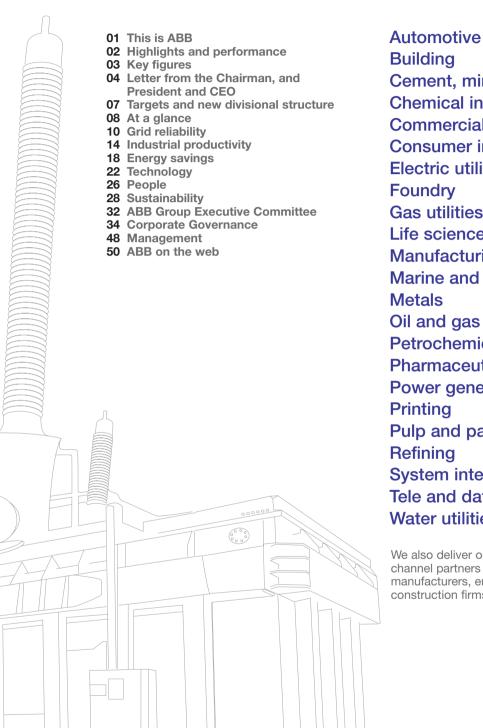




# Table of contents

# Industries we serve



**Buildina** 

Cement, minerals and mining

Chemical industries

Commercial and industrial buildings

Consumer industries

Electric utilities

**Foundry** 

Gas utilities

Life sciences

Manufacturing

Marine and turbocharging

Metals

Oil and gas

**Petrochemicals** 

**Pharmaceuticals** 

Power generation

**Printing** 

Pulp and paper

Refining

**System integrators** 

Tele and data communication

Water utilities

We also deliver our products and expertise through channel partners such as original equipment manufacturers, engineering, procurement and construction firms, wholesalers and distributors.

Caution concerning forward-looking statements
The ABB Annual Report 2005 includes "forward-looking statements" within the meaning of Section 27A of the
Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. In the Operational review, statements are included in the sections entitled "Letter from the Chairman, and President and CEO", "Targets and
new divisional structure" and "People". In the Financial review, such statements are included in the section entittled "Management discussion and analysis". We have based these forward-looking statements largely on current
expectations, estimates and projections about future events, financial trends and economic conditions affecting
our business. The words "believe", "may", "will", "estimate", "continue", "targeti", "anticipate", "intend", "expect"
and similar words and the express or implied discussion of strategy, plans or intentions are intended to identify
forward-looking statements. These forward-looking statements are subject to risks, uncertainties and assumptions, including among other things, the following: (i) the difficulty of forecasting future market and economic conditions; (ii) the effects of, and changes in, laws, regulations, governmental policies, taxation, or accounting standards and practices; (iii) our ability to dispose of certain of our non-core businesses on terms and conditions on

which asbestos claims can be resolved; (vi) the effects of competition and changes in economic and market conditions in the product markets and geographic areas in which we operate; (vii) our ability to anticipate and react to technological change and evolving industry standards in the markets in which we operate; (viii) the timely development of new products, technologies, and services that are useful for our customers; (a) unanticipated cyclical downturns in the industries that we serve; (a) the risks inherent in large, long-term projects served by parts of our business; (xi) the efficituelise encountered in operating in emerging markets; (xii) the amount of revenues we are able to generate from backlog and orders received; (xiii) changes in interest rates and fluctuations in currency exchange rates and (xii) other factors described in documents that we may furnish from time to time with the U.S. Securities and Exchange Commission, including our Annual Reports on Form 20-F. Although we believe that the expectations reflected in any such forward-looking statements are based on reasonable assumptions, we can give no assurance that they will be achieved. We undertake no obligation to update publicly or revise any forward-looking statements because of new information, future events or otherwise. In light of these risks and uncertainties, the forward-looking information, events and circumstances might not occur. Our actual results and performance could differ substantially from those anticipated in our forward-looking statements.

ABB is a leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs about 104,000 people.

As one of the world's leading engineering companies, we help our customers to use electrical power effectively and to increase industrial productivity in a sustainable way.

ABB's technology competence, broad application know-how and global presence offer customers easy access to leading electrical engineering and industry automation solutions and systems. Innovation and quality are key characteristics of our service and product offering.

ABB is headquartered in Zurich, Switzerland. ABB Ltd shares are traded on the stock exchanges in Zurich, Stockholm and New York.

The ABB Group was formed in 1988, when the Swedish Asea and the Swiss BBC Brown Boveri merged under the name ABB. Asea's history dates back to 1883. BBC Brown Boveri was founded in 1891.



ABB Operational review 2005

# **Highlights**

Total ABB Group (in USD million unless indicated otherwise)

Group revenues (2004 \$20,610m)

\$22,442m

EBIT (2004 \$1,046m)

\$1,742m

Net income (loss) (2004 (\$35m))

2

\$735m

- Net income reaches \$735 million compared to a \$35 million net loss in 2004
- Earnings before interest and taxes (EBIT) are more than \$1.7 billion – a 67-percent increase over 2004; EBIT margin rises to 7.8 percent from 5.1 percent in 2004
- Cash flow from operating activities tops \$1 billion
- Net debt¹ is halved to just over \$500 million
- Strategic plan and new targets for 2005-2009 are published
- Board of Directors proposes a dividend of CHF 0.12 per share, subject to the approval of shareholders at the annual general meeting
- Early in March 2006, a U.S. District Court affirms asbestos plan for U.S. subsidiary Combustion Engineering, pending 30-day appeals period

<sup>1</sup>The sum of the items short-term debt and current maturities of long-term debt plus long-term debt, less the sum of the items cash and equivalents, marketable securities and short-term investments.

To find out more visit: www.abb.com

#### **Total ABB Group**

Year ended December 31 (US dollar amounts in millions except per share and % data)

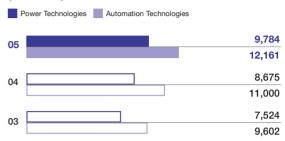
	2005	2004
Orders received	23,581	21,586
Revenues	22,442	20,610
EBIT	1,742	1,046
Net income (loss)	735	(35)
Total Stockholders' equity	3,483	2,824
EBIT margin	7.8%	5.1%
Net margin <sup>2</sup>	3.3%	n/a
Return on capital employed (ROCE) <sup>3</sup>	14%	8%
Net cash flow from operating activities	1,012	902
Free cash flow as % of net income <sup>4</sup>	123%	n/a
Number of employees	104,000	102,000

Basic and diluted earnings (loss) per share	0.36	(0.02)

<sup>2</sup>Net income as a percentage of revenues
<sup>3</sup>EBIT (less tax), divided by the sum of fixed assets (property, plant and equipment, net, goodwill, other intangible assets, net, and investments in equity method companies) plus net working capital (the net of receivables, net, per inventories, net, prepaid expenses, accounts payable, trade, accounts payable, other, advances from customers, and accrued expenses). EBIT (less tax) = EBIT x (1 - tax rate); Tax rate = provision for taxes / income from continuing operations before taxes and minority interest
<sup>4</sup>Free cash flow (net cash provided by operating activities adjusted for changes in financing receivables as well as net investments in property, plant and equipment) as a percentage of net income

#### Core division revenues



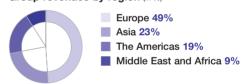


#### **Core division EBIT**





# Group revenues by region (in %)



# Group employees by region (in %)



# Letter from the Chairman, and President and CEO

Jürgen Dormann, Chairman Fred Kindle, President and CEO

# Entering a stage of profitable growth

ABB entered a new phase of development in 2005. After successfully completing our turnaround in 2004. the group moved into a phase of profitable organic growth, and is now progressing confidently towards new mid-term business targets.

> The group returned a full-year profit in 2005 for the first time in five years, made considerable progress on resolving outstanding issues such as asbestos claims, and has laid the groundwork for further profitable arowth.

ABB has benefited from its leadership in markets where demand for our core power and automation technologies is buoyant, and also from the operational improvements we continue to make in our businesses. Our strategy has been to focus on our existing core businesses without venturing into acquisitions or diversification. This has led to rapid progress.

Operating performance is strong and we are reaping the rewards of our focus on execution, our emphasis on cost and risk management, and increasing operational excellence. We met our original group operational targets for revenue growth and earnings before interest and taxes (EBIT) in 2005, which is a solid achievement in view of the special charges we took during the year. As a result, the company has been able to propose a dividend payment for the first time in five years.

Having built a good starting position in 2005 we set ambitious but realistic targets for the group and individual divisions for the five years to 2009. This is underpinned by a strategy that emphasizes improved business execution and a balanced approach to value creation, including focus on growth, operating margin, use of capital and cash generation.

Our actions are designed to build on our strengths, and secure competitive success over the next five years and beyond. Market prospects are good, and we are well positioned to deliver sustained, profitable growth.

The group's key full-year figures for 2005 highlight our profitable development: net income reached \$735 million in 2005 compared to



a loss of \$35 million the previous year; full-year earnings before interest and taxes (EBIT) rose to \$1.7 billion, while the EBIT margin was 7.8 percent. Return on Capital Employed (ROCE) was 14 percent.

In a further sign that ABB is once again a healthy company, we significantly reduced our gross debt, unfunded pension liabilities and securitization. Net debt was halved in 2005 to just over \$500 million. Cash flow from operating activities topped \$1 billion.

Orders and revenues were both nine percent higher than 2004 with orders in North and South America, the Middle East and Asia growing at a double-digit rate. Order growth in the divisions was even stronger with 15 percent for Power Technologies and 12 percent for Automation Technologies.

ABB enjoys leading positions in all major markets in the world, including growth markets such as China and India. We are profiting from ongoing power infrastructure development in the U.S. and Middle East. Our automation technologies business has recorded strong growth in the oil and gas industry, metals, minerals and marine sectors.

We directly benefit from our global operations and supply footprint which allows us to lower the cost of our products. Our robotics division, for example, is now based in Shanghai close to key customers and a booming automotive market. But, at the same time, we still rely on the more mature markets of Europe and North America for sales in our traditional regions and technology development.

Maintaining market leadership also depends on a continuing commitment to R&D and technology innovation. In 2005, we spent \$960 million on research and order-related development in our two divisions – a six percent increase over 2004.

We also continued to streamline our operational costs around the world. Corporate costs at group headquarters and other offices were reduced by \$130 million in 2005, substantially more than our target. This program is ongoing.

In summary, our focus on business execution, cost and risk management, and organic growth has led to a significant improvement in operating performance with much stronger financial results.

One of our main sources of frustration in recent years has been ABB's exposure to asbestos-related litigation in the United States. Thankfully, we continue to make strong progress towards resolving all asbestos claims relating to our U.S. subsidiary Combustion Engineering (CE). On March 1, 2006, a U.S. District Court judge issued an order affirming the modified Plan of Reorganization for CE. In the absence of any appeals within the 30-day appeals period that began on March 1, 2006, confirmation of the CE Plan becomes final.

The asbestos claims case has been long and troubling for all concerned. A final settlement would be timely and benefits all of us.



Our positive share development in 2005, and our likely return to investment grade status by leading ratings agencies once the asbestos issue is finalized, are further signs of strong market confidence in our performance and our solid base for the future.

In the third quarter of 2005, we announced new mid-term business targets for 2005-9 (see page 7), supported by our strategy for the next five years and organizational changes which took effect on January 1, 2006. The strategy is designed to strengthen our company culture of operational excellence and execution, and the organizational changes, which included removing one layer of management, will make us more efficient.

These changes are paving the way for further success. They represent an evolution not a revolution of the ABB we see today.

The key messages in our Strategy 2009 have not changed. We will continue to focus on our core strengths – power and automation products, systems, solutions and services that increase grid reliability and industrial productivity, and make significant energy savings.

