

"eBriefing on Resource Efficiency"

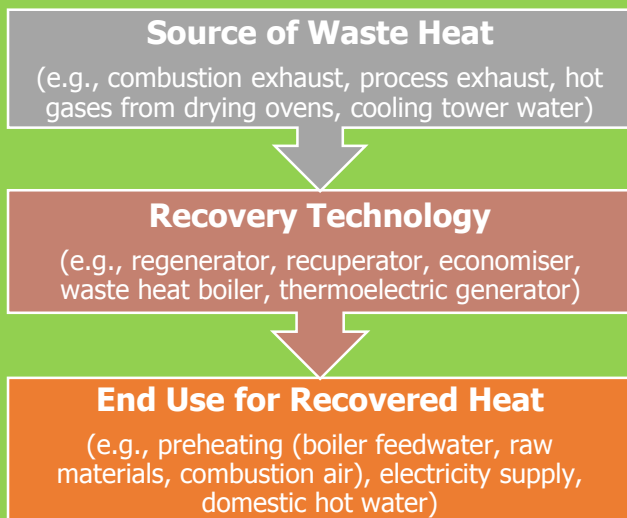
Reed Consulting Bangladesh Ltd.



June 2015

Waste Heat Recovery

With the high cost and adverse environmental impact of burning fossil fuels, heat energy is a precious commodity that should not be wasted.



Waste heat is the energy associated with waste streams of air, exhaust gases, and/or liquids that are discharged into the environment.

Recovery of waste heat directly improves process efficiency. This is reflected by reduction in utility consumption and costs, and so reduces process costs.

Indirect benefits of Waste-Heat Recovery:

- Reduces pollution/environmental impact
- Reduces cost of capital equipment
- Reduces equipment size
- Reduces GHG emissions

Sources of waste heat:

- Exhaust heat recovery from Reciprocating Engine driven Gen-sets used for Captive Power
- Cogeneration and Independent Power Production.
 - Heavy oil
 - Natural Gas and CNG
 - Diesel

- Cogeneration and Independent Power Production.
- Exhaust Heat Recovery from Gas Turbine exhaust.
- Jacket Heat Recovery from Generator Engines
- Hot Waste Gases from
 - Industrial furnaces
 - Incinerators
 - Process equipment
 - Steel melting furnace
 - Cement kiln
 - Leather processing equipment

With the effective use of a Waste Heat Recovery system e.g an Exhaust Gas Boiler, Heat Exchanger or Heat Pump, 5% to 60 % of waste heat energy can be recovered and reused.

Heat recovery units include: Heat Pumps, Thermal Wheels, Pipe Exchanger Heat Exchangers – air to air and air to water, Cogeneration.

Exhaust Gas Boiler: Using a EGB 25% to 30% of exhaust heat can be reused.



Economiser: For every 22°C reduction in flue gas temperature by passing through a economiser or a pre-heater, there can be a 1% saving of boiler fuel.



Heat Pump: A Heat Pump is a device that transfers heat from a lower temperature fluid to a higher temperature i.e. inverting natural heat flow.



For further information about engineering consultancy and waste and energy and water minimisation please contact our Principal Textile Engineer Dr. Mohammad Abbas Uddin abbas.uddin@reedconsultingbd.org.

RCB provides consultancy in Energy Efficiency, Production Engineering, Process Improvement, Water and Waste Minimisation.

Reed Consulting Bangladesh Ltd.

Plot 1 (3rd Floor), Road 13/C, Shahjalal Avenue, Sector 6, Uttara, Dhaka 1230, Phone : +88 02 8956976, Fax : + 88 02 8956915

www.reedconsultingbd.com