PROJECTS OF POWERMAX

3MW Wood Chips Gasification Power Plant in Malaysia

1MW Wood Waste Gasification Power Plant in Indonesia

12MW Rice Husk Gasification Power Plant in Myanmar

1MW Coconut Husk Gasification Power Plant in Indonesia

EFB Gasification Heating Project in Malaysia

Biomass Gasification Heating Project in Vietnam

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2025/07/25

powermax

ISO SGS CE

EFB

Solid Waste Energy From Palm Oil Industry

"GREEN COAL"

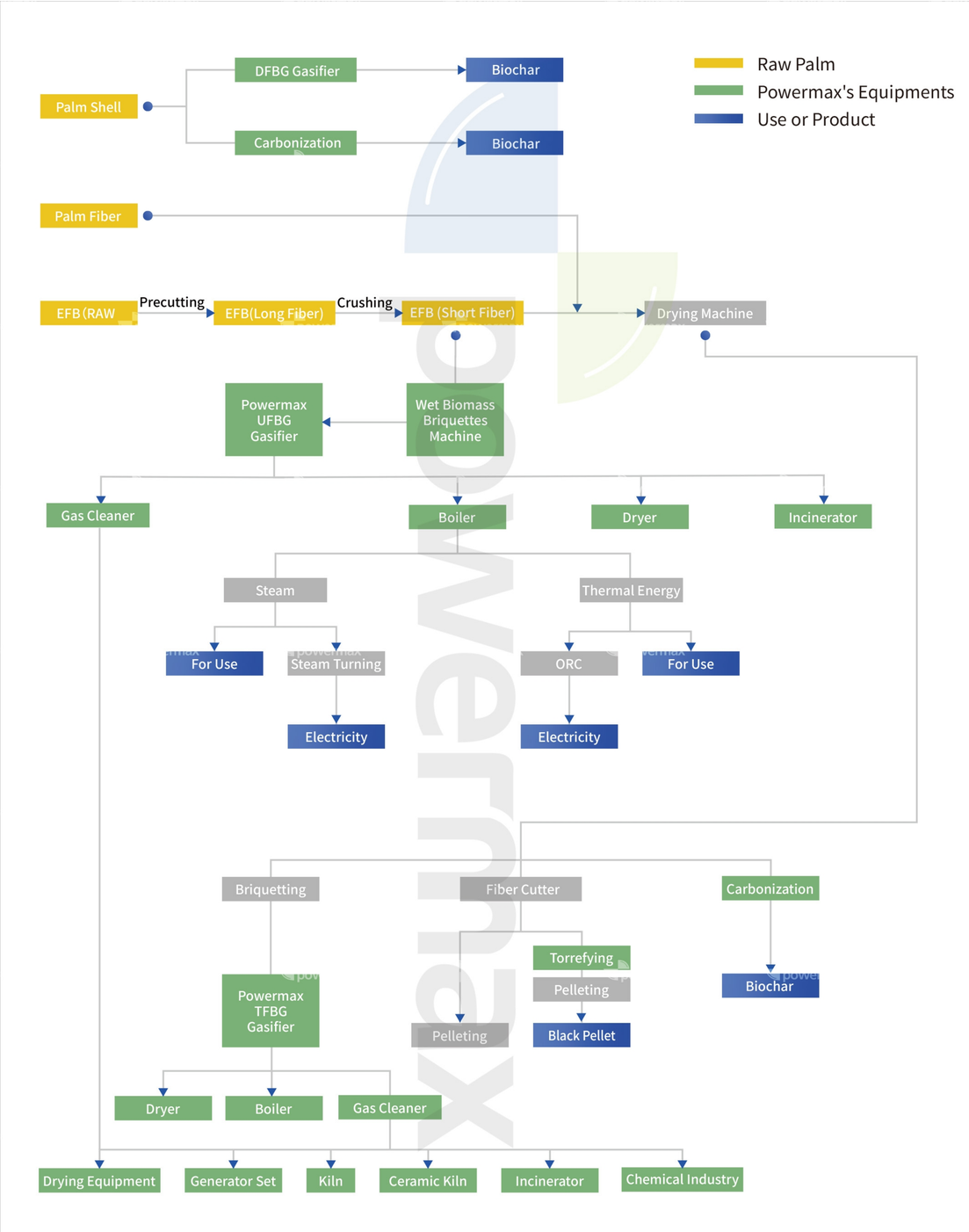
ZERO WASTE SOLUTIONS

CLEAN · GREEN · RENEWABLE

Powermax is a renewable, alternative, waste-to-energy total solution provider.

