Edeniq technology produces cellulosic ethanol increasing plant yields while providing valuable credits to create a more profitable and sustainable future for your ethanol business without the need for large scale capital investment.

**Make Cellulosic Ethanol using your Existing Equipment**

- Edeniq’s Pathway Technology using existing fermenter and distillation equipment has produced up to an additional 2.5%+ of cellulosic ethanol yield.
- Potential to increase yearly profits by $7.0M from additional ethanol, corn oil, and cellulosic credits for a 120MGPY plant.
- Our EPA approved validation and recalculation services provide a turnkey solution for producing D3 RINs currently valued at over $2.00 per cellulosic gallon.
- Pathway Technology works with Edeniq’s Cellunators™ and other fine grind technologies.
Proven Technologies

Edeniq’s Pathway Technology integrates cellulase enzymes into a plant’s existing fermenters to produce cellulosic ethanol from the corn kernel fiber. The technology has been successfully implemented and approved in multiple corn ethanol plant designs.

Particle size reduction pretreats corn kernel fiber and can further increase the cellulase enzyme access to the fiber. Proven in plants since 2010, Edeniq’s Cellunator high shear equipment can further optimize starch and cellulosic ethanol production. These technologies increase overall plant ethanol yield, corn oil yield, and produces cellulosic ethanol while lowering the plant’s overall carbon intensity (CI).

Pathway Platform

Edeniq offers a unique, integrated platform for ethanol plants that reduces operating costs, increases profits, produces cellulosic ethanol and enhances sustainability:

Cellulase Integration

Cellulase enzymes break down the pretreated corn kernel fiber to free up cellulose for conversion to glucose and subsequent production of cellulosic ethanol in your existing fermentation. Commercial data indicates the cellulase frees up small amounts of additional starch leading to a higher ethanol yield from starch as well. Overall, cellulase increases overall ethanol production, produces cellulosic ethanol eligible for D3 RINs and increases corn oil production.

Cellunator™

The Cellunator is a colloid mill that pretreats the corn slurry by creating a high shear environment. This increases enzyme access to starch and pretreats corn kernel fiber for the cellulase enzymes. The effect is an increase in ethanol and corn oil yield and an optimized consistency of the corn slurry which reduces fouling on the evaporators.
Turnkey EPA approved solution for D3 RINs production

The Edeniq team will guide you step-by-step so that you can quickly start realizing the value of producing cellulosic ethanol.

**STEP 1**
Validation.
Edeniq’s EPA approved validation protocol quantifies the cellulosic ethanol gallons produced that qualify for D3 RINs and Cellulosic Producer or Carbon credits valued at over $2.00 per gallon in 2017.

**STEP 2**
Regulatory compliance.
Edeniq has partnered with EcoEngineers to provide compliance services. These include 3rd party engineering reviews, RFS2 EPA pathway registration, Q-RIN Quality Programs, Life Cycle Analysis Modelling and California’s LCFS pathway registrations.

**STEP 3**
Ongoing support.
Edeniq offers ongoing support to ensure that your plant remains in compliance and eligible for generating D3 RINs. These services include data and sample retention and plant recalculation support.
We expect to produce over one million gallons per year of cellulosic ethanol at our Stockton facility using Edeniq’s Pathway Technology. As we confirm and optimize our cellulosic ethanol production process, we will look toward expanding this to other Pacific Ethanol plants.

Neil Koehler
Pacific Ethanol president and CEO

Our goal is to create as much value out of every kernel of corn as possible. The Edeniq Pathway technology helps increase ethanol yields and corn oil recovery, and allows us to produce cellulosic ethanol. We appreciate the strong partnership Flint Hills has with Edeniq and look forward to evaluating the potential use of the Pathway technology at our other plants.

Jeremy Bezdek
Flint Hills Resources’ vice president, Biofuels & Ingredients

Get the CREDIT you deserve
Measure the difference between your starch and cellulosic ethanol

Access cellulosic regulatory credits by quantifying the amount of cellulosic ethanol being produced in your corn ethanol plant using our EPA approved enzyme and analytical methodologies.