Date of Hearing: April 25, 2018

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY
Chris Holden, Chair
AB 2693 (Quirk) – As Amended April 11, 2018

SUBJECT: Natural gas-fired generating units

SUMMARY: Requires the California Public Utilities Commission (CPUC) to assess the inventory of natural gas-fired generating units (gas plants) in the California Independent System Operator's (ISO) balancing authority and develop a plan to ensure that there are sufficient gas plants for reliability and that those plants have sufficient revenues to remain operational. Specifically, **this bill**:

1) Requires the CPUC, in consultation with the ISO, to analyze and determine which gas plants could be used for reliability in the ISO balancing authority.

2) Subsequent to the analysis done with the ISO, requires the CPUC to consult with the Air Resources Board (ARB) and develop a list of preferred gas plants based on: minimizing emissions of greenhouse gases (GHG) and criteria pollutants, impacts on disadvantaged communities and water use; efficiency and unit characteristics of each gas plant; and the feasibility and cost of non-emitting alternatives to gas plants.

3) Ensure that the identified gas plants receive sufficient revenue to remain operational for the time needed, including fuel supply costs, while ensuring that gas plant operators do not exercise market power.

4) Limits the revenue collection mechanisms that can be used by the CPUC to those that include all benefitting customers.

5) Requires that the CPUC modify the rate structures of gas corporations (IOUs) for gas supplied to gas plants to ensure that the IOU collects most of the revenue from capacity charges and the remainder from volumetric charges.

EXISTING LAW:

1) Permits the CPUC to supervise and regulate every public utility in the state and to take all things necessary and convenient in the exercise of such power and jurisdiction. (Public Utilities Code § 701)

2) Requires that all rates charged by a public utility be just and reasonable. (Public Utilities Code § 451)

3) Requires the CPUC to identify a diverse and balanced portfolio of resources needed to ensure a reliable electricity supply that provides optimal integration of renewable energy in a cost-effective manner which relies on zero carbon-emitting resources to the maximum extent reasonable and be designed to achieve GHG limits set by the ARB under AB 32. (Public Utilities Code § 454.51)

4) Defines a gas plant as all real estate, fixtures, and personal property, owned, controlled, operated, or managed in connection with or to facilitate the production, generation, transmission, delivery, underground storage, or furnishing of gas, natural or manufactured, except propane, for light, heat, or power. (Public Utilities Code § 221)

5) Establishes standards for the maintenance and operation of electric generating facilities and power plants to maintain and protect the public health and safety of residents and businesses, to ensure that electric generating facilities are effectively and appropriately maintained and efficiently operated, and to ensure electrical service reliability and adequacy. (CPUC General Order 167)

6) Establishes technology-based standards to implement federal Clean Water Act section 316(b) to reduce the effects associated with cooling water intake structures for power generating facilities on marine and estuarine life (once-through-cooling, OTC) (State Water Resources Control Board, 23 CCR § 2922)

FISCAL EFFECT: This bill is keyed fiscal and will be referred to the Appropriations Committee for its review of the fiscal effect of this bill. It is important to note however that the Appropriations Committee limits its analysis to the impact on overall state agency impacts and cannot assess the impacts of policy on the costs of electricity or gas service to ratepayers.

BACKGROUND:

Gas Fleet; What's Left? – The number of gas plants in the state is steadily declining as is the use of the plants that remain due to several market and environmental factors. Some plants have been taken off line by owners unable or unwilling to eliminate once-through-cooling technologies. Some gas plant owners have retired plants because the growth of renewable generation has pushed the need for the gas-fired generation off of the grid. Some gas plants have likely been supplanted by imports of power. The ISO market does allow out-of-state resources to be bid in to the California market. If out of state electricity comes in at a better price, the out of state plants run and California plants don't.

Integrated Resource Planning – As required by SB 350, the CPUC has introduced two important elements into its long-term resource planning activity on behalf of IOUs: portfolio optimization and steadily decreasing GHG emissions in the electric sector from now through 2030. These elements have created the opportunity for the CPUC to modify resource planning so that portfolios of resources that achieve optimization and GHG emissions reductions can be presented to the CPUC for decision-making. This process is Integrated Resource Planning (IRP) and the outcome will be periodic filings by all load-serving entities and POUs called integrated resource plans. The CPUC has adopted a two-year planning cycle to conduct modeling and analysis, set GHG emissions targets, and consider IRP filings from all LSEs.

In its first modeling and analysis of resources in the IOU territories, the CPUC made a preliminary determination that the gas plants currently in operation will remain necessary for reliability purposes until 2030. They specifically opined that:

> …natural gas resources already delivering energy to the CAISO are needed for reliability and renewable integration purposes through 2030 to reduce overall system costs. Keeping existing gas capacity available was predicted as more cost-effective than retiring gas plants

> and acquiring new ones, or alternative replacement capacity, to serve reliability and integration needs.

