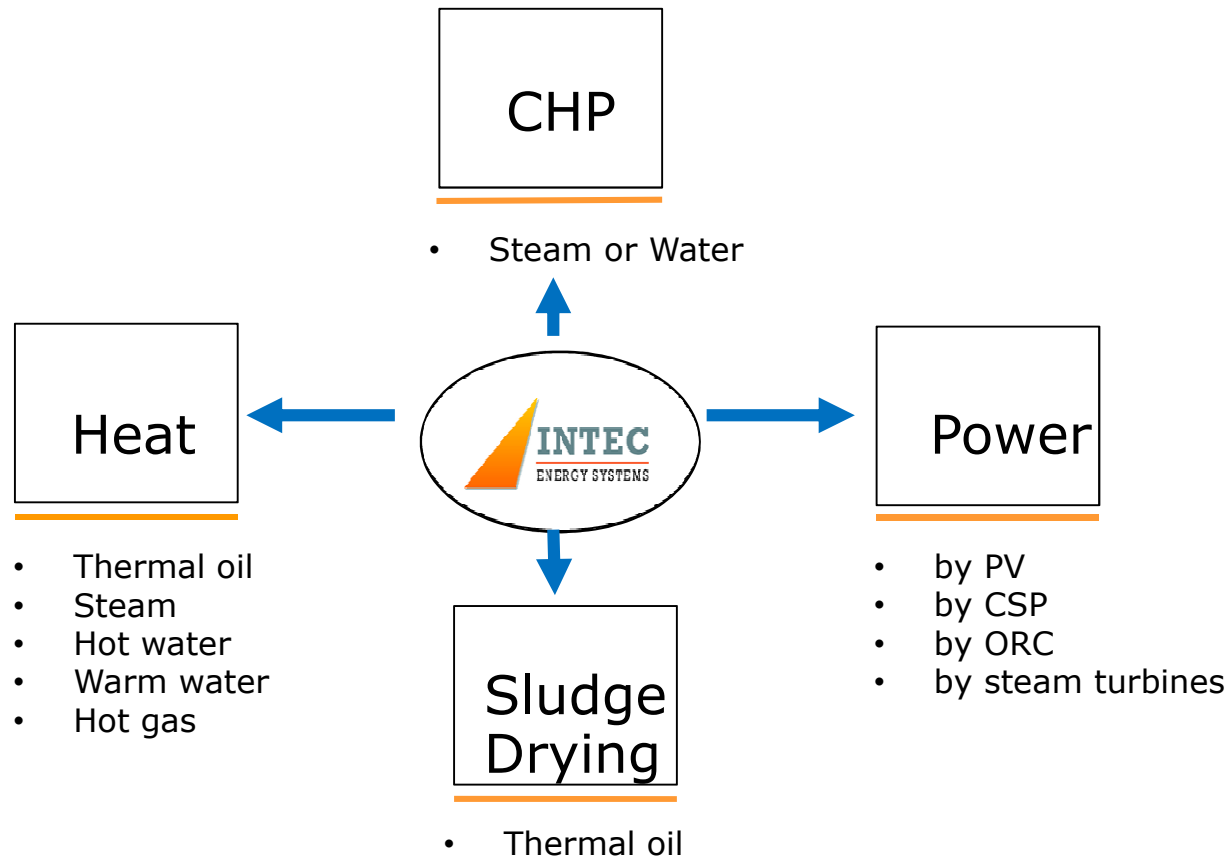


The INTEC GROUP



INTEC Engineering GmbH
energy systems

- Companies within the INTEC group are offering services and equipment for various heat and power applications



INTEC Engineering GmbH **Germany**

- Established in 1995, INTEC is developing successfully and expanding the network of representations as well as own offices around the world. This gives our customer a good service and short reaction times.
- INTEC is developing technologies for industrial process heat and power production
- A turnover of 35-40 million Euro within the involved companies of the INTEC group, generated by approx. 100 employees



INTEC Engineering GmbH **Germany**

- Manufacturing of key components in our production facility in Bruchsal/Germany
- Key Components Supply or Turn Key Installations as requested by clients
- Experienced Supervisors and Service Engineers
- Design Department for customized systems
- Modular Systems
- Experienced Sales and Project Engineers



Thermal Oil Heaters

INTEC Type: ET

Thermal oil as heat transfer medium offers the advantage that it can be operated without any pressure build-up until temperatures of 320 °C. Feed line temperature of max. 400 °C can be achieved using synthetic oil.

