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**Final - Nikola Corporation CEC SB 100 Joint Agency Report  
Comments**

*Additional submitted attachment is included below.*

October 12, 2020

California Energy Commission  
1516 Ninth Street  
Sacramento, CA 95814-5512  
Docket Number: 19-SB-100  
Submitted Via Email to: [docket@energy.ca.gov](mailto:docket@energy.ca.gov)

**Subject: Nikola Corporation's Comments on SB 100 Joint Agency Report: Charting a path to a 100% Clean Energy Future - Draft Results Workshop**

### **Introduction**

Nikola Corporation appreciates the opportunity to provide feedback on the Draft Results Workshop conducted within the scope of the Senate Bill (SB) 100 Joint Agency Report. Nikola supports the initiative to foster greater collaboration among the CEC, CPUC and CARB to identify strategic and innovative pathways to chart a clear path toward a 100% clean energy future. We submit our perspective on the benefits and opportunities with respect to the development of renewable hydrogen infrastructure, production, and fuel distribution to address California's state-wide decarbonization efforts. We will illustrate how the hydrogen infrastructure system can: 1) benefit zero-emission transportation goals; 2) help achieve the state's requirement that renewable energy and zero-carbon resources supply 100% of electric retail sales to end-use customers by 2045; and 3) increase California's overall grid reliability.

### **Background Nikola Corporation**

Nikola is a technology disruptor and integrator, working to develop innovative energy and transportation solutions. As a designer and manufacturer of zero-emission battery-electric and hydrogen-electric vehicles, electric vehicle drivetrains, vehicle components, energy systems and hydrogen production and refueling facilities, Nikola is driven to revolutionize the economic and environmental impact of commerce as we know it today. The company's three major pillars include: Nikola Motor Company (on-road zero-emission vehicles), Nikola Energy (hydrogen infrastructure, production and fueling distribution) and Nikola Powersports (off-road zero-emission vehicles).

Committed to a clean transportation future from energy production to energy consumption, Nikola is developing a robust U.S. and European footprint leveraging key strategic industry partnerships such as General Motors (GM), IVECO, Bosch, Hanwha, Wabco, Mahle, Nel and others. The company's vision is to be the zero-emissions commercial transportation system leader. Nikola is the only company offering both battery-electric vehicle (BEV) and hydrogen fuel-cell electric vehicle (FCEV) solutions, including the facilities to support both short-haul and long-haul markets for commercial fleets.

Nikola is a strong believer that the future of zero-emission transportation is not a case of battery-electric versus hydrogen-electric technologies, but rather, a blend of both. As such, Nikola is working to create ecosystems that support both technologies. The launch of our first Class 8 beta test BEV in

North America will take place in late 2021, followed by the introduction of our first Class 8 beta test FCEV in 2022.

To help address longer-haul routes and intensive delivery operations, the company has estimated a need for approximately 700 hydrogen fueling and DC fast charging stations across North America to support heavy-duty customer routes. Nikola intends for these stations to not only serve its fleet of truck customers, but also to be publicly accessible for light-duty and medium/heavy-duty hydrogen fueling and BEV charging. As we prepare to come to market, Nikola has secured an order for 800 zero-emission trucks from large launch fleet customer, Anheuser Busch. In addition, we recently announced a minimum order of 2,500 electrified refuse trucks from Republic Services, which is expandable up to 5,000 vehicles.

### **Role of Nikola Energy and Development of Hydrogen Production and Fueling Facilities**

As mentioned above, Nikola is taking a holistic approach to revolutionize the transportation industry. By providing both zero-emission vehicles and the infrastructure facilities to support them, Nikola is addressing historic concerns of deploying vehicles without infrastructure and/or the development of infrastructure that will be underutilized by lack of vehicles. Nikola plans to build a diverse and robust infrastructure network that will include hydrogen production facilities and retail fueling stations. It is envisioned that the presence of Nikola's operations in California will contribute to: 1) helping the state achieve its zero-emission transportation goals; 2) meeting the SB 100 mandate to attain renewable energy and zero-carbon resources to supply 100% of electric retail sales to end-use customers by 2045; and 3) increasing California's grid reliability with demand response and ancillary services provided from flexible, interruptible facilities, in addition to the fuel we can provide for distributed generation applications that require long-term storage and dispatch that cannot be readily met by battery energy storage solutions.

