GLOBAL CCS UPDATE: PROGRESS, CHALLENGES, AND WHAT COMES NEXT

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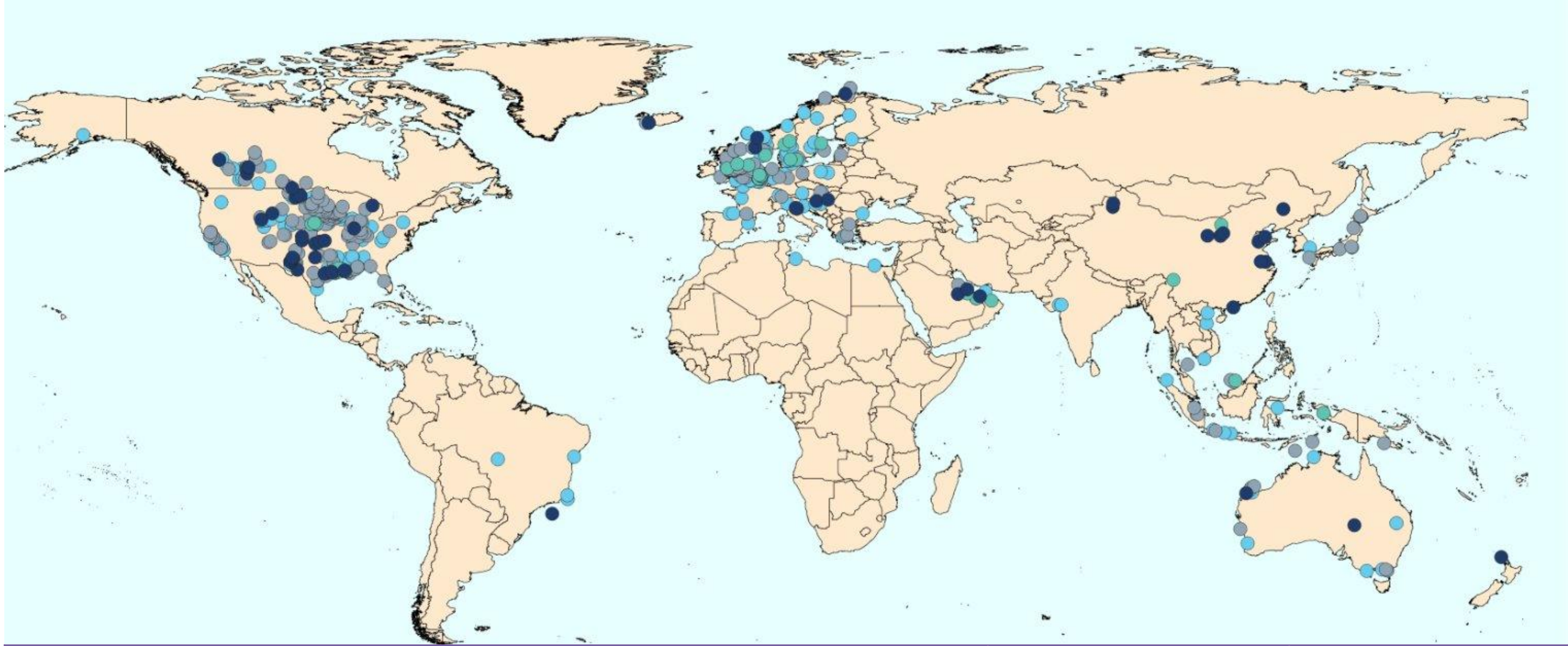
STATUS OF CCS: PROGRESS AND CHALLENGES

- **CCS momentum is accelerating globally**, driven by strong policy frameworks, industrial demand, and project deployment across multiple regions.
- **Over 700 CCS projects are in the pipeline**, but still short of gigatonne-scale needs.
- **CCS is expanding into new sectors** like cement and natural gas-fired power generation.
- **CO_2 transport infrastructure is evolving**, with increase in pipeline, shipping and storage capacity.
- **Financial sector engagement is deepening**, with first-of-a-kind non-recourse debt financing now being secured (e.g. Net-Zero Teesside).
- **Regulatory progress is evident** in emerging economies (e.g. Brazil, Malaysia), improving permitting, liability frameworks, and cross-border cooperation for CO_2 transport.
- **Uncertainty remains**, especially with U.S. policy shifts, and limited public awareness.
- **To meet 2030 climate targets**, the global CCS community must stay the course by accelerating deployment, bridging financing and regulatory gaps, and fostering international collaboration.

