The Florida Senate

BILL ANALYSIS AND FISCAL IMPACT STATEMENT

(This document is based on the provisions contained in the legislation as of the latest date listed below.)

Prepared By: The Professional Staff of the Committee on Environmental Preservation and Conservation

BILL:	SB 958
INTRODUCER:	Senator Richter
SUBJECT:	Underground Natural Gas Storage
DATE:	April 8, 2013
REVISED:	

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Gudeman	Uchino	EP	**Pre-meeting**
2.			CU	
3.			JU	
4.				
5.				
6.				

I. Summary:

SB 958 creates the Underground Natural Gas Storage Act. Specifically, the bill:

- Provides tax exemptions for natural gas stored in Florida;
- Declares that the underground storage of natural gas is in the public interest;
- Clarifies that natural gas stored in Florida is not subject to the specific provisions relating to the control and regulation of all common sources of oil or gas;
- Provides definitions and renumbers definitions;
- Provides authority to the Division of Resource Management (division) and provides the Department of Environmental Protection (DEP) with rulemaking authority;
- Provides specific permitting requirements and the contents of the permit application;
- Provides specific conditions under which a permit may be issued;
- Provides for the protection of water supplies while providing defenses to claims for the contamination of a water supply;
- Provides for the protection of natural gas storage facilities and for the property rights of the natural gas injected;
- Allows for the unitization of a storage reservoir and exempts stored natural gas from certain limitations;
- Provides penalties for violations of a permit for a natural gas storage facility;
- Prohibits pollution and requires the cost of clean-up to be incurred by the responsible party; and
- Allows for underground natural gas storage facilities to be subject to expedited permitting.

SB 958 amends sections 211.02, 211.025, 376.301, 377.06, 377.18, 377.19, 377.21, 377.22, 377.24, 377.241, 377.242, 377.25, 377.28, 377.29, 377.30, 377.34, 377.37, 377.371, 403.973 of

the Florida Statutes. The bill also creates sections 377.2407, 377.2431, 377.2432, 377.2433, 377.2434 of the Florida Statutes, and an unnumbered section of law.

II. Present Situation:

Natural Gas Storage

Natural gas storage is critical to maintaining the reliability and supply needed to meet the demand of consumers. Underground natural gas storage was first introduced in 1909 by the United States Geological Survey and was carried out in 1916 in a depleted reservoir located in Concord, New York.[1]

The most common type of underground natural gas storage facility is depleted natural gas wells where all of the recoverable natural gas has been extracted, leaving underground formations geologically capable of storing natural gas.[2] There are 326 depleted reservoir storage sites in the United States.[3] These sites are favorable over other types of underground storage because the infrastructure from the extraction network is already in place and the geological characteristics of the reservoir are well known.[4]

For a depleted reservoir to be a viable option for underground storage, it must be located in a consuming region and close to transportation infrastructure. The porosity and permeability of the formation are also critical factors as porosity determines the amount of natural gas that may be held, and the permeability determines the rate at which the natural gas flows through the formation.[5]

Aquifers and salt caverns are also used as underground storage facilities. Salt caverns storage facilities are formed out of existing salt deposits that are impermeable and self-sealing, creating a strong and environmentally sound storage system. Aquifer storage systems are underground porous, permeable rock formations that act as natural water reservoirs and are used to store natural gas in areas where there are no depleted reservoirs. Aquifers are the most expensive type of underground storage facility because of the extensive geologic testing that must be done prior to use.[6] There are 43 aquifer storage sites and 31 salt cavern storage sites in the United States.[7]

To store natural gas in an underground storage facility, it is first reconditioned by injecting natural gas into the formation, which builds up pressure. As natural gas is added, the voids in the geologic formation are filled and become pressurized, similar to a natural gas container. Steady pressure in the reservoir allows gas to be extracted at a predictable rate, once the pressure drops below the wellhead, there is no pressure left to push the natural gas out of the reservoir. A "base

[1] Arthur J. Kidnay and William R. Parrish, FUNDAMENTALS OF NATURAL GAS PROCESSING, 256 (2006).
[2] NaturalGas.org, *Storage of Natural Gas*, http://www.naturalgas.org/naturalgas/storage.asp (last visited Apr. 7, 2013).
[3] U.S. Energy Information Administration, *Underground Natural Gas Storage*, http://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/ngpipeline/undrgrnd_storage.html (last visited Apr. 7, 2013).
[4] *Supra* note 2.
[5] *Id*.
[6] *Id*.
[7] *Supra* note 3.

