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Testimony

Before the

Committee on Energy and Natural Resources

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Hearing on

Senate Bill 1013, Department of Energy Carbon Capture and Sequestration Program Amendments Act of 2009

May 14, 2009

Summary

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Firms seeking investment capital to finance business ventures, including CCS, must demonstrate the ability to assume and manage risks inherent to the venture. By doing so, the firm is able to assure investors, whether private or public, that the value of their investment will not erode, and with time, will gain value.

In the case of CCS, the very long time horizon and the use of taxpayer dollars demands a financial assurance structure that adequately protects the private and public investor.

To be effective, a financial assurance structure that implements private – public risk sharing should achieve four clear goals: (1) Ensure funds are adequate, when needed; (2) Ensure these funds are readily accessible, when needed; (3) Establish minimum standards for financial institutions providing funds or underwriting risk; and (4) Ensure continuity of financial assurances, when ownership of sites is transferred.

The long-term indemnity model proposed in Senate Bill 1013 is a notable step forward in achieving these goals, and appropriately limits indemnification to certain types of damages.

However, if the intent of Senate Bill 1013 is to establish a financial assurance structure that ensures sufficient resources are available to pay for long-term stewardship at the time ownership of the demonstration projects is transferred, then the following elements of the Bill would benefit from additional clarification:

1. In the section addressing Collection of Fees and the use of Net Present Value analysis, the amount of fees assessed and collected should be based on the Net Present Value of probable damages arising from each demonstration project. The analytic tools exist to estimate dollar values for potential damages and are routinely used by firms expert in financial and natural resource economics.

2. This section also should require the design of an adjustable fee structure, whereby the CCS developer pays a risk-adjusted, site-specific fee that is reassessed as actual site-specific monitoring, measuring and verification data become available.

3. In the section addressing Use of Fees, consistent with basing fees on Net Present Value analysis, the fees collected should not be deposited in the Treasury and credited to miscellaneous receipts. Rather, the fees should be set aside in a dedicated, interest-bearing Trust Fund similar to other financial assurance models legislated by Congress. Otherwise, the fees collected may disappear into the Treasury, resulting in an inter-generational cost to future taxpayers.

4. The same financial assurance provisions should exist regardless of whether the CCS demonstration project is sited on private lands, public lands or tribal lands.

In my view, clarifying the language of Senate Bill 1013 as I have suggested will help ensure continuity of financial assurances for long term stewardship.

Testimony of Chiara Trabucchi

Principal, Industrial Economics Incorporated

Thank you for the opportunity to testify in today's legislative hearing on Senate Bill 1013, Department of Energy Carbon Capture and Sequestration Program Amendments Act of 2009. I am a Principal with Industrial Economics Incorporated in Cambridge, Massachusetts. My expertise is in finance and economics, with specific focus on financial assurance frameworks and financial indemnity models. Founded in 1981, Industrial Economics is a privately-owned professional services firm expert in the areas of financial and natural resource economics. The clients of the firm span the public and private sectors.

The focus of my testimony is on the financial management and indemnification framework proposed by Senate Bill 1013. Below, I offer my overall assessment of Senate Bill 1013, I highlight areas of the Bill with which I agree, and offer suggestions for consideration by the Committee. These suggestions are based on the language proposed in Senate Bill 1013, and the Bill's intended objective of fostering early mover deployment of no more than 10 Carbon Capture and Sequestration (herinafter CCS) demonstration projects.

The sections that follow map to the provisions proposed by Senate Bill 1013. Where appropriate, I highlight elements of the proposed language that are well designed; and I offer suggestions where the language of Senate Bill 1013 might be clarified or improved.

Overview. The Importance of Financial Responsibility

Firms seeking investment capital to finance business ventures must demonstrate the ability to assume and manage risks inherent to the venture. By doing so, the firm is able to assure investors,

whether private or public, that the value of their investment will not erode, and with time, will gain value. Financing CCS ventures requires a long-term capital horizon, and therefore investors are likely to have a low tolerance for risks. Under traditional financing models, investors require that risks be bounded, quantified and accounted for either directly as an expense, or indirectly through third-party financial instruments (letters of credit, surety bonds, insurance, to name a few).

