

## New Reactor Produces Renewable Biofuel On the Spot

- ▶ The Endurance Bioenergy Reactor (EBR) is a self-sustaining, on-site fuel generation tool that requires no additional power.
- ▶ Argonne scientists have developed a photosynthetic organism capable of producing a long chain hydrocarbon molecule directly from feedstocks.
- ▶ The interdisciplinary research effort produced a drop-in fuel ready for immediate use in diesel equipment; fuel requires no further refinement.
- ▶ The biofuel is truly a green renewable fuel; on-site generation approaches carbon and resource neutrality.
- ▶ EBR is easily transported and operated in field conditions, contributing to the endurance of a self-sustaining operation.



## On-Site Fuel Generation Saves Lives, Strengthens Military Ops

- ▶ EBRs can help fulfill the energy requirements of America's forces, deployed or at home.
- ▶ Force Protection – On-site fuel generation means fewer convoy operations, which translates into lives saved.
- ▶ Force Multiplier – Following installation, servicemen return to primary jobs rather than duties on complicated supply chains or dangerous convoys.
- ▶ Force Enabler – Because EBR uses on-site waste as a feedstock, it reduces the reliance on complicated supply chains and provides increased flexibility and agility.



## Humanitarian Component: Meeting Local Energy Needs

- ▶ Humanitarian and strategic gains are made as EBRs can be left behind for local energy needs after primary military objectives have been met.
- ▶ Ease of operation means an EBR will continue to produce fuel with little follow-on support.
- ▶ The mobility and simplicity of EBRs make them a logical choice for remote and disaster areas. Durable equipment has the ability to improve quality of life immediately and the endurance necessary for long-term use.



## Building Partnerships

- ▶ Argonne and DOD agencies joined forces on the EBR project in direct response to the 2010 *DOD Operational Energy Strategy*.
- ▶ The successful partnership is helping to foster a better working relationship between DOD and DOE as outlined in their July 2010 MOU.
- ▶ The estimated \$2-3 million required to complete EBR development, if shared between agencies, will reduce their economic burden and hasten the EBR field application.
- ▶ EBRs could potentially be used in the commercial sector, enabling benefits to a much broader populace—much like today's global positioning system.

