HOUSE OF REPRESENTATIVES STAFF ANALYSIS

BILL #: CS/HB 1163 Sales Tax Exemptions for Hydrogen Products
SPONSOR(S): Tourism, Infrastructure & Energy Subcommittee, Overdorf
TIED BILLS: **IDEN./SIM. BILLS:**

REFERENCE	ACTION	ANALYST	STAFF DIRECTOR or BUDGET/POLICY CHIEF
1) Tourism, Infrastructure & Energy Subcommittee	16 Y, 2 N, As CS	Walsh	Keating
2) Ways & Means Committee			
3) Commerce Committee			

SUMMARY ANALYSIS

Hydrogen can be produced using a process called electrolysis, which splits water into hydrogen and oxygen. When renewable energy is used as the source of electricity to power an electrolyzer, the resulting hydrogen is referred to as green hydrogen. In Florida, NextEra Energy plans to propose a 20-megawatt project that will produce 100 percent green hydrogen from solar power.

Florida law provides a sales and use tax exemption on the purchase of machinery and equipment necessary to produce electrical or steam energy resulting from burning boiler fuels other than residual oil. There is also a sales tax exemption for various items purchased for use as a combustible fuel in an industrial manufacturing, processing, compounding, or production.

The bill provides that machinery and equipment necessary to produce electrical or steam energy that results from burning hydrogen is exempt from sales and use tax. The bill also provides that hydrogen is exempt from sales and use tax when purchased for use as a combustible fuel in an industrial manufacturing, processing, compounding, or production process at a fixed location.

The bill creates a sales tax exemption for green hydrogen and defines that term. The bill exempts from sales and use tax:

- The purchase of machinery and equipment primarily used in the production, storage, transportation, compression, or blending of green hydrogen.
- The purchase of machinery and equipment primarily used in the production, storage, transportation, compression, or blending of ammonia derived from green hydrogen, if the ammonia will be converted back to green hydrogen before its use or sale.
- The purchase of machinery and equipment that are necessary to produce electrical energy resulting from the electrochemical reaction of green hydrogen and oxygen in a fuel cell. The electrical energy must be primarily used in manufacturing, processing, compounding, or producing for sale items of tangible personal property in this state.

The bill provides that purchasers of machinery and equipment qualifying for this exemption must furnish the vendor with an affidavit stating that the item or items to be exempted will be used for the purposes specified in the exemption, unless the purchaser has self-accrual authority. The bill incorporates existing penalties for submitting a fraudulent claim.

The bill has an approximately $200,000 recurring negative fiscal impact to state government revenues, and a $100,000 recurring negative fiscal impact to local government revenues.

The bill provides an effective date of July 1, 2022.

FULL ANALYSIS

I. SUBSTANTIVE ANALYSIS

A. EFFECT OF PROPOSED CHANGES:

Current Situation

Green Hydrogen

Hydrogen is the simplest and smallest element in the periodic table, and no matter how hydrogen is produced, it ends up with the same carbon-free molecule. The pathways to produce hydrogen are diverse, and so are the emissions of greenhouse gases like carbon dioxide (CO_2) and methane (CH_4) that result from the production of many types of hydrogen.[1]

Hydrogen can be produced using a process called electrolysis, which splits water into hydrogen and oxygen.[2] When renewable energy is used as the source of electricity to power an electrolyzer,[3] the resulting hydrogen can result in zero greenhouse gas emissions[4] and is referred to as green hydrogen. Electrolyzers range in size, varying from small appliance-sized units to larger-scale central production facilities that can be tied directly to renewable forms of electricity production to power the unit.[5]

Some alternative methods of producing hydrogen, mainly grey hydrogen[6] and blue hydrogen,[7] use methane or coal to power the production process.[8] Another alternative method of producing hydrogen, turquoise hydrogen, uses methane through the process of pyrolysis, which creates a reaction to generate hydrogen and solid carbon, which means that there are no carbon dioxide emissions associated with the reaction.[9, 10]

While utilizing green hydrogen could help reduce emissions, the production of green hydrogen is capital intensive.[11] The production cost of green hydrogen must significantly decrease for it to be competitive with more mature carbon-based pathways of energy production.[12]

Green hydrogen can be used for a variety of purposes, including:

- Replacing existing hydrogen feedstock in areas like oil refining, ammonia production, and steelmaking;
- Replacing natural gas in some residential and commercial heating systems;
- Energy storage;
- As an alternative fuel source; and