We have expanded our Executive Committee team, adding expertise and in-depth knowledge of our key businesses and markets that will further drive growth throughout the group. Most of our "newcomers" are highly experienced in their respective fields. The new ABB Executive Committee reflects competence, commitment and global diversity. ABB is truly a global company "at home everywhere."

Maintaining diversity – and increasing it where it concerns gender – will continue as a focus.

The ABB Board of Directors has continued its work without any personnel changes. This continuity has eased the adoption of a number of important measures. These included the formal separation of the chairman and CEO's positions at the start of 2005, and further work on strengthening corporate governance, streamlining our board committees, succession planning and compensation issues.

There are still areas for improvement to ensure we align behavior to rules. At ABB we have a zero tolerance policy of non-compliance and respond to any breaches. Despite this, we still had a number of cases in 2005 which were uncovered in internal compliance reviews and voluntarily disclosed to the respective authorities. We are also continuing our work to fulfill the terms of the Sarbanes-Oxley Act. We are on track to ensure full implementation by the end of 2006.

Another challenge is to improve our health and safety performance. Every incident is unacceptable to us. We are working hard, providing further training for senior executives and country level managers to ensure that a safety culture is fully observed, and that our employees know when they go to work that they will return home safely in the evening.

At ABB we believe that financial success is the foundation for value creation but we also seek to excel in other areas. Sustainability, business

ethics, stakeholder value and related aspects remain core ambitions.

One group of stakeholders – our employees – deserve our greatest thanks. They continue to embody our three business principles – respect, responsibility and determination – in their daily efforts. It is their dedication and hard work that lies at the heart of our business success. They contribute daily to the success of the ABB brand.

We are confident that wherever our facilities are based, customers know our brand stands for top quality power and automation technologies, a pioneering spirit that ensures we can anticipate and fulfill their business needs, and a company that is at home in a truly global world.

ABB is committed to helping our customers to use power effectively and increase productivity in order to create a better world. We are delivering on our mission statement: Power and Productivity for a Better World.

Sincerely,

Juigen Dormann

Jürgen Dormann Chairman, ABB Ltd

Fred Kindle
President and CEO, ABB Ltd

Kindle

# Targets and new divisional structure

The ABB Group comprises five divisions as of January 1, 2006. They are Power Products, Power Systems, Automation Products, Process Automation and Robotics. When the new organizational structure was announced in September 2005, mid-term targets from 2005-2009 for the ABB Group and for the individual divisions were also published. These are set out below.

## Summary of 2009 ABB Group targets

Revenue growth 2005-2009	> 5% (CAGR*)
EBIT margin	>10%
Net margin	> 5%
Return on capital employed (after tax) (RC	OCE) Mid-teens
Free cash flow as share of net income	100%

\*Compound annual growth rate over five years from 2005 to 2009, excluding major acquisitions and divestitures and assuming constant exchange rates.

#### Division targets

Revenue growth 2005-09*	EBIT margin 2009
> 6%	> 11%
> 5%	> 6%
> 5%	> 14%
> 5%	> 9%
> 4%	> 9%
	> 5% > 5% > 5% > 5%

\*Compound annual growth rate for the five years from 2005 to 2009, excluding major acquisitions and divestitures and assuming constant exchange rates.

The Power Products, Power Systems and Automation Products divisions are headquartered in Zurich, Switzerland. The Process Automation division is based in Norwalk, Connecticut in the U.S., while the Robotics division is based in Shanghai, China.

## **Power Products**

Power Products are the key components to transmit and distribute electricity, improving power supply, grid reliability and energy efficiency. The division incorporates ABB's

manufacturing network for transformers, high- and medium-voltage switchgear, circuit breakers, automation relays and associated equipment. It also offers all the services needed to ensure products' performance and extend their lifespan. The division serves electric, gas and water utilities, industrial and commercial customers, as well as channel partners.

#### **Power Systems**

Power Systems offers turnkey systems and services for power transmission and distribution grids, and for power plants. Main customers include utilities, industries and channel partners. Substations and substation automation systems are key areas. Additional highlights, key to grid reliability, include flexible alternating current transmission systems (FACTS), high-voltage direct current (HVDC) systems and network management systems (SCADA), and utility communications. In power generation, Power Systems offers the instrumentation, control and the entire electrical balance of power plants which improve performance and energy efficiency.

# **Automation Products**

Automation Products works in cooperation with channel partners such as original equipment manufacturers, distributors, wholesalers and systems integrators to improve customers' productivity with high-efficiency

motors and generators, variablespeed drives, low-voltage products, instrumentation, and power electronics. More than one million products are shipped daily to channel partners and end customers, serving a wide range of industry and utility operations, plus commercial and residential buildings.

#### **Process Automation**

The main focus of the Process Automation division is to provide customers with integrated solutions for control, plant optimization, and industry-specific application knowledge. The industries served include oil and gas, power, chemicals and pharmaceuticals, pulp and paper, metals and minerals, marine and turbocharging. Key customer benefits include improved asset productivity and energy savings.

#### **Robotics**

ABB has the world's largest installed base of industrial robots - also providing advanced robot software, services and integrated systems for tasks such as assembly, painting, press automation and machine tending. Key markets include automotive, foundry, packaging, material handling and consumer industries.

ABB Operational review 2005

# At a glance

Power Technologies (until December 31, 2005)

ABB's products, systems, solutions and services improve power grid reliability, increase industrial productivity and save energy. The group was organized into two core divisions, Power Technologies and Automation Technologies, until the end of 2005 and their results and organizational structure for the year are reflected on these pages.



#### Power Technologies

The Power Technologies division serves electric, gas and water utilities, as well as industrial and commercial customers, and channel partners with a broad range of products, systems and services for power transmission, distribution and power plant automation.

# **Power Technology Products**

This business area is the world's leading supplier of transmission and distribution products and services. It includes transformers, mediumvoltage and high-voltage products.

## **Power Technology Systems**

ABB is the market leader in Power Systems and the industry benchmark for technology, speed and quality. Business units are transmission and distribution substations, grid systems (e.g. HVDC and FACTS), network management and power generation.

## 2005 Highlights

- Gulf Grid order to deliver six 400 kV gas insulated substations (\$220 million).
- Contract to supply 12 substations and power cables for use in Qatar's Phase VI grid expansion project (\$170 million).
- Orders from utilities in India for 765 kV transformers for country's new ultra-high voltage grid (\$79 million).
- National Grid in U.K. places order for substation capacity extension to increase power reliability in London (\$46 million).
- Order to provide control system in Italy's first large clean coal power plant (\$26 million).

## EBIT 2003-2005

# Cash flow from operations 2003-2005 (in USD millions)

05 681 04 498 03 639

## Revenues by business areas 2005 (in %)



# Revenues by region 2005 (in %)



#### **Automation Technologies**

The Automation Technologies division blends a comprehensive portfolio of standard and customer-tailored products, solutions and services for increased productivity and energy efficiency among industrial, utility and building industry customers.

#### **Automation Products**

This business area serves customers with the "building blocks" to improve plant and building performance, including motors, drives, instrumentation, low-voltage devices and power electronics. More than one million products are shipped daily to channel partners and end customers.

#### **Process Automation**

The main focus of this business area is to provide customers with control solutions, plant optimization, and industry-specific application knowledge. The industries served include oil and gas, power, chemicals and pharmaceuticals, pulp and paper, metals and minerals, and marine.

# **Manufacturing Automation**

This business area provides robots, software, services and modular manufacturing solutions for tasks such as assembly, finishing and machine tending. Key markets include automotive, foundry, packaging and material handling.

#### 2005 Highlights

- Order from Mexico's state energy company, PEMEX, to support new offshore oil platform (\$80 million).
- Supply of automation and electrical systems at Euromax container terminal in Rotterdam (\$52 million).
- Contract for equipment and modernization at Sriracha oil refinery on Gulf of Thailand (\$100 million).
- This business area serves customers with the "building blocks" to improve plant and building performance.

  \*\*Exercise Serves Serves Serves Customers | Key marine propulsion, automation and power projects for shipbuilders in Europe and Asia (totaling \$300 million).
  - Order from Sweden's LKAB Group for expansion of iron ore pellet production (\$27 million).

## EBIT 2003-2005

(in USD millions)



# Cash flow from operations 2003-2005

(in USD millions)



#### Revenues by business areas 2005 (in %)



## Revenues by region 2005 (in %)



# 3%

# Other activities

#### Non-core activities

- Oil, Gas and Petrochemicals
- (Downstream)
- Equity VenturesBuilding Systems
- Structured Finance and other activities

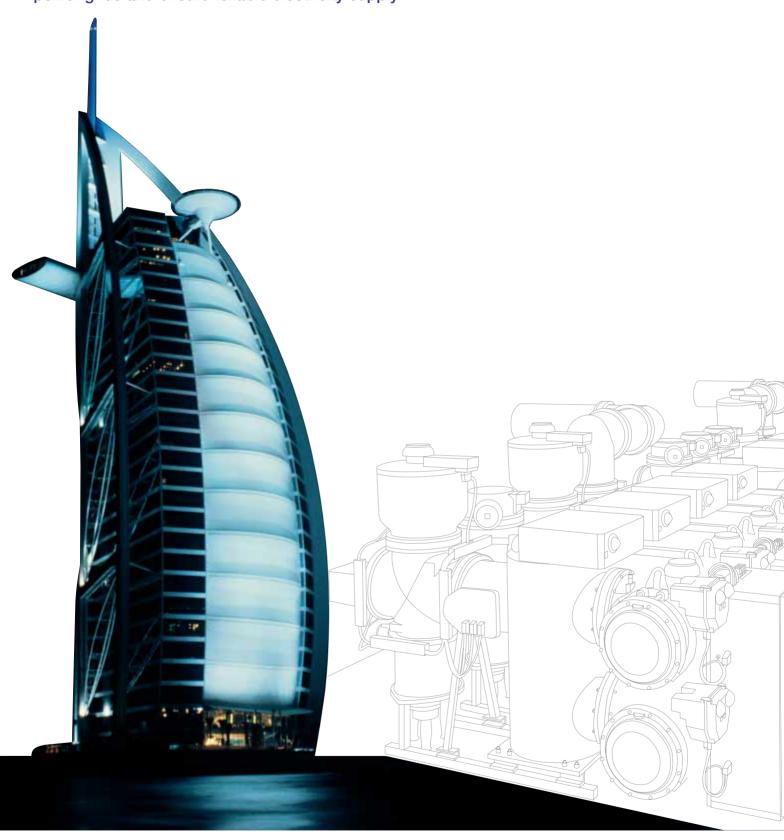
# Corporate

- Headquarters/stewardship
- Corporate Research and Development
- Other

ABB Operational review 2005

# **Grid reliability**

ABB's products, systems, solutions and services strengthen power grids and ensure reliable electricity supply



Left: ABB's new Intelligent Electronic Devices for substation protection and control are easily integrated into existing systems and ensure power grids operate reliably.

Right: ABB is the leading Distributed Control System supplier to power plants, and our 800xA software platform is the state-of-the-art solution for efficient power generation.





# Ensuring reliable power meets booming demand

A reliable power supply is key to economic and social progress. With electricity demand expected to double in the next 30 years, ABB's role as the world leader in power transmission and distribution is central to social and industrial development.

The pace of expansion and demand in the Middle East, particularly the Gulf states, is greater than in most other parts of the world. Supported by oil revenues, countries like the United Arab Emirates (UAE), Saudi Arabia, Kuwait, Qatar and Oman are rapidly expanding their infrastructure, and investing heavily to ensure strong grids and reliable power supply. Blackouts are no longer an option.

