Comparing international incentives for offshore energy development

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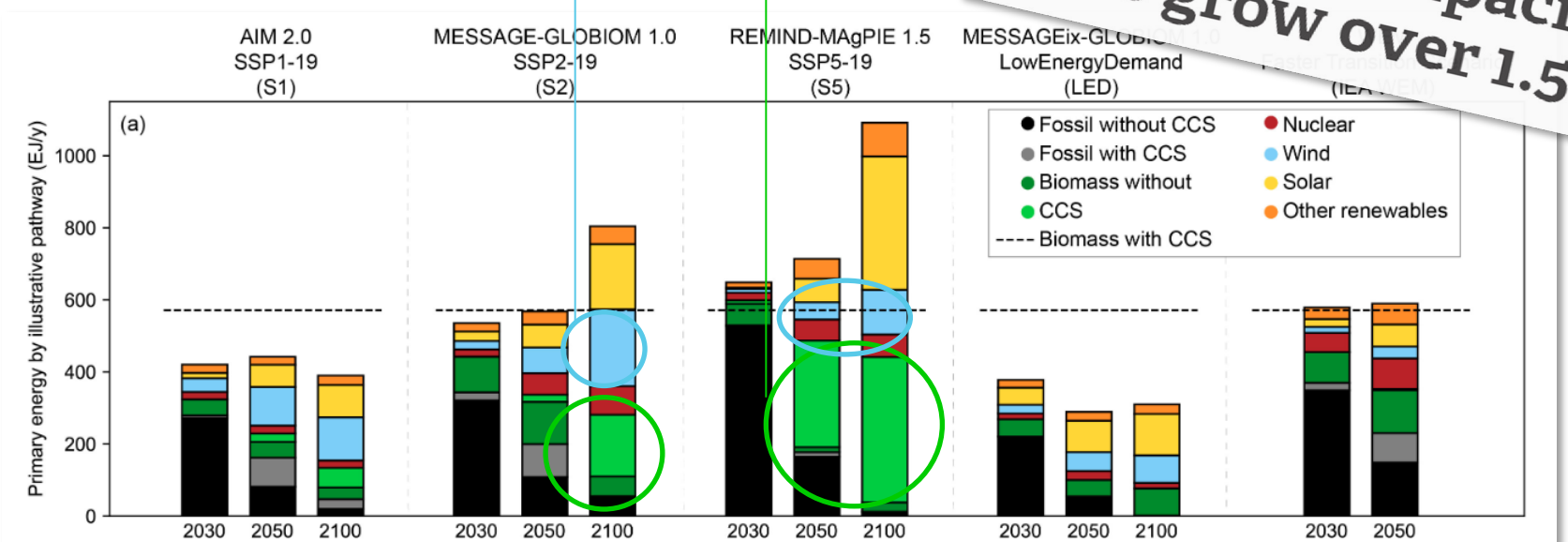
Offshore energy is key:
The importance of wind and CCS

COP28: 120 countries back goal to treble renewables capacity, but fears grow over 1.5C goal



In all IPCC scenarios, fossil energy generation is decreased, replaced by low carbon energy solutions – CCS, nuclear, wind, solar and other renewables
(Figure 2.15 IPCC SR 2.15)

Energy development incentives: the basics

Traditional price support

Feed-in Tariff (FiT)

Market Premium (MP)

Sliding Premium (eg. Contract for Difference - CfD)

Tradeable Green Certifications (eg. Renewable Obligation Certificates - ROCs)

Other forms of support

Capacity Market (CM)

Regulated Asset Base (RAB)

Guarantees, loans and subsidies

Status check: incentivised v market-based energy investment

Critical drivers for investment decisions by strategic and financial investors

Investment with state support

- State support schemes remain major drivers for investment in renewable electricity generation assets
- Most countries apply a diverse combination of measures:
  - price driven strategies and instruments
  - capacity driven strategies and instruments
  - Tax measures
  - Funding support
- Assets have different support scheme profiles allocated by law, which determine commercial viability
- Investment decisions require asset-specific characterisation within the existing (potentially grandfathered) support measures and schemes

