



The Wyoming Enhanced Oil Recovery Institute: 3rd Annual Wyoming CO₂ Conference

Federal Updates

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Areas Covered

- **"Clear and present danger" language in WM about crude oil**
- **HR 2454 Waxman-Markey—CO2-EOR(hydrocarbons)-Sequestration recognized but not given any incentives**
- **45Q DOA if TARP goes away--Treasury still wrestling with language----two versions with interesting twists**
- **Senate Energy Bill-(GS Indemnification S 1013) its meaning, implications and issues**
- **DOE Funding**
- **EPA UIC Guidelines and Mandatory GHG Reporting**

Interesting Finding on Oil

- ***SEC. 127. OPEN FUEL STANDARD.***
- ***17 (a) FINDINGS.—“The Congress finds that—
(1) the status of oil as a strategic commodity,
which derives from its domination of the
transportation sector, presents a clear and
present danger to the United States”;***
- *Language found on page 117 of June 19th HR 2454 this language also found on page 115 of the “Amendment in the Nature of a Substitute” 946 page version of HR 2454 not in the May 21, 932 page version but also on page 33 in the Committee report June 5th.*

H.R. 2454, The American Clean Energy and Security Act of 2009

- Recognizes the use of geologic sequestration (Section 813)
- Primary sequestration mediums are saline formations , depleted oil and gas fields and deep coal seams (June 5th Committee Report)
- EPA sets up Task force to study legal framework within six months of enactment and due within 18 months to Congress of enactment.
- EPA tasked with establishing itself (1 yr report to Congress), the geologic sequestration regulations (2 yrs), Safe Drinking Water regulations (3 yrs) and requirements for geologic sequestration both subsurface and atmospheric reporting (4 yrs) ***including CO2-EOR sequestration operations***
- Using Enhanced hydrocarbon recovery results in reduced bonus allowance values at the EPA Administrator's discretion

H.R. 2454 The American Clean Energy and Security Act of 2009 Committee Report

- ***Three types of geologic formations are well-suited to long-term storage of injected CO₂: depleted oil and gas fields, saline formations, and deep coal seams. Page 288***

H.R. 2454 The American Clean Energy and Security Act of 2009-EPA

- **EPA Administrator** starts upon enactment and shall submit a report to Congress 1 year after bill is enacted study examining how, and under what circumstances, the environmental statutes for which the Environmental Protection Agency has responsibility would apply to carbon dioxide injection and geologic sequestration activities.

H.R. 2454 The American Clean Energy and Security Act of 2009-EPA

- **EPA Administrator** to establish Task Force for “*The Study of Legal Framework for Geologic Sequestration Sites*” 6 months after enactment of the Bill and findings of Report to Congress due 18 months after enactment. Comprised of: *subject matter experts, nongovernmental organizations with expertise in environmental policy, academic experts with expertise in environmental law, State officials with environmental expertise, representatives of State Attorneys General, and members of the private sector to cover:*
 - **(A)** existing Federal environmental statutes, State environmental statutes, and State common law that apply to geologic sequestration sites for carbon dioxide, including the ability of such laws to serve as risk management tools;
 - **(B) the existing statutory framework, including Federal and State laws, that apply to harm and damage to the environment or public health at closed sites where carbon dioxide injection has been used for enhanced hydrocarbon recovery;**
 - **(C)** the statutory framework, environmental health and safety considerations, implementation issues, and financial implications of potential models for Federal, State, or private sector assumption of liabilities and financial responsibilities with respect to closed geologic sequestration sites;
 - **(D)** private sector mechanisms, including insurance and bonding, that may be available to manage environmental, health and safety risk from closed geologic sequestration sites; and
 - **(E)** the subsurface mineral rights, water rights, or property rights issues associated with geologic sequestration of carbon dioxide.

H.R. 2454 The American Clean Energy and Security Act of 2009-EPA

- **EPA Administrator** devises Regulations to protect human health and the environment by minimizing the risk of escape to the atmosphere of carbon dioxide emissions into the atmosphere injected for Geologic Sequestration within 2 yrs of enactment by requiring:
 - (1) a process to obtain certification for geologic sequestration under this section;
 - (2) monitoring, record keeping, and reporting for emissions associated with injection into, and escape from, geologic sequestration sites, taking into account any requirements or protocols developed under section 713;
 - (3) public participation in the certification process that maximizes transparency;
 - (4) the sharing of data between States, Indian tribes, and the Environmental Protection Agency; and
 - (5) other elements or safeguards necessary to achieve the purpose set forth in subsection (b).

H.R. 2454 The American Clean Energy and Security Act of 2009-EPA

- **EPA Administrator** to devise Safe Drinking Water regulations per geologic sequestration wells 1 yr after geologic sequestration regulations are set. Taking into account the current UIC work on geologic sequestration wells, and will include requirements of financial responsibility of for emergency and remedial response, well plugging, site closure, and post-injection site care.
- Financial Responsibility by insurance, guarantee, trust, standby trust, surety bond, letter of credit, qualification as a self-insurer, or any other method satisfactory to the Administrator.

