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Midstream Transportation Agreements for Carbon Capture Projects: Key Issues and Considerations

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A discussion of key considerations for the negotiation and drafting of midstream transportation agreements used for point source carbon capture projects. This Article describes the stages and models of carbon capture projects in the US and analyzes the midstream transportation services agreements (TSAs) used to take the captured carbon from the emitters' plant to the sequestration facility. It examines the most important issues and considerations for the parties when drafting and negotiating TSAs, including the term of the agreement, conditions precedent, types of services, minimum quantity commitments, service fees and escalation, termination rights, liability allocation, and indemnities.

The carbon capture and sequestration industry in the US (often referred to as the CCS industry) has generated increased interest over the past few years for practical and economic reasons. The CCS industry:

- Is a critical tool for both the private and public sectors to meet their net zero emissions targets, and carbon capture projects may help the oil and gas industry to diversify and be part of the transition from an economy based solely on fossil fuels to an economy based on a diverse mix of energy sources.
- Has the potential to generate significant revenue for participants at all stages of a carbon capture project, including revenue from tax credits, service fees, and injection royalties.

The midstream sector may share in these benefits because of the significant overlap of the midstream requirements for the carbon capture and the oil and gas industries. This overlap will allow the midstream sector to quickly expand to service carbon capture projects.

Before realizing these benefits, the definitive agreements for a carbon capture project must first be negotiated, which is not a straightforward process. Legal practitioners with oil and gas expertise cannot simply use the standard approach to oil and gas projects and easily apply them to carbon capture projects. Although the oil and gas skill set is the best skill set for carbon capture transactions, counsel must have a thorough grasp of all aspects of a carbon capture project to understand the unique concerns of each project participant. All project participants, including the midstream company, must assess the risks of the CCS project as a whole and recognize that, by participating in the CCS project, they are exposed to risks they would otherwise not be exposed to in the oil and gas context.

The risks of the overall project may be difficult to cleanly allocate among the upstream, midstream, and downstream stages of the project. The risks of one stage of a CCS project affect the other stages of the project. A major problem at one of the project stages, like the termination of a key project agreement, has ripple effects for the other project stages. If the parties are unwilling to share in the overall risks of the CCS project, the project will never be viable. However, if the parties are willing to share in the risks and to collaborate with one another, they may reap large rewards and spearhead a new industry.

This Article focuses on negotiation considerations for the midstream processing and transportation phases of a point source carbon capture project in which carbon is captured from human-caused emissions

sources. It identifies the main stages and project models used for most US carbon capture projects and examines key issues and considerations for the parties when negotiating and drafting transportation services agreements (TSAs) for the midstream stage of a carbon capture project.

For additional information on carbon capture and sequestration, see:

- Video and Audio, Carbon Capture and Sequestration Projects: Overview.
- Article, Repurposing Existing Pipeline Infrastructure for Carbon Capture and Sequestration.
- Practice Note, Regulatory and Real Property Considerations for Carbon Capture and Sequestration (CCS) Projects.
- Legal Update, US Forest Service Proposes Rule Changes to Allow Carbon Capture and Storage (CCS) Projects on Forest Service Lands.
- Legal Update, Texas Railroad Commission Votes to Publish Amended Carbon Storage Rules and Submit Pre-Application for Authority Over Class VI Injection Wells.

Stages of a Carbon Capture Project

A typical point source carbon capture project involves three main stages:

- The upstream or capture stage, where carbon oxides are captured and separated from human-caused emission sources (like the emissions from a steel plant) and then treated to meet applicable quality specifications for the particular project. In many projects, compression of the captured carbon is performed on-site at the emitter's plant and is considered part of the upstream stage.
- The midstream or transportation stage, where the captured carbon is transported from the emitter's plant to a delivery point downstream. As with traditional oil and gas projects, a smaller gathering pipeline first transports the captured carbon from the emitter's plant to a larger transportation pipeline, and the captured carbon is then transported through the transportation pipeline to the downstream delivery point. The delivery point may be relatively close to the emitter's plant or located hundreds of miles away.
- The downstream or sequestration stage, where the captured carbon is either used as industrial feed stock, as part of enhanced oil recovery operations, or injected into underground pore space for permanent sequestration. Most planned carbon capture projects in the US involve the long-term sequestration of captured carbon. A minority of projects use the captured carbon for enhanced oil recovery projects. Fewer projects involve the use of captured carbon as industrial feed stock.

