

Energy & Sustainability

Interagency Sustainability Group
January 15, 2009

Snapshot



National Glimpse



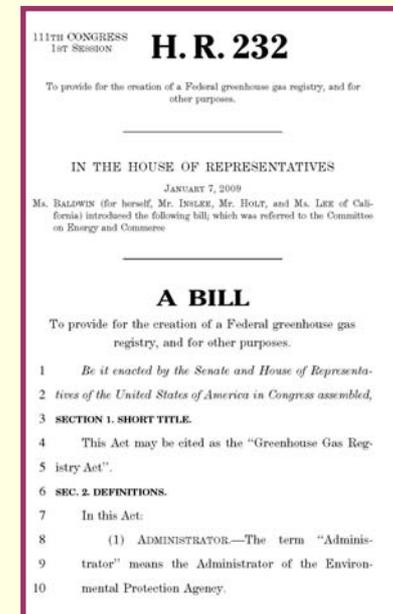
National – Federal Government

U.S. EPA:

- EPA Mandatory GHG Reporting Rule –draft rule sent to OMB October 2008 – not yet public
 - Final rule due June 2009
- Propose rule – Geologic Sequestration
 - *Federal Register*
FR 73 43491 (July 25, 2008)

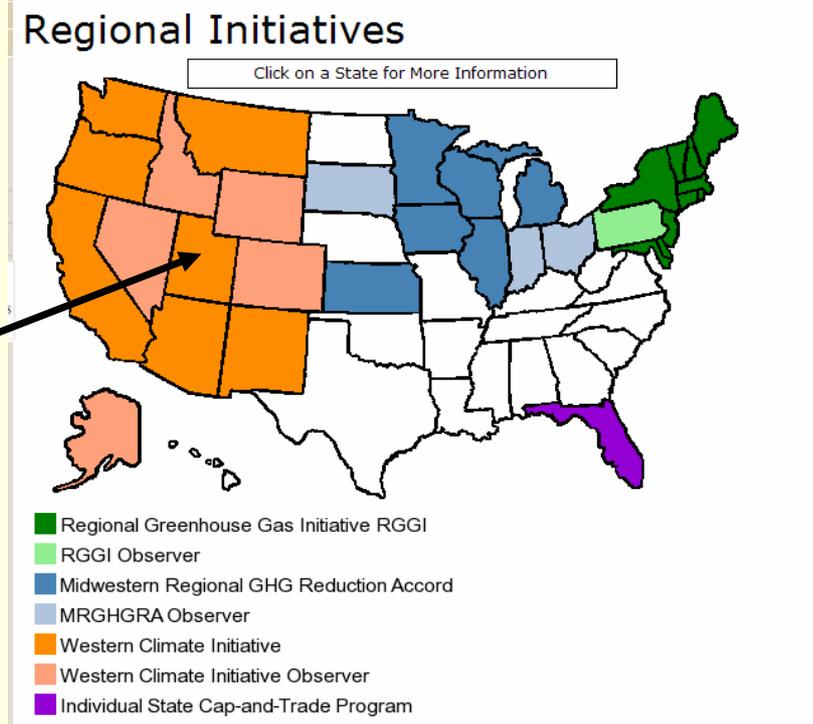
CONGRESS (111th Congress):

- Baldwin – Inslee Bill (H.R. 232)
 - Creates a national GHG Registry



Regional Activities

- Regional Greenhouse Gas Initiative (RGGI)
- Midwestern Regional GHG Reduction Accord
- **Western Climate Initiative (WCI)**



Source: Pew Center on Global Climate Change

Utah – Current Activities

- Recent Utah Law Revisions
- Carbon Capture & Geologic Sequestration Workgroup
- Western Climate Initiative (WCI)
- The Climate Registry (TCI)

UTAH LEGISLATURE / S.B. 202

ENERGY RESOURCE AND CARBON EMISSION REDUCTION INITIATIVE

Statutory Revisions

- Municipal Electric Utility Carbon Emission Reduction Act (Title 10, Chapter 19)
- Energy Resource Procurement Act (Title 54, Chapter 17)

Enrolled Copy S.B. 202

1 ENERGY RESOURCE AND CARBON EMISSION
2 REDUCTION INITIATIVE
3 2008 GENERAL SESSION
4 STATE OF UTAH
5 Chief Sponsor: Curtis S. Bramble
6 House Sponsor: David Clark
7 Cosponsor: Mike Dmitrich

