

**Hannover Fair 2010**

Pre-Press Conference March 16, 2010

**SIEMENS**

# Industry Solutions

**Manufacture economically  
in spite of rising energy costs –  
Energy efficiency over the entire process chain**

Jens Wegmann  
CEO Industry Solutions

# Industry Solution is a leading solution and service provider for industrial and infrastructure facilities

**SIEMENS**

## Industry Sector – Industry Solutions Division

New orders: €6.1 bn

Revenue: €6.8 bn

Profit: €360 m

Employees: ~31,000

### Metals Technologies



- Mining
- Iron and steel industry
- Environmental technology for heavy industry
- Complete solutions and products

### Water Technologies



- Water treatment
- Drinking water supply
- Drainage
- High-purity process water for industry

### Industrial Technologies



- Pulp and paper production
- Cement production
- Ship propulsion systems
- Energy Health Check for all types of industrial installations

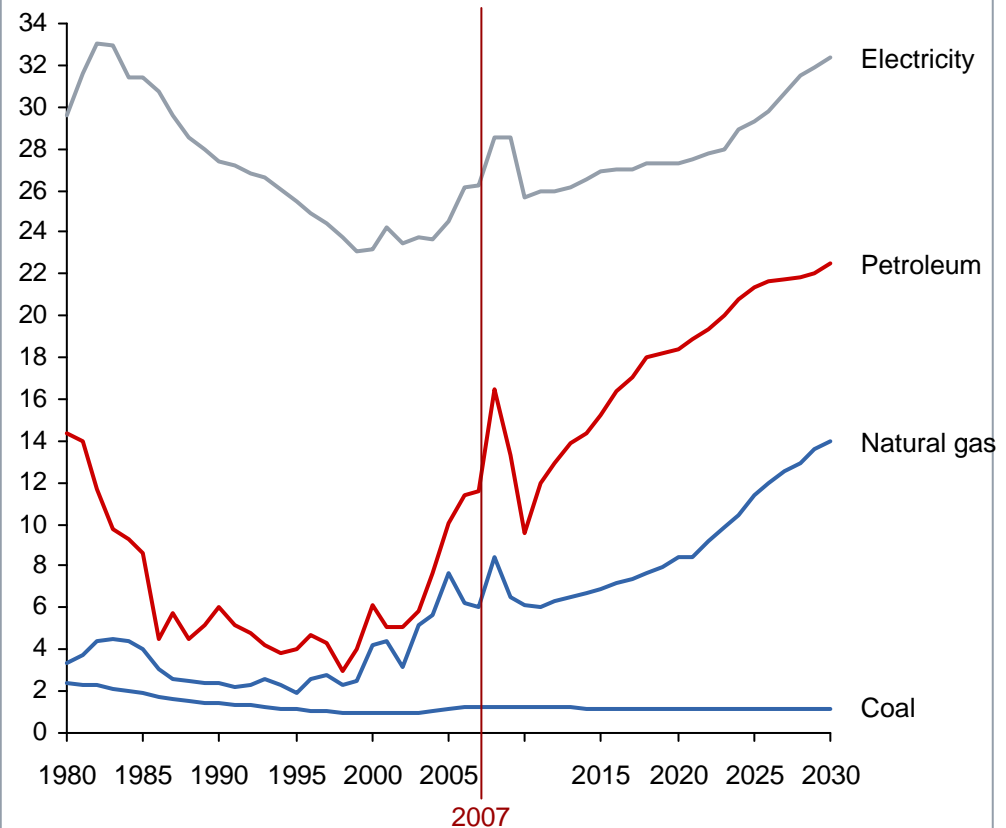
**We create sustainable value for our customers  
by optimizing plant efficiency and productivity over the entire lifecycle.**

# The economical and ecological significance of energy efficiency is increasing

## Public regulations

- **China**  
Reduction of 20% energy usage per GDP by 2010
- **India**  
Energy Conservation Act 2001: Establish norms
- **EU-15/WE**  
+20% energy savings by 2020
- **Eastern Europe**  
20% energy savings by 2020
- **Germany**  
Agreement between the German government and energy-intensive industries to reduce their energy consumption by 30%
- **CIS**  
Russia targets 40% energy savings by 2020
- **USA**  
17% energy savings by 2020

