

OCTOBER 2026

Enhancing the Insurability of Carbon Management Projects

Multi-Stakeholder Collaborative Approach

Guiding Tenets Developed by the Oil and Gas Climate Initiative, the Geneva Association and the Clean Energy Ministerial CCUS Initiative



INSURABILITY



BANKABILITY



INVESTABILITY



SCALABILITY

Northern Lights, Norway

Industrial decarbonization is a defining challenge for governments, industry and the financial sector.

Achieving deep emissions reductions while maintaining industrial competitiveness will require the deployment of new technologies, strategies, infrastructure models and commercial pathways across hard-to-abate sectors. These may include options such as operational and energy efficiency, electrification, waste management and circularity, carbon capture, utilization and storage (CCUS), and shifts in the energy mix toward lower carbon solutions.

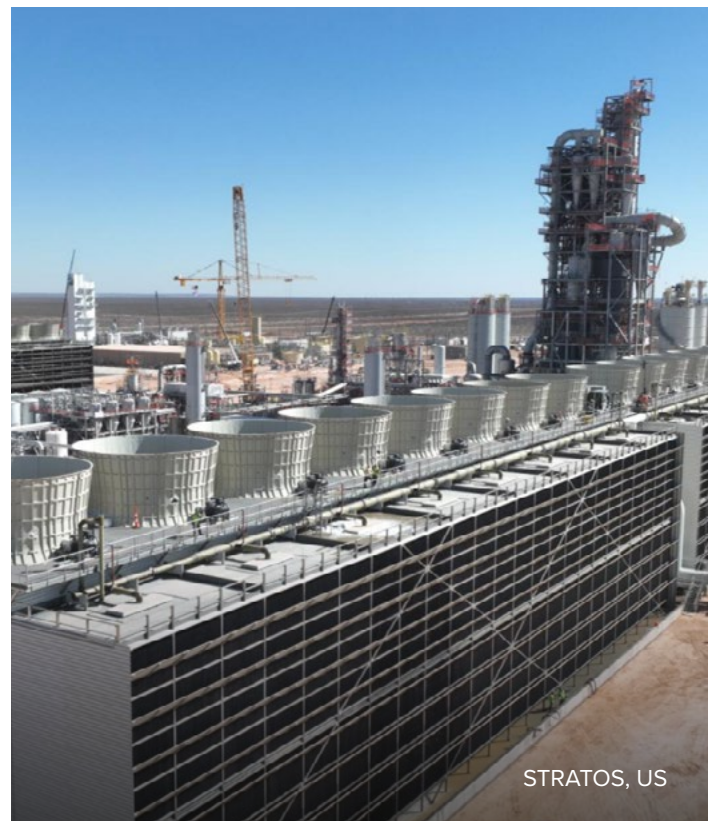
Many of these solutions involve assets with extended operating lives, shared infrastructure, multiple counterparties, new contractual interfaces and evolving regulatory frameworks. Insurance, financial assurance and risk allocation form part of the enabling architecture for emerging decarbonization pathways, helping to make these projects more bankable, investable and scalable.¹

This is particularly important for carbon capture and storage, where projects are advancing from early projects involving a single source of CO₂ being injected into a single sink into increasingly complex carbon capture and storage (CCS) projects involving multiple emitters, shared transport networks, storage hubs and, in some cases, cross-border arrangements across two or more countries. These models can create economies of scale, but also introduce many interdependencies, risk allocation questions and post-injection requirements in addition to complexity for carbon accounting and attribution from the product level and corporate and national aspects.

Against this backdrop, the Oil and Gas Climate Initiative (OGCI), the Geneva Association (GA) and the Clean Energy Ministerial CCUS Initiative (CEM CCUS) have collaborated² to develop guiding tenets* to support dialogue on how CCS value chain projects can be designed, governed and financially assured in ways that enhance insurability and enable responsible and faster scale-up for industrial decarbonization. It is intended to assist senior decision makers at strategic and operational levels responsible for development of decarbonization and carbon capture projects. Many of the principles outlined in this paper are also relevant to other emerging technologies for decarbonization and related infrastructure systems.



Gorgon CCS, Australia



STRATOS, US

**The tenets are non-binding and jurisdiction-neutral. They are not model policy or a recommendation, they do not represent an agreed position of any member company, and each organization and its members make their own decisions independently.*

The role of insurance in global CCS deployment

The IPCC's Sixth Assessment Report³ identifies CCS among the options needed for industrial decarbonization, and states that carbon dioxide removal will be unavoidable to counterbalance hard-to-abate residual emissions if net zero CO₂ or greenhouse gas emissions are to be achieved. IEA analysis⁴ similarly identifies four core roles for CCS: addressing emissions from existing assets, tackling

sectors with limited abatement alternatives, enabling low-carbon hydrogen and other products, and removing CO₂ from the atmosphere. The IEA's World Energy Outlook 2023 illustrates the scale and geography of the next phase: in its Net Zero Emissions by 2050 Scenario, emerging market and developing economies account for around two-thirds of total CO₂ captured by 2050.⁴

Two-thirds of total CO₂ capture is in the emerging market and developing economies