ABB is supporting this exceptional growth with its broad range of offerings in power transmission and distribution, as well as power plant control systems. In 2005, the company won orders worth hundreds of millions of dollars from utilities and industries in the region.

One of the highest profile development projects is the massive Gulf Grid, linking the electricity networks of six Gulf states. It was the biggest power transmission project to be announced anywhere in the world in 2005, and ABB was able to offer very quick delivery times.

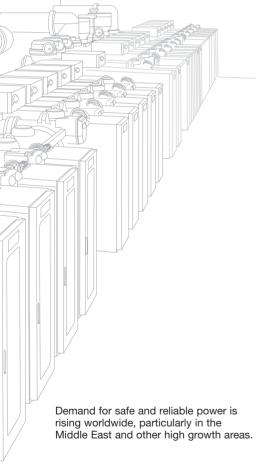
The \$220 million deal, announced in November 2005, means ABB will

contribute six turnkey 400-kilovolt (kV) substations, including gas insulated switchgear (GIS), circuit breakers, transformers and shunt reactors as the main components.

It was ABB's largest single order in 2005. The year was also marked by other key orders for state-of-the-art GIS substations and power plant control systems in the Gulf.

The equipment and engineering capabilities needed for such large projects is increasingly available in the Middle East. In 2005, the company enhanced its local presence with a new factory in Dubai to assemble power plant control units and low-voltage switchgear.

Further long-standing manufacturing units for transmission and distribution equipment are based in Saudi Arabia and Egypt. ABB's operations in Kuwait celebrated their 25th anniversary in 2005.







Left: Underground power transmission eliminates the visual impact of overhead power lines, and features oil-free cables and neutral electromagnetic fields.

Right: High-power semiconductors in our HVDC Light system contain millions of silicon chips, each controlling power equivalent to a Formula One racing engine.

# **Grid reliability**

# Super transformers for a super power grid

ABB is supplying 45 extra-high voltage transformers and shunt reactors for India's first 765 kilo-volt (kV) "super grid" transmission link and its largest and most powerful transformer banks.

The extra-high voltage super grid will improve the stability and reliability of power supply in a country where demand regularly outstrips capacity, and blackouts are still commonplace.

The 20 shunt reactors, 17 autotransformers and eight generator transformers that ABB is supplying will be installed at both ends of a new 326-kilometer, 765 kV transmission line that will link the new Sipat 23,000 megawatt power plant with the Seoni substation in central India.

The link is the first extra-high voltage 765 kV transmission line in India, and a key component in the country's plans to create a national power grid and increase energy transfer between power plants in eastern and central India and load centers in the west and south where demand for electricity is rising. The grid will potentially benefit tens of millions of people.

A 765 kV transmission line carries considerably more power than a 400 kV line but is also subject to heavier losses. India's two leading generation and transmission utilities – National Thermal Power Corporation (NTPC) and Power Grid Corporation of India selected ABB for the unrivalled reduction in power losses achieved by

ABB's transformer and reactor technologies.

ABB was selected independently by NTPC and Power Grid for two separate orders with a combined value of \$79 million.

ABB is the market and technology leader in high-end 765 kV equipment, serving customers worldwide with a global network of 22 dedicated transformer factories.

# China chooses ABB circuit breakers

ABB's flagship factory in Xiamen, China, produced its 100,000th VD4 vacuum circuit breaker in November 2005, making it one of the largest manufacturing facilities for medium-voltage components in the world.

With production running at more than 30,000 units a year, the VD4 is now the biggest-selling medium-voltage circuit breaker in China and the world.

VD4 breakers are used in switchgear that control and protect distribution substations.

Among the many landmark installations in China are the Great Hall of the People in Beijing, the Three Gorges Dam, the giant Baosteel steelworks in Shanghai, and the new state-of-the-art metro systems in Beijing, Shanghai, Guangzhou and Shenzhen.

ABB is the market and technology leader in vacuum circuit breakers and has made pioneering innovations like spring-activated interrupters, vacuum interrupters embedded in epoxy resin, magnetic actuators and, most recently, the world's first intelligent integrated circuit breaker for medium-voltage installations.

ABB vacuum interrupters are the most compact, robust and reliable on the market, with few moving parts and little or no need for maintenance.

ABB manufactures more than 220,000 vacuum interrupters a year in Ratingen, Germany. In 2006 ABB, will open a second vacuum interrupter factory at Nashik in India to better supply its growing customer base in Asia.

# World-class market operations system for New York

A new ABB energy and business management system is enabling the largest wholesale electricity market in the United States to trade electric power efficiently, economically and reliably.

The New York Independent System Operator (NYISO) represents generation companies, transmission operators and retail suppliers in New York State, clearing about \$10 billion a year in market volume.

It is the largest ISO in the United States, dispatching power for the entire state of New York.

Based on ABB's Network Manager EMS (Energy Management System) and Network Manager BMS (Business Management System), ABB's energy and business management system went online in February 2005. It is thought to be the most

Left: Large power transformers are the key components of super grids. ABB draws upon decades of technology expertise and operational experience to support extra high-voltage systems.

Right: ABB's SCADA system, called Network Manager, can analyze and monitor an entire power network, ensuring optimal power flow and power reliability.





advanced market operations system in the world, and is ABB's largest and most complex software development project.

It combines real-time market scheduling and day-ahead and hour-ahead market dispatch into a single platform that eliminates inconsistent pricing and improves market stability. It also enables more efficient scheduling of generation, better control of the power grid, and helps smooth power transfers with neighboring markets.

The solution enables the NYISO to determine the most economical source of power and to deliver it in the most cost-efficient and secure way.

ABB has supplied more than half the world's market operations systems including those for California, Ontario, East China, South Korea and the Philippines.

# System 800xA secures Norway's largest hydropower turbine

Statkraft Energi, one of the world's largest producers of power from renewable sources, chose ABB's Extended Automation System 800xA to improve the control and supervision of Norway's largest power turbine.

The Svartisen hydropower facility, located inside the Arctic Circle consists of a single power turbine with a capacity of 350 megawatts, the largest power turbine in the country. Statkraft Energi, Norway's

state utility, selected ABB's system because of its state-of-the-art human machine interface that lets the plant keep and use as much of the existing system as possible, including the controllers and input/output channels.

The new ABB system can also handle future expansions at Svartisen, including a second generator which the plant has been designed to accommodate. The approach underscores ABB's commitment to protecting customer investments with upgrades that support future needs, while retaining existing system components that are still useable.

The Svartisen plant was commissioned in 1993, and equipped with an earlier ABB control system. Norway is the world's sixth largest producer of hydroelectric power, generating more than 99 percent of its electricity from this renewable source.

# ABB assures Baltic/Nordic power connection

ABB is interconnecting the transmission grids of Estonia and Finland with uniquely "invisible" and environmentally friendly technology that will improve grid reliability and enable utilities on both sides of the Baltic Sea to trade power.

The solution, based on ABB's pioneering HVDC Light transmission technology, will connect Estonia and Finland with a high-voltage link that will deliver 350 megawatts of power in either direction across the Gulf of Finland.

HVDC Light is a unique ABB technology for transmitting power via compact converter stations and underground or underwater cables that are oil-free, lightweight and do not emit magnetic radiation.

Known as Estlink, the 100-kilometer, \$110-million interconnection is one of the European Union's priority projects to integrate the power grids of the ten accession states with those of the 15 existing members. Estlink is the first of several such interconnections.

The link will integrate the power grids of the Baltic states with the Nordic region so that Latvia, Estonia and Lithuania can develop power trading markets, reduce their dependence on energy imports from Russia, and export any electricity surplus to Finland and Sweden.

Estlink will be energized by the end of 2006 after an exceptionally short delivery time of only 19 months.





Left: Static Var Compensators increase power quality and allow heavy power users such as steel or aluminum makers to increase industrial output

Right: ABB's high-voltage gas insulated switchgear is a vital component for indoor substations, increasing grid reliability.

# **Industrial productivity**

ABB's products, systems and solutions that help our customers to increase industrial productivity and raise performance



Left: Modular manufacturing cells from ABB harness robotics to specialized industrial functions like welding, assembly and finishing.

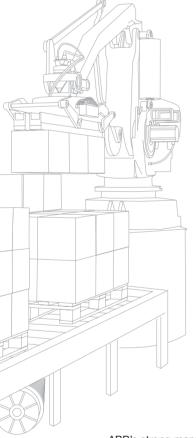
Right: Low-voltage products from ABB control aircraft signal lighting on bridges, buildings, and antenna towers up to 600 meters high.





# Supporting rapid lifestyle growth in Asia

ABB produces millions of automation products annually that support rapid growth in industrial production. Faced with high demand, raw materials shortages and rising energy prices, Asia's newest entrepreneurs need to increase efficiency to satisfy markets where population is measured in the billions.



ABB's strong manufacturing and channel footprint supports dramatic lifestyle changes in Asia. From essential commodities like paper and plastics to newly fashionable consumer products, Asian manufacturers of all sizes are turning to ABB for the building blocks of higher and faster output, resulting in more satisfied consumers.

Among the important ingredients in this product strategy is a global network of channel partners including distributors, wholesalers, and original equipment manufacturers (OEMs) which incorporate ABB products in their own portfolios. These partners greatly extend ABB's reach, adding product, logistics and service support to end-users in a wide range of industries.

The ABB automation products lineup includes low-voltage devices, instrumentation, power electronics, and high-efficiency motors and drives. From 13 manufacturing locations across Asia, ABB helps customers in the region squeeze new productivity from their own buildings and plants.

In China alone, the automation products business has ten factories – half of them established for more than ten years. With service and

application support from key channel partners, ABB supplies commercial and industrial buildings and plants with a range of devices.

Even fractional efficiency gains provide industrial customers who measure their output in millions of end products with a clear competitive edge.

The ABB Xinhui Low Voltage Switchgear Company, which celebrated its tenth anniversary during 2005, provides an example. From spacious facilities in southern Guangdong province, ABB Xinhui produces several hundred variations of lowvoltage switchgear devices – including circuit breakers, control products, pilot devices and electrical enclosures – which help to meet growing energy and consumer demands.

Worldwide, ABB produces and ships more than one million automation products daily from some 100 facilities in 25 countries. A growing number of these are situated in the emerging countries, strengthening ABB's footprint with research, engineering, software development and manufacturing to serve both new and established markets.





Left: Specialized sensors from ABB monitor pH, conductivity and chemical composition for applications ranging from environmental compliance to medical products production.

Right: ABB's Unigear is a universal and flexible switchgear platform that meets unique customer specifications in diverse markets to ensure reliable power distribution.

# Industrial productivity

# ABB services help Nokia work smart in Hungary

Smart manufacturing is central to Nokia's efforts to improve plant flexibility and competitiveness. Among the telecommunication leader's latest tools to achieve this are performance-based maintenance solutions from ABB.

The Nokia/ABB collaboration in Komárom, Hungary is helping one of the world's largest mobile phone factories reap the benefits of a systematic approach to maintenance and change management.

Performance Services help to minimize the money spent on total maintenance over the lifecycle of plant equipment. The approach integrates maintenance methodology with a focus on Overall Equipment Effectiveness (OEE), including line performance, productivity and cost optimization.

"ABB's full service concept takes into account both technological and cultural issues," says Martti Salomaa, head of engineering operations at Nokia Komárom. "This increases employee motivation, as well as enhancing overall competence."

During 2005, over 150 line service personnel and various third-party suppliers implemented service processes under ABB management. ABB was selected in part based on positive experience with its service management at another Nokia plant.

# Brazilian industry booms with ABB substations

ABB substations are improving power quality at some of Brazil's biggest industrial complexes – bauxite, copper and gold mines, aluminum plants, steel mills, automotive and tire factories, flour mills and plastics plants.