Primary Carbon Capture Project Models

There are two primary models for point source carbon capture projects in the US:

- The partnership model (see Partnership Model).
- The sole operator model (see Sole Operator Model).

Partnership Model

Under the partnership model, an industrial emitter (emitter) joins with a carbon capture company, often an oil and gas exploration and production company, to act as the manager of the overall project (project manager). These parties have the following responsibilities:

- **Emitter.** By teaming with a project manager to run the project, the emitter typically limits itself to two primary responsibilities for the entire project:
  - constructing and operating the carbon capture equipment at its plant; and
  - operating its plant to generate a raw emissions stream from which carbon can be captured.
- **Project manager.** The project manager is responsible for all other phases of the project that follow the upstream stage, including:
  - transporting the captured carbon from the emitter's plant to the sequestration site;
  - injecting the captured carbon into underground sequestration; and
  - monitoring, maintaining, and repairing the sequestration site over time.

The emitter pays the project manager a service fee that is typically based on the quantity of captured carbon that the project manager accepts from the

emitter. The emitter, as the owner of the carbon capture equipment, typically claims the tax credits and carbon offset credits generated by the project.

The project manager is nominally responsible for the transportation of the captured carbon from the emitter's plant to the sequestration site. However, the project manager often subcontracts the carbon transportation services to a midstream company under a TSA.

At the sequestration site, the project manager takes delivery of the captured carbon and injects it into the underground storage pore space. The project manager must first secure rights to the pore space, either through a pore space lease or an outright purchase from the pore space owner. If the project manager has entered into a lease with the pore space owner, the project manager is likely required to pay injection fees based on the quantity of captured carbon that the project manager injects into the storage space. The project manager is also responsible for the maintenance and repair of the sequestration site, including long-term monitoring for leaks.

Sole Operator Model

Under the sole operator model, one carbon capture company, often an oil and gas exploration and production company, is responsible for all aspects of the carbon capture project. The sole operator is responsible for:

- Constructing and operating the carbon capture equipment at an emitter's plant.
- Transporting the captured carbon from the emitter's plant to the sequestration site.
- Injecting the captured carbon into underground sequestration.
- Monitoring, maintaining, and repairing the sequestration site over time.

The sole operator enters into an agreement with an emitter for access to the emitter's:

- Plant, to construct and operate the carbon capture equipment.
- Emissions stream, to capture carbon in exchange for a fee.

The sole operator is also responsible for securing pore space and injecting the captured carbon. The sole operator typically claims the tax credits generated by the project. However, as in the partnership model, sole operators often lack the operational expertise and infrastructure required to construct and operate the midstream system, and likely need to turn to a midstream company for those services under a TSA.

The Transportation Services Agreement

The primary transaction document for the midstream stage of a carbon capture project in the US is the TSA.

Under a partnership model, the TSA is between the project manager and the midstream company on a subcontract basis. There is typically no contractual arrangement between the emitter and the midstream company, other than an agreement covering the interconnection between the emitter's and midstream company's facilities. If the project manager is operating multiple projects for different emitters in the same area, the project manager may enter into an omnibus TSA that reserves enough capacity on the midstream company's pipeline to service all the projects in that area. Under the TSA, the midstream company is responsible for:

- Designing and constructing:
  - the gathering system;
  - the interconnections between the emitter's plant and the gathering system; and
  - the main transportation pipeline.
- Providing gathering and transportation services for the project manager.

