
THIRD READING

Bill No: AB 3232
Author: Friedman (D), et al.
Amended: 5/29/18 in Assembly
Vote: 21

SENATE ENERGY, U. & C. COMMITTEE: 10-1, 6/19/18
AYES: Hueso, Bradford, Cannella, Hertzberg, Hill, McGuire, Skinner, Stern,
Vidak, Wiener
NOES: Morrell

SENATE ENVIRONMENTAL QUALITY COMMITTEE: 5-2, 6/20/18
AYES: Wieckowski, Hill, Lara, Skinner, Stern
NOES: Stone, Gaines

SENATE APPROPRIATIONS COMMITTEE: 5-2, 8/16/18
AYES: Portantino, Beall, Bradford, Hill, Wiener
NOES: Bates, Nielsen

ASSEMBLY FLOOR: 55-23, 5/31/18 - See last page for vote

SUBJECT: Zero-emissions buildings and sources of heat energy

SOURCE: Author

DIGEST: This bill requires the California Energy Commission (CEC) to assess the potential for the state to achieve the goal of reducing the emissions of greenhouse gases (GHG) by the state's residential and commercial building stock by at least 40 percent below the 1990 levels by January 1, 2030.

ANALYSIS:

Existing law:

- 1) Requires the California Air Resources Board (ARB) to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. (Health & Safety Code §38530 et seq.)

- 2) Requires the CEC to develop and implement a comprehensive program to achieve greater energy savings in California's existing residential and nonresidential building stock that fall significantly below the current standards in Title 24. (Public Resources Code §25943 et seq.)
- 3) Requires the CEC to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers, by January 1, 2030 using a specified baseline, and to be achieved through a variety of mechanisms and programs. (Public Resources Code §25310)
- 4) Requires the CEC to create a building energy-use benchmarking and disclosure program. Establishes energy data collection authority to improve the development and evaluation of policy and programs and the state's energy infrastructure planning efforts. (Public Resources Code §25402.10)
- 5) Requires the CEC to adopt an integrated energy policy report (IEPR) every two years with an overview of major energy trends and issues facing the state, including, but not limited to, supply, demand, pricing, reliability, efficiency, and impacts on public health and safety, the economy, resources, and the environment. (Public Resources Code §25302)

This bill:

- 1) States legislative findings relating to the GHG emissions associated with buildings and states legislative intent to achieve significant reductions in GHG emissions by the state's residential and nonresidential buildings building stock on or after January 1, 2030.
- 2) Requires, by January 1, 2020, the CEC, in consultation with the California Public Utilities Commission (CPUC) and the ARB, to assess the potential for the state to reduce GHG emissions by the state's residential and commercial building stock by at least 40 percent below 1990 levels by January 1, 2030.
- 3) Requires the assessment to include:
 - a) An evaluation, based on the best available data and existing analyses, of the cost per metric ton of carbon dioxide equivalent of the potential reduction relative to other statewide GHG emissions reduction strategies.

- b) The cost-effectiveness of strategies to reduce GHG emissions from space heating and water heating in both new and existing residential and commercial buildings.
 - c) The challenges associated with reducing GHG emissions from low-income housing, multifamily housing, and high-rise buildings.
 - d) Load management strategies to optimize building energy use in a manner that reduces GHG emissions.
 - e) The potential impacts of GHG emissions reduction strategies on ratepayers, construction costs, and grid reliability. In assessing the impact on grid reliability, requires CEC to account for:
 - i) The 2019 Building Energy Efficiency Standards, effective January 1, 2020, that propose to require solar energy systems on all new single-family and low-rise residential dwellings; and,
 - ii) The increased load and impact on electrical infrastructure due to transportation electrification.
- 4) Requires the assessment to be submitted to the Legislature electronically.
- 5) Requires the IEPR, beginning in 2021, to include a report on the GHG emissions associated with the supply of energy to residential and commercial buildings by fuel type and by geographic area, as appropriate. Requires CEC to make this information available on its Web site.

Background

GHGs from Building Sector. According to ARB, the building sector is the second largest source of GHG emissions in the state and offers significant potential to reduce GHG emissions through the sustainable construction, operation, and renovation of new and existing buildings. The Climate Change Scoping Plan identifies actions to reduce GHG emissions from the building sector, including progressively improving building codes and standards, pursuing voluntary efforts to exceed code requirements, and completing existing building retrofits. According to the California Greenhouse Gas Inventory, in 2015 residential building fuel use generated 23.17 million tons of CO₂ equivalent and commercial building fuel use generated 12.77 million tons of CO₂ equivalents. The majority of these emissions were generated by burning natural gas. In 2015, the Legislature adopted SB 350 (De León, Chapter 547, Statutes of 2015). Primarily, SB 350 increased California's renewable energy procurement goal from 33 percent by 2020

to 50 percent by 2030. SB 350 also requires CEC to take specified actions to double the statewide energy efficiency savings in electricity and natural gas by January 1, 2030. In October 2017, CEC adopted energy efficiency targets and subtargets to achieve the SB 350 goal in its report, *Senate Bill 350: Doubling the Energy Efficiency Savings by 2030*.