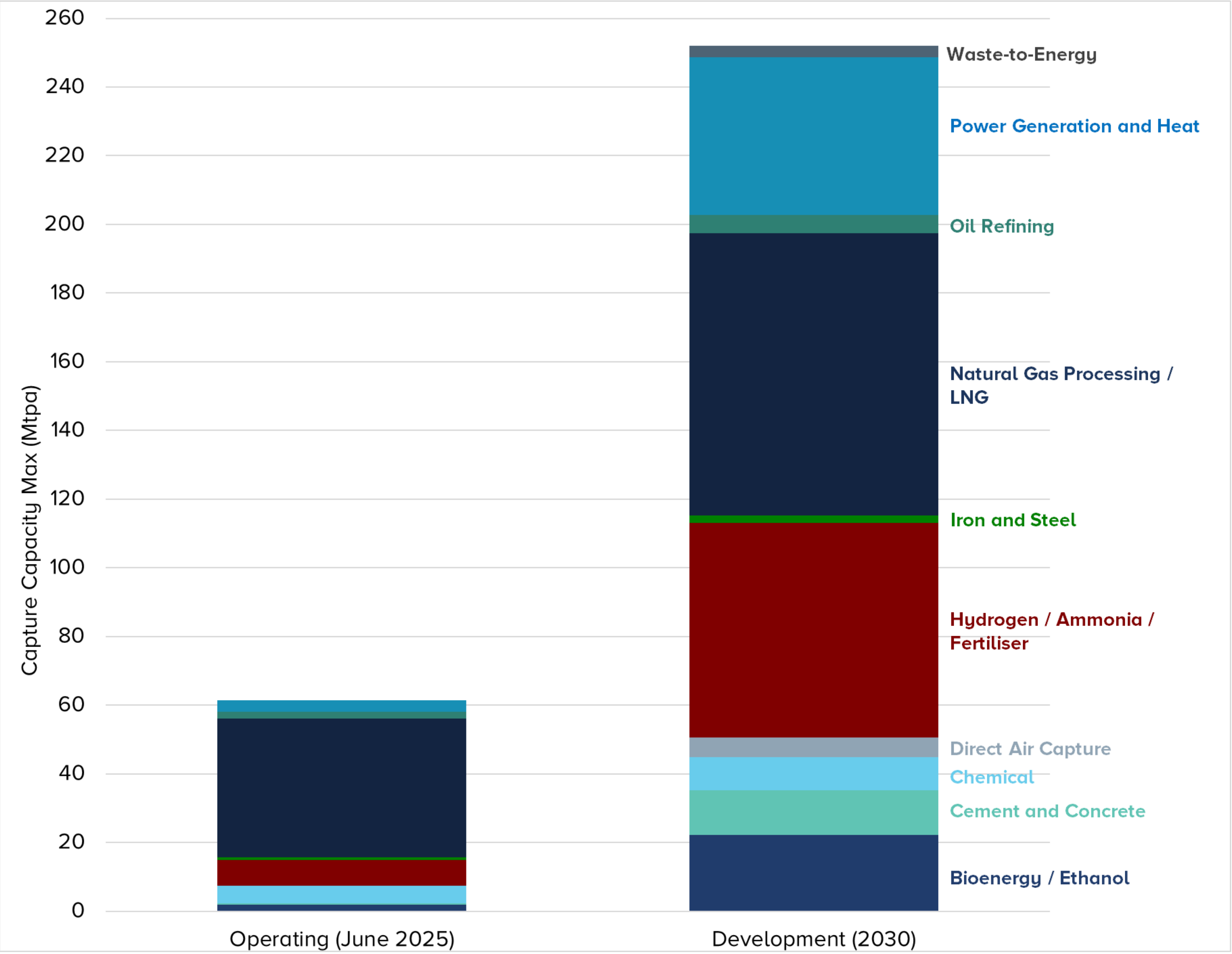
GLOBAL COMMERCIAL CCS FACILITIES



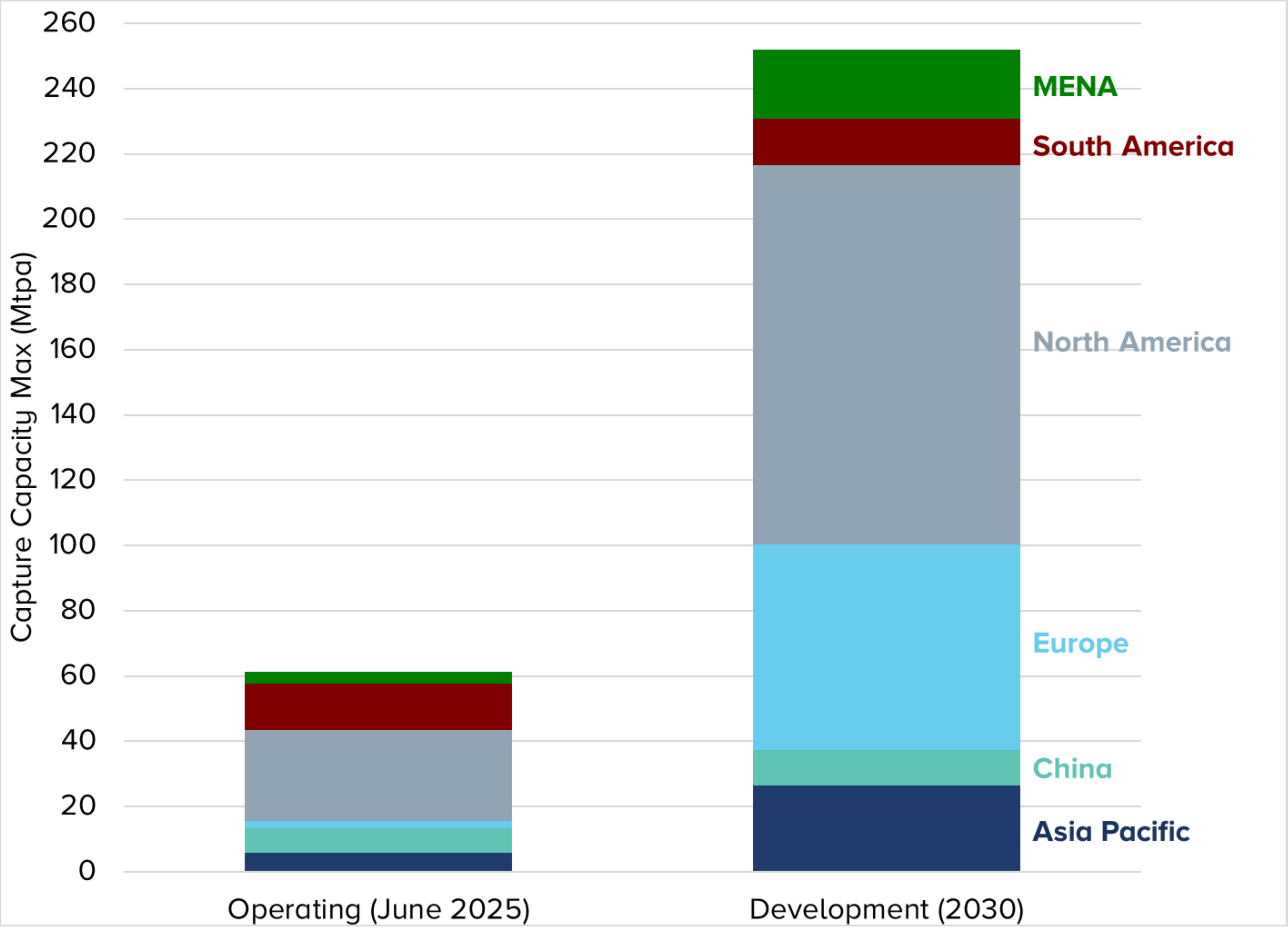
Global CCS Facility Pipeline (June 2025)	Number	Capture Capacity (Mtpa)
Operational	70	61
Under construction	48	48
Total project pipeline (including under development)	742	482

PROJECTS IN DEVELOPMENT

PROJECTS IN DEVELOPMENT BY INDUSTRY



PROJECTS IN DEVELOPMENT BY REGION



As of June 2025. Development (2030) includes projects that are Operational, Under Construction, and in Advanced Development
It excludes projects with an operational year beyond 2030 or those still under evaluation

****Excludes CO_2 Transport and/or Storage projects as there is no capture capacity***

EMERGING REGIONAL THEMES

Americas: CCS advancing across region at different speeds.

Europe & UK: Pivotal year sees policy alignments, tangible project progress.

APAC & India: Critical role of CCS creating both opportunities and challenges.