GREEN COAL—— EFB BRIQUETTE FUEL AND POWER AND HEAT GENERATION SYSTEM

The Specific Plan for EFB Power Generation and Heating Generation



"GREEN COAL"

Palm Shell

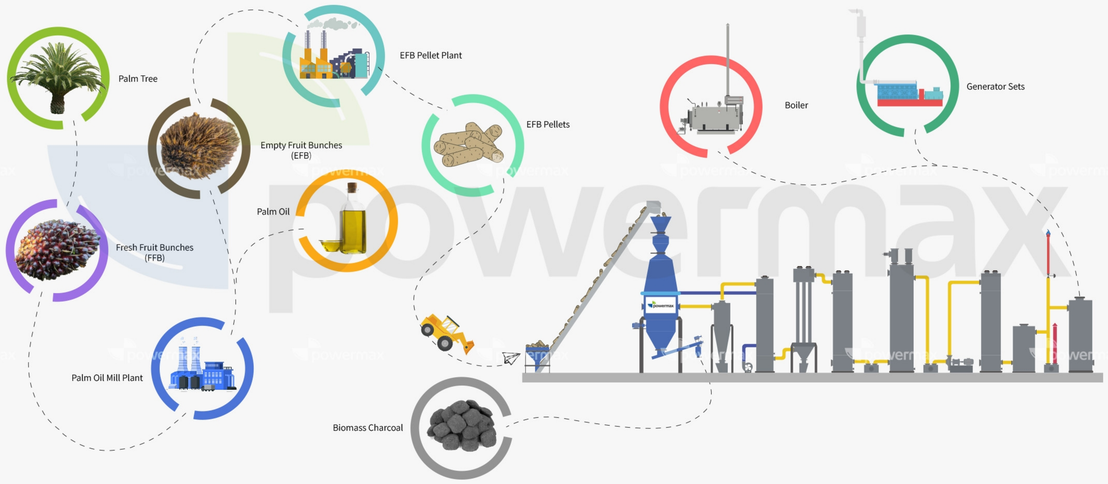
- The production yield is around 6% to FFB(Full Fruit Bunch).
- Are great feedstock for our gasifier, with a moisture content<20%.
- Are of high calorific value, no need of pretreatment before gasifying.

EFB RAW

- The production yield is around 20-25% to FFB(Full Fruit Bunch).
- Moisture content is around 50%.
- Needs crushing, drying and briquetting before feeding into our Downdraft Fixed Bed Gasifier for electricity generation.

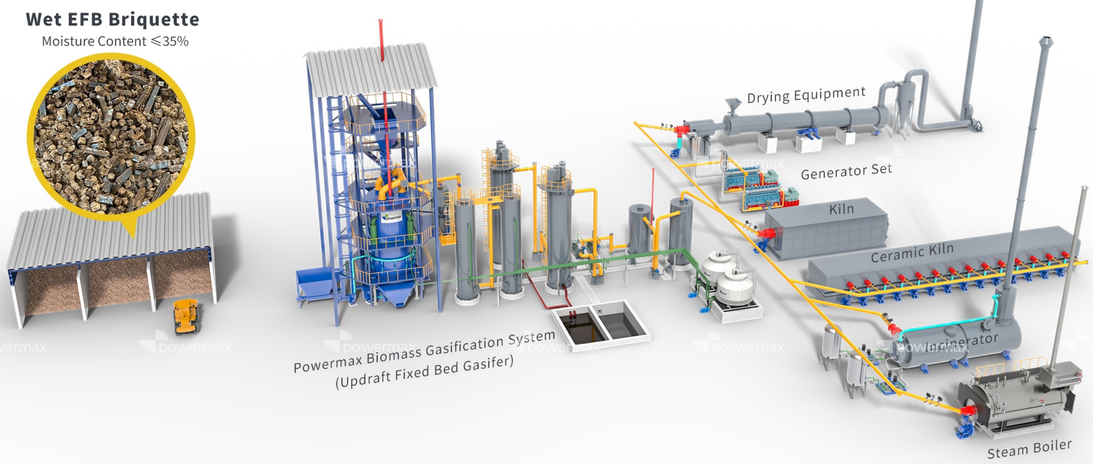
Palm Fiber

- The production yield is around 14% to FFB(Full Fruit Bunch).
- Moisture content is around 40-42%.
- Needs drying and briquet-ting before feeding into our Downdraft Fixed Bed Gasifier for electricity gen-eration.

