VISDAMAX

VISDAMAX (M) SDN. BHD.,
MALAYSIA

TURBOMAX BOILER/HEATER PLANTS

ENERGY FROM BIOMASS

- BOILERS - HOT WATER HEATERS - THERMAL FLUID HEATERS
- FUEL PREPARATION - STORAGE - CONVEYING

VISDAMAX is the new generation Bio-Energy plant supplier and turn-key contractor. We specialize in eco-friendly smokeless clean burning biomass steam boilers, hot water heaters and thermal fluid heaters.

Our modular system combines the unique Bio T-Burner with custom designed heat recovery plant. The Bio T-Burner is an under stoked, two chamber, refractory lined, staged air distribution, pile bed burner equipped with automatic fuel stoking screws, modern high technology electronic instruments and computer based controls.

Visdamax is a leader in combustion technology for burning biomass fuels cleanly.

"BIO T-BURNER"..... THE ENVIRONMENTALLY FRIENDLY, RELIABLE METHOD OF CONVERTING BIOMASS TO ENERGY FOR POWER GENERATION, TIMBER DRYING KILNS, VENEER DRYING, AGRICULTURAL AND COMMERCIAL HEAT ENERGY....

The "Bio T-Burner" Woodwaste combustion systems were developed in New Zealand over 25 years ago. It provides time, temperature and turbulence to achieve complete combustion.

The unique "Bio T-Burner" segment of the plant is an under stoked two chamber refractory lined staged air combustion pile bed burner equipped with automatic fuel stoking screws and modern high technology electronic instruments, with optional computer screen and visual graphics display.

The "Bio T-Burner" can be configured to be the central component of an integrated energy system providing heat energy as steam for heating and electricity generation, high pressure hot water for drying processes, thermal oil for processes requiring high temperatures and hot air for industrial drying. End users are timber drying kilns, veneer dryers, agricultural and commercial drying, heating processes and power generation.

The "Bio T-Burner" can burn a wide range of woodwaste and other agro-industrial residues, in normal circumstances up to 130% moisture content (oven dried weight basis).

ENVIRONMENTAL

VISDAMAX's systems meet the most stringent emission air quality standards. Particulate collection equipment is installed to comply with local operating consent requirements.

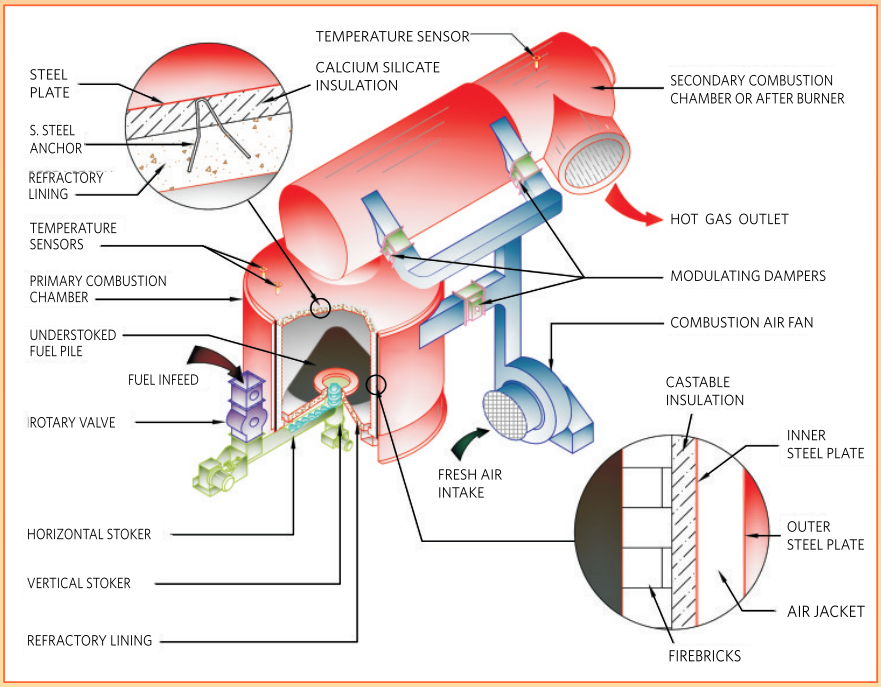
Particulate collection equipment options include :-

