

Introduced by Senator RubioFebruary 21, 2012

An act to amend Section 659 of the Civil Code, to amend Section 51010.5 of the Government Code, to add Section 38575 to the Health and Safety Code, and to add Section 3239 to the Public Resources Code, relating to greenhouse gas.

LEGISLATIVE COUNSEL'S DIGEST

SB 1139, as introduced, Rubio. Greenhouse gas: carbon capture and storage.

(1) Existing law requires the Division of Oil, Gas, and Geothermal Resources to regulate the construction and operation of wells. Under existing federal law, the division has been delegated with the responsibility of regulating class II wells under the federal Underground Injection Control program.

This bill would specifically require the division to regulate carbon dioxide enhanced oil recovery projects that seek to demonstrate carbon sequestration for various laws providing for the reduction of greenhouse gas emissions.

(2) The California Global Warming Solutions Act of 2006 requires the State Air Resources Board to establish regulations to achieve specified greenhouse gas emissions reduction goals. The act authorizes the state board to include market-based compliance mechanisms in achieving those reduction goals.

This bill would require the state board, by January 1, 2015, to adopt a final methodology for carbon capture and storage projects seeking to demonstrate sequestration under various laws providing for the reduction of greenhouses.

(3) The Elder California Pipeline Safety Act of 1981 vests the State Fire Marshal with the exclusive safety regulatory and enforcement authority over intrastate hazardous liquid pipelines and, to the extent authorized by an agreement between the State Fire Marshal and the United States Department of Transportation, interstate hazardous liquid pipelines.

This bill would additionally vest exclusive safety regulatory and enforcement authority over pipelines transporting a fluid consisting of more than 90% carbon dioxide compressed to a supercritical state.

(4) Existing law defines land as a material of earth and includes free or occupied space for an indefinite upward or downward distance for the purpose of prescribing ownership of land.

This bill would specify that free space includes pore space that can be possessed and used for the storage of greenhouse gas.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: no.

The people of the State of California do enact as follows:

1 SECTION 1. This measure shall be known and may be cited
2 as the Carbon Capture and Storage Act of 2012.

3 SEC. 2. (a) The Legislature finds and declares all of the
4 following:

5 (1) California has established stringent short-term and long-term
6 greenhouse gas (GHG) reduction goals that are functionally similar
7 to the federal and international emission reduction goals. Executive
8 Order S-3-05 committed California to reduce the GHG emissions
9 to year 2000 levels by 2010 and to year 1990 levels by 2020, and
10 to 80 percent below the year 1990 levels by 2050, a level consistent
11 with the current scientific evidence regarding emission reductions
12 needed to stabilize the climate. The California Global Warming
13 Solutions Act of 2006 (Division 25.5 (commencing with Section
14 38500) of the Health and Safety Code) separately obligates
15 California to reduce GHG emissions to the year 1990 levels by
16 2020.

17 (2) The scope plan adopted pursuant to the California Global
18 Warming Solutions Act of 2006 recognizes the critical role that
19 carbon capture and storage (CCS) can play in helping the state
20 meet its GHG reduction goals. Cap-and-trade programs worldwide,
21 including the Kyoto Protocol to the United Nations Framework

1 Convention on Climate Change (UN Doc. FCCC/CP/1997/7/Add.1,
2 37 ILM 22) and the European Union Emissions Trading Scheme
3 (Directive 2003/87/EC, as amended), include CCS as a key means
4 for compliance. The 2010 Cancun Agreements under the Kyoto
5 Protocol (UN Doc. FCCC/CP/2010/7/Add.1) envision that CCS
6 will be able to generate certified emissions reductions (CERs)
7 under the clean development mechanism (CDM). The 2011 Durban
8 Platform under the Kyoto Protocol (UN Doc. FCCC/CP/2011/L.10)
9 provides modalities and procedures regarding specifically how
10 CCS projects may generate CERs under the CDM.

11 (3) The geologic storage of carbon dioxide is expected to provide
12 an effective means of storing carbon dioxide over geologic time
13 periods. The International Panel on Climate Change (IPCC), in its
14 2005 Special Report on Carbon Capture and Storage, states that
15 “[o]bservations from engineered and natural analogues as well as
16 models suggest that the fraction retained in approximately selected
17 and managed geological reservoirs is very likely to exceed 99%
18 over 100 years and is likely to exceed 99% over 1,000 years.”