Two out of every three contracts for industrial substations in Brazil in 2005 were awarded to ABB.

Although substation technology is considered mature, customers repeatedly choose ABB substations for their superior quality and unrivalled reliability – factors that ensure continuous power so factories, mills and mines can reach production targets.

Brazilian companies ordering ABB substations include Companhia Brasileira de Alumínio for the world's largest integrated aluminum complex at Alumínio; Companhia Vale do Rio Doce for an immense bauxite mine supplying the world's largest alumina refinery at Alunorte; M&G Polymers, for a new polyethylene terephthalate plant that will be the biggest in the world; and M. Dias Branco, for the largest bread and pasta factory in Latin America.

# Strengthening oil and gas output in India

ABB systems for enterprise-wide Supervisory Control and Data Acquisition (SCADA) will soon help one of Asia's largest oil and gas companies to optimize productivity across a broad range of production and processing operations. India's Oil and Natural Gas Corporation Limited (ONGC) awarded the \$95 million contract to ABB in early 2006.

The new ABB systems will monitor, control and manage vital information from ONGC's production and drilling facilities – linking oil basins, processing plants, forward base and other assets to the company's corporate data center. It is designed to support the geographically-dispersed facilities, both onshore and offshore, with "anytime-any-where" data access for faster decision-making and response.

The turnkey ABB project, set for completion by the end of 2007, encompasses site survey, system design, engineering, supply, installation and commissioning of an integrated three-tier SCADA system, and includes a six-year annual maintenance contract.

ABB has more than 300 SCADA installations worldwide, with a proven track record of maximizing customer competitiveness.

Left: ABB's precision gauging devices accurately measure the dimensions of metal products to one-millionth of a meter thick.

Right: ABB's distributed process controllers share complex plant functions among multiple devices for faster communications and protection from single-point failure.





# ABB robotics speed production of Audi car models

During 2005, ABB won contracts to supply 68 robots and associated solutions to leading German carmaker Audi for use on paint lines to make its A3, A4 and A6 models in the cities of Ingolstadt and Neckarsulm.

ABB is supplying painting robots and additional units for opening doors and hoods. The painting robots load only the amount of paint necessary to cover each vehicle's doors and hood, minimizing paint waste and rinsing during color changes, and creating both cost and environmental savings.

Audi is using an innovative ABB system which applies paint from small cartridges that are interchanged by the robots. This allows near-zero paint loss during color changes, while greatly reducing the use of cleaning solvents and speeding up changeover.

About 350 ABB cartridge system robots, with 6,000 color cartridges, are currently in use, part of an installed base of more than 120,000 ABB robots worldwide.

# SVCs raise productivity in world's steel mills

ABB static var compensators (SVCs) help steelmakers increase production to meet booming global demand for steel. ABB received nine SVC orders in 2005 from steel mills around the world, and booked new orders from Canada, Greece and Spain in the first month of 2006 alone.

SVCs stabilize massive voltage disturbances caused by electric arc furnaces during the steelmaking process, securing power quality and significantly higher levels of production.

The 2005 orders include a 310-megavolt ampere installation at a new electric arc furnace in Turkey – the largest SVC ever used in a steel application.

ABB has delivered more than 200 SVC installations to the steel industry, and is the innovator of SVC and SVC Light technologies. SVC Light creates stable voltage during the melting process, reducing flicker and harmonics to exceptionally low levels.

SVC Light will enable Zhangjiagang Pohang Stainless Steel's (ZPSS) new stainless steelmaking plant near Shanghai to produce at full capacity and still meet stringent Chinese power quality standards regulating voltage fluctuations and flicker. Without it, ZPSS would have to reduce production to stay within the legal limits.

SVC and SVC Light are part of ABB's flexible AC transmission systems (FACTS) technologies enhancing the security, capacity and flexibility of power transmission systems.

# Boosting productivity in a petrochemical plant

The Sinopec/BP joint venture Shanghai Petrochemical Complex in China is one of the largest ethylene plants in the world, with annual production of 900,000 metric tons of ethylene from naphtha feedstocks.

It commenced operations in April 2005 using pivotal technologies like ABB Lummus Global's ethylene and Olefins Conversion Technology (OCT) to increase productivity by converting lower value byproducts to propylene, boosting propylene production.

This has resulted in a two percent reduction in feedstock required, an eight percent cut in energy used and associated greenhouse gases, a six percent reduction in plant investment, and a 50 percent increase in valuable benzene product, while at the same time reducing other less valuable byproducts.

The technology provides flexibility to balance plant production with market demand. Conventional propylene production processes are energy intensive, but OCT is energy neutral, producing "green" propylene and increasing plant profitability.

OCT technology is utilized in more than 20 plants worldwide and is offered exclusively by ABB Lummus Global. Approximately 30 percent of the world's new propylene production is produced using OCT.



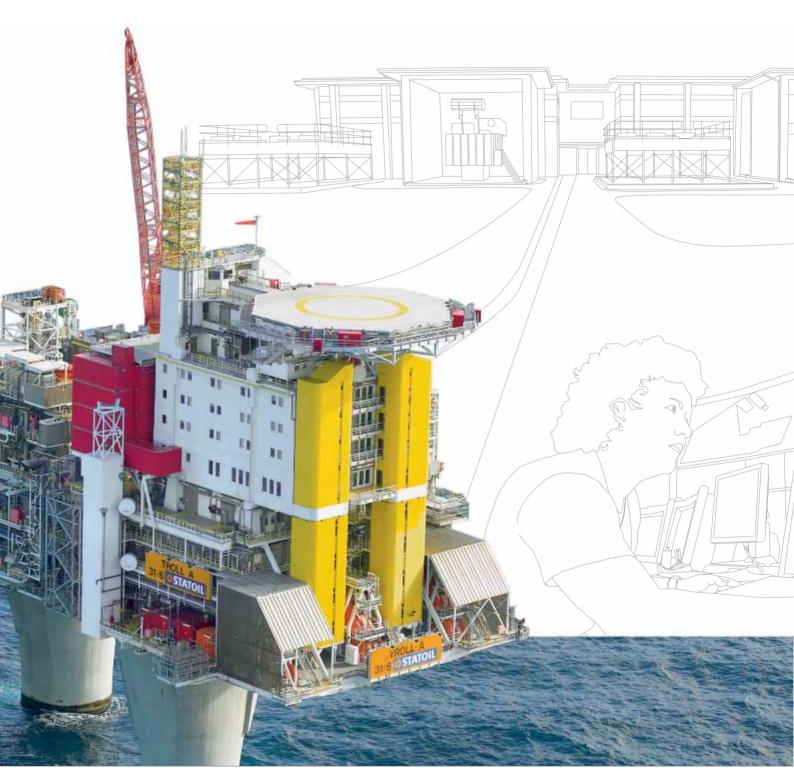


Left: With ABB scanning systems, paper makers measure and control product thickness, color, and moisture content at a rate of hundreds of meters per minute.

Right: Innovative ABB flow meters use mobile phone technology to take remote readings and calibration in large municipal water systems.

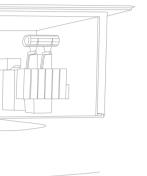
# **Energy savings**

ABB's power and automation technologies raise energy efficiency and reduce environmental impact



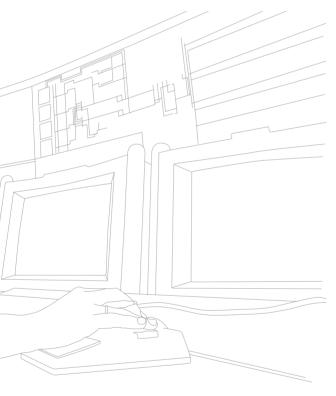


Production management systems from ABB integrate data from thousands of measurement points across the plant to optimize quality, output and safety.



# A groundbreaking project in the North Sea

In 2005, Troll A became the first offshore natural gas platform in the world to be powered by a direct current cable link to an electricity source on shore, about 70 kilometers away. The result for Norwegian oil and gas giant, Statoil, has been considerable energy and cost savings, as well as environmental, health and safety benefits.



Innovative products, systems, services and solutions like those used on the Troll A North Sea oil and gas platform help save energy and cut emissions worldwide.

For this project ABB deployed key technologies including an HVDC (high-voltage direct current) Light power system, a VHV (very high voltage) Motor and an automation solution to help power two 40-megawatt compressor units, without having to generate any electricity on the Troll A platform itself

With 60 percent of Norway's offshore gas reserves, the Troll field is the centerpiece of Norwegian gas production, supplying ten percent of western Europe's gas requirements.

Standing in 300 meters of water, Troll A has been pumping North Sea gas since 1996, but declining reservoir pressure meant gas could not be pumped out fast enough to meet delivery schedules.

Compressors were installed to restore the required gas delivery pressure, but they need power to run continuously. Normally, such power is produced on the platform itself by using gas or diesel turbines, but this is not energy efficient and fuel consumption and greenhouse gas emissions are high. Emission

taxes are also costly and there are health and safety risks associated with gas turbines.

Statoil opted instead for an HVDC Light link, bringing clean, reliable power underwater by cable from the mainland to the platform, where ABB's one-of-a-kind VHV Motor powers the compressors without need of a step-down voltage transformer.

Benefits include increased transmission efficiency, zero pollution (all electricity used on Troll A is generated by hydropower on the mainland), longer lifecycles forequipment, fewer maintenance stops, and a perfect health and safety record on the platform, which requires fewer staff compared to traditional offshore power generating solutions.

ABB has been a key partner in the Troll offshore field for nearly 15 years, providing a broad range of technologies including process control, safety systems, oil separation systems, telecommunications, electric drives and maintenance services. It all adds up to saving energy, even while producing energy.

Left: Dry type transformers are just one part of ABB's comprehensive list of products and systems for wind power generating systems. ABB equipment is reliable, compact and suitable for harsh environments.

Right: ABB provides complete production solutions for metal producers through a wide range of motors, drives, electrical and control systems.





# **Energy savings**

# Driving down energy use

ABB's total installed base of AC drives is estimated to save about 96 million megawatt hours of energy per year – the equivalent of 12 nuclear power plants.

Energy-efficient drives ensure motors only use the electricity they need, and are used in a range of applications, from factories to airport baggage carousels and ski lifts.

For example, the largest United Kingdom salt manufacturer has reduced energy costs by \$200,000 per year and annual CO<sub>2</sub> emissions by 704 tons by replacing an ineffective fan with new equipment powered by an ABB motor and variable speed drive.

The savings were achieved by replacing an oversized, fixed-speed 337 kW fan and motor – fitted to a dryer in a filtration plant – with a correctly dimensioned 132 kW fan powered by an ABB motor and variable speed drive.

The new motor and variable speed drive cut the dryer's energy consumption by 60 percent and the total energy consumption of the plant by 10 percent.

The fan is the largest at the Runcorn salt works of Salt Union. Ian Bradley, technical manager at the site, said: "When we realized the payback time was only a few months, we immediately decided to go ahead with the investment."

# Advanced ABB propulsion saves fuel in Japanese ferries

ShinNihonkai Ferry Company of Japan is successfully operating the first two vessels in the world to use ABB's Counter-Rotating Azipod propulsion system. In their first full year of use, the two long-distance ferries achieved fuel cost reductions of 20 percent compared to conventional twin-shaft vessels.

The Counter-Rotating Azipod from ABB is installed just behind each ship's conventional fixed propeller. By turning in opposite directions, the two propellers work to cancel hydrodynamic turbulence to ensure greater efficiency.

The steerable ABB Azipod also serves as a rudder, turning like a huge outboard motor to improve vessel maneuverability without separate stern thrusters.

