Date of Hearing: July 14, 2025

ASSEMBLY COMMITTEE ON EMERGENCY MANAGEMENT
Rhodesia Ransom, Chair
SB 804 (Archuleta) – As Amended June 27, 2025

**SENATE VOTE**: 34-0

**SUBJECT**: Hydrogen pipeline safety

**SUMMARY:** Requires the Office of the State Fire Marshall (OSFM) to adopt dedicated hydrogen pipeline safety standards by January 1, 2028, as specified. Specifically, **this bill**:

1) Establishes a new chapter under the Elder California Pipeline Safety Act of 1981 dedicated to hydrogen pipeline safety.

2) Finds and declares ensuring the safety and environmental integrity of dedicated hydrogen is crucial for the protection of California's residents, physical property, and natural environment.

3) Finds and declares hydrogen has the potential to significantly reduce our carbon footprint and serve as a cornerstone for a sustainable and clean energy future.

4) Finds and declares proactive state leadership is required to set comprehensive and effective standards in the absence of sufficient federal regulations.

5) Requires the OSFM to adopt dedicated hydrogen pipeline safety standards by January 1, 2028 that meet or exceed all the following requirements:
    a) The dedicated pipeline shall be designed and constructed to minimize hydrogen leakage to the lowest technically feasible level, as determined by the OSFM.
    b) All materials used in the construction of the dedicated pipeline must be codified by the American Society of Mechanical Engineers, or its equivalent, for compatibility with hydrogen resistance to degradation, such as corrosion or embrittlement.
    c) The dedicated pipeline shall employ continuous measurement and monitoring systems to detect any deviation from normal operational parameters.

6) Requires the OSFM to enforce dedicated hydrogen pipeline safety consistently across all jurisdictions of the state and regularly review and update dedicated hydrogen pipeline safety standards, incorporating changing technology and best practices.

7) Requires a dedicated hydrogen pipeline owner to annually submit a report to the OSFM on or before March 30$^{th}$ of each year, detailing the operator's compliance with this bill's recordkeeping requirements.

8) Defines key terms, including "dedicated hydrogen pipeline," which for the purposes of this bill means a pipeline that has been constructed, or undergone a major retrofit, for the purpose of primarily transporting hydrogen gas. Specifies OSFM may adopt a percentage of hydrogen gas by volume carried in a pipeline that would render it a "dedicated hydrogen pipeline;" and that such percentage must exceed 90%.

**EXISTING LAW**:

1) Establishes OSFM, within the Department of Forestry and Fire Protection (Cal FIRE), to foster, promote and develop ways and means of protecting life and property against fire and panic. (Health and Safety Code Sections 13100-13100.1)

2) Requires OSFM to adopt hazardous liquid pipeline safety regulations that comply with federal law regarding hazardous liquid pipeline safety. Establishes certain recordkeeping and reporting requirements for hazardous liquid pipeline operators. (Government Code Section 51010)

3) Defines "green electrolytic hydrogen" as hydrogen gas produced through electrolysis and does not include hydrogen gas manufactured using steam reforming or any other conversion technology that produces hydrogen from a fossil fuel feedstock. (Public Utilities Code Section 400.2)

4) Requires CARB to evaluate by June 1, 2024, market barriers to accelerate the use of green hydrogen, potential beneficial uses of hydrogen, and an estimate of Green House Gas (GHG) emissions reductions that can be achieved through deploying green hydrogen in various settings. Existing law requires CARB's evaluation to include an analysis of life-cycle GHG emissions from various forms of hydrogen, including green hydrogen. (Health and Safety Code Section 38561.8)

5) Authorizes the California Public Utilities Commission (CPUC) to supervise and regulate every public utility in the state and permits the CPUC to do anything that is necessary and convenient to exercise its power and jurisdiction. Existing law provides the CPUC with broad authority to regulate any utility's rules, practices, equipment, appliances, facilities, or service if the CPUC finds that those rules, practices, equipment, appliances, facilities, or services are unjust, unreasonable, unsafe, improper, inadequate, or insufficient after conducting a hearing. (Public Utilities Code Section 701 and 761)