19 (4) California will be unlikely to achieve its GHG emission
20 reduction goals without the deployment of CCS. The International
21 Energy Agency’s 2011 World Energy Outlook describes CCS as
22 a “key abatement option” that accounts for 18 percent of emission
23 savings in a key modeled scenario. The International Energy
24 Agency further reports that CCS investment must be made “now”
25 if emission reductions are to be achieved economically. The August
26 2010 report of the President’s Interagency Task Force on CCS
27 describes the technology as one that can “greatly reduce” GHG
28 emissions while playing an “important role in achieving national
29 and global” GHG reduction goals. In its December 2010 report,
30 the California Carbon Capture and Storage Review Panel states
31 that “[t]here is a public benefit from long-term geologic storage
32 of [carbon dioxide] as a strategy for reducing GHG emissions to
33 the atmosphere as required by California laws and policies.”

34 (5) Despite the existence of comprehensive federal CCS
35 regulations, impediments to the deployment of CCS technology
36 in California remain, including specific gaps in California laws
37 and regulation. Many of these gaps are identified and discussed
38 by the California Carbon Capture and Storage Review Panel’s
39 December 2010 report. These gaps include clarifying ownership

1 of the pore space and clarifying regulatory responsibility for
2 permitting CCS projects.

3 (6) By exercising a leadership role in CCS technology,
4 California will position its economy, technology centers, financial
5 institutions, and businesses to benefit from efforts to reduce
6 emissions of GHGs through CCS.

7 (7) California has ample geologic storage capacity for carbon
8 dioxide. In a 2005 report, the United States Department of Energy
9 determined that the state has a “huge potential for geological
10 sequestration capacity.” The study found that the saline formations
11 have a storage capacity of 146 to 840 gigatons of carbon dioxide.
12 Moreover, those formations also have large numbers of oil and
13 gas fields and significant potential for carbon dioxide enhanced
14 oil recovery (CO₂-EOR). The CO₂-EOR technology is a proven
15 mature technology that results in the sequestration of carbon
16 dioxide.

17 (8) In another 2005 study, the United States Department of
18 Energy documented the potential energy production and GHG
19 storage potential of CO₂-EOR technology for California. That
20 study reached several conclusions, including California has a large
21 “stranded oil” resource base that will be left in the ground
22 following the use of today’s oil recovery practices, much of
23 California’s large “stranded oil” resource base is amenable to
24 CO₂-EOR, application of miscible and immiscible CO₂-EOR
25 would enable a significant portion of the California’s “stranded
26 oil” to be recovered, and the successful introduction and wide scale
27 use of CO₂-EOR in California would stimulate the economy,
28 provide new higher paying jobs, and lead to higher tax revenues
29 for the state.

30 (9) Carbon dioxide capture is subject to comprehensive federal
31 regulations. The United States Environmental Protection Agency
32 (USEPA) regulates air emissions of GHGs through several
33 regulatory programs, including the Prevention of Significant
34 Deterioration (PSD) and Title V permitting programs under the
35 federal Clean Air Act (42 U.S.C. Sec. 7401 et seq.). The USEPA’s
36 PSD and Title V Permitting Guidance for Greenhouse Gases states
37 that permit writers must consider CCS technology to be “available”
38 as part of the five-step Best Available Control Technology
39 assessment process. Subpart PP (commencing with Section 98.420)
40 of, subpart RR (commencing with Section 98.440) of, and subpart

1 UU (commencing with Section 98.470) of, Part 98 of Title 40 of
2 the Code of Federal Regulations prescribing GHG reporting rules
3 separately require companies engaged in CCS-related operations
4 to report their atmospheric emission of GHGs. These regulations
5 apply in California.

6 (10) Carbon dioxide transport is subject to comprehensive
7 federal regulation by all modes, including pipeline, road, or ground.
8 These regulations apply in California.

9 (11) The pipeline transport of carbon dioxide is a proven mature
10 technology. In its 2005 special report of CCS, the IPCC states that
11 the “[p]ipeline transport of [carbon dioxide] operates as a mature
12 market technology (in the [United States], over 2,500 [kilometers]
13 of pipelines transport more than 40 [metric tons of carbon dioxide]
14 per year).” Federal government data demonstrate that carbon
15 dioxide pipelines are safe. Meanwhile, the trucking industry has
16 safely transported significant quantities of carbon dioxide for
17 decades for a variety of commercial end users, including the
18 carbonated beverage industry.

19 (12) Carbon dioxide injection and storage is subject to
20 comprehensive federal regulations. In December 2010, the USEPA
21 finalized its class VI regulations (76 Fed. Reg. 56982) under the
22 Underground Injection Control program (UIC), and since that time
23 the USEPA has issued detailed implementation guidance. Those
24 regulations do not impact ongoing CO₂-EOR operations but
25 provide a mechanism by which CO₂-EOR owners or operators
26 that elect to conduct concurrent oil production and sequestration
27 operations may do so under the UIC class II well program, which
28 governs CO₂-EOR operations. The UIC class VI well program
29 regulations apply in California and are implemented by the USEPA.
30 The UIC class II well program regulations apply in California and
31 USEPA has delegated its implementation responsibilities to the
32 Division of Oil, Gas, and Geothermal Resources of the Department
33 of Conservation.

