

Date of Hearing: June 27, 2018

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY

Chris Holden, Chair

SB 64 (Wieckowski) – As Amended June 20, 2018

SENATE VOTE: 26-11

SUBJECT: Fossil-fuel generation units

SUMMARY: Addresses air emissions associated with startups, shutdowns and cycling of fossil-fueled electrical generating units (gas plants) by (1) requiring collection and reporting of emissions data, (2) requiring air districts to impose operating limits on such gas plants, and (3) requiring a study with recommendations on how to reduce electrical generation from, and prioritize the retirement of, such gas plants. Specifically, **this bill:**

- 1) Defines the following terms:
 - a) California balancing authority (CBA) is an electrical transmission balancing authority with control over a balancing authority area primarily located in California and includes the Independent System Operator (ISO) and a local publicly owned electric utility (POU) operating a transmission grid that is not under the operational control of the ISO (e.g., Los Angeles Department of Water and Power, Imperial Irrigation District and Balancing Authority of Northern California).
 - b) Disadvantaged community (DAC) is a community identified by the California Environmental Protection Agency pursuant to the Greenhouse Gas Reduction Fund Investment Plan and Communities Revitalization Act (pursuant to CalEnviroScreen, according to specified pollution indicators, for purposes of targeting Greenhouse Gas Reduction Fund investments).
 - c) "Facility" is a fossil-fueled electrical generating unit or facility subject to dispatch by a CBA.
 - d) "Sensitive receptors" includes hospitals, schools and day care centers, and such other locations as an air district or the California Air Resources Board (CARB) may determine.
- 2) Requires each CBA to provide data to CARB each quarter regarding startups, shutdowns and cycling of gas plants located in California, and requires CARB to make this data available to air districts and the public in a format that illustrates the changes of emissions, startups, shutdowns and cycling over time.
- 3) Requires each air district, on or before June 1, 2019, to study gas plants in its jurisdiction to examine the actual hourly, startup, and shutdown average emissions of oxides of nitrogen (NOx), total organic gases and particulate matter, as well as identify gas plants in DACs.

- 4) Requires each air district, during a review of a facility's permit and no later than January 1, 2023, to evaluate the emissions impacts of the dispatch of the facility on the state's effort to minimize emissions from these gas plants, with priority on minimizing emissions affecting DACs; areas classified as nonattainment areas pursuant to the federal Clean Air Act; and sensitive receptors. Prohibits the district from taking into account any emission reduction credits used to offset the emissions from the facility.
- 5) If the district finds that the facility's permit conditions are not adequate to ensure compliance with local, state, and federal requirements, maintenance of air quality standards, and any applicable requirements related to impacts on disadvantaged communities, the air district is required to impose limits on the operation of the facility as necessary to ensure compliance with those requirements. These limits may include limits on startups, shutdowns, and cycling of the facility on days forecasted to exceed federal or state one-hour or eight-hour ambient air quality standards for ozone or 24-hour ambient air quality standards for particulate matter.
- 6) Requires an air district to provide a notice to all gas plants within its jurisdiction, the relevant CBA, and the public at least 24 hours in advance of a day forecasted to exceed federal or state one-hour or eight-hour ambient air quality standards for ozone, or 24-hour ambient air quality standards for particulate matter. The notice shall contain both of the following:
 - a) A list of gas plants whose operation are to be limited during the forecasted exceedance period to minimize the levels of exceedance. Requires the district to prioritize limiting the operation of gas plants located in DACs with the largest hourly emissions for startup or shutdown.
 - b) Instructions on limitations on dispatch to the CBA and listed gas plants for the forecasted time period to ensure compliance with operating limits imposed by the district.
- 7) Requires the California Public Utilities Commission (CPUC) and the California Energy Commission (CEC), on or before June 1, 2019, to complete a study with recommendations on how to reduce electrical generation from, and prioritize the retirement of, natural gas-fired electrical generating units to minimize the emissions of localized air pollutants with a priority on minimizing those emissions affecting DACs. Requires the study's recommendations to be incorporated in the CPUC's integrated resource planning process and the CEC's integrated energy policy report.

