

#2 INSURING CCUS AND CDR PROJECTS



MODERATOR

Lesley Harding

GLOBAL HEAD OF STRATEGIC PARTNERSHIPS,
ENERGY TRANSITION

LIBERTY MUTUAL

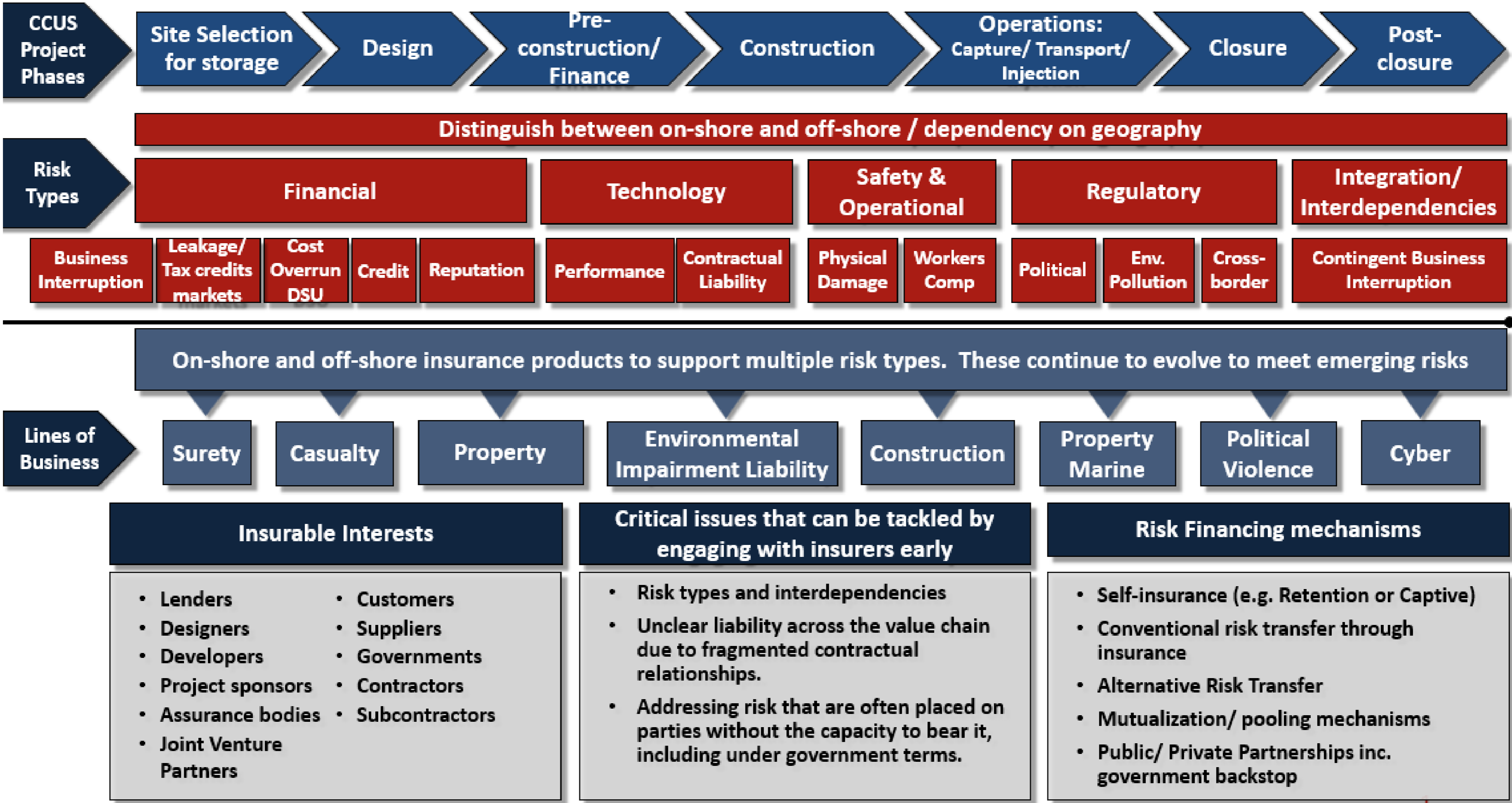
Lesley Harding is Global Head of Strategic Relationships, Energy & Transition Risk, and Global Clients Community Executive within Global Risk Solutions, Office of Underwriting, at Liberty Mutual Insurance.

Lesley is responsible for the execution of Liberty Mutual's global Energy and Transition Risk strategy, including profitability, growth, and strategic market positioning. She leads global industry-specific strategic planning efforts and works across the business to strengthen Liberty Mutual's presence as a partner of choice for clients operating in complex and evolving energy markets. In her role as Global Clients Community Executive, Lesley provides senior sponsorship and strategic leadership across Liberty Mutual's global client community. She acts as an executive-level liaison with major brokers and key global and regional clients, supporting collaboration, relationship management, and the development of client-led solutions across the organisation.

Lesley brings more than 30 years of experience in the energy insurance and risk management sector. Lesley held senior roles at Texaco Inc., Swiss Re, and Willis, and joined Liberty Mutual in 2020 from BP, where she served as Vice President and Global Head of Insurance Risk Management.

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Risk Framework for CCS





Raffaella Rossi

INSURANCE MANAGER
EQUINOR

Raffaella Rossi is an Insurance Manager at Equinor, responsible for the company's low-carbon solutions portfolio, including CCS projects. She advises Northern Lights and supports other Equinor projects as they mature. With over a decade of experience across the energy sector and a background as an insurance broker, she collaborates with industry stakeholders to help shape the role of insurance in emerging CCS value chains.

