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 Communications, Energy, and Public Utilities

BILL: CS/CS/SB 958

INTRODUCER: Communications, Energy, and Public Utilities Committee; Environmental Preservation and Conservation Committee; and Senator Richter

SUBJECT: Underground Natural Gas Storage

DATE: April 15, 2013 REVISED: _____ _____ _____ _____

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Gudeman	Uchino	EP	**Fav/CS**
2.	Wiehle	Caldwell	CU	**Fav/CS**
3.			JU	
4.				
5.				
6.				

Please see Section VIII. for Additional Information:

A. COMMITTEE SUBSTITUTE.....	X	Statement of Substantial Changes
B. AMENDMENTS.....		Technical amendments were recommended
		Amendments were recommended
		Significant amendments were recommended

I. Summary:

CS/CS/SB 958 creates the Underground Natural Gas Storage Act to create a process for regulating in-ground storage of natural gas. Specifically, the bill:

- Declares public policy;
- Creates definitions;
- Authorizes the Division of Resource Management (division) of the Department of Environmental Protection (DEP) to administer and enforce the law relating to natural gas storage reservoirs;
- Authorizes DEP to issue orders or permits and to adopt rules;
- Creates permitting requirements and procedures;
- Protects water supplies;
- Protects natural gas storage facilities;
- Provides for property rights in injected natural gas;
- Requires DEP to adopt rules before issuing a natural gas storage facility permit;
- Includes the storage of natural gas in existing prohibitions on pollution;
- Authorizes DEP to take actions against those involved in natural gas storage; and

- Provides for expedited permitting of natural gas storage facilities and interstate natural gas pipelines.

The bill takes effect July 1, 2013.

The bill 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, 377.30, 377.34, 377.37, 377.371, and 403.973 of the Florida Statutes. It also creates sections 377.2407, 377.2431, 377.2432, 377.2433, and 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]

Salt caverns and aquifers are also used as underground storage facilities. Salt cavern 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 31 salt cavern storage sites and 43 aquifer storage sites in the United States.[7]

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[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*.

To store natural gas in an underground storage facility, the facility is first reconditioned then natural gas is injected 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 reservoir contains three categories of gas: "physically unrecoverable gas," which cannot be extracted and is permanently embedded in the formation; "base gas," which is used to maintain the pressure in the reservoir for extraction of the remaining gas and which can only be extracted with specialized compression equipment; and "working gas," which is the natural gas that is injected, stored, and withdrawn.[8]

Currently in the United States, the majority of natural gas storage facilities are depleted reservoirs located in 22 states, primarily in the north east.[9] The Weekly Natural Gas Storage Report states that 1,724 billion cubic feet of natural gas has been stored over the last five years.[10]

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.[11]

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.[12]

Florida is not a large producer of natural gas as approximately 700 billion cubic feet of natural gas has been produced in northwest Florida and as the amount recovered in south Florida is considered to be insignificant.[13]

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[7] *Supra* note 3.
[8] NaturalGas.org, *Storage of Natural Gas*, http://www.naturalgas.org/naturalgas/storage.asp (last visited Apr. 11, 2013).
[9] *Id*.
[10] U.S. Energy Information Administration, *Weekly Natural Gas Storage Report*, http://ir.eia.gov/ngs/ngs.html (last visited Apr. 7, 2013).
[11] 15 U.S.C. ss. 717 et seq.
[12] *See* ss. 377.242-377.24, F.S.
[13] DEP, *Senate Bill 958/984 Agency Analysis* (Mar. 2013) (on file with the Senate Committee on Environmental Preservation and Conservation).

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 megawatts 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.[14]

III. Effect of Proposed Changes:

The bill creates a process for regulating in-ground storage of natural gas.

Section 5 amends s. 377.06, F.S., to declare 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 7 amends s. 377.19, F.S., to add and revise definitions. The term:

- "Well site" is amended to include "inject gas into and recover gas from a natural gas storage facility.
- "Operator" is amended to include "as part of a natural gas storage facility, injects, or is engaged in the work of preparing to inject, gas into a natural gas storage reservoir; or stores gas in, or removes gas from, a natural gas storage reservoir."
- "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.
- "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 from which oil or gas has been previously produced and which is 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. The term does not mean a transmission, distribution, or gathering pipeline or system that is not used primarily as integral piping for a natural gas storage facility.
- "Natural gas storage reservoir" means a pool or field from which oil or gas has previously been produced and which is suitable for or capable of being made suitable for the injection, storage, and recovery of gas.

