 CCS Regulation
- Marginal carbon tax
- MY 2026 Carbon tax, target Steel, Iron and Power
- 2035 45% GHG reduction
- 2030 32-45% GHG reduction
- 2033 gov target to decarbonize power

JAPAN, KOREA & TAIWAN

- Japan 9 CCS Gov funded projects
- Korea Gov funded CCS (Domestic & int.)
- K-ETS – Strengthening
- Taiwan Gov funded CCS (Domestic & int.)
- JP 2026 GX-ETS CDR on ETS
- KR 1 b\$ fund
- Carbon Fee – ETS Pilot 2026 Full implementation 2027-28
- JP 2035 60% GHG reduction
- 2033 Power sector joints GX-ETS
- Kr 2030 40% GHG reduction,
- 2035 40% GHG reduction,

AUSTRALIA

- Safeguarded Mechanism
- ACCUs (22\$ / ton), projection of 50\$ by 2030
- Gov projects funds / technology support
- Future Gas Strategy – Capacity Invest. Scheme
- Cross border CO2 agreements
- 2035 62-70% GHG reduction

Singapore – S-Hub

State-orchestrated, industry-executed

- S-Hub is Singapore's flagship cross-border CCS project, led by Shell and Exxon., in partnership with the Singapore Economic Development Board (EDB).
- Capture and permanently store ≥ 2.5 million tonnes of CO₂ per year by 2030.
- Government-backed feasibility and planning support via EDB and EMA.
- Regional Partners
 - Indonesia – MoU June 2005
 - Malaysia – MoU January 2005
 - Japan – MoC June 2024
 - Australia – MoU 2020 plus G2G 2026 in development (Treaty framework for cross-border CO₂ T&S in Australia)
 - Brunei – (Shell) MoU Oct 2022
- Industrial Participants Emitters from Singapore's chemicals, energy, power, and waste sectors engaged for sequestration potential.



Dec 2023

MoU signed between S-Hub and EDB to jointly plan the CCS network

March 2024

Official appointment of S-Hub as Government's CCS Lead Developer; feasibility and engineering studies underway

