



## AB 65

### ASSEMBLYMEMBER DEVON J. MATHIS

#### Energy: Small Modular Reactors

#### SUMMARY OF PROPOSED BILL

As proposed to be amended, AB 65 would authorize the development and construction of Small Modular Reactors (SMRs) within California.

#### BACKGROUND AND EXISTING LAW

As a result of SB 100 (2018, Chp 312) and Executive Order B-55-18 by then Governor Jerry Brown, it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of all retail sales of electricity to California end-use customers, and 100% of electricity procured to serve all state agencies by December 31, 2045.

In conjunction, and except for specified powerplants, existing law prohibits the State Energy Resources Conservation and Development Commission from either certifying the construction of new nuclear fission thermal powerplants or permitting land to be used for a nuclear fission thermal powerplant in California.

#### ISSUE

In order to achieve the 2045 goal and ensure that California has a diverse, resilient, reliable and sustainable energy portfolio there are a number of financial and infrastructure challenges to overcome; the foremost being energy independence.

If the state is to meet its ambitions 2045 goal, California must become an energy-independent state. Currently, California has a reliance upon imported energy production. In fact, California imports more electricity than any other state – about 30%, much of which is generated from harmful and unsustainable sources, such as coal-fired plants. Recent rotating outages, whether due to extreme heat as seen in August 2020 which required emergency actions in order to prevent additional rotating power outages or as a result of flooding in January 2023, have demonstrated the need for improved infrastructure, stability and operations within California's electrical grid. However, as evident, our current infrastructure is simply not prepared to sever our dependency upon these resources and function on its own volition.

According to a report by the Environmental Defense Fund (EDF) and both Stanford and Princeton University, for California to reliably generate the electricity needed in 2045 from wind and solar power it would require building up to nearly 500 gigawatts of power-

generating capacity, alongside 160 gigawatts and 1000 gigawatt-hours (GWh) of new storage. However, this goal was deemed unrealistic and unfeasible as the increased energy demand is equivalent to approximately half the capacity of the entire U.S. electricity generating system today, and about six times the current total generating capacity now serving California of about 80 gigawatts which includes nuclear, gas and coal generating stations, and hydroelectric dams.

As reported by the California Energy Commission, natural gas was by far the primary producer of electricity within the state, at about 50.2%. As we strive for the 2045 goal, this energy production will need to be supplanted by an economical, zero-carbon option. Of the major zero-carbon sources, the price per GWh must be considered the driving metric to ensure affordability for all Californians. For solar production, 1 GWh would cost the state approximately \$1.3 million; 1 GWh of wind production would cost \$1.538 million; and nuclear would cost the state approximately \$861 thousand per GWh. Of the zero-carbon energy producers in-state, nuclear generates 17% of the power consumed, and is the most economically viable option to achieve the 2045 goal.

Furthermore, the EDF, Stanford and Princeton report also concluded that not only may it not be possible to construct the wind and solar facilities at the required scale to achieve the 2045 goals, but that the necessary wind and solar power infrastructure would be extremely costly to both the state and the paying customer. The report estimated that if such infrastructure could be constructed, then wholesale electricity rates would increase by approximately 65% compared to current rates. Whereas, solar and wind produced energy is reaching the point of diminishing returns, nuclear energy presents itself as a virtually untapped resource.

#### SOLUTION

To address these challenges, AB 65 would both expand the current energy portfolio by authorizing the development of SMRs within California, as well as require the Public Utilities Commission to adopt a plan to increase the procurement of electricity generated from nuclear facilities and to phase out the procurement of electricity generated from natural gas facilities.

As defined within AB 65, and in keeping with the standards established by the International Atomic Energy Agency, SMRs are nuclear reactors with an electrical generating capacity of up to 300 megawatts per unit. According to The National Office of Nuclear Energy, SMRs are a key part of the Department's goal to develop safe, clean, and affordable nuclear power options. This type of energy offers a number of advantages when compared to conventional nuclear reactors and fossil fuel energy sources, notably SMR's have a smaller physical footprint, have greater deployment flexibility, improved scalability, require a reduced capital investment for development, can help drive economic growth and have enhanced safety and security designs.

Similarly, according to data from the aforementioned EDF report there are a number of other significant advantages of SMRs and the technologies place within the state's 2045 carbon free goal. The report concluded that nuclear power could act as a "flexible base" power source as it is capable of providing a steady amount of electricity that can also have a reduced output during the height of solar output, enabling nuclear plants to conserve their fuel for longer refueling cycles, as well as having lower deployment costs and improved safety due to the ongoing advances in nuclear technology.

AB 65 will allow the state to capitalize on and maximize the economic, energy security, and environmental benefits of SMRs whilst simultaneously phasing out a reliance on electricity generated from natural gas facilities.

### **SIMILAR LEGISLATION**

AB 1776 (2008)  
SB 465 (2019)  
SB 846 (2022)

### **SUPPORT**

None on file

### **OPPOSITION**

None on file

### **CO-AUTHORS**

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### **FOR MORE INFORMATION**

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