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Scene Setting: CCS project risks, stakeholders and their liabilities, and need for insurance

Knowledge Sharing 2026, CCS&CDR Summit

Rafaella Rossi, Insurance Manager at Equinor



Context & Framing

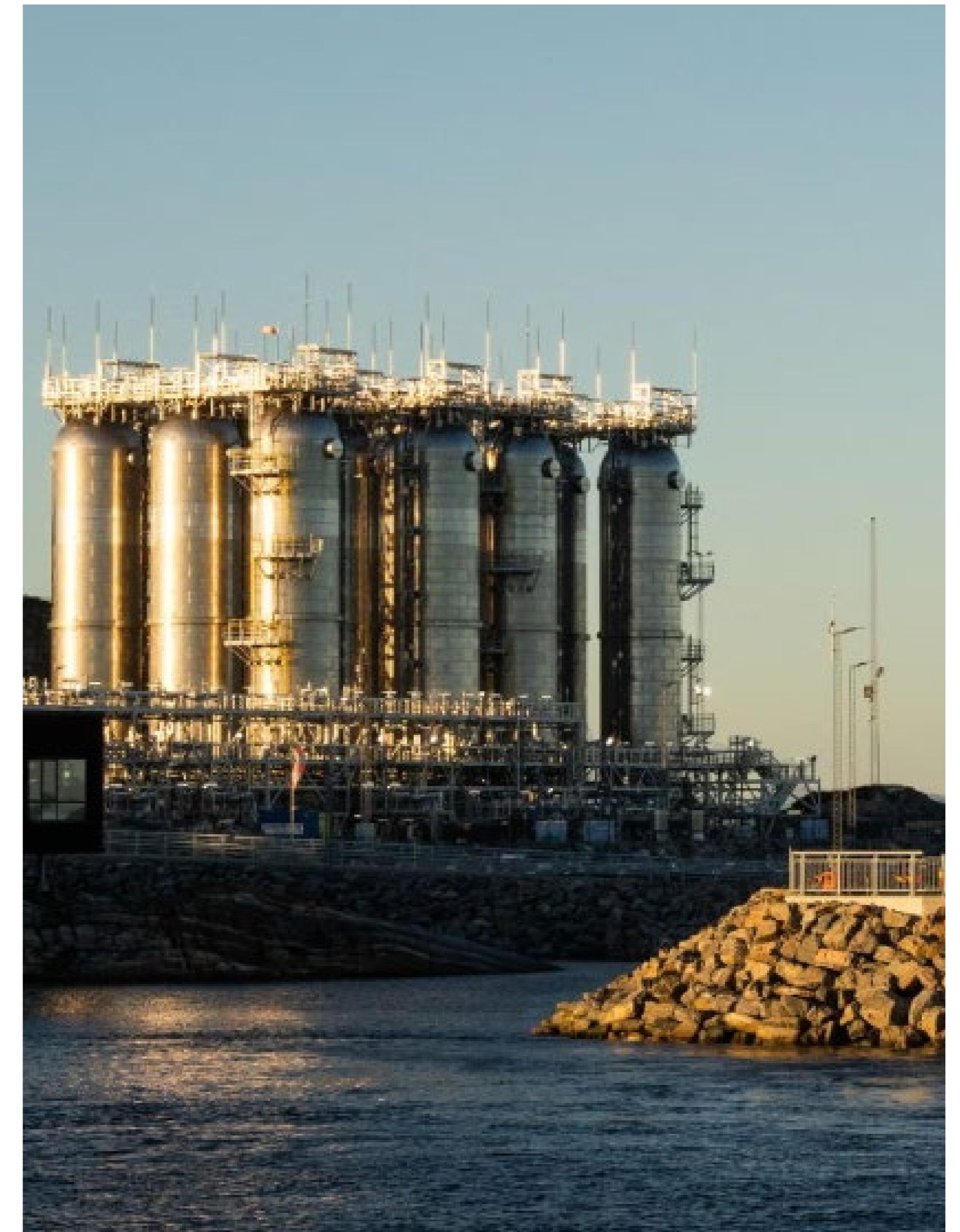
CCS is a young sector with **emerging risks, evolving regulation,** and a **complex stakeholder landscape.**

Insurance plays an enabling role by helping **build resilience, meet regulatory obligations, provide confidence for stakeholders** and **facilitates investment support.**