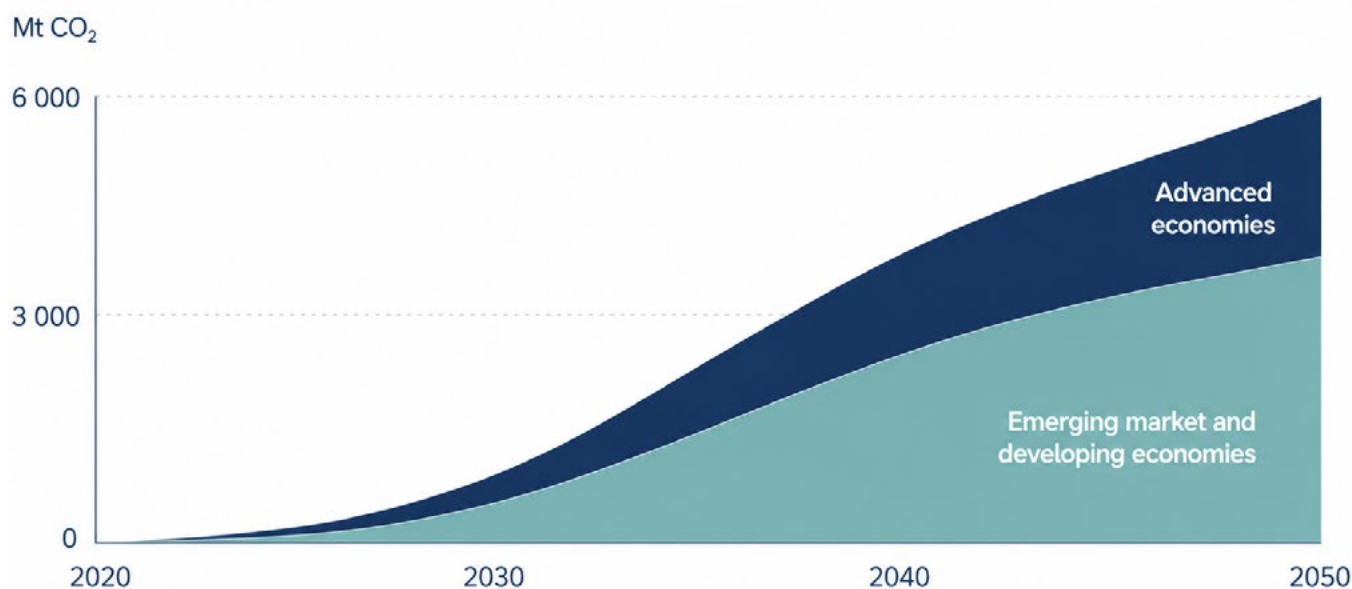


Figure 1: CO₂ capture by economy type, based on IEA World Energy Outlook 2023.⁴

This geographic distribution has practical implications for insurability and deployment. CCS will need to scale in regions where industrial growth is continuing and where regulatory frameworks, storage appraisals, cross-border arrangements, data systems, financial assurance and post-injection requirements models may still be developing. Insurability is therefore a global deployment issue. Clear principles can help identify the risks that

arise across the CCS value chain, define how those risks are measured and evidenced, and clarify whether they are best addressed through operational controls, contractual allocation, insurance, other financial assurance instruments, or public policy. This can reduce transaction costs and support confidence across a wider range of markets.

What is CCS?

Carbon capture and storage is a suite of technologies that captures CO₂ from industrial, energy or carbon removal processes, conditions and compresses it, transports it by pipeline, ship or other carriers, and stores it permanently in suitable geological formations such as depleted oil and gas reservoirs or deep saline aquifers, including formations

located offshore beneath the seabed. Many risks within this value chain (as shown in Figure 2) are familiar to insurers and project developers because they are adjacent to established experience in energy, petrochemicals, pipelines, marine transport, subsurface operations, construction, environmental liability and industrial safety.⁵