When negotiating a TSA under the partnership model, counsel must consider the incentives, risk profiles, and the relationships among the project participants, specifically that:

- Between the emitter and the project manager, the project manager is responsible for providing transportation services.
- Between the project manager and the midstream company, the midstream company is responsible for providing transportation services on a subcontract basis.
- There is no contractual relationship for transportation services between the emitter and the midstream company, other than an interconnection agreement.

Under the sole operator model, the structure is more straightforward because the sole operator contracts directly with the midstream company for the carbon transportation services.

TSA Key Issues and Considerations

Contract Term

The term of a carbon capture TSA normally has a similar structure to an oil and gas TSA. It typically consists of:

- A primary term, usually 12 to 15 years.
- A secondary term, ranging from one to three years, which can be renewed automatically on a rolling basis or by mutual agreement of the parties.

Key considerations to determine the primary term of a carbon capture TSA are:

- The lifecycle of the carbon capture project (see Lifestyle of Carbon Capture Project).
- Whether the midstream system is used for a single CCS project or multiple CCS projects (see Single or Multiple CCS Projects).
- The economics of the midstream system itself (see Economics of Midstream System).

Lifecycle of Carbon Capture Project

The lifecycle of most CCS projects in the US is driven by the availability of the tax credits generated by the projects. Currently, CCS projects in the US can claim tax credits for up to 12 years after they are first placed in service. After the 12-year period, a CCS project no longer generates tax credits, and the primary revenue stream for the project is cut off. As a result, most CCS projects are designed for 12 years, but some project managers optimistically plan for tax credits to be extended past 12 years. Consequently, most carbon capture TSAs have a primary term set in the 12-to-15-year range, depending on whether the midstream system needs to be built before the CCS project is placed into service.

Single or Multiple CCS Projects

Under the partnership model, the project manager may execute one TSA to cover multiple projects at once, and the 12-year lifecycle of a single project may not be a major consideration for the primary term of the TSA. For example, a project manager may agree to manage carbon capture projects with multiple emitters at various stages of development and enter into one large-capacity TSA for all the projects. In this case, the CCS projects likely start operations within years of one another, and the primary term of the TSA must be longer than 12 to 15 years to ensure that transportation services are available during the lifecycles of all related CCS projects.

Economics of the Midstream System

The primary term must be long enough to ensure that the midstream company:

- Generates enough fees from the transportation services over the primary term to recoup its capital and operating expenditures.
- Meet its return-on-investment targets.

The amount of capital and operating expenditures may vary widely depending on the particulars of a given project. For example:

- The midstream company may be able to use an existing oil and gas pipeline for the CCS project (after retrofitting it for CO2) or may need to build an entirely new system, with a significant impact on the capital expenditures of the project.
- If the system crosses difficult terrain or has operational challenges, operating expenditures and maintenance costs may be high.

Economic issues like these affect the midstream company's desired primary term for the TSA, with high-cost projects requiring a longer primary term.

Conditions Precedent

Most TSAs contain conditions that must be satisfied or waived by one or both parties to the agreement before the parties' respective obligations become binding. There are commonalities between the conditions precedent in a TSA in the oil and gas context and in the carbon capture context. These conditions precedent may include:

- Final investment decisions in the project by the parties.
- Obtaining all pipeline permits and surface rights (like rights-of-way and easements necessary for the midstream system).
- Construction of the gathering and transportation system.

There are also conditions precedent that are unique to carbon capture projects, specifically:

- The construction and testing of the upstream carbon capture system.
- The construction of the downstream sequestration system.
- Obtaining permits and approvals for the carbon capture project as a whole, such as approval by the Environmental Protection Agency (EPA) or relevant state authority of a Class VI injection well application (which can take years to obtain).

If these conditions precedent are not satisfied or waived by a certain deadline specified in the TSA, one or both parties have the right to terminate the TSA. In addition, the party that fails to satisfy the applicable condition may be subject to negative consequences, likely depending on whether the condition is under the party's control. For example, if a condition precedent is:

- The construction of the midstream system, which is generally under the midstream company's control, the midstream company's failure to satisfy this condition likely leads to negative consequences.
- Obtaining a Class VI injection permit, which is generally out of either party's control, the failure to obtain the Class VI permit likely does not lead to negative consequences.