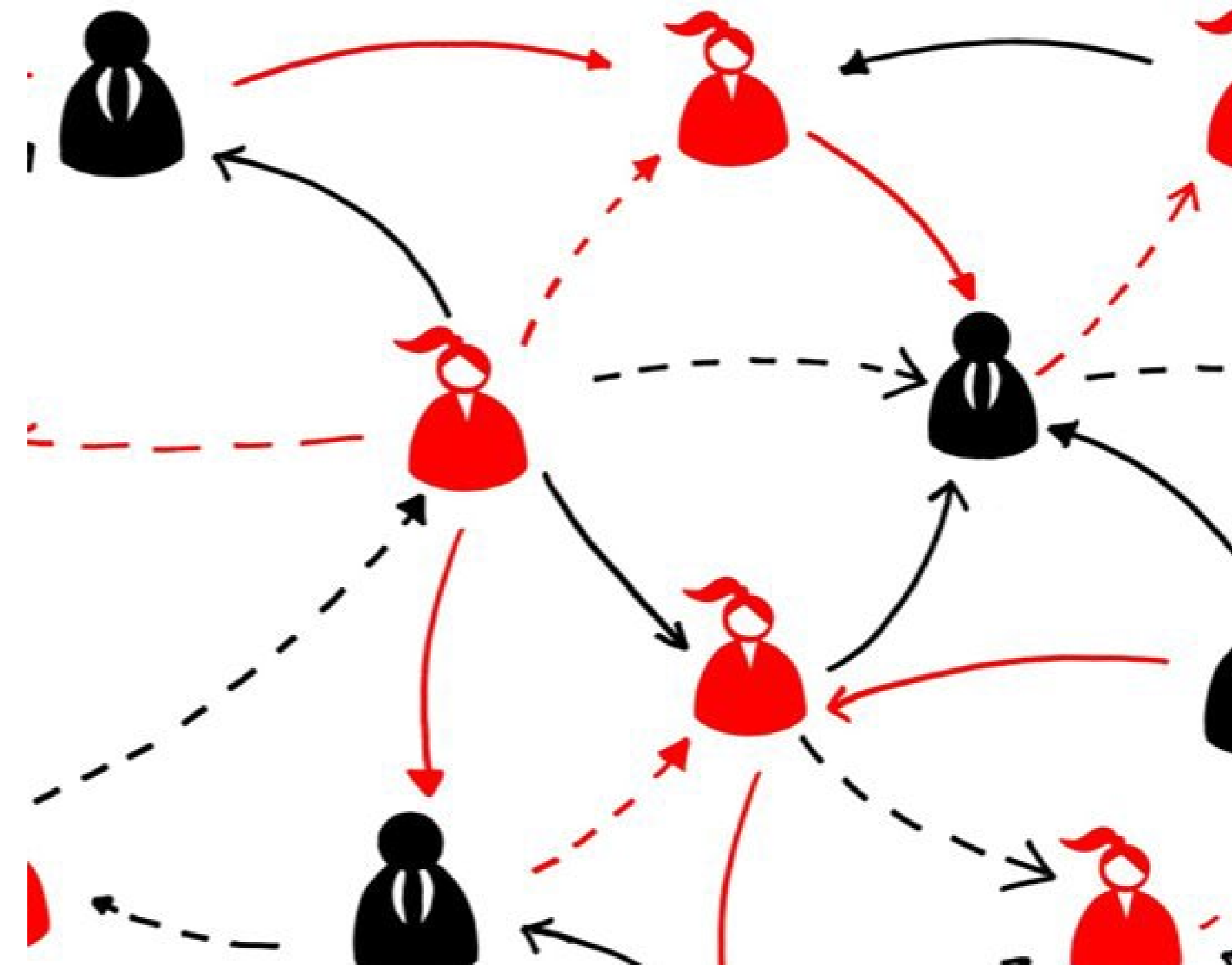
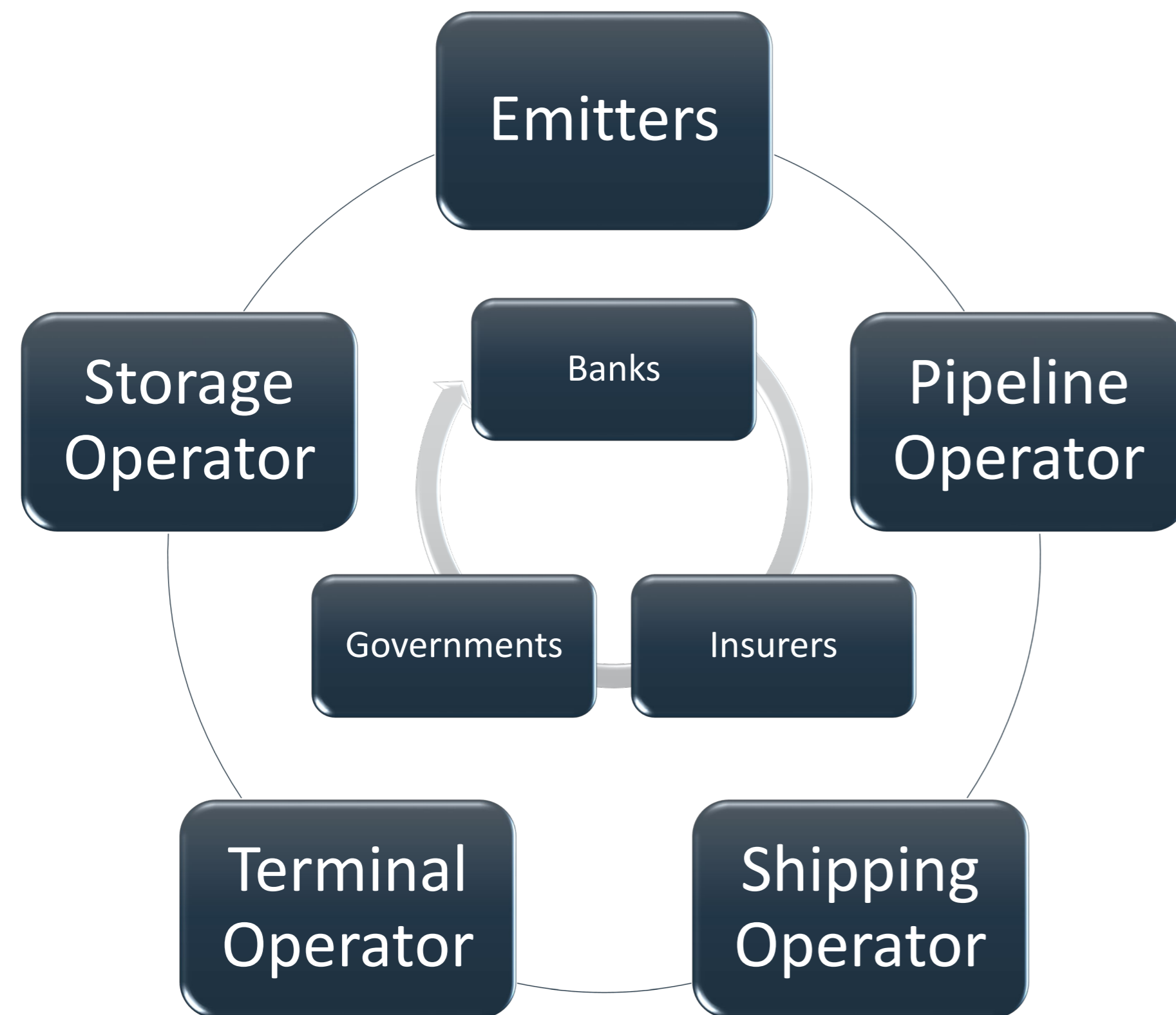
The Northern Lights Carbon Capture and Storage facilities at Øygarden outside of Bergen