34 (13) The goals of creating a regulatory framework that ensures
35 the safe deployment of CCS technology in a manner consistent
36 with the state’s goals for GHG reduction can best be accomplished
37 by clarifying the ownership of the pore space and the regulatory
38 responsibility of permitting CCS projects.

39 (b) It is the intent of the Legislature to create a clear and
40 comprehensive permitting regime for CCS projects in California.

1 (c) In enacting this act, the Legislature does not intend to require
2 the deployment of CCS technology but only to provide a clear and
3 certain regulatory structure for CCS projects.

4 SEC. 3. Section 659 of the Civil Code is amended to read:

5 659. (a) Land is the material of the earth, whatever may be
6 the ingredients of which it is composed, whether soil, rock, or
7 other substance, and includes free or occupied space for an
8 indefinite distance upwards as well as downwards, subject to
9 limitations upon the use of airspace imposed, and rights in the use
10 of airspace granted, by law.

11 (b) (1) *The free space specified in subdivision (a) includes pore*
12 *space that can be possessed and used for the storage of greenhouse*
13 *gas in the state.*

14 (2) *This subdivision does not change or alter the law as it relates*
15 *to the rights belonging to, and the dominance of, the mineral estate,*
16 *and does not change or alter the incidents of ownership or other*
17 *rights of the owners of the mineral estate, including the right to*
18 *mine, drill, complete, or abandon a well, the right to inject*
19 *substances to facilitate production, the right to implement enhanced*
20 *recovery for the purposes of recovery of oil, gas, or other minerals,*
21 *or the dominance of the mineral estate.*

22 SEC. 4. Section 51010.5 of the Government Code is amended
23 to read:

24 51010.5. As used in this chapter, the following definitions
25 apply:

26 (a) “Pipeline” includes every intrastate pipeline used for the
27 transportation of hazardous liquid substances, *carbon dioxide*, or
28 highly volatile liquid substances, including a common carrier
29 pipeline, and all piping containing those substances located within
30 a refined products bulk loading facility ~~which~~ *that* is owned by a
31 common carrier and is served by a pipeline of that common carrier,
32 and the common carrier owns and serves by pipeline at least five
33 ~~such~~ *of these* facilities in the state. “Pipeline” does not include the
34 following:

35 (1) An interstate pipeline subject to Part 195 of Title 49 of the
36 Code of Federal Regulations.

37 (2) A pipeline for the transportation of a hazardous liquid
38 substance in a gaseous state.

1 (3) A pipeline for the transportation of crude oil that operates
2 by gravity or at a stress level of 20 percent or less of the specified
3 minimum yield strength of the pipe.

4 (4) Transportation of petroleum in onshore gathering lines
5 located in rural areas.

6 (5) A pipeline for the transportation of a hazardous liquid
7 substance offshore located upstream from the outlet flange of each
8 facility on the Outer Continental Shelf where hydrocarbons are
9 produced or where produced hydrocarbons are first separated,
10 dehydrated, or otherwise processed, whichever facility is farther
11 downstream.

12 (6) Transportation of a hazardous liquid by a flow line.

13 (7) A pipeline for the transportation of a hazardous liquid
14 substance through an onshore production, refining, or
15 manufacturing facility, including a storage or inplant piping system
16 associated with that facility.

17 (8) Transportation of a hazardous liquid substance by vessel,
18 aircraft, tank truck, tank car, or other vehicle or terminal facilities
19 used exclusively to transfer hazardous liquids between those modes
20 of transportation.

21 (b) “Flow line” means a pipeline ~~which~~ *that* transports hazardous
22 liquid substances from the well head to a treating facility or
23 production storage facility.

24 (c) “Hydrostatic testing” means the application of internal
25 pressure above the normal or maximum operating pressure to a
26 segment of pipeline, under no-flow conditions for a fixed period
27 of time, utilizing a liquid test medium.

28 (d) “Local agency” means a city, county, or fire protection
29 district.

30 (e) “Rural area” means a location ~~which~~ *that* lies outside the
31 limits of any incorporated or unincorporated city or city and county,
32 or other residential or commercial area, such as a subdivision, a
33 business, a shopping center, or a community development.

34 (f) “Gathering line” means a pipeline eight inches or less in
35 nominal diameter that transports petroleum from a production
36 facility.

37 (g) “Production facility” means piping or equipment used in the
38 production, extraction, recovery, lifting, stabilization, separation,
39 or treatment of petroleum or associated storage or measurement.
40 (To be a production facility under this definition, piping or

1 equipment must be used in the process of extracting petroleum
2 from the ground and transporting it by pipeline.)