A party's exposure to negative consequences for failure to satisfy certain conditions precedent may be affected by the CCS project model. For example, the construction of the carbon capture equipment by a certain deadline is often included as a condition precedent under a TSA.

In the sole operator model, the sole operator is responsible for the construction of the carbon capture equipment, and the TSA may impose negative consequences on the sole operator as the responsible party if it fails to construct the carbon capture equipment by the deadline.

In the partnership model, the emitter (who is not a party to the TSA) is responsible for the construction of the carbon capture equipment. Therefore, the construction of the carbon capture equipment is out of the control of either party to the TSA. For TSAs under the partnership model, project managers resist incurring penalties for the emitter's failure to install the carbon capture equipment by a given deadline, or if the project manager is liable under the TSA for that failure, the project manager likely seeks an indemnity from the emitter for any amounts the project manager must pay to the midstream company.

Legal practitioners must keep in mind the broader context of the carbon capture project when drafting the conditions precedent. The midstream stage is just one part of a broader CCS project that is under active development, and the conditions precedent in the TSA must consider developments and delays both at the upstream and downstream stages of the project.

For example, if the parties' obligations under the TSA are not conditioned on the construction of the carbon capture equipment, a project manager may be locked into a minimum quantity commitment under the TSA with no ability to deliver captured carbon, and the midstream company may be required to construct a pipeline system for captured carbon that cannot be delivered. Consequently, when drafting the conditions precedent, legal practitioners must consider:

- The requirements of the upstream and downstream stages of the project.
- The current status of meeting those requirements.
- Their remaining timeline.
- How to synchronize these elements.

Firm and Interruptible Service Levels

Carbon capture TSAs often use the firm and interruptible service concepts found in oil and gas TSAs. The project manager or sole operator in the carbon capture project reserves a certain amount of firm daily capacity on the midstream company's pipeline (typically expressed in metric tons of CO2 per day), and the midstream company guarantees pipeline capacity up to the firm daily capacity amount.

- The project manager's or sole operator's deliveries into the pipeline up to the firm daily capacity usually can only be limited or curtailed because of maintenance, repair, or emergency on the pipeline.
- If firm service deliveries need curtailing, it can only be after all non-reserved or interruptible capacity is fully stopped.
- The firm service deliveries are curtailed on a proportionate basis with all other parties that receive firm service on the pipeline.

Carbon capture TSAs also usually give the project manager or the sole operator the ability to deliver additional quantities of captured carbon above the firm daily capacity on an interruptible basis under the following conditions:

- If there is excess capacity on the pipeline at the time of delivery and the midstream company agrees to accept the excess captured carbon at its discretion, then the midstream company allows these interruptible service deliveries.
- The midstream company likely has the right to stop accepting interruptible service deliveries at its discretion.
- If the midstream company needs to limit deliveries on the pipeline for maintenance, repair, or an emergency, all interruptible services deliveries are curtailed before the curtailment of any firm capacity deliveries.

Given the unpredictable nature of interruptible capacity, CCS projects cannot rely on interruptible capacity alone for the midstream stage of the project. Primary considerations for determining firm and interruptible capacity rights in a carbon capture TSA, include:

- Understanding:
  - the emitter's operational plans; and
  - the quantity of carbon that can be captured from the emitter's raw emissions stream.
- (See Emitter's Operations and Emissions.)
- Incorporating back-to-back curtailment rights with the project manager's upstream emitters (see Curtailment Rights).