But the CPUC also noted the need for further analysis due to factors that will likely change the resource mix in the coming years:

> However, because the RESOLVE model handles classes of resources and not individual plants, and because the expiration of the ITC and PTC would drive early procurement of solar and wind resources, lowering utilization of the natural gas capacity in the near term prior to retirement of the Diablo Canyon nuclear plant in the medium term, staff recommended that more analysis was needed to identify the types of gas plants, or plant attributes, that are most desirable and most needed for reliability. Further work was also identified as needed on how to design procurement or contractual mechanisms to support sustaining the desirable natural gas plants and characteristics in the near and medium term to support attainment of the 2030 GHG target sector wide at least cost while maintaining reliability.

ISO Uses Backstop Procurement Authority – The ISO has a voluntary backstop procurement mechanism known as the Capacity Procurement Mechanism (CPM). This is a type of centralized capacity procurement performed by the ISO for reliability. Under its CPM tariff authority, ISO can offer specific resources a contract to provide capacity services under several circumstances which result in insufficient capacity or resource adequacy and impact reliability.

In December 2017, ISO procured unit 2 at the Moss Landing gas plant (510 MW) and units 4 and 5 at the Encina gas plant (545 MW total) under its first ever annual CPM designation, which will run from January 1, 2018 through December 31, 2018.

COMMENTS:

1) Author's Statement. The author states that as California increases the supply of electricity from renewable sources and spurs the development of greater storage capability, natural gas-fired power plants are being operated less frequently. However, barring unforeseen technological advancements that significantly drive down the cost of large-scale storage, some amount of natural gas-fired generation may still be needed to assure reliability, particularly if the state succeeds in electrifying other energy uses such as transportation. Yet, many gas-fired power plants are not economically viable and cannot obtain sufficient compensation to remain operational within the existing wholesale power market, causing some to shut down and others to consider doing so. While most plans for the how the state will achieve its climate and renewable energy goals assume adequate natural gas-fired capacity will remain in existence to assure reliability, there is currently no plan in place to ensure those plants that will still be needed remain operational and economically viable.

   California should develop a comprehensive plan to determine which natural gas-fired power plants will still be needed to meet our energy needs and which can be phased out. Those that will still be needed should be provided with adequate compensation to remain operational until no longer needed.

AB 2693 will require the CPUC to analyze and determine which natural gas-fired power plants are needed to ensure long-term electric reliability and which can be phased-out. It directs electric corporations to procure electric services from those deemed essential and to allow cost recovery from rate payers. AB 2693 also requires each gas corporation to develop a gas tariff to allow the gas corporation to collect its revenue from rates through demand charges and volumetric charges associated with the delivery of natural gas to these power plants.

2) Three Part Problem. Gas plants are struggling to remain operational in the state. Many are still needed but lack contracts. It appears that this is the result of three significant factors:

   Renewable Generation Increasing. As noted by the author, as renewable generation increases, gas-fired generation will decrease. California will need some, but not all, of its current gas fleet for flexible, fast ramping generation and local reliability.

   Who's on First? California's electricity market is increasingly fragmented with the CPUC reporting one year ago that:

   > …by the end of 2017, 30-40 percent of California's investor-owned electric utility customers will be receiving some type of electricity service from an alternative source and/or provider, such as Community Choice Aggregators (CCA), rooftop solar, or Direct Access providers. Projections suggest that this number will grow to well past 80 percent by the middle of the next decade.

   As a result of CCA growth, and the consequential drop in IOU customers, the IOUs have dropped some gas plant contracts. It appears that the CCAs cannot or will not contract for the gas needed to meet system reliability. The ISO recently used, for the first time, its backstop procurement authority due to reliability concerns and contracted for more than 1,000 megawatts of gas plant capacity for 2018.

   Market Distortions/Impacts. One of the significant dynamics affecting California's gas plant fleet is out of state resources. Each IOU, POU, CCA, and ESP provides the ISO a schedule of resources it has under contract to serve its customers a "day-ahead" of need. The ISO markets then, generally, call on the resources bid in to the market in order of costs – least to highest. However, the resources bid into the ISO market are not just from California-based entities. Out of state marketeers also bid competing resources into the market. Some are specific plants but more often than not these marketeers scoop up myriad surplus generation sources outside of California and bid those "unspecified sources" of power into the market. These resources often bump California-based plants out due to lower costs.

3) Analysis Need. The author opines that the CPUC recognizes these issues, but has no plan to decide which gas plants will be needed. The CPUC has no mechanism to assess and determine which gas plants we need and retire those we don't. In the CPUC's IRP proceeding, many stakeholders raised questions similar to those addressed by the author in this bill which were summarized by the CPUC:

> …need for better location-specific understanding of the value of natural gas resources on the system, identification of operational challenges that will emerge or be exacerbated as the amount of renewable generation grows, whether services currently provided by natural gas resources can be economically replaced by other resources, and how to ensure least-cost reliability through CAISO market mechanisms and capacity development in the resource adequacy or IRP processes.

