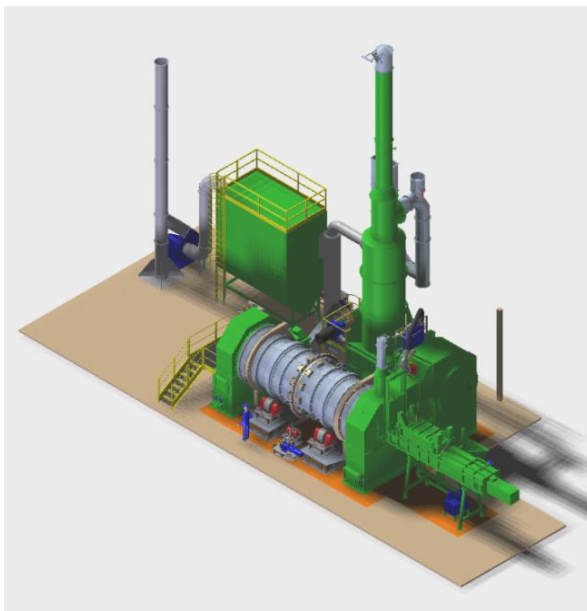




GREEN ENERGY

COMBUSTION PLANT WITH ROTARY KILN FOR SPECIAL BIOMASSES AND M.B.M. (MEAT AND BONE MEAL) WITH SUPERHEATED STEAM GENERATOR AND CONDENSATION STEAM TURBINE # FRB - EE



MODEL	FRB - EE
TREATED WASTE TYPE	SPECIAL BIOMASSES AND M.B.M. (MEAT AND BONE MEAL)
INCINERATION CAPACITY	1.000 –2.000 Kg/h
COMBUSTION CHAMBER	COUNTER-CURRENT ROTARY KILN
OPERATING TIME	CONTINUOUS
FEEDING SYSTEM	AUTOMATIC
OPERATING HOURS PER DAY	24 h.
WASTE HEATING POWER	16,8 MJ/Kg – MAXIMUM HUMIDITY 20%
HEAT RECOVERY	SUPERHEATED STEAM
RECOVERED HEAT POTENTIALITY	3,5 – 7 MWt
POWER SUPPLY POTENTIALITY FROM CONDENSATION	0,5 – 1,0 MWe
FLUE GAS CLEANING	DRY SCRUBBING WITH BAGS FILTER (Bicarbonate + activated carbon)

The proposed combustion system is designed to meet the emission limits required and enforced by the EU Standard [# 2000/76/EU Guide line](#)

The combustion plant for special biomasses and M.B.M. (meat and bone meal) is based on a counter-current rotary kiln. The plant is available in different capacity per hour type with the following features:

- Continuous automatic feeding system with screw conveyor
- Counter-current rotary kiln with controlled temperature (*virtually a pyrolysis under sub-stoichiometric conditions*) complete with burner and control board. Unloading of ashes is automatic and continuous.
- Post combustion chamber is designed to grant:
 - Temperature of 850/1.050 °C
 - Combustion gas residence time from > 0,5 to 2 seconds
 - Swirl chamber to improve combustion's efficiency
 - Oxygen content > 6%
 Complete with burner, control board and emergency chimney.
- Hot water pipes type heat exchanger for the production of superheated steam at – 45 bar T=450°C –
- Flue gas cleaning system for the abatement of pollutants – acid fumes, dioxins and heavy metals – dry scrubbing type using bicarbonate and activated carbons. The system is supplied complete with reactor, reagent's dosing and bags filter.

- PLC control unit complete with dedicated operating system and net connection for online assisted technical support
- Condensation steam turbine, complete with power supply generator, condenser, evaporation tower and accessories.

TYPE	QUANTITY	½ HOUR VALUE	DAILY AVERAGE VALUE
DUSTS	mg/Nm ³	30	10
HCl	mg/Nm ³	60	10
SO ₂ + SO ₃ as SO ₂	mg/Nm ³	200	50
HF	mg/Nm ³	4	1
NO _x as NO ₂	mg/Nm ³	400	250
CO	mg/Nm ³	100	50
T.O.C.	mg/Nm ³	20	10
TYPE	QUANTITY	PROBE AVERAGE VALUE	
Hg	mg/Nm ³	0,5	
Cd + Tl	mg/Nm ³	0,05	
Pb + Cr + Cu + Sn + Mn + Sb + As + Ni + V	mg/Nm ³	0,5	
DIOXINS + DI-BENZOFURANS (2,3,7,8 TCDD)	mg/Nm ³	0,1	

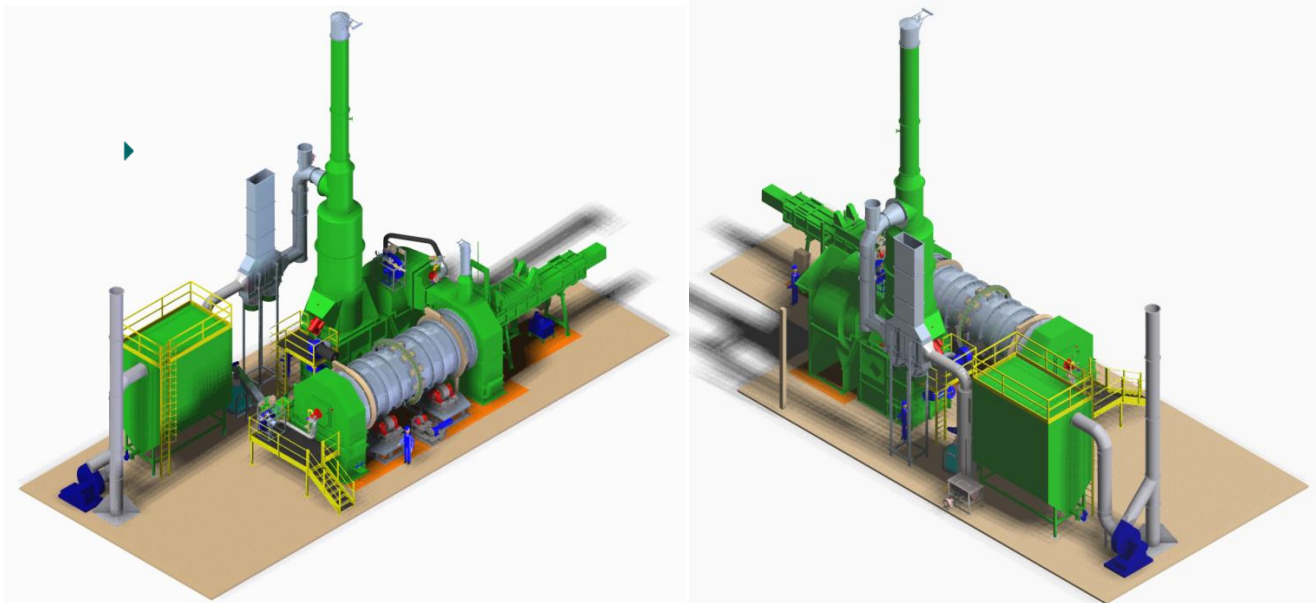
Average value over a sampling period of 8 hours

The results of the measurements made to verify compliance with the emission limits are standardized at the following conditions:

- TEMPERATURE 273,15 K
- PRESSURE 101.3 kPa
- STATE OF GAS – MEASURED DRY
- CONTENT OF OXYGEN IN THE FLOWING GAS EQUAL TO 11% IN VOLUME

Sound pressure level 1 meter away from the logic perimeter of the source (i.e. the *entire combustion system including its bases*):

- 85 dB +/- 2 dB MAX



Note: The technical data are only indicative and need to be checked in the design phase.