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SB-80 Energy: Fusion Research and Development Innovation Initiative. (2025-2026)

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Senate Bill No. 80

CHAPTER 334

An act to add and repeal Chapter 19 (commencing with Section 25997) of Division 15 of the Public Resources Code, relating to energy.

[Approved by Governor October 03, 2025. Filed with Secretary of State October 03, 2025.]

LEGISLATIVE COUNSEL'S DIGEST

SB 80, Caballero. Energy: Fusion Research and Development Innovation Initiative.

Existing law establishes the State Energy Resources Conservation and Development Commission, with various responsibilities with respect to developing and implementing the state's energy policies. Existing law requires, as part of the 2027 edition of the integrated energy policy report, the commission to include an assessment of the potential for fusion energy to contribute to California's power supply. Existing law requires the commission to carry out technical assessment studies on all forms of energy, including, among others, advanced nuclear powerplant concepts, fusion, and fuel cells.

This bill would establish the Fusion Research and Development Innovation Initiative within the commission to accelerate the development and growth of fusion energy by advancing fusion science and technology. The bill would require the commission to administer the initiative and provide financial incentives for projects that, among other things, advance research and development into fusion energy, accelerate the deployment of new research and technology capabilities that support the commercialization of fusion energy, or achieve the initiative's goal of delivering the world's first fusion energy pilot project in the state by the 2040s, as specified. The bill would make its provisions operative, and implementation of its provisions contingent, upon an appropriation by the Legislature for the initiative. The bill would repeal its provisions on January 1, 2028.

Vote: majority Appropriation: no Fiscal Committee: yes Local Program: no

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. The Legislature finds and declares all of the following:

(a) The 100 Percent Clean Energy Act of 2018 (Chapter 312 of the Statutes of 2018) established a state policy of renewable energy and zero-carbon resources supplying 100 percent of electric retail sales to end-use customers by 2045.

(b) When successfully commercialized, fusion energy holds the potential for nearly limitless clean, safe, and reliable energy that can be utilized for dispatchable baseload electricity without producing air pollution, harmful emissions, or long-lasting nuclear waste and could play an important role in meeting California's zero-carbon targets, thereby contributing to California's broader climate goals, including those of the California Global Warming Solutions Act of 2006 (Chapter 488 of the Statutes of 2006).

(c) President Biden's Administration's Net-Zero Game Changers Initiative identified fusion energy at scale as one of five priorities that will help enable the United States to achieve net-zero emissions no later than 2050.

(d) California has the largest fusion economy in the United States, hosting one-third of United States fusion energy startup companies, supporting more than 20,000 jobs at national laboratories, national user facilities, the University of California, the California State University, and other academic institutions, and leveraging billions of dollars in public and private investments. This position presents a unique opportunity for California to lead the way in advancing fusion energy innovation.

(e) The United States Department of Energy's Fusion Energy Strategy 2024 calls for closing science and technology gaps to a commercially relevant fusion pilot plant. In July 2024, the department published a request for information soliciting input for a Fusion Energy Public-Private Consortium Framework with the goal of accelerating fusion energy research, development, demonstration, and deployment by amplifying federal funding with state, local government, private, and philanthropic funding sources to meet the goal of delivering the world's first fusion pilot plant by the 2040s.

(f) The ADVANCE Act of 2023, signed into law by President Biden in July 2024, codified the United States Nuclear Regulatory Commission's decision to regulate fusion energy systems under a byproduct material framework and established a clear separation between fusion energy and nuclear fission regulations, facilitating a streamlined regulatory pathway for fusion energy development.

(g) California enacted Assembly Bill 1172 (Chapter 360 of the Statutes of 2023), which requires the Energy Commission to assess, as a part of the 2027 edition of the integrated energy policy report, the potential for fusion energy to contribute to the state's power supply by identifying, among other factors, the necessary regulatory and policy actions required to deploy fusion energy.