[14] Email from Timothy Riley, Attorney, Hopping Green and Sams (Mar. 6, 2013) (on file with the Senate Committee on Environmental Preservation and Conservation).

- "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 bottom hole 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) within the Department of Environmental Protection (DEP) has authority to administer and enforce laws relating to the storage of gas in and recovery of gas from natural gas storage reservoirs.

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 9 amends s. 377.22, F.S., to authorize DEP to issue orders or adopt rules to:
- Ensure that all precautions are taken to prevent the spillage of any pollutant during the injection of gas into and recovery of gas from a natural gas reservoir;
- Protect the integrity of natural gas storage reservoirs;
- Require and carry out a reasonable program of monitoring or inspection of "injecting wells" to prevent wells from being drilled in such as fashion as to injure neighboring natural gas storage reservoirs; and
- Regulate the storage and recovery of gas injected into natural gas storage facilities.

Section 25 creates an unnumbered section of law to require the DEP to adopt rules relating to natural gas storage before issuing a natural gas storage facility permit.

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 establish the permit-application process. Any person who desires to drill a well to inject gas into and recover gas from a natural gas storage reservoir must apply to DEP to obtain a natural gas storage facility permit. DEP must require an applicant to pay a reasonable permit application fee and the fee must be the amount necessary to cover the costs associated with permitting, processing, issuing, and recertifying the permit application, and inspecting activities for compliance. Each application must contain:
- A detailed, three-dimensional description of the natural gas storage reservoir;
- A geographic description of the lateral reservoir boundary;
- A general description and location of all injection, recovery, withdrawal-only, and observation wells;
- 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 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;
- A gas migration response plan; and
- A location plat and general facility map surveyed and prepared by a registered land surveyor licensed under ch. 472, F.S.

The DEP may require additional necessary information from the applicant for completion of the permit application. Each well must be permitted individually and well construction and operation must be subject to the criteria outlined in ch.377, F.S.

Section 12 adds s. 377.241, F.S., to provide that in determining whether to issue a permit, the division must consider if the storage facility, the nature, structure, and proposed use of the natural gas storage reservoir is suitable for the storage and recovery of gas without causing adverse effects to public health, safety, and the environment.

Section 14 creates s. 377.2431, F.S., to provide 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 ten years. Before issuing or recertifying a permit, the division must require satisfactory evidence that the applicant has:

- Implemented or is in the process of implementing programs for the control and mitigation of pollution;
- Acquired the lawful right to develop the natural gas storage facility from at least 75 percent 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.
- Determined whether native gas or oil will be produced in the process of recovering injected gas. If native gas or oil will be produced, the applicant or operator must acquire the rights to develop the gas or oil before injecting gas into the natural gas storage reservoir.

DEP may not issue a permit for a natural gas storage reservoir that is located under a source of drinking water unless the applicant can demonstrate the injection or recovery of natural gas will

not cause or allow gas to migrate into the source of drinking water or that is in any offshore location or within a salt formation.

The applicant must maintain records of all inspections and reports to be made available to the DEP for inspection at any reasonable time.

The natural gas storage facility operator must request approval of a maximum storage pressure in accordance with the following:

- The maximum storage pressure is the highest shut-in bottom hole pressure found to exist during production history, unless the DEP has established a higher pressure based on testing of caprock and pool containment. Methods for determining the higher pressure must be approved by the DEP.
- If the shut-in bottom hole 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.

Section 15 creates s. 377.2432, F.S., to protect water supplies. An operator of a natural gas storage facility that affects a water supply must restore and replace the affected supply and provide an alternate source. DEP shall ensure that the quality of restored or replaced water is comparable to the quality of the water before it was affected by the operator.

Unless rebutted by a statutory defense, the facility operator is presumed responsible for pollution of water supplies within the lateral boundary of the facility if the pollution occurs within six months of completion of drilling or after initial injection, whichever is later. If the water supply is contaminated in the rebuttable presumption area, the facility operator must provide a temporary alternative water supply. The temporary water supply must be adequate in quantity and quality for the purposes served by the affected 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; or
- The pollution occurred as the result of a cause other than activities authorized under the natural gas storage permit.