8
9 LONG TITLE
10 General Description:
11 This bill provides that an electrical corporation or municipal electric utility maintain a
12 percentage of electricity sold in the form of renewable energy resources and makes other
13 changes concerning the acquisition of energy resources.
14 Highlighted Provisions:
15 This bill:
16 ▪ addresses independent and qualifying power producers;
17 ▪ addresses the application of Title 54, Chapter 17, Energy Resource Procurement
18 Act, to certain renewable energy resources;
19 ▪ defines terms;
20 ▪ provides that 20% of an electrical corporation's or municipal electric utility's
21 adjusted retail electric sales beginning in the year 2025 come from qualifying
22 electricity, including renewable energy resources, if cost effective;
23 ▪ provides for the issuance and recognition of a renewable energy certificate for
24 certain electrical generation and actions by an energy user;
25 ▪ requires plans and reports concerning an electrical corporation's or municipal electric
26 utility's progress in acquiring qualifying electricity;
27 ▪ addresses cost recovery for certain energy resources;
28 ▪ requires certain state agencies to make rules concerning carbon capture and
29 geological storage of captured carbon emissions; and

Energy Resource Procurement Act

- §701 Requirements
 - Develop administrative rules (recommendations) regarding:
 - Carbon capture and geological sequestration
 - DEQ (Divisions of Water Quality & Air Quality-on behalf of their individual Boards)
 - Collaboration with
 - Public Service Commission
 - Division of Oil, Gas, & Mining
 - Utah Geological Survey

Energy Resource Procurement Act

- §701 Requirements – Recommended rules (cont.)
 - Ensure that adequate health and safety standards are met
 - Minimize the risk of unacceptable leakage from the injection well and injection zone for carbon capture and geologic sequestration
 - Rules **do not** apply to Class II injection wells (enhanced hydrocarbon recovery)

Energy Resource Procurement Act

- §701 Requirements – Recommended rules (cont.)
 - Provide adequate regulatory oversight and public information concerning carbon capture and geologic sequestration
 - Apply to the injection of CO₂ into allowable geological formations to reduce emissions to the atmosphere through long-term geological sequestration

Energy Resource Procurement Act

- Site characterization approval;
- Geomechanical, geochemical, and hydrogeological simulation;
- Risk assessment;
- Mitigation and remediation protocols;
- Issuance of permits for test, injection, and monitoring wells;
- Specifications for the drilling, construction, and maintenance of wells;
- Issues concerning ownership of subsurface rights and pore space;
- Allowed composition of injected matter
- Testing, monitoring, measurement, and verification for the entirety of the carbon capture and geologic sequestration chain of operations, from the point of capture of the carbon dioxide to the sequestration site;
- Closure and decommissioning procedure;
- Short- and long-term liability and indemnification for sequestration sites;
- Conversion of enhanced oil recovery operations to carbon dioxide geological sequestration sites; and
- Other issues as identified

Energy Resource Procurement Act

- Multi-agency and stakeholder workgroup created to fulfill §701 requirements
 - Steering Committee
 - 3 Subcommittees
 - Carbon Capture & Separation
 - Compression & Transportation
 - Injection Well / Geological Sequestration
 - Technical Advisory Committee
 - Stakeholders Group

Energy Resource Procurement Act

- §701 Requirements (cont.)
 - Present rule recommendations to Legislature's Administrative Rules Review Committee by **January 1, 2011**
 - Submit a progress report by **July 1, 2009** to the following legislative interim committees:
 - Public Utilities and Technology
 - Natural Resources, Agriculture, and Environment

CARBON CAPTURE & GEOLOGICAL SEQUESTRATION WORKGROUP

Web site created for workgroup

(www.climatechange.utah.gov/CCGS_WG.htm)

- Activities/meetings
- Work products
- Related Documents

First meeting held September 8

MORE TO COME

The screenshot shows a website titled "Climate Change" with a search bar and a navigation menu. The main content area is titled "Carbon Capture and Geologic Sequestration Workgroup" and includes sections for "Purpose" and "Organization".

Climate Change

Stakeholder Activities: BRAC WCI GHG Goal Climate Registry

Photo: Wasatch Mountains - Lone Peak - Photo courtesy Utah Office of Tourism (Steve Greenwood).