Emitter's Operations and Emissions

The project manager or sole operator must reserve enough firm capacity to cover the projected quantity of captured carbon that will be produced by the emitter (or emitters, if a project manager is servicing multiple projects in one area). This consideration is particularly important for CCS projects in the partnership model, because the project manager likely both:

- Provides firm service guarantees to the emitter (for example, guaranteeing the ability to accept, transport, and inject a minimum quantity of captured carbon from the emitter).
- Is subject to a minimum quantity commitment with the emitter (for example, the project manager agrees to accept or inject a minimum quantity of captured carbon from the emitter or to pay a shortfall fee to the emitter if it fails to meet the minimum quantity).

If the project manager does not reserve enough capacity on the midstream company's pipeline to cover its firm service or minimum quantity commitments to the emitter, the project manager may be unable to meet its firm service or minimum quantity commitments and will be subject to shortfall payments to the emitter.

The project manager may also consider including negative consequences in the TSA for the midstream company's failure to meet its firm service commitments on the pipeline. To limit the project manager's liability to the upstream emitter for the midstream company's failure to meet the midstream company's firm service obligations, the amounts paid by the midstream company to the project manager should be large enough to cover any penalties owed by the project manager to the upstream emitter.

Curtailment Rights

Project managers should also consider including back-to-back curtailment rights with their upstream emitters. The project manager should ensure that it has the ability to curtail deliveries from the upstream emitter if the midstream company is curtailing deliveries on the pipeline. This can be accomplished by stating in the upstream offtake agreement between the emitter and project manager that any curtailment under the TSA gives the project manager the right to limit the upstream emitter's deliveries under the offtake agreement without negative consequences.

Minimum Quantity Commitments

Almost all carbon capture TSAs include a minimum quantity commitment that is nearly identical to a minimum volume commitment in an oil and gas TSA. Under a minimum quantity commitment:

- The project manager or sole operator agrees to transport a minimum number of metric tons of captured carbon on the midstream company's pipeline over a given time frame (a monthly, quarterly, or annual basis).
- If the project manager or sole operator fails to meet the minimum delivery quantity, it must pay a shortfall fee equal to:
  - the minimum amount that the project manager or sole operator was required to transport on the pipeline;

  - minus the amount it actually transported on the pipeline; and
  - multiplied by a negotiated dollar-per-ton shortfall fee.

For midstream companies, including a minimum quantity commitment in the transportation services agreement allows locking in revenue over the course of the contract. Regardless of whether the project manager or sole operator actually transports anything on the pipeline, the midstream company receives revenues from the shortfall fees. This payment gives midstream companies the comfort they need to commit to the hefty capital expenditures required up front to build out the gathering and transportation system for a project.

The two biggest considerations for any minimum volume or quantity commitment, whether in the carbon capture or oil and gas industries, are generally the inputs in the calculation of the shortfall fee:

- The required minimum tons of captured carbon.
- The dollar-per-ton shortfall fee.

The midstream company wants both inputs to be as large as possible, and the project manager or sole operator wants both inputs to be as small as possible.

Carbon capture projects have unique factors that the parties must consider as they negotiate the minimum quantity commitments in the TSA, including:

- Whether there will be a dedication of captured carbon (see Dedications).
- The ability of the project manager or sole operator to meet minimum quantity commitments (see Amount of Raw Emissions and Captured Carbon).
- Under a partnership model, the timing of various projects (see Project Timelines).

Dedications

Some project managers and sole operators prefer to negotiate for a dedication of captured carbon in a given area. Under this dedication, the project manager or sole operator agrees to transport all the carbon it captures within a given geographic area as an alternative to a minimum quantity commitment. Project managers or sole operators prefer dedications because they avoid shortfall fees. Dedications do not include a minimum delivery requirement, but rather, require that all captured carbon produced in a given area be delivered on the system (and that number can be low). However, dedications, as opposed to a minimum quantity commitment, are often a non-starter for midstream companies because there are not enough established carbon capture projects within the US to make the dedication a reliable and valuable alternative to a minimum quantity commitment.

For a midstream company to rely on a dedication instead of a minimum quantity commitment, there must be an established track record of predictable production in the dedicated area. Given the nascent stage of the CCS industry, there is generally no track record, and the CCS industry is too early in its development to support most dedication arrangements.