## Development of energy costs

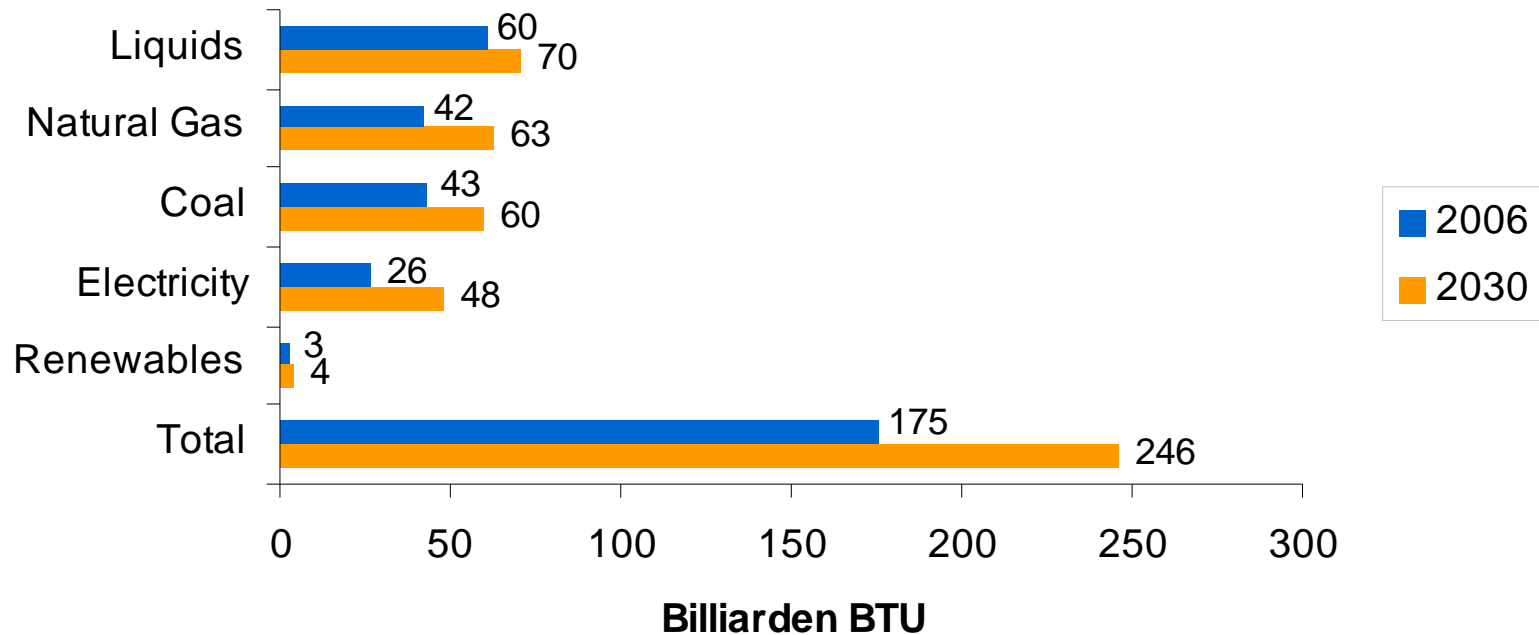


Source: IEA, Annual Energy Outlook

Jens Wegmann CEO IIS

**Worldwide energy consumption continues to rise**

**World industrial sector energy consumption by fuel**



Source:  
 Derived from Energy Information Administration (EIA), International Energy Annual 2006 (June-December 2008).  
 Website [www.eia.doe.gov](http://www.eia.doe.gov). 2030: EIA, World Energy Projections plus (2009)

