

Providing Easy-to-Use Computing Tools for the Automotive Industry

Argonne National Laboratory created a convenient suite of computer models to assist the automotive industry and its constituents in designing and analyzing alternative fuel vehicles (AFVs), validating vehicles and components, and ascertaining the energy and environmental impacts of advanced vehicle technologies.

GCTool. Argonne system analysts developed the General Computational toolkit (GCTool), a versatile simulation software package for designing, analyzing, and comparing different fuel cell configurations for vehicles. GCTool lets automobile and truck designers "try out" different system configurations without the expense and delay of actually building numerous prototypes. A variety of arrangements is available for licensing this software.



For more information, contact Rajesh Ahluwalia, phone: (630) 252-5979.



PSAT and PSAT-PRO. PSAT, a "forward-looking" model, simulates vehicle fuel economy, emissions, and performance in a realistic manner, taking into account transient behavior and control system characteristics from the driver to the wheels. PSAT-PRO, its companion prototyping software, is designed to control any kind of hybrid electric vehicle (HEV) powertrain on a test stand. A 30-day trial version of PSAT is downloadable from Argonne's transportation website (<https://www.psat.anl.gov>).

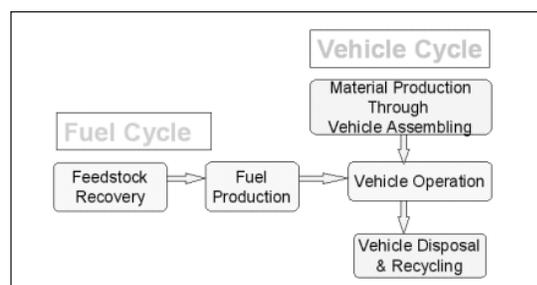
For more information, contact Aymeric Rousseau, phone: (630) 252-7261.

AirCRED. This calculation model easily sums values of summertime ozone precursor and wintertime carbon monoxide emission-reduction credits earned by acquiring AFVs from original equipment manufacturers. The tool primarily assists Clean Cities organizations in estimating AFV emission credits, but has been approved by the Environmental Protection Agency for estimating attributable emission reductions under its Voluntary Mobile-Source Emission-Reduction Program

and calculating State Implementation Plan emission credits. The U.S. Department of Transportation also approved the tool for calculating emission-reduction benefits of certain projects. Version 1.1 and a Users' Guide are easily accessible through the Internet (<http://appserver.es.anl.gov/aircred.html>).

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GREET. A fuel-cycle model for Greenhouse gases, Regulated Emissions, and Energy use in Transportation evaluates various engine and fuel combinations on a consistent fuel-cycle basis. GREET was created as a multidimensional spreadsheet model in Microsoft Excel and is used extensively worldwide by industry, government, and academic researchers. GREET model V1.5 and beta version 1.6 are available free of charge (<http://greet.anl.gov/download.html>).



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IMPACTT. The Integrated Market Penetration and Anticipated Cost of Transportation Technologies (IMPACTT) model assists in calculating direct and indirect fleet fuel use and emissions from projected adoption of alternative engines and fuels for light-duty vehicles. It is Macintosh™- and PC-compatible. The spreadsheet model calculates the effect of the characteristics of advanced-technology vehicles and market-penetration assumptions on fuel use and emissions, relative to an accepted baseline.

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