gas" is used to maintain the pressure in the reservoir and remains in the reservoir at all times.[8] The "working gas" is the natural gas that is injected, stored, and withdrawn.[9] When the working gas pressure is high, gas may be extracted at a high rate; as the working gas pressure decreases, the flow rate of extracted natural gas decreases. The balance between the "base gas" pressure and the "working gas" pressure directly influences the deliverability rate of the storage facility.[10]

Currently in the United States, the majority of natural gas storage facilities are depleted reservoirs located in 22 states, primarily in the north east.[11] The Weekly Natural Gas Storage Report states that 1,724 billion cubic feet of natural gas has been stored over the last five years.[12]

Federal Regulation of Natural Gas

The Federal Energy Regulatory Commission (FERC) regulates interstate pipeline operations, storage, permitting and construction of new pipeline facilities, and the transmission rates that pipelines are permitted to charge. The FERC coordinates with other federal and state agencies to permit new pipelines and the conditions under which the pipelines may be constructed. The FERC also regulates the abandonment of facilities.[13]

Regulation of Oil and Gas Resources in Florida

The DEP's Mining and Minerals Regulation Program (program) regulates oil and gas exploration and production in Florida under part I of ch. 377, F.S., and Rules 62C-25 through 30, Florida Administrative Code. Companies that explore for, or produce oil and gas in Florida, are permitted through the program, which ensures compliance and safety of the activities. In order to drill for oil or gas, the applicant must first provide notice to the DEP and pay the required permit fee. The permit may be granted subject to specific statutory criteria. The local government or municipality in which the land is located must also approve the application for the permit by a resolution.[14]

Section 211.02(1), F.S., provides for a severance tax to be levied on the production of oil within Florida for sale, transport, storage, profit, or commercial use. The tax is measured by the value of the oil produced, saved or stored during a month.

Florida is not a large producer of natural gas as the amount recovered in south Florida is considered to be insignificant and approximately 700 billion cubic feet of natural gas has been

[8] "Base gas" is defined as the volume of gas needed as a permanent inventory to maintain adequate reservoir pressures and deliverability rates throughout the withdrawal season. All native gas is included in base gas volume. *See* U.S. Energy Information Administration, *Natural Gas, Definitions, Sources and Explanatory Notes*, http://www.eia.gov/dnav/ng/tbldefs/ng_stor_wkly_tbldef2.asp (last visited Apr. 7, 2013).
[9] "Working gas" is defined as the volume of total gas storage capacity that contains natural gas available for withdrawal. *See id*.
[10] *Supra* note 2.
[11] *Id*.
[12] U.S. Energy Information Administration, *Weekly Natural Gas Storage Report*, http://ir.eia.gov/ngs/ngs.html (last visited Apr. 7, 2013).
[13] 15 U.S.C., s. 717 et seq.
[14] *See* ss. 377.242-377.24, F.S.

produced in northwest Florida.[15]

There are no existing underground natural gas storage facilities in Florida and there are no regulatory provisions or rules for the storage of underground natural gas. All of the natural gas demand in Florida is served by two interstate pipelines delivering up to 4.5 billion cubic feet per day of natural gas. The existing pipelines are capable of providing enough natural gas to fuel approximately 26,000 mega watts of electric generation, which serves 5.5 to 6 million customers. The only natural gas reserves available in Florida are in the "line pack," which is the actual amount of gas in the pipeline or distribution system. The "line pack" allows for operational flexibility for pipeline customers, but is not considered a method of storage.[16]

III. Effect of Proposed Changes:

Section 1 creates an unnumbered section of law to establish the "Florida Underground Natural gas Storage Act."

Section 2 amends s. 211.02, F.S., to exempt gas-phase hydrocarbons that are transported into Florida, injected into an underground natural gas storage facility and later recovered as liquid hydrocarbons, from the severance tax on oil production.

Section 3 amends s. 211.025, F.S., to provide that the severance tax on natural gas applies only to native gas as defined in s. 377.19, F.S.

Section 4 amends s 376.301, F.S., to correct a cross-reference.