# We have the right solutions for improving energy efficiency

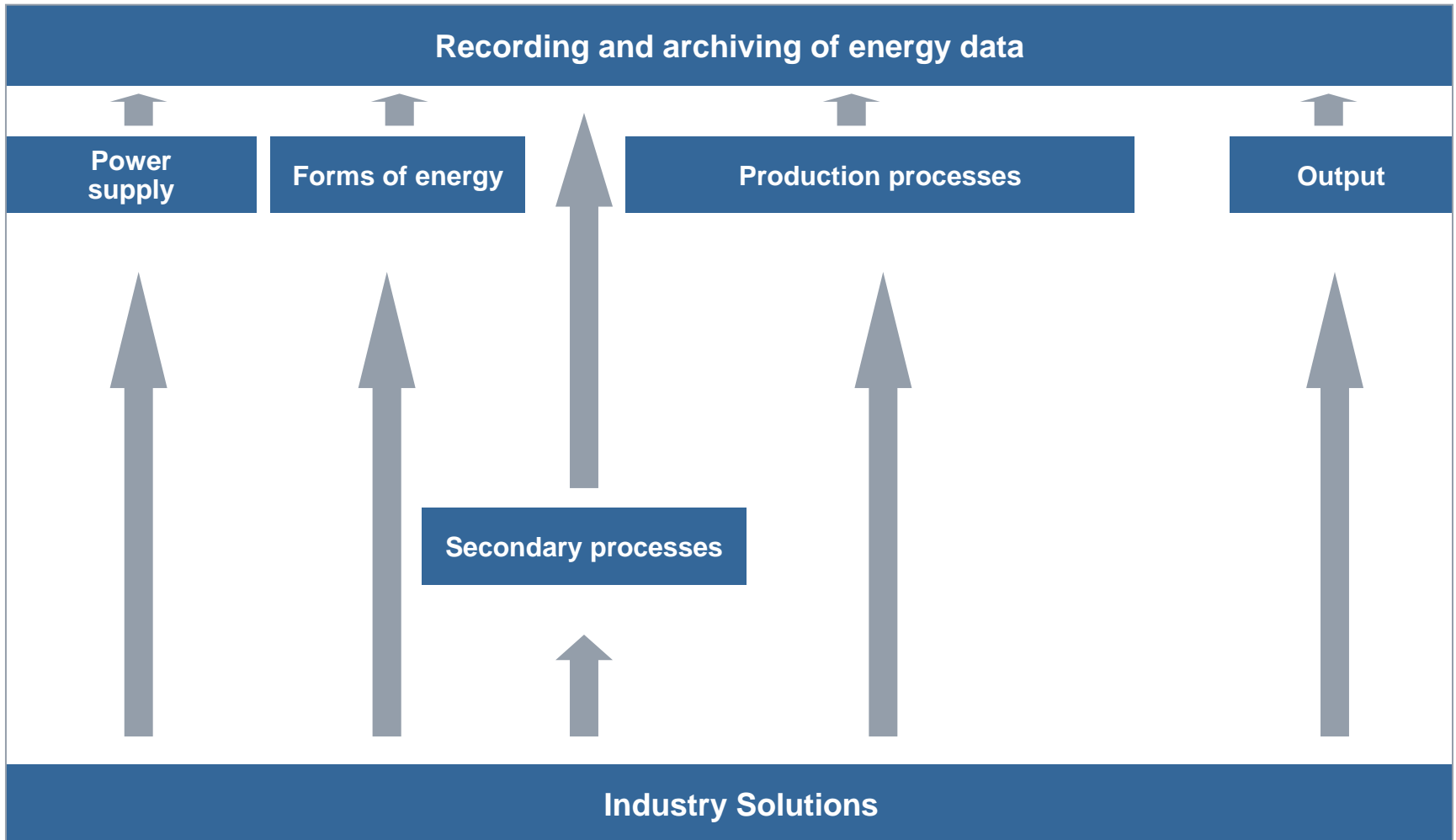


The efficiency and reliability of the power supply are major factors that influence the profitability of a company


Ever higher energy prices and more stringent laws and regulations governing greenhouse gas emissions are making it necessary to handle energy more efficiently – above all, in industry

Industry Solutions provides industrial firms with holistic solutions for improving energy efficiency

