Subfreezing Start/Stop Protocol for an Advanced Metallic Open-Flowfield Fuel Cell Stack (Topic 2)

Nuvera Fuel Cells, Inc.

- Funding

DOE Cost Share	Recipient Cost Share	TOTAL
$4,970,488	$1,970,000	$6,940,488
72%	28%	100%

- Project Description: Nuvera's objective in this Project is to demonstrate a polymer electrolyte (PEM) fuel cell stack that is able to perform and start up after multiple exposures to subfreezing conditions as low as -40°C, without irreversibly degrading its performance more than 5% of its original life. The technical approach is to develop operating strategies and components to optimize two-phase water transport phenomena across the membrane-electrode assembly (MEA), gas diffusion layer (GDL) and flow fields. Key obstacles to achieving the 2010 subfreezing startup targets will be elucidated and addressed. While the focus will be on automotive stack architecture, the findings in this program will directly support stationary fuel cell systems as well.

- Timeframe: 4 year project, starting in FY07

Sub-Contractors

Institutions
University of Delaware
W.L. Gore & Associates
SGL Carbon Group