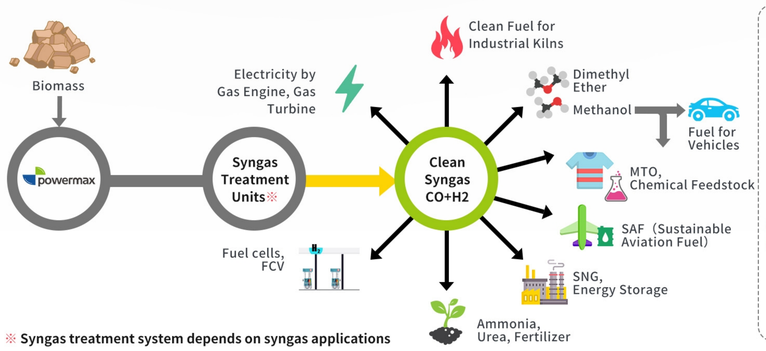


BIOMASS GREEN ENERGY(NET ZERO)

Biomass Gasifier is Widely Used for Replacing Your Existing Fossil Fuel Energy System To Reduce Your Carbon FootPrint, Powermax Can Provie you 100% Biomass Syngas Burner , Dual Fuel Burner or Mixing Buner (Diesel-syngas, HFO-syngas, Natural Gas-syngas)

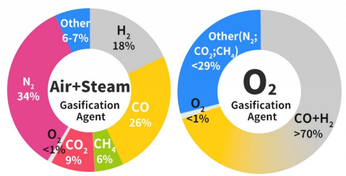


APPLICATION OF POWERMAX



※ Syngas treatment system depends on syngas applications

Powermax Syngas compositions (dry, volume basis) from biomass show high CO and H_2 compositions which lead to high calorific value syngas.



Power Generation

- Generation of Power and Selling it to Grid
- Generation of Power for Factory
- Generation of Power for Village Electrification
- Generation of Power for Irrigation and Pumping Activities

Thermal Application

- Industrial Furnaces / Kilns
- Industrial Ovens
- Industrial Dryer / Hot Air Generators
- Industrial Boiler (Hot Water, Steam, Thermal Oil)

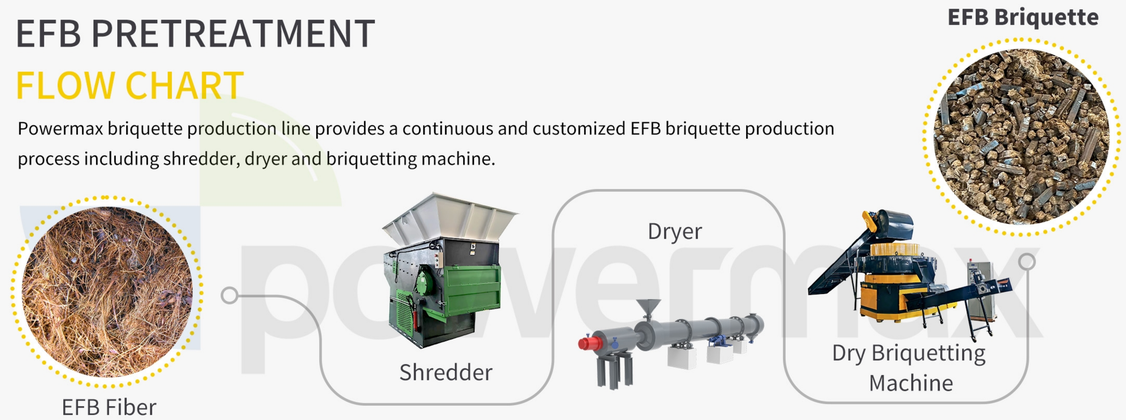
Chemical Industry

- Dimethyl Ether
- Methanol
- MTO, Chemical Feedstock
- SNG, Energy Storage
- Ammonia, Urea, Fertilizer
- Fuel cells, FCV
- SAF（Sustainable Aviation Fuel）

EFB BRIQUETTING PLANT

EFB PRETREATMENT FLOW CHART

Powermax briquette production line provides a continuous and customized EFB briquette production process including shredder, dryer and briquetting machine.



With this system, EFB with high moisture could be converted to valuable and dried short fiber with low moisture and be briquetted into EFB briquette with market selling value as biomass fuel suitable to mix with coal fuel.

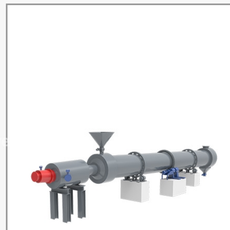
EFB briquette fuel is a green coal and a new type of clean energy. EFB briquette power generation system converts EFB waste from palm oil mill into biochar, wood vinegar, tar, syngas and electricity.