(h) On January 22, 2025, the Regents of the University of California voted to establish and participate in the Pacific Coalition for Advancing Research, Education, Science, and Technology for Fusion Energy (Pacific CREST Fusion), as a special purpose entity established to support and advance fusion energy research, development, and demonstration in the state, and to serve as a nonprofit, independent organization capable of receiving and disbursing funds to support the collective advancement of fusion research and technologies.

SEC. 2. Chapter 19 (commencing with Section 25997) is added to Division 15 of the Public Resources Code, to read:

CHAPTER 19. Fusion Research and Development Innovation Initiative

25997. For purposes of this chapter, all of the following definitions apply:

(a) "Financial incentive" includes a contract, grant, loan, or other appropriate funding mechanism.

(b) "Fusion" means a reaction in which at least one heavier, more stable nucleus is produced from at least one lighter, less stable nucleus, typically through high temperatures and pressures, and emitting energy as a result.

(c) "Fusion energy" means the product of fusion reactions inside a fusion device that is used to generate electricity or other commercially usable forms of energy.

(d) "Initiative" means the Fusion Research and Development Innovation Initiative established pursuant to Section 25997.1.

25997.1. (a) (1) The Fusion Research and Development Innovation Initiative is hereby established within the commission to accelerate the development and growth of fusion energy by advancing fusion science and technology.

(2) The commission, in consultation with the Governor's Office of Business and Economic Development and the Public Utilities Commission, shall establish and administer the initiative to provide financial incentives for projects that advance technologies for fusion energy benefiting California.

(b) The commission may refer to the federal Fusion Energy Sciences Advisory Committee's (FESAC) Powering the Future: Fusion & Plasmas long-range plan and the 2024 draft report of the FESAC Subcommittee on Facilities Construction Projects to determine the highest priority capabilities.

(c) The commission may adopt guidelines governing the award, eligibility, and administration of funding pursuant to this chapter.

25997.3. (a) The commission shall provide financial incentives pursuant to Section 25997.1 for any of the following:

(1) To advance research and development in fusion energy and support the establishment or expansion of testing facilities addressing gaps in fusion science and technology.

(2) To accelerate the deployment of new research and technology capabilities that support the commercialization of fusion energy.

(3) To achieve the initiative's goal of delivering the world's first fusion energy pilot project in the state by the 2040s.

(b) In administering the initiative, the commission may do all of the following:

(1) Solicit applicants and award financial incentives using a competitive award process. The commission may noncompetitively award follow-on financial incentives to awardees of a prior competitive award process.

(2) Use the competitive award process of another organization to award funds or provide follow-on funding for an entity previously selected through a competitive award process for the purposes of attracting significant federal or private funding for the projects or of accelerating the delivery of program benefits.

(3) Notwithstanding any other law, noncompetitively award financial incentives to an entity that will use the moneys as matching funds for federally awarded moneys.

(4) Noncompetitively award financial incentives to national laboratories and any public entities.

(5) Noncompetitively award financial incentives to any entity when the cost to the state is reasonable and the commission makes any of the following determinations:

(A) The expertise, service, or product is unique.

(B) A competitive solicitation would frustrate obtaining necessary information, goods, or services in a timely manner.

(C) When it is determined by the commission to be in the best interests of the state.

(c) The commission shall not noncompetitively award funds pursuant to this chapter unless both of the following conditions are met:

(1) The commission, at least 60 days before taking an action pursuant to this chapter, notifies the Joint Legislative Budget Committee and the relevant policy committees in both houses of the Legislature, in writing, of its intent to take the proposed actions.

(2) The Joint Legislative Budget Committee either approves or does not disapprove the proposed action within 60 days from the date of notification required by paragraph (1).

25997.5. (a) This chapter shall be liberally construed to maximize the commission's ability to utilize and award federal funds expeditiously and in accordance with federal law.

(b) This chapter shall become operative, and its implementation is contingent, upon an appropriation for its purposes in the annual Budget Act or another act.

25997.7. This chapter shall remain in effect only until January 1, 2028, and as of that date is repealed.