The use of taxpayer dollars and the very long time horizon associated with CCS – one which may extend beyond the natural life of the corporate entity undertaking the demonstration project – demands a financial management solution that blends the strengths of private and public risk sharing. To be effective, a financial assurance structure that implements a private – public risk sharing should achieve four clear goals:

(1) Ensure funds are adequate, when needed;
(2) Ensure these funds are readily accessible, when needed;
(3) Establish minimum standards for financial institutions providing funds or underwriting risk; and
(4) Ensure continuity of financial assurances, when ownership of sites is transferred.

To the degree society wishes to reduce greenhouse gas emissions, and the portfolio of emission reduction technologies includes CCS, then an effective financial assurance and indemnification framework will balance the four above-listed goals with needed incentives to foster the safe deployment of a limited number of early mover, demonstration projects.

If modified as I suggest below, the design of the financial assurance framework and the implementation of private – public risk sharing as proposed in Senate Bill 1013 should accomplish these goals.

Project Selection Criteria

The science-based criteria and provisions for project selection as proposed by Senate Bill 1013 are necessary but not sufficient to underpin the financial management structure defined in later sections of Senate Bill 1013. Additional provisions requiring the explicit evaluation of potential human health and environmental impacts from a financial perspective – deriving expected loss values with a clear understanding of the statistical range of possible outcomes – are needed for each proposed demonstration project.

The outputs of these evaluations will achieve two objectives.

First, they will help the implementing agency assess competitive bids for demonstration projects, and make an informed decision as to the potential financial risk posed by each demonstration project.

Second, they will provide an appropriate basis to calculate the amount of financial assurance that should be set aside by the individual CCS developer.

Terms and Conditions (Financial Assurance)

In my view, as proposed by Senate Bill 1013, the CCS developer should remain financially responsible for events that occur during the operating lifecycle of the CCS project, and for a defined period post-injection. Specifically, financial assurances should be secured and maintained by the developer of the CCS demonstration project until such time as title to the site is transferred and accepted by the implementing Federal agency. In this way, the Bill provides incentives for CCS developers to properly operate and maintain their sites, limiting the potential for future damages. Firms are more likely

to undertake design and operating decisions that minimize environmental (and remediation) costs, if they are held financially accountable.

Further, maximum flexibility should be afforded to developers of the early mover demonstration projects in selecting the financial instruments that may be used, including but not limited to trust funds, letters of credit, surety bonds, insurance, and self-insurance through a corporate financial test or corporate guarantee, or any combination thereof. The array of acceptable financial instruments must ensure that funds are adequate if and when needed, and readily accessible to pay for delineated activities. For this reason, minimum standards are necessary for financial institutions securing funds or underwriting CCS risks.

Indemnification Agreements

Exception for Gross Negligence and Intentional Misconduct

In my opinion, Senate Bill 1013 appropriately limits indemnification to certain types of damages. The exception provided in Senate Bill 1013 for gross negligence and intentional misconduct is important, particularly as it relates to fraud and misrepresentation of site (monitoring, measuring and verification) data. The importance of this exception can not be overemphasized, because these data likely will be used to underpin financial assurances and fee calculations.

Collection of Fees

I believe it is appropriate to assess and collect fees from the CCS developer to finance the cost of long-term stewardship. In my view, the language proposed by Senate Bill 1013 should be clarified to ensure that the amount of fees collected is not arbitrary or based on a fixed rate for all sites. Establishing

a blanket fixed fee to be paid by all CCS developers regardless of their individual site characteristics, operational methods and potential for consequences results in an inefficient use of available resources which otherwise could be invested for productive economic purposes. From a financial perspective, establishing a fixed rate that is paid by all CCS developers results in some developers paying more, and others less, than their fair share, because of differences in site attributes. Further, without strong oversight regarding site selection and fund management, and a clear process by which the amount of fees collected are periodically evaluated against the risk profiles of pooled sites, there is no reason to believe that the amount of funds collected will map to the actual financial resources needed to address long-term care expenses and delimited compensatory damages.

