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Hydrogen, and the ICT

The SB100 report must assess not only the generation of new renewable energy, potentially tripling or quadrupling generation already in place, but the movement of this intermittent energy.

Transforming transportation alone will require replacing the nearly 20 billion gallons of diesel and gasoline used annually in California with zero emissions energy. The SB100 effort must assess the addition of this load, roughly equivalent to the energy served on the grid for the last 20 years, and its impact if addressed purely from a grid-charging solution, in addition to loads from agriculture, industry and others also decarbonizing.

We strongly encourage this group to closely monitor the first full-sector zero-emissions effort in California, namely the Innovative Clean Transit rule for transit buses.

Transit fleet zero emissions conversions represent some of the most difficult challenges that lie ahead for the people and industries of California. Transit fleets operate in both remote and dense urban centers, and are operationally critical to the people they serve, especially those in disadvantaged communities. Like the Ports, they have highly restrictive schedules for energy replenishment, and thin operational and capital budgets.

Major transit agencies are beginning to complete their technical analyses for the ICT, and are finding that a purely grid-charged solution is often not only cost prohibitive, but operationally complex, to the point at which they may not be able to fulfill the services their riders rely upon. These agencies are now turning to hydrogen fuel cell electric buses to maintain operational capability, and to achieve reasonable costs for the conversion of their fleet energy infrastructure. Transit agencies in Oakland, Orange County and the Palm Desert are operating these buses now, alongside battery buses, and provide important case studies for the State.

The hydrogen required to serve these agencies can be produced carbon-free in remote areas such as the Salton Sea and brought to urban areas over multiple means, without the need for new high voltage transmission lines. Hydrogen produced at utility scale from solar or wind can be produced for far less cost than the fossil fuels is replaces. Hydrogen produced from organic and municipal waste can produce a carbon-negative energy solution while reducing waste streams.

This multiplicity of production and delivery options should make hydrogen a crucial component of the SB100 report.

We at Ballard urge the air pollution control districts, the Air Resources Board, the Energy Commission and the CPUC to create a unified plan for this energy transformation, and include hydrogen where it most economically serves this transformation, within the financial capabilities of our State and time frame we are afforded by our climate, to maintains the quality of life that we enjoy today.