

Municipal Solid Waste to Liquid Fuel, Bio Char and Wood Products



Public/Private Partnership

The Team

- ALLIED Energy Services, LLC
 - *Developer and Operator*
- Soukos Environmental USA, Inc.
 - *MSW Feedstock Technology Provider*
 - *Energy Conversion Technology Provider*
- AMEC Foster Wheeler
 - *Consulting Engineers*



MSW to Diesel Fuel, Bio Char and Wood Products

Soukos Aeolus System



Municipality Landfill (MSW)



**Output is
RDF Pellets**

Soukos Knossos System



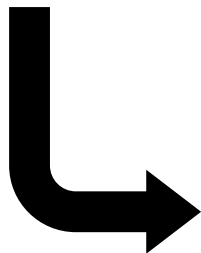
**Output is
Building
Products**



**Soukos
Archimedes System**



**Output is Diesel
Fuel & Char**



Non-Waste Fuel



Soukos RDF Pellet Heating Value

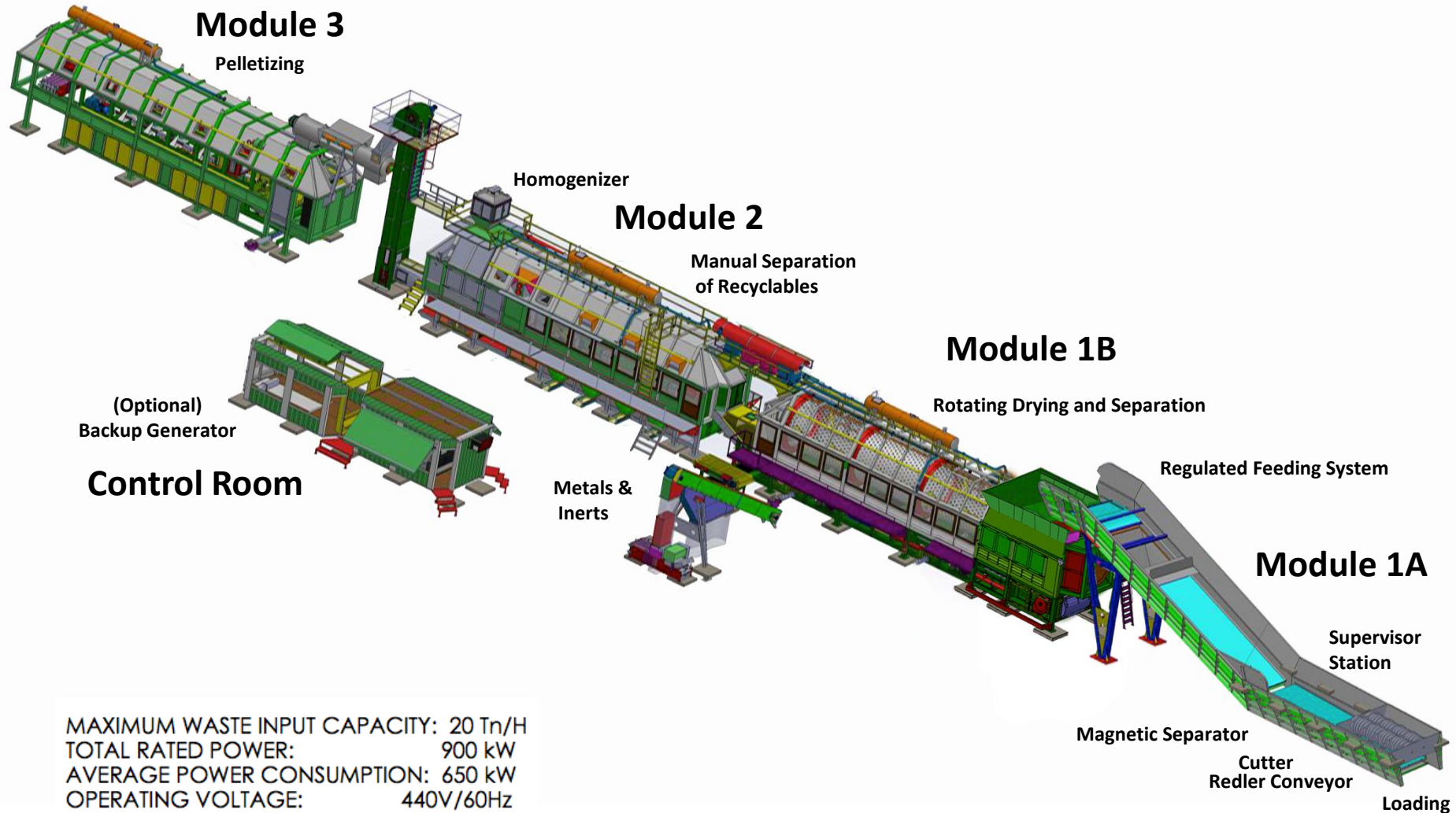
Gross Heating Value 13,281 BTU/lb, 30.89 MJ/kg

