

## 9.0 Financial Responsibility

This chapter describes financial responsibilities related to the construction and operation of four horizontal wells for the injection of CO<sub>2</sub> in Morgan County, Illinois. The chapter first describes the Alliance's approach to demonstrating and maintaining financial responsibility for the construction, operation, closure, and monitoring of the proposed injection wells (Section 9.1). It then provides an overview of the cost of hiring a third party to perform corrective actions, if needed, on wells in the AoR after injection begins,<sup>1</sup> injection well plugging, post-injection site care and site closure, and emergency and remedial response actions if needed (Section 9.2). Section 9.3 describes the Alliance's proposed CO<sub>2</sub> Storage Trust Fund that will be available for corrective actions required after injection begins, injection well plugging, and post-injection site care, and site closure. Section 9.4 describes the Alliance's proposed third-party insurance policy that would be available for conducting any necessary emergency or remedial response actions. References are provided in Section 9.5.

### 9.1 Alliance Financial Requirements Compliance Approach

The Alliance plans to use a trust fund and third-party insurance to provide sufficient funding for actions that will or may need to be taken to protect USDWs within the AoR, which is defined in Chapter 3.0 of this supporting documentation. Together, these instruments will be sufficient to address endangerment of USDWs. Table 9.1 summarizes the approach the Alliance proposes to use to meet the financial responsibility requirements. Each of these instruments is described in full in subsequent sections of this chapter. Information related to the financial instruments will be updated on an annual basis and submitted to the U.S. EPA Director for review.

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<sup>1</sup> With the exception of the FutureGen stratigraphic well, no wells located within the AoR extend to the confining zone (see Section 2.7.3). In fact, the closest penetration of the confining zone is approximately 16 mi (26 km) from the proposed injection wells (see Section 3.2.1). The modeling described in Chapter 3.0, Area of Review and Corrective Action Plan, shows that the projected CO<sub>2</sub> plume will not extend to this distance. Thus, there are no active or abandoned wells or underground mines that penetrate the confining zone in the AoR. For this reason, the Alliance does not expect to need to undertake any corrective actions before the start of CO<sub>2</sub> injection at the Morgan County CO<sub>2</sub> storage site or during the planned injection of up to 22 MMT over approximately 20 years. However, for purposes of the third-party cost estimate, the Alliance assumed that during the injection or post-injection period one previously unidentified well penetrating the confining zone would need to undergo corrective action to protect USDWs.

**Table 9.1.** Approach to Meeting Financial Responsibility Requirements

Required Activity	Qualifying Financial Instrument	Description
Corrective Actions (as necessary following periodic reevaluation of AoR)	CO <sub>2</sub> Storage Trust Fund	<ul style="list-style-type: none"> <li>Established pursuant to the U.S. Environmental Protection Agency (EPA) Geologic Sequestration (GS) Financial Responsibility regulation (40 CFR 146.85)</li> <li>Created prior to injection</li> <li>Held in trust by U.S. Bank National Association, as trustee</li> </ul>
Injection Well Plugging	CO <sub>2</sub> Storage Trust Fund	<ul style="list-style-type: none"> <li>Same as above</li> </ul>
Post-Injection Site Care and Site Closure	CO <sub>2</sub> Storage Trust Fund	<ul style="list-style-type: none"> <li>Same as above</li> </ul>
Emergency and Remedial Response Actions	Third-Party Insurance	<ul style="list-style-type: none"> <li>Established pursuant to EPA GS Financial Responsibility regulation (40 CFR 146.85)</li> <li>Pollution Legal Liability policy, with carbon capture and sequestration endorsement, placed prior to injection</li> </ul>

## 9.2 Detailed Cost Estimate

To demonstrate that the financial instruments used by the Alliance will be sufficient to protect USDWs within the AoR, the Alliance asked Patrick Engineering, Inc., a nationwide engineering, design, and project management firm, to prepare a detailed estimate of the costs (in 2012 dollars) associated with corrective action on wells within the AoR after the start of injection, injection well plugging, post-injection site care, site closure, and emergency and remedial response actions that would or could be needed to protect USDWs. The cost estimate, which is contained in Appendix C, assumes that these costs would be incurred if the Alliance was no longer involved in the FutureGen 2.0 Project and a third party was asked to conclude the project. For that reason, the estimate includes costs such as project management and oversight, general and administrative costs, overhead, and profit.