Amount of Raw Emissions and Captured Carbon

The ability of the project manager or sole operator to meet the minimum quantity commitment is entirely dependent on the upstream emitter's production of raw emissions and captured carbon. The project manager or sole operator is therefore at the mercy of the emitter. If the emitter slows or stops its plant operations, reducing its emissions stream and resulting production of captured carbon, the project manager or sole operator may not have enough captured carbon to meet the minimum quantity commitment under the TSA.

As a result, most project managers or sole operators build in a back-to-back minimum quantity commitment in the agreement with the upstream emitter that is designed to cover any shortfall fees owed to the midstream company that are caused by the emitter. For example, if the TSA contains a minimum quantity commitment of 100,000 metric tons per year and a shortfall fee of $10 per metric ton, the project manager or sole operator will try to include a 100,000 metric-ton-per-year minimum quantity commitment and a $10 per metric ton shortfall fee in its offtake agreement with the upstream emitter.

Project Timelines

For CCS projects under the partnership model where a project manager is entering into one TSA for multiple projects, the various projects will likely develop along different timelines. Some projects may start operations quickly, while others may take years to be fully developed. If the project manager is immediately subject to one large minimum quantity

commitment that is based on the total estimated production of all the projects, the project manager:

- May not be able to meet a large minimum quantity commitment until most or all projects come online.
- Will owe shortfall fees.

Therefore, the project manager should consider negotiating a minimum quantity commitment that gradually increases over a set timeline or as the different projects start operations.

Service Fees and Fee Escalation

Similar to most oil and gas TSAs, the fee structure in carbon capture TSAs is based on overall throughput in the midstream system. The TSA includes a negotiated base unit price, normally a dollar amount per metric ton of captured carbon. The base unit price is then multiplied by the number of units that the midstream company transports from the emitter's plant to the downstream delivery point over a given period. For example, the parties may agree to a monthly transportation fee with base unit price of $10 per metric ton of captured carbon. If the midstream company transports 130,000 metric tons of captured carbon during a given month, the transportation fee for that month is $1,300,000.

The transportation fee is the primary fee under the TSA, but other fees may also apply. For example, the midstream company may charge:

- Compression fees, if the project manager or sole operator delivers captured carbon at pressures that are insufficient to enter the midstream system. This situation requires the midstream company to compress the captured carbon until it meets applicable minimum pressure requirement.
- Blending fees, if the project manager or sole operator delivers captured carbon that does not meet applicable quality specifications. This situation requires the midstream company to blend the captured carbon with other captured carbon until it meets applicable quality specifications.

There are three main negotiation points for fees in a carbon capture TSA:

- How the fee increases are calculated (see Fee Escalation Mechanism).
- The timing of fee escalation (see Timing of Fee Escalation).
- Industry considerations (see Changing Industry).

Fee Escalation Mechanism

Most TSAs provide mechanisms to increase or escalate the base unit price or other fees payable under the agreement each year to keep up with inflation. Most oil and gas TSAs escalate fees based on the annual percentage increase in the consumer price index. Many midstream companies prefer to escalate fees in a carbon capture TSA based on the consumer price index because they are used to it.

However, because the tax credits generated by CCS projects are escalated based on the gross national product (GNP) deflator index, project managers and sole operators may prefer to base fee escalation on this less common GNP deflator index. By linking the escalation of TSA fees to the escalation of the tax credits, project managers and sole operators can be certain that the TSA fees and the tax credits increase by the same percentage amount, eliminating the possibility that differences in fee escalation bases create proportionate differences in the TSA fees and tax credits.