Section 5 amends s. 377.06, F.S., declaring that underground storage of natural gas is in the public interest because it:

- Promotes conservation of natural gas;
- Makes gas more readily available for domestic, commercial and industrial users; and
- Allows the accumulation of large quantities of gas in reserve for orderly withdrawal during emergencies or periods of peak demand.

Section 6 amends s. 377.18, F.S., to clarify that the existing provision relating to the control and regulation of all common sources of oil or gas apply only to native gas.

Section 7 amends s. 377.19, F.S., to re-numbers various existing definitions. The bill adds definitions including:

- "Department" means the Department of Environmental Protection.
- "Lateral storage reservoir boundary" means the projections up to the land surface of the maximum horizontal extent of the gas volume contained in a natural gas storage reservoir.

[15] DEP, *Senate Bill 958/984 Agency Analysis* (Mar. 2013) (on file with the Senate Committee on Environmental Preservation and Conservation).
[16] Email from Timothy Riley, Attorney, Hopping Green and Sams (Mar. 6, 2013) (on file with the Senate Committee on Environmental Preservation and Conservation).

- "Native gas" means gas that occurs naturally within Florida and does not included gas produced outside or transported to Florida, and injected into a permitted natural gas storage facility.
- "Natural gas storage facility" means an underground reservoir used or to be used for the underground storage of natural gas, and any surface or subsurface structure, infrastructure, right, or appurtenance necessary or useful in the operation of the facility for the underground storage of natural gas, including any necessary or reasonable reservoir protective area as designated for the purpose of ensuring the safe operation of the storage of natural gas or protecting the natural gas storage facility from pollution, invasion, escape, or migration of gas, or any subsequent extension thereof.
- "Natural gas storage reservoir" means a pool or field suitable for or capable of being made suitable for the injection, storage, and recovery of gas.
- "Oil and gas" has the same meaning as the term "oil or gas."
- "Reservoir protective area" means the area extending up to and including 2,000 feet surrounding a natural gas lateral storage reservoir boundary.
- "Shut-in wellhead pressure" means the pressure at the casing head or wellhead when all valves are closed and no oil or gas has been allowed to escape for at least 24 hours.

Section 8 amends s 377.21, F.S., to specify that the Division of Resource Management (division) has authority to administer and enforce laws relating to the storage of gas in and recovery of gas from natural gas storage reservoirs.

Section 9 amends s. 377.22, F.S., to provide the DEP with specific authority to adopt rules and issue orders with regard to the injection of gas into and recovery of gas from a natural gas storage reservoir. This section also provides that the DEP's authority to regulate natural gas storage is self executing, and not dependent upon the adoption of rules for that purpose.

Section 10 amends s. 377.24, F.S., to require permits from the DEP prior to storing gas in, or recovering gas from, a natural gas storage reservoir, and requiring applications for such permits to include the name and address of the applicant.

Section 11 creates s. 377.2407, F.S., to provide for the contents of an application for a permit to store gas in a natural gas storage reservoir. The bill requires the application and and application fee be submitted to the DEP in order to drill a well for natural gas injection and extraction. Specifically the bill requires the application to include:

- A detailed, three-dimensional description of the natural gas storage reservoir;
- A geographic description of the lateral reservoir boundary;
- A description and location of all injection, recovery, and observation wells, including casing and cementing plans for each well;
- A description of the reservoir protective area;
- Information demonstrating that the proposed natural gas storage reservoir is suitable for the storage and recovery of gas;
- Information identifying all known abandoned or active wells within the natural gas storage facility;
- A field-monitoring plan that requires, at a minimum monthly field inspections of all wells that are part of the natural gas storage facility;

- A monitoring and testing plan to ensure well integrity;
- A well inspection plan that requires, at a minimum, the inspection of all wells that are part of the natural gas storage facility and plugged wells within the natural gas storage facility boundary;
- A casing inspection plan;
- A spill prevention and response plan;
- A well spacing plan;
- An operating plan for the natural gas storage reservoir, which must include gas capacities, anticipated operating conditions, and maximum storage pressure; and
- A gas migration response plan.

The DEP may require additional necessary information from the applicant for completion of the permit application. The bill also specifies that each well must satisfy applicable criteria for well construction and operation.