The twin ferries Akashia and Hamanasu were commissioned to serve a 1,000-kilometer cargo and passenger route in northern Japan. Due to faster operating speeds and turnaround time of just 24 hours, the two ships now do the work of three previous vessels and have become an attractive alternative to air cargo.

During 2005, the Hamanasu was named Ship of the Year by Japan's Society of Naval Architects and Ocean Engineers.

The Counter-Rotating Azipod is ABB's latest advance in modular podded propulsion for vessels.

Blending electric motors, variablespeed drives and marine expertise from ABB, Azipod systems are saving fuel and improving efficiency for cruise, ferry, cargo and ice-breaking vessels worldwide

# Clean coal-fired plant saves energy with ABB equipment

ABB's Distributed Control Systems (DCS) help power plant engineers and operators around the world run their plants more efficiently while reducing environmental impacts. The result: the same critical level of power is generated, but less fossil fuel is needed to produce it.

The new 268-megawatt E.A. Gilbert generating unit at the H.L. Spurlock power station in Maysville, Kentucky, uses an advanced circulating fluidized bed (CFB) boiler. It is one of the cleanest coal-fired plants in the United States, and can burn a variety of fuels cleanly and efficiently.

Plant operators chose a complete ABB control system package to monitor and control the Gilbert generating unit, including applications for boiler controls, burner management, foreign device interfaces, and performance calculations.

ABB technology monitors and controls the CFB process, in which fuel is burned at very low temperatures while limestone is fed into the boiler, resulting in efficient generation and low emissions.

CFB removes 98 percent of sulfur dioxide, and produces five times less nitrogen oxide than a conventional

Left: ABB's Plug and Switch System switchgear has revolutionized substation design with small, multi-functional, gas insulated modules for high-voltage applications.

Right: ABB Lummus Global's ethylene and Olefins Conversion Technology (OCT) significantly decreases the use of energy and cuts associated greenhouse gases.





unit. It can burn coal and even biomass, or tire-derived fuels cleanly, efficiently and economically, and produces enough electricity to power homes in 30 cities the size of Maysville (pop. 7,300) for an entire year.

ABB is the world's leading DCS supplier in markets like power generation, pulp and paper, and oil and gas, and has the world's largest installed base of power plant distributed control systems.

ABB's automation and power products and solutions can be integrated into complete power generation systems, and include electrification, instrumentation and control systems, tailor-made burner management systems, boiler protection, flame monitoring and turbine controls for the power generation market.

POWER magazine named E.A. Gilbert a top power generating plant in 2005.

# Increased productivity and lower costs

ABB renovations of giant shovel excavators and draglines used in the mining industry are helping to reduce energy costs by up to 25 percent while cutting unscheduled downtime by up to 80 percent, saving customers millions of dollars in replacement costs.

After 15-20 years of around-the-clock operation in tough mining environments, giant shovel excavators and draglines (walking excavators) start to feel their age. Electrical parts, in particular, deteriorate over time, reducing availability and productivity. Even well-maintained older excavat-

ing machines can accumulate 400 hours of unscheduled downtime a year. Replacement costs are about \$13 million for a shovel excavator, and \$30 million for a small dragline.

ABB offers an alternative. As a market and technology leader in shovel renovation, the company provides complete electrical revamps with AC or DC drives, drive control, frequency converters with insulated gate bipolar transistor technology and intelligent control packages. These technologies combine to produce more work with less energy.

The result: an ABB revamp is a fraction of the cost of a new machine, but achieves the same standards of availability, productivity and estimated service life.

Companhia Vale do Rio Doce in Brazil has reported a 10-20 percent increase in productivity within weeks of an ABB shovel revamp at its Carjás Range iron ore mine, while reducing repair time by two thirds.

# Sweet savings for Florida sugar producer

ABB drive technology has helped a sugar cane producer in the southern United States to sharply increase its productivity.

The Sugar Cane Growers Cooperative of Florida supports its 54 member farmers by processing about 24,000 tons of sugar cane daily during the annual harvest. The ground sugar cane is spun in a centrifuge at speeds ranging from 45 to 1,200 revolutions per minute to sep-

arate raw sugar from a syrup mix. By retrofitting a 450 horsepower centrifuge motor with ABB drive technology, the cooperative has realized both energy savings and higher output.

The ACS 800-17 low-voltage drive for speed and torque control was the first of its kind installed in a sugar-processing facility.

ABB's Direct Torque Control feature enables the drive to analyze motor performance up to 40,000 times per second, quickly slowing the centrifuge at the end of each cycle for faster unload and reload.

Another energy-saving feature, called Regenerative Drive Technology, converts the motor into a generator as it slows down, producing new electric power for use in adjacent equipment.

Combining these ABB benefits, the sugar cooperative has achieved a 20 percent reduction in cycle times, increasing the throughput of sugar cane that must be processed within the first day after harvest.





Left: ABB Robotics' Cartridge Bell system holds just enough paint for one job, speeding color changeover and cleanup for automotive and other applications.

Right: ABB turbochargers boost engine output by up to 300 percent, bringing fuel and emissions efficiency to ships, power systems, railways and construction equipment.

# **Technology**

# Ground-breaking innovation for ABB customers

# Creating a better world through power and automation technology is ABB's core goal. Research and development guided by a thorough understanding of customer needs and market forces is the engine helping us get there.

Our ability to preserve and grow technology leadership in ABB power and automation products, services and systems begins with the way we think about R&D.

ABB continually attracts and integrates world-class technologists with a thorough understanding of customer value and technology into our research teams. This is where solid experience merges with curiosity to create innovation.

#### Our R&D focus

We focus on product and process innovations that make electrical power systems more reliable and industrial processes more productive. These innovations make our customers more competitive, while reducing environmental impact.

At ABB, we try to understand our customers' present market needs, and anticipate the market developments that create future needs. These developments include the increasing loads on weak electrical networks in fast-developing countries; the need to invest in aging power infrastructures in mature markets; and targeted improvements in industrial productivity and energy efficiency, as our customers juggle productivity, costs and environmental concerns.

In response, ABB technology provides a range of solutions for electricity generation, AC and DC bulk transmission, distribution, and utilization. Our HVDC Light power

transmission and the newest generation of Flexible AC Transmission systems (FACTS) help utility customers control grid flexibility and reliability, and provide options for integrating power into existing infrastructures.

Productivity and energy efficiency also drive our industrial strategy. ABB's extended automation system 800xA can increase productivity in new plants, and by the gradual migration and functional extension of older control systems. Our variable speed drives and motors are justifiably famous for increasing productivity while reducing energy consumption.

#### Our R&D agenda

R&D is conducted throughout ABB. Our divisions employ engineers and researchers whose job it is to ensure ABB products and solutions meet the specific technical challenges of customer orders.

ABB Corporate Research plays a key role in the process of guiding R&D. Among other things, Corporate Research scouts out new technology and tests it in the lab, removing uncertainty before product development begins. It is also ABB's main interface with scientific organizations and universities, where technology innovation is often born.

Innovation rarely occurs in isolation. At the intersection of market pull and technology push, what counts is a perfect mix of insight and ingenuity. That is why we launch R&D projects in close cooperation with our business and marketing people, or directly with pilot customers, to ensure we have a clear understanding of their markets, and their present and future requirements.

ABB research is thus a crucial asset not just for ABB, but ABB customers as well. Our aim is to deliver high value at reasonable cost.

ABB spent \$960 million on research and order-related development in our two divisions in 2005, a six percent increase over 2004, when we spent \$905 million.

New research center, partnerships We opened our newest R&D center in China in March 2005, following an earlier expansion of research facili-

earlier expansion of research facilities in India. Research is conducted in Beijing and Shanghai, focusing on power transmission and distribution, manufacturing and robotics.

ABB is involved in cooperative projects with top Chinese educational and research institutions, including Tsinghua University in Beijing, Jiaotong University in Shanghai, and most recently an agreement with Chongqing University to cooperate on research into the aging of transformers.

We work closely with more than 70 of the world's top universities and research institutes, including Carnegie Mellon, the Massachusetts Institute of Technology (MIT), RWTH

Measuring high DC currents (up to 500 kA) is traditionally done with current transducers that can weigh 2,000 kilograms. Installing and commissioning these sophisticated machines is complex and time consuming. ABB's award-winning Fiber Optic Current Sensor for high DC currents offers outstanding precision, small size, very light weight and a flexible shape. Easy to use, installation and commissioning takes just hours.



Aachen, ETH Zürich, the Indian Institute of Science in Bangalore, Imperial College London, and Cambridge University.

Our technology customers want operational flexibility plus the reassurance that their ABB products and systems will operate reliably for many years to come without major refits or overhaul. Innovation that reconciles continuity with progress is thus a high priority for the more than 6,000 ABB scientists and engineers developing our technology, especially given the very large installed base of ABB power and automation technologies globally.

R&D that makes a difference

Our advanced industrial software and service offerings significantly reduce cycle times and inventories while increasing operational effectiveness. This clear strategy, marked by our early move into industrial information technology, puts us a step ahead of the competition – a market lead we intend to preserve and grow.

Sustainability remains a top priority for our customers and for ABB, so it commands a significant share of our R&D budget. Today, energy-efficient ABB drives and motors not only reduce energy cost for fast payback, but also prevent emission of about 80 million tonnes of CO<sub>2</sub> every year. We now deliver more than one million products every day that ensure reliable power and productive plant performance, and are ideally positioned to create and deliver pioneering innovations that add real economic and environmental value.

ABB's fundamental R&D priorities never change – products, systems and services for reliable power, increased productivity and sustained customer partnerships.



ABB's award-winning Very High Voltage (VHV) motor is a combination motor and generator for applications up to 70 kV using conventional synchronous machines. Eliminating the need for power transformer systems, it offers high efficiency, low operating cost, simple operation and a vastly reduced footprint. Used with HVDC transmission (Troll A page 19), VHV is ideal for powering electrical drive systems in remote locations.



# ABB technology at work around the world



## **United States**

ABB's PSGuard wide area monitoring system detects grid instability allowing operators time to prevent system collapse. The Tennessee Valley Authority - America's largest public utility - is installing the system, which MIT Technology Review named one of ten technologies that will change the world.

## **Mexico**

ABB insulation innovations increase outdoor lifetimes and reduce manufacturing cycle times of mediumvoltage products. In 2005 Mexico's national grid operator, Comisión Federal de Electricidad, chose ABB to maintain and upgrade its power systems serving 80 million customers.

ABB 765 kV shunt reactors and 500 MVA transformers increase power capacity, quality and reliability in India's first extra highvoltage transmission network. In Brazil, ABB FACTS technology improves load flow and capacity, while HVDC transmission facilitates power sharing with Argentina.

## **Finland and Estonia**

ABB continues to develop StakPak semiconductor press-packs - the heart of its HVDC Light and SVC Light power systems. In 2005, ABB was chosen to build an HVDC Light link connecting power grids in Finland and Estonia.

## Germany

Berlin's water supply - the biggest utility service area in Germany – is now centrally controlled by an ABB process control system and a new central database to efficiently forecast water supply.













ABB has just developed software for paper and rolling mills that quickly and automatically classifies defects detected by web imaging or surface inspection. South African paper mill, Mondi Merebank, has installed ABB's latest web imaging technology, ESI 7.

ABB continually researches ways to improve its medium-voltage switchgear. ABB UniGear ensures reliable power at the ALROSA diamond mine in Siberia's polar circle, where winter temperatures can drop to -70°C.

ABB has research centers in Beijing, Shanghai and Bangalore to support our power and automation businesses in fast-growing regions like India and China, as well as other markets.

ABB's new RobotWare plastics mould software cuts programming and setup time to minutes. The first Chinese-made ABB robot was assembled in Shanghai in 2005, which is also headquarters of ABB's global robotics business.

