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*Comment Received From: Abas Goodarzi US Hybrid
Submitted On: 10/24/2019
Docket Number: 19-ERDD-01*

Comments on Discussion questions

1. Should funding be limited to new builds or repowers? What are some specific benefits and challenges related to each deployment pathway?
 - a. Due to limited funding, it is best to focus on re-power, with a focus on the zero-emission power generation to power existing powertrain, which is already electric.
 - b. Repower will also ensure that the FC engines are compatible with the existing rail powertrain and allow much lower cost for implementation.
2. Due to limited funding available, should certain applications be prioritized over others?
 - a. The zero-emission rails will enable truck displacement in the disadvantaged communities port corridors and offers the most NO_x and GHG reduction due to much longer operation compared with typical Tug. The rail application has a better opportunity for commercial deployment due to economy of scale. The Marine vessels have much-restricted space and regulations on gaseous fuels.
3. How should fueling infrastructure planning requirements be approached to ensure siting, accessibility, safety, throughput, and other considerations are correctly planned out?
 - a. FC rail requires dedicated fueling due to a large volume of fuel and accessibility on siting.
4. How should renewable hydrogen procurement requirements be approached?
 - a. For this demonstration project, the renewable Hydrogen requirements will only complicate due to logistics for a short time. Renewable hydrogen is a good mandate for the commercial deployment stage.
5. What specific performance metrics should be measured to compare against diesel and evaluate the viability of fuel cell technologies?
 - a. Fuel Efficiency in terms of g/ton-payload
 - b. NO_x reduction g/ton-payload
 - c. GHG reduction g/ton-payload
6. What players and partnerships are needed to produce a strong project team?
 - a. Technology Provider
 - b. Rail equipment Operator
 - c. Rail equipment providers
7. What other considerations or requirements should be incorporated into the future GFO?
 - a. One-to-one replacement of Diesel gen-sets with FC engines
 - b. Compatibility with the existing rail electric powertrain.
 - c. Service and diagnostics manuals, tools and training
 - d. Local service and maintenance to be provided during the demonstration.

Additional submitted attachment is included below.

Memo

To: CEC Docket #: 19-ERDD-01

From: Abas Goodarzi
President

Re: US Hybrid response to CEC Discussion Questions.

Date: 10/24/2019

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