INTEC Thermal oil heaters are characterized by the following features:

- Optimized heat transfer and high efficiency design
- Tailor-made design to individual customer requirements
- Environmental friendly operation due to low emission values
- High operational reliability
- Low operating costs
- Long service life



Thermal Oil Heaters

vertical or horizontal Design

- Range of capacity: 50 to 25,000 kW
- Fired by natural gas or fuel oil
- High efficiency up to 93 %
- Air pre-heater, stack optionally
- Easy maintenance
- Safe design and operation
- Down firing
- Up firing option



Electrical Heaters

INTEC Type: ETE

- Range of capacity: 20 to 5,000 kW
- Available as pre-mounted units



Waste Heat Boilers

INTEC Type: ETA

Heat Recovery Boilers using the energy of flue gases to heat up liquid heat transfer medium

Available as:

- One pass radiation heater
- One pass convection heater in tube bundle design
- Three pass heater
- One pass heater with multiple concentric coils



Secondary Control Circuits

- Secondary control circuits for heating and cooling processes
- Precise control of heat transfer to consumer
- Delivery as completely preassembled unit with pumps and accessories as option
- Low loads and forces on pump through fixed point construction



High Pressure Steam Boilers

INTEC Type : iNOOK

Natural circulation boiler

- High pressure boiler for closed circuits
- Up to 10 t/h, 100 barg
- Fired by natural gas or fuel oil



Steam Generators

- Indirect, thermal oil heated steam generators
- Capacity up to 30 t/h of saturated steam
- Pressure up to 35 bar
- Easy regulation
- Operation without permanent attendance
- Complete systems with water treatment equipment



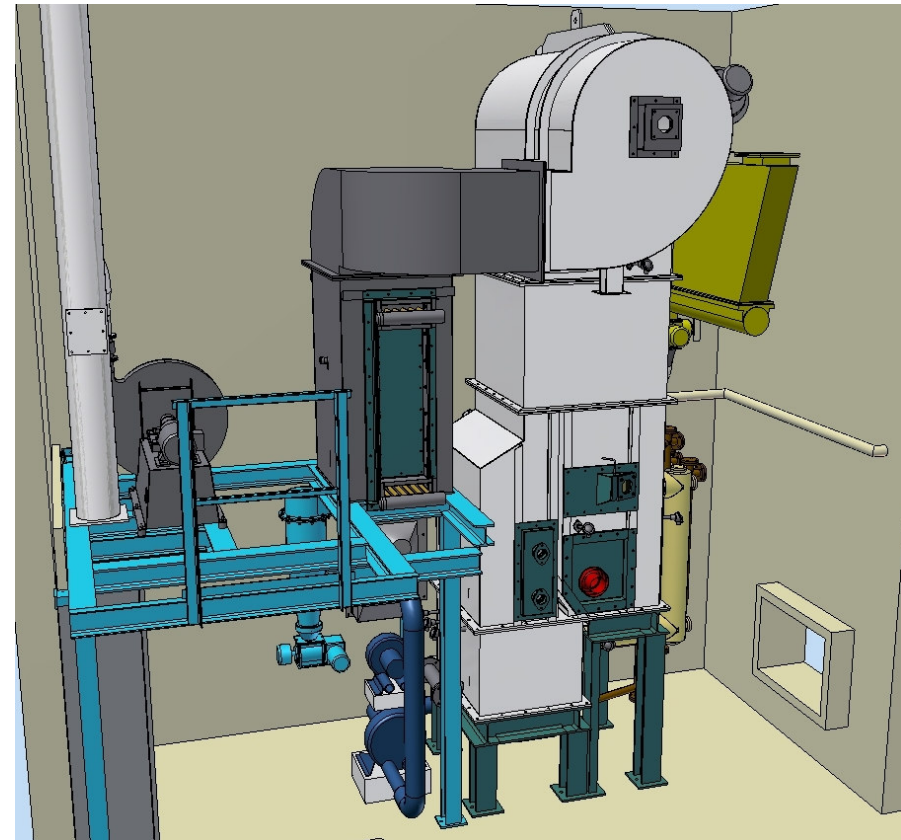
Solid Fuel Firing Systems

- Capacity up to 80 MW
- Reliable operation with high availability
- Low emission values for CO and NO_x
- 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 etc.