Photo: Torstein Lund Eik/Equinor





Many Actors – One Value Chain

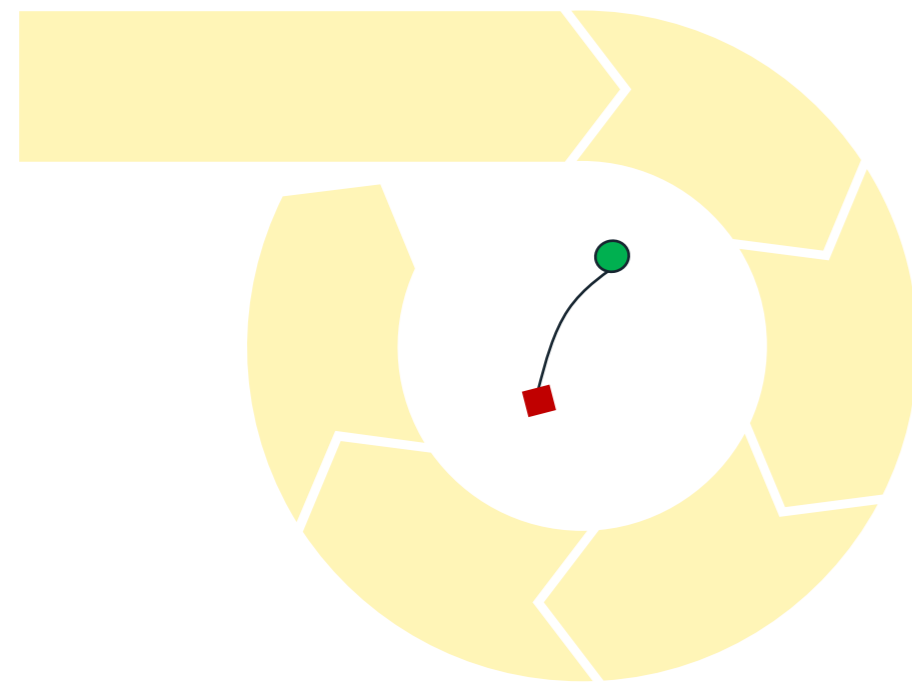


Decisions by one actor impact others, making integrated collaboration critical across the CCS value chain.



FOAK → Scalability Transition

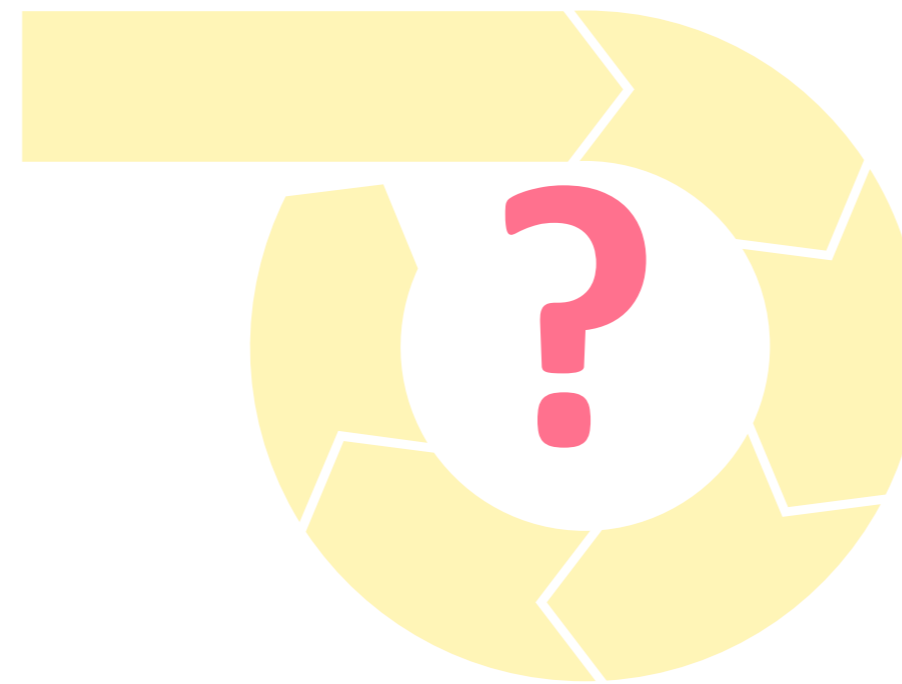
← Today →



First-Of-a-Kind projects

- Limited number of projects
- Significant Government support
- Are the first models sustainable and easy to scale?

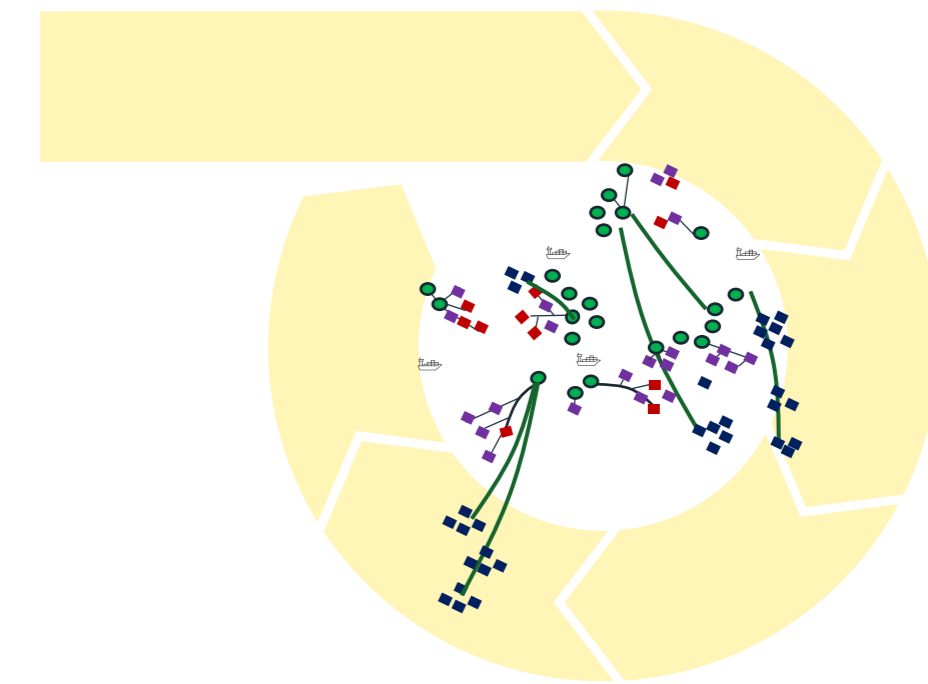
← Med-Term →



Transition Period

- How does the industry go from FOAK to fully merchant?
- Phased transition with sliding scale government support?

← Future →



Self-sustaining merchant market

- Future networks - multiple emitters and T&S
- Competition and commercialization



Examples of Cross-Chain Risks

Timing Mismatch (FID / COD)

Misaligned project timelines in capture and storage infrastructures can create investment uncertainty.

Demand-side risk for T&S

Uncertain CO₂ volumes threaten utilization and the economics of T&S, including the risk of stranded assets.

