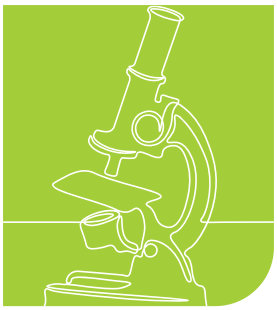
WHY WE BELIEVE ARGONNE GREET IS THE SUPERIOR MODEL

"You Can't Improve What You Don't Measure"

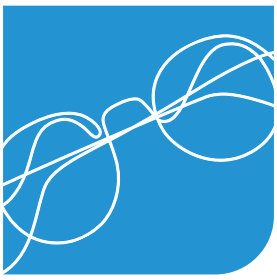
No matter how good the science and technology are, if we're not accounting for all aspects of the emissions from transportation, industrial processes, and agriculture, there is no way to meet the lofty goals needed to protect the planet, nor can participants be appropriately compensated.

Life-cycle analysis (LCA), also known as life-cycle assessment, is a primary tool to support decision-making for sustainable development. The U.S. Environmental Protection Agency (EPA) uses it to evaluate the potential environmental impacts of a product, material, process, or activity. It's a comprehensive method for assessing all direct and indirect environmental impacts across—importantly—the entire life cycle of a product system, from materials acquisition to manufacturing to use to final disposition. This "cradle-to-grave" accounting concept, also called "well-to-wheel," when applied to fuels, and soon "farm-to-wheel" will become common as biofuels using agricultural feedstocks become a more significant fuel source.



Science Sets Argonne GREET Apart

We believe Argonne GREET® (Greenhouse gases, Regulated Emissions, and Energy use in Technologies), developed by Argonne National Laboratory (Argonne) with the support of the U.S. Department of Energy (DOE), is superior to any other LCA tool available. Argonne National laboratories has been working on LCA since 1995 and has been cooperating with several federal agencies including the U.S. Department of Agriculture since 2014 to incorporate soil carbon. They update their models and stay current with the science. By employing rigorous scientific research and incorporating new developments and ideas, an accurate model for carbon intensity can be created and remove outdated boilerplate assumptions. This allows Argonne GREET to accurately account for the entire lifecycle. It also introduces the necessary ability to adapt to new developments and technological advances, making it the only model that can lead to every player in the lifecycle being appropriately compensated.



Argonne GREET Seal of Approval

Argonne GREET can be applied to all aspects of the fuel supply chain, enabling a true apples-to-apples comparison of greenhouse gas emissions for suppliers, consumers, industry, and regulators. Labeling today has drastically changed consumer attitudes and business incentives. Consumers are now more prone to read the labeling to understand how their purchases impact their lives and the world around them. Just as an Energy Star rating helps consumers know the energy efficiency of their appliances, Argonne GREET quantifies emissions over the entire life cycle to help decision-makers understand what's at stake and how it impacts all players. Sharing carbon-intensity values and what they mean will help enhance consumer understanding of the differences between fuel types, empowering them to pick and choose how they want to save the planet.

Counting Carbon Intensity the Best Way We Know How

Argonne GREET was developed to consider carbon intensity related to the energy and environmental effects of fuels and vehicle technologies. The DOE has supported its implementation in the fuel market, and we believe it is the best model for U.S.-based companies. Here's why:

> GREET rewards enterprise and ingenuity—when science gains a deeper understanding of how carbon and emissions affect the impact of fuel use for transportation; it can be incorporated into calculations.

> GREET can accommodate variables for better land management. As an agricultural feedstock supplier implements these practices, the carbon intensity for the fuel made from its harvest is adjusted, and that value can go back to the farmer.

> GREET's adaptability makes it more effective in taking on the special-case variables of subsectors within transportation, including automotive, marine, rail, and aviation.

> Because GREET can apply to vehicles themselves as well as fuels, the impact of electric vehicles, plugin hybrid cars, and virtually any other new developments in transportation technology can be accounted for.

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FUELING THE FUTURE

WHY WE BELIEVE ARGONNE GREET IS THE SUPERIOR MODEL

The playing field would be level for the established players and the new arrivals in any given sector.
> GREET includes the Feedstock Carbon Intensity Calculator (FD-CIC). This transparent and easy-to-use tool helps farmers calculate feedstock-specific carbon intensity at the farm level and is updated regularly.
> GREET has built-in adaptability to accommodate additional economic sectors, such as construction and agriculture, allowing more sectors of our economy to be subject to carbon-intensity accounting in an apples-to-apples comparison. More ideas to reduce carbon intensity can be applied.
> The adaptability extends beyond the direct impact of a product or process. Indirect land-use changes attributed to the adoption of biofuels can be acknowledged and accommodated by GREET. The goal is to present as accurate and complete a picture as possible.

How Do Biofuel Regulations/Programs Treat Key LCA Aspects Compared To GREET?

Several biofuel regulations/programs have been adopted globally in the past 13 years. They are based on LCA carbon intensities, and some of them have benefited from the GREET model:
> The California Low-Carbon Fuel Standard (with CA-GREET3.0)
> The Carbon Offsetting and Reduction Scheme for International Aviation by the UN International Civil Aviation Organization (ICAO CORSIA)
> The Environmental Protection Agency's Renewable Fuel Standard (EPA RFS)
> The European Renewable Energy Directive (EU REDII)
> The Canadian Clean Fuel Standard (CFS)
> RenovaBio, a carbon reduction regulation used by Brazil

GREET is comprehensive by including many parameters which have significant effects on biofuels CIs. It is transparent and consistent to examine feedstock growth and fuel conversion. With annual release, GREET benefits from up-to-date data from government agencies and industry surveys. These cited regulations/programs could have frequent, needed updates from GREET to reflect the state of the biofuel industry.

See how the other models stack up for impacts of feedstock cultivation, indirect land use change for biofuel, better land management, carbon capture and sequestration, electricity, thermal energy, and hydrogen sources, and methane avoidance:

HOW REGULATIONS / PROGRAMS ARE COMPARED TO GREET LCA

CARBON EMISSION CONTRIBUTIONS	GREET	Ca. GREET 3.0	CORSIA	RFS	EU REDII	Canada CFS	RenovaBio
Farm Specific Cultivation	✓	✗	✓	✗	✓	✓	✓
iLUC Updated Land Use Data	✓	✗	✗	✗	✓	N/A	N/A
Land Management Changes	✓	✗	+/-	✗	✓	✓	✓
Carbon Capture and Sequestration Crediting	✓	✓	✗	✓	✓	✓	✓
Electricity Source	✓	✓	✓	✓	✓	✓	✓
Thermal Source	✓	✓	✓	✓	✓	✓	✓
Methane Avoidance for Manure Systems	✓	✓	✗	✓	N/A	N/A	N/A
Hydrogen Source	✓	✓	✓	✓	✓	✓	✓

✓Always calculated ✗ Not calculated +/- Carbon emission calculated if positive, and not if negative N/A Not within system boundary

THIS GRAPHIC REFLECTS CURRENT REGULATIONS AS OF MARCH 2022

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