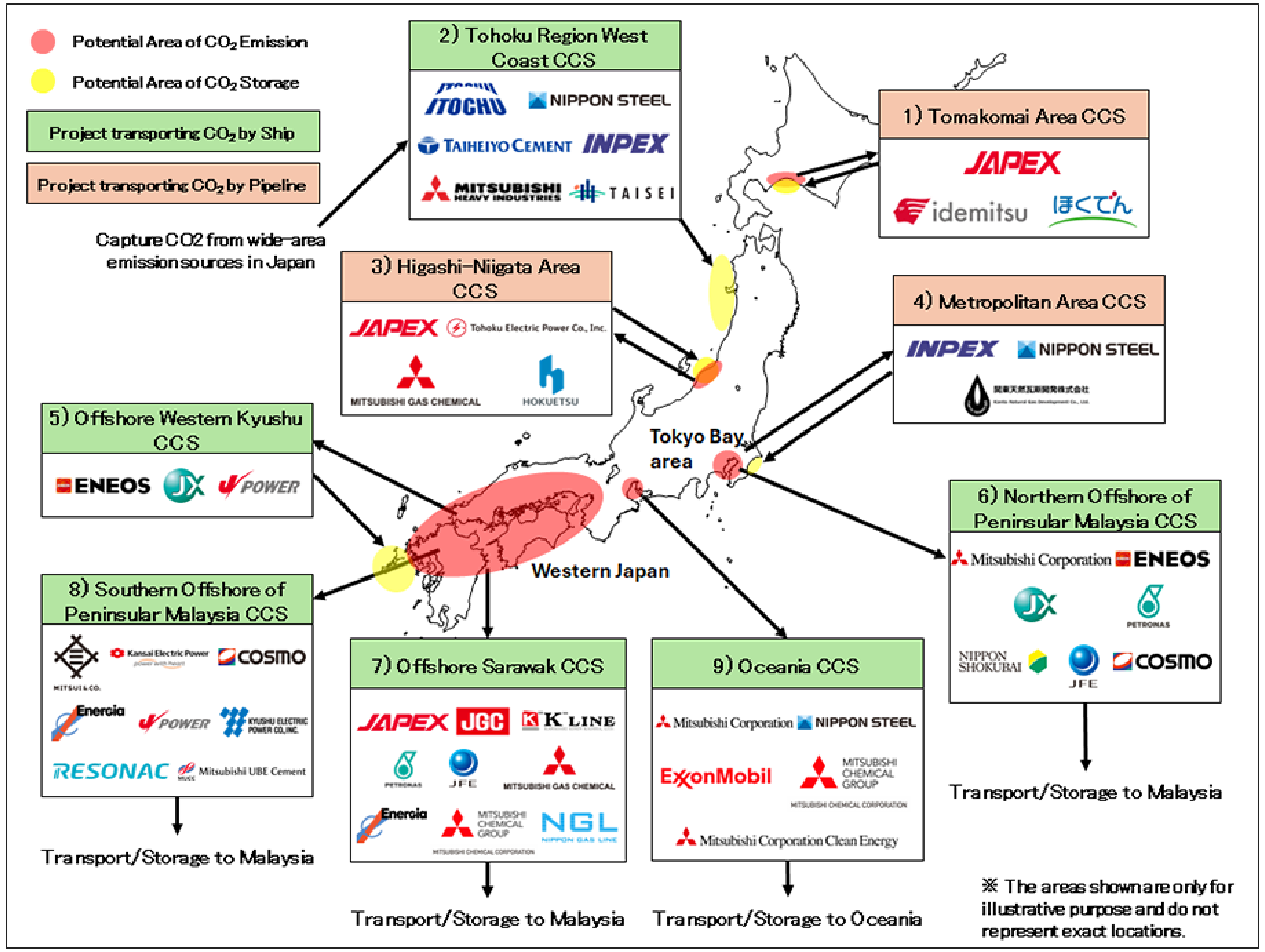
Middle East and Africa: Ambition in motion as focus shifts from strategy to progress.

Japan: Clear policy shifting CCS closer to commercial reality.

China: Entering new phase led by large project developments.

CCS PROGRESS IN JAPAN

- New CCS Business Act (2024) provides clear legal framework for storage, transport, and investment.
- Nine CCS projects underway, with domestic and cross-border storage (e.g. Malaysia) planned.
- Japan is leading in CO_2 shipping innovation, with standardised vessel design and demonstration tests.
- Significant R&D funding targets low-concentration capture and BECCS/DAC readiness.
- Key challenges: limited storage, cost gaps, and need for stronger public engagement.