T&S Availability and Outages

Capacity disruptions in T&S can halt the entire cross-chain system, showing high interdependence.

Off-spec CO₂

Quality deviations pose technical challenges, which can disrupt operations and cascade financial risks across multiple parties

Leakage risk

CO₂ release represents a long-term liability with remediation costs and regulatory exposure for both T&S and emitters



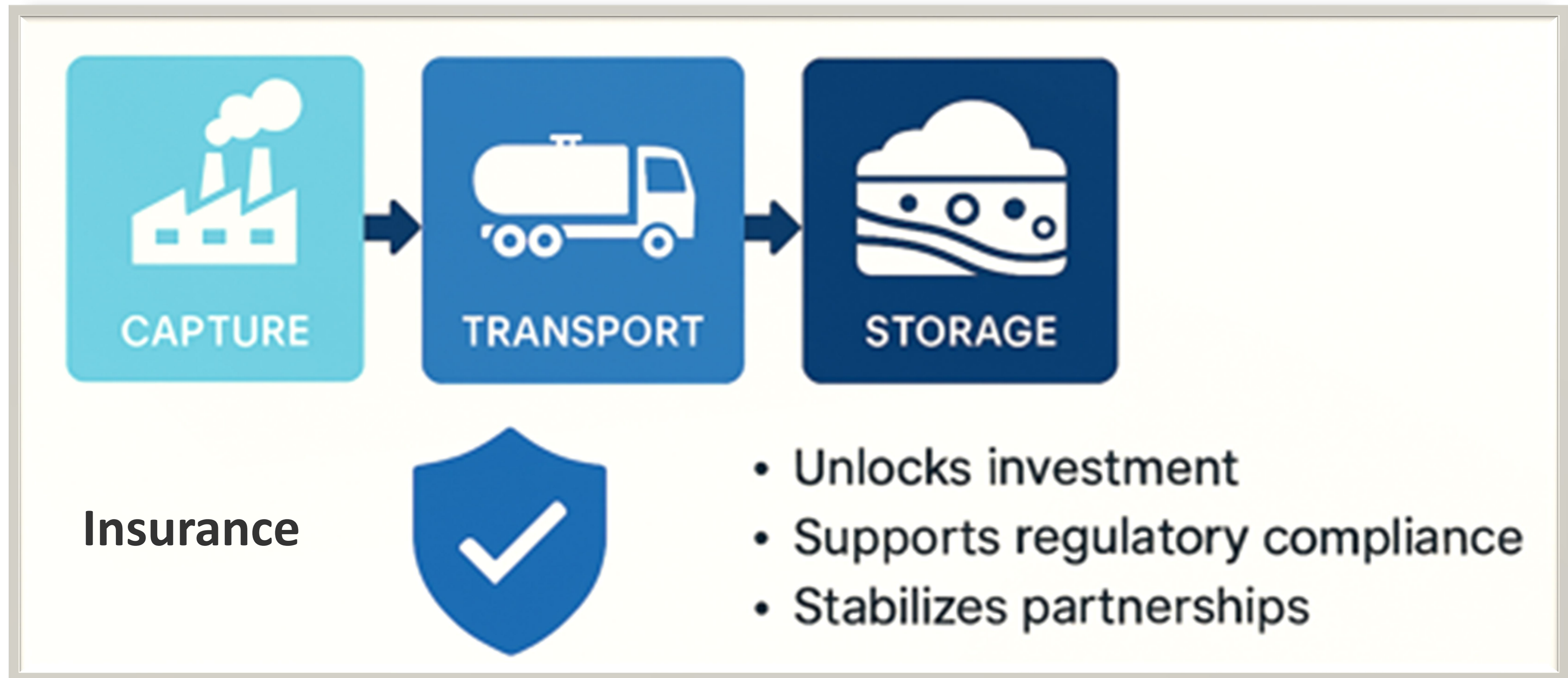
Insurability matters

- **Insurability is not something you add at the end of a project** — it must be built in from the very beginning.
- **It is important that all parties have access to insurance solutions.**, otherwise the chain remains unbalanced.
- Currently, **many risks are still not insurable**, such as non-physical damage triggers, gradual corrosion, long-term liabilities, future carbon prices and contingent business interruption.
- **CCS is low-margin business** — premiums must remain reasonable.
- The complex stakeholder landscape makes it **challenging to assign responsibility across parties** – who is the best party to take insurance?





To scale CCS, we will have to collectively manage risks in a way that works for every link in the chain





Thank you

Rafaella Rossi, Insurance Manager

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Michel Krenzer

GLOBAL HEAD OF ENERGY

SCOR

Michel Krenzer has over 30 years' experience in insurance. After starting as a Chemical Engineer at Foster Wheeler, he joined UAP as a Loss Prevention Engineer, later moving into Oil & Gas underwriting at Sorema. He opened Sorema's London office in 1999 and joined SCOR in 2001, holding several leadership roles. He became Global Head of Energy in 2023.

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CCS insurance challenges - Interdependencies