Exposure to market risks

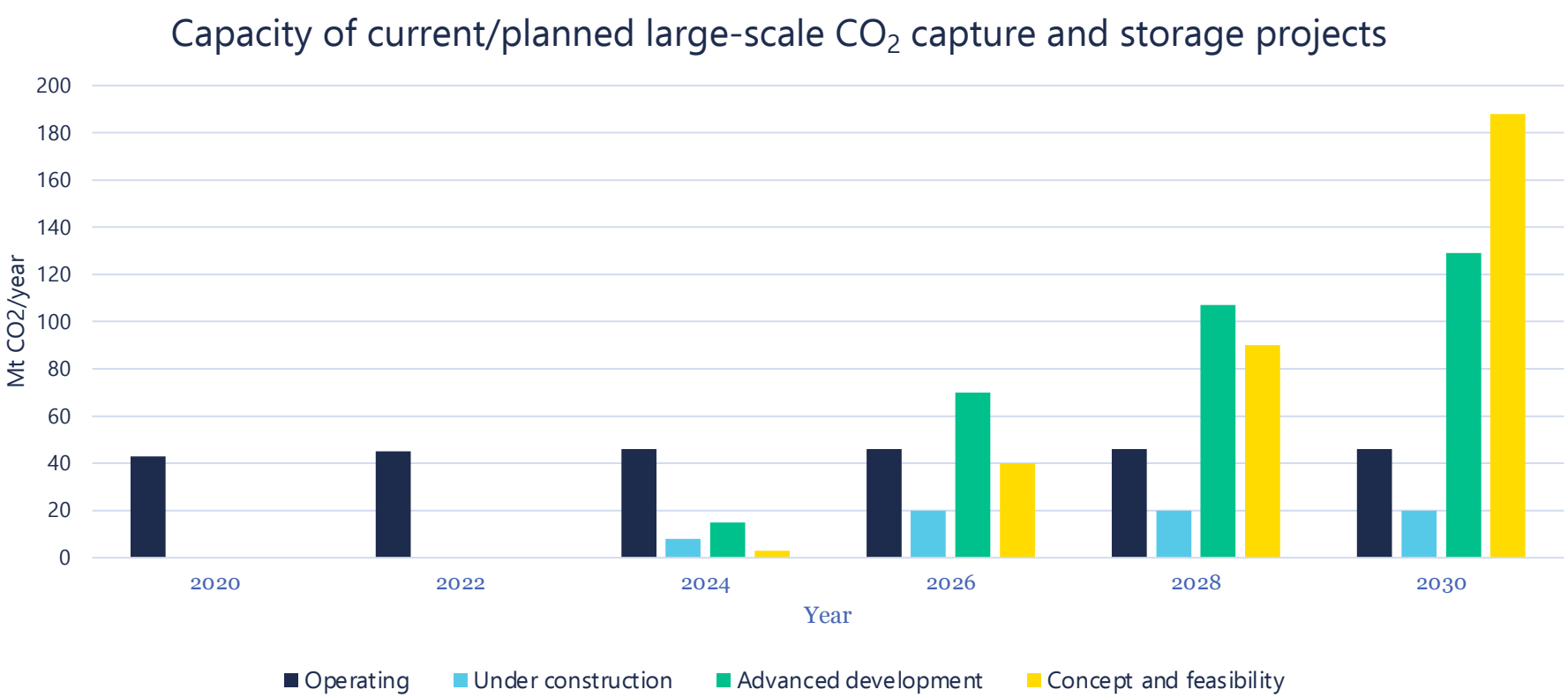
- Increasing numbers of clean energy assets either win tenders based on **'zero subsidies'** or run past the expiry of legacy state support
- Some regimes **include but mitigate market risk** by offering fixed price state support (eg, CfDs)
- Being exposed to market risks that are **highly dependent on regulatory decisions** can make investment in renewable assets unviable
- PPAs are gaining momentum in mitigating this risk (eg, large corporate PPAs being entered into by industrial players across Europe)