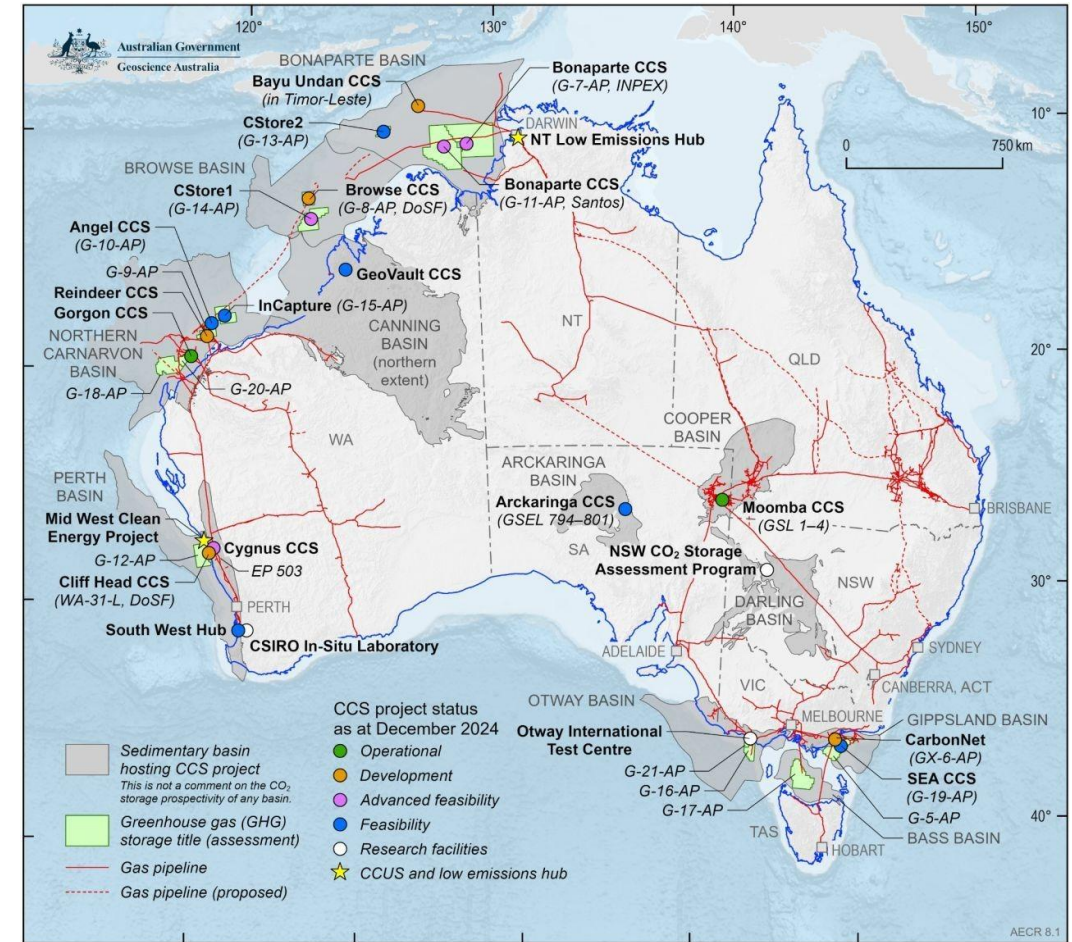
2024 - 2026

Ongoing assessment of CO₂ aggregation, cross-border transport logistics, and storage options. MoU's with regional partners

Australia

Market-led, private-developer model, supported by regulatory enablement and government grants

- Massive geological CO₂ storage capacity (~31 Gt sub-commercial + ~470 Gt undiscovered). CCS is designated a critical pillar of Australia's pathway to net-zero by 2050.
- Government + Industry Co-Funding: Supports CO₂CRC programs, CSIRO R&D, and emerging hub projects
- The Safeguard Mechanism sets declining emissions limits for Australia's biggest industrial emitters, requiring them to cut emissions or purchase credits.
- Enabling Environment:
 - Removing regulatory barriers for CO₂ import/export, Australia has legalized transboundary storage activity opening storage market to international projects.
 - Creating offshore greenhouse gas storage acreage licenses. Australia released 10 new offshore storage areas in 2023 across seven basins.
 - Establishing federal and state-level frameworks



On 12 June 2024, the Queensland Government banned all greenhouse gas (GHG) storage and injection activities in Queensland's Great Artesian Basin (GAB). Pipelines routes from the GPIInfo petroleum database. DoSF: Declaration of an identified Greenhouse Gas Storage Formation.