Net Heating Value 12,296 BTU/lb, 28.60 MJ/kg

*Based on testing at PPI on 10/26/16

Soukos Environmental USA, Inc. Proprietary

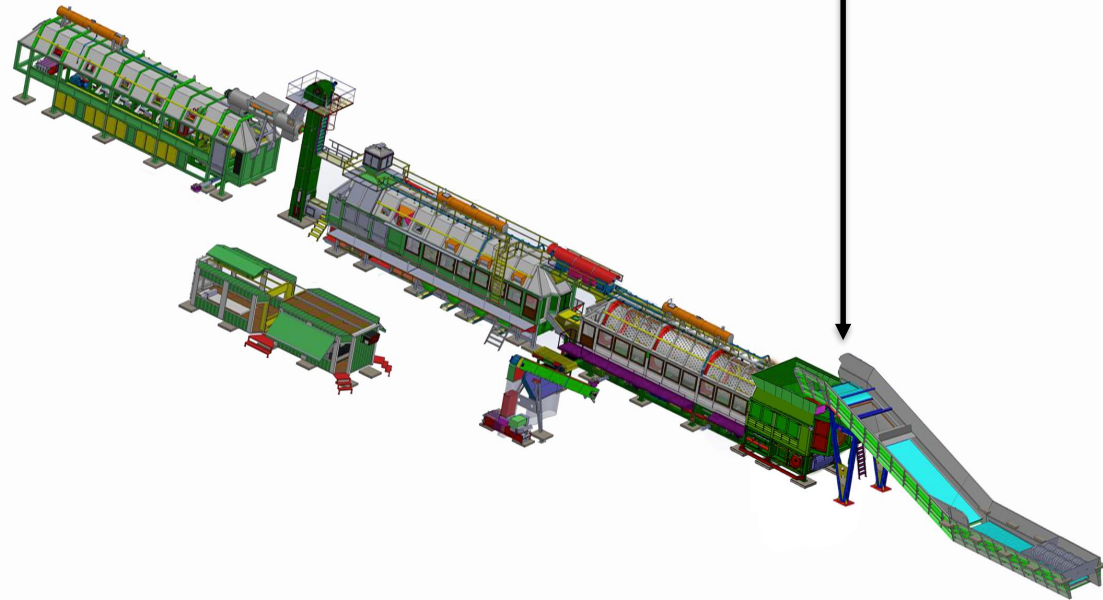
Non-Waste Fuel Pellets



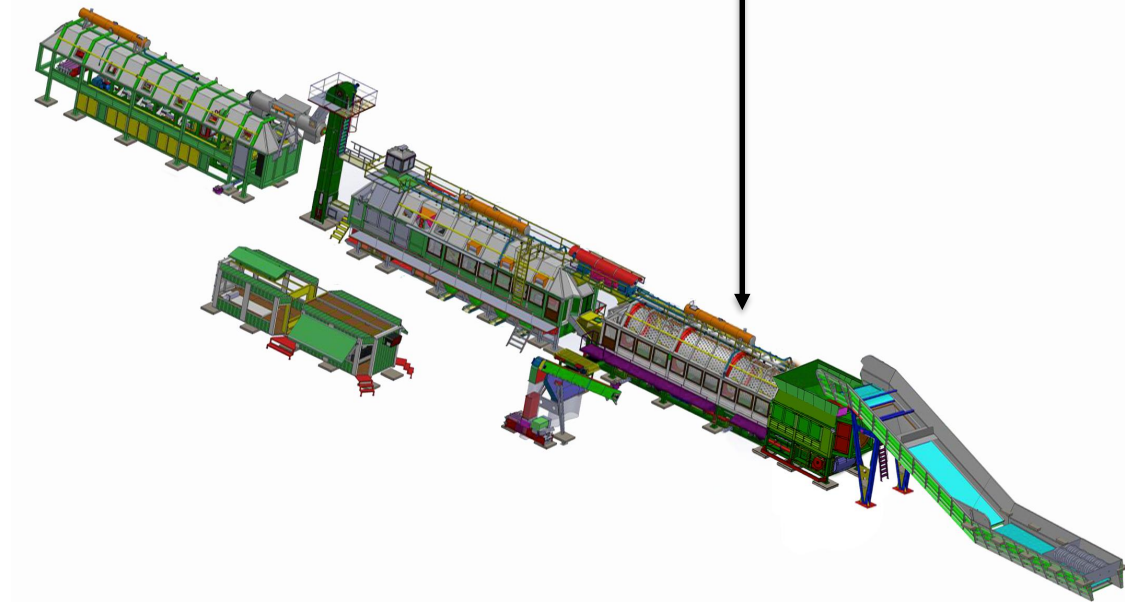
MSW to Non-Waste Fuel



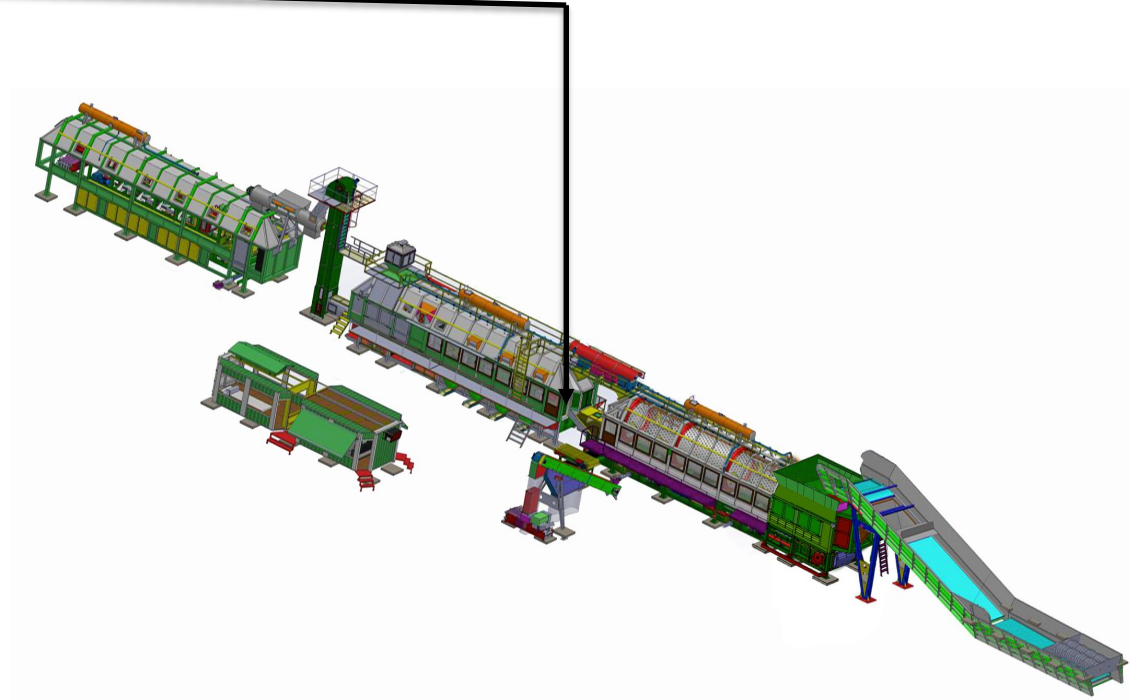
MSW to Non-Waste Fuel



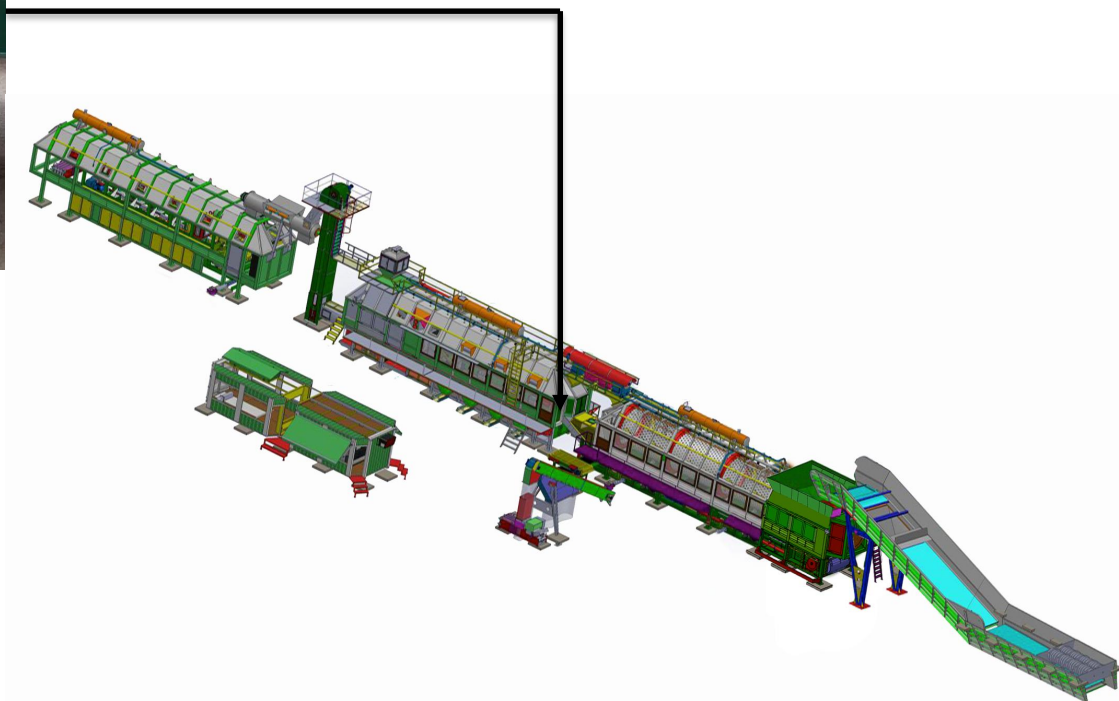
MSW to Non-Waste Fuel



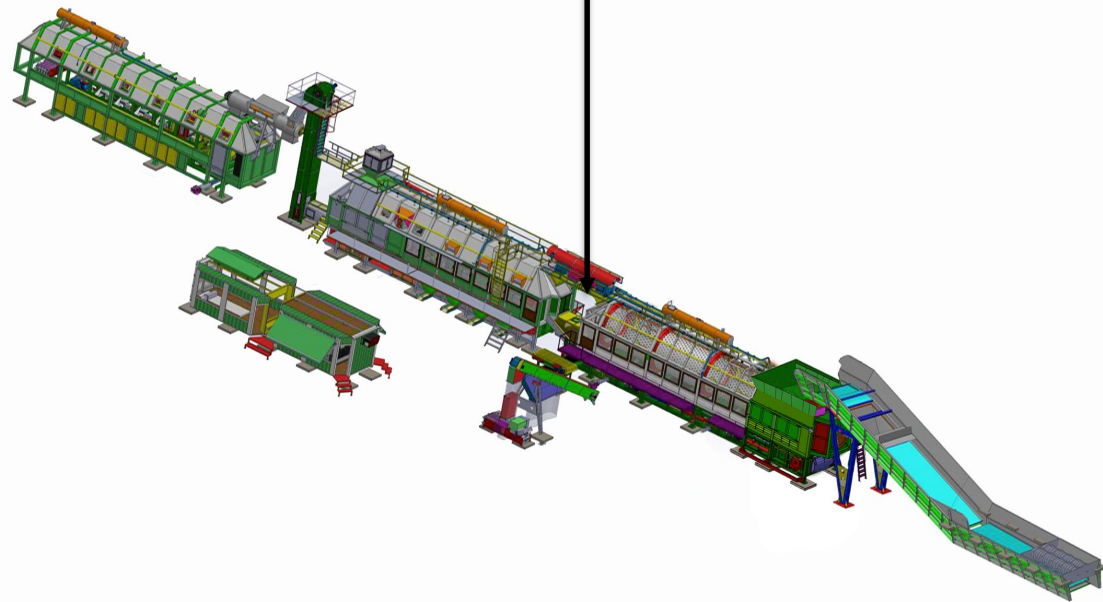