Nikola Energy is exploring opportunities for hydrogen production under two general approaches: 1) a distributed, on-site production and refueling model and 2) a centralized or "hub-and spoke" production and distribution model. Under the on-site production and refueling model, Nikola proposes to develop a distributed network of stations starting at 20 MW /8 tonne H<sub>2</sub>/day production and fueling. With the hub and spoke mechanism, Nikola envisions developing a network of large scale facilities, ranging up to 400 MW / 160 tonne H<sub>2</sub>/day of hydrogen production or more, with transportation of the hydrogen via tanker truck, rail or pipeline to the distributed hydrogen refueling stations. In both models, the critical cost factor is electric power. Competitive power pricing is the key to producing hydrogen cost effectively.

### **Additional Comments**

Nikola would like to note our support of the comments submitted by the California Hydrogen Business Council (CHBC) and Green Hydrogen Coalition to this docket, particularly pertaining to the role hydrogen can play in California's decarbonization planning process. Nikola believes that the CEC's current views with respect to the high cost and price forecasts associated with hydrogen fuel-cells and hydrogen fuels are outdated. Nikola is rapidly developing heavy-duty hydrogen fuel-cell vehicles that will be on the roads in California in pilot form in 2022 and in full production by 2023.

We would respectfully recommend the CEC consider reviewing the hydrogen pricing and demand assumptions currently in use, which may not be currently reflective of the future demand that companies like Nikola are anticipating, or the rapid decline in costs, which could result as hydrogen production capacity scales across the United States and the rest of the world. We encourage the CEC to consider the implications of market entry by companies like Nikola in the hydrogen space and to update its assumptions around hydrogen demand and cost declines through an open dialogue with hydrogen industry associations, such as the California Fuel Cell Partnership, California Hydrogen Business Council and the Green Hydrogen Coalition.

Nikola offers the following considerations to encourage the growth and development of hydrogen as a primary fuel source for transportation, freight, and backup power decarbonization with an eye towards encouraging the continued decarbonization of the energy and transportation sectors.

- A multi-agency approach must be taken to incentivize adoption of heavy-duty (HD) vehicle electrification by:
  - 1) Supporting the development of hydrogen production facilities, hydrogen refueling stations, HD electric vehicle charging, and the transmission and renewable generation infrastructure needed to support the resulting loads.
  - 2) Incentivizing adoption of HD FCEVs and BEVs within California so smaller owner-operators can also partake in the freight transportation revolution.
  - 3) Reducing the cost of electricity procurement and transmission/distribution costs by allowing hydrogen production facilities to participate as Non-Generating Resources or hybrid or microgrid resources with behind-the-meter generation within the CAISO markets. Sourcing electricity at wholesale prices is critical to producing low cost hydrogen for, transportation applications while also benefitting the grid by providing demand response capacity and other ancillary services.
- Hydrogen should be supported as a clean source of long-term back-up power generation for microgrid applications in which electric customers may be disconnected from the broader electrical grid due to Public Safety Power Shutoffs relating to wildfire threats and within renewable-powered microgrids more generally.
- Current barriers to low cost hydrogen production include:
  - 1) Unclear access to the wholesale electricity markets for low-cost renewable electricity;
  - 2) Caps on Direct Access participation, leading to less choice and competition associated with retail energy rates for industrial customers;
  - 3) No industrial or hydrogen production rates currently offered by utilities at pricing low enough to justify investment in hydrogen production within California;
  - 4) Lack of hydrogen procurement mandates to encourage consumption and drive down costs through economies of scale and technology maturation;
  - 5) Inadequate planning for the scale and near-term timing by when hydrogen trucks and low-cost hydrogen production will be available for the market, thus causing under-investment in needed transmission and renewable generation infrastructure; and
  - 6) Lack of policies and hydrogen procurement mandates to drive down the costs of hydrogen production and scale up the maturity of hydrogen technology, as it has done for the renewables and energy storage industries.

### Closing Comments

Nikola Corporation supports the efforts of the Joint Agencies and their work to develop the Joint Agency Report. Continued cooperation and coordination among the CEC, CPUC and CARB to address decarbonization is critical for the achievement of a zero-carbon resources supply 100% of electric retail sales to end-use customers by 2045. California must take a proactive stance to continue encouraging decarbonization, particularly in harder to decarbonize industries by encouraging the production, distribution, and procurement of hydrogen. Innovative technologies, such as electrolysis, relevant to hydrogen production present a viable near-term solution to address zero-emissions transportation, grid reliability and economic opportunity in the state. A comprehensive funding and implementation roadmap, that includes fostering a welcoming production and operation environment for large-scale hydrogen production is essential to California's successful completion of its zero-carbon goals. Nikola looks forward to working with all three agencies and key stakeholders in California on the deployment of its zero-emissions vehicles and hydrogen infrastructure technologies that will accelerate California's realization of the goals identified in SB 100.

Sincerely,

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