2019

Gorgon CCS project begins commercial operations, up to 4Mtpa capacity

2024

Moomba CCS begins commercial operations 1.7Mtpa

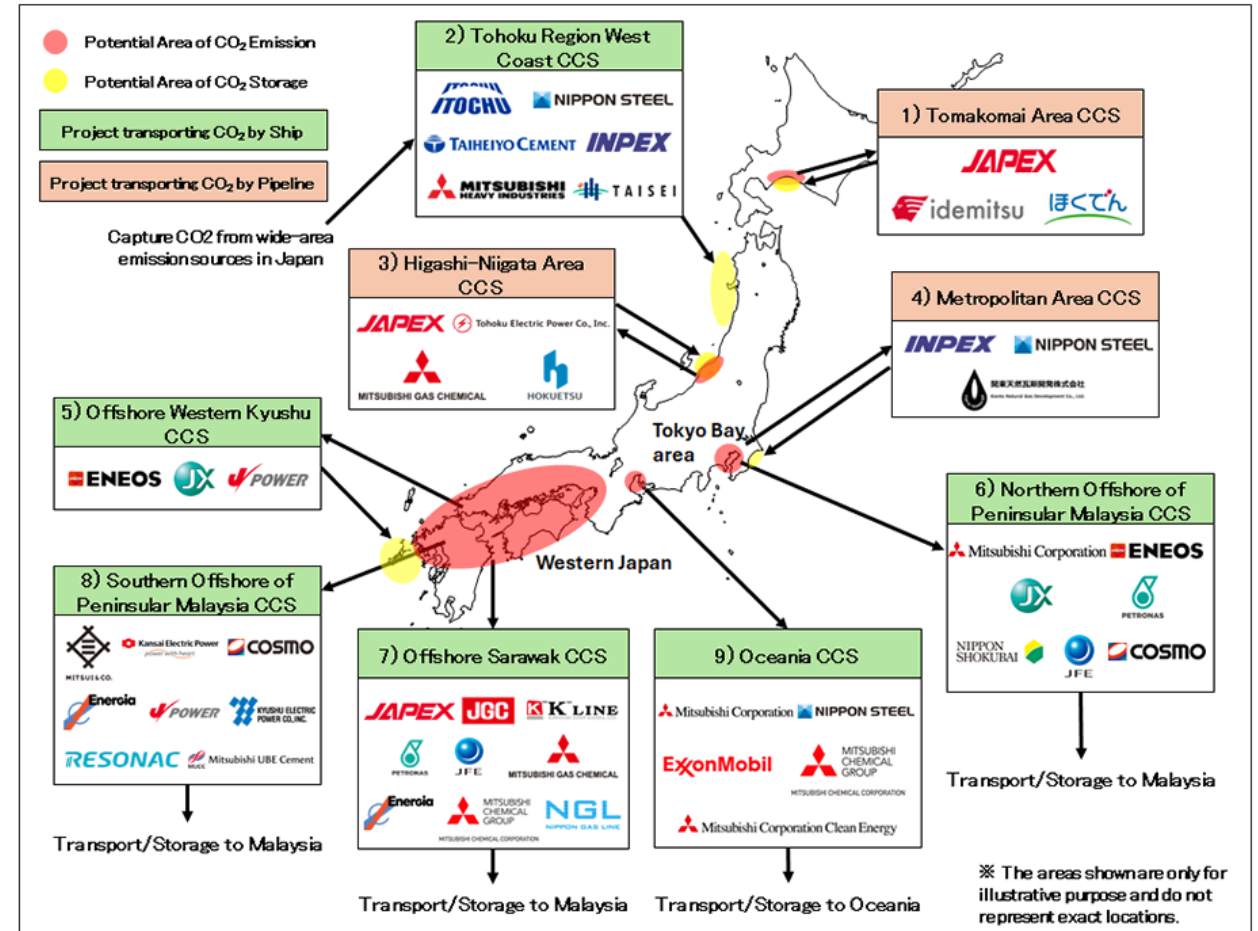
2030

43% emissions-reduction target for national greenhouse gas emissions below 2005 levels.

A closer look at Japan- 9 Advanced CCS projects

State-coordinated, fully integrated value-chain approach

- The Advanced CCS Initiative was initiated in 2023 by JOGMEC (Japan Organization for Metals and Energy Security) under the oversight of METI (Ministry of Economy, Trade and Industry),
- Governed under the CCS Business Law (2024) with the objective of enabling commercial CCS operations by 2030 to support Japan's 2050 carbon neutrality target.
- Focus on developing scalable, replicable CCS value chains across domestic and Asia-Pacific sites. Hard-to-abate sectors (steel, cement, refining, power) and international CO₂ transport partnerships.
- Phase 1 support includes
 - Feasibility studies
 - Engineering design
 - Geological surveys
 - CO₂ transport and storage modelling



2023

Advanced CCS Initiative was in 2023 by JOGMEC (Japan Organization for Metals and Energy Security)