In its IRP decision, the CPUC acknowledged that gas-fired generation would decrease and that it would be worthwhile to determine which generating units would be needed in the future.[1] However, it is not apparent that the CPUC has taken action to perform this analysis. No parties in the IRP proceeding or those in contact with the committee have questioned the need for this analysis. A few parties did comment in the IRP proceeding that they think that the analysis should be done by the ISO. State control of procurement decisions is critical. State procurement decisions generally concern a broader array of factors, particularly costs and environmental factors, than ISO analyses.

4) Non-ISO Balancing Authority Gas Plants. The purpose of the bill is to stabilize the remaining gas plants in the ISO's balancing authority to ensure that the resources are used efficiently and that the plants have the financial support needed to remain available and operational. A related impact is a desire to continue to reduce the use of gas plants to meet demand. For the latter, the bill does not include the non-ISO balancing areas the largest of which are LADWP and SMUD which have several gas plants remaining in their fleet. The Union of Concerned Scientists comments that:

> …an analysis of the future role of natural gas generation should not leave out the thousands of megawatts of natural gas plant capacity operating outside the CAISO balancing authority, like plants in the service territory of Los Angeles Department of Water and Power, for example. Not only would limiting this analysis to the CAISO give the state an incomplete sense of the appropriate role of natural gas in California's clean energy future, it would also miss the opportunity to understand the value of clean alternatives in some of the places in California worst impacted by fossil-fuel combustion.

This is a critical question but the more narrow purpose of this bill is to ensure reliability in the ISO balancing authority while also considering cost and environmental factors in procurement decisions. The continued use of gas plants in the non-ISO balancing authorities is addressed in the filing of integrated resource plans by the POUs with the California Energy Commission. Each POU will have a GHG emissions limit that it must meet. As that limit is ratcheted down, some gas plants will likely have to come off line. A more aggressive look at the plants may be necessary.

5) Legislative Ratemaking. The bill goes beyond planning and also goes beyond the requirement that the plants have the necessary market support to remain operational. This bill requires that the CPUC modify rates that the gas plants pay to PG&E, SoCalGas and SDG&E for the supply of gas to run the plants so that the rates are primarily based on demand capacity charges and secondarily based on volumetric charges.

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[1] See D.18-02-018

The sponsor opines that the current rate structure for gas plant fuel supply is primarily based on volumetric charges and that this:

> …process disadvantages efficient California plants compared to inefficient out of state plants. Higher GHG emissions result from this rate structure. Also, some California plants pay much higher gas supply rates than other plants based solely on whether they are connected to backbone gas transmission or local gas transmission. This rate structure also results in higher GHG emissions.

This may be true for some plants but not all plants. It is an issue that the CPUC should consider. However a statutory mandate on rates paid by gas plants by the Legislature undermines the statutory requirement of the CPUC to determine what is "just and reasonable." The only consequence of this mandate that is certain is that it will create a cost shift – aka rate increase – for some other class of customers. This is a good example of legislative ratemaking which should always be approached with great caution. The impacts of this change are not known. *Therefore the committee may wish to consider requiring the CPUC to consider the impact of the IOU rate change as part of the study mandated by the bill, rather than mandating the rate change with no understanding of unintended consequences.*

a) Page 3, strike lines 37-40;
b) Page 4, line 40, strike "as modified" and on page 5, line 1, strike "pursuant to subdivision (e); and
c) At page 5, at line 14, strike "shall modify" and insert "consider revising".

6) Study Scope. The bill limits the generating resources that the CPUC may consider as alternatives to gas plants stating that only "non-emitting resources" may be considered. This eliminates consideration of other resources that are considered renewable on a life cycle basis even though they do emit criteria pollutants such as plants that run on biogas or biomass. *The committee may wish to consider amendments that allow the CPUC to consider all renewable resources by adding "and renewable" after "non-emitting" at page 4, line 33.*

7) Going Forward. The stability and reliability of the gas plant fleet in the IOU balancing authority is of critical concern. The committee has letters recommending amendments to this evaluation and some parties are at polar opposites. The committee has not heard from the ISO or the CPUC. As this bill moves forward, the author should work with the policy committees in both houses and regulatory agencies to ensure that the study has the right balance and scope.

REGISTERED SUPPORT / OPPOSITION:

Support

California State Association of Electrical Workers
California State Pipe Trades Council
Coalition of California Utility Employees
Western States Council of Sheet Metal Workers

Support If Amended

Calpine Corporation
The Utility Reform Network

Oppose

Independent Energy Producers Association

Concerns

California Environmental Justice Alliance
Large-Scale Solar Association
Union of Concerned Scientists
Solar Energy Industries Association

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