Michel Krenzer, Global Head of Energy at SCOR

**Knowledge Sharing 2026, CCS & CDR Summit
Insurance Workshop**

Sandefjord, 15 April 2026

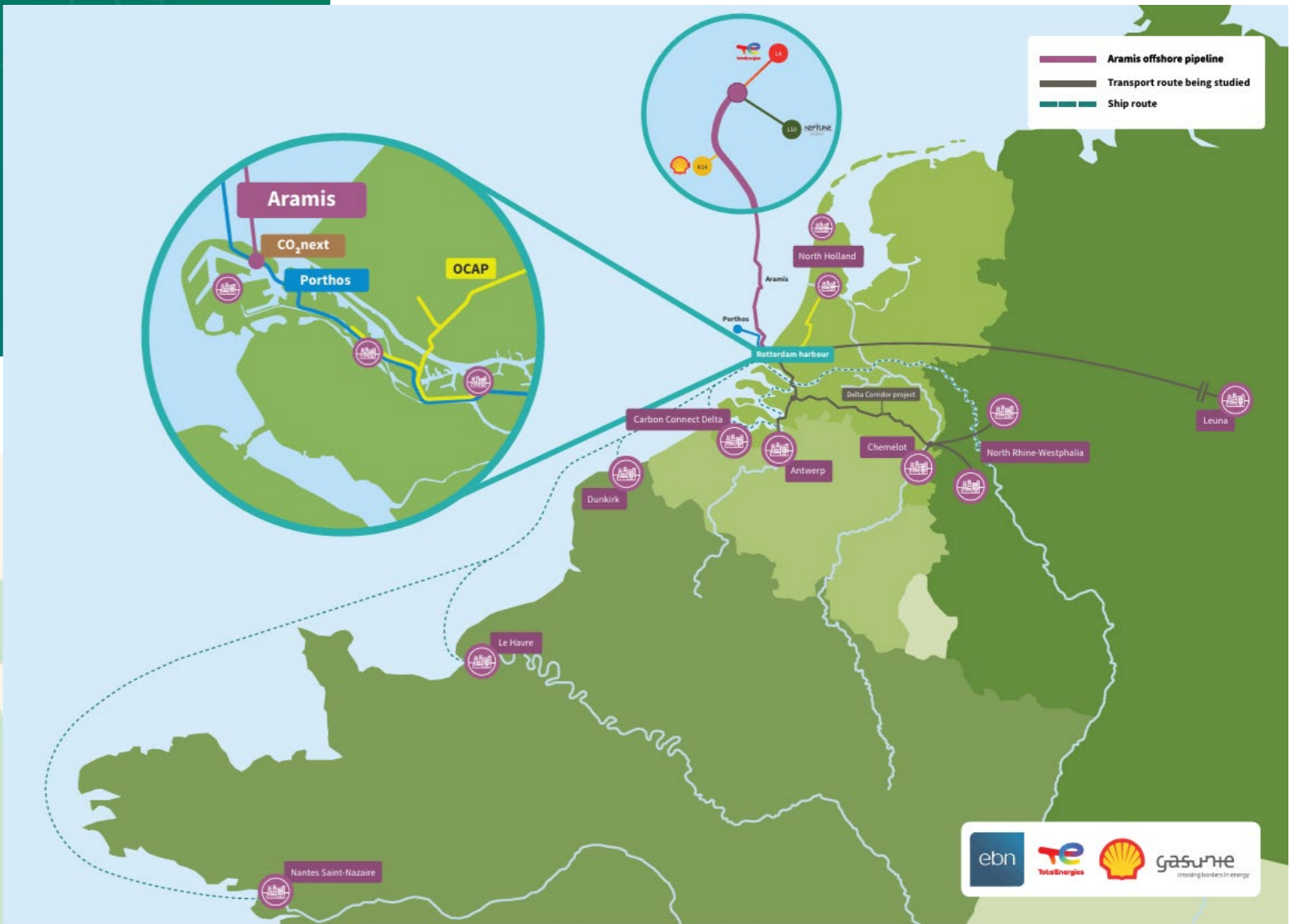
CCS Cluster operational property - interdependencies and accumulations

Actors include

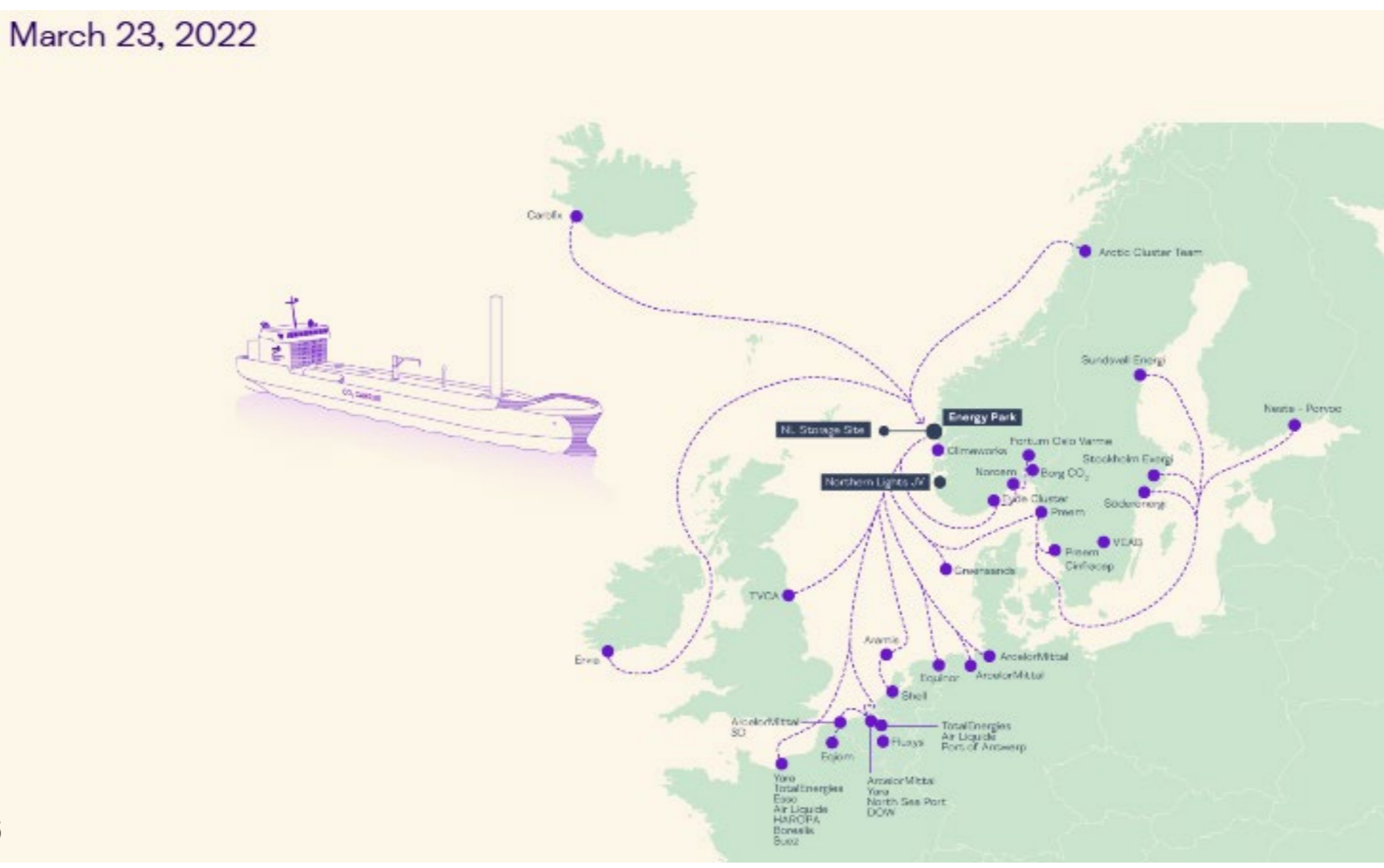
1. Emitters
2. Emitters' clients
3. Emitters' customers
4. Onshore Pipelines
5. Export terminals
6. CO2 vessels
7. Submarine pipelines
8. Receiving terminals
9. Offshore geological storage
10. Onshore geological storage