EXISTING LAW:

- 1) The federal Clean Air Act (CAA) and its implementing regulations set National Ambient Air Quality Standards (NAAQS) for six criteria pollutants, designate air basins that do not achieve NAAQS as nonattainment, and require states with nonattainment areas to submit a State Implementation Plan (SIP) detailing how they will achieve compliance with NAAQS.
- 2) Establishes the CARB as the air pollution control agency in California and requires the CARB, among other things, to control emissions from a wide array of mobile

- sources and coordinate with local air districts to control emissions from stationary sources in order to implement the CAA.
- 3) Requires, subject to the powers and duties of the CARB, local air districts to adopt and enforce rules and regulations to achieve and maintain the state and federal ambient air quality standards in all areas affected by emission sources under their jurisdiction, and to enforce all applicable provisions of state and federal law.
 - 4) Requires CARB to make available on its Internet Web site the emissions from stationary sources of greenhouse gases, criteria pollutants, and toxic air contaminants (TACs) throughout the state, as specified, and to update that information at least once a year.
 - 5) Grants exclusive jurisdiction to the CEC to issue permits for thermal power plants, meaning any stationary or floating electrical generating facility using any source of thermal energy, with a generating capacity of 50 megawatts or more, and any related gas plants.
 - 6) Requires the CPUC to direct each investor-owned utility (IOU) to include in its proposed procurement plan a strategy for procuring a diverse portfolio of resources that provide a reliable electricity supply, including renewable energy integration needs, using zero carbon-emitting resources to the maximum extent reasonable.
 - 7) Requires the CPUC to adopt a process for IOUs and other electricity suppliers to file an integrated resource plan (IRP) to:
 - a) Meet the greenhouse gas (GHG) emissions reduction targets established by CARB for the electricity sector and each load-serving entity that reflect the electricity sector's percentage in achieving economy-wide greenhouse gas emissions reductions of 40% from 1990 levels by 2030.
 - b) Procure at least 50% eligible renewable energy resources by December 31, 2030, consistent with the Renewables Portfolio Standard (RPS).
 - c) Enable each IOU to fulfill its obligation to serve its customers at just and reasonable rates.
 - d) Minimize impacts on ratepayers' bills.
 - e) Ensure system and local reliability.
 - f) Strengthen the diversity, sustainability, and resilience of the bulk transmission and distribution systems, and local communities.
 - g) Enhance distribution systems and demand-side energy management.
 - h) Minimize localized air pollutants and GHG emissions.

- 8) Requires the CEC to assess energy infrastructure trends and issues facing California and develop and recommend energy policies for the state to address and resolve such issues as part of the Integrated Energy Policy Report (IEPR).

FISCAL EFFECT: Unknown.

BACKGROUND:

According to the CEC, natural gas power plants account for approximately 36% of the total electricity delivered in California, and approximately 50% of in-state electricity generation, as of 2016. Natural gas and other thermal power plants 50 megawatts and larger are permitted by the CEC. The CEC has exclusive jurisdiction and may override contrary state or local decisions. Power plants under 50 megawatts may be permitted by local agencies in a process that includes review under the California Environmental Quality Act (CEQA). In either case, local air districts are responsible for issuing air permits.

Most of the aging natural gas power plants in California have been replaced, retired or repowered over the past 15 years due to market conditions, and several more aging coastal power plants are scheduled to be retired over the next few years due to the phase out of once-through cooling (OTC) intake structures adopted in 2010 by the State Water Resources Control Board pursuant to the federal Clean Water Act.

The share of California's total electricity needs served by natural gas varies from year to year with changes in demand and availability of hydroelectric, nuclear and other resources. Over the past 15 years, the range has been 35% to 50%, with the largest variable being availability of hydroelectric generation (in drought years, natural gas typically has made up for a low hydroelectric production). However, natural gas generation appears to be declining over the past few years due to the increasing supply of renewable energy resources. That trend is expected to continue as renewable energy costs decline and Renewables Portfolio Standard targets increase toward 50% of retail electricity sales by 2030.

Increasing penetration of intermittent renewables (e.g., solar and wind) may not only decrease the overall share of natural gas generation, it stands to change the way many of the plants operate, from relatively constant "baseload" operation to "cycling," where generating units operate at varying load levels, including on/off, load following, and minimum load operation, in response to changes in system load requirements.

While most large gas plants are equipped with continuous emissions monitoring systems (CEMS), there is little public analysis of the emissions data to illustrate the air quality impacts of increased starts, stops and cycling.

