



## Transparent Energy Systems Pvt. Ltd.

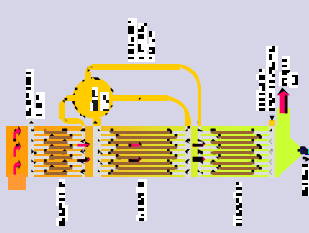
A company, having maximum number of running installations in India & holding performance certificates, at

- Ø The KCP Ltd
- Ø Ultra Tech Cement Ltd
- Ø Shree Cement Ltd - I
- Ø Shree Cement Ltd - II ( repeat order under execution )

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## Waste heat recovery boiler – Vertical Co-Flow design



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## Vertical Co-Flow design



- Steam is generated by direct contact between hot gas and water
- Hot gas bypasses the drum and is preheated.
- From a logical and technical perspective the parallel operation provides the equipment, for minimum investment and cost
- Hot gas bypasses the drum and is preheated
- Single point dual circulation
- Low level flow separating element
- Low level floating level float
- Dual operating exhaust gas valves for automatic operation
- Reduced load in case of hammering system stoppage

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## Waste Heat driven Power Plant – Superior Features

- Both Single pressure / dual pressure options can be provided for Steam turbine depending upon process temperature requirements.
- In case of dual pressure, separate steam drum provided for HP and LP boilers.
- Hammering system provided for both Preheater as well as Clinker Cooler boiler.
- Efficient dust settling chamber provided at the inlet of Clinker Cooler boiler for removal of abrasive dust
- Modularized leak proof dampers provided to avoid air / moisture ingress in boiler.
- "On Line Real Time" performance monitoring system provided for continuous measurement of
  - Exhaust gas flow
  - Dust load in exhaust gas
  - Steam pressure & temperature
  - Gross power generation
  - Pressure drop across WHRS

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## Water Cooled Condensing System



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## Air Cooled Condensing System



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**Projects executed**

**The KCP Ltd., Machherla, A.P.**

- Steam Rankine Cycle Power Plant – 0.5 Million TPA
- Clinker Production – Preheater and Clinker Cooler
- Source – 2.3 MW
- Gross Power Generation
- Water cooler condensing
- Commissioned – April 2007

**Projects executed**

**Waste Heat Recovery Boiler on Preheater gases at The KCP Ltd.**



**Projects executed**

**Waste Heat Recovery Boiler on Clinker Cooler at The KCP Ltd.**



**Projects executed**

**Steam Turbine Generator at The KCP Ltd..**



**Projects executed**

**UltraTech Cement Ltd., Tadipatri, A.P.**



**Projects executed**

**UltraTech Cement Ltd., Tadipatri, A.P.**

- Organic Rankine Cycle Power Plant – 2.3 Million TPA
- Clinker Production – Clinker Cooler
- Source – 4 MW
- Gross Power Generation
- Water cooler condensing
- Commissioned – March 2007

Note – WHRB system supplied by transparent & Organic Power Generation is our proprietary technology.

**Projects executed**

**Organic Rankine Cycle Power Plant**

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**Projects executed**

**Waste Heat Recovery Thermal Oil Heater on gasat Clinker Cooler Ultratech Cement Ltd.**

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**Projects executed**

**Waste Heat Recovery Power Plant at Ultratech Cement Ltd.**

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**Projects executed**

**Performance certificate**

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**Projects executed**

**Shree Cement Ltd., Beawar, RJ**

**Project - I**

- \* Steam Rankine Cycle Power Plant
- \* Clinker Production - 1 Million TPA
- \* Fuel Oil - 100000 TPA
- \* Output Power generation - 2 MW
- \* Waste heat recovery
- \* Commenced - March 2010

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**Projects executed**

**Waste Heat Recovery Power Plant at Prithvi Bargaon Shree Cement Ltd.**

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**Projects executed .....**

Performance certificate

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**Projects executed .....**

**Shree Cement Ltd., Beawar, RJ**

**Project - II**

- Steam Rankine Cycle Power Plant
- Clinker Production - 1 Million MT X 2 Nos. of Lines
- Source - Pulverised Coal & Clinker
- Conceptive generation - 19.27% on validated / normalised plant & 3.00% on total / norm of the sources
- Total 19.27% E
- 100% Validated / normalising
- 100% Validated / normalising

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**Projects executed .....**

Waste Heat Recovery Boiler on Preheater & Clinker Cooler gases at Shree Cement Ltd

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**Projects executed .....**

Waste Heat Recovery Boiler on Preheater & Clinker Cooler gases at Shree Cement Ltd.

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**Projects executed .....**

Air cooled condenser at Shree Cement Ltd.

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**Projects executed .....**

Turbine Room at Shree Cement Ltd.

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**Executed Feasibility Study & DPR Contracts**

- Full range of services and solutions for feasibility, study & DPR preparation
- Gujarat Cement Works, Kowaja, India.
- Narmada Cement Works, Jafrabad India
- Italcementi Group, Spain
- Arنبuj Cement, Raibryawas, India
- Caribbean Cement Co. Ltd., Jamaica ( Order from IFC, Washington, USA – under execution)
- Arawak Cement Co. Ltd., Barbados ( Order from IFC, Washington, USA –under execution)

**Services offered**

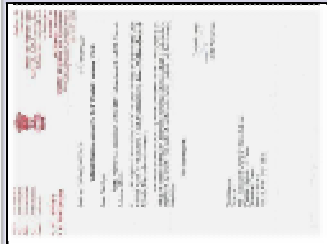
- Concept to Commissioning**
- Feasibility Study
  - Detailed Project Report Preparation
  - Supply, Installation and Commissioning of CPC Lines
  - Integration of New Line
  - Operational and Maintenance

**Patent**



**Patent No. 1977 68 -  
 Vertical Co-Flow  
 Technology**

**Recognition**



**National Award for  
 R&D efforts in Industry (2008) in  
 "Clean Energy and Climate  
 Change" category,  
 from  
 Department of Scientific and  
 Industrial Research (DSIR),  
 Govt. of India**

**Thank You**

**TRANSPARENT ENERGY SYSTEMS PRIVATE LIMITED**

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