Offshore wind: recent EU examples

Key takeaways from German and Dutch tender procedures

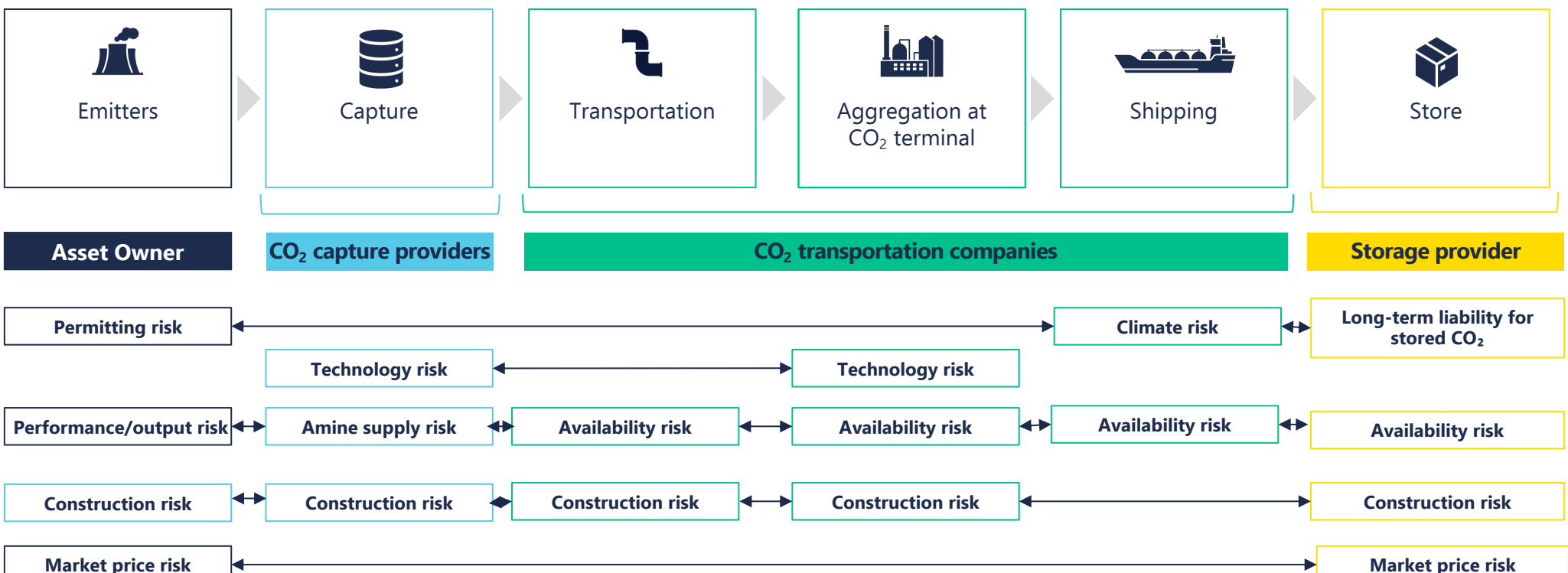
Subsidy vs subsidy-free tenders	• Tenders involving subsidies **must be based on price criteria** • However, the CEEAG now allow Member States to include **up to 30 percent of non-price criteria** in the selection criteria of their subsidy tenders • Subsidy-free tenders **may be based on non-price criteria** only, provided that **overcompensation** of the winning bidder is **prevented** • The **Member State government** is responsible for ensuring that there is no overcompensation when structuring a zero-subsidy tender
The EC's view of zero cent bids	• In its approval decision of the new German tender scheme, EC clearly stated that it is '*indispensable to differentiate zero-cent bids in order to **prevent overcompensation** due to further advantages accruing to operators of offshore wind installations,* **such as the offshore grid connection**' • This shows that the EC is aware of potential state aid implications of subsidy-free bids, in particular potential overcompensation • All subsidy-free tenders will therefore need to be structured in a way that **avoids overcompensation** of the winning bidder, eg because the winner is **not paying a seabed lease fee**, is granted **access to the grid** free of charge, or does not have to **compensate** the public authority for **costs** it incurred in relation to impact assessment and site studies

CCUS: investment landscape



CCUS incentives: targeting investment barriers

What makes CCUS different? The project chain



CCUS incentives: international models

Different approaches to overcoming investment barriers

UK Model
- Targets different elements of the chain
- Cluster-based competition

Dispatchable Power Agreement for emitters
- Constant availability payment
- Price support for dispatched energy

Regulated Asset-Based transport and storage
- Price and revenue-controlled support
- Guaranteed returns and incentivised availability
- Backed by legislative protections against uncontrollable risks

EU Approach
- Focuses on economy-wide carbon reduction incentives
- Supported by R&D grants