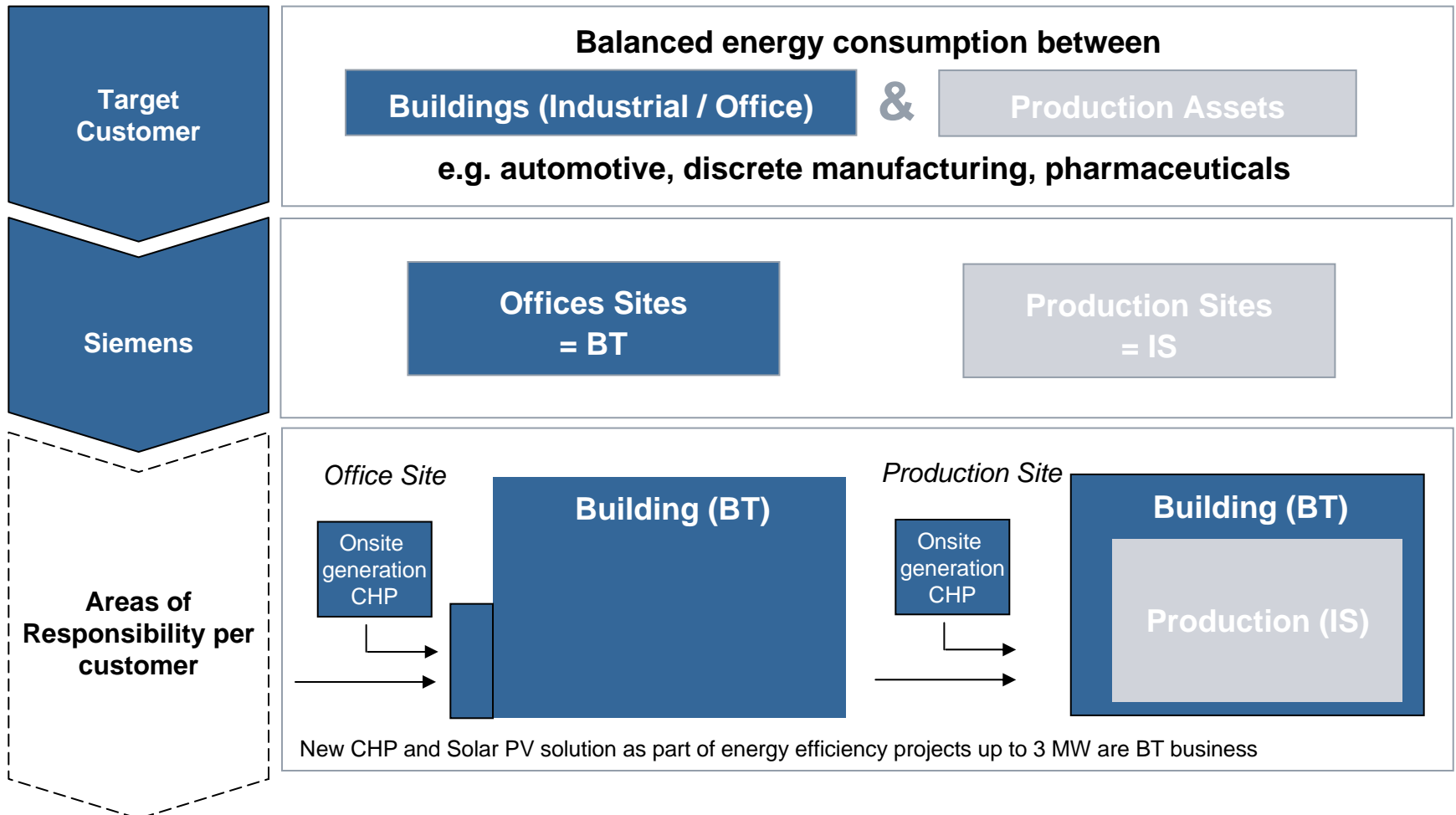
# Our holistic solutions encompass all areas of energy optimization in industrial plants



