

## Let us help you capture atmospheric carbon

Carbon capture and sequestration (CCS) is expanding nationally under government programs and voluntary markets. Ethanol fermentation produces a pure stream of biogenic carbon dioxide that is inexpensive to capture because of its purity and concentration. The additional value created from the Federal Inflation Reduction Act (IRA) has turned carbon into a valuable coproduct when safely and permanently sequestered underground. Ethanol facilities representing at least half the U.S. production and 25 million metric tons of carbon dioxide are actively investigating CCS.

EcoEngineers is guiding CCS project stakeholders through the regulatory process providing expert support from project concept to completion. Below are the services we provide to clients interested in moving forward with their CCS projects. More details for each service can be found on the next page.

SCHEDULE OF SERVICES		
Service Type	Service	Description
EcoUniversity	Training and Education Workshops	Education on regulations, policy updates, markets and incentives focused on compliance
Asset Development Consulting	Renewable Energy Consulting	Feasibility studies
Third-Party Review	Geology and Petroleum Engineering	Professional geologists and engineers to assist with CARB certification
Life-Cycle Analysis (LCA)	Carbon Storage and Emissions Measurement	California GREET modeling for LCFS, Argonne GREET modeling for IRA
Registrations	California LCFS Markets	California LCFS Alternative Fuels Portal
	Voluntary Markets	Voluntary registries
Compliance Management	Planning, Management, Reporting	Compliance monitoring plans for California LCFS and voluntary markets
		Ongoing compliance management services
		Ongoing fuel pathway reporting
Audit	Third-Party Credit Verification	California LCFS validation
		California LCFS verification
		Voluntary market audits

**For more information about any of our carbon capture and sequestration services, contact:**

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## EcoUniversity CCS Workshop

A half-day or full-day CCS EcoUniversity Workshop virtually or at the location of your choice. We take our knowledge on the local regulatory, federal certification (USEPA, IRS) and regulated carbon market (LCFS) programs and voluntary markets and download it to your organization. The last several hours are custom tailored to your needs, wants, knowledge gaps, and available case studies – basically anything that you want to know more about or have us analyze.

## Feasibility Studies

An independent third-party feasibility study outlining the beneficial capture, transport, and sequestration options for carbon dioxide emitted at a given site. Our work product will include a comprehensive literature review, assessment of viable storage reservoirs, and well stock through subsurface interpretation.

## Financial Pro Forma Analysis or Review

An independent third-party evaluation of potential project cash flows through a comprehensive review of the required capital operating expenses and anticipated revenues for a given CCS site. We assess all associated credits, whether earned through tax subsidies or regulated/unregulated carbon markets. Financial sensitivity analysis modeling low, moderate, and high scenarios can be created using EcoEngineers' knowledge of the current regulatory conditions.

## Overall Project Due Diligence

Review of a project including overall project feasibility, capital, and O&M cost estimates, applicability to generate 45Q tax credits, LCFS credits, or other energy credits, technology assessment, offtake and sales agreement reviews, metering and monitoring plan for conformity to EPA and LCFS regulations, carbon intensity (CI) score assumptions, project pro forma, and other project documents.

## Risk Assessment and Financial Structuring

A comprehensive review of the risks associated with CCS projects, risk mitigation strategies and options, and potential financial structures to reduce risk for project owners.

## CCS Site Permanence Review

A review of the proposed chain of custody for carbon dioxide beginning with the emitter facility, moving through the transport phase (pipeline, truck, rail or barge), and ultimately into the Storage Complex injection wells to ensure favorable physical conditions for the emitter or CCS site developer and to ensure the appropriate monitoring and metering equipment is in place.

## CI Estimation and GREET Modeling

EcoEngineers has leading life-cycle analysts and carbon modelers on staff. We can estimate the carbon intensity score for an integrated biofuels and CCS pathway application at the conceptual stages of the project or complete more detailed modeling during the preliminary design stages to refine the carbon intensity estimate for more accurate LCFS revenue estimations.

## LCFS Validation and Verification Services

EcoEngineers became a California Air Resources Board (CARB)-accredited verification body in January 2020, and we have more than 20 Lead Verifiers on staff. We provide initial pathway validation services along with annual verification services for all fuel types.

## Asset Development Consulting Services

Consulting services addressing the development of a CCS site asset including project feasibility, technology assessments, permanence guidance, pipeline assistance, offtake assistance, construction guidance, project registration, and ongoing compliance. Because of EcoEngineers' audit status, all of this work must be done on a consulting basis, and we cannot take a percentage of any credits generated.

## CCS Site Certification (Initial + Quarterly Certificates)

CCS Site Certification services including the initial independent third-party licensed verification of site compliance with either the CARB LCFS CCS Protocol applications or alternative registry-based protocols such as ACR v1.1 or ISO 27914 / ISO 27916. EcoEngineers is also offering independent site certifications for the purposes of voluntary credit transactions between private parties.