H.R. 2454 The American Clean Energy and Security Act of 2009-EPA

- **EPA Administrator** will issue a first report starting 2 yrs after rule making then report every three years thereafter, this report to the ***Committee on Energy and Commerce of the House of Representatives and the Committee on Environment and Public Works of the Senate*** on geologic sequestration in the United States, and, to the extent relevant, other countries in North America. Such report shall include—
 - (1) data regarding injection, emissions to the atmosphere, if any, and performance of active and closed geologic sequestration sites, including those where enhanced hydrocarbon recovery operations occur;
 - (2) an evaluation of the performance of relevant Federal environmental regulations and programs in ensuring environmentally protective geologic sequestration practices;
 - (3) recommendations on how such programs and regulations should be improved or made more effective; and
 - (4) other relevant information.

H.R. 2454 The American Clean Energy and Security Act of 2009-Allowances

- *(b) ELIGIBILITY CRITERIA. Page 78 To be eligible to receive emission allowances under this section, the owner or operator of a project must*
- *“(2) Page 80 geologically sequester carbon dioxide at a site that meets all applicable permitting and certification requirements for geologic sequestration, or, pursuant to such requirements as the Administrator may prescribe by regulation, convert captured carbon dioxide to a stable form that will safely and permanently sequester such carbon dioxide,*
- *(3) meet all other applicable State and Federal permitting requirements; and*
- *(4) be located in the United States.*

H.R. 2454 The American Clean Energy and Security Act of 2009-Allowances

- **(3) BONUS ALLOWANCE VALUES.—Page 81**
- **(D) Page 82 For a carbon capture and sequestration project sequestering in a geological formation for purposes of enhanced hydrocarbon recovery, the Administrator shall, by regulation, reduce the applicable bonus allowance value under this paragraph to reflect the lower net cost of the project when compared to sequestration into geological formations solely for purposes of sequestration.**

H.R. 2454 The American Clean Energy and Security Act of 2009-Allowances

- **CRITERIA FOR ESTABLISHING BONUS Page 87**
- **ALLOWANCE VALUES.—**In setting bonus allowance values under this paragraph, the Administrator shall seek to cover no more than the reasonable incremental capital and operating costs of a project that are attributable to implementation of carbon capture, transportation, and sequestration technologies, taking into account
- **(ii) the reduced cost associated with sequestering in a geological formation for purposes of enhanced hydrocarbon recovery when compared to sequestration into geological formations solely for purposes of sequestration;**

45Q Tax Credit for Geologic Sequestration

- Two versions: EIEA-TARP and ARRA-Stimulus
- Credit given to taxpayer at capturing facility
- TARP-Enacted October 3 good through February 17th. Can file with IRS draft form 8933: <http://www.irs.gov/pub/irs-dft/f8933--dft.pdf>
- \$20/ton for disposal in deep saline formations and unminable coal seams secure geologic storage “sequestration not used”
- \$10/ton EOR
- Captured but not recaptured-recycled or re-injected
- “Secure geological storage” means, in part, that “adequate security measures” have been undertaken to ensure that the “carbon dioxide does not escape to the atmosphere.” This only applied to brine reservoirs
- Only had to consult with the EPA
- CO2 had to be captured and stored starting October 3, 2008 through February 17, 2009 with a 75million ton annual cap of certified capture
- ARRA “Stimulus” version- Amended and enacted February 17th.

EIEA -TARP 45Q

- The Energy Improvement and Extension Act of 2008 (“EIEA”) – enacted last fall as part of the Emergency Economic Stabilization Act of 2008 – added a new Section 45Q sequestration tax credit. Section 45Q has two parts. The first part is a credit of \$20 per metric ton for “qualified carbon dioxide” captured by a taxpayer at a qualified facility and disposed of by such taxpayer in secure geological storage (including storage at deep saline formations and unminable coal seams under such conditions as the Secretary of the Treasury may determine).
- The second part allows a credit of \$10 per metric ton of qualified carbon dioxide that is captured by the taxpayer at a qualified facility and used by such **taxpayer as a tertiary injectant (including carbon dioxide augmented waterflooding and immiscible carbon dioxide displacement) in a qualified enhanced oil or natural gas recovery project.**
- “Qualified carbon dioxide” is defined as carbon dioxide captured from an industrial source that (1) would otherwise be released into the atmosphere as an industrial emission of greenhouse gas, and (2) is measured at the source of capture and verified at the point or points of injection. **Qualified carbon dioxide includes the initial deposit of captured carbon dioxide used as a tertiary injectant but does not include carbon dioxide that is recaptured, recycled, and re-injected as part of an enhanced oil or natural gas recovery project process.**
- A “qualified facility” means any industrial facility (1) which is owned by the taxpayer, (2) at which carbon capture equipment is placed in service, and (3) which captures not less than 500,000 metric tons of carbon dioxide during the taxable year. **The credit applies only with respect to qualified carbon dioxide captured and sequestered or injected in the United States or one of its possessions.** Except as provided in regulations, credits are attributable to the person that captures and physically or contractually ensures the disposal, or use as a tertiary injectant, of the qualified carbon dioxide. Credits are subject to recapture, as provided by regulation, with respect to any qualified carbon dioxide that ceases to be recaptured, disposed of, or used as a tertiary injectant in a manner consistent with the rules of the provision.
- The credit is part of the general business credit. The credit sunsets at the end of the calendar year in which the Treasury Department, in consultation with EPA, certifies that 75 million metric tons of q