Timing of Fee Escalation

The project manager or sole operator and the midstream company often negotiate when the fee escalation should begin. TSAs are often executed several years before a CCS project starts commercial operations. Midstream companies often push to begin fee escalation immediately (for example, on the first anniversary of the TSA and each anniversary after). Project managers or sole operators push to begin fee escalation after the project begins operating (for example, on the first anniversary of the date the project begins commercial operations). While the timing of fee escalation is not often a major issue in negotiating a TSA, it can have an outsize effect, and depending on the economy's overall inflation level, changing the timing of when fees are escalated can shift the TSA fees by as much as 15%.

Changing Industry

The carbon capture industry is in its early stages of development, and there is the potential for future changes in regulations or incentives to alter the economics of a carbon capture project.

On the positive side, current incentives may be expanded, or new incentive programs may be created. For example:

- The federal government may increase the value of the 45Q tax credits for CCS projects, as it did with the Inflation Reduction Act in 2022.

- States may create their own incentive systems for CCS projects, such as California's low carbon fuel standard offset system.

Midstream companies often try to capture the value of expanded or new incentives by including in the TSA the right to increase the services fees if existing incentives are expanded or new incentives are created.

On the negative side, the Federal Energy Regulatory Commission, the EPA, or state regulators may make current CCS regulations more stringent. This potential regulation may require CCS project participants to incur additional costs to comply with the stricter rules. Midstream companies try to cover these potential increased costs by including in the TSA the right to increase the services fees if regulation costs materially increase.

Project managers and sole operators may resist including price increase rights in the TSA unless they can negotiate similar increase or pass-through rights under their upstream contracts with the emitters.

If the TSA includes price increase rights, the parties often negotiate limitations on these rights. For example, project managers and sole operators may seek caps on the fee increases or require that the fee increases be proportionate to the increase in incentives or in regulatory costs incurred by the midstream company.

Termination Rights

Many of the termination rights in a carbon capture TSA are the same as those in an oil and gas TSA. These rights may include the ability to terminate for:

- A party's failure to satisfy conditions precedent by applicable deadlines.
- The project manager's or sole operator's failure to pay service fees when due.
- A party's uncured material breach of a covenant.
- Extended events of force majeure.

However, there are two additional termination rights that are unique to carbon captures TSAs:

- Termination triggered by the elimination or material devaluation of the tax credits for the CCS project (see Elimination or Devaluation of Tax Credits).
- Termination triggered by the termination of the project manager's or sole operator's arrangement with the upstream emitter or downstream injection site owner (see Termination with Upstream Emitter or Downstream Injection Site Owner).

Elimination or Devaluation of Tax Credits

Tax credits are the primary economic driver of CCS projects. If the tax credits are eliminated or lowered below certain thresholds, the CCS project as a whole will no longer be viable. Therefore, project managers and sole operators want the right to terminate the TSA in this scenario, because otherwise, they are forced to pay shortfall fees throughout the term of the TSA without the revenue from the tax credits to pay them.

Most midstream companies resist including this type of termination right because the bulk of their capital expenditures occurs early in the term of the TSA through the build-out of the midstream system. These expenditures are then recouped over the term of the TSA through the service or shortfall fees. If the TSA terminates early because of changes to the tax credits, the midstream company may never recoup its capital expenditures. There are potential compromises on this issue (for example, the project manager or sole operator agreeing to reimburse the midstream company for a portion of their capital expenditures), but it may be difficult for the parties to reach a resolution on this termination right.

Termination with Upstream Emitter or Downstream Injection Site Owner

Project managers and sole operators try to include the right to terminate the TSA if either:

- Their contract with the upstream emitter terminates. In this case, no carbon would be captured or transported on the midstream system, resulting in shortfall fees. Without the captured carbon, the project manager or sole operator would not have the revenue steam to pay the shortfall fees.
- The pore space lease terminates. In this case, no captured carbon could be sequestered underground. The project manager or sole operator would be forced to stop transporting captured carbon on the midstream system, resulting in both shortfall fees and the inability to pay them for lack of a supporting revenue stream.

Midstream companies try to resist these rights to ensure that they can recoup their early capital expenditures.

