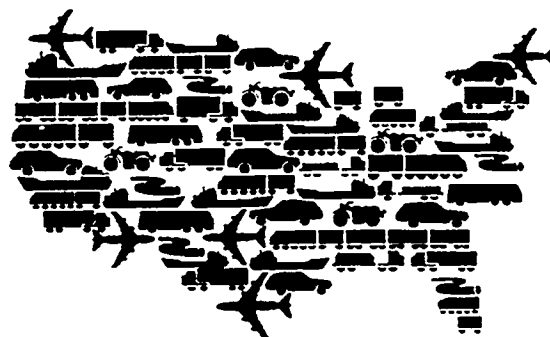


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Development and Use of the GREET Model to Estimate Fuel-Cycle Energy Use and Emissions of Various Transportation Technologies and Fuels



**Center for Transportation Research
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ANL/ESD-31

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by M.Q. Wang

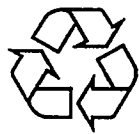
Center for Transportation Research, Energy Systems Division,
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March 1996

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Office of Transportation Technologies

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NOTICE

An earlier report on this topic was prepared for the Office of Transportation Technologies, U.S. Department of Energy. That report, entitled *Criteria Pollutant, Greenhouse Gas, and Energy Model for Transportation Fuel Cycles*, documents Version 1 of the fuel-cycle emissions and energy-use model developed at Argonne National Laboratory. Version 1, called the Criteria Pollutant, Greenhouse Gas, and Energy Model (CPGEM), relies on emission factors contained in the fourth edition (with various supplements) of the U.S. Environmental Protection Agency's (EPA's) AP-42 document. In 1995, EPA released the fifth edition of the AP-42 document. This report documents Version 2 of the fuel-cycle model, which is now called the Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) model. The GREET model relies on emission factors contained in the fifth edition of the AP-42 document. Additional features of the model include calculation of fossil fuel consumption, total energy consumption, and petroleum consumption; and calculation of both all-location and in-basin emissions for volatile organic compounds, carbon monoxide, nitrogen oxides, particulate matter measuring 10 microns or less, and sulfur oxides.

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