## We continuously expand our range of services

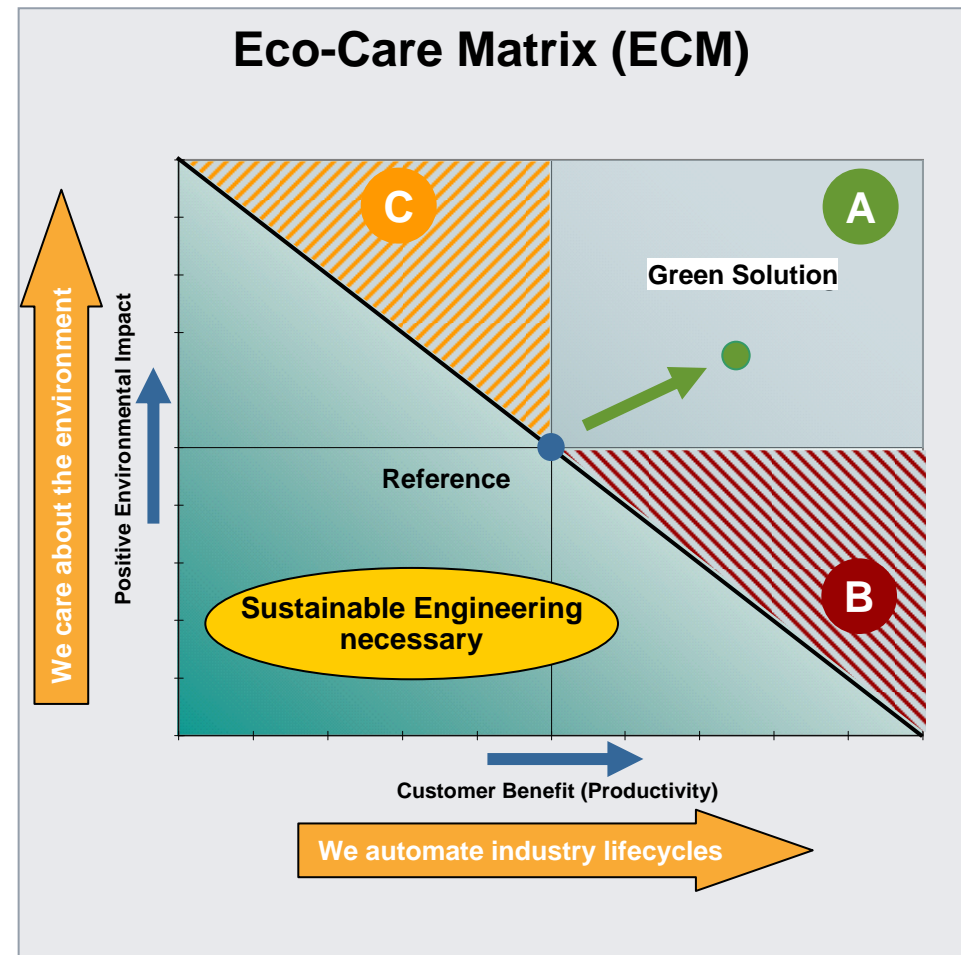
	<ul style="list-style-type: none"> <li>▪ offers consulting services in the areas of energy and environment</li> <li>▪ has proven know-how in modern practices, processes and systems for industry and infrastructure, and</li> <li>▪ possesses vast knowledge of the national and international energy and environmental policies</li> </ul>	<b>Energy systems and energy industry</b>	<ul style="list-style-type: none"> <li>▪ Energy consultancy for manufacturing facilities &amp; buildings</li> <li>▪ Optimization of processes, machines and systems</li> <li>▪ Measurements and simulation analyses</li> <li>▪ Consultancy for energy purchase</li> <li>▪ Worldwide benchmark studies</li> </ul>
<b>International cooperation on development</b>	<ul style="list-style-type: none"> <li>▪ Establishment of institutions for the promotion of energy efficiency and environmental protection</li> <li>▪ Identification of “typical” energy</li> <li>▪ Development of suitable financing models</li> </ul>	<b>Environmental protection &amp; emissions trading</b>	<ul style="list-style-type: none"> <li>▪ Support in preparing the application &amp; the emission report</li> <li>▪ Setting up of monitoring methods &amp; introduction of monitoring systems</li> <li>▪ Development of a compliance strategy</li> </ul>
		<b>Further training</b>	<ul style="list-style-type: none"> <li>▪ Coaching of industrial plants in the creation of energy concepts</li> <li>▪ International workshops and in-house seminars on the topics of energy efficiency &amp; climate protection</li> <li>▪ Training of energy auditors</li> </ul>