6) Requires each gas corporation to develop a plan for the safe and reliable operation of its CPUC-regulated gas pipeline facility. Existing law specifies components that must be included in these plans and requires the CPUC to review and accept, modify, or reject the plan for each gas corporation. Under existing law, gas corporations are required to implement gas pipeline safety plans approved by the CPUC. (Public Utilities Code Sections 961 and 963)

7) Pursuant to federal law:
    a. Grants the United States Secretary of Transportation the regulatory and enforcement authority over gas and hazardous liquid pipelines, including $H_2$ pipelines. (49 United States Code Section 60102)
    b. Prohibits the Secretary of Transportation from prescribing or enforcing safety standards and practices for an intrastate pipeline or intrastate pipeline facility to the extent that the safety standards and practices are regulated by a state authority, except as provided. (49 United States Code Section 60105)

**FISCAL EFFECT**: Unknown. This bill is keyed fiscal, and will be referred to the Assembly Committee on Appropriations for its review. The version of this measure heard in the Senate, which authorized the CPUC to adopt and enforce the hydrogen pipeline safety standards and reporting required under this measure, was estimated by the CPUC to cost a little under $7 million over three years. It is unclear how moving these responsibilities to the OSFM may change these cost impacts.

**COMMENTS**:

Purpose of the bill: According to the author, "California leads the nation in the clean energy transition, and hydrogen is poised to play a pivotal role, especially in hard-to-decarbonize sectors like cement production, aviation fuel, and heavy-duty transportation. Yet, as hydrogen infrastructure expands, the state's regulatory framework for pipeline safety has not kept pace.

Senate Bill 804, the Hydrogen Pipeline Safety Act, addresses this critical gap by directing the Office of the State Fire Marshal (OSFM) to establish clear, enforceable safety standards tailored to hydrogen pipelines. Unlike natural gas, hydrogen presents distinct challenges, including high diffusivity and the potential to degrade common pipeline materials, risks that current regulations were not designed to address.

Without modern oversight, California faces increased risks to public safety and the environment, and could erode public confidence in hydrogen as a clean energy solution. SB 804 sends a clear message: California is committed to pairing innovation with responsibility. This legislation takes a proactive, future-focused approach to managing the unique risks of hydrogen infrastructure while enabling continued investment in our clean energy future. It's smart, timely policy that safeguards both progress and public well-being."

Hydrogen: Hydrogen is the most abundant element in the universe and occurs naturally on Earth, but mostly in compound form with other elements. Pure molecular hydrogen (H2) can be extracted by decomposing or chemically reacting hydrogen feedstocks—sources of hydrogen such as fossil fuels, biomass, and water. Once hydrogen molecules are extracted, they can be used for functional purposes.

For decades, technologies such as steam methane reforming (SMR) and coal gasification have used fossil fuels as hydrogen feedstocks for the manufacture of ammonia, fertilizers, and petroleum products and for other industrial processes. Emerging and potential future applications for hydrogen include storing energy, heating, and replacing natural gas in certain functions. Almost all current hydrogen production in the United States uses fossil fuels as feedstocks and directly emits carbon dioxide (CO2).

Safe Use of Hydrogen: According to the U.S. Department of Energy, some of hydrogen's properties require additional engineering controls to enable its safe use. Specifically, hydrogen has a wide range of flammable concentrations in air and lower ignition energy than gasoline or natural gas, which means it can ignite more easily. In addition, some metals can become brittle when exposed to hydrogen, so selecting appropriate materials is important to the design of safe hydrogen systems.

Hydrogen is stored under high pressure and, due to its relative weight compared to the surrounding air ventilation, leak detection and emergency response plans are crucial. In addition to designing safety features into hydrogen systems, training in safe hydrogen handling practices

is a key element for ensuring the safe use of hydrogen. In addition, testing hydrogen systems—tank leak tests, garage leak simulations, and hydrogen tank drop tests—shows that hydrogen can be produced, stored, and dispensed safely.