The cost estimate is based upon historic price data from other projects managed by Patrick Engineering, Inc., cost quotes from third-party companies, EPA guidance documents, and professional judgment about the level of effort required to complete an activity. The estimated costs for each planned activity are listed in Table 9.2. Although the probability of such events occurring is extremely low, the types of events that could require emergency and remedial response actions and the cost of such actions are listed in Table 9.3. This information is consistent with Chapter 8.0, Emergency and Remedial Response Plan.

**Table 9.2.** FutureGen 2.0 Third-Party Cost Estimate for Planned Activities

Required Activity	Cost Estimate (\$ millions)
AoR and Corrective Action	0.623
Injection & Monitoring Well Plugging (including site reclamation)	2.723
Post-Injection Site Care	18.32
Site Closure	3.402
Total	25.068

**Table 9.3.** FutureGen 2.0 Third-Party Cost Estimate for Emergency and Remedial Response Actions

Required Activity	Cost Estimate (\$ millions)
<b>1. Post-injection USDW contamination</b>	
Acidification due to migration of CO <sub>2</sub>	0.305
Toxic metal dissolution and mobilization	5.865
Displacement of groundwater with brine due to CO <sub>2</sub> injection	0.270
<b>2. Post-injection failure scenarios (acute)</b>	
Upward migration through CO <sub>2</sub> injection well	3.343
Upward migration through deep oil and gas wells	2.111
Upward migration through undocumented, abandoned, or poorly constructed wells	2.111
<b>3. Post-injection failure scenarios (chronic)</b>	
Upward migration as a result of the gradual failure of the confining zone(s)	5.865
Release through existing faults due to effects of increased pressure	5.865
Release through induced faults due to effects of increased pressure	6.10
Upward migration through CO <sub>2</sub> injection well	0.821
Upward migration through deep oil and gas wells	0.411
Upward migration through undocumented, abandoned, or poorly constructed deep wells	0.411
<b>4. Other</b>	
Catastrophic failure of confining zone(s)	6.10
Failure of confining zone(s) or well integrity due to seismic event	6.10

### 9.3 CO<sub>2</sub> Storage Trust Fund

This section describes the selection of a trustee for the CO<sub>2</sub> Storage Trust Fund, the Trust Agreement, and the financial strength of the trustee. The trust fund will be established prior to injection and will be designed to meet the requirements of 40 CFR 146.85.

The Alliance expects that DOE will share the cost of the initial funding of the trust in a manner similar to the cost-sharing for other project-related expenses. The initial funding level has not yet been determined. The trust fund will be available for corrective action on wells within the AoR after the start of injection and, after injection ceases, for injection well plugging, post-injection site care, and site closure. The trust funds will be available to the Alliance or to a third party if the Alliance were no longer involved in the FutureGen 2.0 Project.

#### 9.3.1 Trustee Selection

On October 27, 2011, the Alliance sent requests to eight local, regional, and national banks seeking a statement of qualifications for the management of an irrevocable trust to meet the Alliance's obligations for injection well plugging and post-injection site care and site closure. The Alliance provided the trustee requirements and specifications that prospective trustees must meet and provided the draft Trust Agreement included in *Underground Injection Control (UIC) Program Class VI Financial Responsibility Guidance, Appendix B* (EPA 2011). Expressions of interest were due to the Alliance by November 15, 2011.

On December 19, 2011, the Alliance sent a formal Request for Proposal to the four banks that had expressed interest in serving as the trustee for the CO<sub>2</sub> Storage Trust Fund; clarifications were issued on January 10, 2012. On January 13, 2012, the four banks submitted their proposals.

Each proposal was reviewed and evaluated by a four-member review committee that assigned scores to price and non-price proposal responses. The price portion of the proposal was worth 33.3 percent of the total score and was based on five different categories such as setup fees, transaction fees, and other costs and fees. The non-price portion was worth 67.7 percent of the total score and was based on 14 different categories including the type, size, and location of assets held; the banks' ratings; and their experience working with federal agencies.