# Cooperation of Industry Solutions and Building Technologies in the area of energy optimization





# The Eco-Care Matrix supports the development of “Green Solutions” and Sustainable Engineering

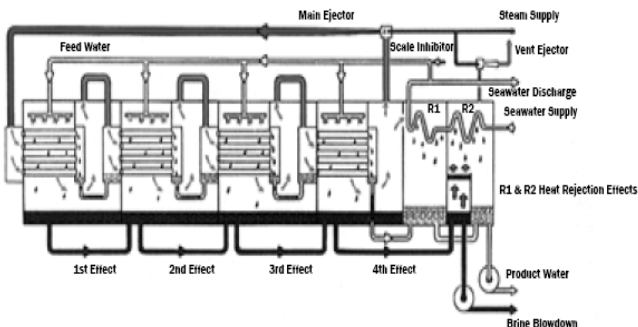


# Optimized Component: Process water produced out of sea water

## Water Industry



Multi-Effect Distillation (MED)



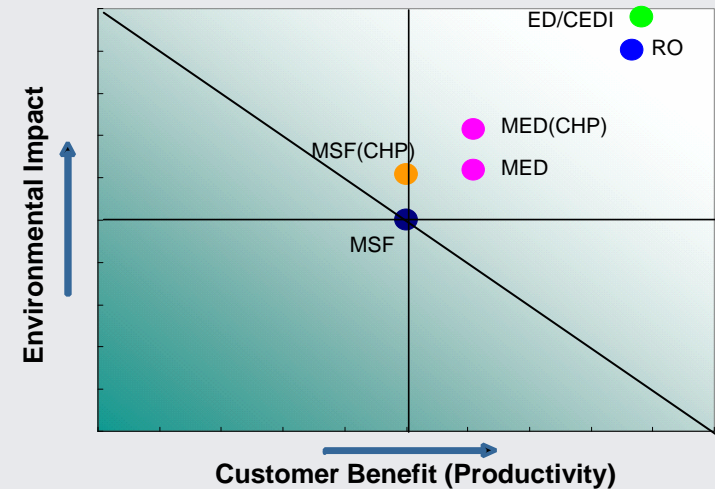
Green  
Solution

MED:  
Using the waste heat from the steel plant for producing process water out of sea water.

ED/CEDI is the most eco-efficient approach to generate process water out of sea water (under development).

Environmental  
Impact

Customer  
Benefit

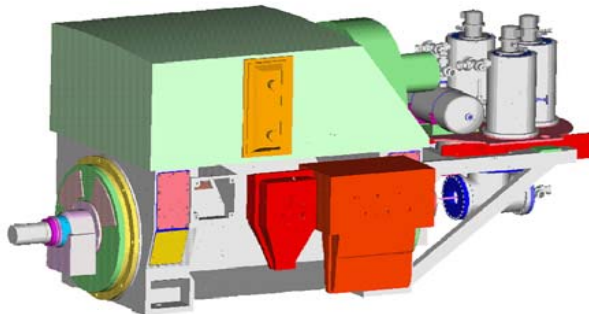


# Optimized Component: HTS-Generators and Drives for ships

## Ship Industry



High-Temperature-Superconducting (HTS)

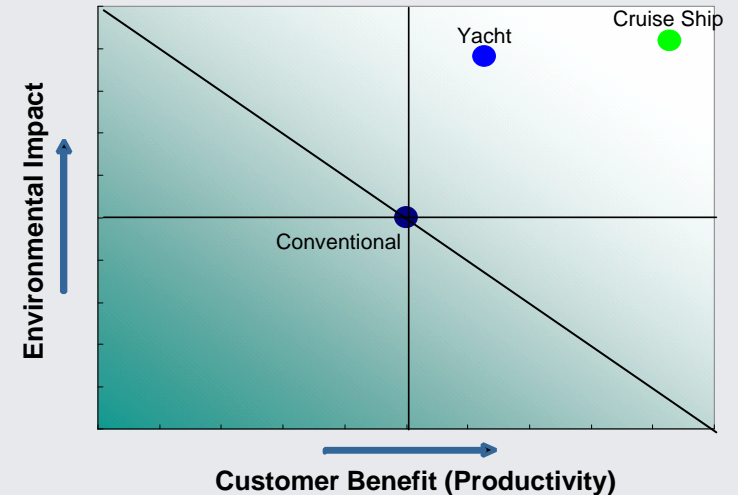


Green  
Solution

HTS-Technology is described by the following Benefits against conventional technology:

- compact design (weight, size)
- higher efficiency rate (95% → 98%)
- higher torque overload (1,5 → 7,5)

Environmental  
Impact



Customer  
Benefit

# Optimized Auxiliary Process: Reject Power – Energy instead of deposition

## Pulp & Paper Industry

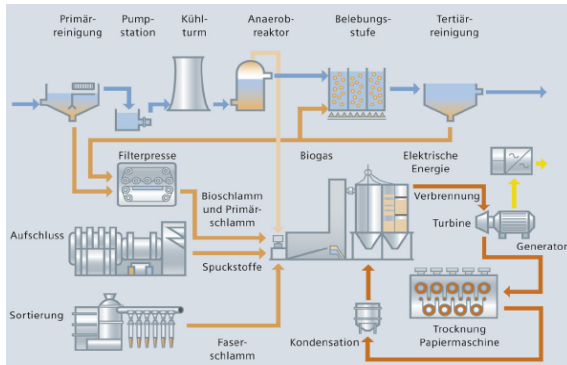


Green Solution

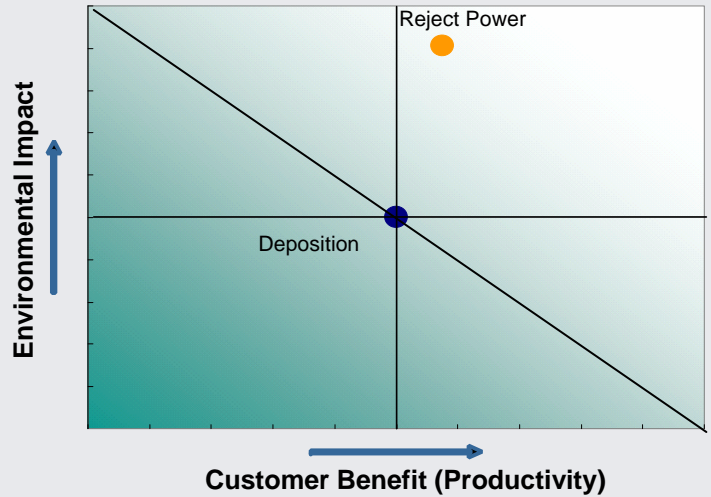
Using the heat of burned paper waste for electrical power and heat generation instead of environmentally critical deposition (example for W2E = Waste-to-Energy)

