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**IEP Comments on SB 100**

*Additional submitted attachment is included below.*



# Independent Energy Producers Association

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California Energy Commission  
Docket No. 23-SB-100  
715 P Street  
Sacramento, CA 95814

November 14, 2023

## RE: SB 100 Analytical Framework Workshop

### I. INTRODUCTION

The Independent Energy Producers Association (IEP) appreciates the opportunity to submit comments on the SB 100 Analytical Framework Workshop (“workshop”) held October 31, 2023. The purpose of the SB 100 Report is to “report on current statewide efforts toward clean electricity progress and identify opportunities to enhance state efforts,” as noted in the workshop. IEP recognizes the state’s progress in meeting its clean electricity goals and supports any effort to meet future goals earlier than planned. To accomplish our clean electricity goals timely--considering the exponential load growth as we electrify our transportation sector by 2035,<sup>1</sup> interconnection delays,<sup>2</sup> and supply shortages<sup>3</sup>--the state must utilize existing infrastructure that is interconnected and poses new land use issues. IEP respectfully submits the following

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<sup>1</sup> California Air Resources Board. “California Moves to Accelerate to 100% New Zero-Emission Vehicle Sales by 2035.” August 25, 2022. Accessed November 8, 2023. <https://ww2.arb.ca.gov/news/california-moves-accelerate-100-new-zero-emission-vehicle-sales-2035>.

<sup>2</sup> Walton, Robert. “California Governor Signs Bill to Speed Utility Interconnections. October 9, 2023. Accessed November 8, 2023. <https://www.utilitydive.com/news/california-newsom-signs-clean-energy-bills-SB-410/695964/>.

<sup>3</sup> Grossberg, Emily. “Power Companies Warn of Dangerous Transformer Shortage.” August 9, 2023. Accessed November 8, 2023. <https://www.10news.com/power-companies-warn-of-dangerous-transformer-shortage>.

comments relating to combustion retirement, hydrogen implementation, and carbon capture and sequestration (CCS) implementation.

## II. COMMENTS

### a. Combustion Retirement

The workshop did not request feedback on its modeling of combustion retirement; however, IEP recognizes the relationship between combustion retirement and two areas of concern in the workshop: hydrogen and CCS. First, SB 100 (Leon, 2018), does not give statutory authority to contemplate combustion retirement within the SB 100 report. Second, four natural gas plants have received extensions twice—with the fourth being extended into 2029<sup>4</sup>—illustrating the need for their use with a strained power grid and the threat of rolling blackouts. Third, the CPUC, Energy Division, has already presented information pertaining to the retirement of combustion generation and its projected impacts both on total greenhouse gas (GHG) emissions and costs to the ratepayers, as noted in the “Integrated Resource Planning (IRP) Proposed Portfolios for the 24-25 Transmission Planning Process (TPP) and Preliminary Busbar Mapping” workshop documents on pages thirteen (13) to eighteen (18). The results indicate that when once through cooling (OTC) and combined heat and power (CHP) generation phases out naturally between 2031 and 2039, the GHG emissions for the 25 MMt Least Cost, Moderate Gas Retirement, and High Gas Retirement are around 13 to 14 MMt CO<sub>2</sub>/yr. With no significant decrease in CO<sub>2</sub> emissions, the retirement of natural gas assets increases costs for ratepayers ranging from \$3.742 to \$13.038 MM. The addition of renewable energy generation and storage continues to decrease the capacity factors for natural gas assets, while these assets continue to maintain grid stability.

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<sup>4</sup> Backer, Rachel. “Southern California’s Natural Gas Plants to Stay Open Through 2026.” CALMATTERS. August 15, 2023. Accessed November 7, 2023: <https://calmatters.org/environment/2023/08/southern-california-natural-gas-plants-remain-open/#:~:text=Now%20that%20extension%20has%20been,regional%20supply%20gaps%20though%202029.>

Finally, existing natural gas plants are already connected to the grid and could supply upwards of 250+ MW<sup>5</sup> [This is just one test facility at the Lodi Generation center. Approximately half of the gas turbine peaking facilities and combined-cycle facilities can be converted to utilizing hydrogen / natural gas mixtures or 100% hydrogen based upon combustion retro fits that the Original Equipment Manufacturers (“OEMs”) are developing. This is between 12 GW to 15 GW of existing generation that can significantly decrease CO2 emissions with hydrogen blending and potentially become zero (0) CO2 emissions utilizing 100% hydrogen. The OEMs are currently developing combustion and controls retrofits to existing gas turbines to increase the capability of utilizing hydrogen. These approaches would still meet the current NOx emissions.] which can be converted to hydrogen combustion that emits no greenhouse gas emissions (GHG) or renewable natural gas from agricultural waste with CCS. The power and existing interconnections at these combustion-based plants are needed to keep our grid resilient and reliable as we face unprecedented and unpredictable weather patterns, all while transitioning these natural gas plants to cleaner fuels.