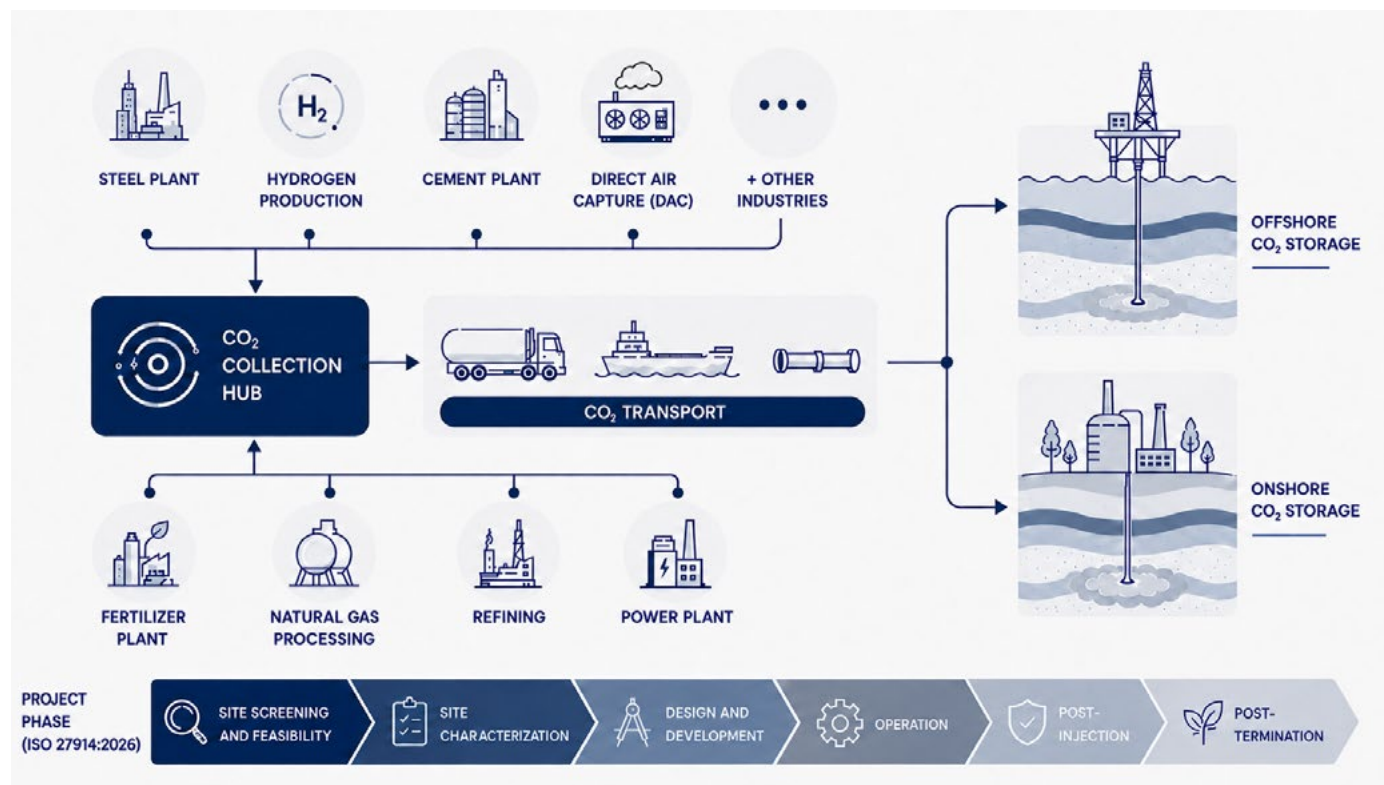


Figure 2: The CCS value chain and project development phases.

Carbon management, including CCS, is an important component of credible climate mitigation pathways and a key tool for industrial decarbonization, while also supporting economic development and growing demand for low-carbon products. Relevant operational experience spans decades, including CO₂ injection and geological storage operations for greenhouse gas emission reduction purposes since the Sleipner storage project began in 1996,⁶ but deployment remains far below the scale contemplated in many credible decarbonization pathways.

Stronger coordination among policymakers and regulators, including across the energy, environment, finance and insurance sectors can help create the conditions for insurance

and other financial assurance tools to support CCS deployment effectively. Many early projects were managed within a single entity, were generally a small part of a larger operation, and drew upon existing financial and insurance products. Now two aspects are driving the need for more sophisticated financial and insurance tools: large scale up requiring access to capital; and disaggregation of the value chain requiring the management of contractual and counterparty risk.

At the same time, increasing project experience, evolving regulatory frameworks and a growing evidence base have improved understanding of CCS risks and created new opportunities to strengthen risk management, financial assurance and insurance solutions.

Insuring CCS projects

Where sites are appropriately selected, characterized, designed, operated, monitored and regulated, the technical risks associated with geological storage can be identified, managed and reduced.² Project proponents can apply decades of data collection, interpretation, and experience to the assessment and approval of CO₂ capture technologies, transport infrastructure and subsurface storage sites.

However, shared infrastructure, multiple counterparties and post-injection requirements create interfaces that do not always map neatly onto conventional insurance products. Insurability depends not only on the technical risk itself, but also on where the exposure sits: who owns it, how it is measured and defined, and whether loss can be linked to a clear triggering event. Better understanding between technical evidence, regulatory expectations, insurance and financial assurance can improve both regulatory confidence and market readiness.

Insurability conditions evolve as CCS technologies mature, risks become better understood and mitigation evidence improves. Early projects may require greater risk sharing among insurers, developers, investors and government agencies; over time, stronger performance data can support more conventional risk transfer so insurers can take a greater share of the overall risk pool.⁷ As shown in Figure 3, the core principles of insurability are well established,⁸ but their application to emerging climate technologies requires deliberate attention from the early stages. Insurability is strengthened where risks can be clearly defined and measured; loss events are sufficiently independent and

predictable; maximum possible losses (MPL) and probable maximum losses (PML) are manageable; data is transparent and reduces information asymmetry; premiums, limits and deductibles reflect the assessed risk and can be agreed between parties and coverage is legally permissible and aligned with societal expectations.

These conditions can be shaped from project inception and strengthened over time as project experience generates a reliable evidence base, including data and operational learning from site screening, characterization, design, construction, injection operations, monitoring and post-injection requirements.

Some risks may remain difficult or uneconomic to insure due to very long-time horizons, accumulation potential, policy dependency or legal uncertainty. As projects become operational and are managed according to qualified standards with performance consistent with permit conditions, applicable standards and monitoring evidence, subsequent evidence can help validate risk assumptions, reduce uncertainty and support broader market confidence in CCS deployment. This creates an opportunity for the relevant stakeholders to collaborate on practical pathways toward meeting the core principles of insurability, recognizing the complexity of some CCS value chains and the need for innovative approaches to risk management. Solutions can evolve over time as data accumulates and the CCS market matures, enabling projects, risk management approaches and insurance solutions to develop together.



