Overview

Packer Engineering, a pioneer in the use of biomass for energy, aims to reduce reliance on foreign petroleum, and at the same time reduce the carbon footprint of energy production. A large, untapped market is on-site generation of electricity and heat for moderate-sized operations like farms, wood and paper mills, ethanol plants, co-ops and rural villages. Our patent pending approach has the high conversion efficiency needed to be economical at this scale. This work is supported by grants from the US Department of Agriculture and the Illinois Department of Commerce and Economic Opportunity.

The Farm as an Energy Exporter

Farm operations have been hard hit by cost increases in diesel fuel, natural gas, nitrogen fertilizer and lime. Energy costs represent a large and increasing portion of farm budgets. The Packer Engineering process uses crop waste -- not food -- to replace some of those energy sources. The electricity that can be generated from a farm with 600 acres or more of corn is more than the farmer needs. Through net metering, this excess can be sold back to the electric utility. Our partner corporation N-Ovations located in Savanna, IL is working on a way to create nitrogen fertilizer from air, water, and electricity made from biomass. This fertilizer can be used on the farm, or sold to others.

How it Works

The Stalk StokerTM by Packer Engineering runs on corn stover (the cobs, stalks and leaves left after harvesting) and gasifies it. Similar to a self-cleaning oven, the stover is heated to produce a flammable gas. Running that gas through a microturbine, we can generate electricity and heat. The heat can be used to dry grain in a silo, warm a barn in winter, or provide hot water to the farmhouse. The output is a dry ash rich in minerals that can be spread back onto the land. The only exhaust is water vapor and carbon dioxide -- but that same carbon dioxide was pulled from the atmosphere during the growing season. This makes the Stalk Stoker "carbon neutral", but since it replaces the use of fossil fuels, there is a net gain for the Earth's environment.

What's Next

Packer Engineering is committed to addressing the energy needs of mankind. The Stalk Stoker is a start, but we are also working on hydrogen storage for fuel cell vehicles. Storing hydrogen safely and efficiently is one of the hardest problems in creating the Hydrogen Economy. Our 6 patents pending cover a breakthrough technology to create powerful, yet small, energy packs for cars, portable electronics, and stationary or backup power needs. We are also working on enabling technologies for space solar power -- the use of large solar cells in orbit (where there is no night), and beaming the power back to the earth for general use. This suite of technologies addresses humanity's near-term needs (biomass), intermediate requirements (fuel cells), and future imperatives (SSP).

How to Learn More

Visit our website at www.packereng.com or contact us at peinfo@packereng.com.

PACKER ENGINEERING, INC.
1950 N. Washington St.
Naperville, IL 60563
www.packereng.com