Date of Hearing: June 10, 2026

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY
Cottie Petrie-Norris, Chair
SB 925 (McNerney) – As Amended May 14, 2026

SENATE VOTE: 37-0

SUBJECT: Fusion energy: State Energy Resources Conservation and Development Commission: strategic plan: certification and environmental review

SUMMARY: Requires the California Energy Commission (CEC) to develop a strategic plan for the development of fusion energy in the State. Additionally, the bill expands the types of facilities eligible to be certified by the CEC as environmental leadership development projects (ELDPs) to include discretionary projects for the manufacture, production, or assembly of specialized products, components, or systems integral to fusion energy. Specifically, **this bill**:

1) Makes a number of findings and declarations concerning the potential of fusion energy to serve California's load and provide zero-carbon energy.

2) Requires the CEC, in coordination with specified agencies, to develop a strategic plan for the development of fusion energy in California and submit the plan to the Legislature on or before December 31, 2028.

3) Requires the CEC, in coordination with relevant agencies and the fusion energy industry, to develop and include the following in the strategic plan report:
    a. Develop a strategy for the expansion and development of fusion research and development in California.
    b. Develop a strategy for supporting the commercialization of fusion energy in California.
    c. Develop a regulatory framework for fusion energy and roadmap for licensing and permitting for new fusion energy research and fusion energy facilities.
    d. Assess the level at which fusion energy at scale would best support California's long-term renewable energy and greenhouse gas emission reduction goals.

4) Expands the types of facilities eligible to be certified as environmental leadership development projects by the CEC to include a discretionary project, as described, for the manufacture, production, or assembly of specialized products, components, or systems that are integral to fusion energy.

EXISTING LAW:

1) Requires the CEC to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices and use these assessments and forecasts to develop and evaluate energy policies and programs that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety. (Public Resources Code §§ 25000 *et seq.*)

2) Requires the CEC, beginning November 1, 2003, and biennially thereafter, to adopt an integrated energy policy report that contains an overview of major energy trends and issues facing the state, presents policy recommendations based on an in-depth and integrated analysis of the most current and pressing energy issues facing the state, and includes an assessment and forecast of system reliability and the need for resource additions, efficiency, and conservation. (Public Resources Code § 25302)

3) Requires the CEC to include an assessment in the 2027 Integrated Energy Policy Report (IEPR) regarding the potential for fusion energy to contribute to California's power supply. (Public Resources Code § 25302.4)

4) Authorizes persons proposing specified electrical generation, electrical transmission, hydrogen production, energy storage, and geothermal projects to apply, on or before June 30, 2030, to the CEC to certify sites and related facilities as environmental leadership development projects, as specified. Makes a site and related facility certified by the CEC subject to streamlining benefits related to the California Environmental Quality Act (CEQA) with no action by the Governor. (Public Resources Code § 25545)

5) Declares the policy of the state to encourage the use of nuclear energy, wherever feasible, recognizing that such use has the potential of providing direct economic benefit to the public, while helping to conserve limited fossil fuel resources and promoting clean air. (Public Resources Code § 800)

6) Prohibits any nuclear fission thermal powerplant from being permitted in the state until the federal government approves technologies to reprocess the spent nuclear fuel rods, and the CEC reports to the Legislature affirmative findings of that federal action. (Public Resources Code § 25524.1)

FISCAL EFFECT: According to the Senate Committee on Appropriations, the CEC estimates one-time costs of $3.3 million spread over two years and ongoing costs of $2.2 million annually.

BACKGROUND:

What is fusion? Fusion energy is formed by combining two hydrogen atoms into a single helium atom. Because the resulting helium atom weighs less than the two hydrogen atoms combined, the excess mass is released as energy – the very reaction which powers the sun.