Based on the scoring summarized above, the review team unanimously recommended that the Alliance enter into negotiations with U.S. Bank as the prospective trustee in support of the financial assurance requirements associated with the UIC permit application.

### **9.3.2 Trust Agreement**

U.S. Bank stated that it is able to accept a form of trust agreement that largely conforms to the Sample Trust Agreement provided by the Alliance, which includes the terms recommended by the EPA.

### **9.3.3 Financial Strength of the Trustee**

U.S. Bank has been providing trust services for more than 100 years and currently administers more than 120,000 client matters in its Corporate Trust Division with \$4 trillion in assets under its administration. U.S. Bank has trusts in Morgan County, Illinois, that have assets of between \$200 million and \$300 million. U.S. Bank has a credit rating in the top categories from all of Standard & Poor's or Moody's Investor Service and Fitch Ratings. Importantly, U.S. Bank serves as trustee on more than 200 environmental protection or remediation trusts, including trust estates of hundreds of millions of dollars. The bank is involved in environmental trusts involving multiple beneficiaries including EPA and state environmental protection agencies.

## **9.4 Third-Party Insurance**

This section describes the manner in which the Alliance will select a third-party insurer, develop an insurance estimate, obtain proof of insurance, and confirm the financial strength of the insurer.

### **9.4.1 Selection of Third-Party Insurer**

The Alliance has procured the services of McGriff, Siebels & Williams (McGriff), an insurance broker operating as a separate, wholly owned subsidiary of BB&T Insurance Services. As the largest independent energy broker in the United States, McGriff serves as the broker to electric generation, natural gas, water and wastewater treatment, and energy services companies, among others. McGriff developed and placed the first insurance policy for CCS liability, representing American Electric Power on the Mountaineer Project. The company is currently engaged with multiple CCS projects on their insurance program development and management.

McGriff prepared a memorandum for the Alliance that describes the applicable insurance products, expected policy terms and conditions, exclusions, and costs and deductibles. That memorandum and a specimen policy form with a sample CCS endorsement are contained in Appendix D. A summary of the information provided by McGriff is provided in the following sections.

## **9.4.2 Insurance Estimate and Application**

The Alliance intends to secure third-party insurance to cover the potential need to undertake emergency and remedial response actions to protect USDWs in the AoR. Although the Alliance has been able to obtain information about the possible terms, conditions, and cost of such a policy, the Alliance has not yet applied for such a policy. This section describes the type of coverage that the Alliance expects to obtain from a third-party insurer, including protective conditions of coverage (cancellation, renewal, and continuation provisions). Additional information about deductions, exceptions, and the premium to be paid is also provided.

### **9.4.2.1 Type of Coverage**

After surveying the insurance marketplace, it is McGriff's understanding and opinion that the purchase of a Pollution Legal Liability (PLL) policy will provide insurance coverage for cleanup costs if the Alliance were to become legally obligated to remediate contamination of USDWs. The Alliance expects to obtain a PLL insurance policy, which will include a specifically crafted endorsement designed to address the environmental risk exposures for CCS injection and storage operations. PLL insurance can generally be obtained for bodily injury, property damage, and remediation costs arising from pollution-related exposures and would include coverage for defense costs. PLL policies contain an aggregate limit of liability for the term of the policy. To protect other aspects of the Alliance's FutureGen 2.0 activities, a PLL policy would cover costs in excess of those needed to carry out any possible emergency and remedial response actions.

A PLL policy would cover the following identified events affecting a USDW and requiring emergency and remedial response actions:

- acidification due to migration of CO<sub>2</sub>
- toxic metal dissolution and mobilization
- displacement of groundwater with brine due to CO<sub>2</sub> injection
- acute and chronic upward migration through the CO<sub>2</sub> injection well
- acute and chronic upward migration through deep oil and gas wells
- acute and chronic upward migration through undocumented, abandoned, or poorly constructed wells
- upward migration as a result of the gradual failure of the confining zone(s)
- release through existing or induced faults due to effects of increased pressure
- catastrophic failure of the confining zone(s)
- failure of the confining zone(s) or well integrity due to seismic events.