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[1] World Economic Forum, *What is Green Hydrogen and Why Do We Need It? An Expert Explains* (Dec. 21, 2021) *https://www.weforum.org/agenda/2021/12/what-is-green-hydrogen-expert-explains-benefits/* (last visited Feb. 4, 2022).
[2] *Id*.
[3] The process of electrolysis uses an electrolyzer, which is a system that uses electricity to break water into hydrogen and oxygen. Cummins, Inc., *Electrolyzers 101: What They Are, How They Work, and Where They fit in a Green Economy*, https://www.cummins.com/news/2020/11/16/electrolyzers-101-what-they-are-how-they-work-and-where-they-fit-green-economy (last visited Feb. 4, 2022).
[4] Office of Energy Efficiency & Renewable Energy, *Hydrogen Production: Electrolysis*, U.S. Department of Energy, https://www.energy.gov/eere/fuelcells/hydrogen-production-electrolysis (last visited Feb. 6, 2022).
[5] *Id*.
[6] Grey hydrogen is traditionally produced from methane that is split with steam into carbon dioxide and hydrogen. World Economic Forum, *supra* note 1.
[7] Blue hydrogen production follows the same process as grey hydrogen production, but also includes the technology necessary to capture the carbon dioxide produced when hydrogen is split from methane. *Id*.
[8] Despite the colorful names used for the different ways hydrogen is produced, the gas itself is invisible to the human eye. *See* Natalie Marchant, *Grey, blue, green – why are there so many colours of hydrogen?*, World Economic Forum (Jul. 27, 2021), https://www.weforum.org/agenda/2021/07/clean-energy-green-hydrogen/ (last visited Feb. 8, 2022).
[9] Rachel Meidl & Kenneth Medlock, *The Advanced Carbon Economy: A Sustainable Hydrogen Pathway*, Rice University's Baker Institute for Public Policy, Jun. 22, 2021, p. 3, available at https://www.bakerinstitute.org/media/files/files/ec39c09c/bi-brief-062221-ces-carbonecon-4.pdf (last visited Feb. 8, 2022).
[10] When utilizing pyrolysis to produce turquoise hydrogen, the reaction does produce a solid carbon by-product that can be used in applications ranging from construction to farming. *Id.*
[11] World Economic Forum, *supra* note 1.
[12] Office of Energy Efficiency &Renewable Energy, *supra* note 6.

- Powering fuel-cell vehicles.[13]

NextEra Energy's Green Hydrogen Project

In Florida, NextEra Energy[14] plans to propose a 20-megawatt electrolyzer that will produce 100 percent green hydrogen from solar power.[15] The green hydrogen produced by the electrolyzer would replace a portion of the natural gas consumed by the utility's existing Okeechobee plant. The electricity to power the electrolyzer would come from solar power.[16]

Sales Tax Exemptions

Florida law provides numerous exemptions from sales and use tax.[17] One sales tax exemption is for the purchase of machinery and equipment used at a fixed location in which the machinery and equipment is necessary to produce electrical or steam energy resulting from burning boiler fuels other than residual oil. This electrical or steam energy must be primarily used in the manufacturing, processing, compounding, or producing for sale items of tangible personal property in Florida.[18]

Another sales tax exemption is for natural gas, residual oil, recycled oil, waste oil, solid waste material, coal, sulfur, wood, wood residue, and wood bark when purchased for use as a combustible fuel in industrial manufacturing, processing, compounding, or production at a fixed location. This exemption may not be used unless the purchaser signs a certificate stating that the fuel is being purchased exclusively for a designated purpose. This exemption does not apply to the use of boiler fuels that are not used in manufacturing, processing, compounding, or producing items of tangible personal property for sale.[19]

Florida's sales tax law, does not currently define or reference the term "green hydrogen."[20]

Effect of the Bill

The bill provides that machinery and equipment necessary to produce electrical or steam energy that results from burning hydrogen is exempt from sales and use tax.

The bill also provides that hydrogen is exempt from sales and use tax when purchased for use as a combustible fuel in an industrial manufacturing, processing, compounding, or production process at a fixed location.

The bill creates a sales and use tax exemption for green hydrogen. The bill defines the term "green hydrogen" to mean hydrogen created using an electrolytic process powered from renewable energy sources, including solar energy, wind energy, and geothermal energy. The term also includes hydrogen created using the pyrolytic decomposition of methane gas.

Under the bill, the following are exempt from sales and use tax:

- The purchase of machinery and equipment primarily used[21] in the production, storage, transportation, compression, or blending of green hydrogen. The machinery and equipment must be used at a fixed location.

[13] Jason Deign, *5 Early Applications for Green Hydrogen* (Jan. 2, 2020), https://www.greentechmedia.com/articles/read/5-early-applications-for-green-hydrogen (last visited Feb. 6, 2022).
[14] Florida Power & Light Company, a subsidiary of NextEra Energy, operates as one of Florida's four investor-owned electric utilities.
[15] Stromska, Karl-Erik, *NextEra Energy to Build Its First Green Hydrogen Plant in Florida* (July 24, 2020), https://www.greentechmedia.com/articles/read/nextera-energy-to-build-its-first-green-hydrogen-plant-in-florida (last visited Feb. 4, 2022).
[16] *Id.*
[17] S. 212.08, F.S.
[18] S. 212.08(5)(c), F.S.
[19] S. 212.08(7)(b), F.S.
[20] Department of Revenue (DOR), Agency Analysis of 2022 House Bill 1163, p.2. (Jan. 12, 2022).
[21] The bill defines the term "primarily used" to mean a use of at least 50 percent.