Section 12 adds s. 377.241, F.S., to confirm that the issuance of a natural gas storage facility permit considers the storage facility, the nature, structure, and proposed use of the natural gas storage reservoir suitable for the storage and recovery of gas without causing adverse effects to public health, safety, and the environment.

Section 13 amends s. 377.242, F.S., to provide that the DEP is vested with the power and authority to issue permits for natural gas storage facilities.

Section 14 creates s. 377.2431, F.S., providing conditions under which a natural gas storage facility permit can be issued and requires that the permit be issued for the life of the facility, subject to recertification every five years. The bill requires the applicant to adhere to specific conditions in order for the division to issue or reissue a permit. Specifically the bill requires that the applicant has:

- Implemented or is in the processing of implementing programs for the control and mitigation of pollution;
- Acquired the lawful right to develop the natural gas storage facility from the majority of the property interests or the applicant has obtained a certificate of public convenience and necessity from the Federal Energy Regulatory Commission pursuant to 15 U.S.C. ss. 717 et seq.
- Identified the known wells that have been drilled into or through the reservoir to the best of their ability and determined if the wells are inactive or abandoned and properly plugged. The applicant is required to plug or recondition any well that has not been properly plugged before conducting injection operations.
- Tested the quality of water from all water supply wells within the lateral boundary of the facility and complied with all of the requirements of s. 377.2432, F.S. The applicant must also submit the water quality data to the DEP.

The bill requires all inspections and reports to be submitted to the DEP as prescribed by rule.

The bill also requires the natural gas storage facility operator to request approval of a maximum storage pressure in accordance with the following:

- The maximum shut-in wellhead pressure must not exceed the highest shut-in wellhead pressure found during the production of the reservoir, unless the DEP has established a higher pressure based on testing of caprock and pool containment.
- If the shut-in wellhead pressure of the original discovery or highest production is not known, or the DEP has not established a higher pressure, then the maximum storage reservoir pressure must be limited to a freshwater hydrostatic gradient.

The bill provides that the DEP may issue a permit regardless of whether the DEP has adopted rules for underground natural gas storage and preempts local government regulation of natural gas storage facilities.

Section 15 creates s. 377.2432, F.S., requiring the operator of a natural gas storage facility that affects a water supply to restore and replace the affected supply and provide an alternate source.

The bill specifies that the facility operator is presumed responsible for pollution of water supplies within the horizontal boundary of the facility if the pollution occurs within six months of completion of drilling, unless rebutted by a defense outlined in the bill.

The bill requires that if the water supply is contaminated in the rebuttable presumption area, the facility operator must provide a temporary alternative water supply.

The facility operator presumed responsible for contaminating a water supply may rebut the claim by proving any of the following:
- The pollution existed before the drilling or alteration as determined by a predrilling or prealteration survey;
- The landowner or water purveyor refused to allow the operator access to conduct a predrilling or prealteration survey;
- The water supply is not within the lateral boundary of the natural gas storage facility;
- The pollution occurred more than six months after completion of drilling or alteration of any well associated with the natural gas storage facility; and
- The pollution occurred as the result of a cause other than activities authorized under the natural gas storage permit.

The bill requires the facility operator to use an independent certified laboratory to conduct the predrilling and prealteration water quality surveys. The surveys are to be submitted to the DEP and the landowner or water supplier. The presumption that the facility operator is at fault for the water contamination may be void if the landowner or water supplier prohibits the facility operator access to conduct predrilling and prealteration water quality surveys.

The bill does not prevent the landowner or water supplier who claims the water source has been contaminated from seeking any other remedy at law or in equity.

Section 16 creates s. 377.2433, F.S., to provide for the protection of natural gas storage facilities, as follows:
- The DEP may not permit wells to be drilled into or through the reservoir except under conditions that prevent loss or migration of gas from the reservoir;

- The operator must have reasonable right of entry to observe the drilling of any such well within the permitted natural gas storage facility boundary or reservoir protective area;
- The DEP must ensure that any well drilled into a permitted natural gas storage reservoir or reservoir protective area is properly cased and cemented.
- In the event the there is an activity that affects the integrity of the natural gas storage area, the facility operator may petition the DEP for a determination of the activity that may cause gas migration, escape or loss. The DEP must conduct a preliminary investigation and make a preliminary determination as to the probable cause of the gas migration, escape or loss.
- The bill requires that if the DEP determines an activity is causing the gas migration, escape or loss, then:
  - The activity causing the gas migration, escape or loss must immediately cease operations pending a final determination; and
  - The petition must be referred to the Division of Administrative Hearings to conduct formal administrative proceedings under ss. 120.569 and 120.57, F.S. The DEP must enter a final order granting or denying the petition based on the finding of fact by the administrative proceedings.