Environmental Impact

Production Process with Reject Power



Customer Benefit



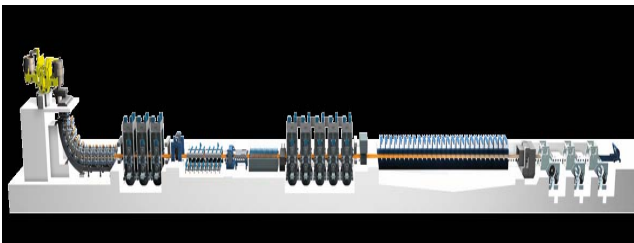


# Optimized Process Technology: Endless Strip Production (ESP)

## Steel Industry



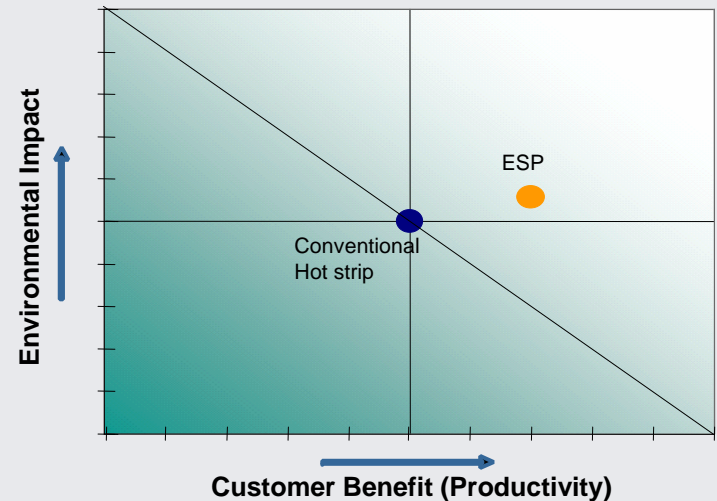
Optimized Production with ESP



Green  
Solution

Continuous process gives the opportunity to use the heat of the hot steel for the process instead of waste heat at a batch driven process.

Environmental  
Impact



Customer  
Benefit

# Our holistic solutions encompass all areas of energy optimization in industrial plants



## Challenge

Increasing energy prices on global scale and tighter laws for greenhouse gas emissions are forcing industrial enterprises to handle energy more efficiently.

## Solution

Energy Optimization concept to reduce energy costs of industrial plants and facilities through a holistic 4-phase approach.

## Customer Benefits

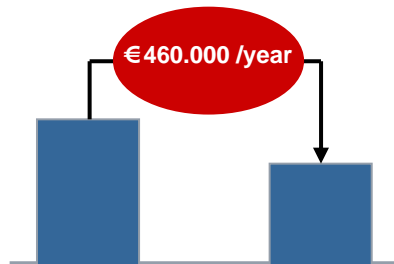
- Sustained reduction of energy costs and CO<sub>2</sub> emissions
- Short-term return on investment
- Optimal results by assessing all energy-related processes (management, operation, maintenance) and forms of energy (electricity, heat, compressed air, steam, etc.)
- Referenced results by benchmarking with more than 2,300 industrial companies
- Worldwide network of energy efficiency specialists

## We create measurable customer benefits

### Improved energy efficiency



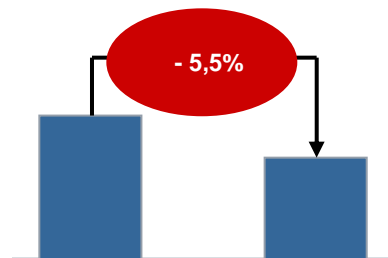
#### Energy savings



Felix Schoeller jr.  
Canada



#### Energy cost reduction at a new installation



Tropicana  
Belgium



#### Energy savings



Mondi Packaging  
Great Britain

# We are also experts for energy efficiency in other vertical markets

## Metals

- Arvedi ESP - Endless Strip Production (Italy); from liquid steel to hot rolled coil in 7 minutes, with 40% energy savings compared to conventional processes



## Mining

- Arvedi ESP - Endless Strip Production (Italy); from liquid steel to hot rolled coil in 7 minutes, with 40% energy savings compared to conventional processes



## Infrastructure

- Zweckverband Restmüll, (Böblingen, Germany)  
Efficient generation of energy from finely chopped material



## Cement

- Holcim GmbH (Germany);  
Modernization of energy management system (ECS – Energy Control System by Siemens Industry Solutions)



## Water

- Cannibal solids reduction process: 40% to 80% reduction in biological solids yield and 90% reduction in aeration energy



## Food & Beverage

- Coca Cola; Energy Health Check and implementation of energy saving measures
- Abraham Schinken Germany; complete Energy Optimization process (4 phases) EUtech reference



## Marine

- WHR Maersk Line  
Generation of energy from vessel's exhaust gases



## Pulp & Paper

- Energy optimization service at Felix Schoeller Jr., Germany & Canada





## We create sustainable value for our customers

- 1 Ever higher energy prices and more stringent laws and regulations governing greenhouse gas emissions are making it necessary to handle energy more efficiently.
- 2 The efficiency and reliability of the power supply are major factors that influence the costs and the profitability of a company.
- 3 Using four phases and based on a holistic study of the company processes, our energy optimization concept reveals the potential energy savings.
- 4 We create sustainable value for our customers by optimizing plant and energy efficiency and productivity over the entire lifecycle.