Liability Allocation and Indemnities

The parties to a carbon capture TSA generally allocate liabilities and related indemnity rights along the same lines as the liability allocation and indemnities in oil and gas TSAs. For example, the parties may agree to a fault-based liability allocation, under which each party agrees to:

- Bear any damages or liabilities that are caused by its own actions.
- Indemnify the other party for damages or liabilities the other party suffers because of the first party's actions.

For example, if a project manager is negligent in its maintenance of the downstream injection equipment and a resulting equipment failure causes damages to the pipeline, the project manager must cover those damage under the fault-based liability allocation and indemnity.

Alternatively, the parties to a carbon capture TSA may agree to a no-fault (knock-for-knock) liability allocation, under which each party agrees to:

- Bear any damages or liabilities that it suffers, regardless of which party caused the damages or liabilities.
- Indemnify the other party to the extent the other party suffers any damages or liabilities on behalf of the first party.

For example, if the midstream company is negligent in its maintenance of the pipeline and a resulting pipeline failure injures one of the project manager's employees, the project manager is responsible for any liabilities related to the employee's injuries. If the project manager's employee successfully sued the midstream company for damages, the midstream company would be entitled to reimbursement from the project manager for those damages under the knock-for-knock liability allocation and indemnity. For further discussion of knock-for-knock indemnities in the oil and gas context, see Standard Clause, General Contract Clauses: Knock-for-Knock Indemnification Provision (TX).

The parties may also agree to a hybrid approach to the liability allocation. A common hybrid approach is a knock-for-knock liability allocation with exceptions for liabilities resulting from a party's gross negligence or willful misconduct. Under this approach:

- Each party agrees to bear any damages that it suffers, regardless of which party caused the damages or liabilities, unless they are caused by the other party's gross negligence or willful misconduct.
- The party who acted with gross negligence or willful misconduct bears the damages it caused.

There are two unique liability allocation considerations for carbon capture TSAs:

- **Back-to-back indemnity.** Project managers or sole operators may seek back-to-back indemnity arrangements covering any indemnity obligations the project manager or sole operator has to the upstream emitter for damages caused by the midstream company. This type of arrangement protects the project manager from damages caused by its upstream or midstream counterparties. For example, a project manager may agree in its contract with the upstream emitter to indemnify the emitter for any damages to the emitter's equipment caused by the operation of the midstream system. In turn, the project manager may push for an indemnity from the midstream company that covers any damages to the upstream equipment caused by the midstream company's operation of the midstream system. In this case, if a pipeline rupture damages the upstream emitter's equipment:
  - the project manager would be required to cover those damages under its indemnity of the upstream emitter; and
  - the midstream company would be required to cover any payments made by the project manager to the upstream emitter under its indemnity of the project manager.
- **Tax credit indemnity.** The project manager or sole operator may want to include an indemnity for the recapture or disallowance of any tax credits that are caused by the midstream company. For example, if there is a catastrophic problem on the pipeline:
  - a significant portion of the captured carbon on the pipeline may leak into the atmosphere;
  - the upstream emitter (in a project under the partnership model) or sole operator (in a project under the sole operator model) will not be able to claim tax credits for the leaked captured carbon (which will never be sequestered); and
  - if the pipeline problem also causes damage to the downstream sequestration site and captured carbon leaks from the sequestration reservoir,

the upstream emitter or sole operator may be subject to the recapture of previously claimed tax credits for the carbon that leaked out of sequestration.

For projects under the sole operator model, the tax credit indemnity is likely straightforward, and the midstream company would indemnify the sole operator (the party claiming the tax credits) for the loss of the tax credits.

For projects under the partnership model, the indemnity is less straightforward and would likely take the form of a back-to-back indemnity. The upstream emitter is the party claiming the tax credits, and the project manager may be required to indemnify the upstream emitter for the recapture or disallowance of tax credits caused by the operation of the midstream system. The project manager, in turn, would seek an indemnity from the midstream company for the recapture or disallowance of tax credits caused by the operation of the midstream system.