Life-Cycle Analysis – The Praxis of Carbon Accounting

Adapting to the new energy paradigm requires action. For businesses, this means measuring emissions footprint, making the right investment decisions, and filing reports and managing data through the lens of carbon accounting. EcoEngineers has helped hundreds of businesses gain control of this journey, guiding them through the energy transition without disrupting their core activities.

Clean energy regulations, investment opportunities in voluntary carbon markets, and incentive programs such as the U.S. Inflation Reduction Act (IRA) all have product Life-Cycle Analysis (LCA) as their foundation. Therefore, in addition to measuring Scope 1, 2, 3 emissions, measuring product life-cycle carbon intensity (CI) of your inputs-outputs or a more comprehensive environmental product declaration of your inputs-outputs is one of the first steps in a successful transition to net-zero.

Life-Cycle Analysis (LCA) is the praxis and application of carbon accounting. It is a systematic and comprehensive method for evaluating the environmental impact of a product, service, or system, from its inception to its end-of-life (cradle-to-grave). It assesses the environmental aspects and impacts throughout the entire life cycle of a product, including the extraction of raw materials, production, transportation, use, and disposal.

LCAs are used by regulators to create a performance-based standard for incentives or to identify compliance issues. LCAs are also increasingly popular for environmental product declarations or labeling a product's environmental footprint. EcoConsulting performs LCAs to support regulatory compliance and to inform decision-makers on priority areas to focus by identifying emissions hot spots associated with a product and their potential for improvement.

Regulations that provide incentives to using low-carbon fuels based on an LCA:

- U.S. Renewable Fuel Standard (RFS)
- California Low Carbon Fuel Standard (LCFS)
- Oregon Clean Fuels Program (CFP)
- Canada Clean Fuel Regulations (CFR)
- British Columbia Low Carbon Fuel Standard (LCFS)
- EU Renewable Energy Directive (RED) and its implementing measures
- Brazil RenovaBio
- Emerging Voluntary Carbon Markets

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Eco's team of industry-renowned scientists, led by Dr. Zhichao Wang, has performed more than 500 carbon LCAs since 2015, on a variety of products including grains, oils, fuels, plastics, farm products, supplements, lubricants, metals, and more. Our team is fully adept at utilizing all available LCA tools such as the Argonne GREET (Greenhouse gases, Regulated Emissions, and Energy use in Technologies) model and its derivative CA-GREET, GHGenius, SimaPro, and OpenLCA. We advocate for establishing an international LCA standard and database for the global good.

About EcoEngineers

EcoEngineers is a consulting, audit, and advisory firm with an exclusive focus on the energy transition. From innovation to impact, we help you navigate the disruption caused by carbon emissions and climate change.

We help you stay informed, measure emissions, make investment decisions, maintain compliance, and manage data through the lens of carbon accounting. Our team consists of engineers, scientists, auditors, consultants, and researchers with deep expertise on global fuels policy, energy and carbon markets, and alternative solutions to meet energy demands.

Eco was established in 2009 to steer low-carbon fuel producers through the complexities of emerging energy regulations in the United States. Today, our global team is shaping the response to climate change by advising businesses across the energy transition.

Together, we can create a world where clean energy fuels a healthy planet.

Navigating the Energy Transition

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