TECHNICAL SPECIFICATION OF SHREDDER

Machine Model Number	YFSS- 1000
Rated Operating Capacity(T)	1-3T/H
Motor	75KW / 415V /50HZ
Mesh Size	60mm
Stator Knives Qty	3pcs
Rotor Knives Qty	64pcs
Machine Dimension	3218*1983*2053mm
Control System	Mitsubishi PLC automatic control
Electrical Appliance	Schneider or ABB

Start up power to be provided by clients.

TECHNICAL SPECIFICATION OF DRYER



Technical Specification of Dryer	
Drive Motor	BWED74-289-7.5
Blower	15kW
Power of Hot Blast Stove	400000kCal
Size of Drying Roller	1.8m Diameter × 10m Length
Capacity	1 Ton/h

Start up power to be provided by clients.

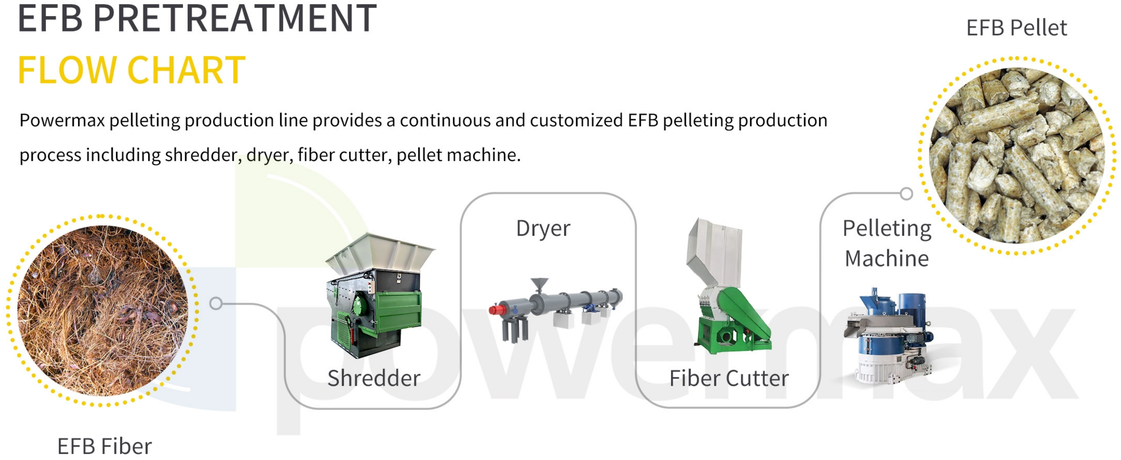
TECHNICAL SPECIFICATION OF BRIQUETTER

Machine (Reducer Type)	11J-3500A	11J-5000A	11J-6000A
Power	110KW	160KW	200KW
Holes(Pieces)	72	101	120
EFB Production Rate	2 Ton/h	3 Ton/h	4 Ton/h
Briquette Size (mm)	32×32	32×32	32×32

EFB PELLETING PLANT

EFB PRETREATMENT
FLOW CHART

Powermax pelleting production line provides a continuous and customized EFB pelleting production process including shredder, dryer, fiber cutter, pellet machine.



TECHNICAL SPECIFICATION OF SHREDDER

Machine Model Number	YFSS- 1000
Rated Operating Capacity(T)	1-3T/H
Motor	75KW / 415V /50HZ
Mesh Size	60mm
Stator Knives Qty	3pcs
Rotor Knives Qty	64pcs
Machine Dimension	3218*1983*2053mm
Control System	Mitsubishi PLC automatic control
Electrical Appliance	Schneider or ABB

Start up power to be provided by clients.

TECHNICAL SPECIFICATION OF DRYER

Technical Specification of Dryer	
Drive Motor	BWED74-289-7.5
Blower	15kW
Power of Hot Blast Stove	400000kCal
Size of Drying Roller	1.8m Diameter × 10m Length
Capacity	1 Ton/h

Start up power to be provided by clients.

TECHNICAL SPECIFICATION OF FIBER CUTTER

Model	YF-FFM1000	YF-FFM1200	YF-FFM1400
Main Motor	55kw/415v/50hz/3-phase	75kw/415v/50hz/3-phase	110kw/415v/50hz/3-phase
Hopper Inlet	1000x600mm	1100×1200mm	1200×1400mm
Hydraulic Motor	1.5kw	1.5kw	3kw
Rotor Knife	5x2pcs	5x2pcs	5x2pcs
Stator Knife	2x2pcs	2x2pcs	2x2pcs
Rotor Rotating Diameter	520mm	600mm	600mm
Rotor Rotating Speed	550r/min	550r/min	550r/min
Production Capacity	0.5-1.2 t/H (according to different screen hole size)	0.8-1.0t/h (screen hole diameter 8mm)	1-1.5t/h (screen hole diameter 8mm)
Machine Dimension	1860x1793x3563mm	2300×2100×3570mm	2300×2100×3570mm
Machine Weight	4200kgs	4500kgs	6000kgs