REGIONAL HIGHLIGHTS: AMERICAS

United States:

- The US continues to lead the global CCS facility count and EPA is reviewing 62 projects with 181 Class VI applications under review
- Federal and state policy incentives have been sustaining CCS investment, but policy changes and funding cuts at the Federal level are creating uncertainty
- Bright spots: continued 45Q support, EPA is prioritizing Class VI primacy, CCS has a role in decarbonizing power needed for AI data centers (NGCC+CCS)

Canada:

- Canada continues to show leadership and commitment to CCS bolstered by their recent election
- A combination of mandates & policies drives CCS development in Canada
- Provinces like Alberta are heavily invested in the commercial development of CCS, including Direct Air Capture

Brazil:

- Brazil is emerging as a global leader in CCS and is leading the way in South America
- CCS legislation in Brazil is a milestone for South America
- Brazil will host COP30 and recognizes carbon management as an essential climate mitigation approach
- Petrobras continues successful CCS operations at its Santos Basin pre-salt reservoirs, 13M tonnes of CO_2 injected in 2023

REGIONAL HIGHLIGHTS: EUROPE & THE UK

- Decarbonisation policies & robust CCS market anticipation drive new projects
- CO_2 transport & storage facility development surged last year
- CCS a key focus in climate & industrial policy agendas
    - Net-Zero Industry Act
    - EU Industrial Carbon Management Strategy
    - EU Clean Industrial Deal
    - £21.7 billion support for UK East Coast (Teesside) and West Coast (Hy-Net) clusters, followed by £9.4 billion of funding for Acorn and Viking clusters
- 10 countries, in addition to the EU, introduced or announced industrial carbon management strategies or roadmaps for CCS deployment
- Historic EU – UK Reset Summit resulted in decision to work towards linking Emission Trading Schemes and collaboration on new technologies, including CCUS
- Northern Lights first shipment completed, and FID on the expansion has been taken

REGIONAL HIGHLIGHTS: APAC & CHINA

Australia:

- With the election of the Australia Labour Party, the political environment has shifted in a positive direction
- GHGT18, to be hosted in Perth in 2026, presents an opportunity to build advocacy momentum in support of CCS

Southeast Asia:

- Storage hubs & cross-border CCS projects are a major focus
- Transboundary transport & storage of CO_2 is a major focus area

China:

- CCUS plays a prominent role in climate policies, including plans to reduce emissions from coal-fired power plants
- Projects are scaling up and demonstrating significant progress:
    - The world's largest oxy-fuel project in cement sector now operational
    - Huaneng Power will soon start up and operate the world's largest coal power CCS project
    - Phase 1 of Xinjiang Oilfield coal power project is under construction
    - CNPC began construction of China's largest CO_2 pipeline
    - CNOOC initiated Asia's first offshore CO_2-EOR project

REGIONAL HIGHLIGHTS: MIDDLE EAST & AFRICA

Middle East:

- CCS policy is advancing quickly in this region. For example:
    - UAE's Industrial Decarbonisation Roadmap includes CCS
    - Saudi Arabia is outlining ambitious targets
- Carbon markets are being established to support deployment
- Collaboration is growing, and countries are establishing cross-border projects & CCS hubs

Africa:

- Interest is picking up in Africa, and some countries are beginning to evaluate opportunities, including Kenya, South Africa, Nigeria, and Egypt
- The first Africa Carbon Capture, Utilisation and Storage (CCUS) Forum was held in Morocco this year and brought together more than 100 stakeholders from across Africa, including representatives from Morocco, Mauritania, Tunisia, Kenya, Ghana, Nigeria and Egypt

CARBON MANAGEMENT CHALLENGE

Global carbon management initiative aligned with the Paris Agreement and high-level ministerial at COP, building on existing global collaborations, and with a stakeholder engagement mechanism.

