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Doosan Fuel Cell America, Inc.

Comments on the July 8, 2019 California Air Resources Board, Public Workshop to discuss the Fuel Cell Net Energy Metering, Greenhouse Gas Emission Standard, Calculation Methodology

July 22, 2019

Doosan Fuel Cell America appreciates the opportunity to provide comments to the California Air Resources Board (CARB) on the materials presented at the July 8, 2019 public workshop to discuss the methodology for calculating the Fuel Cell Net Energy Metering (NEM) greenhouse gas (GHG) emission standards. Doosan supports both the recommended methodology and the acknowledgement that fuel cell systems are critical to California energy and environmental policy objectives.

Doosan is a global leader in providing clean, continuous-duty, cost-competitive stationary fuel cell energy systems. Our PureCell[®] systems operate 24/7 with high efficiency and ultra-low emissions, allowing our customers to generate their own electricity and heat on-site while reducing their utility expenses and environmental emissions.

The Doosan Corporation is a global company with 42,000 employees and worldwide revenue of more than \$16 billion. Our global businesses span a range of products and services in infrastructure support and power generation, including nuclear power, steam turbines, power plant boilers, water desalination, construction equipment, machine tools and engines for a variety of applications.

Our PureCell[®] Model 400 fuel cell systems operate more than 500 units worldwide producing over 230 MW with many more coming on line in the next year. The reliability and resiliency attributes of our fuel cells are felt during grid outages where our systems continue to run, providing essential electricity and heat to critical facilities. Such was the case in northeast during winter storm Alfred in 2011 and Superstorm Sandy in 2012. Doosan fuel cells kept the lights on during these critical times of need.

The State of California has been one of the most important markets for the emerging fuel cell sector, and non-combustion fuel cells are contributing greatly to the State's goals of reducing greenhouse gas emissions, improving air quality, reducing peak load, and improving the reliability of the electric utility system. Doosan fuel cells are currently supplying clean and secure power to a diverse set of customers in the U.S. such as hospitals, universities,



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manufacturers, municipalities and high schools, supermarkets, residential buildings and waste water treatment plants as well as other technology companies.

Stationary fuel cell applications offer these customers a clean and efficient method of producing energy that provide resiliency, reliability and price stability, while reducing stress on the electric grid. A wider deployment for distributed generation (DG) will lead to clean, efficient electric generation and will alleviate the need for additional transmission facilities, when developed where the demand is needed.

Doosan Fuel Cell America supports the work that CARB has put in to come up with a data-driven methodology to develop the GHG standard. We feel that it is important to set a standard that conforms with the true intent of the original legislation which was to encourage and expand the use of fuel cell systems for environmental benefits and GHG emission reduction. This standard supports the use of fuel cells and all their benefits.

Fuel cells emit no criteria air pollutants and improve air quality in local communities. Currently, potential customers are choosing between the grid and dirty diesel generators. Fuel Cell NEM will now allow them to select non-combustion fuel cell technology. There is a need, now more than ever, for additional resiliency in California and fuel cell systems are the only non-combustion reliable energy source. The implementation of Fuel Cell NEM is critical and timely especially with current wildfire and microgrid legislation. In the long run fuel cells will lead to cheaper, cleaner and more reliable power in California.