

The Delphi logo is displayed in a bold, black, sans-serif font. It is positioned on the right side of a horizontal blue band that spans the width of the slide. The background of the slide features a blurred, abstract image of a car's interior or exterior components in shades of blue.

Solid Oxide Fuel Cell Systems for APU Functions and Beyond

M. James Grieve, Russell H. Bosch, Steven R. Shaffer
2007 DEER conference – Detroit, MI

Solid Oxide Fuel Cell Market Opportunity



Heavy Duty Truck
Diesel



Recreational Vehicles
Diesel, LPG



Truck and Trailer Refrigeration
Diesel



US Military
JP-8



**European micro –CHP
& CHP + A/C**
Natural Gas



US Stationary – APU & CHP
Natural Gas, LPG



Commercial Power
Natural Gas



FutureGen Powerplant
Coal Gas

Heavy Duty Truck SOFC APU



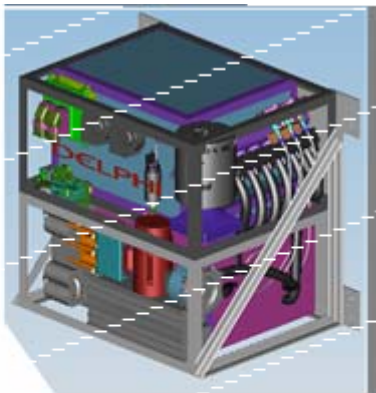
- Key early application for SOFC
- Easily interfaces with existing subsystems:
 - diesel fuel - from the vehicle,
 - regulated DC electric power - to the vehicle
 - independent of cooling and exhaust systems

- Benefits:

- extremely low (near zero) emissions
- high efficiency (2 to 5 X reduction in consumption)
- low noise
- attractive size/weight
- (low maintenance, high reliability)

- Longer-term options:

- thermal byproduct (heating, thermally driven A/C etc.)
- reformat byproduct (aftertreatment functions)
- displacing alternator for continuous loads



2008

3.0 kW Diesel APU
Development Platform

DELPHI