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**Comments of Diamond Generating LLC on the August 22, 2023  
Joint Agency SB 100 Kickoff Workshop**

*Additional submitted attachment is included below.*

**STATE OF CALIFORNIA ENERGY RESOURCES CONSERVATION  
AND DEVELOPMENT COMMISSION**

In the Matter of:

SB 100 Joint Agency Report: Charting a Path  
to a 100% Clean Energy Future.

Docket No. 23-SB-100

**COMMENTS OF DIAMOND GENERATING LLC  
ON THE AUGUST 22, 2023 JOINT AGENCY SB 100 KICKOFF WORKSHOP**

**I. INTRODUCTION**

Diamond Generating LLC (“Diamond”) offers these comments on the August 22, 2023 Joint Agency SB 100 Kickoff Workshop discussion. In these comments, Diamond provides recommendations for issues that should be included in the scope of the 2025 SB 100 Joint Agency Report, with a focus on the reasons the next Senate Bill (“SB”) 100 report should address a pathway to decarbonizing existing resources needed for reliability during California’s transition to a renewable and decarbonized retail electric supply.

**II. COMMENTS**

**A. Diamond is Actively Planning for California’s Clean Energy Future**

Diamond owns and operates fast-starting, flexible, peaking capacity facilities that provide much needed reliability insurance to the California grid. Diamond is actively preparing for investments in technologies that are responsive to California’s decarbonization goals while still providing much needed capacity in the near- to mid-term that is available during the periods of greatest system need. These strategies can provide reliable capacity to grid operators in the near term, while preparing for the transition needed to attain the SB 100 goals. Decarbonization strategies under consideration by Diamond include the integration of alternative, low-carbon fuels, such as renewable hydrogen and other renewable fuels, and the addition of on-site long-

duration energy storage (“LDES”). Adding LDES allows Diamond’s peaker facilities to retain and expand their firm capacity attributes in the near-term while pursuing technologies responsive to the state’s decarbonization objectives.

**B. California’s Clean Energy Future Will Be More Affordably Achieved Where the State Supports Clean Energy Developments at Existing Generation Locations**

In order for California to best utilize its existing electric infrastructure, reduce costly buildout of the transmission system, and support reliability, the 2025 SB 100 Joint Agency Report should strive to maintain and access the full deliverability potential available from existing generation resources’ interconnections. In particular, Diamond’s peaker facilities are located at key points on the transmission or distribution system where capacity needs to be maintained.

The 2021 SB 100 Joint Agency Report finds that planning should reflect the “Garamendi Principles,” which set forth transmission siting principles, and first and foremost encourages the use of existing right-of-way for transmission upgrades where technically and economically justifiable.<sup>1</sup> We also believe transmission expansions should be prioritized to allow the addition of additional capability at existing locations versus new greenfield locations. This would allow for generation to exceed the current Net Qualifying Capacity / Resource Adequacy capacity at existing points of interconnection in a timely fashion. Similarly, the Joint Agencies should assess the potential to maximize existing supply resources’ deliverability potential to best utilize these locations by adopting policies that encourage project owners and operators to add LDES and to transition to renewable and zero-carbon fuels. It is important to acknowledge that combustion of green hydrogen or renewable natural gas (“RNG”) either emits no greenhouse

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<sup>1</sup> 2021 SB 100 Joint Agency Report at p. 112.

gases (“GHG”) or results in net zero GHG emissions. In order to maintain the capacity at these locations, combustion resources must be provided a pathway to transition to renewable and zero-carbon technologies.

Maintaining the existing deliverability network has affordability benefits as costly transmission build-out and system upgrades can be reduced, or not further exacerbated. Ensuring existing interconnections are able to continue to deliver electricity is also unaccompanied by the interconnection delays faced by new generation projects, and land use controversies and legal hurdles associated with transmission buildout can be avoided. Costs and development risks of the unprecedented clean resource build-out can be somewhat managed by maintaining, and not abandoning, the capacity potential at existing combustion resource interconnections.

In particular, SB 100 planning should address what structures will allow LDES (consistent with the California Public Utilities Commission’s Integrated Resource Plan decisions’ standard of maximum capacity deliverability for a minimum eight-hour duration) to be co-located at peaker sites. Co-location of LDES at the sites of existing resources allows California to efficiently utilize the existing transmission infrastructure by allowing the storage resource to provide capacity up to the maximum interconnection value at the facility. While Diamond believes LDES can qualify as “incremental” power under the Integrated Resource Plan (“IRP”) program, the SB 100 discussion should consider the full potential of added LDES at peaker sites outside of the constraints of the California Public Utilities Commission’s (“CPUC”) IRP procurement authorizations or baseline resource limits in IRP modeling. Installation of LDES at peaker plant sites can provide incremental capacity during the tightest system conditions as soon as summer 2025. This strategy also provides a pathway for these combustion

resources to completely transition to LDES, or other renewable and zero-carbon technologies, in the long-term and within the limits of the site's interconnection.

