

## Frequently Asked Questions

**What is ZeaChem's technology?** ZeaChem has designed biorefineries to efficiently and cost-effectively convert biomass into chemical and fuel products. ZeaChem combines the best of biochemical fermentation and thermochemical processes into a hybrid process that achieves 40% higher yield than other cellulosic processes. ZeaChem's patented biorefining process uses an acetogen – a species of bacteria adapted to digest the tough carbon chains of cellulose – to extract the maximum amount of energy available from the feedstock. ZeaChem offers the highest yield, lowest production cost and lowest carbon emissions profile of any known biorefining process. See the [Technology Overview](#) and [Acetogen](#) fact sheets for more information.

**How is ZeaChem's process different from other cellulosic ethanol companies?** ZeaChem's patented process offers the highest yield, lowest cost and lowest carbon footprint of any known biorefining method. Unlike conventional biorefining approaches that waste energy and harm the environment, ZeaChem efficiently extracts the most energy possible from renewable plant feedstock – significantly increasing output while reducing both production costs and environmental impacts. See the [Carbon Analysis](#) fact sheet for more information.

**What kinds of plant biomass does ZeaChem convert into fuel?** ZeaChem is biomass agnostic and can use any kind of plant for its process. All plants contain relatively high levels of cellulose, the rigid structural compound, and lignin, the “glue” that holds plant cells together. Both are used in the ZeaChem biorefinery process. The primary factor in choosing the source of plant biomass is the productivity of the land used to grow the crop. We choose to use poplar trees because they grow abundantly throughout the world and replenish quickly on poor-quality soil, yielding a high volume of tons-per-acre per year. When biomass is harvested for the biorefinery, it is called feedstock. See the [Cellulosic Ethanol](#) and [Feedstock](#) fact sheets for more information.

**What is ZeaChem selling, and who are its customers?** ZeaChem is developing an entire portfolio of third generation ethanol fuels and intermediate chemicals derived from cellulosic biomass, including several value-added chemicals purchased by chemical companies to create popular commercial and industrial products. ZeaChem will sell advanced cellulosic ethanol fuel, which costs less than gasoline to produce and emits 90 percent less fossil carbon than gasoline. Petroleum companies will purchase ZeaChem's ethanol and incorporate it directly into the fuel blend, significantly reducing the total emissions profile of gasoline. See the [Products](#) fact sheet for more information.

**Is ZeaChem the first company to do this?** ZeaChem is the first company to implement a “building block” approach to dramatically improve the economics of producing chemicals and fuels from cellulosic biomass. ZeaChem uses patented technology to extract the most energy possible from the feedstock, maximizing yield while minimizing both production costs and environmental impacts at every stage of the biorefining process. See the [Advantages](#) fact sheet for more information.

**There are so many externalities in the biofuels business. How do you expect to stay competitive?** ZeaChem's strategy is to control input costs so that it can remain the lowest cost producer. We choose feedstock that can be cultivated and delivered locally. We have patented a highly efficient and flexible process to convert that feedstock into not just one niche product but a portfolio of high-value chemicals and fuels. Our role is to develop and demonstrate the technology, partnering with large chemical and petroleum companies to offer them a reliable, low-cost, sustainable solution.

**When will cellulosic ethanol become widely available?** Consumers can already purchase gasoline blended with ethanol in concentrations from 5 to 85 percent. E10, which is gasoline blended with 10 percent ethanol, is compatible with all cars on the road today and is widely available at gas stations. Meanwhile the automotive industry has found ways to lower the cost of producing advanced flex-fuel engines, which can use gasoline with far higher concentrations of ethanol. Gasoline with higher blends of ethanol, including E85, is poised to become more commonplace as flex-fuel vehicles appear on the roads in greater numbers.