New v. Existing Buildings. California energy efficiency policy related to buildings is based on savings of electricity measured in kilowatt hours and gas savings measured in therms. The policies have also distinguished between new construction and older building stock (although building renovations do sometimes fall under new construction regulations). Related programs are highlighted below.

Building Action Plan. This CEC-developed plan provides a ten-year roadmap to activate market forces and transform California's existing residential, commercial, and public building stock into high-performing and energy-efficient buildings.

Title 24. The CEC is required by law to adopt energy efficiency building standards every three years that are cost effective for occupants over the 30-year lifespan of a building. The standards ensure that builders use the most energy efficient technologies and construction, save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants and help preserve the environment. These measures (Title 24, Part 6) are listed in the California Code of Regulations. Since 1978 the standards have made buildings more comfortable with lower energy costs. Cost-effectiveness is calculated by determining the energy savings associated with a more efficient building standard. Savings are calculated by multiplying cumulative savings in each year by the average residential or commercial electricity rates to determine savings over the life of the measure.

The success of standards and other energy efficiency efforts is a significant factor in California's per capita electricity use remaining flat over the last 40 years while the rest of the country's use continues to rise.

Energy Efficiency. California's commitment to energy efficiency has resulted in many different efficiency programs across the state. The programs span a variety of sectors encompassing residential homes and commercial buildings, large and small appliances, lighting and HVAC, industrial manufacturers, and agriculture. Within those sectors, efficiency programs may use any number of different tools: financial incentives and rebates, research and development for energy efficiency technologies, financing mechanisms, codes and standards development, education and public outreach, marketing, and others.

Each of these programs helps California be more energy efficient, and collectively, these programs result in significant reductions in California's greenhouse gas emissions. In total, energy efficiency is expected to make up 15 percent of the state's GHG emission reduction targets.

The investor-owned utility (IOU) programs are funded by a small portion of electricity and gas rates included in customer bills, which provides over \$1 billion per year to fund energy efficiency programs. These publicly-funded energy efficiency programs are usually administered by the state's four IOUs: Pacific Gas and Electric Company, Southern California Edison, San Diego Gas & Electric, and Southern California Gas Company. Some programs are administered by Marin Clean Energy or through two "Regional Energy Networks" in the Bay Area and Southern California. All of the programs administered by these different entities are regulated by the CPUC to ensure they are meeting the goals and cost-effectiveness metrics the CPUC is statutorily required to set for the IOU efficiency portfolios. Publicly owned utilities are also required to report to the CEC a description of each energy efficiency and demand reduction program, program expenditures, the cost-effectiveness of each program, and expected and actual energy efficiency savings and demand reduction results from providing service to existing residential and nonresidential buildings, while taking into consideration the effect of the program on rates, reliability, and financial resources.

Integrated Energy Policy Report (IEPR). Every two years the CEC reports on trends and issues concerning electricity and natural gas, transportation, energy efficiency, renewables and public interest energy research in the IEPR. The report is updated in the intervening years. A report of findings is formally adopted and transmitted to the governor and Legislature. A lead commissioner provides oversight and policy direction related to collecting and analyzing data needed to complete the IEPR on trends and issues concerning electricity and natural gas, transportation, energy efficiency, renewables, and public interest energy research.

The CEC recently published its planned research for its 2018 IEPR. They report that a track will be dedicated to "advancing greenhouse gas reductions in California's buildings" or decarbonizing buildings. The IEPR will:

...discuss the long-term role of natural gas in California buildings, and other greenhouse gas reduction policies and strategies relevant to California's built environment. This update will also identify market barriers, data collection needs building performance metrics, and grid integration opportunities to

develop recommendations that advance California's energy-related policies and programs on greenhouse gas reductions from buildings.

Horse Appropriately Before the Cart. This bill requires the CEC to develop an assessment to achieve the goal of reducing the emissions of GHGs by the state's residential and commercial building stock by at least 40 percent below the 1990 levels by January 1, 2030. However, this bill, appropriately, does not require specific actions to implement the plan. Rather the results of the assessments required by this bill can help inform whether future policies have merit and are cost-effective to achieve the stated goal. In helping to inform future policies that should be adopted or avoided, the author may wish to consider including an assessment of the cost-effectiveness of strategies to address emissions from cooking, in addition to those required in the bill for space and water heating. While there may be cost-effective strategies to address space and water heating, eliminating gas service to the building could result in unexpected implications for other uses, especially cooking. Additionally, this bill includes a mention of the recently proposed, and CEC adopted 2019 Building Energy Efficiency Standards, which proposes to mandate solar installations in new residential construction. However, it is important to note that the Building Standards Commission has not, yet, adopted the standards. Furthermore, requiring the CEC to make the assessment on the impacts to the grid regarding their own proposed and adopted requirement may not yield information that is different from that which was considered by the CEC in adopting the requirement. Nonetheless, an explicit assessment on the impact to the grid would be useful.

