



CCUS

Managing Risk & Insurance

2023 Midwest Regional Carbon Initiative

Partners & Stakeholders Meeting

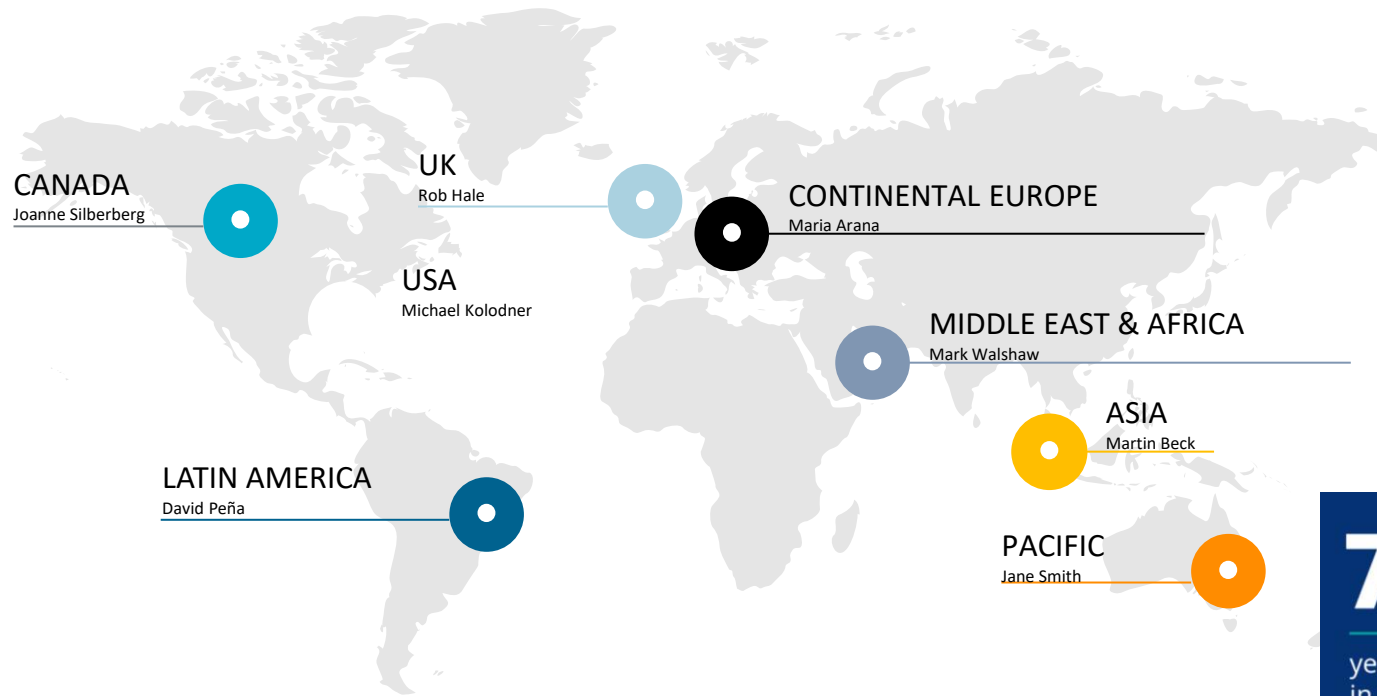
October 4, 2023



Who Are We?

Marsh's Power & Energy Global Footprint

- Global Energy, Power & Renewables Practice
- Commitment to Specialization
- Direct Access & Full Transparency
- Unparalleled Leverage & Alignment of Interest



\$5.1 billion

in **premiums** placed on our clients' behalf into the global marketplace

MORE THAN 3000

energy and power clients worldwide

70+

years of **experience** in the energy and power industry

70

risk engineers aligned in industry verticals

CCUS – Insurance & Risk Management

De-Risking & Better Understanding CCUS

- A project sponsor for a CCUS project is on the right side of ESG history. Sometimes the biggest risk is doing nothing.
- Energy exploration and production companies have been employing CO₂ in the process of enhanced oilfield production for approximately fifty years. There have been infrequent incidents of release or seepage with low dollar value claims impact.
- The process of stripping CO₂ from a waste stream is well established and less hazardous than piping other substances (i.e. hydrocarbon fuels).
- The process of obtaining a Class VI permit to deposit CO₂ in deep formations is complex and thorough. The EPA has demonstrated permits will only be granted if the location demonstrates essentially perfect geology for long-term deep underground storage.
- Most companies evaluating CCUS project options have substantial experience in deep geologic exploration and expert geologists on staff.

