

## *Strategic Summary*

Important Findings of the Market Worldreport

# **Power Plant Markets 2010**

## **- Global Market Analyses and Forecasts until 2010 -**

World market for plant-related products and external services in the Power Generation Sector will grow at an average annual rate of 3.2% between 2000 and 2010.

2000:	\$ 120 billion
2005:	\$ 125 billion
2010:	\$ 164 billion

**Markets:** Highest demand for machinery, electrical equipment, building materials, software and external services in coal-fired power plants, followed by gas-fired power plants. Fastest growing demand in fuel-based distributed power generation followed by power generation based on wind energy.

**Countries:** North America is the leading market for plant-related products and external services in power generation, followed by Asia-Pacific and Western Europe. China is the fastest growing market, followed by India. China is already the leading market in Asia followed by Japan.

**Trends:** The major trend is towards higher energy efficiencies and further cost reductions in design and engineering. Advanced control systems, artificial intelligence and smart instrumentation will further improve power plant optimization capabilities and enable asset management.

## GLOBAL MARKET GROWTH FOR EQUIPMENT, SERVICES, EQUIPMENT AND PLANTS FOR POWER GENERATION IN THE 2<sup>nd</sup> HALF OF THE DECADE

Electric power utilities worldwide will be faced with additional, **global challenges** in the 21st century such as an increasing need of dealing with the carbon-dioxide problem and a further internationalization of energy markets. Globally, all types of **distributed power generation** will gain importance: wind energy, solar energy (photovoltaics, photothermal) and fuel-based distributed power generation based on miniturbines and reciprocating engines. The most important **growth factors** for a long-term, continuous increase of power generation are a continuous growth of the world population, people's desire for higher standards of living and a continuous growth of purchasing power in the fast-developing countries. A major **growth barrier** is the further progress in more efficient power utilization, especially in highly industrialized countries.

According to the market worldreport, "**Power Plant Markets 2010**" by INTECHNO CONSULTING (Basel, Switzerland), the **global production volumes** of the **power generation industries** is expected to grow from 15'400 Terawatt hours (TWh) in 2000 to about 20'500 Terawatt hours by 2010. The respective global capital expenditures will grow from USD 120 billion in 2000 to USD 156 billion by 2010. Between 2000 and 2005 the average annual growth of capital expenditures is 0.2% and between 2005 and 2010 it is expected to be 5.1%. The share of capital expenditures in central power generation is expected to decrease from 91.3% in 2000 to about 85% by 2010.

The world market for plant-related products and external services in power generation, including **project and operation phases**, is expected to grow from USD 120 billion in 2000 to presumably USD 164 billion by 2010. The average annual growth rate is 0.8% between 2000 and 2005 and will be about 5.5% between 2005 and 2010. The average growth for the whole decade is 3.2%. The term "plant-related products and external services" covers the whole spectrum of power generating equipment, transport & conveying machinery, storage & piping equipment, automation and electrical equipment, building materials, software and external open-market services such as engineering, execution, training, maintenance, demolition and overall plant services.

### SEGMENTATION BY PLANT WORKS

The segmentation of the global market for plant-related products and external services in 2000 by types of works was as follows:

<input type="checkbox"/> IT-MES (Manufacturing Execution Systems):	0.9%;
<input type="checkbox"/> Automation (control & instrumentation):	7.3%;
<input type="checkbox"/> Electrical works (drives, switchgear, cables):	10.1%;
<input type="checkbox"/> Mechanical works:	54.9%;
<input type="checkbox"/> Civil & structural works:	19.9%;
<input type="checkbox"/> Overall plant services:	6.8%.

Until 2010, the shares of MES and automation works are expected to grow. **MES** includes plant management functions, plant execution and process management as well as data &

information management. **Automation works** cover control systems and instrumentation as well as software and the related services such as engineering (basic, detail), execution (installation, assembly, commissioning), training and maintenance. **Mechanical works** represent the following items: power generation equipment (boilers, turbines, generators), pumps, compressors and conveyors as well as storage tanks and systems, piping and valves. The machinery-related services, too, are included.

The **overall services** comprise activities such as feasibility studies (technical, economical, legal), conceptual planning, overall consulting, project management, process design, financial engineering and procurement as well as plant or utility-related outsourcing services.

## SEGMENTATION BY POWER GENERATION PLANTS

Nearly 87% of the global demand for building materials, plant equipment and external services are for central power generation and 11.5% for distributed and standby power generation facilities including wind farms. Another 1.7% is for outsourcing service suppliers. About 24.9% of global plant-related products and external services is for coal-fired power plants.

## SEGMENTATION BY REGIONS

The segmentation of the global market for power generation equipment, electrical equipment, building materials, software and external services in 2000 by global regions was as follows:

<input type="checkbox"/>	Western Europe:	17.4%;
<input type="checkbox"/>	Eastern Europe:	6.2%;
<input type="checkbox"/>	North America:	37.8%;
<input type="checkbox"/>	South America:	4.7%;
<input type="checkbox"/>	Asia-Pacific:	28.7%;
<input type="checkbox"/>	Rest of the World:	5.2%.

