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Newest GREET model updates environmental impacts Of latest transportation fuels, vehicle technologies

ARGONNE, Ill. (May 8, 2008) – The newest version of the Greenhouse gases, Regulated Emissions and Energy use in Transportation (GREET) model from the U.S. Department of Energy's (DOE) Argonne National Laboratory will provide researchers with even more tools to evaluate and compare the environmental impacts of new transportation fuels and advanced vehicle technologies.

Led by Dr. Michael Wang, a group of Argonne transportation researchers regularly update key parameters and assumptions in the GREET model on the basis of new research and development in fuel pathways and vehicle technologies. Today, GREET can simulate more than 100 fuel production pathways and more than 80 vehicle/fuel systems. The model has more than 4,000 registered users worldwide.

The newest update released today will allow scientists to model combustion of ethanol produced from Brazilian sugarcane and used by U.S. automobiles; production and use of bio-butanol as a potential transportation fuel; and production and use of biodiesel and renewable diesel via hydrogenation, coal/biomass co-feeding for Fischer-Tropsch diesel production and various corn ethanol plant types with different process fuels.

In addition, simulations of many existing fuel pathways in GREET are updated. For example, petroleum refining energy efficiencies in GREET are updated with recent survey data from the Energy Information Administration. Enhancements to current pathways include three methods for dealing with co-products for soybean-based biodiesel, compression energy efficiencies for natural and hydrogen gases are calculated with the first law of thermodynamics and a tube trailer delivery option for hydrogen gas to refueling stations.

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Argonne updates GREET model – add one

In addition to the fuel-cycle GREET module, the vehicle-cycle GREET module incorporates an additional platform, allowing researchers to model sport utility vehicles in addition to cars and light trucks. That version better evaluates the energy consumption required to produce the aluminum used in the chassis of automobiles.

Several state and federal agencies have used GREET to aid in their considerations of potential fuel greenhouse gas regulations. For example, the U.S. Environmental Protection Agency uses a specific set of assumptions with the GREET model in its analysis of the reductions in greenhouse gas emissions resulting from the potential expanded use of renewable and alternative fuels. California Air Resources Board has been using a GREET version in its effort to develop low-carbon fuel standards.

Funding for the development and maintenance of the GREET project was provided by the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy through the Vehicle Technologies Program, Office of Biomass Program and Office of Hydrogen, Fuel Cells and Infrastructure Technologies Program.

The GREET software is available at no charge. To learn more about its functionality, visit the GREET Web site at: <http://www.transportation.anl.gov/software/GREET/index.html>.

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