- Multicyclones
- Large diameter high efficiency two-stage cyclones
- Electrostatic precipitators
- Bag houses

UNIQUE FEATURES

- Smokeless combustion.
- Time, Temperature & Turbulence - all these important combustion rules are adhered to.
- Low emissions from burner - extremely low loading on particulate collector.
- Controlled combustion temperatures improve boiler life.
- High turndown with slumber mode.
- Combustion completed before heat recovery.
- Low power consumption with single FD fan.
- No moving grates in the combustion chamber.
- Can burn very wet fuel up to 130% M.C. (on dry basis) without the need of fuel dryer.
- Designed to be shipped in containers (instead of flat rack).

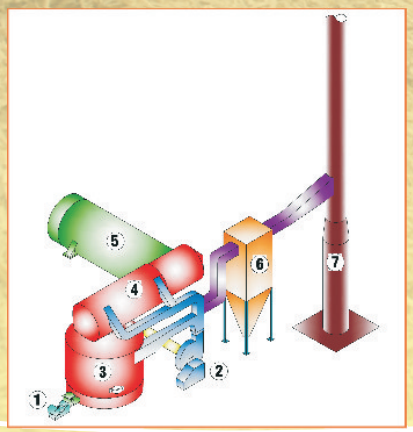
"BIO T-BURNER" COMBUSTION SYSTEM



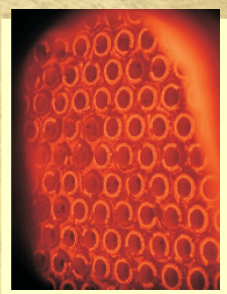
TECHNICAL SPECIFICATIONS

TURBOMAX Boiler / Heater Model No.	BIO T-BURNER Model No.	OUTPUTS			FUEL CONSUMPTION	
		Steam (kg / hr)	Hot Water (MW)	Thermal Oil (MW)	Hardwood tonne / day at 50% mc	Radiata Pine tonne / day at 130% mc
					Moisture Content = dry weight basis	
Turbomax - 2	1800	2,000	1.4	1.1	14.9	21.5
Turbomax - 4	2700	4,000	2.8	2.2	29.7	43.6
Turbomax - 6	3300	6,000	4.2	3.4	48.2	69.5
Turbomax - 8	3600	8,000	5.3	4.5	59.4	85.5
Turbomax -10	4200	10,000	7.0	5.6	74.2	107.0

- Design outputs dependent on model and fuel quality.
- Customized design to suit buyer's requirements for thermal output can be arranged.
- Design verified by SGS / Lloyd's Register or other third party preferred by buyer.
- Design codes : Shell / fire tubes boiler to BS EN 12953
  Water tubes boiler to BS EN 12952
- Gas passes in heat exchanger : One or two with / without economizer



1. Stoker Screw
2. Forced Draft Fan
3. Primary Combustion Chamber
4. Secondary Combustion Chamber
5. Heat Exchanger
6. Flue Gas Filter
7. Chimney


Fire Tubes Boiler / Heater (in operation)


Water Tubes Boiler / Heater (under installation)

MODULAR SYSTEMS

BIO T-BURNERS
Single or Multiple Units

- Water Tube Medium & High Pressure Steam Boilers Superheaters Economizers
- Fire Tube Low & Medium Pressure Steam Boilers Pressurised Hot Water Heaters Economizers
- Thermal Fluid Heaters

1-Boiler / Heater Arrangement (Fire Tubes)

2-Heaters Arrangement (Fire Tubes)

3-Heaters Arrangement (Water Tubes)