TECHNICAL SPECIFICATION OF PELLET MACHINE

Model	XGJ560	YF-FFM1200
Power(kw)	132	250
Capacity(t/h)	1.3-1.5	3-4

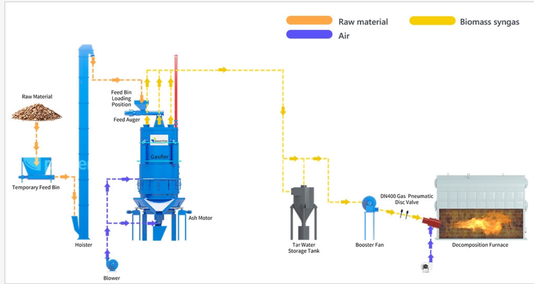
POWERMAX - UFBG

Biomass(EFB Raw) Gasification Heating and Power Generation Solution

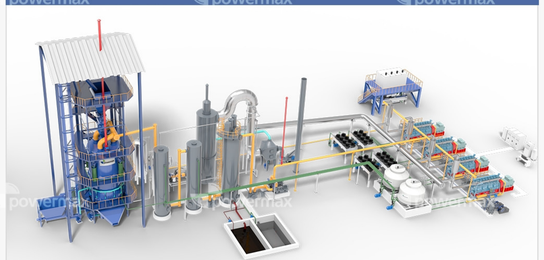
HOT GAS APPLICATION

Biomass(Wet EFB Briquettes) Gasification Steam Boiler 4Ton- 30Ton Per Hour Per Module

Flow Chart:



CLEAN GAS APPLICATION

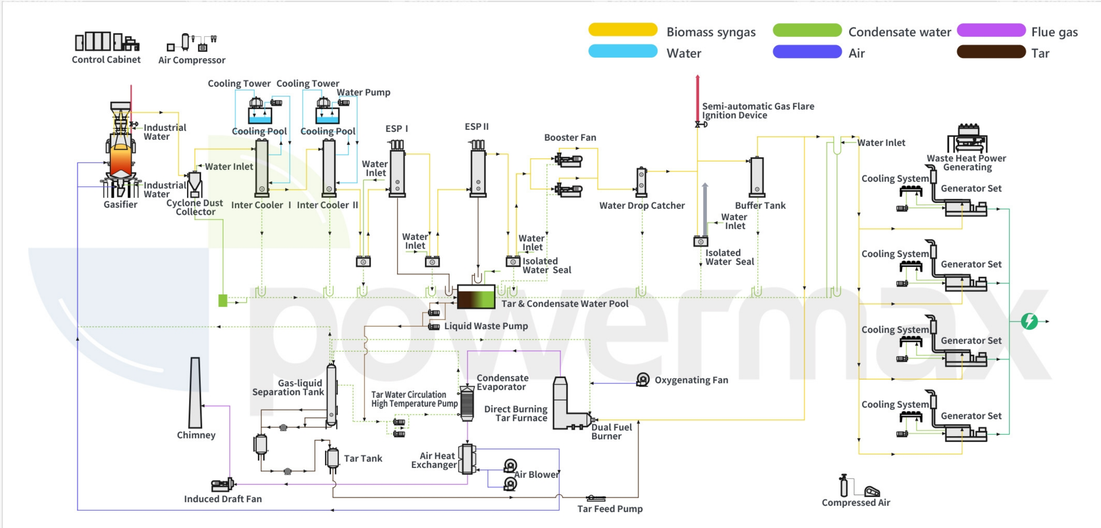


Biomass(Wet EFB Briquettes) Gasification Power Plant 500KW to 5MW Per Module

Parameters:

Gasifier Model	WUFBG2400-5200
Gasifier Type	Updraft Fixed Bed Gasifier
Gas Purification System Type	Dry Type
Biomass Moisture Requirements	MAX 55%(WB)
Biomass Size Requirements	Diameter: 20mm-80mm Length: 20mm-80mm
Rated Thermal Output after Purification (Kcal/hr)	1,200,000-12,000,000
Rated Gas Flow(Nm^3/hr)	1,000-10,000 Per Module
Average Gas Calorific Value(Kcal/Nm^3)	1200-1800
Cold Gas Mode Efficiency (After Purification)	≥70-75%

Flow Chart:

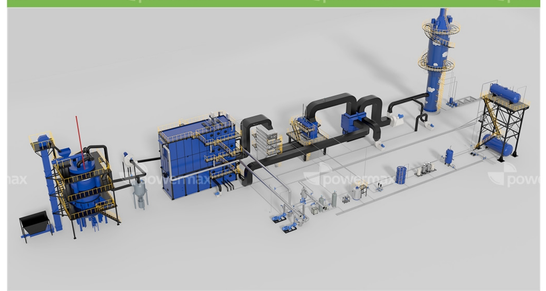


POWERMAX - BIOMASS BOILER

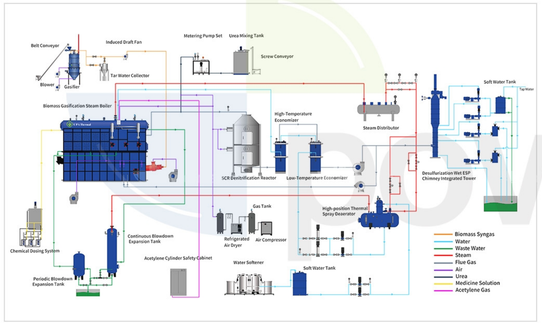
Biomass Thermal Energy Solution

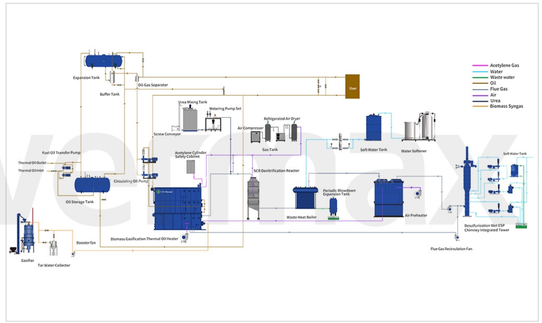
BIOMASS GASIFICATION STEAM BOILER

BIOMASS GASIFICATION THERMAL OIL HEATER



Flow Chart:



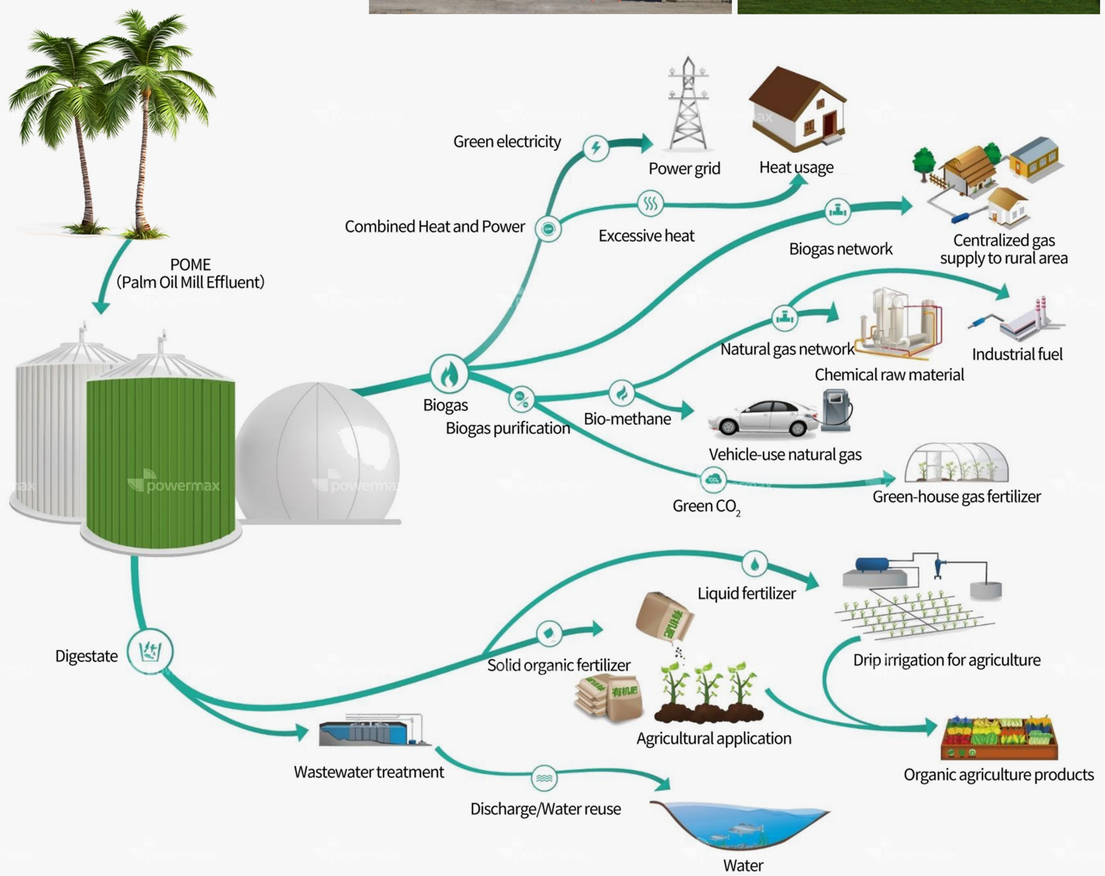


Actual cases:

POWERMAX - BIOGAS SOLUTION

Biogas(Palm Oil Mill Waste) Power Plant Solution

POME（PALM OIL MILL EFFLUENT）



POWERMAX - CARBONIZATION / TORREFACTION SYSTEM

Biomass Carbonization/Torrefaction Solution

Pyrogreen's solution

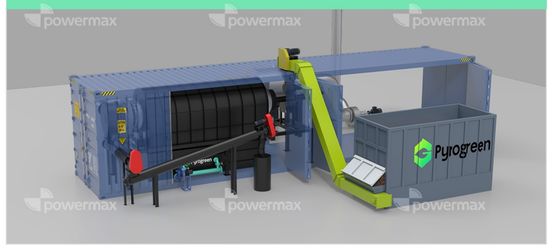
As a leader in advanced thermochemistry processing systems, Pyrogreen provides customized rotary kiln type and screw type carbonization/torrefaction system for the production of biochar from different kinds of biomass. Sometimes referred to as torrefaction, the pyrolysis of biomass into a high quality biochar product is a technical endeavor, requiring advanced knowledge of thermochemistry processing principles. Pyrogreen process experts would work with you to design this system around your unique source of material.

Advantage:

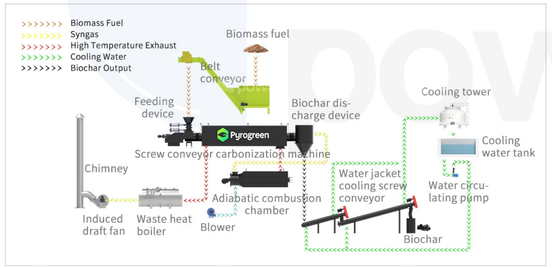
① Modular Concept, easy transportation and installation.
② No tar and liquid waste production.
③ Fully Automation.
④ Extremly Low NOx, CO, Particle Emission.
⑤ High thermal efficiency and high biochar quality and quantity production.

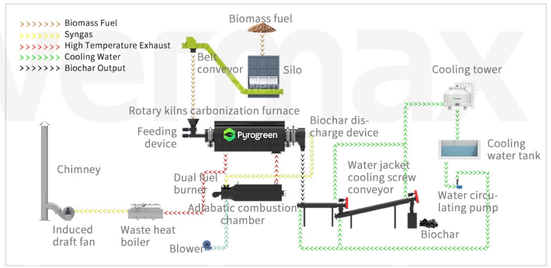
PYROGREEN- BIOMASS SCREW CONVEYOR CARBONIZER

PYROGREEN- BIOMASS ROTARY KILNS CARBONIZER



Flow Chart:



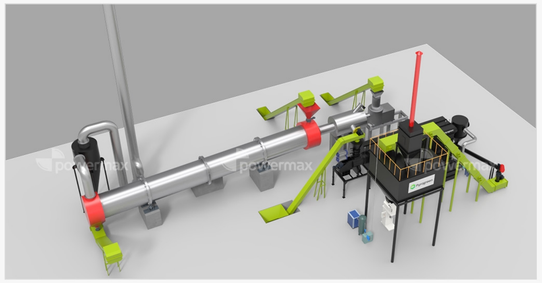


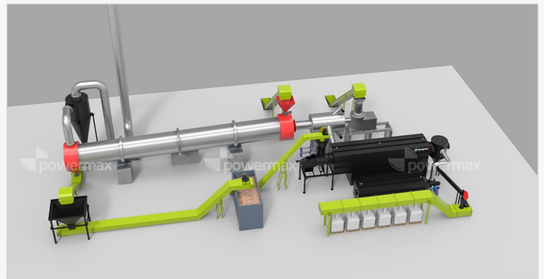
Parameters:

Biomass Screw Conveyor Carbonizer		
Model	BSCC 1000	BSCC5000
Feed Rate	1m³/h(300kg)	5m³/h(1500kg)
Footprint(L*H)	16m*10.5m	21m*11m
Working Mode	Continuous	
Feed Requirements	Size≤20mm(5-8mm is optimal), MC≤15%	
Construction	Indirect Heating Screw Conveyor Type	
Control Mode	PLC Control System	
Material	SS310S+SS304	
Pressure	Micro Negative Pressure	
Heating Fuel	Diesel, natural gas, heavy oil,etc	
Heating Mode	Indirect Heating	
Noise(dB)	≤80	
Cooling Mode	Circulating Water Cooling	