ABB's revolutionary PASS (plug and switch system) hybrid AIS/GIS switchgear cuts substation size by 60 percent and installs in hours. It is ideal for remote locations, and Australian utilities have installed more than 100 units.











ABB's strength relies on the quality of its employees. We are committed to ensuring they acquire the skills they need to add value to the group, and to making ABB a safe place to work.



ABB had a highly successful year in 2005 in many areas, for example employee training and development, but areas like health and safety still present challenges.

Our "people strategy" is designed to develop the leadership skills potential of employees and reward positive performance.

Learning is key, and we want to be sure employees don't just attend training courses, but learn as well. Learning is a way of sustaining positive change; all of us benefit, as we build more productive business relationships within the company and with our stakeholders.

Learning is central to our efforts to infuse the principles of business excellence throughout the company. Coupled with talent management – essentially the attraction, retention and development of employees – and an integrated system of rewards and recognition, this forms the basis of our ongoing "people strategy" work around the world.

ABB attracts and retains good quality people; our focus now is on developing their full potential.

Another 6,000 employees at all levels of the company took part in 240 leadership development programs, conducted in seven languages across 25 countries during 2005. This brings the total who have benefited from such courses to more than 8,000.

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We are now also using new management tools and processes to assess and track talent within the organization around the world.

The value of training was underlined by a significant event in 2005 in Sweden, where ABB celebrated the 100th anniversary of its training scheme. Among the 1,000 people who gathered to celebrate were notable "graduates" of the scheme, including CEOs from some of Sweden's biggest companies, as well as a number of top ABB managers.

Training is also central to our ongoing efforts in 2005 to improve health and safety performance. Despite good progress on training and implementing plans and procedures, we regrettably still reported a number of safety-related incidents.

A total of 20 people died and 47 were seriously injured as a result of ABB operations in 2005.

Every incident is unacceptable to us, and we are working hard to improve. A number of improvements initiated in 2004 advanced further last year. ABB implemented an Occupational Health and Safety Management System (OHSMS) globally, and continued safety leadership training for senior managers. About 96 percent of business units had achieved 75 percent or more OHSMS implementation by the end of 2005.

Site observational tours in which managers monitor health and safety standards and their implementation were introduced to encourage greater local involvement in health and safety matters. By the end of 2005, 1,470 managers had received this training. This is continuing in 2006.

Training top managers is only part of the process of embedding safety-consciousness within a company. Extending safety leadership training into countries and business units plays a critical role. At the end of 2005 1,700 local managers had received such training.

Another area where ABB is working hard to improve performance is in compliance. Proper business conduct is the hallmark of a sound organization; our stakeholders – customers, suppliers, shareholders, employees, authorities, the media – have the right to expect that we conduct our business with integrity.

At ABB we have a zero tolerance policy on compliance issues and respond to any breaches. During 2005, a total of 31 people were dismissed for non-compliance, for offences including theft, harassment at work and making suspect payments.

Meanwhile, ABB is pressing ahead with its program to meet the requirements of the Sarbanes-Oxley Act, which is designed to strengthen corporate governance in companies that do business or have investors in the U.S. We are on course to be fully compliant by the end of 2006.

ABB employees identify strongly with the company. They are proud to work for a global leader in power and automation technologies, supported by belief in our three business principles – respect, responsibility and determination – and the knowledge that they work for a company with integrity.

Our employees' sense of loyalty finds expression in different forms: for example, it was reflected in the strong interest shown in ABB's employee share acquisition program (ESAP), which started in 2004 and was extended in 2005.

ESAP is designed to give staff an opportunity to share in the company's success. In 2005, more than 15,000 people in 39 countries opted into the year-long program – some 17 percent of those eligible. This take-up rate is above the industry norm for such schemes.

Our commitment to our employees is enshrined in the company's vision statement: "As one of the world's most global and dynamic companies, ABB is unique in its multicultural environment and attitude. We are committed to attracting and retaining dedicated and skilled people, offering employees an attractive working environment and excellent development opportunities." We are working hard to fulfill those goals.

Left: Health and safety training takes many forms, ranging from site observational tours and courses around the world to learning about best practice in the office.

Right: Learning – on the shop floor or in the office – helps employees develop, improves business excellence and ensures a positive company culture.





# Sustainability

Seeking to improve performance

ABB pursued its commitment to sustainable development in 2005, focusing on ways of lowering the environmental impact of its own and customers' businesses, increasing health and safety training in the group, and working on a range of social projects and multilateral initiatives around the world.



We can make a significant difference on environmental issues by manufacturing efficient products, systems and solutions which lower energy use and emissions. These include high-voltage direct current for long-distance power transmission, energy-efficient motors and drives, Azipod podded propulsion units that steer ships, and automation solutions that control factories and power plants.

As part of our commitment to lower environmental impact, ABB also set out new targets in 2005 for phasing out the use of certain hazardous materials. These include the elimination of Chromium VI+ and the emission of any chlorinated solvent by the end of 2006, and increasing the use of water-based paints by 50 percent.

ABB continues to follow the triple bottom line reporting approach to business, detailing the economic, environmental and social aspects of our business. We seek to balance economic development, environmental stewardship and social progress.

Our contribution takes different forms: developing power and automation technologies which raise energy efficiency and reduce emissions; socio-economic projects, like the Access to Electricity rural electrification program, which improve living standards; the development of technology which helps get the most out of wind power; and projects from Brazil to China to help disadvantaged members of society.

ABB placed considerable emphasis in 2005 on stakeholder dialogue – listening to independent experts, non-governmental organizations and international agencies on a variety of issues, ranging from our plans to reduce CO<sub>2</sub> emissions to ways of ensuring the company is not complicit in human rights abuses in countries where we operate.

The group is also actively involved in multilateral efforts such as the UN Global Compact and the Business Leaders Initiative on Human Rights to support and promote a human rights aware approach to business.

Among a number of sponsorships, ABB joined six other Swiss-based companies in 2005 in a long-term corporate partnership agreement with the International Committee of the Red Cross to support the organization's humanitarian work.

Sustainability is a competitive business advantage; it is embedded in ABB's businesses and in the group's vision statement for the years up to 2009. We also recognize it is a constant learning process and are committed to further improvements.

More details about ABB's sustainability performance can be viewed in the 2005 Sustainability review.

Researchers constantly try to improve the performance and reduce the environmental impact of ABB's products and systems, and help customers lower their own environmental footbrint.



# In common with many other companies and individuals, ABB and its employees were involved in helping people, communities and businesses recover in the aftermath of natural disasters around the world in 2005.

Donations came from far and wide – for example, from North America for Tsunami victims, from Australia for the victims of the Kashmir earthquake – and ABB supported a range of reconstruction efforts.

From the southern United States to India came heartening stories of personal and professional commitment in the face of heart-rending losses.

As well as helping people in the affected areas and donating generously, getting customers' businesses back up and running after hurricanes ripped through the southern United States was one of the priorities in the U.S. ABB, its engineers and employees in the U.S., Canada and Mexico responded quickly with funds and expertise.

- They helped ExxonMobil, Southern Company, Florida Power and Light, Entergy, the Central Louisiana Electric Company and many other companies which made urgent requests on an ABB toll-free hotline in the storms' aftermath.
- ABB engineers slept on air mattresses at Dow Chemical, Westlake Petrochemical and Sasol locations in order to help these customers resume operations as quickly as possible.

- Service professionals arrived at an Ingalls Shipyard facility in Mississippi four days after Katrina and worked 18-hour days for weeks to restore power. Other employees left their families to engineer, manufacture and deliver three transformers in six days to Northrop Grumman Ship Systems. The normal lead-time for delivering these transformers is 10-12 weeks.
- ABB provided 18 electrical circuit breaker panels to manage ventilation and lighting in temporary classrooms at an elementary school in Mississippi.

The rebuilding of homes, schools and infrastructure formed a key element in ABB's efforts to help communities recover. In India, ABB – working with NGOs – helped hundreds of women and fishermen to pick up their shattered lives and livelihoods. Two examples:

Chinnaponnu, a 45-year-old widow living in a coastal village in Tamil Nadu state, lost two young children and the ability to feed her remaining two children. A self-help group, supported by ABB, has helped her set up a small business selling fish and she can now support her family: "The group helped me a lot, like a mother, to come out of my pain," she says.

Selvaraj, a disabled young man who cannot move without help, found himself the family breadwinner after the Tsunami. With ABB help, he now has a refreshments and cold drinks shop, with a new refrigerator, and is supporting himself and other family members.

From Mexico to Thailand, there were many cases of personal commitment. After devastating hurricanes, ABB employees in Mexico joined efforts to bring provisions – canned food, bottled water, clothing and blankets – to collection points. In several parts of southeast Asia, ABB employees sought to help Tsunami survivors with a variety of collections and projects.

No ABB employees died in the disasters. The responses show how a company and individuals can make a difference in the face of adversity.

ABB employees worked long and hard to provide emergency equipment like distribution transformers that helped get customers up and running in the wake of disasters.



# **ABB** sustainability initiatives worldwide

#### **United States**

Electrical engineering students at the University of Wisconsin – Madison are using energy-efficient industrial drives donated by ABB to test motors, as part of their electrical engineering curriculum and studies.

#### Canada

Under a contract signed in 2005, analytical instruments developed by ABB in Quebec City will be used on a Japanese satellite to collect and transmit data on the atmosphere's carbon dioxide and methane levels.

#### **Brazil**

ABB and its employees are involved in more than a dozen social welfare projects in Brazil, which range from providing shelter for ill people to soup kitchens and extracurricular teaching for the socially disadvantaged.

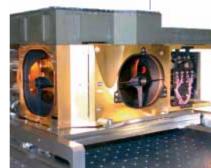
#### South Africa

In South Africa, ABB was one of the first companies to commit to a government-initiated energy efficiency accord signed in 2005. ABB's energy-saving products and systems will help meet ambitious targets set for 2015.

#### Italy

About 1,300 external visitors attended ABB's first Corporate Social Responsibility exhibition and conference in Italy. Nearly 70 people, including local government officials and professors, spoke at seminars held in Milan.







## Switzerland

ABB joined six other Swiss-based companies in 2005 in a long-term corporate partnership agreement with the Geneva-based International Committee of the Red Cross to support the organization's humanitarian work.

#### Finland

ABB is a leading component supplier to the wind industry. In Finland, ABB's generators and products are at work on a 100-meter-high wind tower built on an island near Oulu, that houses the country's largest wind power generator.

## Saudi Arabia

ABB received several awards in 2005 for its commitment to training Saudi students through holiday projects and apprenticeships, and professional development programs for graduates. ABB views hiring Saudi nationals as a business advantage.

#### India

ABB in India was awarded the prestigious Helen Keller award in 2005 for its efforts to help people with disabilities obtain gainful employment. An employment scheme in the western city of Nashik is to be extended to other locations.

#### China

The ABB Xiamen Switchgear Co. Ltd, set up scholarships in the city's University of Technology, donated more than 3,000 books and established a training center to help students majoring in engineering.







# **ABB Group Executive Committee**

## **Executive Committee as of 2006**

The ABB Group expanded the Executive Committee towards the end of 2005 and at the start of 2006. The five business division heads became members of the Executive Committee at the start of 2006.

Two new positions have also been added: Global Markets and Technology, and Corporate Development. The group's multinational character is reflected in the different nationalities of the members of the Executive Committee

# Fred Kindle President and CEO.

Swiss/Liechtenstein citizenships, 46, President and CEO since January 2005.

# Michel Demaré Executive Committee member and Chief Financial Officer.

Belgian citizen, 49. Joined ABB as CFO in January 2005.