2025-2026

Feasibility, design, and permitting

2027 - 2029

Infrastructure development and testing

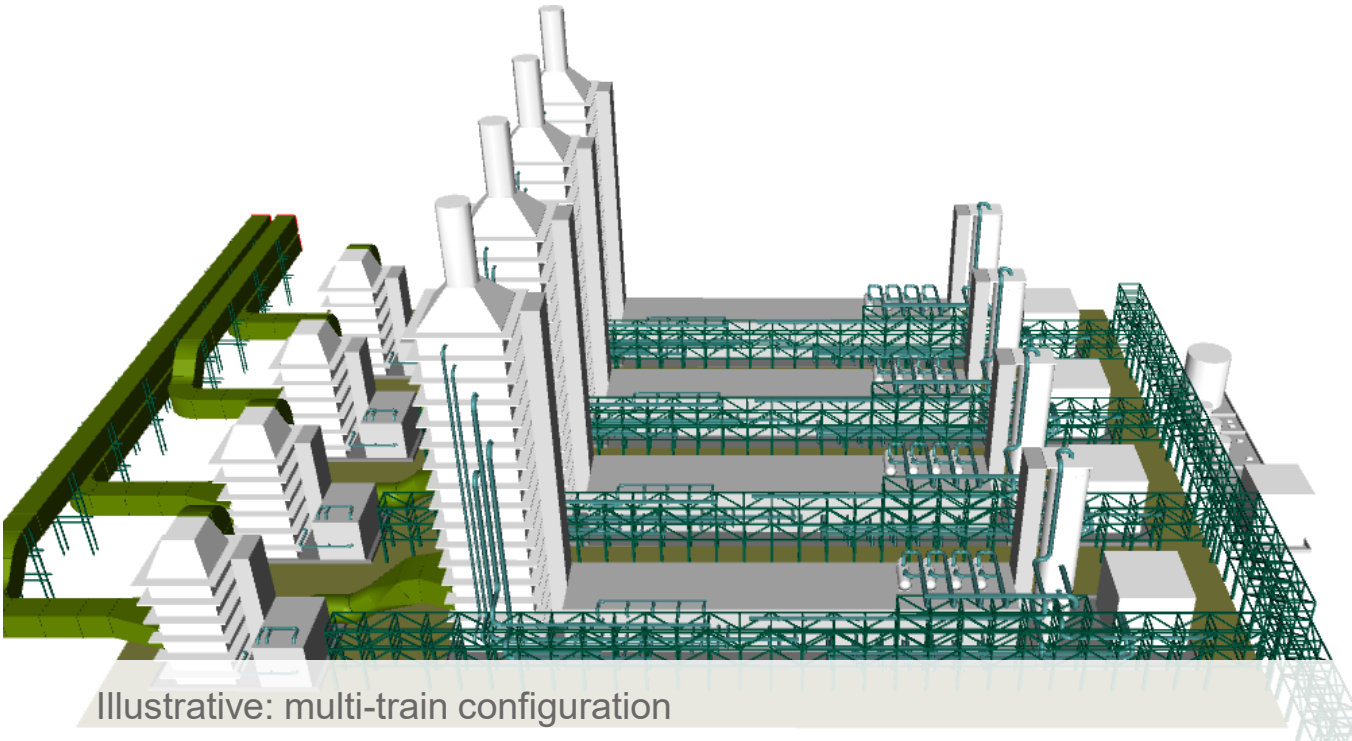
2030

Commercial launch of CCS operations.

Target Storage: 12–20 Mt CO₂/year by 2030!

Built on modularity - Standardized for mega-scale

~1 MTPA trains to improve delivery predictability for large scale CC



Long term accelerated delivery



Reduced CAPEX per ton installed capture capacity



Turbine-to-capture alignment



Target of 50% more prefabrication



Reduced on-site installation scope



Standardized building blocks

Thank you!

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Impact at scale

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