Until 2010, the share of Asia-Pacific will grow up to 36.1%. China's share will expand from 10.7% in 2000 to 15.5% by 2010 and India's share is expected to grow from 4.8% in 2000 to 5.4% by 2010.

## THE REPORT AS A SUPPORT FOR YOUR STRATEGIC DECISIONS

The report "**Power Plant Markets 2010**" is based on the power section of the INTECHNO Worldreport "**Process Plant Markets 2010**". It covers all types of **central power generation plants**. **Distributed power generation (DPG)** and **standby power generation** is included, too. The report shows the equipment, software and services market development for power generation only and is intended to serve as a strategic tool for all those power generation equipment and plant service suppliers who want to diversify or penetrate into new power generation market sectors. Companies who intend to internationalize or who are already active on a global level are a further target group for this report. The power generation section of this report is based on international expert

interviews plus analysis of more than 400 statistics and reports on the relevant industries. A priority has been the well-founded assessment of electricity generation volumes and capital expenditures for each type of the single power generation plants.

**The report "Process Plant Markets 2010" was published in May 2003** and only sold as a whole. INTECHNO CONSULTING is now offering the power generation section of this report - "**Power Plant Markets 2010**" - as a special module and at **special prices** for all those plant builders, machinery, electrical and automation manufacturers, who are focused on the power generation industries solely.

#### **THE REPORT IS PUBLISHED IN 2 VERSIONS:**

##### **Version 1 = General Version - Net Price EUR 2'400:**

The report "**Power Plant Markets 2010 - Version 1**" represents the overall version and is identical with chapters 1, 2, 3 and 18 of the report "**Process Plant Markets 2010**". It contains about 142 pages including 75 tables and 15 figures of highly concentrated and strategically valuable market information. About 89 pages refer to the power plant industries as such and 53 pages refer to basic definitions, assumptions and overall economic trends. It is published as a CD-ROM version and contains all data as pdf-files. All tables are shown in Excel-format, too.

##### **Countries published:**

About 80 countries have been analyzed in detail of which the following 21 countries / regions are published:

Germany, France, United Kingdom, Italy, Spain & Portugal, Benelux, Scandinavia, Rest Western Europe, Russia, FSU - other countries, Rest Eastern Europe, USA, Rest North America, Brazil, Rest South America, Japan, Australia & New Zealand, China, India, Rest of Asia-Pacific, Rest of the World.

The report shows and discusses the **global electricity generation volumes** and the **capital expenditures by type of power plant**. The plant markets are segmented by **core and auxiliary processes (utilities, environmental, others)**.

##### **Works published, segmented by project and operation phases:**

**Manufacturing Execution Systems:** MES hardware, MES software, MES services (engineering, execution, training, maintenance, demolition). **Automation:** Automation hardware (control & instrumentation), automation software, automation-related services (engineering, execution, training, maintenance, demolition). **Electrical works:** Switchgears, drives, cables, electrical works services (engineering, execution, training, maintenance, demolition).

**Mechanical works:** power generation equipment, transport & conveying machinery, storage & piping equipment, mechanical works services (engineering, execution, training, maintenance, demolition). **Civil & structural works:** Building materials, building works

services (planning, execution, training, maintenance, demolition **Overall plant services:** Feasibility studies, conceptual planning, overall consulting, project management, process design, financial engineering, procurement, outsourcing.

**Version 2 = Detailed Version - Net Price EUR 4'800:**

The report "**Power Plant Markets 2010 - Version 2**" comprises **all data of version 1** in pdf- and Excel-format **plus additional pages and Excel tables for each of the 12 plant categories of power generation. These additional pages and Excel tables were not published within the report "Process Plant Markets 2010".** They cover data about power generation volumes, capital expenditures, production investments, MES, automation, electrical works, mechanical works, civil & structural works and overall plant services **for each of the following types of power plants (years 2000, 2005 and 2010):**

**A. Central Power Generation:**

- Coal-fired power plants by countries;
- Oil-fired power plants by countries;
- Gas-fired power plants by countries;
- Waste-fired power plants by countries;
- Combustible renewables-fired power plants by countries;
- Nuclear power plants by countries;
- Hydroelectric power plants by countries.

**B. Distributed and Standby Power Generation:**

- Power generation based on wind energy by countries;
- Power generation based on solar energy by countries;
- Power generation based on other renewables (tidal, geothermal) by countries;
- Fuel-based distributed power generation (DPG) facilities by countries;
- Fuel-based standby power generation facilities by countries.

**All in all version 2 contains about 423 more pages than version 1 including 384 tables (pdf and Excel) and another 234 additional market tables, which are shown in Excel-format only. All in all version 2 comprises about 618 more tables and 52 more figures than version 1.**

We believe that the data of this report, although the basic research was conducted already in 2003, are still quite valid.

*In case of interest, this study is available at:*

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## POWER PLANT MARKETS 2010

### International Market Report about the Market Development of Power Generation Plants, Equipment and Services until 2010

We hereby order the report „Power PLANT MARKETS 2010“

**Net Prices**

CD-ROM Version 1 - General Market Report:  
Chapters 1, 2, 3 and 4

EUR 2'400

CD-ROM Version 2 - Detailed Market Report:  
Version 1 and Additional 618 Excel-Tables

EUR 4'800

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