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TARDEC's New 8-in-1 Laboratory Will Spearhead Research into Alternative Energy Development

For the U.S. Army to be successful on the battlefield, it is imperative the Tank Automotive Research, Development and Engineering Center (TARDEC) and its enterprise partners continue developing advancements in power and energy generation, distribution and deployment, and vehicle applications that increase fuel economy.

“Fueling the Army’s fleet of vehicles has always been of utmost importance,” remarked TARDEC’s National Automotive Center Director Paul Skalny. “In the waning days of World War II, as Army General George S. Patton’s Third Army was down to only a half-day supply of fuel, Patton went before General Omar Bradley and said that if he had 400,000 gallons of gasoline he could get his troops into Germany.”

Reading from Bradley’s memoirs, Skalny reveals Patton “might as well have asked for the moon,” as a fuel shortage had affected all U.S. troops in Europe. The Army faces a similar challenge today. Prior to engagements in Afghanistan and Iraq, the Army used an average of 50 million gallons of gasoline per year. Since 2003, the amount has increased to about half a billion gallons of fuel per year.

TARDEC’s engineers and scientists are working to improve efficiency and find alternative means to meet the power demands of our Nation’s military ground vehicles. The strategies TARDEC and its ground vehicle integration partners are implementing may also have the potential to move the Nation closer to securing energy independence.

“We’re here to help address the Nation’s challenges. We have the technical expertise to drive the right solutions so that in the future we can truly be energy independent,” explained Dr. Grace M. Bochenek, TARDEC Director.

Meeting those challenges head on is one reason the Department of Defense is building the Ground Systems Power and Energy Laboratory (GSPEL). TARDEC is hosting a groundbreaking ceremony for the 30,000 sq. ft. facility at 9 a.m., Aug. 17. Dignitaries from throughout the Army, state and local government, industry and academia are expected to attend the celebration.

Housed on the Detroit Arsenal, the eight-labs-in-one complex will have capabilities unlike any other facility in the world. It will be able to test entire vehicles and individual vehicle systems components in a wide variety of environmental conditions. Designed with an eye toward the



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future, the GSPeL will serve as the cornerstone for the Army's next generation of research, development and engineering to deliver advanced power and energy solutions.

Among the eight unique labs in the GPSEL complex are the Hybrid-Electric Lab and the Fuel Cell Lab. These labs will evaluate hybrid-electric powertrains and develop and evaluate fuel cell components and systems. TARDEC supports *all* of the Nation's manned and unmanned ground vehicles, which means finding solutions that will work across a variety of tactical vehicle and robotic platforms.

TARDEC and its partners have spent years researching and developing hybrid-electric systems, hydrogen fuel cells, alternative fuels and energy storage devices. Example programs include the Fuel Efficient Ground Vehicle Demonstrator (FED), Hydrogen Cooperative Refueling Program, Hybrid-Electric Vehicle Experimentation and Assessment Program, and ongoing Army Technology Objective vehicle testing programs. These new labs will help further research and development into alternative fuels and propulsion systems, and focus efforts to address critical combat vehicle fuel efficiencies, auxiliary power requirements and field sustainability issues.

TARDEC's work in the areas of fuel efficiency and energy security ensure our warfighters have the most advanced, high-tech vehicles imaginable. The solutions developed will help the Army's ground vehicles sustain the power they need to do their job and set the path for the Nation's future energy independence.

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There are two photos available for use with this release. Caption information follows. To download the photos, go to <http://www.tardec.info/pressreleases/>.

HEVEA.jpg

TARDEC established the HEVEA Program to make sure hybrid-electric vehicle technology meets safety, reliability and maintainability requirements to withstand the harsh rigors of military environments. The GSPeL will help address these challenges by allowing testing similar to the International Military and Government, LLC Future Tactical Truck System Utility Vehicle which is attached to a dynamometer to test the engine's torque and rotational speed. (Photo courtesy of ATC.)

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A Hydrogen Fueling Station operator attaches a communications cable that gathers valuable research information. The 3-year Hydrogen Fueling Station and fuel cell vehicles (FCV) program began as Cooperative Research and Development Agreements. TARDEC also entered into an interagency agreement with Selfridge Air National Guard Base, MI, to serve as the site for hydrogen FCV testing and fueling station cold-weather testing. (U.S. Army TARDEC photo by Bill Dowell.)



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TARDEC is the Nation's Ground Systems Enterprise to ensure U.S. Soldiers continue to be the best-equipped and most lethal, survivable and sustainable fighting force on Earth. For additional information or to schedule an interview, please contact Bill Dowell at (586) 574-5144, william.dowell2@us.army.mil or wdowell@brtrc.com.

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