If the intent of Senate Bill 1013 is to ensure a fee structure whereby the CCS developer pays a risk-adjusted, site-specific fee, then additional clarifying language in the section of the Bill that addresses the criteria for determining the amount of the fee to be collected is necessary. In my opinion, this fee should be based on the Net Present Value of the future expected losses for each individual demonstration project. Probable loss scenarios can be derived from each project's site characterization and risk assessment plans. These analyses provide an indication of 'how bad it could get' if an adverse event related to a CCS project were to occur, as well as a measure of the amount of damages that might be required for remediation and to compensate for harm or injury.

The use of Net Present Value analysis, as proposed in Senate Bill 1013, is accepted practice for funds management within the financial community. The analytic tools exist to estimate the expected range of dollar values for potential damages. Similar tools are used by: (1) firms, such as insurers, in the risk management industry; (2) firms in the financial sector; and (3) firms with expertise in human health and natural resource economics.

Additional clarifying language is warranted with respect to the timing of when such fees will be paid by the CCS developer. To ensure continuity of financial assurance during active site injection, post-injection, and through long-term stewardship, the amount of fees collected from the CCS developer should be established either as an up-front payment or as a payment over time during the operating lifecycle – the period of active injection – of the demonstration project. If the intent of Senate Bill 1013 is not to delay the collection of fees until the end of the project, when there is the danger that the CCS developer may not have the resources available to pay the fees, or until an event or claim arises, then the language of the Bill should clearly state this. Provisions should be made at the outset of the demonstration project for the possibility of future bankruptcy or financial distress of the developer of the CCS demonstration project.

As the provisions proposed by Senate Bill 1013 relate to a limited number of demonstration projects, and the public is assuming a measure of financial risk, the fees should be reassessed as information about the risk profiles become available. Practical reality should inform the application of financial theory. For example, if actual site monitoring, measuring and verification data demonstrate a declining risk profile and a reduced dollar value of future expected loss, the Net Present Value calculation underpinning the fee collection should be adjusted to reflect this situation, and the CCS developer should pay less in fees. Overfunding a long-term financial structure benefits neither the private sector nor the public sector. However, the inverse is also true – if monitoring, measuring and verification data suggest an increasing risk profile – the fees assessed should reflect the incremental increase in potential harm that may arise from the occurrence of an adverse event.

Establishing an adjustable fee structure that is based on the results of actual monitoring, measuring and verification data ensures that the CCS developer is rewarded for design and operating decisions that minimize future risk, and by extension future loss. Further, underpinning the financial management structure proposed by Senate Bill 1013 with an adjustable fee structure that reflects the

evolution of site risks over time ensures that the financial instruments used for purposes of financial assurance can be scaled up or down in response to site-specific differences.

Analyses underpinning the Net Present Value calculation proposed by Senate Bill 1013, and the determination of how much to collect in fees, should be developed prior to entering into an indemnification agreement. These analyses should be transparent, identifying key assumptions regarding the timing of probable payments and an appropriate risk-adjusted discount rate. The public should know what it is financing, especially if there is the expectation that these fees will be passed through to end consumers in the form of increased energy rates. Further, to the degree other projects (beyond the early mover demonstration projects) come on-line, the data generated as part of these early mover efforts should inform the financial assurances and design of financial management strategies for long-term stewardship of subsequent projects.

Use of Fees (Net Present Value and the Importance of Funds Management)

In my view, Net Present Value analysis should be used to underpin the financial management framework proposed in Senate Bill 1013. However, Net Present Value analysis presumes that money set aside today will earn interest and gain value over time. Thus, the use of Net Present Value analysis is effective only if the money that is collected is set aside in a dedicated, interest-bearing account, and does not form part of the miscellaneous receipts of the general Treasury, as currently proposed by Senate Bill 1013. Clarifying language is warranted in the Bill if, in fact, the expectation is that fees collected from developers of CCS demonstration projects will be set aside in a dedicated account. In the absence of doing so, the fees collected may disappear into the Treasury, and result in an inter-generational transfer of costs to future tax payers, if claims are made in the future and the fees collected are not set aside and allowed to gain value.

Based on my experience with financial assurance frameworks, and other long-term indemnity models legislated by Congress, the fees collected from developers of CCS demonstration projects should be set aside in a dedicated, interest-bearing account that generates a rate of return at least equal to the rate of inflation. Specifically, the fees collected from CCS developers should be deposited in a dedicated fund defined by Senate Bill 1013 as a "Fund" or "Trust Fund" for purposes of paying claims and monitoring costs arising after transfer and acceptance of title of the CCS demonstration projects by the Federal government. Conforming legislation establishing the Fund under Title 26, Subtitle I, Chapter 98, subchapter A of the Internal Revenue Code is necessary.[1] Duty for managing investments collected and deposited in the Fund should be the purview of the Department of the Treasury.