The bill does not prevent the facility operator from seeking any other remedy at law or in equity

Section 17 creates s. 377.2434, F.S., to provide the injected gas is the property of the injector or the injector's heirs, successors, or assigns, whether owned by the injector or stored under contract.

The bill specifies the surface owner does not have the right to waste or exercise control over the gas; however, the ownership of hydrocarbons that occur naturally within the state or the right of a surface owner or mineral interest are not subject to these restrictions and they may drill or bore through a natural gas storage facility as long as the integrity of the natural gas storage facility is protected.

The bill requires that the injector, injector's heirs, or assigns, may not lose title to or possession of the gas that has migrated to adjoining properties or strata as long as they can prove the migrated gas is the same gas originally injected into the underground storage facility. The injector, injector's heirs, or assigns, at their own expense, have the right to conduct tests on the existing wells on the adjoining property to determine ownership of the gas.

The bill provides that property owners may be entitled to compensation in the event gas has migrated to their property.

Section 18 amends s. 377.25, to provide that well spacing requirements do not apply to injection wells associated with a natural gas storage facility.

Section 19 amends s. 377.28, F.S., to provide for the unitization of a storage reservoir upon the agreement of 50 percent or more of the owners of the pore spaces in the reservoir.

Section 20 amends s. 377.29, F.S., to provide for agreements between owners and operators of a natural gas storage facility in the interest of conservation.

Section 21 amends s. 377.30, F.S., to provide that the limitations on the amount of oil and gas taken do not apply to nonnative gas recovered from a permitted natural gas storage facility.

Section 22 amends s. 377.34, F.S., to provide that the division may enforce laws, rules and orders against those engaged in storage or recovering of natural gas.

Section 23 amends s. 377.37, F.S., to clarify that the penalties provided in s. 377.37, F.S., may be applied to any person who violates the law or the provisions of a permit for a natural gas storage facility.

Section 24 amends s. 377.371, F.S., to clarify that the storage of natural gas is included in the prohibition on pollution when drilling for or producing oil, gas, or other petroleum products. The bill also specifies that the cost to clean-up state waters from pollution that was the result of a natural gas storage facility is the responsibility of the facility operator.

Section 25 amends s. 403.973, F.S., to provide projects for natural gas storage facilities permitted under ch. 377, F.S., are eligible for the expedited permitting process created in s. 403.973, F.S.

Section 26 provides an effective date of July 1, 2013.

Other Potential Implications:

The bill provides the DEP with rulemaking authority, but allows permits to be issued prior to the development of a rule. Currently the DEP does not have an application process or administrative staff in place to administer this type of program.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

None.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

V. Fiscal Impact Statement:

A. Tax/Fee Issues:

None.

B. Private Sector Impact:

There may be some benefit to the private sector to have stored natural gas during a time when supply may have otherwise been interrupted (eg. hurricane season). In addition, companies that specialize in the types of natural gas storage facilities contemplated by this bill would be able to apply for permits and begin operations if the bill becomes law.

C. Government Sector Impact:

SB 958 provides for increased costs to the DEP associated with rulemaking procedures, and public workshops. The DEP will experience recurring costs associated with personnel training and personnel required for application review and permit issuance. There will be increased costs to the DEP to obtain the engineering and field expertise necessary to implement an underground natural gas storage program. The DEP expects to have to hire an outside contractor with the expertise necessary to oversee the engineering reviews and rulemaking.

The fee schedule for the underground natural gas storage program has not been specified. The impact the fee will have on offsetting the administrative costs incurred by the DEP cannot be determined.

VI. Technical Deficiencies:

None.

VII. Related Issues:

None.

VIII. Additional Information:

A. Committee Substitute – Statement of Substantial Changes:
(Summarizing differences between the Committee Substitute and the prior version of the bill.)

None.

B. Amendments:

None.