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**SENATE COMMITTEE ON ENERGY, UTILITIES AND  
COMMUNICATIONS**

**Senator Steven Bradford, Chair  
2023 - 2024 Regular**

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| <b>Bill No:</b>    | SB 993      | <b>Hearing Date:</b> | 4/16/2024 |
| <b>Author:</b>     | Becker      |                      |           |
| <b>Version:</b>    | 1/31/2024   | Introduced           |           |
| <b>Urgency:</b>    | No          | <b>Fiscal:</b>       | Yes       |
| <b>Consultant:</b> | Sarah Smith |                      |           |

**SUBJECT:** Clean energy development incentive rate tariff

**DIGEST:** This bill requires the California Public Utilities Commission (CPUC) to establish a tariff to encourage new, time-responsive electricity consumption to produce hydrogen and electrify high-heat industrial processes.

**ANALYSIS:**

Existing law:

- 1) Authorizes the CPUC to regulate public utilities, including electric and natural gas corporations and establish rates for these utilities. (Public Utilities Code §201 et. seq.)
- 2) Requires public utility rates approved by the CPUC to be just and reasonable and prohibits utilities from assessing any charges that are unjust or unreasonable. (Public Utilities Code §451)
- 3) Requires the California Energy Commission (CEC) and CPUC to take certain steps to achieve the state's clean energy and climate goals. These steps include authorizing, where feasible, resource procurement to promote grid reliability services that minimize reliance on system power and fossil fuel. These services may include energy storage, energy efficiency measures, and demand response. (Public Utilities Code §400)
- 4) Defines a load-serving entity (LSE) as an electrical corporation, electric service provider, or community choice aggregator. Existing law excludes local publicly owned electric utilities (POUs), the State Water Project, energy resources on the customer-side of the meter, and certain projects with special utility arrangements specified by law. (Public Utilities Code §380)
- 5) Establishes the integrated resource plan (IRP) process through which LSEs identify a diverse selection of resources that will be used to meet service and

reliability obligations while making long-term investments in clean energy resources that help meet the state's climate goals for the energy sector. Existing law requires the CPUC to direct LSEs to submit proposals for procuring renewable energy resources, which may include demand-side and supply-side resources. (Public Utilities Code §454.52)

This bill:

- 1) Requires the CPUC to establish a tariff, by July 1, 2026, to encourage increased time-responsive electricity consumption for hydrogen production and electrification of industrial heat processes. The CPUC's adoption of this tariff is conditional upon the CPUC first evaluating the potential tariff and finding that such a tariff is just and reasonable.
- 2) Specifies that the tariff would only apply to customers that meet all the following:
  - a) Customers that establish service on or after January 1, 2025, or customers that increase their total electricity consumption by more than 50 percent after starting service under the tariff.
  - b) Customers that can operate flexibly to improve grid conditions by aligning demand with times and locations associated with plentiful renewable or zero-carbon electricity, with the ability to curtail demand at other times.
  - c) Customers that either produce hydrogen using electrolysis of water or customer that use electricity for industrial heat processes.
- 3) Specifies that a tariff established under this bill must meet the following requirements:
  - a) The tariff has hourly rates as low as feasible while still meeting the marginal cost of service for that hour, all related non-bypassable charges, and a portion of non-marginal costs.
  - b) The tariff includes significantly higher rates at other hours to encourage a reduction in demand or full curtailment of demand during times that would help reduce total costs for the electrical system, including where there is transmission congestion or during net peak demand.
  - c) The tariff is contingent upon customers being interruptible during times of peak grid usage, and the tariff provides that the customer's LSE shall not be

required to provide resource adequacy for the customer's load during peak demand periods.

- d) The tariff shall not result in a cost-shift between customer classes.
- 4) Specifies that the tariff shall only be available to customers of bundled electrical corporations. Other customers can obtain the tariff if their LSE adopts a generation rate component similar to the generation rate approved for the tariff of an electrical corporation.
- 5) Requires the CPUC to consider whether the tariff should include an option for an LSE to provide hourly, time-matched, renewable or zero-carbon energy that would meet the requirements of the federal Clean Hydrogen Production Tax Credit, enabling the customer to use LSE-delivered electricity to meet those requirements.

## Background

*Bill aims to incentivize increased time-responsive use of electricity for certain purposes.* Both electrolytic hydrogen production and high-heat industrial processes are emerging uses of electricity for certain decarbonization efforts. While electrolytic hydrogen production relies on electricity to split water to make hydrogen fuel, certain high-heat industrial processes are potential candidates for electrification measures that may reduce emissions from the industrial sector. Both electrolytic hydrogen production and electrification of high-heat industrial processes require substantial amounts of electricity. Generally, certain industrial processes and hydrogen production are only economical when they occur at large scales, which leads these processes to consume electricity without regard for electricity market signals and grid conditions. This bill would require the CPUC to consider establishing a new tariff to encourage the development of these new electrical loads in a manner that reflects grid conditions on an hourly basis. This bill also restricts eligibility for this tariff to those industrial and hydrogen facilities that are bundled investor-owned utility (IOU) customers that also agree to have their power interrupted during peak demand periods.