#### Ulrich Spiesshofer Executive Committee member responsible for Corporate

Development.

German citizen, 41. Joined ABB on November 1, 2005 to manage Group corporate strategy, supply chain management and mergers and acquisition functions.

# Gary Steel Executive Committee member responsible for Human Resources.

Citizen of the United Kingdom, 53. Joined ABB as head of Human Resources in 2003.



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# Dinesh Paliwal Executive Committee member and President, Global Markets and Technology.

American citizen, 48. Joined ABB in 1985, became member of Executive Committee in January 2001. Also country manager in United States, and head of Group operations in North America.

#### Bernhard Jucker Executive Committee member responsible for Power Products division.

Swiss citizen, 51. Head of Power Products division effective January 1, 2006, he joined BBC Brown Boveri (one of ABB's two founding companies) in 1979.

# Samir Brikho Executive Committee member responsible for Power Systems

division.

Swedish citizen, 47. Head of Power Systems division effective January 1, 2006, he is also chairman of ABB Lummus Global. He rejoined ABB in 2003.

# Tom Sjökvist Executive Committee member responsible for Automation Products division.

Swedish citizen, 58. Head of Automation Products division effective January 1, 2006, he joined ASEA (one of ABB's two founding companies) in 1972.

#### Veli-Matti Reinikkala

Executive Committee member responsible for Process Automation division.

Finnish citizen, 48. Head of Process Automation division effective January 1, 2006, he joined ABB in 1993.

## Anders Jonsson Executive Committee member responsible for Robotics division.

Swedish citizen, 55. Head of Robotics division effective January 1, 2006, he joined ASEA (one of ABB's two founding companies) in 1976.



ABB Operational review 2005

# Corporate governance

## 1. Principle

ABB is committed to the highest international standards of corporate governance, and supports the general principles as set forth in the Swiss Code of Best Practice, as well as those of the capital markets where ABB Ltd has its shares listed: the SWX Swiss Exchange and exchanges in Stockholm and New York (where its shares are traded in the form of American depositary shares).

In addition to the provisions of the Swiss Code of Obligations, ABB's principles and rules on corporate governance are laid down in its articles of incorporation, its standards for corporate governance, the charters of the board committees, the board membership guidelines, several directives (e.g. on insider information) and the code on business ethics. It is the duty of ABB's Board of Directors to review and amend or propose amendments to those documents from time to time to reflect the most recent developments and practices, as well as to ensure compliance with applicable laws and regulations.

This section of the Annual Report is based on the Directive on Information relating to Corporate Governance published by the SWX Swiss Exchange. Where an item listed in the directive is not addressed in this report, it is either inapplicable to, or immaterial for, ABB.

In accordance with the requirements of the New York Stock Exchange ("NYSE"), a comparison of how the corporate governance practices followed by ABB differ from those required under the NYSE listing standards can be found on ABB's Web site under: www.abb.com

## 2. Group structure and shareholders

#### 2.1 Group structure

ABB Ltd, Zurich, Switzerland is the ultimate parent company of the ABB Group, which is comprised of 378 subsidiaries (operating and holding companies) worldwide. ABB Ltd has its shares listed on the SWX Swiss Exchange (virt-x) and the exchanges in Stockholm and New York. During 2005 ABB Ltd delisted its shares from the exchanges in London and Frankfurt. The only other company in the ABB Group with listed shares is ABB Limited, Bangalore, India, which is listed on the Mumbai Stock Exchange, National Stock Exchange of India, Ahmedabad Stock Exchange, Delhi Stock Exchange and Kolkata Stock Exchange.

Stock exchange	Security	Market capitalization	ABB interest	Ticker symbol	Security number	ISIN code
SWX Swiss Exchange (virt-x)	ABB Ltd, Zurich, Share	25.9 billion CHF	Parent	ABBN	1222171	CH0012221716
Stockholm Stock Exchange	ABB Ltd, Zurich, Share	25.9 billion CHF	Parent	ABB	_	CH0012221716
New York Stock Exchange	ABB Ltd, Zurich, ADS	25.9 billion CHF	Parent	ABB	000375204	US0003752047
National Stock Exchange of India	ABB Limited, Bangalore,	81.6 billion INR	52.11	ABB	_	INE117A01014
	Share					
Mumbai	ABB Limited, Bangalore,	81.6 billion INR	52.11	ABB	500002	INE117A01014
	Share					
Ahmedabad	ABB Limited, Bangalore,	81.6 billion INR	52.11	ABB	_	INE117A01014
	Share					
Delhi	ABB Limited, Bangalore,	81.6 billion INR	52.11	ABB	_	INE117A01014
	Share					
Kolkata	ABB Limited, Bangalore,	81.6 billion INR	52.11	ABB	_	INE117A01014
	Share					

All data as of December 31, 2005.

The following table sets forth, as of December 31, 2005, the name, country of incorporation, ownership interest and share capital of ABB Ltd, Zurich, Switzerland and its significant subsidiaries:

of ABB Ltd, Zurich, Switzerland and its significant sub	osidiaries.		Share	
		ABB	capital in	
Company name/Location	Country	interest %	in 1,000	Currency
ABB S.A., Buenos Aires	AUSTRALIA	100.00	10,510	ANS
ABB Australia Pty Limited, Sydney ABB AG, Vienna	AUSTRIA	100.00	122,436 15,000	EUR
ABB Ltda., Osasco	BRAZIL	100.00	495,810	BRL
ABB Bulgaria EOOD, Sofia	BULGARIA	100.00	493,810	BGN
ABB Inc., St. Laurent, Quebec	CANADA	100.00	301,957	CAD
ABB (China) Ltd., Beijing	CHINA	100.00	120,000	USD
Asea Brown Boveri Ltda., Bogotá	COLOMBIA	99.99	485,477	COP
ABB Ltd., Zagreb	CROATIA	100.00	2,730	HRK
ABB s.r.o., Prague	CZECH REPUBLIC	100.00	100,100	CZK
ABB A/S, Skovlunde	DENMARK	100.00	241,000	DKK
Asea Brown Boveri S.A., Quito	ECUADOR	96.87	315	USD
Asea Brown Boveri S.A.E., Cairo	EGYPT	100.00	82,490	EGP
ABB AS, Tallinn	ESTONIA	100.00	25,985	EEK
ABB Oy, Helsinki	FINLAND	100.00	10,003	EUR
ABB S.A., Rueil-Malmaison	FRANCE	100.00	38,921	EUR
ABB AG, Mannheim	GERMANY	100.00	167,500	EUR
ABB Automation GmbH, Mannheim	GERMANY	100.00	1,050	EUR
ABB Automation Products GmbH. Alzenau	GERMANY	100.00	20,750	DEM
ABB Beteiligungs- und Verwaltungsges. mbH, Mannheim	GERMANY	100.00	120,000	DEM
ABB Gebäudetechnik AG, Mannheim	GERMANY	100.00	12,315	DEM
Asea Brown Boveri S.A., Metamorphossis Attica	GREECE	100.00	1,182	EUR
ABB (Hong Kong) Ltd., Hong Kong	HONG KONG	100.00	20,000	HKD
ABB Engineering Trading and Service Ltd., Budapest	HUNGARY	100.00	444,090	HUF
ABB Limited, Bangalore	INDIA	52.11	423,817	INR
ABB Ltd, Dublin	IRELAND	100.00	2,898	EUR
ABB Technologies Ltd., Tirat Carmel	ISRAEL	99.99	420	ILS
ABB S.p.A., Milan	ITALY	100.00	107,000	EUR
ABB SACE S.p.A., Sesto S. Giovanni (MI)	ITALY	100.00	60,000	EUR
ABB Trasmissione & Distribuzione S.p.A., Milan	ITALY	100.00	3,300	EUR
ABB Technology SA, Abidjan	IVORY COAST	99.00	178,540	XOF
ABB K.K., Tokyo	JAPAN	100.00	1,000,000	JPY
ABB Ltd., Seoul	KOREA, REPUBLIC OF	100.00	18,670,000	KRW
ABB Holdings Sdn. Bhd., Subang Jaya	MALAYSIA	100.00	4,490	MYR
Asea Brown Boveri S.A. de C.V., Tlalnepantla	MEXICO	100.00	419,096	MXN
ABB BV, Rotterdam	NETHERLANDS	100.00	9,076	EUR
ABB Holdings BV, Amsterdam	NETHERLANDS	100.00	119	EUR
Luwoco Lummus World-wide Contracting (Netherlands) B.V.	NETHERLANDS	100.00	19	EUR
ABB Limited, Auckland	NEW ZEALAND	100.00	34,000	NZD
ABB Holding AS, Billingstad	NORWAY	100.00	800,000	NOK
Asea Brown Boveri S.A., Lima	PERU	99.99	17,152	PEN
Asea Brown Boveri Inc., Paranaque, Metro Manila	PHILIPPINES	100.00	123,180	PHP
ABB Sp. z o.o., Warsaw	POLAND	96.04	208,843	PLN
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Continued on the next page.

		ABB	Share capital in	
Company name/Location	Country	interest %	in 1,000	Currency
ABB S.G.P.S, S.A., Amadora	PORTUGAL	100.00	4,117	EUR
Asea Brown Boveri Ltd., Moscow	RUSSIA	100.00	332	USD
ABB Contracting Company Ltd., Riyadh	SAUDI ARABIA	65.00	10,000	SAR
ABB Holdings Pte. Ltd., Singapore	SINGAPORE	100.00	25,597	SGD
ABB Holdings (Pty) Ltd., Sunninghill	SOUTH AFRICA	80.00	4,050	ZAR
Asea Brown Boveri S.A., Madrid	SPAIN	100.00	33,318	EUR
ABB AB, Västerås	SWEDEN	100.00	400,000	SEK
ABB Norden Holding AB, Stockholm	SWEDEN	100.00	459,000	SEK
ABB Asea Brown Boveri Ltd, Zurich	SWITZERLAND	100.00	2,768,000	CHF
ABB Ltd, Zurich	SWITZERLAND	Parent	5,192,353	CHF
ABB Schweiz AG, Baden	SWITZERLAND	100.00	55,000	CHF
ABB LIMITED, Bangkok	THAILAND	100.00	1,034,000	THB
ABB Holding A.S., Istanbul	TURKEY	99.95	12,844	USD
ABB Ltd., Kiev	UKRAINE	100.00	5,860	USD
ABB Industries (L.L.C), Dubai	UNITED ARAB EMIRATES	49.00	5,000	AED
ABB Holdings Ltd., Warrington	UNITED KINGDOM	100.00	203,014	GBP
ABB Ltd., Warrington	UNITED KINGDOM	100.00	219,000	GBP
ABB Holdings Inc., Norwalk, CT	UNITED STATES	100.00	2	USD
ABB Inc., Norwalk, CT	UNITED STATES	100.00	901	USD
ABB Lummus Global Inc., Bloomfield, NJ	UNITED STATES	100.00	12,400	USD
Asea Brown Boveri S.A., Caracas	VENEZUELA	100.00	4,899,373	VEB
ABB (Private) Ltd., Harare	ZIMBABWE	100.00	50	ZWD

ABB's operational group structure is described in the "Financial review" part of this Annual Report.

## 2.2 Significant shareholders

On March 8, 2005, Investor AB, Sweden announced that it reduced its holdings to 187,374,142 ABB shares, representing 9.1 percent of the company's share capital as of that date. Based on quarterly reports, Investor AB further reduced its investment so that at the end of June 2005 it held 166,330,142 ABB Ltd shares representing 8.0 percent of the company's share capital and kept this holding unchanged until December 31, 2005.

To the best of ABB's knowledge, no other shareholder holds 5 percent or more of ABB's shares.