Hynet



Aramis

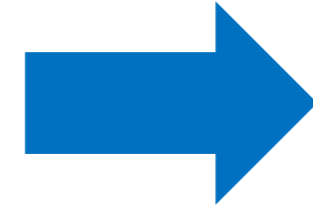


Northern Lights

CCS Cluster operational interdependencies and accumulations

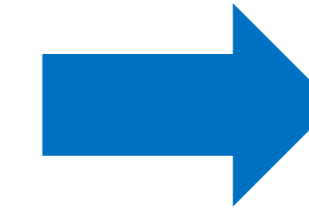
Risk analysis requires data and involvement of engineers

- ❑ Review of submission containing “survey reports” to analyse the “quality of risk” including nat cat analysis
- ❑ Review of past losses (insured and sector) need for data
- ❑ Probability of storage leak based on geological data
- ❑ Identification of worst accumulation case scenarios on a specific insured e.g. storage/injection major loss
- ❑ Identification/quantification of worst-case accumulations
- ❑ Taking into account regulatory regimes in case of leakage
- ❑ BI mitigation opportunities
- ❑ Risk of off-spec CO2



Clarify wording to remove coverage uncertainty, especially BI

- ❑ Impact on each insured (BI/CBI/interdependency) and sublimits
- ❑ Definition of Business Interruption (for each insured)
 - Trigger
 - Increased Cost of Working
 - Lost tax credits
 - Lost volume of CO2 x Carbon price
 - Green premium etc



Underwriting considerations to generate an insurance contract

- ❑ Coverages and wording
- ❑ Deductibles
- ❑ Limits and sublimits
- ❑ Period
- ❑ Pricing based on risk analysis, loss history in the sector, benchmarking
- ❑ Line size vs max “capacity”
- ❑ Appetite, line size



Hannah Jennings

SENIOR VICE PRESIDENT

MARSH

Hannah leads Marsh's global CCS initiative, delivering tailored insurance solutions and advisory services to de-risk projects and facilitate investment. Her experience spans the full removal chain, grounded in strategic collaboration with industry, government, and regulatory stakeholders.



CCS & Insurance A broker's perspective

Hannah Jennings, CCS Lead, Energy & Power



Insurance as
an enabler.

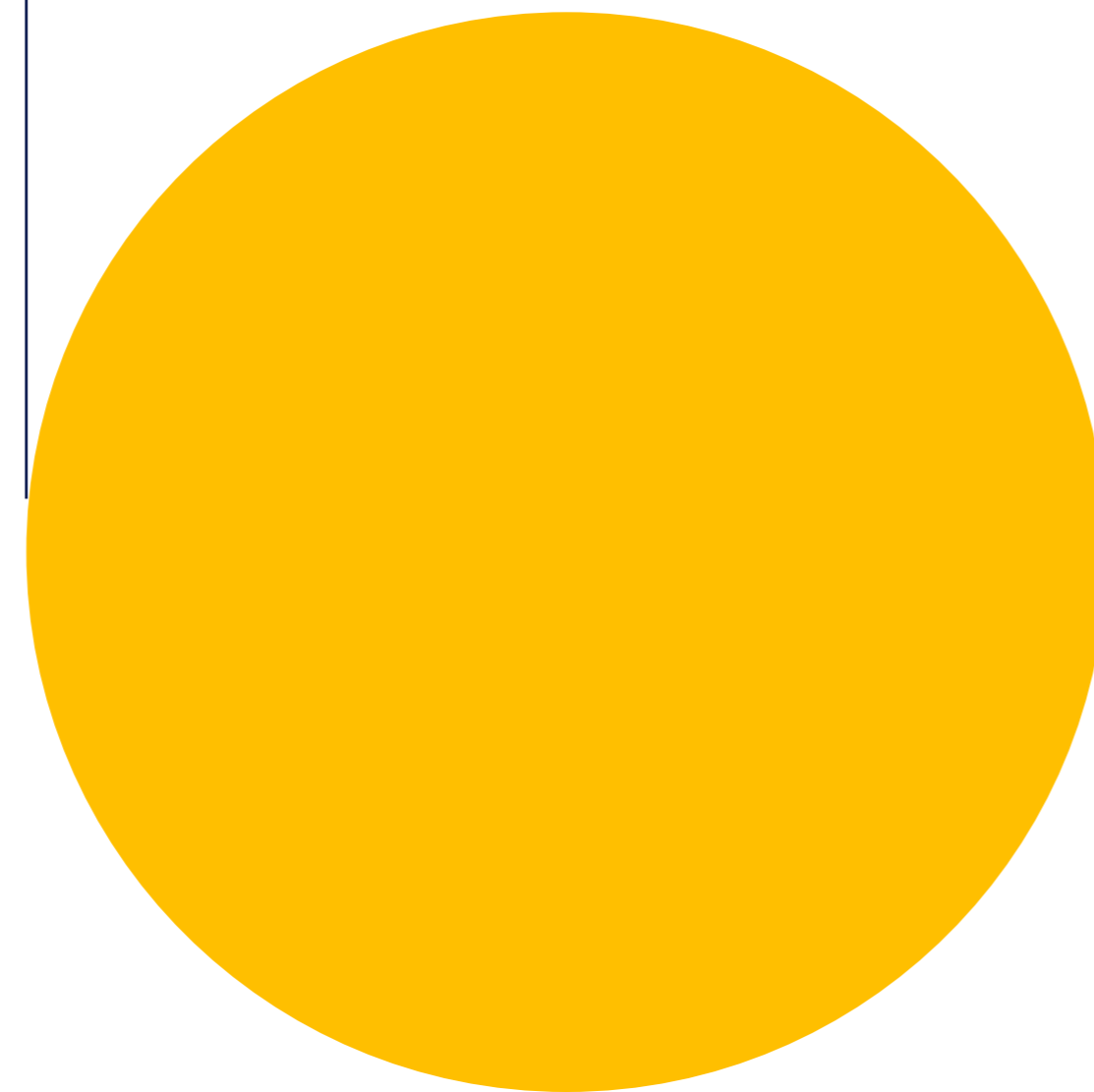
Supporting
the
development
of a
CCS
industry.