Northern Endurance Partnership, UK

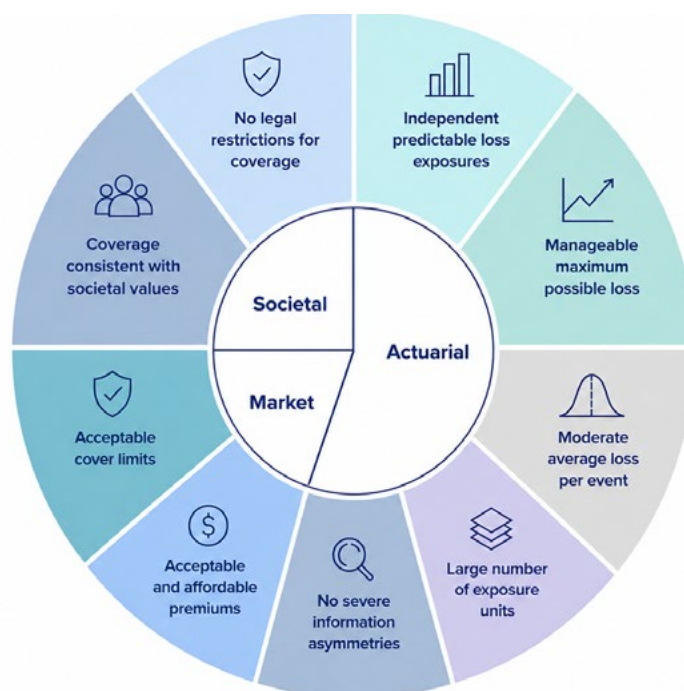


Figure 3: Insurability Principles.⁸

Development of guiding tenets

Guiding tenets to enhance insurability of CCS projects have been developed through structured engagement between OGCI, the CEM CCUS Initiative and the Geneva Association during 2024–2026. The process brought together perspectives from industry, government and the insurance sector to consider how CCS value chain risks arise, evolve and interact across the project lifecycle. The objective of this effort was not to seek to maximize insurance coverage, but rather to build trust amongst stakeholders through exploration of shared areas of understanding regarding integrated risk allocation frameworks that support project delivery. It drew on practical experience, policy and regulatory considerations, and insurance-market perspectives.

The risks considered run across the value chain and ranged from project coordination and investment-timing risks across the CCS value chain to technical storage risks, including how nearby injection activities could affect carbon dioxide plume stabilization within a shared geological carbon store.

As shown in Figure 4, these risks have been grouped into five broad risk categories, which can help conceptualize different risk management approaches across the value chain: financial, technology, safety and operational, regulatory, and integration / interdependencies.

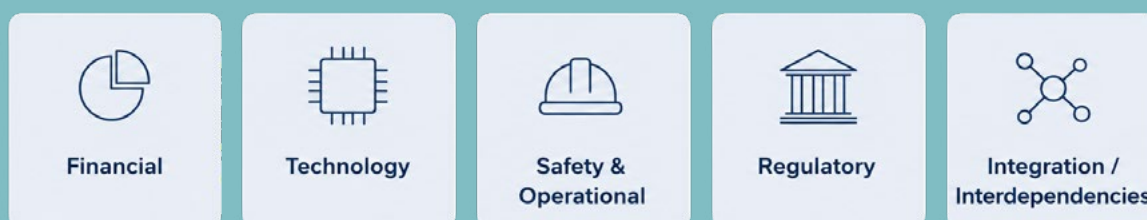


Figure 4: Risk Types.

The process distinguished between risks for which insurance products are available, areas where analogous products or practices may be relevant, and gaps where further innovation, contractual solutions, financial assurance or targeted public-

private measures may be needed. This process was designed to explore insurability of CCS across the value chain and identify opportunities for collaboration to expedite scaled deployment of CCS and inform the guiding tenets set out in this paper.



Guiding tenets for enhancing the insurability of carbon management

Tenet 1. Cross-sectoral collaboration enables scale

Tenet 2. Clear regulation builds confidence

Tenet 3. Whole value chain assessment can improve insurability and risk allocation

Workshop Insight: Shared data can reduce cost and improve risk assessment

Tenet 4. Clear risk allocation frameworks can accelerate project development

Workshop Insight: Post-injection requirements need early clarity

Workshop Insight: Targeted public policy measures can bridge early gaps

The objective of developing these tenets is not to seek to maximize insurance coverage, but to build trust amongst stakeholders through exploration of areas of shared understanding regarding integrated risk allocation frameworks that support project delivery. Not all CCS risks are insurable, and effective deployment depends on allocating risks to the parties best positioned to manage them through operational controls, contractual arrangements, insurance solutions or public policy support.⁹ Improved insurability can contribute to greater bankability, which in turn supports investability and ultimately the large-scale deployment of CCS.

Tenet 1

Cross-sectoral collaboration enables scale

Effective development of the CCS value chain depends on the combined capabilities of governments, project developers, technology providers, insurers, financiers, carbon markets, and communities. Each brings differing perspectives, priorities and risk management needs along the value chain.

Operators and technical specialists understand storage screening and selection, system integrity management and operational controls. Regulators define permits, monitoring expectations, minimum financial assurance requirements, and closure pathways. Insurers and reinsurers assess fortuity, accumulation, maximum possible loss, coverage triggers and the quality of risk information. Investors consider whether the resulting allocation of residual risk is compatible with project bankability and their own risk appetite. While cross-sectoral collaboration enables scale, early collaboration enables scale more effectively and more rapidly. Active and early engagement of the insurance sector during the development and refinement of a country or state's CCS regulatory framework, as well as at project concept, site selection, front-end engineering and design, permitting and financing stages* can identify issues that are difficult to resolve, such as site-specific risk considerations, once contracts and project structures are fixed.

These include the definition of various stakeholders' insurable interests, insured events, policy periods, indemnity limits,

data access, monitoring evidence, post-injection responsibilities, and the treatment of losses caused by delays or disruptions elsewhere in the CCS value chain. Early engagement can also help translate technical controls into underwriting-relevant evidence, while protecting commercially sensitive information. Structured information sharing can help insurers and reinsurers build a stronger evidence base over time, supporting improved modeling, underwriting confidence and more cost-effective solutions. Each insurer and reinsurer would continue to assess that evidence, and to determine the terms on which it writes business, independently.

Early independent engagement by individual insurers and reinsurers can also help determine the most appropriate treatment for each potential risk exposure: whether it should be avoided, mitigated, transferred through insurance or other instruments, supported through financial assurance, or retained by the party best placed to manage it. This promotes more efficient risk allocation, reduces the likelihood of costly late-stage redesign and helps identify where project-specific solutions, market-based insurance or targeted public-private mechanisms may be most effective at balancing post-injection requirements. Early engagement from insurers and reinsurers can also help project developers consider other external factors (such as natural perils) and risk mitigation approaches that may impact insurability, based on insurance technical capabilities, data and modeling approaches.



