



HUTTER FREI POWER GMBH



Company - Profile



HUTTER FREI POWER GMBH

Product- and Services-Strategy

High-grade energy conversion plants
are the better answer
to the global challenge of preserving the CO₂ balance.

With the aim of efficiency increase, that means fuel savings, and of emission reductions,
innovative technologies were created, which are the basis of our products.

Our **products of**
Combined Heat and Power Stations, Thermal Power Stations and Residue Waste-to-Energy Plants
achieve **highest fuel utilisation factors (total efficiencies)** and **time reliabilities**.

Our products lead with their primary energy savings (fuel savings) and very low air pollutant emissions to
environmentally-beneficial and highly economical solutions.

Based on the **competence** and **experience** of our Engineers
HUTTER FREI POWER
offers a huge variety of engineering services and products
in the power plant sector.



Overview of Activities

Our Company is **acting**:

- on the one hand as **Consulting-, Planning- & Executing Engineer (Owner's Engineer, General Planer, EPCM)**, and
- on the other hand in the **Development, Design, Engineering, Procurement and Supply of Combined Heat & Power (CHP) Stations, Power Stations, Heating Plants and Waste-to-Energy Plants (Component Supply, EPC/Turn-key)**.

Our **Customers** are:

- **Industries, Energy Supply Companies, (Public) Utilities, Waste Disposal Companies, Investors, Banks and State-owned Institutes.**

Our **Products**:

- **are based on innovative, high-grade and low emitting** technologies, and
- form together with **competent and experienced** Employees the basis for successful solutions.

Solutions: We offer **solutions**, which are **tailor-made** and **optimised** for the **individual** Customer needs.

Know-how: By means of our **combined know-how** in Consulting, technical Planning and as Supplier:

- we have the **latest state of the art** at our disposal and consider and analyse **all available technological solutions**.
- Consequently we are in a position to really **optimise** the **Customer benefit**.



Overview of Products

Development, Planning, Design, Engineering, Supply and Commissioning
of high-grade, high-efficient, environmentally-protecting, operation-flexible and low-emissioning
Combined Heat and Power Stations, Power Stations, Steam Generators, Residue Waste-to-Energy,
and as Consultant, General Planer or EPCM-Contractor
of large **Power Stations** and entire **Waste Incineration Plants**

- Combined Cycle CHP Stations SYSTEM HUTTER with own-developed Radiation-type Steam Generator
- Gas Turbine CHP Stations with Heat Recovery Steam Generator
- Steam Turbine CHP Stations
- Heating Plants and Steam Generator Plants
- Thermal Power Stations (up to medium size)
- Residue Waste-to-Energy Plants
- Waste Incineration Plants
- Consulting & Engineering (Consultant, Owner's Engineer, General Planer, EPCM-Contractor)
- Process Automation & Distributed Control Systems



Overview of Services

HUTTER FREI POWER offers
all Services in all Project-Phases of our Products,

- in the Consulting Phase:
 - General Planning for the Electrification of Regions and Planning of regional Power Station Parks
 - Project Developments
 - Pre-Studies
 - Parameter Studies
 - Feasibility Studies
 - Pre-Engineering
- in the Project Execution (Realisation) Phase:
from the order through the Design, Planning, Engineering, Supplier Control to the Hand-over
 - Pre-Engineering
 - Services as Consulting and/or Executing Engineer
 - Services as General Planer or EPCM-Auftragnehmer
- in the Operation Phase:
 - Service-Provider
 - Operation Support, Plant Assessments
 - Modernisations, Power- and Efficiency-Upgrades



Competent and experienced Employees for

- Consulting and Studies
- Development of innovative plant technologies
- Customer Support, e.g. with the preparation of permit application
- Expert Know-how of Plant Engineering and Components of power plants, at latest state of the art
- Planning, Design, Engineering, Procurement, Supplier control, Construction control, Turnkey supply
- Steam Generator detailed design
- Innovative open-loop- and closed-loop control concepts, e.g. for steam generator
- Project management
- Site management, Overall Erection Management,
- Overall Commissioning Management
- Commissioning
- Acceptance tests measurement





