SENATE STAFF ANALYSIS AND ECONOMIC IMPACT STATEMENT

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

Prepared By: Environmental Preservation Committee

BILL: SB 2074

SPONSOR: Senator Constantine

SUBJECT: Hydrogen Energy Technology

DATE: March 24, 2005 REVISED: 3/21/05 03/29/05

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Wiehle	Caldwell	CU	**Fav/2 amendments**
2.	Branning	Kiger	EP	**Fav/1 amendment**
3.			CM	
4.			GE	
5.			GA	
6.			WM	

Please see last section for Summary of Amendments

[x] Technical amendments were recommended

[ ] Amendments were recommended

[x] Significant amendments were recommended

I. Summary:

The bill:

- Creates the Florida Hydrogen Energy Technologies Act;
- Provides for grants for demonstration and commercialization projects and for research and development relating to hydrogen energy technologies and electrical grid optimization;
- Provides an exemption from the sales tax for equipment, machinery, and other materials for hydrogen energy technologies, which is repealed July 1, 2009;
- Creates the hydrogen energy technologies investment tax credit against the corporate income tax, which, except for the credit-carryover provisions, expires on July 1, 2009;
- Authorizes regulated electric utilities to recover from customers all costs or expenses incurred by the utility in deploying hydrogen energy technologies; and
- Requires the State Fire Marshall to establish uniform firesafety standards applying to hydrogen fueling, storage, and production facilities for stationary fuel cells and vehicles, including maintenance and repair facilities.

The bill substantially amends the following sections of the Florida Statutes: 212.08, 213.053, 220.02, 220.13, 366.8255, and 633.022.

It also creates the following sections of the Florida Statutes: 377.801, 377.802, 377.803, 377.804, 377.805, and 220.192.

II. Present Situation:

Florida is highly dependent upon fossil fuels produced from outside of the county. Oil, coal, and natural gas provide 75 percent of the fuel necessary to generate electricity within Florida. Over 86 percent of petroleum products coming into the state come from suppliers overseas. By 2021, 47 percent of Florida's electricity supply is expected to be powered by natural gas. The price of oil and natural gas is rapidly climbing as a result of a market forces. The long-term implications for Florida's economy are significant given the state's heavy reliance on these fuels.[1]

Around the world, energy companies, major auto makers and petroleum companies are developing new and emerging hydrogen energy technologies to reduce reliance on foreign oil, increase economic security, and avoid costly environmental regulations. Governor Bush has been working with industry leaders and others to develop the "Florida Hydrogen Energy Technologies Act" to help make Florida a pioneer in the development of hydrogen technology, attract corporate investment and jobs to the State, increase economic security, promote energy independence and improve air quality for Florida.[2]

The generation of electricity constitutes the largest portion of Florida's energy use. On average, each megawatt-hour of electricity produced in the U.S. creates more than 2.9 lbs. of nitrogen oxide (NO_x).[3]

Hydrogen fuel cells offer the potential to generate and store electricity with little or no air emissions, depending on the technology involved. Stationary fuel cells that produce hydrogen by chemically "reforming" natural gas have significantly lower emissions than power plants fired by coal or oil. Stationary fuel cells that create hydrogen from photovoltaic electrolysis (solar power) are pollution-free. Vehicles using fuel cells have zero tailpipe emissions, and vehicles powered by hydrogen fueled internal combustion engines with post-combustion catalytic control reduce NO_x emissions by 95 percent or more compared to traditional gas and diesel-powered vehicles.[4]

III. Effect of Proposed Changes:

This bill creates the Florida Hydrogen Energy Technologies Act.

Section 1. Section 377.801, F.S., is created to provide ss. 377.801-377.805, F.S., may be cited as the "Florida Hydrogen Energy Technologies Act."

Section 2. Section 377.802, F.S., is created to provide a statement of legislative intent for the act.

Section 3. Section 377.803, F.S., is created to state that the purpose of the act is to provide matching grants to stimulate capital investment in this state and to enhance the market for, and

[1] Department of Environmental Protection Draft Analysis for SB 2074 (2005)
[2] White paper developed by DEP for the Governor on Hydrogen Energy.
[3] Id.
[4] Id.

promote the statewide use of, hydrogen energy technologies. The grant program is designed to advance the already growing establishment of hydrogen energy technologies in the state and encourage the use of other incentives such as tax exemptions and to provide regulatory certainty in order to attract additional producers, developers, and users of hydrogen energy technology to this state.

Section 4. Section 377.804, F.S., is created to provide the following definitions for use in applying the act.

