CAPITAL COST DIFFERENCE BETWEEN CONVENTIONAL BIOMASS STEAM BOILERS AND BIOMASS THERMAL OIL HEATERS INSTALLED AT HARTALEGA

<u>Constants</u>	<u>Unit</u>	Value	
Forex USD to RM	-	3.80	
	T T 1.	** 1	
MechMar Steam Boiler	<u>Unit</u>	<u>Value</u>	Reference
Steam boiler capacity (steam output)	kg/hr	40,000.00	MechMar "Bi-Drum Water Tube Boiler for Biomass Burning" catalogue
Equivalent heat output	MW	27.90	MechMar "Bi-Drum Water Tube Boiler for Biomass Burning" catalogue
Capital cost	RM	3,800,000.00	MechMar budgetary quotation reference HL/5703/10/07/SMK dated 4/10/2007
Vyncke Thermal Oil Heaters	<u>Unit</u>	<u>Value</u>	<u>Reference</u>
Heat output	MW	25.60	Project Design Document
Capital cost of boilers 1 and 2	USD		Agreement - "a 15Gcal/hr VYNCKE thermal oil heater plant on palm
1		1,818,000.00	fruit waste" dated 8th Feb. 2002
Capital cost of boilers 1 and 2	RM	6,908,400.00	
Capital cost of boiler 3	USD	1,075,000.00	Agreement signed between Hartalega and Vyncke dated 6th Oct. 2004
Capital cost of boiler 3	RM	4,085,000.00	
Total capital cost for phase 1	RM	10,993,400.00	
<u>CONCLUSION</u>			
Ratio capital cost thermal oil heater / biomass steam boiler		2.89	

Our ref: HL/5703/10/07/SMK

Date: 4th October 2007

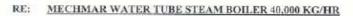
HARTALEGA SDN. BHD

 Kawasan Perusahaan Suria, 45600 Batang Berjuntai, Selangor Darul Ehsan, Malaysia.

Tel: 3271 0277 Fax: 3271 0135

Attn: Mr M.L. Kuan

Dear Sir,



With refer to the above, appended our budgetary price for your perusal.

To supply, delivery, install, testing & commissioning (site: within Sclangor, Malaysia)

MECHMAR COCHRAN BOILERS (M) SON BHD

Selangor Darul Ehsan, Malaysia. Tel: (603) 5569 3688 Fax: (603) 5569 1368

E-mail: mcbsa@mechmar.com.my

(Company No: 38083-P) No. 1, Jalan Perunding U1/17, Hicom Glenmarie Industrial Park,

40150 Shah Alam,

1) BD 40mt/hr @ 300 psig Water Tube Steam Boiler (Fuel: palm shell)

- · 1 lot of standard Boiler Mountings
- 1 no. Electrical + 1 no. Steam driven Feedwater Pumps
- · 1 set Dust Collector
- 1 no. Mild Steel Chimney (100°H)
- · 1 complete set of Fans c/w ducting
- · Type Feedwater Control: 3 element
- · Type of Soot Blower: Sonic
- Type of Grate: Reciprocating Step Grate
- · 1 no. Control Panel
- · 1 lot platform, ladder & gallery.

Budgetary price - RM 3,800,000.00

Exclude:

- · Fuel Storage & Feeding system
- · Ash Handling & Discharge system
- Feedwater treatment plant
- Incoming electrical, water & compressed air supply
- Steam piping to process
- · Utilities during installation, testing & commissioning
- Civil/RC & building work
- Anything not mentioned in the above.

Thank you.

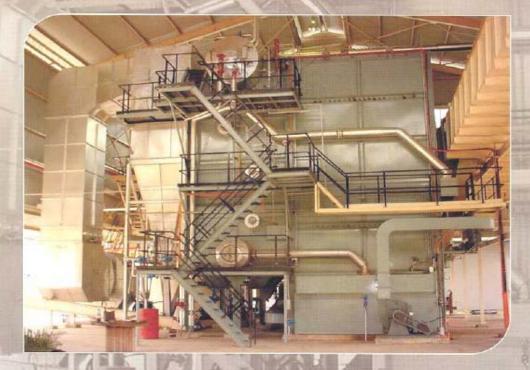
Yours faithfully,

MECHMAR COCHRAN BOILERS (M) SDN BHD

Kok Sook Meng Commercial Manager



BI-DRUM WATER TUBE BOILER FOR BIOMASS BURNING





TITAN BD





MECHANI POLETS SIN BIID a wholly sented subsidiary of MECHANIA COMPORATION (M) BEHARD, the market leader in Misrayas for botter manufacturing actived yet aristhan stall-clim sith the award of 50 5002 certification by Eleyt's Rodater of Quality Assurance mixing in the first hollow manufacturing company in Molayas to attain this recognition.

With Layd's Class I certification for its product and 50 0002 porthagen for its quality management system, Mechanical Berker done follow is now among the wine group of boiler manufacturing company in the world. For its layd quality workmanship and opinishency in quality, MECHANIA BOILERS SON BHO is always a horizor of DLASS I flatingfor feedice for produce vessel near Jackship feets. Layd's Projects of Shipping dince 1989.

MECHMAR BÖLLERS SON BHD started operation at East 14, Julian Timoth, Preir Gurberg Industrie Estate, Johans in 1977 and to date have produced more than 5000 unde of boliess lenging from 500 to do show 132,000 to capacity of abson per hour if also measuratures Hox Mater Bollers, Thomas Houle Roders and other pressure vessel.

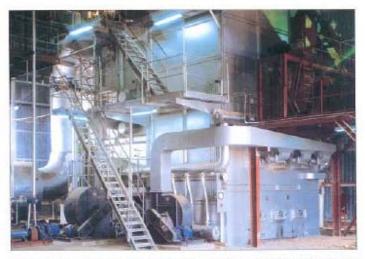
The products are developed and marketed by MECHWAR COCHRAN BOILERS (M) SON BHO profiles wholly owned subsidiary of MECHWAR CORPORATION (M) SHC.

MECHANA COCHRAIN BOILERS (M) SOIL BIRD increase, a wide range of balanc, thermal of heaten, steam plant and power solar matabasis. It operate from offices and sensice centres in Shali Azon, Johne and Pha to insure occasional attar sales service and prompt supply of operas.



BI-DRUM BOILER

Titan BI-DRUM Water Tube Boiler



A MEDIUM TO LARGE SIZE, NATURALLY CIRCULATED FIELD ERECTED WATER TUBE BOILER. SPECIFICALLY DESIGNED FOR HIGH MOISTURE SOLID WASTE FIRING. DESIGNED AND CALCULATED CONSERVATIVELY TO MEET INCREASED RELIABILITY, OPTIMUM FUEL ECONOMY, LONG LIFE AND LOW MAINTENANCE COST. FLEXIBLE TO ACCOMMODATE HIGH FLUCTUATING LOADS AND SOLID WASTE PROPERTIES.

BOILER CIRCULATION

The boiler water flows from the steam drum via designated downcomer tubes into the lower drum. Downcomers are in the coldest part of gas passage and last tube row is covered by insulating material. The boiler water flows from the drums to furnace front and side headers and to the nest of convection bank riser tubes. External downcomers are also mounted.

Large volume of boiler water contained in the boiler assembly allows the boiler to respond to fluctuating steam demands. Baffling arrangement and steam/water separator losses the steam drum guarantee a good steam quality.

STEAM DRUM INTERNALS

Mechmar offers a 3-stage approach to achieving maximum steam purity. Steam is directed by baffling into cyclone separators and apply it to separating water from steam. Steam rises and flows through chevron scrubbers where residual water droplets or condensate cling to the scrubber plates, collect and return to drum water.

The end result is steam of excellent quality and high purity up to 99.5% dry.