Fluidised Bed Combustion Systems

- Fluidised bed combustion with controlled ash recirculation
- Ash cooling heat exchanger positioned outside of combustion area
- Capacity: 500 kW – 50,000 kW
- Fuels: Biomass, coal (anthracite and lignite)
- Waste heat recovery media: Thermal oil, steam, hot water



Air Preheater

- For heat recovery from flue gas
- Preheating of combustion air
- Stainless steel piping optionally
- Cross-counter flow for improved efficiency



Energy plants

- Complete energy plants for particleboard, MDF or OSB production with heat transfer by thermal oil, steam or hot gas

Capacity range: up to 100 MW

- Fuels like bark, wood chips, production waste, fines, sanding dust, saw dust, rice husk, empty fruit bunches and other biomass fuels.
Other fuels like coal, natural gas or fuel oil may be used additionally
- Low emissions, modular design, high reliability



Power and co-generation plants

- Combustion systems for power plants, output up to 15 MWeI
- Fuels like bark, wood chips, production waste, rice husks, other biomass fuels or coal may be used
- High degree of local manufacturing is possible



Fluidised bed combustion systems



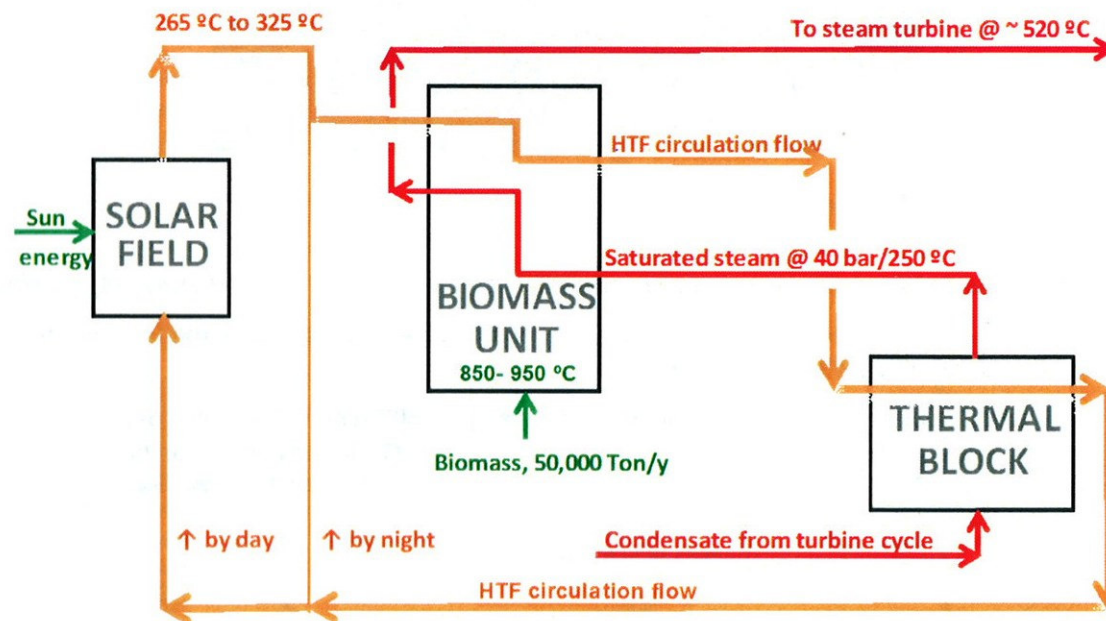
Taiwan, 2 x 12 MW coal fired thermal oil heaters with flash system

Hybrid Solar Biomass Plant



Spain, 2 x 25 MW biomass fired thermal oil heaters

Hybrid Solar Biomass Plant



Thermal Sewage Sludge Utilisation

- Sewage sludge drying and incinerators: Contact drying plants for sanitizing, drying and increasing the calorific value of municipal and industrial sewage sludge, wet fractions, oil sludge, fermentation residues and water sediments.

