Date of Hearing: April 25, 2018

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY
Chris Holden, Chair
AB 3232 (Friedman) – As Amended April 18, 2018

SUBJECT: Zero-emissions buildings and sources of heat energy

SUMMARY: Requires the California Energy Commission (CEC) to develop a plan 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. Specifically, **this bill**:

1) Expresses the intent of the Legislature to achieve significant reductions of GHG emissions in the state's residential and commercial building stock by January 1, 2030.

2) Requires the CEC to develop a plan by January 1, 2020 to achieve the goal of reducing the GHG emissions in the residential and commercial building stock by at least 40 percent below the 1990 levels by January 1, 2030. The plan must:

    a. Include cost-effective strategies to reduce emissions from both new and existing residential and commercial buildings;

    b. Consider and ensure that strategies account for the unique challenges associated with reducing emissions from low-income housing, multifamily housing, and high-rise buildings.

    c. Evaluate potential impacts of the strategies on grid reliability.

3) Requires the CEC to revise load management standards for buildings to ensure appropriate standards and incentives exist to optimize building energy use in a manner that reduces the emissions of greenhouse gases

4) Requires the CEC to report on its progress toward achieving the goals in its annual integrated energy policy report (IEPR) beginning November 1, 2021 and include recommendations to the Legislature on strategies to remedy any performance gaps in achieving those goals.

EXISTING LAW:

1) Requires the Air Resources Board (CARB) to ensure that statewide GHG emissions are reduced to 40% 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)

FISCAL EFFECT: Unknown

BACKGROUND:

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 Energy Commission 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 greenhouse gas 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 Integrated Energy Policy Report or 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.

COMMENTS:

1) Author's Statement. The author states that while California has made great strides in transitioning to a cleaner electricity supply, thanks to policies like the Renewables Portfolio Standard and the California Solar Imitative, the state lacks a comparable strategy to reduce emissions from space and water heating fuels like natural gas.

   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. While energy efficiency in buildings will continue to be an important and significant contributor to reducing emissions, a large-scale transition away from burning fossil fuels is also needed to reach California's climate and clean air targets.

2) Building Emissions. CARB reports that the building sector is the second largest source of GHG emissions in the state. Direct emissions from residential and commercial buildings comprise 9% of California's GHG emissions. 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.

   This bill introduces the concept of measuring and designing programs around the reduction of elimination of GHG emissions directly from building fuel use. Resulting GHG reductions from the energy efficiency programs are tracked and reported to some extent, but the programs are primarily driven by kilowatthour and therm savings.

   The 2014 updated scoping plan states that CARB and the CEC should "analyze zero and near-zero GHG alternatives for heating, cooking, and commercial energy use and assess the potential economic and technological barriers to switching to these alternatives."

3) Plan, Goals, Strategy, Feasibility? The provisions of this bill have raised a range of questions about its effect. Is it a plan with a mandate to reach a goal or is it just a looksee? Or something in between. The author reports that it is her intent to assess the potential for reducing GHG in buildings. This is a different focus from current energy efficiency programs that CARB has stated is worthy of consideration. She intends that the assessment look specifically at cost-effective strategies to achieve reductions but not mandate any actions at this time without an assessment.

   The bill in its current form should be clarified to ensure that the author's goals are achieved. *Attached are amendments that the committee may wish to consider to bring that clarity to the bill.*

4) Related Legislation.

   AB 3001 (Bonta) establishes the California Zero-Emissions Buildings Act and creates requirements for the CEC and the Public Utilities Commission to encourage the development of zero-emissions buildings. Assembly Utilities & Energy Committee, no hearing date.

SB 1477 (Stern) requires the CEC, in consultation with the Public Utilities Commission, 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. Senate Appropriations Committee, pending hearing.

REGISTERED SUPPORT / OPPOSITION:

Support

American Institute of Architects, CA Council*
American Lung Association in California*
Arkin Tilt Architects*
Association For Energy Affordability*
BCV Architects*
Bernheim & Dean*
Carbon Free Palo Alto*
Center for Built Environment/UC Berkeley*
Center for Sustainable Energy*
Design Avenues LLC*
Earthjustice*
Efficiency First California*
Environmental Defense Fund*
Esherick Homsey Dodge And Davis*
Essential Habitat Architecture*
Green Cities CA*
Integral Group*
Interface Engineering Inc. *
Marin County Board of Supervisors*
Menlo Spark*
Natural Resources Defense Council*
Passive House California*
Rutherford + Chekene*
San Francisco Bay Area Physicians for Social Responsibility*
SERA*
Siegel & Strain Architects*
Sierra Club California*
Silverman & Light*
TEECOM*
TLCD Architecture*
Union of Concerned Scientists*
Voices for Progress*
WRNS Studio*

Support If Amended

Silicon Valley Leadership Group*

Opposition

Alhambra Chamber of Commerce*
Aluminum Precision Products, Inc. *
American Public Gas Association*
Arcadia Chamber of Commerce*
As You Like It Catering*
BizFed Central Valley*
Black Chamber of Orange County*
Boys And Girls Club of Greater Ventura*
Boys Republic*
Brandt Company*
Brotherhood Crusade*
Brotherhood Crusade*
California Cut Flower Commission*
California Dairies, Inc. *
California Farm Bureau Federation
California Restaurant Association*
California Small Business Alliance*
California State Pipe Trades Council*
Carson Chamber of Commerce*
CARSTAR*
Catalina Cylinders*
Central City Association*
Central City Association of Los Angeles*
Coalition Of California Utility Employees*
Compton Chamber of Commerce*
Congress of California Seniors*
Desert Valleys Builders Association*
Economic Development Coalition of Southwest Riverside County*
El Monte/south El Monte Chamber of Commerce*
Engineers And Scientists Of California, IFPTE Local 20, AFL-CIO*
Erg Resources*
EtaGen*
Greater Bakersfield Chamber of Commerce*
Greater Coachella Valley Chamber of Commerce*
Greater Conejo Chamber of Commerce*
Greater Irvine Chamber of Commerce*
Harbor Association of Industry & Commerce*
Hollywood Park Casino*
International Council of Shopping Centers*
Kern County Taxpayers Association*
Latino Kids Health*
Los Angeles Area Chamber of Commerce*
Los Angeles Gateway Chamber of Commerce*
Malibu Chamber of Commerce*
Mars, Incorporated*
Maruhachi Ceramics of America, Inc. *