The portion of funds vested in the Fund that is not required to meet annual withdrawals should be invested in interest-bearing obligations of the United States.[2] Other long-term liability and federal indemnity models, including the Hazardous Substances Superfund,[3] the Oil Spill Liability Trust Fund,[4] and the Harbor Maintenance Trust Fund,[5] to name a few, adopt a similar investment strategy. Further, the Secretary of the Treasury should rely on the implementing agency, as established by Senate Bill 1013, to provide information on the annual funding needs of the program, either as it may relate to the payment of claims following acceptance of title to the CCS demonstration project, or for purposes of long-term monitoring activities.

Ensuring that the language of Senate Bill 1013 clearly articulates the intent of Congress in assessing, collecting and using fees from the developers of CCS demonstration projects will help to avoid

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[1] See 26 U.S.C. 9501 through 26 U.S.C. 9510 for dedicated Trust Funds established by the federal government under the Internal Revenue Code.
[2] 26 U.S.C. 9602
[3] See Comprehensive Environmental Response, Compensation, and Liability Act § 221, 42 U.S.C. 9631 (2007), Superfund Amendments and Reauthorization Act § 517, 42 U.S.C. 9601(11) (2006), 26 U.S.C. 9507 (Hazardous Substance Superfund).
[4] See Oil Pollution Act § 1001(11), 33 U.S.C. 2701(11) (2007). 26 U.S.C. 9509 (Oil Spill Liability Trust Fund).
[5] See Act of May 13, 1954 (commonly referred to as the "St. Lawrence Seaway Act") § 13(a), 33 U.S.C. 988(a). Water Resources Development Act § 210(a), 33 U.S.C. 2238(a) (2007). 26 U.S.C. 9505 (Harbor Maintenance Trust Fund).

future litigation over how much should have been collected in fees, how much was collected in fees, and what happened to the fees that were collected.

Federal Land

The same financial and legal provisions, with respect to financial assurances and indemnification, should exist regardless of whether the CCS demonstration project is sited on private lands, public lands or tribal lands. The failure to establish the same financial provisions for demonstration projects sited on public or tribal lands as for those sited on private lands may result in: (1) poor operating decisions and lack of appropriate site selection, because the project developer is not held financially accountable for its business decisions; and/or (2) provide an unintended subsidy or competitive market advantage to developers of demonstration projects on public or tribal lands.

Training Program

To the degree authority for financial management or investment of fees collected under Senate Bill 1013 is transferred to a federal agency other than the Treasury Department, appropriate training programs in financial and economic analysis should be provided.

Conclusion

The use of tax payer dollars and the very long time horizon associated with CCS – one which may extend beyond the natural life of the corporate entity undertaking the demonstration project – demands a financial assurance structure that blends the strengths of private and public financing and risk management tools. In my view, a financial assurance structure that successfully implements private – public risk sharing should achieve four clear goals:

(1) Ensure funds are adequate, when needed;

(2) Ensure these funds are readily accessible, when needed;

(3) Establish minimum standards for financial institutions providing funds or underwriting risk; and

(4) Ensure continuity of financial assurances, when ownership of sites is transferred.

To the degree society wishes to reduce greenhouse gas emissions, and the portfolio of emission reduction technologies includes CCS, then an effective financial assurance and indemnification framework will balance the above-listed goals with needed incentives to foster the safe deployment of a limited number of early mover, demonstration projects. The long-term indemnity model proposed in Senate Bill 1013 is a step forward in accomplishing this objective.

However, if the intent of Senate Bill 1013 is also to establish a financial assurance structure that ensures sufficient funds are available to pay for long-term stewardship at the time ownership of the demonstration projects is transferred, then the Bill would benefit from the modifications that I outline above. Finally, ensuring that the language of Senate Bill 1013 clearly articulates the intent of Congress in assessing, collecting and using fees from the developers of CCS demonstration projects will help to avoid future litigation.