



The Appropriate Role for Fuel Cells on DoD Mobility Platforms

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Objective and Approach

- Objective

- The development of a holistic approach integrating full cells systems as ONE important weapon in the complete arsenal of power technologies that the DoD (and TARDEC) could employ. Where within the DoD (and TARDEC) missions do fuel cell systems provide added value over the current power and energy systems?

- Approach

- Turn the fuel cell and reforming programs from a “technology push” perspective to a well-researched “mission-demand” program -- which DoD mission scenarios could capitalize on the many positive aspects of fuel cell and reforming technologies?

Key Areas for Implementation

- Systems of Systems Approach applied to:
 - Multi-functional tactical vehicle platforms
 - Captured fleet special purpose vehicles
 - Non-tactical or administrative vehicles

Multi-functional Vehicle Platforms

- Vehicles employed for “silent-watch”
 - Expand vehicle capabilities beyond ICE capabilities
 - Near silent APU for C4ISR operations
 - Options fuel cell technologies, such as an SOFC system or a PEMFC
 - Choices dependent on fuel source, balance of plant (BOP), thermal/electrical load and space claims.



Captured Fleet Special Purpose Vehicles

- Vehicles where value is added for electrical power generation
 - Exportable power
 - Multi-tasking prime mover
 - Grid support
- Clean exhaust of such vehicles supports compliance with Executive Orders and Federal Mandates



Non-tactical and Administrative Vehicles

- Fleet vehicles serviced by centralized fuel depot utilizing renewable energy technologies as feedstock.