*Hydrogen production and the Three Pillars.* Hydrogen is one of several resources that could support decarbonization of certain hard-to-decarbonize sectors. However, most existing hydrogen production is based on fossil fuels, and most existing demand for hydrogen comes from oil refining processes. Refineries use hydrogen to lower the sulfur content of diesel fuel. As demand for diesel has increased, demand for hydrogen in the refining sector has commensurately increased. While short-term hydrogen demand is largely focused on existing oil

and gas uses, hydrogen has the capacity to replace dirtier fuels in portions of the transportation sector and reduce emission in certain industrial processes. However, if sufficient standards are not in place to ensure that hydrogen production is aligned with California's climate goals and electricity needs, increased hydrogen production may result in a net increase in emissions from the energy sector. Currently, the costs to produce cleaner forms of hydrogen at scale are too high to support wide expansion of the clean hydrogen market. To address the need for more renewable hydrogen production, the Biden Administration is in the process of enacting a Clean Hydrogen Production Tax Credit (also known as the 45V Tax Credit) included in the Inflation Reduction Act. This tax credit would be provided directly to hydrogen producers that meet certain requirements for producing clean hydrogen, and the amount of the credit would be based on the relative emissions associated with the hydrogen's production. Only hydrogen with the lowest-emitting production process will qualify for the richest level of tax credit.

In December 2023, the federal Treasury Department issued its proposed regulations for implementing the Clean Hydrogen Production Tax Credit and started collecting comments on the proposal. Since the release of this proposal, multiple organizations have emphasized the importance of the regulations incorporating the "Three Pillars" to ensure that hydrogen production from electrolysis does not result in unintended emissions increases. These three pillars include the following:

- **Additionality/Incrementality:** the hydrogen must be produced from new units of renewable electric generation to prevent hydrogen from diverting clean energy resources away from the grid.
- **Deliverability:** the hydrogen must be regionally deliverable to ensure that the hydrogen is not being produced from dirty resources that cannot be verified or from far away resources that are never able to reach the facility.
- **Hourly Matching:** the hydrogen's production must match a clean power supply on an hourly basis to ensure that hydrogen production does not increase demand for fossil fuel generation.

While this bill does not establish a three pillars requirement as a condition of obtaining the tariff authorized by this bill, it is likely that only those hydrogen projects most closely matching the goals of the three pillars will be eligible for the tariff. This bill may provide an additional incentive for those hydrogen projects that are able to modify their electrolyzers' operations to only produce hydrogen at times of the day when there are plentiful zero-carbon resources on the grid.

*Bill prohibits rate shifts between classes, but cost shifts within a class may be inevitable.* While this bill aims to limit the rate impact of establishing a discounted rate tariff, costs associated with discounted tariffs are almost always borne by other customers. Commercial and industrial customers in the same rate class as those customers receiving a tariff under this bill will necessarily cross subsidize the discounted electricity received under the tariff. This tariff is specifically aimed to provide a rate incentive for certain use cases in the commercial and industrial sector. To the extent that the scope of customers using this tariff and the amount of electricity to which the tariff is applied remains low, other customers in the commercial and industrial sector that are ineligible for the tariff may experience limited rate impacts. Conversely, if the tariff is widely used for large amounts of energy consumption within the commercial and industrial rate class, cost shifts to ineligible customers may be larger. This bill specifies that the tariff must cover at least some portion of non-marginal costs in addition to the marginal costs associated with providing electrical service; however, it is unclear what non-marginal costs will be covered by a tariff and which costs will not be included.

This bill authorizes the CPUC to determine whether LSEs should be required to provide hourly time-matched renewable or zero-carbon electricity meeting the Clean Hydrogen Production Tax Credit requirements to facilitate hydrogen producers' compliance with the tax credit. It is unclear how the CPUC could establish an hourly time-matching requirement on an LSE for a customer producing hydrogen without establishing a new accounting mechanism for generation resources or a new procurement requirement to tie a specific renewable or zero-carbon electricity supply to a specific customer. It is unclear if any additional costs associated with establishing an hourly-matching mechanism would be borne solely by the tariffed customer or by all utility customers under this bill.

*If you tariff them, will they come?* Under this bill, customers receiving this tariff must also be new electrical customers or customers who will substantially increase their electrical load once they enroll in the tariff. Given that this tariff would be for new loads instead of shaping existing loads, the potential demand for the tariff and impacts on other customers may be difficult to anticipate. This uncertainty may make utility planning for tariffed and non-tariffed customers more challenging.