National Fire Protection Association's (NFPA) Hydrogen Technologies Code: The NFPA 2 is a critical element of the framework for deploying hydrogen technologies in the United States. With the increased interest in hydrogen being used as a vehicle fuel source, the NFPA was petitioned to develop an all-encompassing document that would establish the necessary requirements for hydrogen technologies. The NFPA's technical committee was formed in 2006, and the NFPA 2 is continuously updated. The focus of the NFPA 2 standard is all aspects of hydrogen storage, use and production and draws from existing codes and standards. The standards are developed for code users and enforcers, such as the State Fire Marshal.

Hydrogen Production: Hydrogen is currently produced both intentionally (on-purpose hydrogen) and as a byproduct of other processes. On-purpose hydrogen produced and sold to a consumer is known as merchant hydrogen, while on-purpose hydrogen produced by a consumer for internal use is called captive hydrogen. On-purpose hydrogen differs from byproduct hydrogen, which is the result of processes that are not for the express purpose of producing hydrogen. Examples include processes for producing chlorine and sodium hydroxide.

Estimates of hydrogen production may cover on-purpose hydrogen, or they may cover both on-purpose and byproduct hydrogen combined. A U.S. Department of Energy (DOE) Hydrogen and Fuel Cells Program Record published in 2019 estimates that about 10 million metric tons (MMT) of on-purpose hydrogen is produced in the United States annually. Production in the United States accounts for approximately 14% of total hydrogen produced worldwide, which is around 70 MMT. Most of the hydrogen produced globally and almost all of the hydrogen produced in the United States comes from natural gas.

Zero-Emission Vehicles and Hydrogen Fueling in California: As zero-emission vehicles (ZEVs), hydrogen-powered fuel cell electric vehicles (FCEVs) play a significant role in reducing California's greenhouse gas and smog emissions. Significant growth in ZEV deployment over the coming decades is necessary to meet the state's climate and air quality goals. Deployment of sufficient fueling infrastructure for the coming ZEV fleet is a necessary first step, as recognized by the passage of Assembly Bill 8 in 2013.

In January 2018, Governor Brown signed Executive Order B-48-18, setting targets of 200 hydrogen-fueling stations and 250,000 EV chargers to support 1.5 million zero-emission vehicles (ZEVs) on California roads by 2025. The 2025 target is an interim goal on the state's path to 5 million ZEVs by 2030 and 100 percent of in-state sales of new passenger cars and trucks as ZEVs by 2035. Although the vast majority of those vehicles are projected to be battery EVs supported by EV chargers, the state currently has approximately 8,000 FCEVs on the roads and 65 hydrogen-fueling stations, according to the CEC's Zero Emission Vehicle and Infrastructure Statistics dashboard.

Big Beautiful Bill Extends 45Q Clean Hydrogen Tax Credit: Under the One Big Beautiful Bill Act, certain hydrogen projects that enter construction before 2028 could be eligible to receive the 45V tax credit, which is crucial for the profitability of hydrogen produced from renewable sources like the electrolysis of water using wind or solar. There were concerns that clean hydrogen production facilities would have to begin construction before January 1, 2026, to

remain eligible for 45V credits. However, the updated bill that passed Congress extends that deadline by two years to January 1, 2028, providing a lifeline for green hydrogen projects to reach final investment decision and break ground in the next 30 months.

Arguments in support: The California State Pipe Trades writes, "The members of the California State Pipe Trades are already at the forefront of building California's hydrogen infrastructure, bringing unmatched experience, training, and technical expertise to these cutting-edge projects. Our members ensure that hydrogen systems are constructed to the highest standards of safety and quality, helping California transition to a cleaner, more sustainable energy future. Current federal safety regulations have not fully kept pace with technological advancements or the specific requirements of hydrogen infrastructure. SB 804, the Hydrogen Pipeline Safety Act, addresses this regulatory gap."