## **b. Hydrogen Integration**

IEP is supportive of the inclusion of hydrogen within the workshop’s Resource Diversification Scenario because hydrogen will play a crucial role as a resource that can be both combusted (gas turbines / reciprocating engines) and oxidized (fuel cells) with no GHG emissions.<sup>6</sup> IEP urges the Commission to

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<sup>5</sup> California Energy Commission. Lodi Energy Center. Accessed November 7, 2023.  
<https://www.energy.ca.gov/powerplant/combined-cycle/lodi-energy-center>.

<sup>6</sup> Office of Energy Efficiency & Renewable Energy. “Hydrogen Production: Electrolysis.” Accessed November 7, 2023.  
[https://www.energy.gov/eere/fuelcells/hydrogen-production-electrolysis#:~:text=Hydrogen%20produced%20via%20electrolysis%20can,source%20of%20the%20electricity%20used.](https://www.energy.gov/eere/fuelcells/hydrogen-production-electrolysis#:~:text=Hydrogen%20produced%20via%20electrolysis%20can,source%20of%20the%20electricity%20used.;); Gencer, Emre. “Hydrogen.” June 23, 2021. Accessed November 7, 2023.  
<https://climate.mit.edu/explainers/hydrogen#:~:text=Unlike%20most%20fuels%2C%20hydrogen%20does,different%20parts%20of%20our%20economy.>

consider hydrogen’s potential contribution to the grid as a clean fuel that can be stored seasonally,<sup>7</sup> utilize existing natural gas plants as a blend, and, in the future, be used as the sole fuel powering those plants. With the \$1.2 billion from the U.S. Department of Energy (DOE) awarded to the State of California through the Alliance for Renewable Clean Hydrogen Systems (ARCHES) to build or expand hydrogen projects, including technologies to produce hydrogen from renewable energy and biomass, the state must maintain facilities that promote the use of hydrogen, placing the fuel into our resource mix sooner, thereby reducing emissions and stabilizing our grid.<sup>8</sup> IEP agrees that all policies listed in the workshop, SB 1075, the Scoping Plan, and current utility plans—including the Integrated Resource Plans—should be consulted when drafting the hydrogen integration section of the Resource Diversification Scenario.

### **c. Carbon Capture and Sequestration Integration**

IEP also supports the inclusion of CCS in the SB 100 Resource Diversification Scenario, following our recommendation to exclude combustion retirement from the report and focus on transitioning existing resources to cleaner fuels to meet our state’s GHG goals sooner. Knowing that our state has extended the life of existing natural gas plants and that it can and should utilize these plants for clean burning fuels to get onto the grid quicker, the state should also consider the immediate use of CCS for the current and projected GHG emissions from these plants as we transition and strengthen our grid. IEP agrees the policies already listed within the workshop materials are those to be consulted when drafting the CCS integration as part of the Resource Diversification Scenario.

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<sup>7</sup> Breeze, Paul. “Hydrogen Energy Storage.” 2018. Accessed November 7, 2023. <https://www.sciencedirect.com/topics/engineering/hydrogen-energy-storage#:~:text=Abstract,engine%20or%20a%20fuel%20cell.>

<sup>8</sup> Office of Governor Gavin Newsom. “California Selected as a National Hydrogen Hub.” October 13, 2023. Accessed November 7, 2023. <https://www.gov.ca.gov/2023/10/13/california-selected-as-a-national-hydrogen-hub/>.

### III. CONCLUSION

IEP recognizes the work of the Commission staff to compile and coordinate data to draft the SB 100 Report and appreciate your commitment to mapping out the state's path to zero emissions, including information and studies developed by the CPUC, CEC, and CAISO. IEP supports a clean transition and notes the fastest way towards zero is to utilize the resources already online so even in times of severe weather, we can be confident that our grid resources are emitting less every year but maintaining grid reliability. We look forward to contributing to the remainder of the drafting process for the SB 100 Report.

Signed,

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