COMMENTS:

- 1) Author's Statement. As California increases the penetration of renewable energy, the cycling of the natural gas fleet is likely to increase as natural gas units are increasingly relied upon to backup renewable energy. Cycling natural gas plants produces significantly more air pollution than gas plants operated as base load gas plants. These increases in air emissions can significantly impact local ambient air quality, and without any protection or consideration, air quality may become worse in disadvantaged communities and communities already breathing unhealthy air.

The purpose of this bill is to ensure that California's increased penetration of renewable energy does not lead to the unintended consequence of increased air pollution.

Communities in California already breathe some of the unhealthiest air in the nation. This protection will help ensure that the air quality does not get worse. This bill importantly requires increased data availability and accessibility related to power plant operations. Increased transparency and data related to how power plants are operating is an essential first step in a meaningful decision-making process. This bill next requires that air districts analyze how power plants are actually operating and likely to operate in the future to ensure that protections are included in applicable permits. Finally, this bill requires a study of how to prioritize the reduction of the usage and eventual retirement of natural gas plants most impacting the air quality of disadvantaged communities and communities breathing unhealthy air. It is clear that natural gas plants will retire as California reaches its energy and climate goals, and an evaluation of the gas fleet will inform an orderly and equitable retirement.

- 2) Two Different "Classes" of Gas Plants a Factor. This bill applies to all balancing authorities. The ISO is a balancing authority. Other POUs in the state which own transmission are also separate balancing authorities such as the Los Angeles Department of Water and Power and Sacramento Municipal Utility District which are also vertically controlled utilities. They generally own gas plants, own the transmission, and entirely control the dispatch of their plants. The utility decides where, when and what resources will be dispatched to serve load. For these plants, the impact of this bill on the operation and the ability of a local air quality district to establish a system of cooperation and communication for the dispatch of those plants is more clear.

However, the IOUs generally contract with merchant generators and the transmission is operated by the ISO and a few other publicly owned utilities. Utilities, mostly IOUs but also a few POUs, schedule that power through the ISO and notify the ISO a day-ahead as to what plants should be dispatched, or offered into the market, to serve load the next day. These gas plants then have to compete in a market based on the price of power offered by that plant/utility. The gas plants compete not only with other resources in the state, but against other plants and "system power" (which masks coal imports) coming in from out-of-state. If those out-of-state resources, or any other plant in the state, have a better price in the ISO market, they get dispatched over California-based gas plants. This is reported to be pushing California-based gas plants out of the market.

When the plants get called out by an air district, some electricity, from some source, has to replace that power to meet load.

If this bill goes forward, and if California-based plants are taken off the market (to the degree the dispatch mechanisms of this bill can work), it may address the immediate issue of criteria emissions in one smaller area but, due to market dynamics in the ISO and the need for power, result in greater emissions of criteria pollutants and GHG in another area in the west – including the dispatch of coal – as those out-of-state resources are called upon to serve California load.

- 3) Gas Plant Use Unclear. The proponents of this bill express concern that gas plants:

...were constructed to provide baseload power and frequent—even daily—cycling was not anticipated in the original air quality permits. UCS is concerned that this increase in cycling, if not considered in air permits, could increase air pollution concentrations to unhealthy levels. A natural gas plant starting up can produce as much as 30 times more NOx emissions than it will after it has been running for a few hours.

It is certainly the case that the use of gas plants as baseload has changed. As more solar and wind have come on to the grid, gas plants have to be used to balance the intermittent generation and also in the evenings to address peak demand as solar declines.

In response to this change in use, the author proposes the reporting of emissions data based on how often power plants are starting, stopping and running. The CARB primarily has annual emissions data, which does not demonstrate how power plants are actually operating on an hourly or daily basis. Hourly data for criteria air pollutants from some power plants is reported quarterly on a U.S. EPA website, but it is not user friendly because it is difficult to determine how power plants are operating without completing a complex data analysis. The U.S. Environmental Protection Agency (U.S. EPA data is required pursuant to 40 Code of Federal Regulations Section 75. The only way to calculate startups and shutdowns is to analyze spreadsheets of data and back-calculate when the emissions of the unit are zero. The U.S. EPA has recently taken down climate change information and data from its website, resulting in more limited access to gas plant data in general.