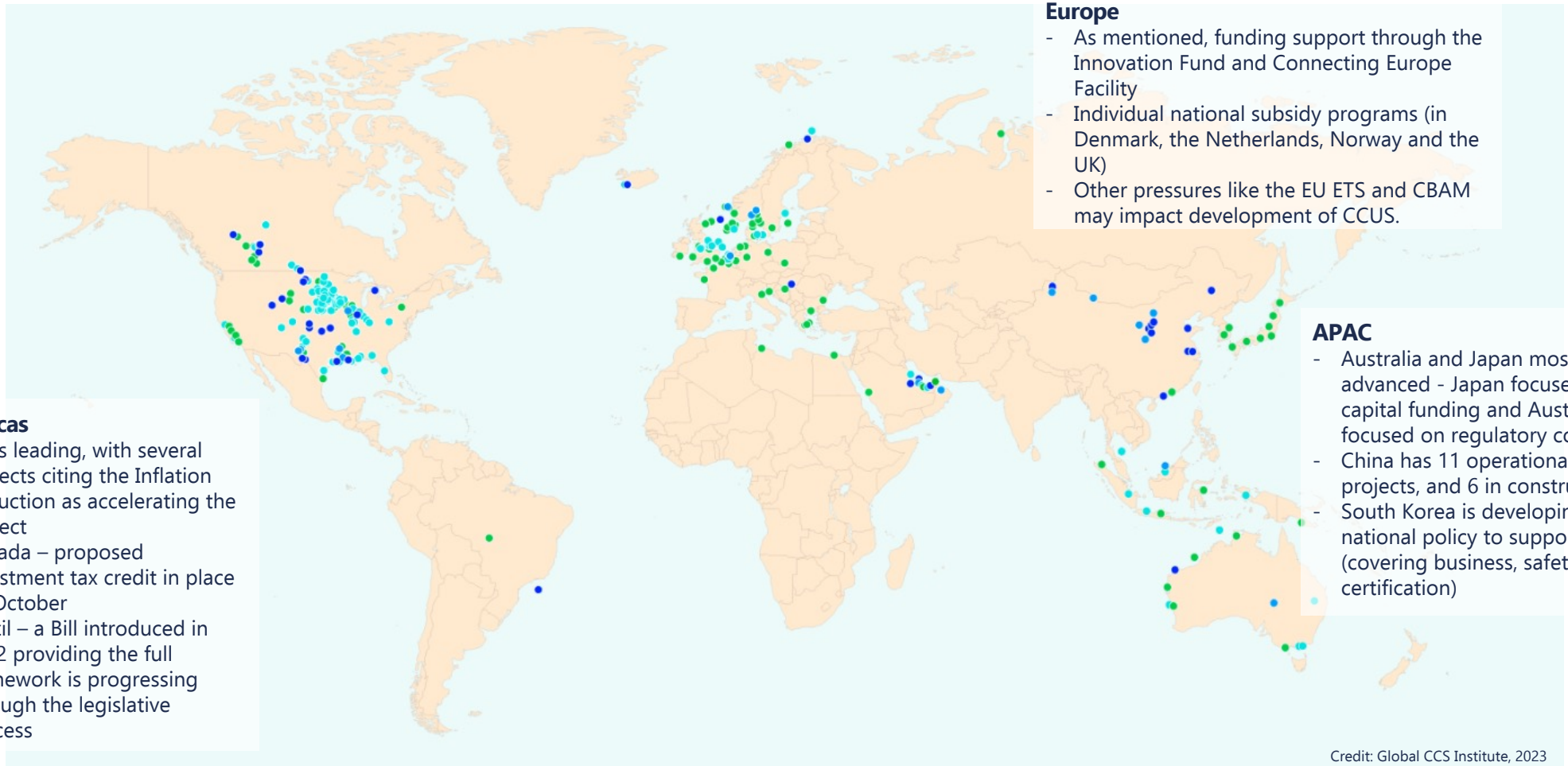
EU ETS-driven carbon price incentivises emitters to participate in CCUS

Connecting Europe Facility supports cross-border CO_2 transport networks.

Significant grants to support CCUS R&D and demonstration projects

US Approach
- Tax incentives support investment (subject to increasingly stringent requirements) in storage to flow through the chain

Inflation Reduction Act
Project developers can receive a 50 dollar per metric tonne of CO2 tax reduction where that CO2 is stored in dedicated storage sites.



Europe
- As mentioned, funding support through the Innovation Fund and Connecting Europe Facility
- Individual national subsidy programs (in Denmark, the Netherlands, Norway and the UK)
- Other pressures like the EU ETS and CBAM may impact development of CCUS.

