

# RENEWABLE FUEL PROCESSING UNITS & POWER GENERATION



*Our partner, Golden Renewable Energy, has strategically designed the technology to maximize efficiency at the lowest price available. The Small Power Plants and Renewable Fuel Processing units can be installed onsite within 6 months.*

## TRANSFORMING WASTE PLASTICS INTO A VALUABLE ENERGY RESOURCE

### MAXIMUM EFFICIENCY

### LOWEST PRICE AVAILABLE

### UNIQUE DESIGN

### SMALL FOOTPRINT

### PROCESSES UP TO 24 TONS/DAY

### NO PROJECT IS TOO LARGE OR TOO SMALL

### PROPRIETARY TECHNOLOGY

*Our proprietary software is based on an Industrial Opto-22 platform. The operator monitors the system, the software will automatically notify the operator if an issue occurs. The software controls all temperature zones and pressure gauges of the system. There are 12-heating zones throughout the system with set points for each zone. The software monitors feedstock entering the system and syngas and fuel that the system has processed. It is essential for a pyrolysis to be an oxygen free environment, the Opto-22 software controls the machine's monitoring system, continuously communicating to the operator all temperatures and pressures.*

### UNIQUE DESIGN AND SMALL FOOTPRINT

The unique design and small footprint (approximately 140 square meters) of our innovative solution minimizes capital, operating and installation expense; maximizing throughput and revenue while processing over 24 tons of plastics waste per day and 8700 tons per year. This processing rate produces up to 6.62 million liters of fuel production per unit, per year at a production cost of US \$0.18 per liter.

### STRATEGIC DESIGN

The Renewable Fuel Processing units are designed to be installed in parallel with one another. Multiple units operating simultaneously dramatically increase the economies of scale. This allows your project to increase the operating volume of the incoming plastics. **No project is too large, or too small!**

### RENEWABLE FUEL PROCESSOR

The proprietary Renewable Fuel Processor (RFP) technology used by our manufacturing partner produces a light distillate fuel (referred to as "renewable diesel") and a synthetic gas for power production. The RFP operates in a completely oxygen free environment. With no oxygen there can be no combustion, therefore no Carbon Dioxide (CO<sub>2</sub>) emissions are released into the atmosphere during the breakdown of the plastic.

## SOLID CHAR REMOVAL SYSTEM

The RFP's solid char conveyor continually releases char by-products while maintaining the oxygen free environment during removal. The char released from the system is an inert carbon, a non-hazmat product. Aluminum and other materials that did not condense, nor gasify, are removed with the char. The char can be sold to cement & concrete manufacturers thus no disposal is necessary.

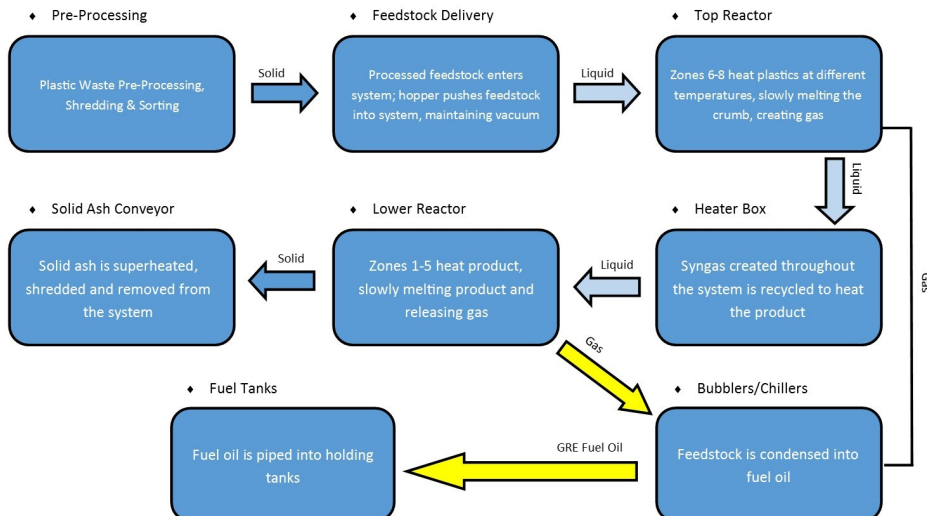
## FUEL SUPPLY AND STORAGE

The Renewable Fuel Processing (RFP) machine feeds directly into barrels or above ground storage tanks. (A separate underground storage tank is also located on site at Golden Renewable Energy headquarters in Yonkers, NY.) Customized fuel storage solutions are developed for each individual project.

## RENEWABLE DIESEL

The fuel produced from the Golden Renewable Energy fuel processing machine is considered a renewable diesel. It can be blended with any and all diesel fuels. The raw fuel oil is a clean burning, ultra low Sulfur Diesel product with Sulfur percentage below 0.0015%. It meets or exceeds the chemical and performance characteristics of traditional petroleum based products. The renewable diesel requires no modifications to traditional diesel engines, or heating oil equipment.

### RFP SYSTEM OVERVIEW



*Golden Renewable Energy's flexible feedstock technology allows for various feedstock materials to enter the system: Mixed grade plastic bags (3-7) shredded before entering machine, Mixed grade post-consumer plastic (3-7) shredded before entering machine, including plastic bottles and food containers.*



[solutions@GSDinnovations.com](mailto:solutions@GSDinnovations.com)

+1 312 235 6560

[www.GSDinnovations.com](http://www.GSDinnovations.com)