MSW to Non-Waste Fuel



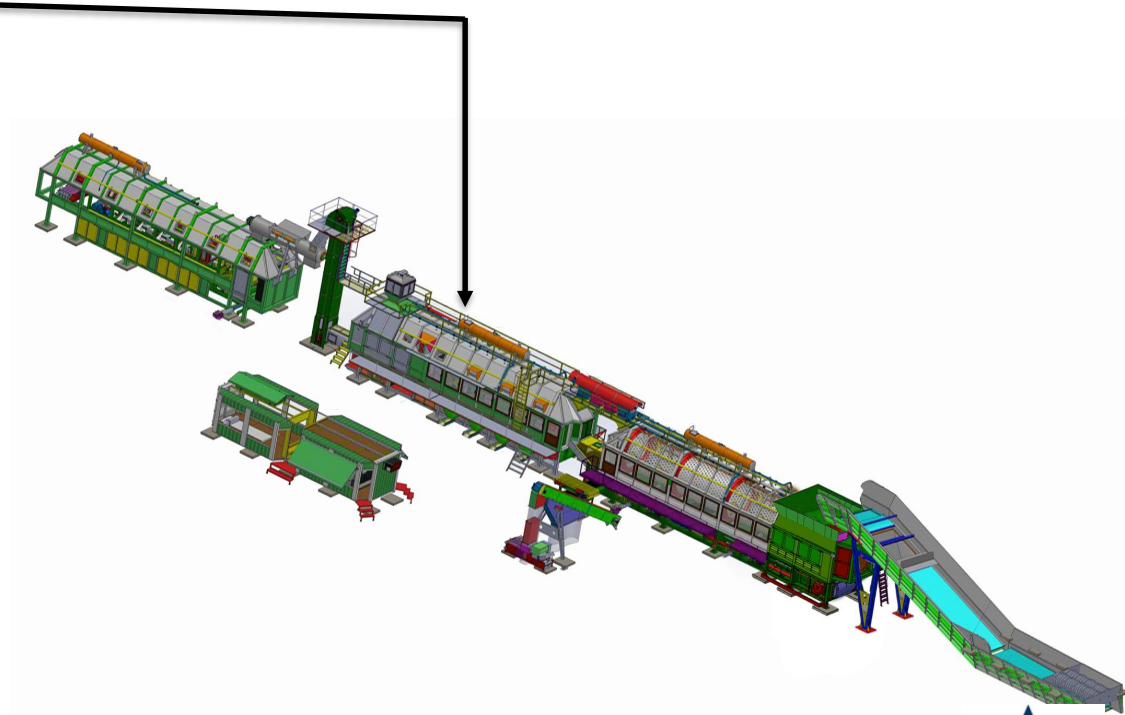
MSW to Non-Waste Fuel



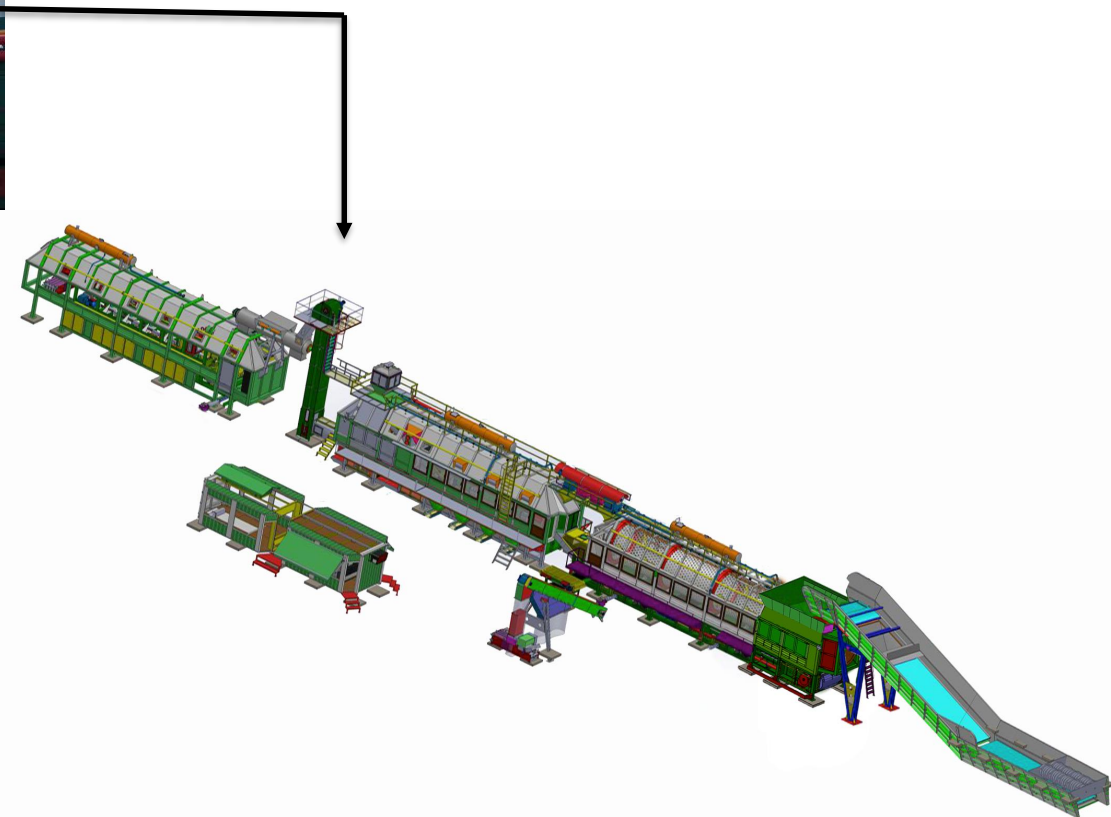
MSW to Non-Waste Fuel



MSW to Non-Waste Fuel



MSW to Non-Waste Fuel



MSW to Non-Waste Fuel



Non-Waste Fuel to Diesel

- RDF Pellet to Diesel Fuel System
 - Not a standard catalytic pyrolysis technology
 - Relatively low temperature process
 - MSW pellets with high plastics can be processed