Quest CCS, Canada

*Project development phases are shown in Figure 2.



Porthos, The Netherlands

Tenet 2

Clear regulation builds confidence

Governments are central to the insurability of the CCS value chain because they shape both the policy and regulatory environment in which projects operate. The IEA¹⁰ has identified legal and regulatory frameworks as essential to effective post-injection requirements and secure storage.

General or specific regulatory frameworks already exist in many jurisdictions and include aspects such as permitting, environmental protection, health and safety, monitoring, reporting and verification, financial assurance, emissions limits, closure, post-injection requirements, cross-border transport and public engagement. In some jurisdictions, this may also include adjudicating storage rights and pore space access where multiple parties may have rights to the same storage formations.

There is an increasing insurability benefit to developing and further refining such regulatory frameworks. Clear delegation of responsibilities to a competent CCS authority, or equivalent existing institutions, can enable greater confidence for project developers and other key stakeholders.

Such authorities would generally require clear mandates, adequate technical capability and transparent interfaces with other relevant agencies, including those responsible for environmental protection, offshore safety, pipelines, shipping, taxation and carbon market integrity.

Policy measures can also shape the revenue and risk profile of a project over its lifecycle. Grants, subsidies and associated guarantees, tax credits, contracts for difference, regulated network models, state participation, public ownership of infrastructure and other business models can affect market development and how costs, revenues and risks are distributed across the CCS value chain.

While it is unlikely that there is a single model that will suit all jurisdictions, stable, transparent and proportionate policy frameworks can reduce uncertainty, help align incentives and create the conditions attractive to project owners, private insurance and capital to participate.

Where policy and/or regulation is absent, ambiguous or inconsistent, investment and insurance may become more costly or unavailable, even where the underlying risk is manageable.

Strengthened cross-sectoral coordination among policymakers and regulators (e.g. energy, environment, finance, and insurance) can also help to align regulations and liability regimes and thereby enable effective risk-sharing models.

Regulatory alignment would help clarify liability allocation and capital treatment across various stakeholders.¹ Coordinated frameworks will also help reduce uncertainty for project developers, investors, insurers, reinsurers, and governments.

Tenet 3

Whole value chain assessment can improve insurability and risk allocation

CCS value chain projects benefit from being assessed as integrated systems because the material risks often arise at the interfaces among parties, assets and contractual arrangements. Clear allocation of ownership, custody, liability and governance responsibilities, combined with an understanding of volume, timing and operational interdependencies across the value chain, can support more effective risk management, insurance solutions and project bankability. As CCS networks mature and expand to shared infrastructure models, risk allocation and insurance frameworks can evolve to reflect changing market structures and increasing industry experience.

Capture facilities, compression and conditioning systems, pipelines, ships, terminals, injection wells, reservoirs, monitoring networks and post-injection requirements arrangements not only each involve different risks but also have multiple interdependencies. For example, volume risk, timing risk and value-chain integration risks. These risks are often material to investors and are a key determinant of project bankability. A delay, outage, specification issue or

permitting constraint in one part of the chain may create operational, financial or compliance consequences elsewhere. These interface dependencies often result in cross-chain risks and are central to bankability, but they do not always fall naturally within traditional insurance products unless they can be linked to a defined insurable event. Effective insurability therefore relies on risks being identified and defined throughout the value chain, before being measured, mitigated, evidenced and allocated to the parties best able to manage or influence them.

This assessment can be supported by clear custody management and industry tools. Examples include: risk registers, scenario analysis, probabilistic modeling, sensitivity analysis and cost-estimation models, combining technical site data, engineering assumptions, regulatory requirements and insurance-market judgment. Used early, these tools can help distinguish risks that may be suitable for insurance from those better addressed through contractual allocation, operational controls, financial assurance or public policy measures.



Sakakemang CCS, Indonesia



Ravenna CCS, Italy

Workshop Insight

Shared data can reduce cost and improve risk assessment

Insurability improves when stakeholders can assess risks using a common evidence base. The CCS value chain already benefits from decades of relevant experience in industries such as oil and gas, petrochemicals and power, as well as infrastructure design and management spanning pipelines, marine operations, wells, subsurface characterization and geologic storage.

From an insurability perspective, data and insights become valuable when they are translated into decision-useful evidence that supports risk assessment, risk mitigation and risk allocation. However, the development of insurance solutions can be constrained where knowledge is fragmented, held confidential on legitimate business grounds, jurisdiction-specific or not translated into insurance-relevant metrics.

The objective is not to create disclosure that might jeopardize a project's legitimate commercial needs, rather it is to identify the minimum relevant information needed for underwriting and modeling, while protecting intellectual property, commercial sensitivity, security considerations and avoiding unnecessary administrative burden.

Public regulatory information, operational experience and anonymized industry learning could be particularly valuable where individual project loss histories are limited or unavailable.

Future development of a common taxonomy, baseline data requirements and standards developed through open and transparent processes for use by regulators, insurers and their risk engineers could help ensure that information is used consistently to support product development, underwriting and risk mitigation, while reducing the potential for misunderstandings and unnecessary transition costs.

Lessons learned and relevant non-commercially sensitive data can also be exchanged more systematically across jurisdictions and project types. Greater harmonization of reporting requirements, terminology and evidence standards could lower transaction costs and give insurers, investors and regulators a more consistent basis for assessing the CCS value-chain risk.