Meet Each Need With Dignity
Murrieta Wildomar Chamber of Commerce*
NAIOP of California, The Commercial Real Estate Development Association*
Newton Heat Treating
Newton Heat Treating Company Incorporated*
Orange County Business Council*
ORCO Block & Hardscape*
PABCO Building Products*
Pacific Die Casting Corporation*
Pacific Gas and Electric Company*
Palm Desert Chamber*
Parker Boiler Company*
Precious Life Shelter*
Precision Wire Products*
Proteus Inc. *
PTG Water And Energy*
Rainbo Records*
Raypak, Inc. *
Regional Hispanic Chamber of Commerce*
Rheem Manufacturing Company*
Rinnai Hispanic Chamber of Commerce*
Rockview Farms*
Rosemead America Corporation*
San Diego Gas And Electric Company*
San Gabriel Valley Consortium on Homelessness*
San Gabriel Valley Economic Partnership*
San Gabriel Valley Regional Chamber*
Santa Barbara Flower Growers Association*
South Orange County Economic Coalition*
Southern California Gas Company*
Southern California Legislative Council*
Southwest Riverside County Association Of Realtors*
State Building And Construction Trades Council*
Ted Levine Drum Company*
TELACU*
Temecula Valley Chamber Of Commerce*
TST Inc. *
Tulare County Economic Development Corporation*
United Chambers of Commerce
Utility Workers Union Of America*
Valley Economic Alliance*
Visalia Emergency Aid Council*
Western Propane Gas Association*
William C. Velasquez Institute*
Wiretech Inc. *

Oppose Unless Amended

Building Industry Association of Southern California, Baldy View Chapter*
Building Owners and Managers Association
California Apartment Association
California Building Industry Association
California Business Properties Association
International Council of Shopping Centers
NAIOP of California, the Commercial Real Estate Development Association

Oppose As Amended

Air Conditioning, Heating and Refrigeration Institute
California Chamber of Commerce
California Citrus Mutual
California Cotton Ginners and Growers Association Inc.
California League of Food Producers
California Manufacturers & Technology Association
California Natural Gas Producers Association
California Retailers Association
Culver City Chamber of Commerce
Far West Equipment Dealers Association
National Federation of Independent Business- CA
West Coast Lumber & Building Material Association
Western Agricultural Processors Association
Western States Petroleum Association

* indicates letters that were received before the latest amendment date of April 18, 2018.

Analysis Prepared by: Kellie Smith / U. & E. /

AB 3232, WITH RECOMMENDED AMENDMENTS, WOULD READ:

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

(1) Chapter 249 of the Statutes of 2016 directs the state to achieve a reduction in the emissions of greenhouse gases of 40 percent below 1990 levels by 2030.

(2) Buildings are responsible for 25 percent of all emissions of greenhouse gases.

(3) Direct emissions from the combustion of fossil fuels in buildings, primarily for space and water heating, accounts for 10 percent of all emissions of greenhouse gases in California.

(4) Approximately half of all energy used in buildings in California is in the form of on-site combustion of fossil fuels.

(5) The state has many ambitious energy efficiency building goals. Chapter 470 of the Statutes of 2009 requires the State Energy Resources Conservation and Development Commission to establish a comprehensive program to achieve greater energy savings in the state's existing residential and nonresidential building stock. The Clean Energy and Pollution Reduction Act of 2015 (Chapter 547 of the Statutes of 2015) establishes a goal of achieving a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030. However, the state has not assessed the potential for reducing total greenhouse gas emission reduction goals from buildings in-line with the state's greenhouse gas reduction target of 40 percent below 1990 levels by 2030.

(6) Decarbonizing California's buildings is essential to achieve the state's greenhouse gas emission reduction goals at the lowest possible cost.

(b) It is the intent of the Legislature to achieve significant reductions in the emissions of greenhouse gases in the state's residential and commercial building stock by January 1, 2030.

SEC. 2. Section 25403 is added to the Public Resources Code, to read:

25403. (a) By January 1, 2020, the commission shall do all of the following:

(1) Assess the potential for the state to reduce the emissions of greenhouse gases by the state's residential and commercial building stock by at least 40 percent below the 1990 levels by January 1, 2030. The assessment shall consider cost-effective strategies to reduce emissions from space heating and water heating in both new and existing residential and commercial buildings. In developing the assessment, the commission shall consider, and ensure that these strategies account for, the unique challenges associated with reducing emissions from low-income housing, multifamily housing, and high-rise buildings. The commission shall also evaluate the potential impacts of the strategies, including on customer costs and grid reliability.

(2) Open a proceeding by February 1, 2019 to consider load management standards and strategies needed to optimize building energy use in a manner that reduces the emissions of greenhouse gases.

(b) Beginning with the integrated energy policy report due on November 1, 2021, and in all subsequent integrated energy policy reports, the commission shall include in the integrated energy policy report a report on the emissions of greenhouse gases associated with the supply of energy to residential and commercial buildings, by fuel type. The commission shall make this information publicly available on its Internet Web site.