Advancing projects by 2030 to manage

1 gigatonne of CO_2 annually

Workstream 1

Developing Country Project Finance

Co-Leads
Kenya
Indonesia

Workstream 2

Project Deployment and Tracking

Co-Leads
Brazil

Workstream 3

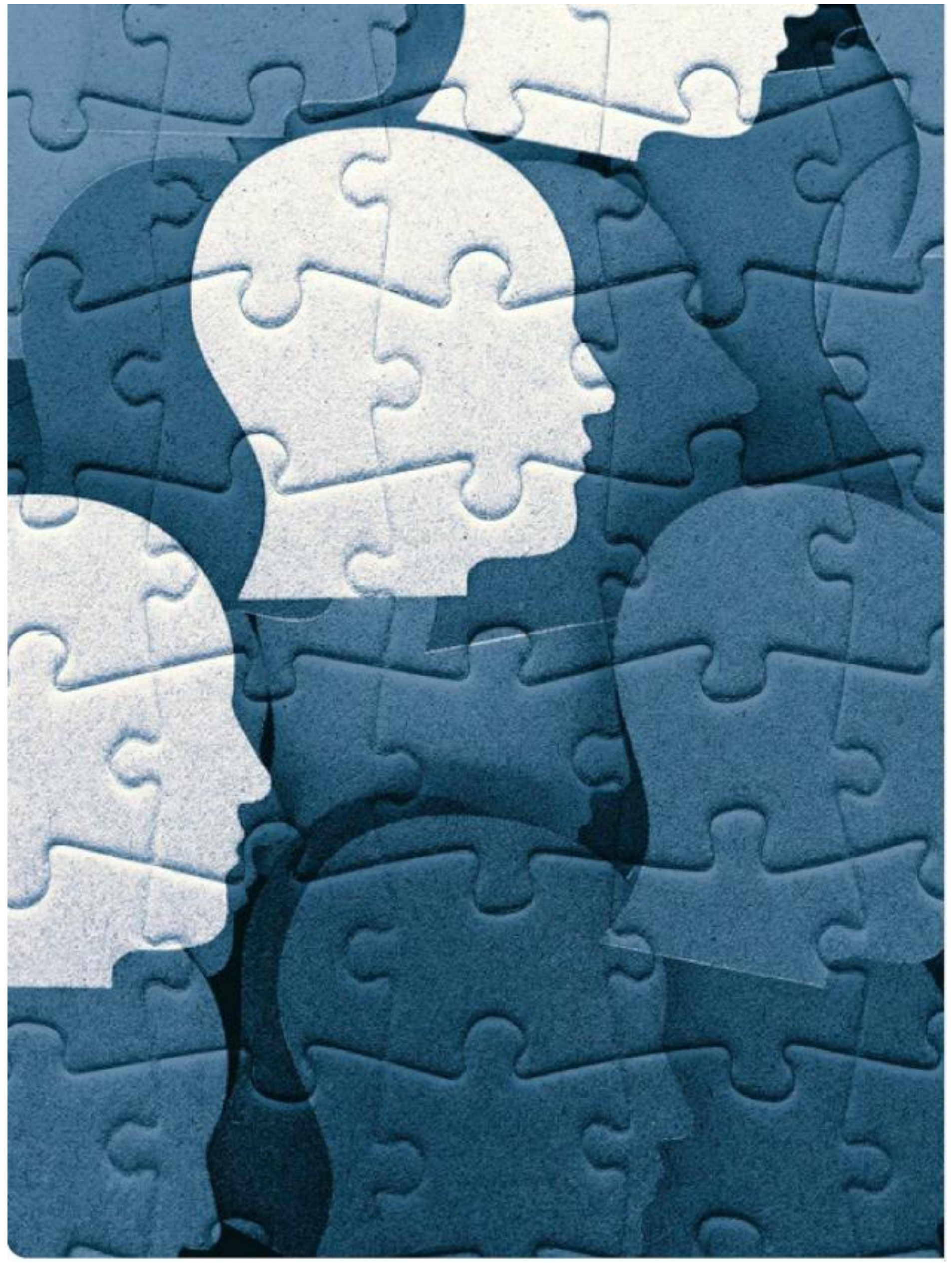
Strategic Comms and Engagements

Co-Leads
Saudi Arabia
UK

22

Countries plus the European Commission

LOOKING AHEAD



Scaling up deployment remains the top priority.
Gigatonne-scale CO_2 capture is essential to keep net-zero pathways within reach.

Finance is maturing but remains uneven.
First-of-a-kind non-recourse deals are emerging, but many regions still face uncertain investment conditions.

Policy and regulation must keep pace.
While progress is evident, recent policy shifts (e.g. in the U.S) highlight the need for stability and long-term commitment.

Public engagement and trust are crucial.
Social license will shape the pace and political durability of CCS deployment.

Let's stay the course—together.
In a moment of both momentum and uncertainty, accelerating progress will require active collaboration, clear policy signals, and engagement from all stakeholders.