APAC
- Australia and Japan most advanced - Japan focused on capital funding and Australia focused on regulatory controls.
- China has 11 operational projects, and 6 in construction
- South Korea is developing national policy to support CCUS (covering business, safety and certification)

Americas
- US is leading, with several projects citing the Inflation Reduction as accelerating the project
- Canada – proposed investment tax credit in place BY October
- Brazil – a Bill introduced in 2022 providing the full framework is progressing through the legislative process

Credit: Global CCS Institute, 2023

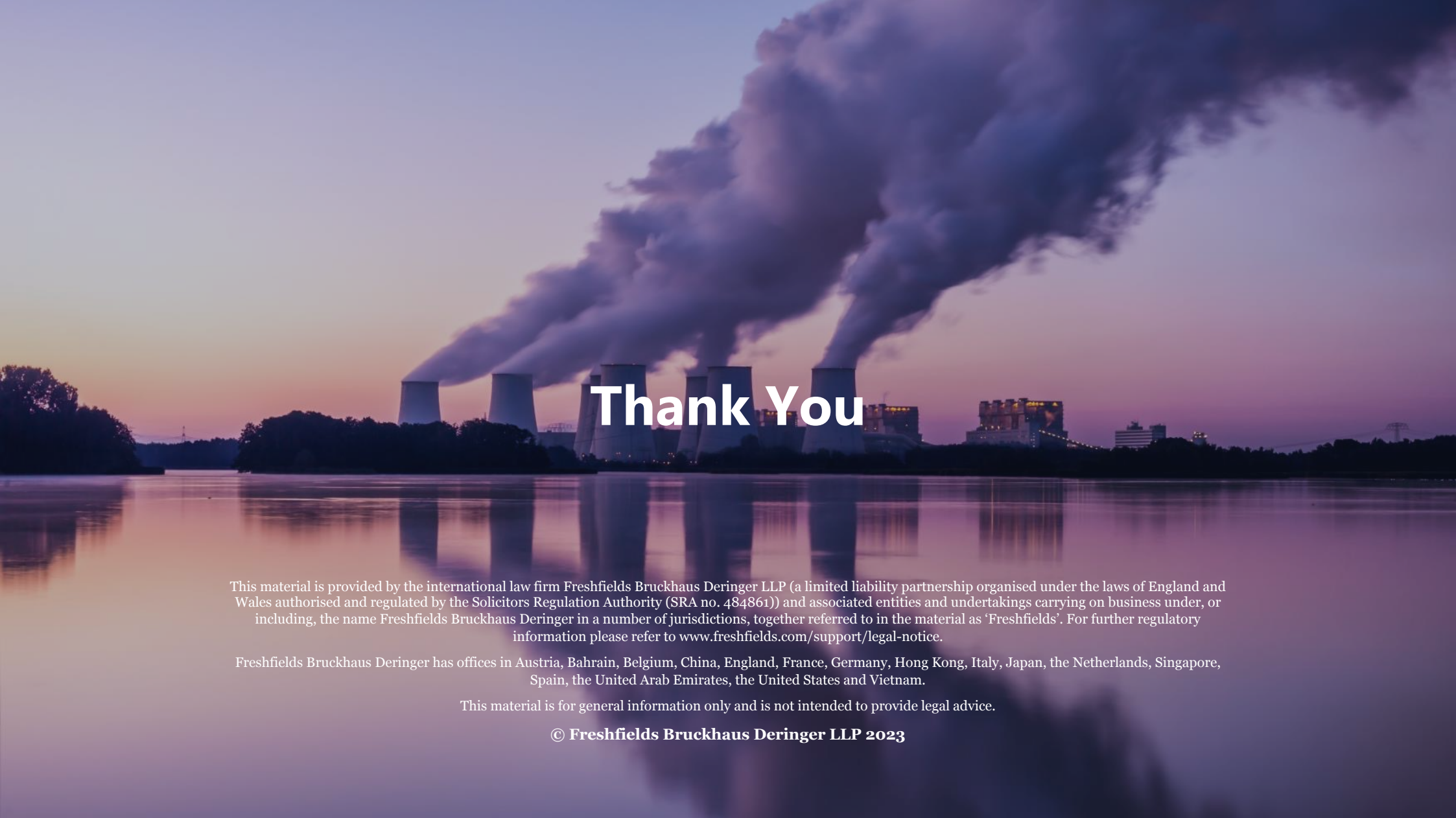
Operational: 41 projects

In Construction: 26 projects

Advanced Development & Early Development: 325 projects

Broader regulatory context

Beyond support schemes: examples of recent, relevant regulatory issues affecting investment returns



Thank You