Fusion was first achieved in 1934 but was not energy-positive (i.e., the output energy was not greater than the input energy) until 2022.[1] The most common method to achieve fusion is to heat the atoms to a temperature hotter than the sun, which requires substantial energy input. Newer methods are less energy intensive, relying on strong lasers or magnets to start the reaction.[2] When the Department of Energy's Lawrence Livermore National Lab (LLNL) created a sustained energy-positive fusion reaction in 2022, it was a breakthrough.[3] As of 2025, LLNL

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[1] EuroFusion, History of Fusion. https://euro-fusion.org/fusion/history-of-fusion/
[2] Lemonick, S. (2021) Fusion experiments broke records this year, raising hopes for fusion power, Chemical and Engineering News. https://cen.acs.org/energy/nuclear-power/Fusion-experiments-broke-records-year/99/i44
[3] Martucci, B (2025) Is nuclear fusion for real this time? These utilities think so, Utility Drive. https://www.utilitydive.com/news/is-nuclear-fusion-for-real-this-time-these-utilities-think-so/761079/

created a fusion reaction that netted 1.74 megajoules (MJ), approximately enough energy to power a house for 30 minutes or drive an electric sedan for 1.5 miles.[4] Fusion labs internationally have sustained a fusion reaction for over 15 minutes, longer than LLNL. [3]

California leads the fusion industry. One-third of all US-based fusion companies are in the state. SB 80 (Caballero, Chapter 334, Statutes of 2025) dedicated $5 million to fusion research and development. The sector currently employs 4,700 people.[5]

Energy of the Future – A headline from 2018 reads "Nuclear Fusion is 15 years from reality, say Massachusetts Institute of Technology (MIT) engineers."[6] Eight years later, a research physicist at LLNL said that a viable fusion power plant is 15 to 30 years away.[3] Despite the uncertainty of when fusion energy will become a reality, several companies are making million-dollar bets that fusion will reach utility scale in the next two to ten years. Commonwealth Fusion Systems, backed by Bill Gates, plans to open a 400-megawatt (MW) plant, enough to power 300,000 homes, in the early 2030s.[7] Helion, backed by OpenAI's Sam Altman, plans to bring a 50-MW fusion power plant online by 2028.[3] The International Thermonuclear Experimental Reactor, located in France and intended to demonstrate the feasibility of fusion power, is $5 billion over budget and 9 years delayed (with an opening date of 2034).[8] Presently, fusion energy can generate 1.74 megajoules (MJ) for 15 minutes (approximately 500 Wh), a far cry from reliable, utility-scale energy. The fusion power plants currently planned are 24,000 to 200,000 times larger and must function consistently for hours, if not days, at a time.

Nuclear Waste – Existing nuclear power plants generate 9% of California's electricity[9] and use nuclear fission, a process which generates around-the-clock, fossil-free energy and significant nuclear waste. Nuclear waste is classified in tiers depending on radioactivity: low-, intermediate-, and high-level. Low-tier nuclear waste consists of lightly contaminated items such as tools or work clothing. High-level waste consists of highly radioactive fuel byproducts. 90% of nuclear waste is low-level waste, but the 3% of high-level nuclear waste is difficult to properly dispose of.[10] Presently, California has a moratorium on new nuclear fission power plants until the federal government identifies and approves technology for the permanent disposal of high-level nuclear waste.[11] There are currently limited intermediate-level disposal sites in the US and no high-level disposal sites.