Our Customers

Our Customers are looking for a Partner for a high-grade solution,

- which provides for CHP Stations simultaneously useful heat and electricity and for Power Stations purely electricity
- which turns out to be the optimal plant variant considering all applicable power plant technologies
- which are individually optimised to his needs
- which uses high efficient and environmentally protecting technology
- and which offers the needed flexibilities in the type of operation and in the operation range

Our Customers are looking for a Partner,

- who analyses continuously the technical and economic developments in the (CHP-)Power Plant business
- acts competently and experienced
- keeps at least the agreements
- can successfully lead a power plant project
- and acts in line with the Overall Project Interest



Customers and Operators of CHP Stations

Companies, which continuously and simultaneously need Useful Heat (Steam or Warm water) as well as Electricity:



UPM Nordland Paper Mill, Dörpen, Germany

- Paper- and Cardboard
- Textile
- Automobile
- Steelwork
- Cement
- Chemistry
- Aluminium
- Mines
- Oil refinery and Oil production
- Sugar
- Food
- District Heating, Airports, Industrial Parks
- Process Industry
- Residue-Waste-to-Energy / Waste Incineration Plants



Customers and Operators of Thermal Power Stations

Companies, which either
need pure Electricity or
continuously and simultaneously need
Electricity and a relatively small portion of Useful Heat:



- Power Utility Companies
- Municipal Utilities and Service Providers
- Independent Power Producers
- Industries



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Three Combined Cycle CHP Stations SYSTEM HUTTER Varel 1, 2, 3

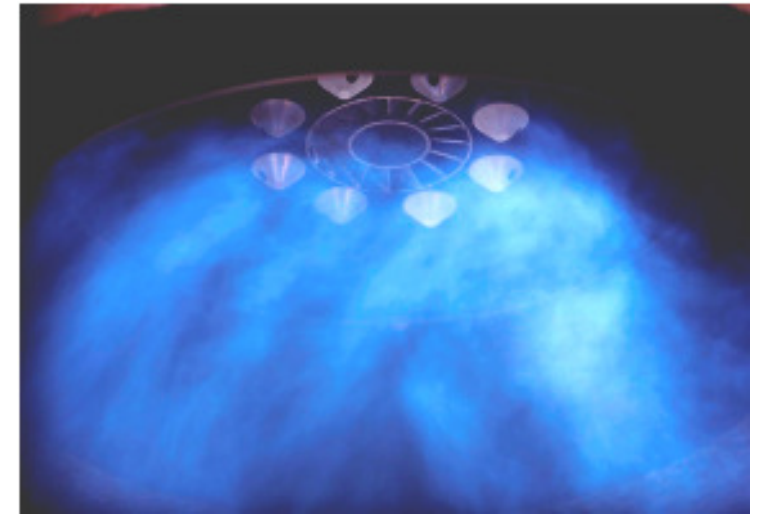


Three Combined Cycle
CHP Stations SYSTEM
HUTTER
at the Paper and Board Mill
Varel, Germany,

Varel 1; 1990; 211'000 OH

Varel 2; 2003; 91'000 OH

Varel 3; 2007; 56'000 OH





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Combined GT & ST CHP Station SYSTEM HUTTER

is a high-grade Combined Gas Turbine- and Steam Turbine-CHP Station,
own developed and based on **own patents**,
achieving **highest fuel utilisation factors** and
superior economy,
saving CO₂-emissions and **reducing CO₂-Costs**,
using a **Radiation-type SYSTEM HUTTER Steam Generator**
instead of a Heat Recovery Steam Generator (HRSG)

SYSTEM HUTTER

is designed for **Cogeneration / Combined Heat & Power (CHP) Applications**
in Industries and District Heating Systems,
for the simultaneous generation of
Electricity and Process Steam or District Heating Steam



Patent Rights

Our Company is holder of Patent Rights:

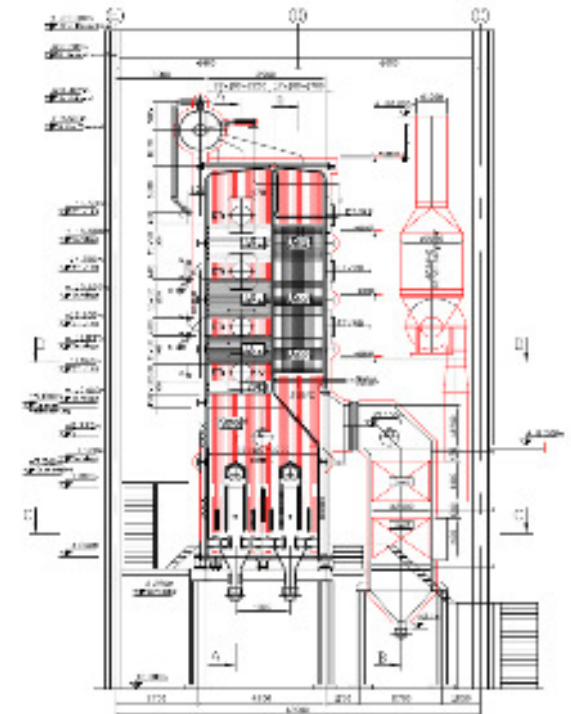
- on low emission technology of Steam Generator Firing, and on special thermal Steam Generator configuration of Radiation-type SYSTEM HUTTER Steam Generators downstream Gas Turbines to reach highest total efficiencies and consequently fuel savings and reductions of CO₂ emissions
- on CO reduction technologies on bubbling fluidized-bed Combustion Plants



Cut-away Gas Turbine ROLLS ROYCE KB5
in the Zellcheming Fair in Wiesbaden, Germany



Design of optimised Bubbling
Fluidized-Bed Combustion for
rejects from paper- and card-
board- production with high-
pressure Steam Generator





Operation Experience of Combined Cycle CHP Stations SYSTEM HUTTER

7 CHP Stations SYSTEM HUTTER in Operation

Cumulative Operation Experience:

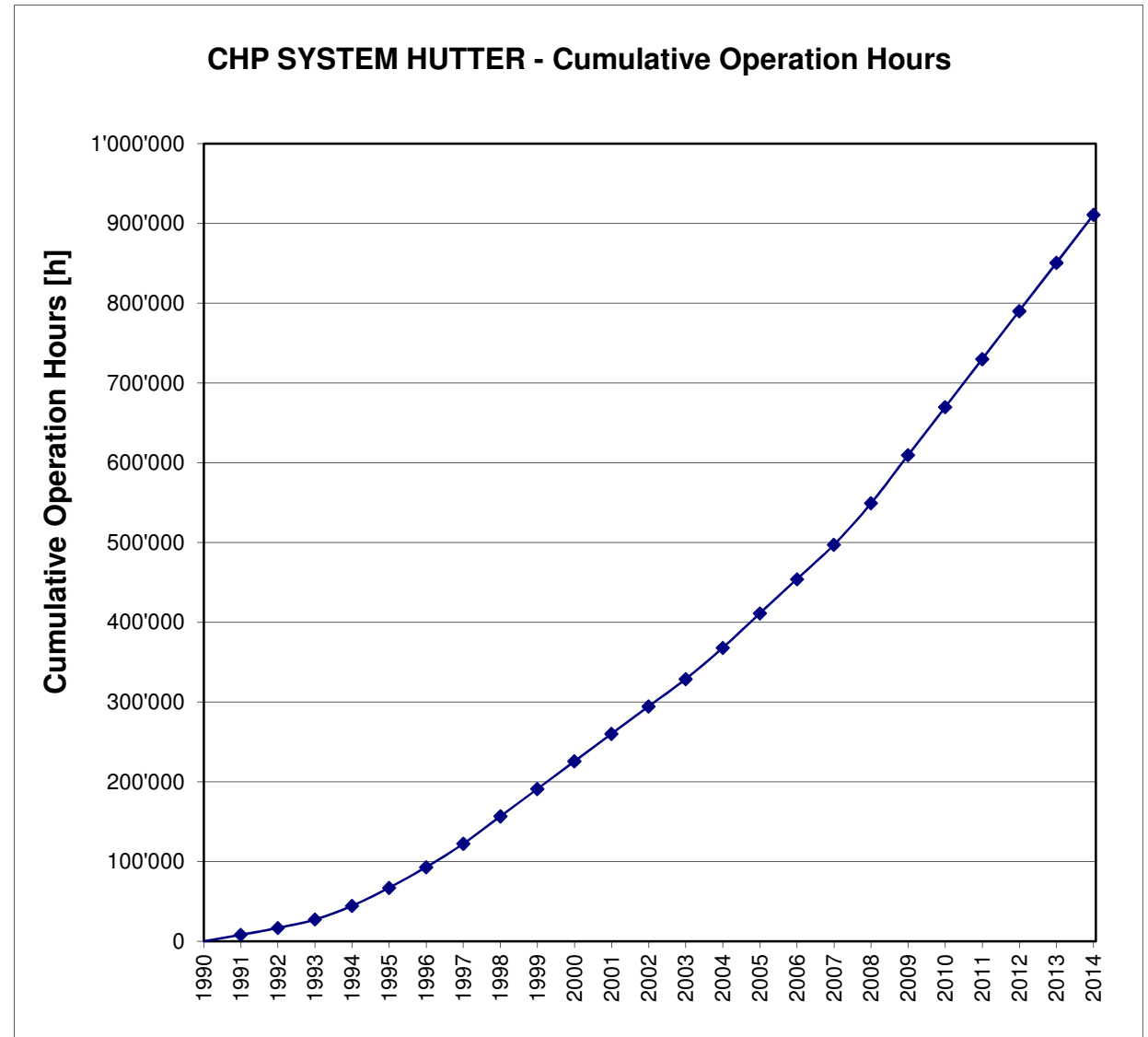
- 106 Years
- 911'000 Operation Hours

Longest Operation Experience:

- 24 Years
- 211'000 Operation Hours

Time-Reliability:

- > 99.5 %





References of delivered SYSTEM HUTTER and further CHP Stations

- **Combined Cycle CHP Station SYSTEM HUTTER Varel 1**
for Paper- and Board Mill VAREL; Varel, Germany
- **Combined Cycle CHP Station Repowering to SYSTEM HUTTER Buchmann 1**
for Board Mill BUCHMANN; Annweiler-Sarnstall, Germany
- **Combined Cycle CHP Station SYSTEM HUTTER Smurfit Kappa Badische Karton & Pappenfabrik (BKPO) 1**
for Board Mill SMURFIT KAPPA BADISCHE KARTON & PAPPEN; Obertsrot, Germany
- **Combined Cycle CHP Station SYSTEM HUTTER Smurfit Kappa Europa Carton Hoya 1**
for Paper Mill SMURFIT KAPPA EUROPA CARTON; Hoya, Germany
- **Combined Cycle CHP Station SYSTEM HUTTER Varel 2**
for Paper- and Board Mill VAREL; Varel, Germany
- **Combined Cycle CHP Station SYSTEM HUTTER Varel 3**
for Paper- and Board Mill VAREL; Varel, Germany
- **Combined Cycle CHP Station SYSTEM HUTTER Buchmann 2**
for Board Mill BUCHMANN; Annweiler-Sarnstall, Germany
- **Extension of Heating Plant with Steam Turbine Plant - Refurbishment and Modernisation of a used Steam Turbine**
Paper Mill STORA ENSO UETERSEN, Uetersen, Germany
- **Waste Incineration Plant Mainz Line 3** – Overall Concept, Integration, Engineering and Delivery of Energy part around Steam Turbine
KRAFTWERKE MAINZ-WIESBADEN – Entsorgungsgesellschaft Mainz mbH, Mainz, Germany
- **Combined Cycle CHP Station SYSTEM HUTTER UPM Nordland Papier 1** (Design, Pre-Engineering, Authority Permitting)
UPM NORDLAND PAPIER; Dörpen, Germany



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