Junggar Basin CCUS hub, China



Jubail CCUS hub, Saudi Arabia

Any collaborative approach to information sharing would need to be designed with applicable competition law in mind from the outset. Established practice suggests a workable set of conditions. Participation would be voluntary and open on transparent and non-discriminatory terms, including for bodies representing customers. Shared material would draw on aggregated, anonymized and sufficiently historic data, and would not identify any individual insurer, reinsurer, ceding undertaking or insured party. Any resulting compilation, table or study would be expressly non-binding, and would carry no indication of the level of commercial premiums or of loading for profit. Each participant would remain free to develop alternative approaches and to determine independently the terms and pricing on which it provides or procures cover. Arrangements designed on this basis can strengthen the shared technical evidence base while preserving independent commercial decision-making.

Tenet 4

Clear risk allocation frameworks can accelerate project development

Complex, large-scale CCS value chain projects require clear allocation of project risks in a manner that is technically feasible, legally enforceable and commercially acceptable.

As a general principle, risks are generally best allocated to the party best placed to prevent, control or absorb them as this can further enhance project investability.

However, some early-market risks may be too uncertain, or policy-dependent for private insurance markets alone, or for project sponsors to retain on their own balance sheets. Placing all residual uncertainty on a single project party can increase costs, delay final investment decisions or limit participation to entities with the largest balance sheets.

As developers seek to scale CCS deployment across multiple projects and jurisdictions, financial assurance requirements may increase substantially even where the incremental technical risk of additional storage activity diminishes over time. If these requirements are not calibrated proportionately, they can tie up capital long-term, impact permitting and public acceptance, discourage participation by experienced operators and investors and slow the development of further projects.

Proportionate financial assurance frameworks can protect public and environmental interests while avoiding unnecessary barriers to responsible CCS deployment.

No single mechanism is likely to address all CCS risks. A balanced approach uses different instruments for different risks. Insurance can play an important role within a broader financial assurance framework by helping to quantify, allocate and transfer fortuitous risks. Private insurance may support construction, operational, liability, environmental, marine, transport, business interruption and certain carbon-linked financial risks.

Contractual arrangements may address take-or-pay/send-or-pay obligations, storage capacity reservations, CO₂ specifications, interface obligations for CO₂ volumes and liquidated damages. Public policy may be needed where the risk arises from early-market coordination, policy durability, cross-chain timing mismatches, or long-term public stewardship.



Workshop Insight

Post-injection requirements need early clarity

Robust post-injection requirements are central to confidence in the CCS lifecycle. Cessation of injection does not end the regulatory life of a geological storage project; it begins a distinct post-injection period during which monitoring, reporting, verification, maintenance and financial assurance obligations may continue for years or decades depending on jurisdiction-specific requirements and subsurface conditions.

At an effectively selected and managed storage site (according to qualified standards such as ISO 27914:2026), the technical risk profile is generally expected to decline after injection ceases, as pressure dissipates, trapping mechanisms strengthen and monitoring evidence accumulates.^{11,12}

However, the legal, financial and institutional obligations associated with the CCS project during the post-injection period continue and currently extend well beyond conventional insurance policy periods.¹³ This can create a misalignment between the project's revenue-generating period and the private insurance market's operating models and structures, raising questions about financial viability that may conflict with existing financial assurance requirements, deter investment or otherwise impede project development.

A demonstration of Tenet 4 could be a practical framework which clarifies the roles of operators, storage license holders, third-party verifiers, regulators and public authorities during injection, post-injection monitoring, closure certification and any post-closure transfer of stewardship and any remaining liabilities. Each stakeholder can contribute to the development of such frameworks. Operators can provide practical insight into development and operational realities, particularly when managing a portfolio of projects or anticipating challenges such as cumulative financial assurance requirements or multiple operators injecting into the same hydraulically connected area over time. Strong frameworks can reduce misalignment between regulatory requirements, long-term liabilities and the commercial drivers that make projects economically viable. Governments have a central role in clarifying the minimum requirements owners and operators must meet to satisfactorily demonstrate that their projects have been properly decommissioned, that applicable closure or transfer criteria have been met, storage performance is consistent with regulatory requirements, and residual obligations are defined and appropriately managed. This may include requirements that address interactions between operators, particularly where more than one operator may inject into the same hydraulically connected area over time. Insurers can support this discussion by identifying the events, durations, limits and evidence that may be insurable, and by distinguishing post-injection requirements from discrete insured losses.



Workshop Insight

Targeted public policy measures can bridge early gaps

Public-private partnerships can play a constructive role where early projects face risks that are difficult to assess, quantify or transfer, too correlated for a narrow private market, or dependent on reliable and clear policy and system coordination.

Public measures are generally most effective where they are designed to complement, not replace, commercial risk management. Examples from other sectors show that public participation can help create capacity for risks that private markets are not initially able to absorb alone, provided the measures are transparent, targeted and designed to evolve. This may become particularly important as CCS deployment moves from single-source, single-sink projects toward shared infrastructure models, including hubs and clusters. Smaller industrial sources may benefit from access to shared CCS infrastructure but may have different risk appetites and financial capacity than larger anchor emitters (for example: storage requirements and long-term liabilities).

Appropriately designed pooling, contractual and public-private arrangements can broaden participation while preserving incentives for high-quality project design and operation. Over time, support for projects can transition from public support mechanisms to market-based measures as the industry matures.

Where projects meet robust environmental integrity, permanence, monitoring and governance criteria, corporate stakeholders and financiers may also help clarify how CCS value chain activities can be treated within climate strategies and sustainable finance frameworks, consistent with recognized standards.¹⁴ This should be handled in a technology-neutral, evidence-based manner that avoids overstating what insurance can certify, while recognizing that credible insurance and financial assurance arrangements can support investor confidence.