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[4] LLNL National Ignition Facility & Photon Science (2025) Achieving Fusion Ignition, https://lasers.llnl.gov/science/achieving-fusion-ignition
[5] Governor Newsom (2025) California continues to lead the nation in fusion energy, investing in technology of the future, https://www.gov.ca.gov/2025/12/15/california-continues-to-lead-the-nation-in-fusion-energy-investing-in-technology-of-the-future/
[6] Duckett, A. (2018) Nuclear fusion is 15 years away from reality, says MIT engineers, The Chemical Engineer. https://www.thechemicalengineer.com/news/nuclear-fusion-is-15-years-away-from-reality-say-mit-engineers/
[7] Blum, J. (2025) Nuclear fusion, the 'holy grail' of power, was always 30 years away – now it's a matter of when, not if, fusion comes online to power AI, Fortune. https://fortune.com/2025/10/02/nuclear-fusion-online-commercial-ai-power/
[8] Matthews, D. (2024) ITER fusion project confirms more delays and €5B cost overrun, Science Business. https://sciencebusiness.net/news/iter-fusion-project-confirms-more-delays-and-eu5b-cost-overrun
[9] 2024 Total System Electric Generation, CEC, https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2024-total-system-electric-generation
[10] World Nuclear Association, What is nuclear waste, and what do we do with it? https://world-nuclear.org/nuclear-essentials/what-is-nuclear-waste-and-what-do-we-do-with-it
[11] LAO (2015) A.G. File No. 2015-001. https://lao.ca.gov/BallotAnalysis/Initiative/2015-001

Nuclear fusion generates lower quantities of waste that is less hazardous; however, it is still hazardous nuclear waste, both low-level and intermediate-level waste.[12] Fusion waste contains tritium (an isotope of hydrogen) with a half-life of 12 years, far shorter than nuclear fission waste but still a substantial amount of time. Tritium easily contaminates steel and concrete and has a propensity to migrate, increasing the likelihood of environmental releases.[11]

Nuclear fusion has the potential to be a clean source of energy. Fusion produces less radioactive waste than either fission or coal combustion.[13] However, care must be taken to ensure low- and intermediate-level waste is disposed of properly, that there are sufficient intermediate-level disposal sites, and environmental releases are minimized, especially in pollution burdened communities.[14]

COMMENTS:

1) *Author's Statement.* According to the author, "For decades, fusion energy was viewed as a distant promise of unlimited clean energy that might never be realized. But not anymore. Successful fusion ignition has already been achieved multiple times at the Lawrence Livermore National Laboratories in my Senate district — the only place in the world to do so. California now needs to build out its regulatory framework to keep fusion jobs and investment here in the state. SB 925 will require the California Energy Commission to create a strategic roadmap to advance fusion energy. This includes assisting research and development, locating sites for future power plants, and creating a licensing and permitting framework."

2) *Purpose of the bill.* This bill aims to create a roadmap for the development of nuclear fusion facilities. The goal of this bill is to ensure California reaps the benefits of fusion energy investments and has a framework in place to welcome this pioneering technology. The bill requires the CEC to build off the 2027 IEPR findings established by AB 1172 (Calderon, Chapter 360, Statutes of 2023) and expand to develop a strategic plan for fusion energy development, including criteria for suitable locations for testing facilities and demonstrations, workforce development, regulatory framework and roadmap for licensing and permitting, and an assessment of the level at which fusion energy at scale would best support the state's long-term renewable energy and greenhouse gas emissions reduction goals. As noted above, there are varying perspectives about the timeline by when fusion energy may become commercially available (as well as viable at producing energy cost-effectively). The idea of a strategic plan for fusion energy may be premature. However, as this bill plans to build off the findings of the 2027 IEPR, it will be informed by any findings by the CEC in that effort, including the time horizon the state should be considering for the resource. As the State rapidly approaches clean energy and reliability goals, including the SB 100 (De León, Chapter 312, Statutes of 2018) requirement to

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[12] Gonzalez de Vincenta, S. M. (2022) Overview on the management of radioactive waste from fusion facilities: ITER, demonstration machines and power plants, Nuclear Fusion. https://iopscience.iop.org/article/10.1088/1741-4326/ac62f7

[13] Broden, K. (1998) Waste from fusion reactor: A comparison with other energy producing systems, Fusion Engineering and Design. https://www.sciencedirect.com/science/article/abs/pii/S0920379697001506

[14] Upholt, B. (2023) Spent nuclear fuel sits on a crumbling California coastline. So what to do? SeaGrant California. https://caseagrant.ucsd.edu/news/spent-nuclear-fuel-sits-crumbling-california-coastline-so-what-do

achieve 100% zero-carbon electricity by 2045, this strategic plan may be helpful to identify if and how fusion energy could play a role in meeting those goals.