*Need for Amendments.* As currently written, this bill would establish a tariff to encourage increased energy consumption at certain times for the purposes of producing hydrogen and electrifying certain industrial processes. However, the demand for this tariff and potential impacts of the tariff are unclear, and an open-ended tariff may not enable sufficient opportunities to evaluate and address tariff impacts. Additionally, this bill implies that LSEs may not be required to meet resource adequacy requirements (RA) for customers tariffed under this bill;

however, RA procurement requirements are not specific to individual customers - RA may consist of local, system, or flexible requirements needed to ensure the CAISO has sufficient capacity to meet needs across the grid. While customers enrolled in interruptible load programs may decrease overall RA obligations by reducing peak demand, LSEs are generally required to meet RA obligations based on demand projections. This bill also includes unnecessary references to rate adoption by LSEs that are not IOUs subject to the tariff provisions of this bill. *For these reasons, the author and committee may wish to amend this bill to do the following:*

- *Cap the total load eligible for a tariff established under this bill to no more than 1,000 megawatts.*
- *Clarify that the CPUC shall consider tariffed customers' interruptible load when determining an LSE's RA requirements.*
- *Delete provisions regarding the conditions under which other LSEs may adopt tariffs similar to the tariff established under this bill.*
- *Delete provisions authorizing the CPUC to consider adopting an hourly time-matching requirement for LSEs.*

### **Prior/Related Legislation**

SB 1420 (Caballero, 2024) establishes definitions for qualified clean hydrogen and renewable hydrogen, authorize certain hydrogen projects to use environmental leadership streamlined permitting processes, and adds electricity generated from renewable hydrogen as an RPS-eligible resource. The bill is currently pending the Senate Energy, Utilities and Communications Committee.

SB 1018 (Becker, 2024) excludes businesses and individuals that provide solar and wind generation exclusively for the purposes of producing hydrogen and electrifying high-heat industrial processes from the definition of an "electrical corporation." The bill is currently pending in the Senate Energy, Utilities and Communications Committee.

AB 841 (Berman, 2023) would have required the CEC to create a roadmap for electrifying certain industrial processes, including high-heat processes. The bill was held in the Senate Appropriation Committee.

SB 663 (Archuleta, 2023) would have defined renewable hydrogen and added renewable hydrogen as a renewable energy resource under the RPS. The bill also establishes criteria for renewable hydrogen acquired from a dedicated or on-site pipeline to meet RPS standards. The bill died on the Senate Floor.

SB 1075 (Skinner, Chapter 363, Statutes of 2022) required CARB and the CEC to analyze options for using hydrogen as part of decarbonization strategies.

AB 157 (Committee on Budget, Chapter 570, Statutes of 2022) authorized the Governor's Office of Business and Economic Development 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 for the purposes of receiving funds for hydrogen hubs.

AB 209 (Committee on Budget, Chapter 251, Statutes of 2022) among other provisions, established a hydrogen funding program at the CEC to support projects that produce, process, deliver, store, or use hydrogen.

**FISCAL EFFECT:** Appropriation: No Fiscal Com.: Yes Local: Yes

**SUPPORT:**

350 Sacramento  
Advanced Energy Economy  
California Hydrogen Coalition  
California State Association of Electrical Workers  
California State Pipe Trades Council  
Climate Action California  
Coalition of California Utility Employees  
Green Hydrogen Coalition  
Industrious Labs  
Intersect Power  
Natural Resources Defense Council and NRDC Action Fund  
Rondo Energy  
Sierra Club California  
The Climate Reality Project: Silicon Valley Chapter

**OPPOSITION:**

San Diego Gas and Electric Company

**ARGUMENTS IN SUPPORT:** According to the Author:

As California transitions to net-zero emissions, some of the toughest challenges are in reducing greenhouse gas (GHG) emissions from “hard-to-abate” industrial uses. Green hydrogen and thermal batteries are two of the

most promising options for tackling industrial emissions, and hydrogen can also provide clean energy solutions for long-distance transportation and grid energy storage. To be successful as climate solutions, however, both hydrogen and thermal batteries need access to very large amounts of low-cost, clean electricity – while avoiding adding cost or putting additional stress on the grid... This tariff will offer these new customers a great deal: pricing to help them be cost-competitive, but only if they operate in a way that relies on clean energy, avoids new grid infrastructure costs, and helps us maintain a reliable grid. California wants these new energy solutions to help the state decarbonize, but they will only help if they are done right. SB 993 will provide the support and economic incentives to make sure that happens.

**ARGUMENTS IN OPPOSITION:** In opposition, the San Diego Gas and Electric Company states:

San Diego Gas & Electric (SDG&E) is opposed to SB 993 (Becker) which would create a new incentive rate time-of-use tariff. While we understand and agree with the desire to encourage the use of multiple fuel options to reduce greenhouse gas emissions, SB 993 would create a cost shift that would add to the complex rate system that has not been solved for affordability, so adding this would exacerbate the existing electric rate affordability issues. SB 993 would create a new clean energy development incentive time-of-use tariff to offer lower electricity rates for customers producing hydrogen using an electrolysis of water and for customers using electricity to provide industrial process heat, including through the use of a thermal energy storage system. Other customers will pay the difference of this price reduction. For example, if the tariff does not include all nonmarginal costs, the portion of nonmarginal costs not paid by a customer on the SB 993 tariff would be shifted to other customers.

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