

SYSTEM AND METHOD FOR HYDROGEN BASED ENGINE DECARBONIZATION

ABSTRACT

5 An engine decarbonization system includes multiple local engine decarbonization units that communicate with a remote engine decarbonization management system. Each engine decarbonization unit includes a hydrogen flow regulation unit couplable to a source of dry hydrogen; a hydrogen delivery line for introducing dry hydrogen into an engine; an engine exhaust gas analyzer for measuring engine exhaust gas components and determining a set of corresponding lambda values; and a control unit configured for controllably introducing dry hydrogen into the engine while the engine is running in accordance with a set of engine decarbonization process parameters, which can be provided or determined by the remote engine decarbonization management system based upon engine type and engine capacity. Each engine decarbonization unit introduces dry hydrogen rate into a given engine such that determined lambda values corresponding to engine combustion conditions approach or remain within a target lambda value range.

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FIG. 2