3 (h) “Public drinking water well” means a wellhead that provides
4 drinking water to a public water system as defined in Section
5 116275 of the Health and Safety Code, that is regulated by the
6 State Department of Health Services and that is subject to Section
7 116455 of the Health and Safety Code.

8 (i) “GIS mapping system” means a geographical information
9 system that will collect, store, retrieve, analyze, and display
10 environmental geographical data in a data base that is accessible
11 to the public.

12 (j) “Motor vehicle fuel” includes gasoline, natural gasoline,
13 blends of gasoline and alcohol, or gasoline and oxygenates, and
14 any inflammable liquid, by whatever name the liquid may be
15 known or sold, which is used or is usable for propelling motor
16 vehicles operated by the explosion type engine. It does not include
17 kerosene, liquefied petroleum gas, or natural gas in liquid or
18 gaseous form.

19 (k) “Oxygenate” means an organic compound containing oxygen
20 that has been approved by the United States Environmental
21 Protection Agency as a gasoline additive to meet the requirements
22 for an “oxygenated fuel” pursuant to Section 7545 of Title 42 of
23 the United States Code.

24 (l) *“Carbon dioxide” means a fluid consisting of more than 90*
25 *percent carbon dioxide molecules compressed to a supercritical*
26 *state.*

27 SEC. 5. Section 38575 is added to the Health and Safety Code,
28 to read:

29 38575. (a) On or before January 1, 2015, the state board shall
30 adopt a final methodology for carbon capture and storage projects
31 seeking to demonstrate sequestration under the greenhouse gas
32 emission performance standard pursuant to Chapter 3 (commencing
33 with Section 8340) of Division 4.1 of the Public Utilities Code or
34 the regulations implementing a cap-and-trade program pursuant
35 to this division, or create greenhouse gas emission compliance
36 instruments or offset credit pursuant to this division.

37 (b) The methodology adopted pursuant to subdivision (a) shall
38 be suitable for any of the following:

39 (1) The regulations for the mandatory reporting of greenhouse
40 gas emissions (Article 2 (commencing with Section 95100) of

1 Subchapter 10 of Chapter 1 of Division 3 of Title 17 of the
2 California Code of Regulations).

3 (2) The demonstration of sequestration under the greenhouse
4 gas emission performance standard established pursuant to Chapter
5 3 (commencing with Section 8340) of Division 4.1 of the Public
6 Utilities Code.

7 (3) The demonstration of sequestration for the purposes of the
8 regulations implementing the market-based compliance
9 mechanisms pursuant to this division.

10 (4) A compliance offset protocol for use in the regulations
11 implementing the market-based mechanisms pursuant to this
12 division.

13 (c) The methodology shall include a methodology for assessing
14 emission reductions for carbon dioxide enhanced oil recovery
15 projects seeking to demonstrate sequestration pursuant to the
16 greenhouse gas emission performance standard or regulations
17 implementing the market-based compliance mechanisms, or to
18 create greenhouse gas emission compliance instruments or offset
19 credits pursuant to this division by demonstrating simultaneous
20 sequestration of injected carbon dioxide. The methodology shall
21 address multiple modes of carbon dioxide transportation, including
22 pipeline, rail, and road transportation.

23 (d) In adopting the methodology, the state board shall, to the
24 maximum extent feasible, harmonize the adopted methodology
25 with greenhouse gas storage or sequestration quantification
26 methodologies used by other state, federal, or international
27 greenhouse gas emission reduction programs.

28 SEC. 6. Section 3239 is added to the Public Resources Code,
29 to read:

30 3239. The Division of Oil, Gas, and Geothermal Resources
31 shall regulate a carbon dioxide enhanced oil recovery project
32 seeking to demonstrate sequestration of greenhouse gas pursuant
33 to the greenhouse gas emission performance standard under the
34 greenhouse gas emission performance standard pursuant to Chapter
35 3 (commencing with Section 8340) of Division 4.1 of the Public
36 Utilities Code or the regulations implementing a cap-and-trade
37 program pursuant to the California Global Warming Solutions Act
38 of 2006 (Division 25.5 (commencing with Section 38500) of the
39 Health and Safety Code), or create greenhouse gas emission
40 compliance instruments or offset credit pursuant to the California

1 Global Warming Solutions Act of 2006 pursuant to this division
2 and under its regulatory authority to permit class II injection wells
3 in the state pursuant to the authority delegated to the Division of
4 Oil, Gas, and Geothermal Resources pursuant to Section 1425 of
5 the federal Safe Drinking Water Act (42 U.S.C. Sec. 311h-4).

O