Porthos, The Netherlands

Looking ahead

Enhancing the insurability of the carbon management value chain will require continued collaboration among governments, industry, insurers, reinsurers, insurance brokers and financial institutions. No single stakeholder can address the challenges associated with scaling up alone. Insurance coverage is already available for a range of CCS-related construction, operational, environmental, transport and liability risks, although coverage scope, duration and terms remain project-specific and risk dependent. Existing knowledge from traditional energy, renewables, marine and other industries - for the risk types that meet the insurability principles - means that coverage for shorter periods is being explored and underwritten by a range of specialist insurers. Arrangements appropriate for first-of-a-kind projects may evolve in the future from those used in mature, data-rich CCS networks in established regulatory environments where insurers, lenders and investors have greater confidence.

Governments can help create confidence through clear policy, regulatory, stewardship and financial assurance frameworks; industry can develop high-quality projects, apply relevant operational experience, generate evidence and allocate responsibilities clearly across the value chain; and insurers, reinsurers, brokers and financial institutions can help translate technical understanding into practical financial assurance, risk management, risk sharing and risk transfer solutions.

Improved insurability can support bankability, which supports investability, and investability is essential to scalability.

The guiding tenets set out in this paper are intended to provide a common framework for dialogue across the carbon management ecosystem. They reflect the view that insurability is not determined solely by insurance availability; it is influenced by project design, risk mitigation, risk allocation, regulation, governance, stewardship arrangements and the quality of available evidence. Strengthening these foundations can improve confidence among stakeholders.

OGCI, the GA and the CEM CCUS Initiative intend to continue working collectively on selected issues identified through this process, while inviting broader engagement where it can help strengthen understanding and improve transparency, both of which are foundational steps toward the development of relevant and practical risk mitigation, risk sharing and risk transfer solutions. By continuing to distinguish clearly between technical, commercial, policy and stewardship risks, stakeholders can help support the scale-up of the CCS industry and its contribution to industrial decarbonization.



Northern Lights, Norway

References

¹ [The Geneva Association \(2026\) Expediting Sectoral Decarbonisation: Strategic Implications for the Insurance Industry](#)

² See [page 3](#) for additional context and rationale for this collaboration

³ [IPCC \(2023\) Sixth Assessment Report](#)

⁴ [International Energy Agency \(2020\) CCUS in Clean Energy Transitions Report.](#)

[International Energy Agency \(2023\) World Energy Outlook 2023](#)

⁵ [IEAGHG, What is Carbon Capture and Storage \(CCS\)?](#)

⁶ [Equinor, Carbon Capture, Utilisation and Storage](#)

⁷ [IPCC \(2005\) Carbon Dioxide Capture and Storage: Summary for Policymakers](#)

⁸ [The Geneva Association \(2024\) Bringing Climate Tech to Market: The Powerful Role of Insurance](#)

Figure 3 adapted from Berliner, B. (1982). Limits of Insurability of Risks. Englewood Cliffs, NJ: Prentice-Hall

⁹ Importantly, insurability and insurance coverage for a CCS project is not a certification or validation of a project's environmental integrity, emissions reductions, permanence or sustainability credentials, unless specifically designed to address these issues

¹⁰ [International Energy Agency \(2022\) Legal and Regulatory Frameworks for CCUS: An IEA CCUS Handbook](#)

¹¹ [OGCI \(2026\) Geological Storage Post-Injection Risk and Liability](#)

¹² [IEAGHG \(2025\) Reviewing the Implications of Unlikely But Potential CO₂ Migration to the Surface or Shallow Subsurface](#)

¹³ [OGCI \(2026\) Management and Transfer of Reservoir Licenses and Liability Study](#)

¹⁴ [OGCI \(2026\) Carbon Accounting and Reporting for Carbon Capture and Storage and Engineered Carbon Removals](#)

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About OGCI

The Oil and Gas Climate Initiative is a CEO-led initiative comprised of 12 of the world's leading oil and gas companies, producing around a quarter of global oil and gas on an operated basis.

For the past decade, OGCI member companies have worked together to reduce their own emissions, while also driving action across the wider oil and gas industry to reduce emissions to achieve net zero operations in the timeframe of the Paris Agreement.

To help scale emissions reductions across a broader network of companies, OGCI works closely with the Oil & Gas Decarbonization Charter (OGDC), an initiative launched at COP28, which comprises 56 signatories representing approximately 40% of global oil and gas production.

As OGDC secretariat, OGCI and its member companies are sharing a decade's worth of their own expertise reducing

emissions with OGDC's signatories through technical consultations, mentorship programs and longer-term collaborative partnerships. Priority topics include methane emissions abatement, flaring reduction and energy efficiency.

Since 2017, OGCI members have reduced their own total operated methane emissions by 63%, routine flaring by 72%, and carbon intensity by 24%. OGCI members have also invested a cumulative total of \$125 billion in low-carbon technologies and solutions, including acquisitions and R&D, since 2017.

OGCI's members are Aramco, bp, Chevron, CNPC, Eni, Equinor, ExxonMobil, Occidental, Petrobras, Repsol, Shell and TotalEnergies.

Read more in OGCI's latest annual [Progress Report](#) and see our current Performance Data [here](#).

About the Geneva Association

The Geneva Association was created in 1973 and is the only global association of insurance companies; our members are insurance and reinsurance Chief Executive Officers (CEOs). In total, the companies of Geneva Association members managed USD 21 trillion in assets and are headquartered in 26 countries around the world.