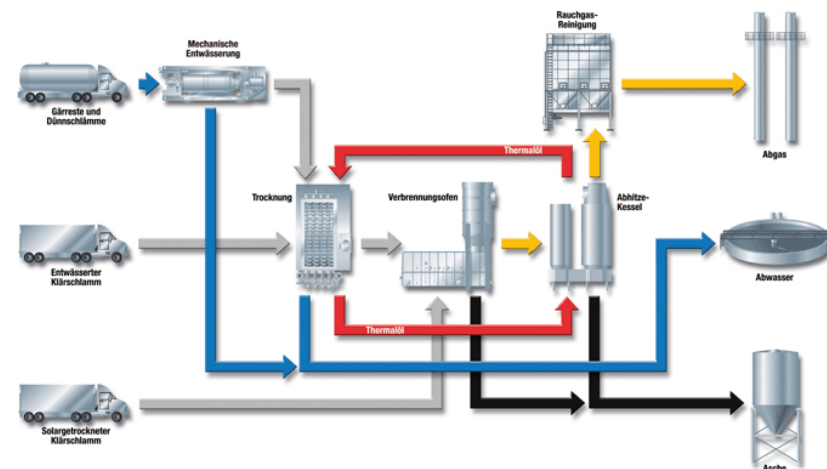


Thermal Sewage Sludge Utilisation

The INTEC-KonTroTec concept Thermal utilisation - Efficient energy generation

The innovative disposal and utilisation concept is based on a combination of the KonTroTec drying plants with INTEC solid material firing plants and process heat generation plants. During the process, the complete plant that results from this combination does not release any environmentally harmful substances into the air or soil.

It is not necessary to purchase any energy or fuel in order to dry the sludges and wet residues, or for their incineration. The energy released by the incineration is used to generate process heat for the drying process. In addition, the optional partial generation of electricity enables electricity costs to be further reduced.



INTEC GMK GmbH

Germany

- Founded in 2015 by Mr. Edwin Karrer and Mr. Aldo Piacentini-Timm, located in Bargeshagen, Germany
- Power generation based on the Organic Rankine Cycle

INDUCAL®

Waste heat recovery



GEOCAL®

Geothermal



ECOCAL®

Biomass

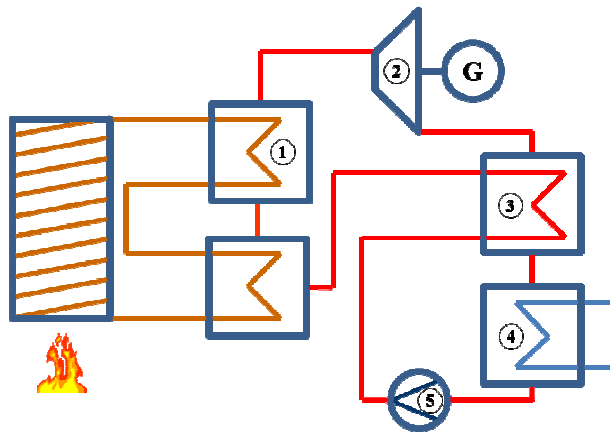


INTEC GMK GmbH

Germany

ECOCAL ORC-Module

- Power generation based on biomass firing systems
- Process temperature up to 320°C

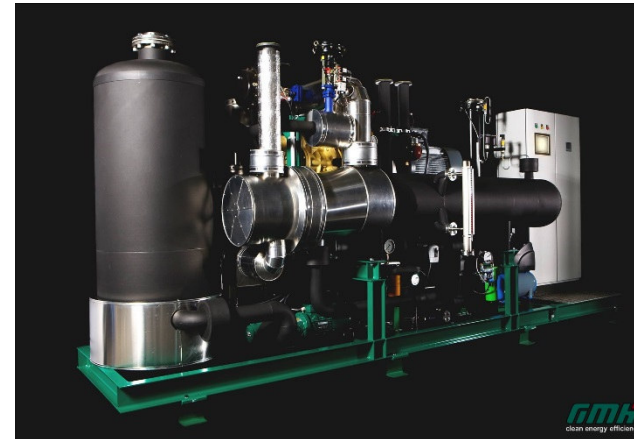


INTEC GMK GmbH

Germany

INDUCAL ORC-Module

- High temperature application: Usage of waste heat energy from industrial or biogas process process temperature up to 330°C
- Low temperature application: usage of warm water waste streams from industry; process temperature up to 100°C



INTEC GMK GmbH

Germany

GEOCAL ORC-Module

- Power generation based on geothermal heat sources
- Process temperature up to 100°C