- The purchase of machinery and equipment primarily used in the production, storage, transportation, compression, or blending of ammonia derived from green hydrogen, if the ammonia will be converted back to green hydrogen before its use or sale. The machinery and equipment must be used at a fixed location.
- The purchase of machinery and equipment that are necessary to produce electrical energy resulting from the electrochemical reaction of green hydrogen and oxygen in a fuel cell. The electrical energy must be primarily used in manufacturing, processing, compounding, or producing for sale items of tangible personal property in this state. The machinery and equipment must be used at a fixed location.

The bill provides that purchasers of machinery and equipment qualifying for this exemption must furnish the vendor with an affidavit stating that the item or items to be exempted are for the use designated herein. Purchasers with self-accrual authority[22] are not required to provide this affidavit but must maintain all documentation necessary to prove the exempt status of purchases.

The bill provides that a person furnishing a false affidavit to the vendor for the purpose of evading payment of any tax imposed by ch. 212, F.S., is subject to the penalty set forth in s. 212.085, F.S., providing penalties for the fraudulent claim of a tax exemption and as otherwise provided by law.

The bill authorizes the Department of Revenue (DOR) to adopt rules to implement this tax exemption.

B. SECTION DIRECTORY:

Section 1: Amends s. 323.08, F.S., relating to sales, rental, use, consumption, distribution, and storage tax; specified exemptions.

Section 2: Provides an effective date of July 1, 2022.

II. FISCAL ANALYSIS & ECONOMIC IMPACT STATEMENT

A. FISCAL IMPACT ON STATE GOVERNMENT:

1. Revenues:

On January 28, 2022, the Revenue Estimating Conference (REC) adopted a negative recurring fiscal impact of $200,000 to General Revenue, and insignificant negative fiscal impacts to state trust funds, per fiscal year for the 2022-2023 through 2026-2027 fiscal years.[23]

2. Expenditures:

DOR may incur some expenditures associates with implementing this tax exemption and creating a new rule to implement the sales tax exemption for green hydrogen.

B. FISCAL IMPACT ON LOCAL GOVERNMENTS:

1. Revenues:

On January 28, 2022, the REC adopted be a negative recurring fiscal impact of $100,000 to local governments for the 2022-2023 through 2026-2027 fiscal years.[24]

2. Expenditures:

None.

[22] Pursuant to s. 212.183, F.S.,
[23] Office of Economic and Demographic Research, Revenue Estimating Conference, *2022 Impact Conference Results*, p. 296, http://edr.state.fl.us/Content/conferences/revenueimpact/archives/2022/_pdf/page293-298.pdf (last visited Feb. 4, 2022).
[24] *Id.*

C. DIRECT ECONOMIC IMPACT ON PRIVATE SECTOR:

The sales tax exemption may reduce costs associated with the production, storage, transportation, compression, blending, and combustion of green hydrogen, which may enhance the economic viability of green hydrogen projects in the state.

D. FISCAL COMMENTS:

The sales tax exemption created in the bill may be duplicative of an existing sales tax exemption for industrial machinery and equipment by an eligible manufacturing business. Eligible manufacturing businesses are defined as within industries classified under certain North American Industry Classification System (NAICS) classifications as published in 2007. Included in eligible classification codes is the NAICS code 325120, relating to industrial gas manufacturing, including hydrogen gas manufacturing.[25]

III. COMMENTS

A. CONSTITUTIONAL ISSUES:

1. Applicability of Municipality/County Mandates Provision:

Not applicable. This bill does not appear to require counties or municipalities to spend funds or take action requiring the expenditure of funds; reduce the authority that counties or municipalities have to raise revenues in the aggregate; or reduce the percentage of state tax shared with counties or municipalities.

2. Other:

None.

B. RULE-MAKING AUTHORITY:

The bill authorizes DOR to adopt rules to implement the sales and use tax exemptions for green hydrogen.

C. DRAFTING ISSUES OR OTHER COMMENTS:

None.

IV. AMENDMENTS/COMMITTEE SUBSTITUTE CHANGES

On February 8, 2022, the Tourism, Infrastructure & Energy Subcommittee adopted an amendment and reported the bill favorably as a committee substitute. The amendment corrected drafting errors in both the title and the text of the bill.

This analysis is drafted to the committee substitute as approved by the Tourism, Infrastructure & Energy Subcommittee.

[25] *Id.* at 295. *See also* s. 212.08(7)(jjj), F.S.