ARRA “Stimulus”- 45Q Tax Credit

- In ARRA and effective February 17, 2009..But was amended:
- Consultation ongoing-IRS must consult with DOI, EPA and DOE
- Implies 75 million ton annual cap-*not total program of 75 mm tons*
- “Secure geological storage” remains focused on adoption of security measures to ensure that the carbon dioxide does not “escape into the atmosphere.” but with consultation with the DOE, EPA and DOI on crafting the regulations for this-*ongoing*
- Clarifies that secure geological storage also includes oil and gas reservoirs
- “Permanent”
- Qualified carbon dioxide still must be “measured at the source of capture” and “verified at the point of disposal or injection.”
- The 45Q takes effect with respect to “carbon dioxide captured” after ARRA’s enactment – but not necessarily injected

American Clean Energy Leadership Act of 2009-GS Indemnification

- **TITLE III—IMPROVED ENERGY SECURITY -PART III—MISCELLANEOUS -Subtitle F—Carbon Capture Sec. 371. Large-Scale Carbon Storage Program (Energy Innovation and Workforce Development in Summary by Bingaman and Murkowski)**
- **Facilitates Carbon Capture, Transportation and Storage**
- ***Carbon capture and geologic storage Indemnification (S.1013) legislation establishes a national indemnity program through the Department of Energy for up to 10 commercial-scale carbon capture and sequestration projects to ensure this energy technology is fully realized for the future.***
- **Up to 10 sites**
- **Geographically agnostic—“sites” may possibly aggregation of individual sites**
- **Industrial sources may be aggregated to make 1 million ton hurdle**
- **Brine reservoirs, active and depleted oil and gas reservoirs and “stacked storage” mediums**
- **First come first served for qualifying sites**
- **Secretary must make a determination within 1 year of application**
- **Must comply with Federal and state regulations including protection of USDW**
- **Minimum 10 yrs post closure and meeting requirements**
- **May be some financial assistance**
- **DOE takes over ownership of lands sequestration if not already on Fed**



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Federal CCS Funding Opportunities

U.S. Department of Energy-National Energy Technology Laboratory Recovery Act: Carbon Capture and Sequestration from Industrial Sources and Innovative Concepts for Beneficial CO2 Use Funding Opportunity Number: DE-FOA-0000015 Announcement Type: Initial CFDA Number: 81.089 Fossil Energy Research and Development.
Announcement June 8, 2009 application due August 7, 2009

- **\$1,321,765,000.00 Available**
- **Carbon Capture Storage from Industrial Sources-can be with/from steel, aluminum, cement, manufacturing, muni-waste, petcoke fuel source. Exclusions on power plants with energy output over 50% and fuel is over 55% coal. Efficiency in capture technology min 10% CO2 content with 75% capture of emitted CO2 stream storage, 1 million tons/year in CO2-EOR-EGR, basalt, stacked and ECBM, required site characterizations and MVA as program components**
- **Phase I: concept and planning. Seven months. 10-12 awards, \$500K to \$3 million. DOE 80% cost share**
- **Phase II: Design, Construction and Operations. 60 months. 4-6 awards must be in Phase I to qualify. \$50 to \$400 million award size. DOE targets 50% but cannot exceed 80% cost share.**
- **No min-max on awards and qualifications open-financial ability in Phase II. Applications due August 7, 2009**



EPA

- **UIC Codes/Geologic Sequestration Well** Protocols- Docket ID No. EPA-HQ-OW-2008- 0390- Proposed rule: 40 CFR Parts 144 and 146 Federal Requirements Under the Underground Injection Control (UIC) Program for Carbon Dioxide (CO₂) Geologic Sequestration (GS) Wells
- EPA proposes adding Class VI, MSG proposes Class IIb and Class VII
- Public comment period ended December 24, 2008
- <http://www.epa.gov/fedrgstr/EPA-WATER/2008/July/Day-25/w16626.htm>

- **Mandatory GHG Reporting-** Docket ID No. EPA-HQ-OAR-2008-0508 FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110–161), EPA has proposed a rule that requires mandatory reporting of greenhouse gas (GHG) emissions from large sources in the United States.
- Public comment period ended June 9, 2009
- <http://www.epa.gov/climatechange/emissions/ghgrulem>



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