CCUS – Insurance & Risk Management

De-Risking & Better Understanding CCUS

- The areas where sequestration will be allowed must have substantial pore space, impermeable capstone formations, and be remote from aquifers.
- The EPA requires that any existing dormant wells in the vicinity be extensively inspected to verify that they can not offer a path for CO₂ to move between geologic formations.
- In general, projects are being established in areas that are relatively remote from population centers.
- The injection site sponsor must show financial proof of the ability to cap the wells and monitor the site for a prescribed period after injection operations cease.

CCUS – Insurance & Risk Management

Common Misconceptions & Realities

Misconception

- Insurers are unwilling to insure CCUS technology and projects.
- All insurers will deem these activities risky, making insurance cost prohibitive.
- Environmental is the most prominent risk and insurers will shy away from this class of business.
- Annual renewals will be an administrative burden.
- 45Q tax credits will be the primary driver for tax equity investors but no insurance backstop exists to protect my investment.

Reality

- Insurers are excited for CCUS! Many have expressed an interest in this space, released whitepapers, and have made accommodations to write policies.
- Environmental insurers have expressed significant interest in this space, several are working with Marsh to craft bespoke policies to cover the unique nature of this risk.
- Insurance programs can be placed for multi-year periods to avoid annual renewals. Non-insurance options are available.
- Tax Indemnification policies are available to protect 45Q tax credits.

CCUS – Insurance & Risk Management

Project Risk – Insurance Timeline



Pre-Construction & Construction

- Builders' Risk
- Delay In Startup
- General Liability
- Automobile
- Workers' Compensation
- Environmental – Contractors Pollution
- Surety

Substantial Completion, Maintenance, & Operation

- All-Risk Property
- General Liability
- Automobile
- Workers' Compensation
- Environmental – Contractors Pollution
- Surety

Other Coverages & Considerations:

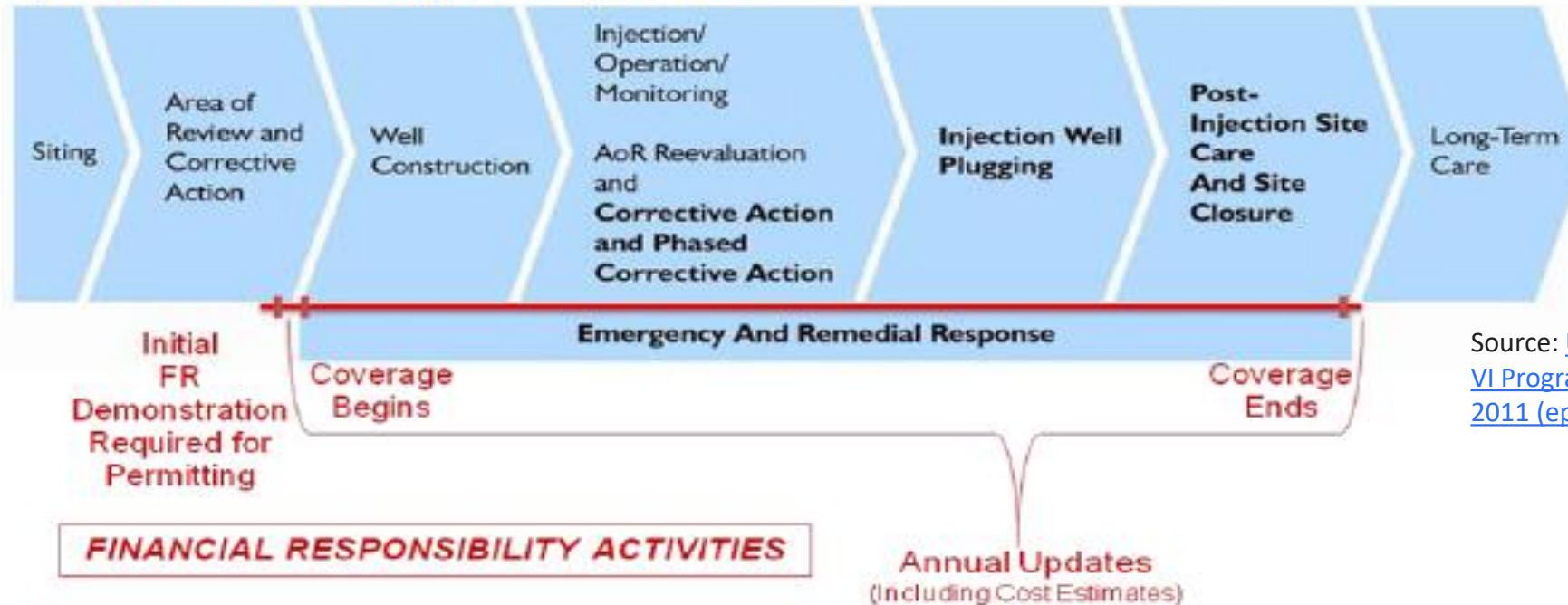
- Directors' & Officers
- Efficacy Coverage