Based on rigorous research conducted in collaboration with its members, academic institutions and multilateral organizations, its mission is to identify and investigate key trends that

are likely to shape or impact the insurance industry in the future, highlighting what is at stake for the industry; develop recommendations for the industry and for policymakers; provide a platform to our members and other stakeholders to discuss these trends and recommendations; and reach out to global opinion leaders and influential organizations to highlight the positive contributions of insurance to better understanding risks and to building resilient and prosperous economies and societies, and thus a more sustainable world.

About the CEM CCUS Initiative

The CEM CCUS Initiative is an initiative of the Clean Energy Ministerial, a high-level global forum to promote policies and programs that advance clean energy technology. It currently comprises 29 members and 21 participants from nations around the world.

Initiatives are based on areas of common interest among participating governments and other stakeholders.

The objective of the CCUS Initiative is to accelerate CCUS as a viable CO₂ mitigation option, facilitate diffusion of knowledge on technologies, regulations, and policies, and lead to strategic partnerships to accelerate both near and longer-term investment in CCUS. As an action-oriented platform, the Initiative serves to bring government, industry and the financial and investment sectors together.

Glossary

Term	Definition	Relevant Source
Accumulation Potential	The potential for a single event or series of related events to generate multiple losses across policies, locations, insureds, or lines of business, resulting in aggregated exposure exceeding expected levels.	Lloyd's Market Association; Swiss Re accumulation risk guidance (industry usage)
Bankability	The ability of a project to secure debt financing on acceptable terms based on factors such as its risk profile, projected cash flows, contractual arrangements and overall creditworthiness.	Yescombe, E.R. (2023). Principles of Project Finance (3rd ed.).
Broker	An independent insurance intermediary who acts primarily on behalf of the insured or prospective insured to advise on insurance needs, arrange coverage with one or more insurers, and assist with policy placement and claims. Unlike agents who may represent insurers, brokers generally represent the interests of the client.	Lloyd's – Insurance Glossary and Acronyms
Counterparty Risk	The risk that the other party to a contract or financial transaction will fail to fulfill its contractual obligations, resulting in financial loss.	International Association of Insurance Supervisors (IAIS)**
Financial Assurance	Financial mechanisms that demonstrate the availability of resources to meet regulatory and project obligations, including closure, monitoring, corrective action and remediation where required.	United States Environmental Protection Agency (EPA)
Fortuity (Fortuitous Risk)	The principle that insurance covers losses arising from accidental, uncertain and unintended events. A loss must be beyond the insured's control and not inevitable or deliberately caused. The requirement of fortuity is a fundamental condition for insurability because insurance is designed to cover uncertain future events rather than known or expected losses.	International Risk Management Institute (IRMI)
Indemnity	A fundamental principle of insurance whereby the insured is restored, as nearly as possible, to the same financial position occupied immediately before a covered loss, without allowing the insured to profit from the loss. Property and liability insurance generally operate on the principle of indemnity.	Lloyd's – Insurance Glossary and Acronyms
Indemnity Limit (Limit of Liability)	The maximum amount an insurer is contractually obligated to pay for a covered loss under a policy or for a specified coverage. Limits may apply on a per-occurrence, per-claim, aggregate, or policy-period basis and define the insurer's maximum financial responsibility.	National Association of Insurance Commissioners (NAIC)
Insurability	The characteristics of a risk that determine whether it is suitable for insurance, generally requiring losses to be accidental, measurable, independent, sufficiently predictable, and economically feasible to insure.	Lloyd's – Insurance Glossary and Acronyms

Term	Definition	Relevant Source
Investability	The extent to which a project is capable of attracting investment capital by offering an acceptable risk-adjusted return to investors.	OECD (2015). Mapping Channels to Mobilise Institutional Investment in Sustainable Energy.
Insurable Interest	A legally recognized financial or economic interest in the subject matter of insurance such that the insured would suffer a financial loss or other recognized detriment if the insured property were damaged or destroyed or if the insured event occurred. Insurable interest is generally required when the insurance contract is formed (and, for property insurance, often at the time of loss).	Lloyd's – Insurance Glossary and Acronyms
Interdependency Risk	The risk that disruption or failure in one system, asset, organization, or supply chain component causes cascading impacts on other interconnected systems or entities.	OECD (critical infrastructure resilience); IAIS** operational risk guidance
Liquidated Damages	A contractually specified sum that one party agrees to pay the other upon breach of contract, representing a reasonable estimate of anticipated damages rather than a penalty.	Black's Law Dictionary (Thomson Reuters)
Maximum Possible Loss (MPL)	The largest loss that could reasonably occur if all protective systems failed or were ineffective and the event developed under the most adverse conditions.	International Risk Management Institute (IRMI)
Post-Injection Requirements	Activities and obligations that may apply after CO ₂ injection ceases, including monitoring, reporting, verification, maintenance, site care, corrective actions where required, and activities necessary to demonstrate secure geological storage and satisfy regulatory requirements.	https://www.epa.gov/uic/final-class-vi-guidance-documents
Probable Maximum Loss (PML)	The largest loss likely to occur from a single event after considering that normal protective features and fire protection systems function as intended.	FM Global Property Loss Prevention Data Sheets ; IRMI
Reinsurer	An insurance company that provides insurance to other insurers by assuming part of their risks in exchange for a reinsurance premium. Reinsurance enables insurers to manage large or accumulated exposures, stabilize results, protect capital and increase underwriting capacity.	Lloyd's – Insurance Glossary and Acronyms
Residual Risk	The risk remaining after risk treatment, mitigation, or control measures have been implemented.	ISO 31000 Risk Management Standard (ISO)
Underwriting	The process by which an insurance company evaluates a risk, determines whether to accept or reject it, classifies the risk, and establishes appropriate terms, conditions, and premium.	National Association of Insurance Commissioners (NAIC)

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