Carbon Capture and Geologic Sequestration Workgroup

[Meetings](#) | [Documents & References](#) | [Back to CCGS Main Page](#)

Purpose

The primary purpose of the CCGS Workgroup is to develop recommended administrative rules for the implementation of carbon capture and geologic sequestration in Utah as directed under Part 54-17-701 of the Utah Energy Resource Procurement Act (the Act) recently added by the enactment of Utah Senate Bill 202, Utah 2008 General Legislative Session. The Act directs the Division of Water Quality and the Division of Air Quality, in collaboration with the Public Service Commission, the Division of Oil, Gas, and Mining, and the Utah Geological Survey, to develop these rules; including rules for the capture and transportation of carbon dioxide to the geologic sequestration site. State and federal statutes and existing and proposed regulations must be considered during the development of these new rules.

The secondary purpose of the CCGS Workgroup is to prepare comments on EPA's Proposed rule for Federal Requirements Under the Underground Injection Control (UIC) Program for Carbon Dioxide (CO₂) Geologic Sequestration (GS) Wells. The proposed EPA rule only addresses federal requirements for the injection wells; it does not address requirements for the capture of carbon dioxide at its source or its transportation to the injection well. Although the proposed EPA rule only addresses the injection well, some of the proposed requirements may impact implementation of other aspects of CCGS.

Organization

The CCGS Workgroup consists of an over-arching Steering Committee; three Subcommittees - CO₂ Capture and Separation, CO₂ Compression and Transport, and CO₂ Injection Well - that will focus on developing rules for the three major aspects of CCGS; an Advisory Committee that provides technical support to the Steering Committee and the Subcommittees; and a Stakeholder Group that provides for public and stakeholder input during the rules development process.

* [CCGS Workgroup Organization](#) (pdf, 192 kb)

* [CCGS Workgroup Members](#) (coming soon)

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Climate Science
Utah Report
Utah Symposium
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Capture & Sequestration
Renewable Energy
USTAR
Repository
BRAC Process
BRAC Report
Energy Efficiency Report
GHG Emissions Inventory
Climate Policy Symposia
EPA Initiatives
State Initiatives
National Reports

Western Climate Initiative (WCI)

- A regional effort to reduce greenhouse gas emissions
- Greenhouse gases included under WCI
 - Carbon dioxide (CO₂)
 - Methane (CH₄)
 - Nitrous oxide (N₂O)
 - Hydrofluorocarbons (HFCs)
 - Perfluorocarbons (PFCs)
 - Sulfur hexafluoride (SF₆)

WCI Participants

- US Partner States: Arizona, California, Montana, New Mexico, Oregon, Utah, Washington
- Canadian Partner Provinces: British Columbia, Manitoba, Ontario, Quebec
- Observers: Other Canadian Provinces (Saskatchewan), 6 additional US states, 6 Mexican states

WCI - Cap and Trade Program

- “Cap and Trade” refers to
 - Setting a maximum amount of CO₂e emissions allowed under the program
 - Distributing “allowances” (approved emission equal to one metric ton CO₂e)
 - Trading of allowances among CO₂e emitters.
- Participation threshold is 25,000 metric tons CO₂e annually.

WCI - Reporting Requirements

- 2010 first reporting year
- First report submitted in 2011
- Who is required to report (reporting threshold)?
 - 10,000 metrics tons carbon dioxide equivalent (CO₂e) annual emissions
 - Definitely includes large industrial facilities such as power plants, refineries, and cement kilns
 - May include hospitals, large office buildings/complexes, and some manufacturing operations
 - Most residential and small business facilities will fall below the 10,000 metric ton CO₂e reporting threshold.

WCI - Important Dates

- 2010: reporting requirement begins
- 2012: “CAP and Trade” program begins
 - CAP set at 2012 emission levels
 - CAP declines annually along straight line to meet 2020 target level.
- 2015: CAP and Trade program expands to cover additional sectors
 - CAP is set by adding expected emissions from new sectors to the calculated CAP for previously covered sectors.
- 2020: goal target date, return to 2005 emission levels

Utah GHG Emissions Reduction Goal:

- Announced June 20, 2008
- Reduce emissions to **2005 levels by 2020**
 - A **28%** reduction in emissions over 2020 business as usual (BAU)
 - Over 27 million tons of CO₂e reductions over BAU
 - Over 9 tons per person reduced in 2020

What Else?

- Landscape Sequestration Team
- Various Other Organizations
- Local Government