- 4) Who Has the Data. The bill currently requires BAs to provide the data to CARB. This might work for a vertically integrated balancing authority like LADWP which owns its plants, but the ISO dispatches plants around the state but does not collect emissions data. That is in the control of the air district or plant operator. *The committee may wish to consider amending this bill to strike the reporting of data by the balancing authority [page 3, lines 25-27] and instead require the gas plants to report that data to CARB:*

Each facility subject to these requirements shall, on a quarterly basis, provide to the state board all available continuous emissions monitoring data or other data that reflects the emissions of the facility, and the facility shall provide all available data on startups, shutdowns and cycling of the facilities to the air resources board.

- 5) Look Before You Leap. In addition to new data disclosure requirements, this bill requires an air district to impose operating limits on gas plants on days when a region area is forecasted to exceed “federal or state one-hour or eight-hour ambient air quality standards for ozone or 24-hour ambient air quality standards for particulate matter.”

The air district action can be overridden by the balancing authority to maintain reliability.

We do not have data on the impacts of the ramping of gas plants on air quality which makes it a challenge to determine the extent to which the gas plants are part of the problem. Proponents of the bill report that plants are running and creating excess emissions from but in other deliberations we are seeing that plants are being shut down because they cannot compete with out-of-state resources. There could be a difference of impacts between BAs and market conditions which is not apparent without further data.

Before processes are established to address an issue which could have such a significant effect on reliability, it seems that the committee should be aware of exactly what is occurring with the plants and look at the data required to be tracked by this bill.

Consequently, the committee may wish to consider striking subdivisions (e) and (f) [page 4 lines 23-39; page 5, lines 1-37] of this bill until that data is available and evaluated.

- 6) Retirement Study. This bill also requires the CPUC and the CEC to conduct a study resulting in recommendations on how to reduce the use of, and prioritize the retirement of, gas plants in the state. The criteria of the study are limited to minimizing the emission of localized air pollutants with a priority on disadvantaged communities.

The author should consider broadening the parameters of the study to consider the ripple effect of plant closures in California. Gas must continue to be used for reliability for the foreseeable future. Limiting the study to localized emissions fails to consider whether the closing of those plants would increase criteria pollutants and GHG emissions outside of California, increase the costs of electricity, and adversely impact local reliability, among other factors.

- 7) Related Legislation.

AB 2693 (Quirk) requires the CPUC to analyze California's future grid reliability needs and determine which natural gas plants can be retired and which plants are needed to ensure local and system grid reliability while minimizing emissions. Status: Passed the Assembly but recently gutted and amended to address an unrelated issue.

REGISTERED SUPPORT / OPPOSITION:

Support

Asian Pacific Environmental Network (Co-Sponsor)
 Clean Power Campaign (Co-Sponsor)
 California Environmental Justice Alliance (Co-Sponsor)
 Union of Concerned Scientists (Co-Sponsor)
 Clean Water Action
 Coalition for Clean Air
 Communities for a Better Environment
 East Bay Community Energy (EBCE)
 Environmental Defense Fund
 Environmental Health Coalition
 Fossil Free California
 Leadership Counsel for Accountability and Justice
 Natural Resources Defense Council
 People Organizing to Demand Environmental & Economic Rights
 Sierra Club California

Opposition

California Municipal Utilities Association
Calpine Corporation
Cogentrix
Independent Energy Producers Association
NRG Energy, Inc.
San Diego Gas and Electric Company
SMUD
Southern California Gas Company

Oppose As Amended

Brea Chamber Of Commerce
California Business Properties Association
California Cement Manufacturers Environmental Coalition
California Chamber Of Commerce
California Manufacturers & Technology Association
Energy Users Forum
Fresno Chamber Of Commerce
Greater Bakersfield Chamber Of Commerce
Greater Coachella Valley Chamber Of Commerce
Greater Irvine Chamber Of Commerce
Greater Riverside Chamber Of Commerce
Long Beach Area Chamber Of Commerce
Los Angeles Area Chamber Of Commerce
National Federation Of Independent Business
North Orange County Chamber Of Commerce
Oxnard Chamber Of Commerce
Palm Desert Area Chamber Of Commerce
Rancho Cordova Chamber Of Commerce
Redondo Beach Chamber Of Commerce & Visitors Bureau
South Bay Association Of Chambers Of Commerce
Southwest California Legislative Council
Tulare Chamber Of Commerce
Western Independent Refiners Association
Western States Petroleum Association

Oppose Unless Amended

California Air Pollution Control Officers Association

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