INTEC Rohrtechnik GmbH

Quality „Made in Germany“

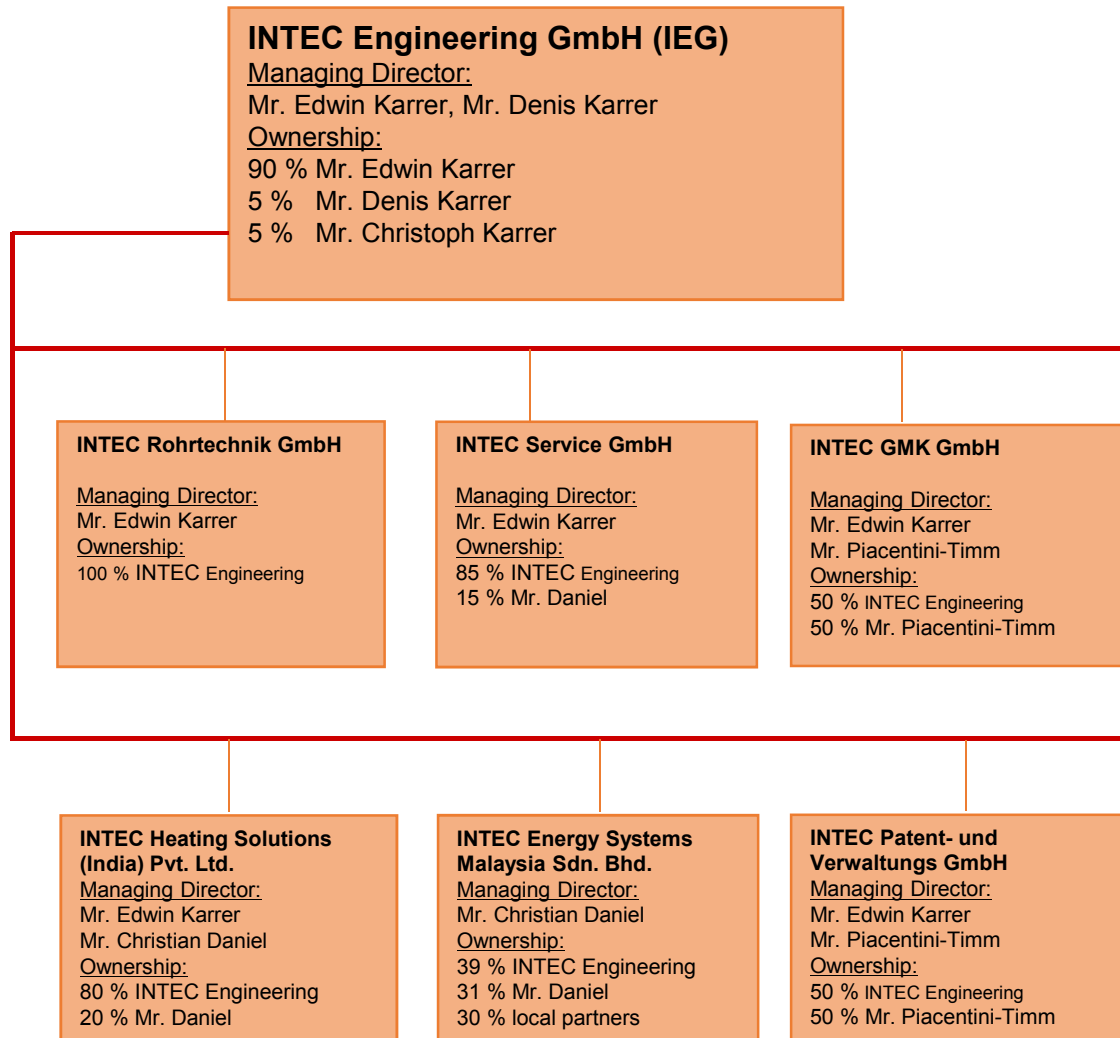
- INTEC manufacturing takes place at our own premises in Bruchsal, Germany
- Production of step grates, heater coils and tube bundles, complete heaters and boilers
- Certification for according:
 - Marine industry: GL, LR, BV, RINA, DNV
 - ASME*
 - TR TS (Ru)
 - SELO (China) **

* ASME Section VIII Boiler & Pressure Vessel Code

** Boiler & Pressure Vessel Manufacture Licensing of P.R. China



Organigramm of INTEC Group



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