To preserve a defense, the facility operator must 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 operator must provide written notice to the landowner or water supplier that 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.

This section 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.

Section 17 creates s. 377.2434, F.S., to provide for property rights to the injected gas. 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 owner of the surface land or of any mineral rights has no right to the gas and no person has any 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 the owner may drill or bore through a natural gas storage facility as long as the integrity of the natural gas storage facility is protected.

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

Property owners may be entitled to compensation in the event gas has migrated to their property.

Section 21 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 22 amends s. 377.37, F.S., to clarify that existing penalties may be applied to any person who violates the law or the provisions of a permit for a natural gas storage facility.

Section 23 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. Additionally, 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 24 amends s. 403.973, F.S., to provide that projects for natural gas storage facilities permitted under ch. 377, F.S., and interstate natural gas pipelines that are subject to certification by the FERC are eligible for the expedited permitting process created in s. 403.973, F.S.

The remainder of the bill is technical or conforming to fully incorporate the new provisions into the existing regulatory structure and other statutes.

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 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 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 specify the additional recovery of oil or gas must not interfere with the storage or recovery of natural gas within a natural gas reservoir.

Section 20 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 26 provides an effective date of July 1, 2013.

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 (e.g. hurricane season). In addition, companies that specialize in the types of natural gas storage facilities allowed by the bill will be able to apply for permits and begin operations if approved.

C. Government Sector Impact:

The bill provides for minor non-recurring costs that will be absorbed by the DEP for rulemaking procedures, public workshops, staff training, reviewing applications, and issuing permits. The DEP expects these costs to be partially offset by the permit fee and the remainder to be absorbed with existing resources.

The DEP currently does not have the expertise to be able to regulate natural gas storage facilities appropriately. There would be a cost incurred to the DEP to obtain the engineering and field expertise necessary to implement a natural gas storage program. According to the DEP, due to the specialized field, the DEP would likely have to hire an outside contractor with the expertise necessary to oversee the engineering reviews and rulemaking. Permit fees developed during rulemaking would likely offset some of the costs incurred. The amount of regulatory oversight required to manage the program is unknown and the DEP has not been able to find an outside contractor with the appropriate experience to provide an estimate of the fee, therefore the exact amount of fees necessary to fund the program is unknown. The DEP does not expect to request an appropriation to begin the rulemaking process.

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.)

CS/CS by Communications, Energy, and Public Utilities on April 15, 2013:

- Removes the prohibition against a county or municipality attempting to regulate or enforce any matter concerning natural gas storage facilities, allowing local governments, subject to state and federal law, to participate in the permitting of storage facilities to account for public safety, such as fire prevention, law enforcement, and emergency management.

CS by Environmental Preservation and Conservation on April 9, 2013:

- Revises definitions;

- Removes the provision that the act is "self-executing" and requires rulemaking before a permit may be issued;
- Removes the provision that prohibits the DEP from declaring a permit application invalid or prohibits the issuance of a permit solely because the DEP has not adopted rules for the underground storage of natural gas;
- Requires the DEP to develop a reasonable application fee to cover programmatic costs;
- Specifies that a general description and location of all injection, recovery, withdrawal-only, and observations wells is required in a permit application;
- Requires an individual permit for each well related to natural gas storage;
- Extends the permit recertification requirement from five years to ten years;
- Clarifies requirements with respect to property ownership above the lateral extent of a natural gas storage reservoir;
- Removes all references to the power of eminent domain;
- Specifies requirements if native gas or oil is recovered during extraction of stored gas;
- Specifies that the well pressure records be made available for inspection by the DEP and clarifies the default maximum reservoir operating conditions that will be established in the facility permit;
- Specifies additional protections for storage facilities located beneath an underground source of drinking water;
- Specifies that storage facilities cannot be established in any offshore location or in salt formations;
- Removes the provision that allows a natural gas storage facility operator to petition the DEP to stop activities that may interfere with the reservoir;
- Clarifies unitization orders issued by the DEP with regard to natural gas storage;
- Removes the reference to the use of conservation agreements for common ownership; and
- Authorizes expedited permitting for interstate pipelines.

B. Amendments:

None.