84%

Insurance is a cornerstone of bankability

A majority of CCS leaders expecting to rely heavily on insurance

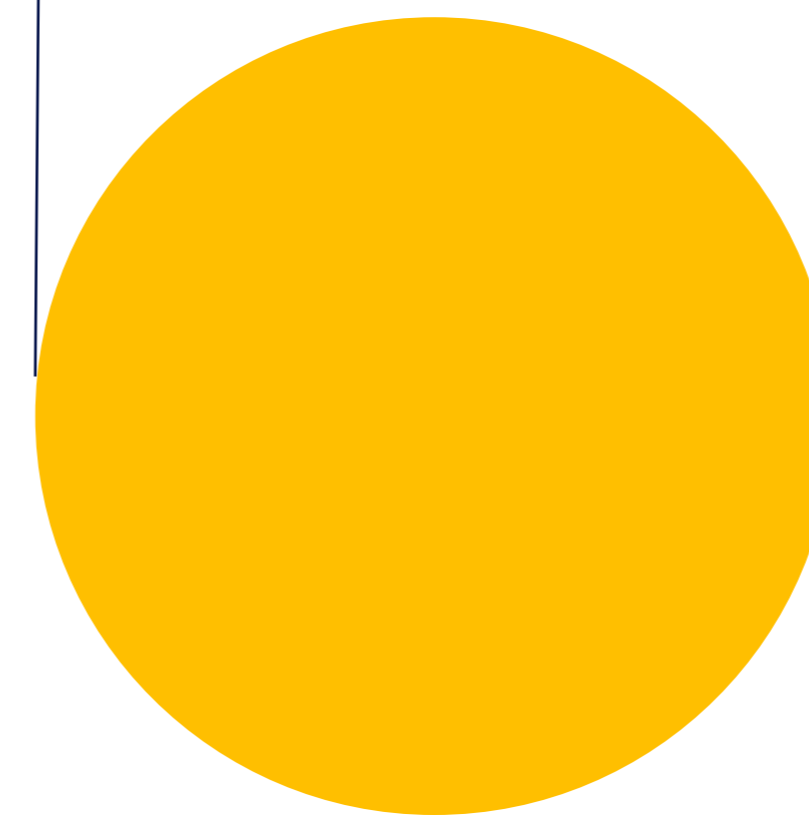
And confident that there is sufficient market appetite and capacity



38%

Low internal engagement with risk & insurance team

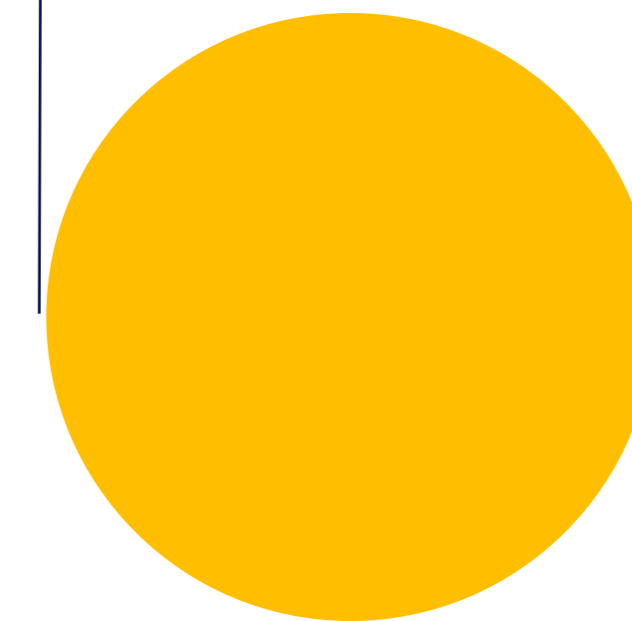
Collaboration between technical, financial, and risk functions is essential to align assumptions, mitigate risks, and bolster investor confidence.



Misalignment across the value chain

Diverging views across stakeholders show a fragmented understanding of costs, risks, and readiness.

This misalignment poses a threat to timely FIDs.



CCS risk landscape shaped by...

New Financial Security Requirements

UK model of mandating insurance for defined risks e.g. geological leakage event.

EU more flexibility on financial security instruments.

Evolving Contractual Landscape

Negotiations reflecting interdependency of value chain – contingent risks.

Associated Regulatory Incentives

Losses could include EUAs, Tax Credits, CDRs, Green Premiums.

Insurance for emerging risks in CCS removal chain

A mixture of traditional and new coverage requirements

Traditional Insurance

- Physical damage or bodily injury trigger
- Typically, sudden and accidental in nature
- Historical data exists to map probability of a loss
- Coverage on an annual basis

+ New Solutions Available

- *A fortuity* is the baseline - unexpected and unintended;
 - Geological Leakage
 - Venting off-spec CO2
 - Performance risk of capture
- Engineering & MMV

Not for Insurance

- Certain to occur
e.g. permit obligations for agreed monitoring and reporting

MARSH

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We are leaders in risk, strategy and people. One company, with four global businesses, united by a shared purpose to build the confidence to thrive through the power of perspective.

PANEL SESSION



Lesley Harding,
Moderator



Hannah Jennings
Marsh



Michel Krenzer,
SCOR



Raffaella Rossi,
Equinor

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SHARING 26
CCS & CDR Summit

PANEL SESSION

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CLOSING REMARKS

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12:45-14:00 LUNCH