The Environmental Defense Fund writes, "the Environmental Defense Fund respectfully supports SB 804 (Archuleta). This bill ensures the safe construction, monitoring, and operation of hydrogen pipelines to protect public health, property, and the environment. SB 804 provides a clear, forward-looking regulatory framework that supports the hydrogen industry's growth while maintaining the highest safety and environmental standards."

Arguments in support if amended: The Pipeline Safety Trust writes, "Currently, hydrogen pipelines fall within the Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations for gas pipelines, however, there are virtually no specific regulations that consider the unique nature of hydrogen as compared to methane. Hydrogen is much more likely to explode than methane, and those explosions are larger and burn hotter than methane. In addition, many pipeline materials are not suitable for transporting hydrogen, which can lead to embrittlement and cracking issues. Hydrogen is also a much smaller molecule than methane which allows it to leak much easier and faster."

Double referral: This bill is double referred. The Assembly Committee on Utilities and Energy approved this bill on June 25, 2025 on an 18-0 vote.

Related legislation: AB 716 (Carrillo) of this Session. Requires the Office of the State Fire Marshal (OSFM) to adopt the National Fire Protection Association Hydrogen Technologies Code as the statewide fire safety standards and guidelines for hydrogen production, storage, and distribution facilities, as specified. (Pending in the Senate Committee on Appropriations)

Prior legislation: AB 2204 (Bennett) of the 2023-24 Session. Establishes a goal, by an unspecified date, for all in-state hydrogen production, and specifically excludes any fossil fuel use as either a feedstock or energy source in the production process. Also requires the hydrogen to show the use of new and incremental renewable generation, temporal matching, and geographic deliverability. (Died in the Assembly Committee on Utilities and Energy)

SB 1418 (Archuleta) requires every city and county to adopt an ordinance to create an expedited, streamlined permitting process for hydrogen-fueling stations. Status: Chapter 607, Statutes of 2024.

SB 1420 (Caballero) of the 2023-24 Session. Provides for expedited California Environmental Quality Act (CEQA) and California Energy Commission (CEC) review for hydrogen production facilities that have received state or federal funding. Status: Chapter 608, Statutes of 2024.

AB 1550 (Bennett) of the 2023-24 Session. Would have required, on and after January 1, 2045, all hydrogen produced and used in California for either the generation of electricity or the fueling of vehicles be "renewable hydrogen of biological origin" or "renewable hydrogen of nonbiological origin." (Died on the Assembly Floor)

SB 414 (Allen, 2023) required CARB, upon appropriation, to complete an assessment of the use of hydrogen in specified applications. Status: Died in the Assembly Committee on Appropriations.

SB 1075 (Skinner) of the 2021-22 Session. Directs CARB, in consultation with the CPUC and CEC, to develop an evaluation by June 1, 2024 which includes, among other topics, policy recommendations regarding the use of green hydrogen in the state, an estimate of reduced GHG emissions achievable through the use of green hydrogen. (Chapter 363, Statutes of 2022)

AB 157 (Committee on Budget) of the 2021-22 Session. Authorized GO-Biz to take steps to prepare and submit an application to receive funding from the regional clean hydrogen hubs program or to otherwise participate in the regional clean hydrogen hubs program. The bill also established a definition of clean hydrogen. (Chapter 570, Statutes of 2022)

SB 1369 (Skinner) of the 2017-18 Session. Requires the CPUC, CARB, and CEC to consider green electrolytic hydrogen an eligible form of energy storage, and to consider other potential uses of green electrolytic hydrogen. (Chapter 567, Statutes of 2018)

**REGISTERED SUPPORT / OPPOSITION**:

**Support**

Air Products and Chemicals, INC.
California State Pipe Trades Council
Environmental Defense Fund

**Support if amended**

Pipeline Safety Trust

**Opposition**

None on file.

**Analysis Prepared by**: Mike Dayton / E.M. / (916) 319-3802