Finanzierung von Erneuerbaren Energie und Energieeffizienz Projekten in Asien

INTEC Engineering GmbH
Berlin, 08.03.2016
Energy efficiency projects in Asia, 8th March 2016, Berlin

INTEC Heat and Power Solutions in Asia

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INTEC Group

A family of heat to power solutions

- Steam or Water

- Thermal oil
- Steam
- Hot water
- Warm water
- Hot gas

Heat

- by CSP
- by ORC
- by steam turbines

Power

- Sludge drying
- heated by Thermal oil
- Sludge incineration

Sludge Drying
INTEC Engineering GmbH

• Established in 1995, INTEC is developing successfully and expanding the network of representations as well as own offices around the world. This gives our customers a good service and short reaction times.

• A turnover of 40-50 million Euro within the involved companies of the INTEC group, generated by approx. 100 employees.
A family of heat to power solutions

Status Quo

- More than 2100 installations in 80 countries
- More than 370 MW electrical energy installed
- More than 5200 MW thermal energy installed
INTEC Engineering GmbH

**Product range:**

- Thermal oil heaters
- Steam, hot water and hot gas boilers
- Solid fuel and biomass firing systems
- Fluidized bed combustion system
- Fired heaters for Oil & Gas industry
- Waste recovery systems
- Power Plants (ORC or Steam)
- Sludge drying and hygienisation process for industrial and municipal sludge
Thermal Oil Heaters
Horizontal and Vertical Design:

- Range of capacity: 50 to 25,000 kW
- Fired by natural gas or fuel oil
- High efficiency up to 95%
- Air pre-heater, stack optionally
- Easy maintenance
- Safe design and operation
- Down firing
- Up firing option
- Back door access to combustion area optionally with Horizontal Design
Step Grate Firing Systems for Biomass

- Capacity up to 100 MW
- Reliable operation with high availability
- Low emission values for CO and NOx
- High efficiency
- Automatic fuel feeding and de-ashing
- Operation with “low quality fuel” or high moisture up to 180 % o.d.b.
- Burning wastes like bark, chips, wood waste, off-cuts, trimmings, production waste, sanderdust and even critical fuels such as rice husks, cotton stalks, sunflower seeds, bagasse and all different kind of waste.
Fluidized Bed Firing Systems

- Capacity: 500 kW – 50,000 kW
- Fuels: Biomass, coal, sewage sludge
- Waste heat recovery media: Thermal oil, steam, hot water
- Fluidised bed combustion with controlled ash recirculation
- Bed cooling heat exchanger positioned outside of combustion area
Schneider-Kessel Berlin

- Family-owned boiler manufacturer, 5th Generation since 1881
- More than 5,000 delivered boilers world-wide
- Holder of Eckrohr-Kessel Licence
- Design, development, tailor-made solutions
- Engineering, Consultancy, Project Management
- Commissioning, Supervision of installation
- After Sales Services
INTEC GMK GmbH

- Since 2015 member of the INTEC Group located in Bargeshagen, Germany
- Power generation based on the Organic Rankine Cycle

**INDUCAL®**
Waste heat recovery

**GEOCAL®**
Geothermal

**ECOCAL®**
Biomass
Industrial Usage

INDUCAL ORC-Module

- High temperature application: Usage of waste heat energy from industrial sources or reciprocating engines and Gas Turbines
- Flue gas temperature between 300° und 600° C
- Low temperature application: usage of warm water waste streams from industry
- Process water temperature up to 150° C
Geothermal Usage

GEOCAL ORC-Module

- Power generation based on geothermal heat sources
- Ground water temperature between 90° and 180° C

GEOCAL ORC-Module near Munich (3,6 Mwel)
Ecological Usage

ECOCAL ORC-Module

- Power generation based on biomass firing systems
- Process temperature: thermal oil up to 340° C, organic fluid up to 280° C
KonTroTec GmbH

- Since 2014 member of the INTEC Group, located in Edenkoben, Germany
- KonTroTec GmbH is specialized on contact drying plants for hygienisation, drying and increasing the calorific value of municipal and industrial sewage sludge, wet fractions, oil sludge, fermentation residues and aquatic sediments
The innovative disposal and utilisation concept is based on a combination of the KonTroTec contact drying plants with INTEC solid fuel firing systems and Waste Heat Recovery Units. During the complete process there is no release of any environmental harmful substances into the air or soil.

The drying process combined with waste heat recovery from incineration is energetically self sufficient.

Power generation module may also be attached.
F 0516 Wood waste fired thermal oil heater

**Capacity:** 12 MW
Vibrating grate 12 MW, Dust firing: 3 MW
Thermal oil heating: 6,8 MW, Hot Gas 4,1 MW, Hot Water 500 kW
Fuel: Rubberwood, bark and production wastes

**Installation:** Malaysia
**Customer:** Hevea Board Berhad
F 0920 Wood waste fired hot gas generator with thermal oil heating system

**Capacity:** 17 MW
Step grate firing: 15 MW, Sander/screen dust: 2 MW
Thermal oil heater: 9 MW, Hot gas: 8 MW
Fuels: Bark/chips, wastes from production, reject fibre, palm fibre, sander dust

**Installation:** Malaysia

**Customer:** Segamat Panel Boards
Energy Efficiency Project in Malaysia

Customer produces up to 100,000 m³ of premium quality MDF board per year

Original situation:

- Old local steam boiler with low efficiency and high operation cost
- Thermal oil heaters using heavy fuel oil, up to 400 to / year
Customer produces up to 100,000 m³ of premium quality MDF board per year.

**INTEC solution:**

One biomass fired energy plant with capacity of 17 MWth using:

- 2300 to/y wood waste from production
- Up to 800 to/y palm fibre
- Generating 9 MW thermal oil, 7 MW saturated steam and 8 MW hot gas for the dryer
Energy Efficiency Project in Malaysia

Customer produces up to 100,000 m³ of premium quality MDF board per year

Future implementation INTEC solution:

- Attachment of a ORC power generation module to generate up to 1 MW electrical power, with ROI of 3-4 years
Thank you!
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