3) *Clarifying amendments.* In Section 25995.3(b), the CEC must align the regulatory framework and roadmap for licensing and permitting with the Nuclear Regulatory Commission (NRC) rule on this topic – fusion energy regulations. This rule has just recently concluded the public comment period[15] and is scheduled to be published well before the CEC's report would be due to the Legislature. For clarity, *the committee recommends striking the language that the CEC should incorporate this rule once it is finalized and promulgated.*

   In this same section focused on a regulatory framework, subsection (c)(4) directs the CEC to identify staff and funding needs for the Radiologic Health Branch of the State Department of Public Health and other agencies. It is most appropriate for those agencies, rather than the CEC, to opine upon and request their own staff and funding needs. Therefore, *the committee recommends clarifying that the CEC shall report on the projected staff and funding needs of other agencies/departments as determined by those entities.*

   Finally, the committee recommends removing "nearly limitless" in the first finding and declaration given uncertain future of fusion energy.

4) *Double Referred*. This bill is double referred. Should it pass out of this committee, it will next be considered in the Assembly Committee on Natural Resources.

5) *Related Legislation.*

   AB 2647 (Calderon) requires the CEC, as part of the IEPR or separate report, to complete a comprehensive assessment of the potential role for advanced nuclear technologies in supporting critical infrastructure in California and the potential for new, in-state nuclear powerplants to cost-effectively meet statewide needs for new electricity resources and meet the state's clean energy goals. Status: Pending committee assignment in the Senate.

6) *Prior Legislation.*

   SCR 25 (Blakespear) celebrates the contributions of public and private sector organizations advancing nuclear fusion energy research and supports developing the fusion energy ecosystem with the goal of siting a first-of-its-kind fusion pilot plant in California by the 2040s. Status: Chapter 161, Statutes of 2025.

   SB 80 (Caballero) requires the CEC to establish a program to provide financial incentives for fusion energy research. This bill specifies that it will only become operative if a separate measure or budget bill provides funding for its implementation. Status: Chapter 334, Statutes of 2025.

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[15] Regulatory Framework for Fusion Machines, https://www.federalregister.gov/documents/2026/02/26/2026-03865/regulatory-framework-for-fusion-machines

SB 86 (McNerney) authorizes the California Alternative Energy and Advanced Transportation Financing Authority to provide financial assistance, in the form of exclusions from sales and use tax, to electrical generation facilities using nuclear fusion technology. Status: Chapter 211, Statutes of 2025.

AB 1172 (Calderon) requires the CEC to evaluate various fusion technologies and to analyze the feasibility of using nuclear fusion in the state as part of its 2027 IEPR. Status: Chapter 360, Statutes of 2023.

AB 525 (Chiu) requires the CEC in collaboration with relevant stakeholders to create a roadmap for the development of the offshore wind industry. Status: Chapter 231, Statutes of 2021.

REGISTERED SUPPORT / OPPOSITION:

Support

B3k Prosperity
Blue Laser Fusion
City of Bakersfield
City of Livermore
Clean Air Task Force
East County Economic Development Council
Ex-fusion America
Focused Energy
Fuse
General Atomics
Helicity Space
High Temperature Superconductors, INC.
Inertia Enterprises
Innovation for Green Advanced Transportation Excellence Development Corporation (I-GATE)
Innovation Tri-valley Leadership Group
Kyoto Fusioneering America
Longview Fusion Energy Systems
Marathon Fusion
Mifti Fusion
Openstar Technologies
Pacific Fusion
San Diego Regional Chamber of Commerce
San Diego Regional Economic Development Corporation
San Diego State University
Tae Technologies

Opposition

None on file.

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