In order for the policy to respond to the events listed above, the action must fall within the definition of "cleanup costs" and be required by "environmental law." The specimen policy definition of "cleanup costs" is as follows:

*Clean-Up Costs means reasonable and necessary expenses, including legal expenses incurred with the Company's written consent which consent shall not be unreasonably withheld or delayed, for the investigation, removal, treatment including in situ treatment, remediation including associated monitoring, or disposal of soil, surface water, groundwater, microbial matter, Legionella pneumophila, or other contamination:*

- 1. To the extent required by environmental laws or required to satisfy a Voluntary Cleanup Program;*
- 2. With respect to Microbial Matter, in the absence of any applicable Environmental Laws, to the extent recommended in writing by a Certified Industrial Hygienist; or*
- 3. With respect to Legionella pneumophila, in the absence of any applicable Environmental Laws, to the extent required in writing by the Center for Disease Control or local health department; or*
- 4. That have been actually incurred by the government or any political subdivision of the U.S. or any state thereof or Canada or any province thereof, or by third parties.*

*Clean-Up Costs also include Restoration Costs.*

The specimen policy definition of “environmental law” is as follows:

*Environmental Law means any federal, state, provincial or local laws (including, but not limited to, statutes, rules, regulations, ordinances, guidance documents, and governmental, judicial or administrative orders and directives) that are applicable to the pollution condition.*

Other specific information regarding expected coverage is contained in the specimen policy form in Appendix D (Section I).

#### **9.4.2.2 Coverage Limits**

McGriff believes that the greatest exposure would be a catastrophic failure of the confining zone, which would have an estimated cost of \$6.1 million for emergency and remedial response actions to protect USDWs (see Third-Party Cost Estimate in Appendix C). Because the actual claim amount could be much higher, McGriff recommends that the Alliance purchase \$100 million in insurance coverage. The limits of liability are discussed in more detail in the specimen policy form in Appendix D (Section V).

#### **9.4.2.3 Deductible**

Based on its experience in placing other CCS policies, McGriff indicates that the deductible would be \$250,000. The deductible is discussed in more detail in the specimen policy form in Appendix D (Section V(F)).

#### **9.4.2.4 Exclusions**

The common exclusions applicable to all coverages are contained in the specimen policy form in Appendix D (Section II).

#### **9.4.2.5 Renewal**

McGriff indicates that the insurance market currently offers PLL policy terms of 3 to 5 years, depending on the required limit of liability. The market, at this time, will not guarantee renewal of such a policy because market conditions at expiration, loss of reinsurance capacity, or risk appetite for CCS exposures may limit the ability of the insurers to offer renewal terms.

#### **9.4.2.6 Cancellation**

The terms under which the policy may be cancelled are contained in the specimen policy form in Appendix D (Section VI(G)). In general, the policy may be cancelled by the Alliance by surrender of the policy. It may be cancelled by the insurance company only for nonpayment of the premium, misrepresentation by the Alliance, failure of the Alliance to comply with material terms, or a change in use or operation.

#### **9.4.2.7 Premium**

McGriff estimates that a \$100 million insurance policy with a deductible of \$250,000 would cost between \$625,000 and \$825,000 annually. This is only an estimate; the premium will be determined based on information provided to the underwriter prior to a cost quotation.

#### **9.4.3 Proof of Insurance**

Proof of insurance will be provided when the insurance policy is obtained, prior to injection.

#### **9.4.4 Financial Strength of Insurer**

The financial strength of the insurer will be an important component of the Alliance's selection of an insurer. Information regarding the insurer's financial strength will be provided to the EPA when the insurer is selected.

### **9.5 References**

40 CFR 146.85. Code of Federal Regulations, Title 40, *Protection of the Environment*, Part 146, "Underground Injection Control Program: Criteria and Standards," Section 85, "Financial responsibility."

Clean Coal FutureGen for Illinois Act. Illinois Public Act 097-0618, effective October 26, 2011

EPA (U.S. Environmental Protection Agency). 2011. *UIC Program Class VI Financial Responsibility Guidance*, Appendix B (Recommended Financial Responsibility Instruments). EPA 816-R-11-005, Washington, D.C.

