

Clean Hydrogen Consulting and Verification Services

Transitioning to a sustainable and equitable world is one of the greatest challenges humankind has faced, with political winds, carbon markets, and transition costs constantly shifting.

Low-carbon molecules, particularly clean hydrogen, will play an important role in the energy transition. To make investments, we need to understand the environmental benefits and potential impacts of producing, transporting, and using clean hydrogen and its derivatives such as clean ammonia, synthetic natural gas, sustainable aviation fuel (SAF), and e-methanol. To assess these impacts, EcoEngineers, recently acquired by leading global assurance partner LRQA, uses a technique called life-cycle analysis (LCA).

Conducting an LCA involves compiling an inventory of relevant energy and material inputs and environmental releases, evaluating the potential environmental impacts associated with the identified inputs and releases, and then interpreting the results to help you make more informed decisions. This expertise of multi-disciplinary teams is often not available in-house, and that is where EcoEngineers can help.

What Is Your Clean Hydrogen Project's CI Score?

A carbon intensity (CI) score is the aggregated greenhouse gas (GHG) emissions during the life cycle of a fuel divided by the quantity of the fuel. To qualify for the Section 45V Clean Hydrogen Production Tax Credit under the Inflation Reduction Act (IRA), an LCA is required to determine if the hydrogen has a CI score of 4 kg CO₂e per kg of hydrogen or lower on a well-to-gate basis. For participation in the California Low Carbon Fuel Standard (CA-LCFS) and Oregon Clean Fuels Program (OR-CFP), a well-to-wheels CI score is required to generate credits. In the European Union (EU), to qualify under the Renewable Energy Directive (RED) as a renewable fuel of non-biological origin (RFNBO), emissions from hydrogen need to be at least 70% lower than the emissions of fossil-based fuel. An LCA should be conducted as early as possible in the project development cycle. You will want to design your project from the outset to maximize the value of available tax credits and other relevant programs.

EcoEngineers helps companies develop clean fuel projects from conception to commissioning, including the review of offtake agreements. After the project is up and running, we provide ongoing compliance management to make sure your revenue stream from carbon credits and incentives remains stable.

Our Services:

- Life-Cycle Analysis (LCA)
- IRA Tax Credit Verification
- LCFS Pathway Application
- Investment Due Diligence
- Feasibility Studies
- Offtake Market and Revenue Analysis
- Hydrogen Project Development
- White Papers
- Training and Education
- Regulatory Engagement
- Ongoing Compliance Management

EcoEngineers has performed more than 1,000 carbon LCAs since 2015. We have experience in all of the regulations that require LCAs, including the IRA, U.S. Renewable Fuel Standard (RFS), CA-LCFS, OR-CFP, Canada Clean Fuel Regulations (CFR), British Columbia Renewable and Low Carbon Fuel Requirements (RLCFR), Brazil RenovaBio, EU RED, and impending directives, as well as emerging voluntary carbon markets (VCM).

IRA Tax Credit Verification Services

The IRA tax credits most relevant for hydrogen are the Section 45V tax credit and the Section 45Q tax credit for carbon sequestration or utilization. To qualify for the Section 45V tax credit, the production and sale or use of clean hydrogen must be confirmed by a qualified verifier. EcoEngineers is an experienced auditor and a qualified verifier as defined in the Section 45V regulations. Similarly, the GHG claims associated with a Section 45Q project must be verified by a qualified verifier. EcoEngineers is one of the few firms with Sections 45V and 45Q verification experience.

About EcoEngineers

EcoEngineers, an LRQA company, is a consulting, auditing, and advisory firm with an exclusive focus on the energy transition and decarbonization. From innovation to impact, we help clients navigate the disruption caused by carbon emissions and climate change. EcoEngineers helps organizations stay informed, measure emissions, make investment decisions, maintain compliance, and manage data through the lens of carbon accounting. Its team of engineers, scientists, auditors, consultants, and researchers live and work at the intersection of low-carbon fuel policy, innovative technologies, and the carbon marketplace. EcoEngineers was established in 2009 to steer low-carbon fuel producers through the complexities of emerging energy regulations in the United States. Today, EcoEngineers' global team is shaping the response to climate change by advising businesses across the energy transition. For more information, visit www.ecoengineers.us.

Navigating the Energy Transition



- Asset Development
- Life-Cycle Analysis
- Compliance
- Regulatory Engagement



- Validation & Verification
- Quality Assurance Programs
- Third-Party Engineering Reviews



- Interactive Workshops
- Market Outlooks
- Carbon Literacy

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