Related/Prior Legislation

SB 1477 (Stern, 2018) requires the CEC, in consultation with the CPUC, to develop and administer the Zero-Emission Building Program to provide incentives for the deployment of near-zero emission building technologies to significantly reduce GHG emissions from buildings. The bill is pending consideration before the full Assembly.

AB 3001 (Bonta, 2018) would have established the California Zero-Emissions Buildings Act and creates requirements for the CEC and the CPUC to encourage the development of zero-emissions buildings. The bill was held in Assembly Committee on Natural Resources.

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

According to the Senate Appropriations Committee, the fiscal impact would be \$520,000 for three permanent positions for the CEC (no specified funding source).

SUPPORT: (Verified 8/16/18)

350 Bay Area

Acterra

Adobe

American Institute of Architects, CA Council

American Lung Association of California

Arkin Title Architects

Association for Energy Affordability

Atelier Ten

Ben & Jerry's

Bernheim & Dean

BVC Architects

California Building Industry Association

California Efficiency & Demand Management Council

Carbon Free Palo Alto

Carbon Free Silicon Valley

Center for Built Environment/UC Berkeley

Center for Sustainable Energy

Ceres

City and County of San Francisco

City of San Jose

Clif Bar, Inc.

County of Marin

Design A VEnues LLC

Earthjustice

eBay Inc.

Efficiency First California

Environmental Defense Fund

Esherick Homsey Dodge and Davis

Essential Habitat Architecture

Fossil Free California

Green Cities California

Guttman & Blaevoet

Integral Group

Interface Engineering Inc.

JLL

Menlo Spark
Natural Resources Defense Council
Passive House California
Point Energy Innovations
Redwood Energy
Rutherford & Chekene
Sacramento Municipal Utility District
San Francisco Bay Area Physicians for Social Responsibility
San Francisco Environment
SERA
Siegel & Strain Architects
Sierra Club California
Silicon Valley Leadership Group
Silverman & Light
Southern California Edison
Symantec
TEECOM
TLCD Architecture
Unilever
Union of Concerned Scientists
Voices for Progress
WRNS Studio

OPPOSITION: (Verified 8/16/18)

California State Pipe Trades Council
Coalition of California Utility Employees
International Brotherhood of Electrical Workers Local 18

ARGUMENTS IN SUPPORT: According to the author, “California cannot achieve its air quality and climate goals without a deep reduction in emissions from residential and nonresidential buildings. Current building-related energy policies fall short of achieving emissions reduction of GHGs of 40% below 1990 levels by 2030 and 80% below 1990 levels by 2050 for residential and nonresidential buildings. AB 3232 would require the commission to assess the potential to achieve a reduction in the emissions of greenhouse gases from the state’s building stock of at least 40% below 1990 levels by January 1, 2030. It would also require the commission to report to the Legislature the findings from the assessment by June 1, 2021, and to include in the integrated energy policy report due on November 1, 2021, and in all subsequent integrated energy policy reports, a report

on the emissions of greenhouse gases associated with the supply of energy to residential and commercial buildings, by fuel type.”

ARGUMENTS IN OPPOSITION: The joint letter authored by the opposition expresses concern with language that was previously in the bill which required all buildings built after January 1, 2030 to be zero-emission. The opposition has general concerns with implementing a requirement for zero-emission buildings or requiring electrification of buildings, which they fear would result in limited consumer choices and increased costs to ratepayers. Instead, they state a preference for a more fuel-neutral approach, including arguing that the existing mandates and measures already address these emissions.

ASSEMBLY FLOOR: 55-23, 5/31/18

AYES: Aguiar-Curry, Arambula, Baker, Berman, Bloom, Bonta, Burke, Caballero, Calderon, Carrillo, Cervantes, Chau, Chiu, Chu, Cooley, Cooper, Daly, Eggman, Frazier, Friedman, Cristina Garcia, Eduardo Garcia, Gipson, Gloria, Gonzalez Fletcher, Gray, Grayson, Holden, Irwin, Jones-Sawyer, Kalra, Kamlager-Dove, Levine, Limón, Low, Maienschein, McCarty, Medina, Mullin, Muratsuchi, Nazarian, O'Donnell, Quirk, Quirk-Silva, Reyes, Rodriguez, Rubio, Salas, Santiago, Mark Stone, Thurmond, Ting, Weber, Wood, Rendon
NOES: Acosta, Travis Allen, Bigelow, Brough, Chávez, Chen, Choi, Cunningham, Dahle, Flora, Fong, Gallagher, Harper, Kiley, Lackey, Mathis, Mayes, Melendez, Obernolte, Patterson, Steinorth, Voepel, Waldron

Prepared by: Nidia Bautista / E., U., & C. / (916) 651-4107
8/18/18 16:35:40

**** **END** ****