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REQUEST FOR PROPOSAL NO. 212858
Amendment No. 1
Offer Due: October 19, 2012

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Amendment No. 1 to this RFP is issued to include the below Clarifications to questions received:

Question 1:

Truck Classification: The requirements document states "The fuel cell-based APU to be developed is intended to serve as a retrofit to existing TRU on Class 4-6 medium duty trucks." However, earlier it states ""The American Trucking Association has determined that 30,000 refrigerated trucks are being produced each year in the US for the fleet total of approximately 300,000 refrigerated trucks." The predominant TRU on refrigerated trucks is for trailers, which is a Class 8 heavy duty truck. Refrigeration in Class 4 through 6 is a very limited marketed and does not match the statement about ATA sales. Market data that we've researched specifically on refrigerated tractor trailer sales is what matches that statement of 30,000 annual sales. In support, ACT Research also provides data identifying Class 8 refrigerated trailer as the truck classification with roughly 30,000 annual sales. Class 4-6 is far less. From a production standpoint, the majority of Carrier Transicold and Thermo King TRU sales are refrigeration units for these Class 8 trucks. Examples of those Carrier Transicold TRU products include the X2 and Vector product lines for Class 8 trucks. Examples of those Thermo King TRU products include the SB and Spectrum product lines. The Class 8 trucks (trailers with TRUs) would be the ideal target for a product demo because these are regularly used at locations in the US that already have hydrogen infrastructure and distribute perishable and freezer goods that would be in needed of such environments during transport. We acknowledge that hydrogen infrastructure could be a limiting issue for some customer operations, however, many customers with Class 8 truck fleets use a hub and spoke distribution model where the trucks return to the customer site for fueling each day. Would a proposal that was submitted to target the Class 8 trucks (the greatest TRU market) be deemed responsive?

Clarification:

The primary purpose of targeting the Class 4-6 trucks was our concern that the hydrogen infrastructure is in its infancy. The short haul Class 4-6 trucks generally return daily to a central location where they can be refueled. Many of the long haul trucks travel across the country and may require refueling where no hydrogen infrastructure exists. The Class 4-6 requirement was meant to ease the need for multiple hydrogen refueling stations for a demonstration such as this. If a proposal is able to identify a market with Class 8 trucks where they can be returned to a central location for fueling each day and not require a large number of hydrogen refueling stations, this would still be responsive to our call. A second reason for selecting the Class 4-6 trucks is there are noise regulations for the medium duty trucks that do not exist on the heavy duty trucks. The quiet operation of the fuel cell can help meet these regulations. In

spite of this second advantage, a proposal using Class 8 trucks will still be considered because of their wide usage.

Question 2:

Power Requirement: As stated above, the majority of the TRU products sold are intended for Class 8 trucks. These include the Carrier Transicold X2 (18.8 kW rating) and Vector (19.3 kW rating) product lines as well as the Thermo King SB (15-17.6 kW) and Spectrum (13.2-14.4 kW) product lines. Since these transport refrigeration units are intended to moderate the temperature of the large volume of a trailer, the power requirements will typically range in the 15 to 20+ kW range. The requirements document states to "Provide a work plan for the deployment and demonstration of an approximately 3-6 kW net cooling capacity TRU retrofitted with a fuel cell-based APU on a Class 4-6 truck." We may be getting confused by the use of APU and TRU as an interchangeable term – the APU is typically smaller, in the 3-6 kW range, but this is only intended to provide power and heat to the truck cabin so that the truck engine doesn't have to run. If I understand this program correctly, it is intended for demonstration of a fuel cell that powers the transport refrigeration unit (TRU) that keeps the product in the storage location at an intended temperature, which is in the power range identified next to the product lines defined earlier. Would a proposal that was submitted to target the TRU power requirements of 15-20 kW be deemed responsive?

Clarification:

The cooling described in this RFP is meant to provide refrigeration of the trailer and its contents and not cool the truck cabin. The values provided are meant only as estimates. Higher power requirements, if required for a particular application to meet its needs, are considered acceptable.

Offerors shall acknowledge receipt of any amendment of this RFP by E-mail sent to kit.mcburney@pnnl.gov. Battelle must receive the acknowledgement by the time specified for receipt of proposals.

Battelle Memorial Institute Pacific Northwest Division Kit McBurney Kit Steichen McBurney, C.P.M., Sr. Contracts Specialist	10/9/2012 Date Signed