**C. The 2025 SB 100 Discussion Should Address the Transition of Existing Resources to Alternative Fuels and Zero-Carbon Resources**

In planning for California's renewable and zero-carbon retail electric supply, the SB 100 Joint Agency Report should consider how existing combustion resources can evolve to meet California's clean energy and climate goals. As compared to inverter-based resources, conventional, rotating resources provide system inertia and higher reliability attributes. Diamond is concerned that much of the discussion about modeling sensitivities at the workshop focused solely on shuttering existing facilities as opposed to decarbonization strategies that could be more cost-effectively implemented over time at existing locations (e.g., transition to a zero-carbon resource over a 10 year period). As recognized in the 2021 SB 100 Joint Agency Report, 75 percent of the flexible capacity of the grid is currently attributed to natural gas power plants, and these plants continue to be needed to maintain grid reliability as more renewable power enters the system.<sup>2</sup> Modeling conducted for the 2021 SB 100 Joint Agency Report largely retained the state's natural gas capacity. Existing peakers are capable of continuing to provide flexible, firm power needed for reliability in the near- and medium-term while the state waits for long lead-time resources and other firm capacity technologies to reach commercial viability and operation. In the meantime, existing peakers will be part of the reliability solution and if the state sends procurement signals, these resources can also be part of the decarbonization strategy.

In order to continue to provide this needed capacity, Diamond's peakers need a pathway to adopt renewable and zero-carbon technologies. In particular, *blending* of hydrogen fuels, as

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<sup>2</sup> 2021 SB 100 Joint Agency Report at p. 40.

opposed to employing assumptions that a fully hydrogen-fueled resource will timely replace natural gas-fueled capacity, should be modeled and part of the SB 100 Joint Agency Report's strategies for meeting the 2045 clean energy goals. Blending of renewable hydrogen at existing combustion resources is a necessary first step towards greater integration of this zero-carbon fuel and the technologies that will facilitate it. A measured approach to the integration of alternative low-GHG fuels is pragmatic as there is not currently, nor projected in the near- to mid-term, a reliable supply or delivery mechanism for renewable hydrogen that would allow conventional utility-scale generation to switch to 100% use of this fuel.

The U.S. Environmental Protection Agency's ("U.S. EPA") recent analysis of the potential for hydrogen fuel in certain fossil-fueled electric generation resources reaches the same conclusion.<sup>3</sup> While the U.S. EPA's proposed rule would not impose an emission guideline for Diamond's California peakers, it concludes that the potential for certain planned and existing fossil-fueled resources to incorporate renewable hydrogen begins at 30 percent in the year 2032. This analysis takes into account the expected availability of renewable hydrogen and the reasonable costs for moving to this fuel. Development of this important option for electric reliability in California will be impeded if combustion resources are only assessed as an all-hydrogen or all-fossil fuel resource and not acknowledged as being able to transition from one fuel source to the other. Such a position will preclude development of an important and emerging strategy for reliably decarbonizing California's electric supply.

Diamond has performed modeling as part of the CPUC's IRP rulemaking that shows peaking facilities using a 30 percent renewable hydrogen blend are selected when included in the

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<sup>3</sup> Proposed Rule: *New Source Performance Standards for Greenhouse Gas Emissions from New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Mission Guidelines for Greenhouse Gas Emissions from Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule*, 88 Fed. Reg. 33240 (May 23, 2023) (amending 40 CFR Part 60).

RESOLVE model as a candidate resource. The model's assessment of reliability and cost saving results in the selection of these blended fuel peakers while still meeting the RESOVLE model's GHG emission levels in 2035. Selection of peakers blending renewable hydrogen further avoids over-selection of other firm capacity resources that have uncertain development timelines and are subject to ongoing transmission interconnection delays and other supply-chain risks facing greenfield development.

Considering the feasibility and benefits of blending renewable hydrogen fuels at existing combustion resources, the potential contribution of a blended fuel combustion resource should not only be part of one of the alternative scenario pathways, but should also be a feature of the factors comprising the Reference Pathway's electric supply scenario.

Beyond modeling, the 2025 SB 100 Joint Agency Report process should address what policies need to be revised to ensure combustion resources have a pathway to integrating renewable and zero-carbon fuels in the near-term. Currently, there are few or no market mechanisms for peaker plants to recover the costs of reconfiguring their physical operations to blend, or convert completely, to hydrogen. A procurement framework that permits procurement of energy from decarbonizing combustion turbines may be necessary to allow these assets to invest in renewable hydrogen, RNG, or other developing technologies.

In furtherance of maintaining electric reliability and more affordably transitioning to California's clean energy future, the Joint Agencies should include in the 2025 SB 100 planning effort measures that allow existing resources providing firm, flexible capacity to pursue strategies that reduce their GHG emissions, while relying on existing system infrastructure to do so.