 - This translates to high energy value fuel
 - No catalysts needed
 - No system shutdown to replace catalysts in reactor
 - High conversion rate
 - 60% MSW - pellet conversion
 - 45% by weight of diesel fuel produced with MSW pellets
 - 2 Modules plus Control Room



Non-Waste Fuel to Wood Products

The “KNOSSOS” System is a mobile Unit, which utilizes the generated RDF material derived from the innovative Mobile MSW Treatment Systems “AEOLUS” of SOUKOS ROBOTS.

The system’s capacity is maximum 10 ton/hr of incoming RDF materials



INPUT
Material RDF



OUTPUT



CONVERSION TO PRODUCTS

Non-Waste Fuel to Wood Products



Non-Waste Fuel to Wood Products



Non-Waste Fuel to Wood Products



Soukos Aeolus & Archimedes MSW to Diesel Fuel (Bulgarian Operation)



Project Benefits

- **Jobs (65 to 100 full time jobs)**
- **Environmental**
- **Environmental Services Operation**
- **Sustainability Objectives**
- **Education**
- **Economic**
- **Financial**

Executive Summary

Project Summary

- **Proposed Approach**
 - 131,400 to 175,000 Wet Tons of MSW
 - Diesel Fuel: **9,926,673 Gallons/Year**
 - Char: **16,704 Tons/Year**
 - **Wood Products**

For more information contact:

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