

BioPro Power (BPP) is an energy development and technology company based in the United States that focuses on converting locally produced biomass fuels - specifically from corn stover - into environmentally friendly and sustainable energy.

BioPro Power is pleased to be introducing our proprietary biomass logistics and combustion processes to the China market as our first and foremost target. Our goal is to deploy our technology throughout the Asia Pacific region using the various biomass streams that are common there. BPP's technology is protected by its Know-How, Trade Secrets and US Patent No. 8,712,787 and China Patent No. CN 105003920 A.

BPP is seeking partners in power plant projects with operating problems, to develop biomass energy generation in rural areas of China where large amounts of corn are grown. BPP can provide engineering, procurement, and construction (EPC) packages with performance guarantees while retrofitting or building new plants, licensing technology into those plants, providing operations management, plus biomass fuel procurement and logistics.

## Why Is Corn Stover An Attractive Biomass Energy Source?

Several factors have combined to make corn stover (biomass) an attractive renewable energy fuel alternative. These factors can be likened to an ecosystem where a number of elements are required for the system to thrive. This briefing outlines those enabling factors.

### 1 Corn stover represents an enormous, untapped source of biomass fuel

Corn stover is the largest, untapped source of biomass fuel. In fact, China is the second largest producer, growing ~ 70% of the amount of corn as the US. As corn yields increase, the volume of residue increases proportionally.

Further increasing the environmental appeal to turn stover into fuel is the fact that much of the corn residue (stover) in China is burned in the field, which contributes to air pollution and wastes the fuel potential.

The "Stinger" Stacker is one piece of equipment that improves the harvesting logistics of stover.



### 2 China seeks to increase both corn yields and acreage



China has large areas of concentrated corn biomass feedstock necessary to support large scale power production. As yields and acreage increase, the supply of biomass also increases.

Corn stover is the above-ground material that remains in the field after the grain is harvested.



China's Corn Belt

### 3 China is seeking clean, renewable energy alternatives to coal and natural gas

China is developing multiple energy sources, hoping to reduce pollution. Corn stover (biomass) represents a significant opportunity.

Those who can harness this source of energy in a sustainable manner can deliver substantial profits.



## 4 Logistics expertise

Unlike many biomass-based systems that collect and transport loosely bound material, BPP has developed a supply chain model to maintain high compaction, high-quality bales. This, coupled with our proprietary pre-processing, enables us to more carefully control the combustion of stover. Compared to other technologies our cost effectiveness is among the best in efficiently delivering the corn stover for its end-use.



Stover bales are carefully stacked in locations that can be easily accessed for later transportation to the facility for combustion.

## 5 Boiler design and operation "recipe" eliminates boiler tube "glassing"

Our protected IP includes critically tested and proven technology for the combustion "recipe" that takes care of the problem of corn stover's high alkali content, which creates a solid glass and slag build-up on the boiler tubes and walls that cannot be cleaned with soot blowers or manual cleaning.

Our approach eliminates boiler tube glassing, allowing the boiler sections and tubes to be cleaned using standard soot blowing and cleaning methods.



## 6 Efficient combustion reduces emissions

Corn stover (biomass) can be combusted efficiently and with lower net CO<sub>2</sub> emissions when compared to combusting coal and natural gas.

The Argonne National Laboratory (US DOE's Office of Energy Efficiency and Renewable Energy) has determined that a greenhouse gas emissions comparison in grams of CO<sub>2</sub> equivalent per unit of energy produced noted that burning corn stover produces just 7.4% of greenhouse gas as compared with burning coal and just 12% of natural gas.

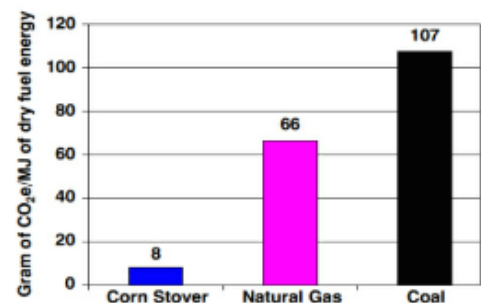


Figure 1. Life-cycle greenhouse gas emissions for heat and power applications. The GHG data for natural gas and coal include upstream (i.e., fuel production and distribution) and combustion emissions as fuels in industrial boilers (GREET, 2009).

# Thank You



BioPro Power has conducted extensive research to fine-tune the entire biomass conversion process. This work resulted in improved stover collection processes, combustion technology advances, Know-How, Trade Secrets and Patents.

To learn more about how to participate in turning stover and other biomass into valuable energy, please contact us at:

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