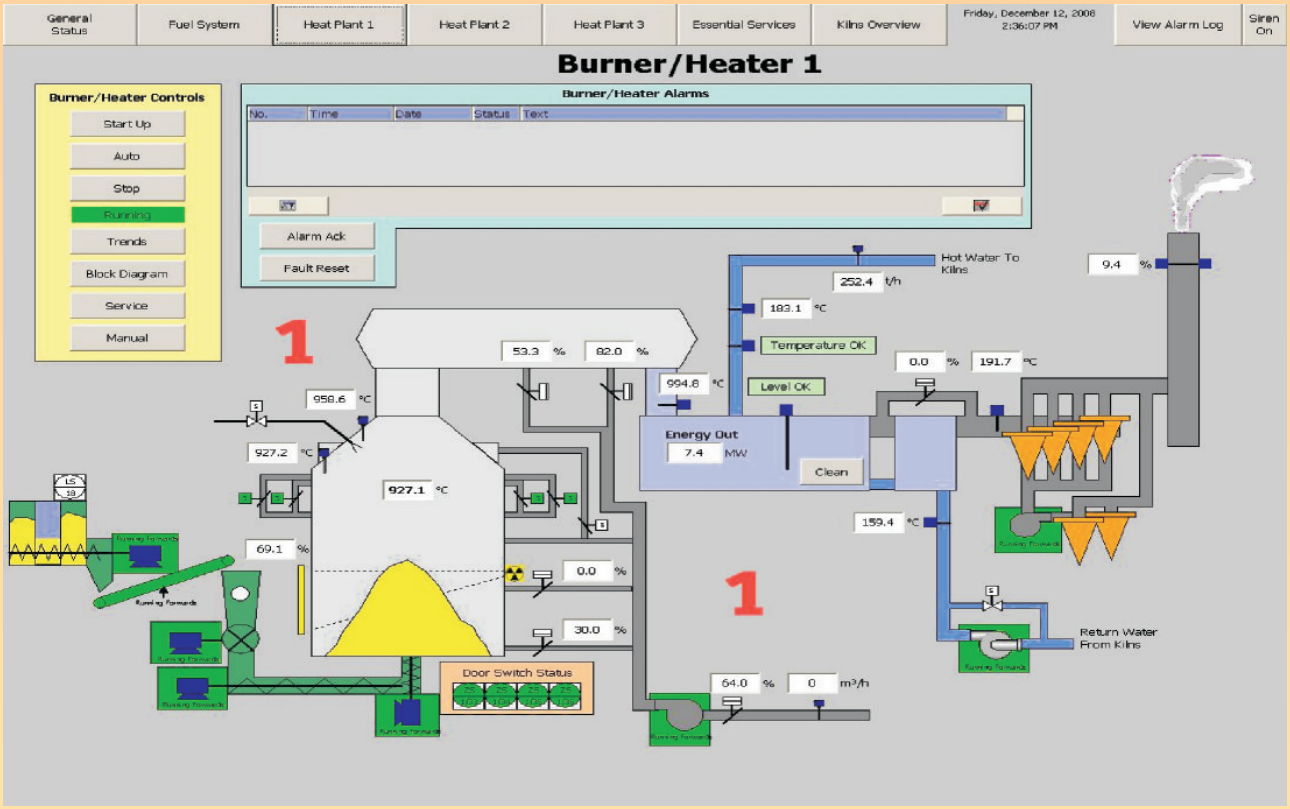
SOME OF THE COMPLETED PROJECTS

- 1 x 5.6MW Steam Boiler (Fire Tubes) - 12 barg
- Multicyclone Particulate Collectors
- Installed in Malaysia

- 2 x 4.5MW - 175°C Pressurized Hot Water Heaters (Fire Tubes)
- 2 Stage Cyclone Particulate Collectors
- Installed in New Zealand

- 3 x 7.5MW - 190°C Pressurized Hot Water Heaters (Water Tubes)
- 2 Stage Cyclone Particulate Collectors
- Installed in New Zealand

PLC CONTROL SYSTEMS FOR OUR EQUIPMENT / PLANT

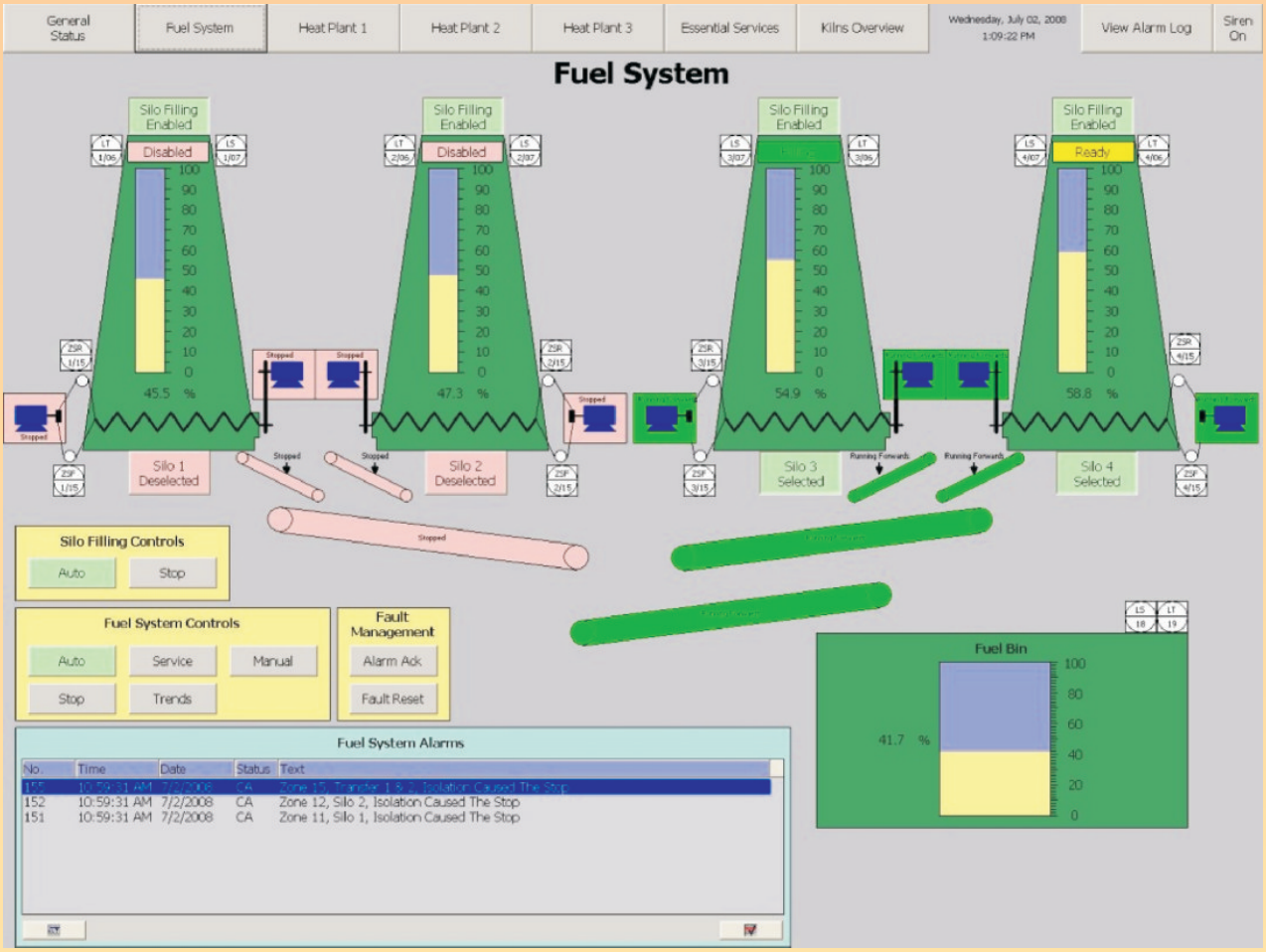


HMI Operating Software for Burner / Heater Controls

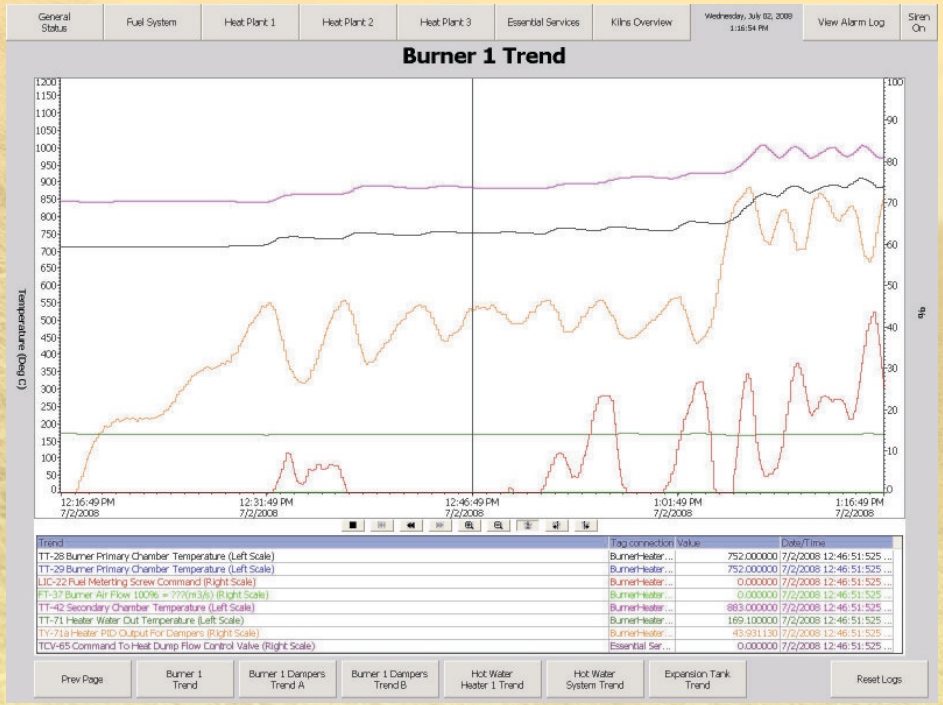
The picture above is a sample PLC-HMI software for our Burner / Heater equipment. The software is normally run on a centralized PC located in the Control Room. The HMI operating software is SCADA compliant and comes complete with the following abilities :

1. Fully Automatic Control
2. Data Logging (History)
3. Engineering Settings
4. Instrument Readouts
5. Animated Graphics
6. Alarms Log & Indicator.
7. Remote Access / Controls Possible (Option)
8. Auto Dialer (Option)

Motor Control Centre (MCC)



HMI Operating Software For Fuel Storage System



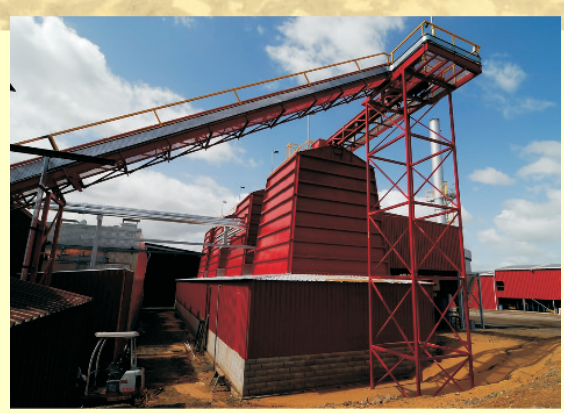
All HMI software controls that will be supplied with our equipment will come standard with the above stated abilities and will all be located on the centralized PC. As control programs are normally custom written to suit the supplied equipment, certain configurations and customer requirements can be accommodated.

VISDAMAX MANUFACTURES PURPOSE DESIGNED BIOMASS FUEL HANDLING & STORAGE SYSTEM TO COMPLIMENT THE TURBOMAX BOILER / HEATER

- Tipping floor truck unloaders
- Reclaim hopper
- Storage silos
- Load out silos
- Scraper conveyors
- Belt conveyors
- Screw conveyors
- Screens

Prefabricated 4 x 400m³ Quadrant Traverse Silos with Metering Extraction Screws - New Zealand

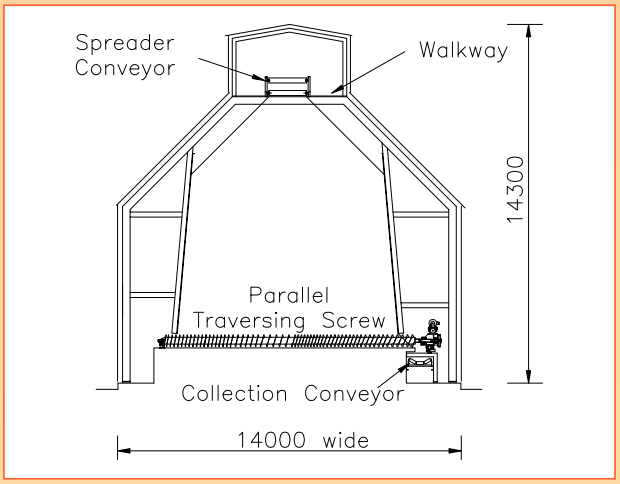
Conveyors and Silo - Siberia Russia



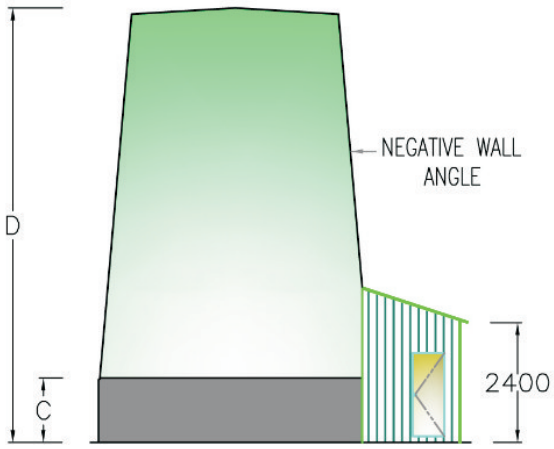
PARALLEL TRAVERSE BULK FUEL BIN

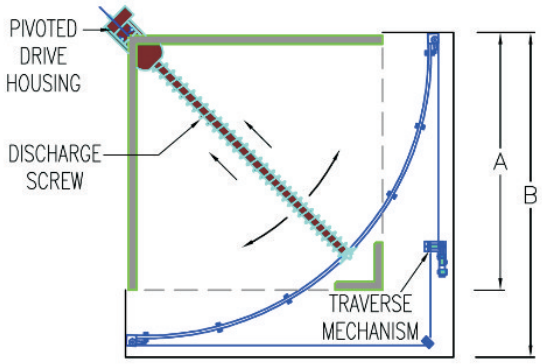
Prefabricated bulk storage bin with parallel traversing metering extraction screw and collection belt conveyor

Capacity (cu.m.)	Length (mm)
500	7,500
1,000	15,000
1,500	22,500
2,000	30,000



QUADRANT TRAVERSE FUEL SILO





Capacity	A	B	C	D	Metering Screw Dia.
cu.m.	mm	mm	mm	mm	mm
50	5,300	6,800	750	3,000	300
100	5,300	6,800	750	6,200	300
150	5,300	6,800	750	9,500	300
200	6,200	8,100	850	9,500	400
250	6,500	8,400	850	9,500	400
400	6,800	8,700	1,000	9,500	450

2 x 250m³ Silos - Installed in New Zealand

Tail End of Metering Screw

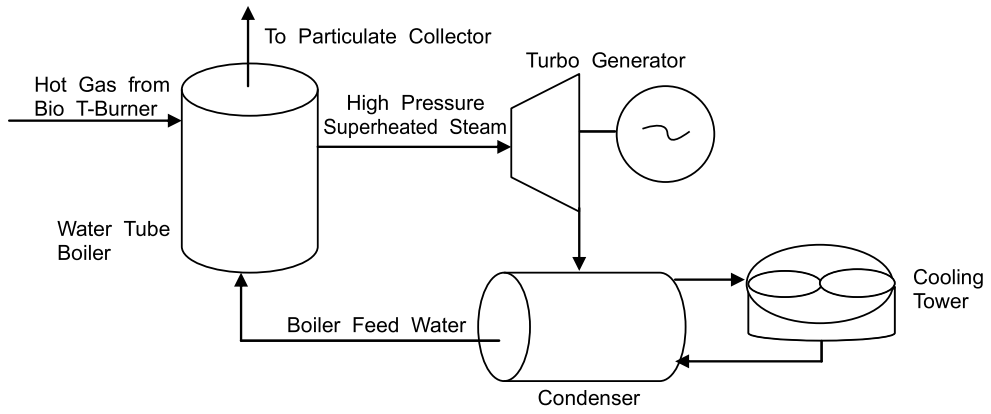
ELECTRICITY PRODUCTION FROM BIOMASS

VISDAMAX can provide a complete power generation solution engineered to meet customer requirements and bio fuel availability. High pressure superheated steam systems or zero pressure thermal fluid and organic steam systems are also available.

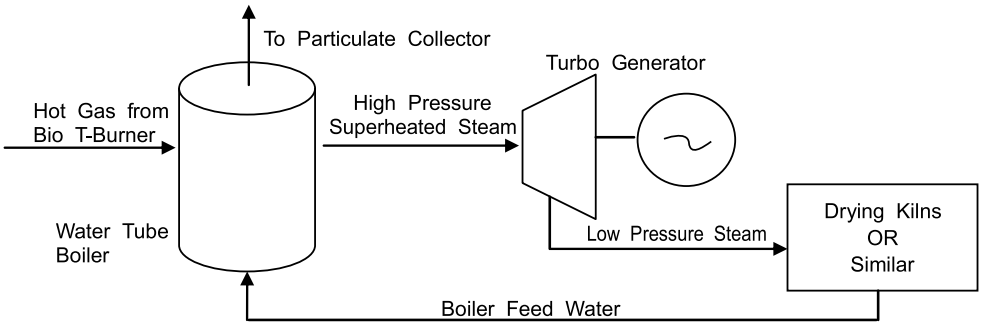
Multi stage condensing, pass out, or back pressure turbines from international suppliers are selected to provide best efficiency and highest power generation.

ORC turbo generator sets coupled with zero pressure thermal fluid systems are used when preferred to meet local regulations.

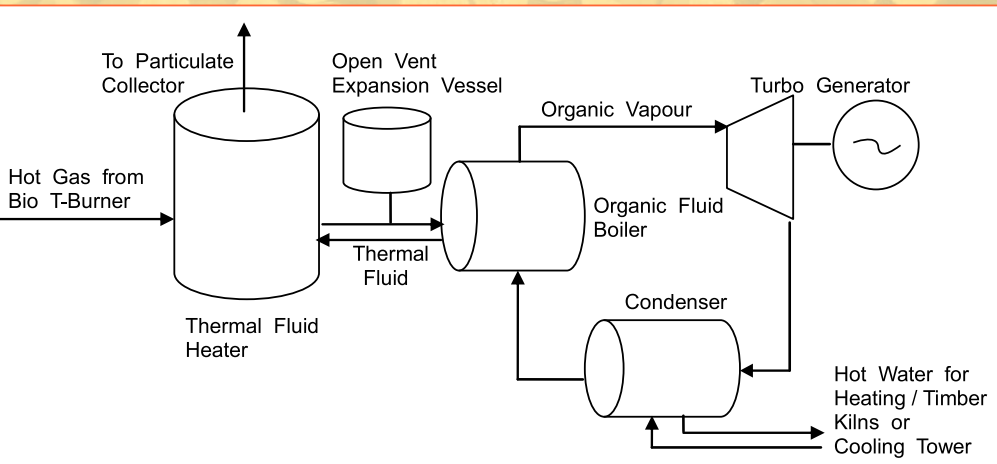
CONDENSING SYSTEM – Maximum Power



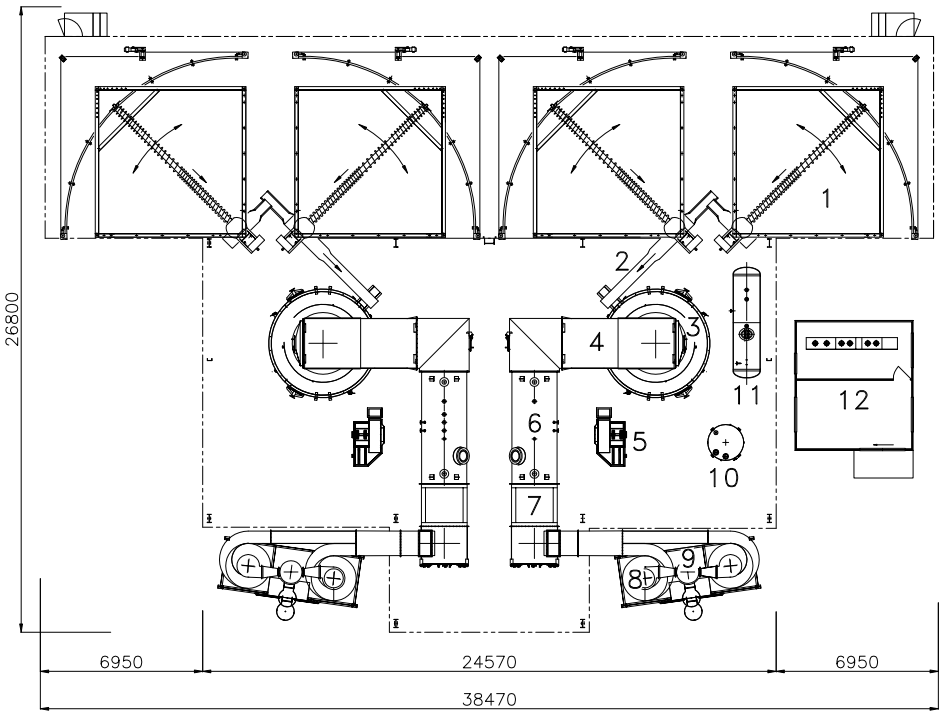
CO-GENERATION - Dual Use of Steam



ORC THERMAL FLUID SYSTEM

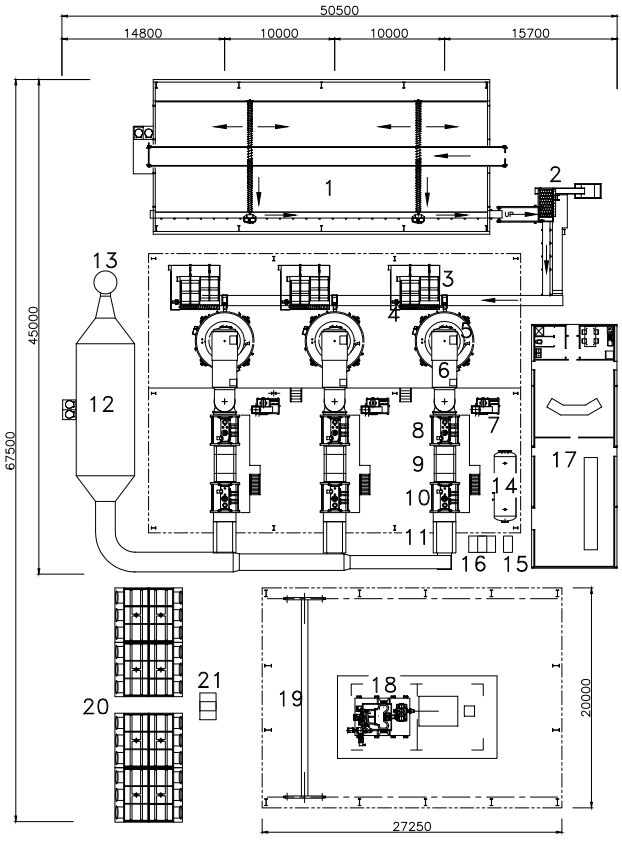


LAYOUT OF TYPICAL PLANTS



1 – Silo 250M³
2 – Transfer Screw
3 – Primary Burner
4 – Secondary Burner
5 – F.D. Fan
6 – Hot Water Heater (Fire Tubes)
7 – Economiser
8 – 2 Stage Cyclones
9 – Steel Chimney
10 – Water Storage / Dump Tank
11 – Expansion Tank
12 – MCC / Control Room

2 x 5.3 MW Hot Water Heaters – with 2 Stage Cyclones



1 – Bulk Fuel Storage 2000M³
2 – Fuel Disc Screen
3 – Moving Floor Day Bin
4 – Metering Screw
5 – Primary Burner
6 – Secondary Burner
7 – F.D. Fan
8 – Steam Boiler (Water Tubes) Stage 1
9 – Super Heater
10 – Steam Boiler (Water Tubes) Stage 2
11 – Economiser
12 – Electrostatic Precipitator (ESP)
13 – Steel Chimney
14 – Deaerator
15 – Steam Header
16 – Feed Water Pumps
17 – Centralised Electrical / MCC / Control Room
18 – Steam Turbine / Speed Reducer / Generator / Condenser
19 – Gantry Service Crane
20 – Water Cooling Towers
21 – Water Circulating Pumps

3 x 9.5 ton/hr Steam Boiler & 5.3 MW Power Generation-with ESP

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