Financial Assurance Considerations and Solutions

Overview

- CCS requires an Underground Injection Control Class VI Permit
- All Class VI Permits require a demonstration of financial responsibility during multiple phases of the project as a condition of issuance and a plan to achieve it must be submitted as part of the application process
- The intent of financial responsibility is to guarantee that the applicant has a dedicated funding source to address cleanup costs required by a pollutant release

Figure 2: GS Financial Responsibility Timeline



Source: [Underground Injection Control \(UIC\) Class VI Program Financial Responsibility Guidance July 2011 \(epa.gov\)](#)

Financial Assurance Considerations and Solutions

Mechanisms Approved by EPA per Project Phase

- Trust Funds
- Surety Bonds
- Letter of Credit
- Insurance
- Self Insurance
- Escrow Account.
- Any other instrument(s) satisfactory to the Director

Approved methods
(in order of EPA
preference):

Source: [Underground Injection Control \(UIC\) Class VI Program Financial Responsibility Guidance July 2011 \(epa.gov\)](#)

Table 4: Recommended financial responsibility instruments for GS activities (relative ranking)¹⁰

Corrective Action	Injection Well Plugging	Post-injection Site Care and Site Closure	Emergency and Remedial Response
1. Trust Fund	1. Trust Fund	1. Trust Fund	1. Insurance
2. Letter of Credit	2. Letter of Credit	2. Insurance	2. Letter of Credit**
3. Surety Bond	3. Surety Bond	3. Financial Test and Corporate Guarantee*	3. Surety Bond**
4. Escrow Account	4. Insurance	4. Surety Bond	4. Financial Test and Corporate Guarantee*
5. Financial Test and Corporate Guarantee*	5. Financial Test and Corporate Guarantee*	5. Escrow Account	5. Trust Fund
6. Insurance	6. Escrow Account	6. Letter of Credit	6. Escrow Account

*Financial tests and corporate guarantees present the lowest direct costs to owners or operators, but the highest risk to the public.

**Letters of credit and surety bonds are likely most appropriate for emergency and remedial response during operation phases.

Questions & Next Steps?

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Appendix: 45Q Tax Credit Insurance



45Q Insurance

Two Pronged Approach During Operations Phase

Business Interruption

- **Where:** a component of the property insurance coverage
- **What:** physical damage that prevents injection

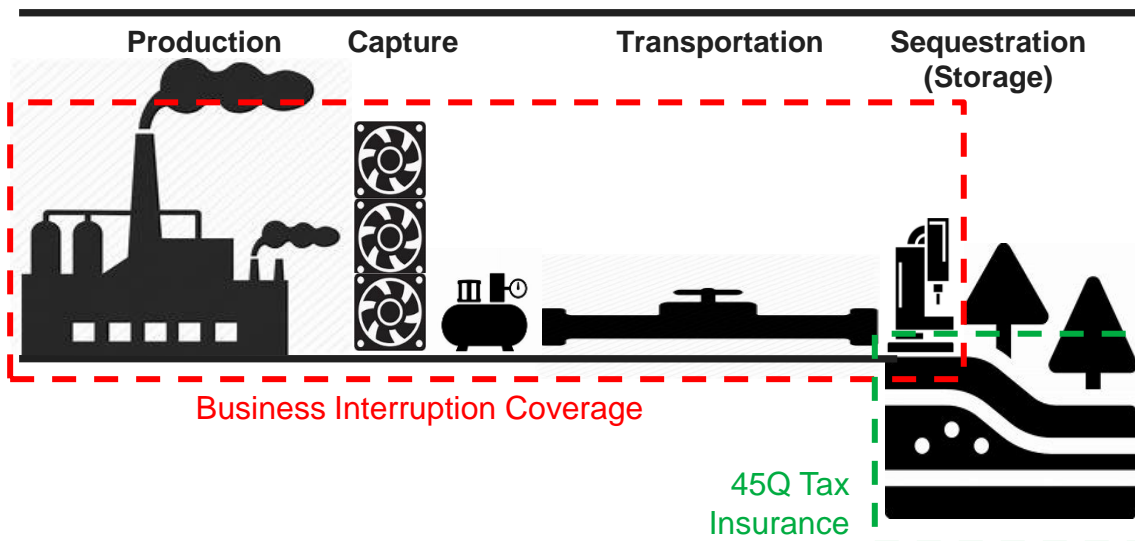
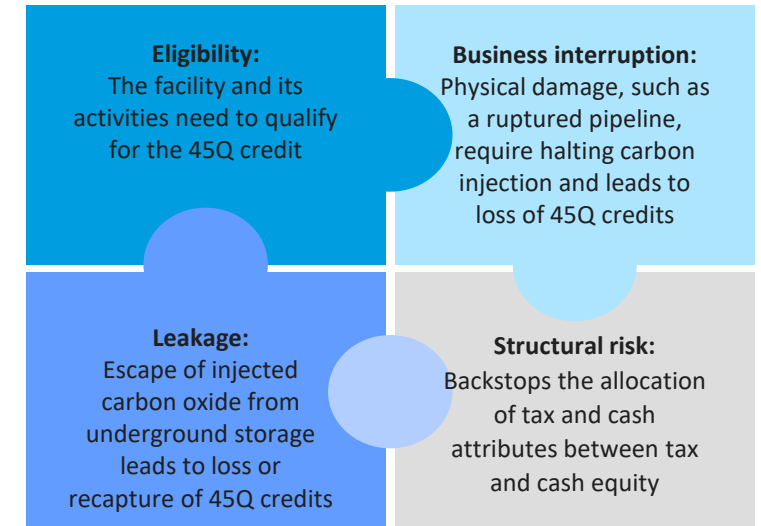
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45Q Tax Credit Insurance

- **Where:** a bespoke coverage
- **What:** scope:
 - Eligibility
 - Structural Risk
 - Leakage (Recapture)

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Holistic Coverage



45Q Tax Credit Insurance

Features and Considerations

- **Alignment of all capital providers:** the program provides both credit enhancement and de-risking to all developers/sponsors and investors/lenders in the CCUS chain
- **Balance sheet risk management:** 45Q credit insurance de-risks the contingent tax risk on the balance sheet of the entity providing the indemnity
- **Risk allocation:** accurately map the obligations of the various participants in the production-capture-transportation-injection chain
 - Ownership of the capture equipment, pipeline, and/or the storage facility
 - Financing arrangements
 - The party claiming the 45Q credit
 - The related indemnity packages
- **Interaction with transaction documents:** eliminate/reduce gap risk on payout timing
- **Other insurances:** The interplay between all insurance coverages needs to be closely examined
- **Limit of liability:** appropriate sizing and a gross-up (to cover taxes on the policy payout)
- **Policy period:** claims-made policy:
 - Limited capacity exists for 12 years plus the 3 year claw back period
 - Most capacity for a period of 10 years from binding
- **Retention:** bifurcated:
 - Standard retention for eligibility and structural risk
 - Retention for leakage?
 - Note: in some structures, the retention is already covered by commercial arrangements with capped indemnities
- **Time to bind:** at financial close or COD?
- **Payment terms:** aligned with the project timeline
- **Equity risks:** will not cover loss of 45Q credits due to lower than expected injection level due to lower captured emissions

45Q Tax Credit Insurance

Market Overview and Process

Market for 45Q Tax Credit Insurance

- **Innovation:** 45Q insurance is new
 - No policy has bound to date
- **Steep learning curve:** for the transactional risk underwriters
 - Each has leveraged in-house and external experts
 - Disconnect between recapture/leakage pricing and rhetoric on historic storage performance and expectations
 - Retention is a key variable that needs to be defined
- **Market capacity:**
 - For tax in general exceeds \$1bn per risk
 - For 45Q, we estimate \$500mm to \$600mm available currently with a careful positioning of excess layers
 - Potential to expand capacity with traditional energy reinsurers, specialist energy MGUs, insurers and mutuals.

Underwriting

- **Eligibility and structural risk:** written tax advice
- **Leakage/recapture:** piggy-back off information required by investors such as:
 - Permitting information and supporting information
 - MRV plan approved by EPA or State
 - Independent engineering report or studies for asset, pipeline and well integrity
 - Well design details
 - Complete engineering and geological design
 - Stress testing (i.e., to demonstrate non-catastrophic scenarios) and mitigants
 - Storage operator historical performance
 - Other insurances in place during operations
 - Term sheets or draft documents (including the scope of all indemnities and caps thereto (if any))
 - Project timeline (i.e., Gantt chart)
 - Expected injection volumes annually
 - Amount of 45Q tax credit insurance sought and the methodology for such amount



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