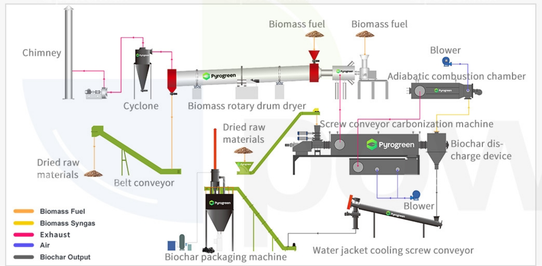
Biomass Rotary Kilns Carbonizer					
Model	BRKC600	BRKC1000	BRKC1500	BRKC3000	BRKC5000
Feed Rate	0.6m³/h(200kg)	1m³/h(300kg)	1.5m³/h(500kg)	3m³/h(1000kg)	5m³/h(1500kg)
Footprint(L*H)	14m*10.5m	15m*10.5m	16m*10.5m	17.5m*10.5m	19m*10.5m
Working Mode	Continuous				
Feed Requirements	Size≤50mm, MC≤15%				
Construction	Indirect Heating Rotary Kilns Type				
Control Mode	PLC Control System				
Material	SS310S+SS304+Carbon Steel				
Pressure	Micro Negative Pressure				
Heating Fuel	Diesel, natural gas, heavy oil,etc				
Heating Mode	Indirect Heating				
Noise(dB)	≤80				
Cooling Mode	Circulating Water Cooling				
Rotation Mode	External Gear Rotation				

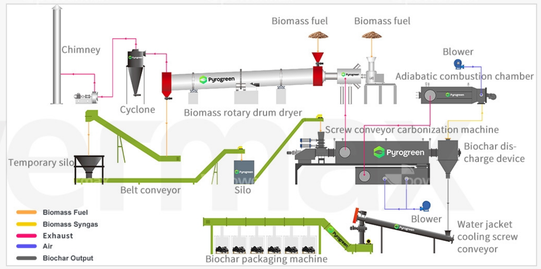
1.5T Biomass Screw Conveyor Carbonizer and Drying System



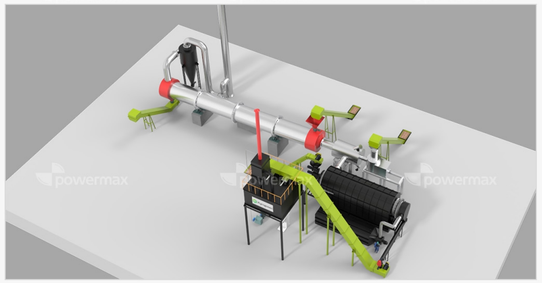


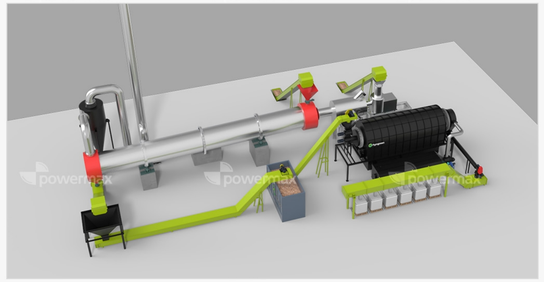
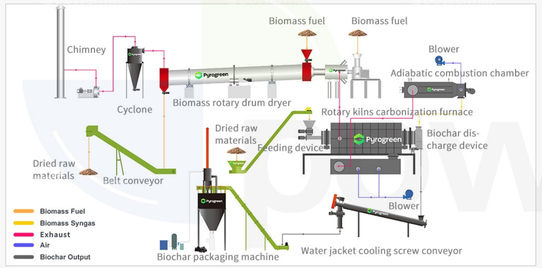
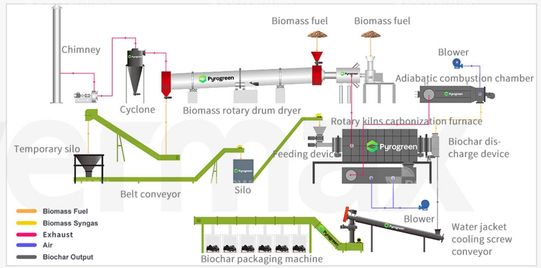
Flow Chart:





1.5T Biomass Rotary Kilns Carbonizer and Drying System





Flow Chart: