

DAACK Vessels brings together, well trained and experienced engineers and designers with specialization in design & engineering calculations, layout, plant design and detailed engineering knowledge of systems. The company adheres to high quality in it's design & engineering conforming to international standards.

DAACK Vessels engineers have worked for variety of industries and in association with renowned consultants. DAACK Vessels has its network spread across countries like Sri Lanka, South East Asian countries and African countries providing engineering services and products.

DAACK Vessels experienced team is capable of taking specialized projects like waste heat recovery from exothermic reactions of chemicals like sulphuric acid in fertilizer industry. Heat recovery from flue gases of coke oven plants. Heat recovery from engine exhaust etc.,



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Boilers | Power Plants | Co-Generation Units

POWER PLANTS

BIOMASS | COAL | HEAT RECOVERY STEAM GENERATOR

DAACK Vessels Pvt Ltd. is a professionally managed engineering company catering to the Process heat and Power needs of various industries. We specialize in designing, engineering, supplying, erection & commissioning of highly efficient Boilers and Turbines designed for a wide variety of fuels like Agrowaste, Municipal waste, Bagasse, Coal, Fuel Oil, Gas and other Biomass.

DAACK engineers with vast experience in green technology and renewable energy, adopts eco-friendly methods of energy generation using the latest methods and technology available. We offer complete solution to all energy needs on turnkey basis.



BIOMASS BASED POWER PLANTS/ COAL BASED POWER PLANTS

Power plants based on Biomass/ Coal as fuel. Fuel is burnt in boiler to generate steam at high pressure. The steam thus generated, is further superheated to remove moisture and then passed through a condensing steam turbine. Steam coming out of Turbine is passed through a Condenser which creates a negative gauge pressure in the turbine, so that maximum output is extracted from the turbine. The condensate coming out of the Condenser is pumped back to the boiler circuit by Condensate evacuation pumps.

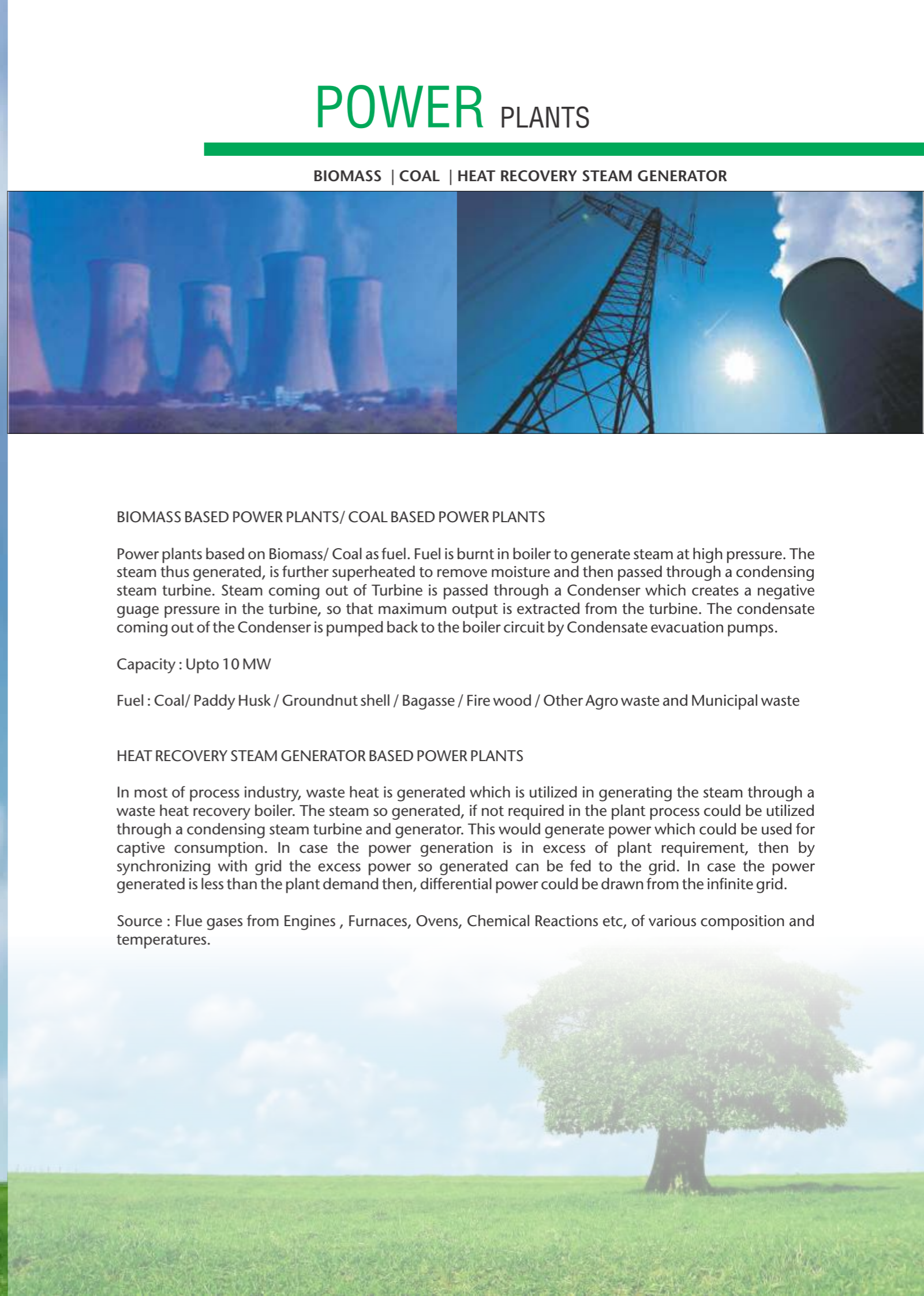
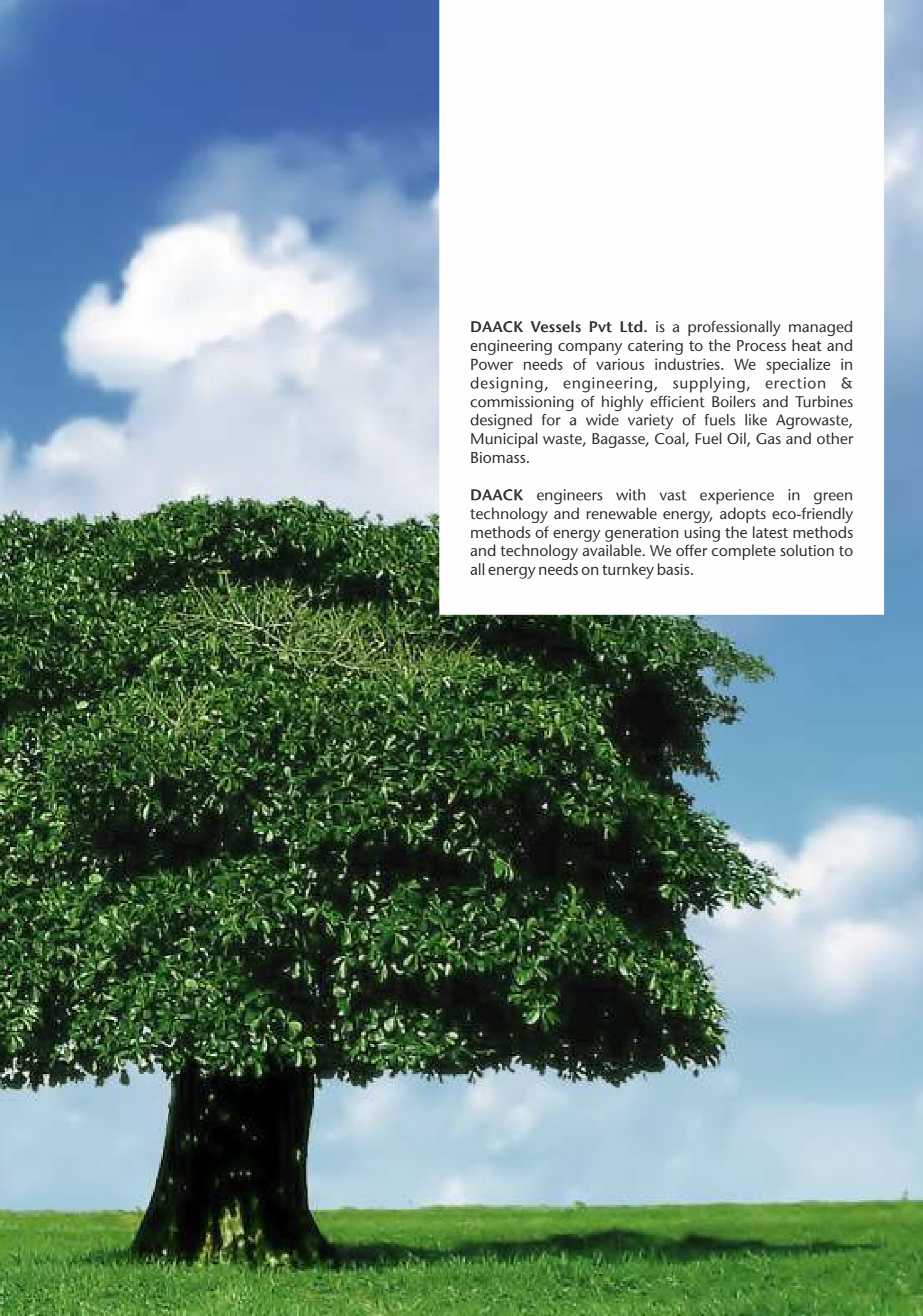
Capacity : Upto 10 MW

Fuel : Coal/ Paddy Husk / Groundnut shell / Bagasse / Fire wood / Other Agro waste and Municipal waste

HEAT RECOVERY STEAM GENERATOR BASED POWER PLANTS

In most of process industry, waste heat is generated which is utilized in generating the steam through a waste heat recovery boiler. The steam so generated, if not required in the plant process could be utilized through a condensing steam turbine and generator. This would generate power which could be used for captive consumption. In case the power generation is in excess of plant requirement, then by synchronizing with grid the excess power so generated can be fed to the grid. In case the power generated is less than the plant demand then, differential power could be drawn from the infinite grid.

Source : Flue gases from Engines , Furnaces, Ovens, Chemical Reactions etc, of various composition and temperatures.



CO-GENERATION PLANTS



These steam turbines are designed based on the process industries' needs. It is custom built and is replacement to the existing Pressure reducing stations (PRS) and Pressure reducing and de-superheating stations (PRDS), which are widely used in the process industries. The basic objectives are to utilize the heat energy available in the steam rather than wasting by throttling it in PRV or PRDS.

Different types of custom built co-generation systems

- Back Pressure turbine based systems
- Extraction cum condensing type systems
- Extraction cum Back Pressure type systems

Salient features:

- The power generated through this system is incidental, hence negligible extra fuel required.
- The power generated through this system depends on the process pressure requirement and pressure level raised in the Boiler. Lower the process pressure, better the power output.
- Superheating required, hence cost of fuel for superheating adds on to the operation cost, which is negligible when compared to the power generated.
- Parts in contact with steam has better life as compared to saturated steam turbines as the quality of steam is better and free from moisture
- The power generated thus also qualifies for the CDM benefits
- Options of Alternator and Induction generator available for fluctuating steam loads.



Our Green Activities

DAACK Vessels is an organization committed to help industries develop and implement sustainable initiatives in their business. DAACK has spent substantial amount of energy and time in developing various energy efficient products to achieve the set ambition of offering the best to the customers. DAACK's engineers have gained tremendous amount of knowledge and experience by involving themselves with the customers' problems and working with them to develop customized products and solutions. Having sales and service network through offices and associates in African countries, Srilanka, Bangladesh and South East Asian countries has exposed DAACK to various international challenges thereby contributing in making a seasoned solution provider.

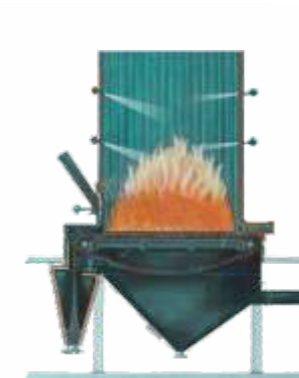
Helping achieve your vision is our vision

- Integrating sustainable initiatives in your business model
- Improving efficiency through waste reduction
- Expertise in process heating, waste heat recovery
- Profitable implementation of Biomass, CHP and other co-generation technologies. Pollution control equipments
- Water treatment plants

Major industries catered are Paper, Food processing, Distilleries, Ricemills, Chemicals, Pharmaceuticals etc., The projects are taken on turnkey basis and involves conceptualizing, engineering, supply, erection, commissioning, maintenance, etc.,

FLUIDISED BED BOILERS

TRAVELLING GRATE BOILERS



- Construction : Radiant furnace, membrane water wall lined fluidized bed combustion boiler.
- Capacities : Upto 60,000 kgs/ hr.
- Pressure : Upto 67 kgs/ cm².
- Furnace & feeding : Fluidised bed combustion (Overbed and Underbed feeding) Dual furnace options available (Solid as well as pulverised fuel furnaces working simultaneously). Pneumatic and Mechanical Fuel feeding

Salient features

- Large furnace volume and free board area, hence ideal for fuel with high volatile content.
- Less excess air required for combustion, hence very high thermal efficiency. optimized for a wide range of fuel like Paddy husk, Groundnut shell, Coal, Saw dust and other agro waste.
- High thermal efficiency as the furnace is surrounded by membrane water wall, resulting in minimal radiation losses.
- Efficient combustion and minimum choking hence reduced cleaning frequency.
- Handles fluctuating steam load much better due to large water holding and steam space.
- Instrumentation and controls are customised for various requirements of customer. DCS and SCADA easily adoptable.
- Superior membrane technology helps in very quick steam generation. Time taken from cold start to attain working pressure is commendable.

Our self contained Travelling grate assemblies are with Hydraulic Drives which reduces the power requirement substantially. The system is designed and manufactured for continuous operation with minimum maintenance.

The curvature design of grate keeps the grates closed without the aid of auxiliary weights while turning around the sprockets. No gaps appear between the grates, there by directing all ash into the ash pit safeguarding the drive mechanism. Front and rear seals in the furnace automatically keep excess air to a minimum. These seals are ruggedly constructed for long service and are automatically self adjusting to maintain continuous close sealing contact.

To achieve perfect combustion of any fuel, a great deal of experience, perfect designing, correct stoichiometric calculations to maintain optimum air fuel ratio, excellent manufacturing skill and technology, good fabrication standard, adequate fuel feeding & combustion systems, etc are given prime importance.

Salient features

- The catenary design of this grate is self aligning i.e. it aligns itself during heating and cooling, which avoids locking, tightening due to which breakage of castings and other parts are eliminated.
- Maintenance free and easy to operate.
- The grate castings can be easily replaced during the working of the grate by just stopping the grate and taking out the castings from the side and replacing the same.
- Proper air sealing for effective combustion of fuels.
- Grate castings provided with venturi type of air Jet nozzles, for adequate turbulence and better combustion
- Sprockets are provided in front as well as in rear to ensure both the shafts are rotating and hence positive feed and smooth operation.

We design, manufacture, erect and commission boilers with

- Pulsating (Reciprocating) Grate with Hydraulic Power Pack
- Dumping Grates
- Fuel feeding systems like Rotary feeders and extractors, Mechanical & Pneumatic spreaders, Drag chain feeders for Coal, Agro waste, Woodchips and bagasse etc.