- "Balance of plant" means all equipment and components directly involved in the generation, storage, or use of hydrogen for energy production located at the site of hydrogen generation or use.
- "Department" means the Department of Environmental Protection.
- "Fuel cell" means equipment using an electrochemical process to generate energy or electricity or to transfer heat.
- "Electrical grid optimization" means the use of hydrogen energy technology to assist in decreasing electrical peak demand.
- "Hydrogen energy technology" means any technology that is used primarily for the purpose of generating or using hydrogen directly as a fuel in this state, including, but not limited to:
    - Stationary fuel cell systems, or internal combustion engine systems fueled with hydrogen, used for power generation, including prime power, supplemental power, and back-up power, and the balance of plant.
    - On-road and off-road vehicles and watercraft powered by fuel cells or internal combustion engines fueled with hydrogen.
    - Fueling systems and supportive infrastructure.
    - Renewable energy resource systems used to electrolytically produce hydrogen.
    - Reformer technologies used to produce hydrogen from the respective hydrogen carrier, including, but not limited to, steam-methane, biomass, and chemical.
    - Electrical grid electrolysis.
    - Electrical grid optimization technologies.
- "Person" means an individual, partnership, joint venture, private or public corporation, association, firm, public service company, or any other entity, public or private, however organized.
- "Renewable energy resource" means any method, process, or substance, the use of which does not diminish its availability or abundance, including, but not limited to, solar energy, wind energy, thermal gradient power, hydroelectric power, and fuels derived from agricultural products, but does not include fossil fuel or nuclear power.

Section 5. Section 377.805, F.S., is created to provide for the Hydrogen Energy Technologies Grants Program. The program is established within the Department of Environmental Protection (DEP) to provide hydrogen energy matching grants for demonstration and commercialization projects and for research and development relating to hydrogen energy technologies and electrical grid optimization.

Matching grants may be made to any of the following based on certain factors:

- Municipalities and county governments.
- Established for-profit companies licensed to do business in this state.
- State universities.
- Utilities located and operating within the state.
- Nonprofit organizations.
- Qualified persons.

Factors that the DEP is to consider in awarding grants include, but are not limited to:

- The extent to which the project stimulates in-state capital investment and economic development in metropolitan and rural areas, including job creation and future development of a commercial market for clean energy technologies.
- The availability of matching funds from an applicant, and the applicant's commitment to provide matching funds.
- The ability to administer a complete project.
- Project duration and the timeline for expenditures.
- The geographic area of the state in which the project is to be conducted in relation to other projects.
- Other in-kind contributions applied to the total project.
- The extent to which the project incorporates an innovative new technology or an innovative application of an existing technology.
- The degree to which a project generates thermal or electrical energy by means of a low or zero-emissions generation technology or renewable energy resource that has substantial potential for long-term production.
- The degree to which the project fosters an overall understanding and appreciation of clean energy technologies by the general public, students, or a specific government or sector of industry.
- The degree of public visibility and interaction.

Grants awarded to any entity may subsequently be increased by the DEP upon a determination that sufficient factors are met for the additional funds.

The DEP is required to adopt rules to administer the awarding of grants under this program.

The DEP is required to provide a progress report on grants awarded to the Governor, the President of the Senate, and the Speaker of the House of Representatives. The report must include:

- A description of the extent to which the grants program is benefiting the state's environment, public health, and economic development.
- A list of grant recipients.
- The amount of each grant.
- The amount of matching funds provided by recipients.
- The date of each grant.
- A description of each project or expansion funded by a grant.

- A description of each project's contribution to the state's knowledge and use of hydrogen energy technologies.

Section 6. Section 212.08, F.S., is amended to provide an exemption from the sales tax for the sale or use of equipment, machinery, and other materials for hydrogen energy technologies. The exemption is repealed July 1, 2009. The exemption is for sale or use of hydrogen energy technologies and of materials used in the manufacture of hydrogen energy. The DEP is required to provide to the Department of Revenue a list of items considered to meet the definition of hydrogen energy technologies. Any person may request a determination from the DEP as to whether an item that is not on the list meets the definition of hydrogen energy technology, and the DEP must make a determination and issue a revised list if appropriate. The DEP may adopt rules to administer the exemption paragraph, and the Department of Revenue may provide procedures by rule for purchasers to make tax-exempt purchases.

Section 7. Section 213.053, F.S., is amended to provide that the Department of Revenue may share with the DEP information, for use in conducting its official business, relating to sales tax on equipment, machinery, and other materials for hydrogen energy technologies and hydrogen energy technologies investment tax credit.

Section 8. Section 220.02, F.S., is amended to include the hydrogen energy technologies investment tax credit in the list of tax credits to be applied against either the corporate income tax or the franchise tax.

Section 9. Section 220.192, F.S., is amended to create the hydrogen energy technologies investment tax credit. The bill creates the following definitions for purposes of this credit:

- “Eligible costs” means all capital costs, operation and maintenance costs, and research and development costs incurred between July 1, 2005, and June 30, 2009, in connection with an investment in hydrogen energy technologies in this state, including, but not limited to, the costs of acquiring, leasing, constructing, installing, equipping, and financing hydrogen energy technologies in this state; all obligations incurred for labor; and obligations to contractors, subcontractors, builders, and materialmen in this state.
- “Hydrogen energy technology” means hydrogen energy technology as defined in s. 377.804(6), F.S.

For tax years beginning on or after January 1, 2005, a credit against the corporate income tax shall be granted in an amount equal 75 percent of the eligible costs. Credits may be used in tax years beginning on or after January 1, 2005, and ending on or before December 31, 2011, after which the credit expires and may not be used. If the credit under this section is not fully used in any one tax year because of insufficient tax liability on the part of the corporation, the unused amount may be carried forward and used in tax years beginning on or after January 1, 2006, and ending on or before December 31, 2011, after which the credit carryover expires and may not be used. A taxpayer that files a consolidated return in this state as a member of an affiliated group under s. 220.131(1), F.S., may be allowed the credit on a consolidated return basis up to the amount of tax imposed upon the consolidated group. Any eligible cost for which a credit is claimed and which is deducted or otherwise reduces federal taxable income shall be added back in computing adjusted federal income under s. 220.13, F.S.

In addition to its existing audit and investigation authority, the Department of Revenue may perform any additional financial and technical audits and investigations, including examining the accounts, books, and records of the tax credit applicant which are necessary to verify the eligible costs included in the tax credit return and to ensure compliance with this section. The DEP shall provide technical assistance when requested by the Department of Revenue on any technical audits or examinations performed pursuant to this section.

It is grounds for forfeiture of previously claimed and received tax credits if the Department of Revenue determines that a taxpayer received tax credits to which the taxpayer was not entitled. The taxpayer is responsible for returning forfeited tax credits to the Department of Revenue, and such funds shall be paid into the General Revenue Fund of the state.

The bill provides the conditions under which the tax credit eligibility may be revoked.

Additionally, the taxpayer must notify the Department of Revenue of any change in its tax credit claimed and file an amended return.

A taxpayer that receives a credit under this section for the construction or purchase of structures or the purchase of equipment shall recapture and repay the amount of credit attributable to such property if that property is not used by the taxpayer for hydrogen energy technologies through the warranty period of the complete system or system components. If a warranty is not provided by the equipment manufacturer, the equipment must be operated for the useful life of the complete system or system components. Credit may not be allowed under this section for an eligible cost associated with an investment in hydrogen energy technologies if the credit has previously been allowed for such eligible cost.

The Department of Revenue may adopt by rule the forms required to claim a tax credit under this section, the requirements and basis for establishing an entitlement to a credit, and procedures for the examinations and audits required to administer this section.

The provisions of this section, except the credit carryover provisions contained in subsection (2), expire on July 1, 2009.

Section 10. Section 220.13, F.S., is amended to include in the adjusted federal income the tax credit claimed for hydrogen energy technologies for that tax year.

Section 11. Section 366.8255, F.S., which provides for recovery by a regulated electric utility of environmental compliance costs, is amended to provide that “environmental compliance costs” includes “all costs or expenses incurred by an electric utility in deploying hydrogen energy technologies as defined in s. 377.804(6), F.S., (as created by this bill.) Included as “environmental compliance costs” are costs incurred between July 1, 2005, and June 30, 2009, for hydrogen energy technologies, as defined in s. 377.804(6), F.S., which have the potential to contribute to the provision of adequate and reliable electric service to or for the public of this state and which have minimal rate impacts. The electric utility must demonstrate that the proposed hydrogen energy technology meets the definition in s. 377.804(6), F.S.

Section 12. Section 633.022, F.S., is amended to require the State Fire Marshal to establish uniform firesafety standards applying to hydrogen fueling, storage, and production facilities for stationary fuel cells and vehicles, including maintenance and repair facilities.

The bill also authorizes the State Fire Marshal to adopt rules pertaining to or applicable to any building, structure, facility, condition, situation, or circumstance in which hydrogen is being used, produced, or stored, or in any other manner dealt with or treated as a fuel, which the State Fire Marshal finds are necessary to protect the public health, safety, and welfare and to protect the safety of persons and property in this state, including, but not limited to, the adoption of the most recent edition of the National Fire Protection Association's NFPA 1 and any other applicable code, publication, or standard. The State Fire Marshal may require by rule that any equipment used in conjunction with any use specified in these rules be listed by a nationally recognized testing laboratory, such as Underwriters Laboratories, Inc., or Factory Mutual Laboratories, Inc. The State Fire Marshal may adopt by rule procedures to determine whether a laboratory is nationally recognized, taking into account the laboratory's facilities, procedures, use of nationally recognized standards, and any other criteria reasonably calculated to reach an informed determination.

Section 13. This bill takes effect July 1, 2005.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

None.

B. Public Records/Open Meetings Issues:

The bill amends s. 213.053, F.S., relating to confidentiality and information sharing, to allow the Department of Revenue to provide information relative to the sales tax exemption to the DEP for use in conducting its official business. Such information is, otherwise considered confidential.

C. Trust Funds Restrictions:

None.

V. Economic Impact and Fiscal Note:

A. Tax/Fee Issues:

This bill provides a sales tax exemption for equipment, machinery, and other materials for hydrogen energy technologies. The sale or use of hydrogen energy technologies and materials used in the manufacture of hydrogen energy technologies is exempt. The exemption is repealed July 1, 2009.

The bill also provides for a hydrogen energy technologies investment tax credit against the corporate income tax. Except for the credit carryover provisions, this tax credit expires on July 1, 2009.

The definition of "adjusted federal income" is amended to include the amount of the credit taken against the corporate income tax.

B. Private Sector Impact:

To the extent that the bill produces investments in hydrogen technology, private companies doing so will receive tax exemptions and credits. To the extent that regulated utilities invest in hydrogen technologies which they can demonstrate meet the definition of "hydrogen energy technology" and which have the potential to contribute to the provision of adequate and reliable electric service to or for the public of this state and which have minimal rate impacts, costs of these investments will be passed on to the investing utility's customers through an environmental compliance cost recovery proceeding at the Public Service Commission. Florida's citizens will benefit from the bill to the extent improvements in and deployment of hydrogen energy technology help this technology to become cost competitive with fossil fuels.

The Revenue Estimating Conference adopted the following estimate of the impact on state revenues on February 18, 2005.

	FY 2005-06 Cash	FY 2006-07 Cash
General Revenue –Sales	(.1 million)	(.1 million)
General Revenue – Corporate	(2.0 million)	(3.1 million)
State Trust	(Insignificant)	(Insignificant)
Total State Impact	**(2.1 million)**	**(3.2 million)**
Total Local Impact	(Insignificant)	(Insignificant)
Total Impact	**(2.1 million)**	**(3.2 million)**

C. Government Sector Impact:

See "B" above. The Governor is requesting $12.9 million for the grant program, presumably from General Revenue.

The DEP anticipates that the administration of the new grants program can be handled by existing staff resources.

VI. Technical Deficiencies:

Section 11 amends s. 366.8255, F.S., to include in the general definition of "environmental compliance costs" "all costs or expenses incurred by an electric utility in deploying hydrogen energy technologies as defined in s. 377.804(6)," then adds to the types of costs included in this

term “costs incurred between July 1, 2005, and June 30, 2009, for hydrogen energy technologies, as defined in s. 377.804(6) . . .” It is not clear that the stated time limitation applies to the costs of deploying hydrogen energy technologies as included in the general definition, and therefore it is not clear whether such general costs may be recovered through this procedure beyond this time limit.

VII. Related Issues:

Section 5 of the bill provides for a Hydrogen Energy Technologies Grants Program in DEP. Among those entities that may receive grants are “qualified persons.” This term is not defined in the bill. “Person” is defined as an individual, partnership, joint venture, private or public corporation, association, firm, public service company, or any other entity, public or private, however organized.

VIII. Summary of Amendments:

Barcode 322362 by Communications & Public Utilities:
Makes a technical change.

Barcode 830934 by Communications & Public Utilities:
Makes a technical change to reflect the original intent.

Barcode 151814 by Environmental Preservation:
This amendment authorizes the Public Service Commission to approve experimental or transitional rates for any public utility to encourage energy conservation, efficiency, or use of energy from a renewable energy resource. This is the subject of SB 1464 that was voted favorably by the Environmental Preservation Committee on March 21, 2005. (WITH TITLE AMENDMENT)