## 2.3 Cross-shareholdings

There are no cross-shareholdings in excess of 5 percent of the share capital or the voting rights between ABB and another company.

## 3. Capital structure

## 3.1 Ordinary share capital

As of December 31, 2005, ABB's ordinary share capital (including treasury shares) amounts to CHF 5,192,353,742.50 divided into 2,076,941,497 fully paid registered shares with a par value of CHF 2.50 per share.

## 3.2 Changes to the share capital

On November 20, 2003, ABB's extraordinary shareholders' meeting resolved to increase ABB's share capital by CHF 2,100,016,505 by issuing 840,006,602 new shares. Shareholders who did not want to exercise their rights to subscribe for new shares could sell them. A total of 99.4 percent of the rights were exercised. The shares related to unexercised rights were sold in the market and the proceeds were received by ABB. ABB's new share capital of CHF 5,100,040,085, divided into 2,040,016,034 shares, was registered in the commercial register on December 9, 2003.

Subsequently, ABB issued 30,298,913 shares out of its authorized capital for purposes of fulfilling ABB's obligations under a plan of reorganization of its U.S. subsidiary Combustion Engineering. In accordance with its then-current articles of

incorporation, the pre-emptive rights of the shareholders were excluded and allocated to an ABB subsidiary, which has subscribed for these shares and holds them until they will be contributed to the Asbestos PI Trust, once the plan of reorganization of Combustion Engineering has become effective (for the accounting treatment of these "Asbestos shares" please refer to Notes 17 and 22 of the "Financial review" part of this annual report). The resulting share capital of CHF 5,175,787,367.50 divided into 2,070,314,947 shares was registered in the commercial register on December 15, 2003.

In November 2005, ABB issued 6,626,550 shares to certain of its employees who elected to receive them in connection with the company's Employee Share Acquisition Plan (for further details see section 7.7). The resulting share capital CHF 5,192,353,742.50 divided into 2,076,941,497 shares was registered in the commercial register on December 13, 2005.

## 3.3 Contingent share capital

ABB's share capital may be increased in an amount not to exceed CHF 550,000,000 through the issuance of up to 220,000,000 fully paid shares with a par value of CHF 2.50 per share (a) up to the amount of CHF 525,000,000 (equivalent to 210,000,000 shares) through the exercise of conversion rights and/or warrants granted in connection with the issuance on national or international capital markets of newly or already issued bonds or other financial market instruments, and (b) up to the amount of CHF 25,000,000 (equivalent to 10,000,000 shares) through the exercise of warrant rights granted to its shareholders. ABB's Board of Directors may grant warrant rights not taken up by shareholders for other purposes in the interest of ABB.

The pre-emptive rights of the shareholders are excluded in connection with the issuance of convertible or warrant-bearing bonds or other financial market instruments or the grant of warrant rights. The then-current owners of conversion rights and/or warrants will be entitled to subscribe for the new shares. The conditions of the conversion rights and/or warrants will be determined by ABB's Board of Directors.

The acquisition of shares through the exercise of conversion rights and/or warrants and each subsequent transfer of the shares will be subject to the transfer restrictions of ABB's articles of incorporation (see section 3.5).

In connection with the issuance of convertible or warrant-bearing bonds or other financial market instruments, the Board of Directors is authorized to restrict or deny the advance subscription rights of shareholders if such bonds or other financial market instruments are for the purpose of financing or refinancing the acquisition of an enterprise, parts of an enterprise, participations

or new investments or an issuance on national or international capital markets. If the Board of Directors denies advance subscription rights, the convertible or warrant-bearing bonds or other financial market instruments will be issued at the relevant market conditions and the new shares will be issued pursuant to the relevant market conditions taking into account the share price and/or other comparable instruments having a market price. Conversion rights may be exercised during a maximum ten-year period, and warrants may be exercised during a maximum seven-year period, in each case from the date of the respective issuance. The advance subscription rights of the shareholders may be granted indirectly.

ABB's share capital may be increased by an amount not to exceed CHF 183,433,625 through the issuance of up to 73,373,450 fully paid shares to employees. The pre-emptive and advance subscription rights of ABB's shareholders are excluded. The shares or rights to subscribe for shares will be issued to employees pursuant to one or more regulations to be issued by the Board of Directors, taking into account performance, functions, levels of responsibility and profitability criteria. ABB may issue shares or subscription rights to employees at a price lower than that quoted on the stock exchange. The acquisition of shares within the context of employee share ownership and each subsequent transfer of the shares will be subject to the transfer restrictions of ABB's articles of incorporation (see section 3.5).

## 3.4 Authorized share capital

ABB's authorized share capital expired in May 2005.

## 3.5 Limitations on transferability of shares and Nominee registration

ABB may decline a registration with voting rights if a shareholder does not declare that it has acquired the shares in its own name and for its own account. If the shareholder refuses to make such declaration, it will be registered as a shareholder without voting rights.

A person failing to expressly declare in its registration application that it holds the shares for its own account (a "Nominee"), will be entered in the share register with voting rights, provided that such Nominee has entered into an agreement with the Board of Directors concerning its status, and further provided that the Nominee is subject to a recognized bank or financial market supervision. In special cases the Board of Directors may grant exemptions. There were no exemptions granted in 2005.

## 3.6 Convertible bonds and warrants

For information about outstanding convertible bonds and options on shares issued by ABB, please refer to Notes 14 and 21 of the "Financial review" part of this Annual Report.

## 4. Shareholders' participation

## 4.1 Shareholders' dividend rights

For shareholders who are residents of Sweden, ABB has established a dividend access facility under which such shareholders have the option to be registered with VPC AB in Sweden and to receive the dividend in Swedish kronor from ABB Participation AB. For further information on the dividend access facility please refer to the articles of incorporation.

## 4.2 Shareholders' voting rights

ABB has one class of shares and each registered share carries one vote at the general meeting. Voting rights may be exercised only after a shareholder has been registered in the share register of ABB as a shareholder with the right to vote, or with VPC AB in Sweden, which maintains a sub-register of the share register of ABB.

A shareholder may be represented at the annual general meeting by another shareholder with the right to vote, its legal representative, a corporate body (Organvertreter), an independent proxy (unabhängiger Stimmrechtsvertreter), or a depositary (Depotvertreter). All shares held by one shareholder may be represented by only one representative.

For practical reasons shareholders must be registered in the share register no later than ten days before the general meeting in order to be entitled to vote. Except for the cases described under section 3.5 there are no voting rights restrictions limiting ABB's shareholders' rights.

## 4.3 General meeting

Shareholders' resolutions at general meetings are approved with an absolute majority of the votes represented at the meeting, except for those matters described in article 704 of the Swiss Code of Obligations and for resolutions with respect to restrictions on the exercise of the right to vote and the removal of such restrictions, which all require the approval of two-thirds of the votes represented at the meeting.

Shareholders representing shares of a par value of at least CHF 1,000,000 may request items to be included in the agenda of a general meeting. Such request must be made in writing at least 40 days prior to the date of the general meeting and specify the items and the motions of such shareholder(s). ABB's articles of incorporation do not contain provisions on the convocation of the general meeting of shareholders which differ from the applicable legal provisions.

#### 5. Board of Directors

## 5.1 Responsibilities and organization

The Board of Directors defines the ultimate direction of the business of ABB and issues the necessary instructions. It determines the organization of the ABB Group and appoints, removes and supervises the persons entrusted with the management and representation of ABB.

The internal organizational structure and the definition of the areas of responsibility of the Board of Directors, as well as the information and control instruments vis-à-vis the group Executive Committee, are set forth in the regulations of the Board of Directors.

Board meetings are convened by the chairman or upon request by a director or the Chief Executive Officer (CEO).

#### 5.2 Term and members

The members of the Board of Directors are elected at the ordinary general meeting of the shareholders for a term of one year; re-election is possible.

ABB's board membership guidelines require that the Board of Directors is comprised of a substantial majority of independent directors. Currently all board members are non-executive and independent directors (see also section 5.4), with the exception of Jürgen Dormann who was also CEO until December 31, 2004 in addition to his ongoing function as Chairman.

Members of the Board of Directors of ABB

## Jürgen Dormann

Chairman, board member since 1998 and Non-executive board member of ABB, since January 1, 2005; from September 5, 2002 until December 31, 2004 also President and CEO of ABB

Vice-Chairman: sanofi aventis (France), Adecco (Switzerland, as of November 22, 2005)

Board member: Adecco (Switzerland, as of January 1 to November 21, 2005) IBM (U.S., as of February 22, 2005), BG Group (U.K., as of June 1, 2005)

## Roger Agnelli

President and CEO of Companhia Vale do Rio Doce (Brazil)

Non-executive board member of ABB, since 2002

Board member: Duke Energy (U.S.), Suzano Petroquimica (Brazil, as of April 20, 2005)

## Louis R. Hughes

Chairman of Manager Technology (U.S.), CEO of GBS Laboratories (U.S.) Non-executive board member of ABB. since 2003

Board member: AkzoNobel (The Netherlands from April 2006), BT Group (U.K. through March 2006), Electrolux (Sweden, as of April 20, 2005), MTU (Germany as of January 2006) and Sulzer (Switzerland)

Executive Adviser: Windpoint (U.S.)

Louis R. Hughes took a temporary leave of absence from the board until July, 2005 to serve the United States government as chief of staff of the Afghanistan Reconstruction Group

#### Hans Ulrich Märki

Chairman of IBM Europe, Middle East and Africa (France)

Non-executive board member of ABB, since 2002

Board member: Mettler Toledo International and Menuhin Festival Gstaad AG (both Switzerland)

#### Michel de Rosen

Chairman, President and CEO of ViroPharma (U.S.)

Non-executive board member of ABB, since 2002

Board member: Ursinus College and Pennsylvania Biotech (both U.S.) Member of the advisory board of Paul Capital Partners Royalty Fund and the Global Business Coalition on HIV/AIDS (both U.S.)

#### Michael Treschow

Chairman of Ericsson, Electrolux and the Confederation of Swedish Enterprise (all Sweden)

Non-executive board member of ABB, since 2003

## Bernd W. Voss

Member of the Supervisory Board of Dresdner Bank (Germany)

Non-executive board member of ABB, since 2002

Board member: Allianz Leben, Continental, Quelle, Hapag-Lloyd, Wacker Chemie, Osram (all Germany)

## Jacob Wallenberg

Chairman: Investor AB (Sweden)

Non-executive board member of ABB, since 1999

Vice-Chairman: SEB Skandinaviska Enskilda Banken, Atlas Copco AB and SAS AB (all Sweden)

Board member: The Knut and Alice Wallenberg Foundation, W Capital Management AB and The Nobel Foundation (all Sweden)

As of December 31, 2005, none of ABB's board members holds any official functions or political posts. Further information on ABB's board members, including details about their nationality, education and professional experience, as well as other activities and functions, is available on ABB's Web site under:

www.abb.com/about

#### 5.3 Cross-involvement

The only cross-involvement among ABB's board members and the boards of directors of other listed companies is that Louis R. Hughes and Michael Treschow are board members of Electrolux (Sweden).

## 5.4 Business relationships

This section describes business relationships between ABB and its non-executive board members, or companies and organizations represented by them.

In November 2005, ABB sold its Finnish lease portfolio business to Skandinaviska Enskilda Banken AB (publ) ("SEB"). Also in November 2005, ABB entered into a new 5 billion Swedish krona commercial paper program pursuant to which SEB is an arranger and dealer. Jacob Wallenberg is the Vice-Chairman of SEB.

On July 4, 2005, ABB entered into a new unsecured syndicated \$2 billion five-year revolving credit facility, which became available in July 2005. Each of SEB and Dresdner Bank AG has committed to \$120 million out of the \$2 billion total. Jacob Wallenberg is the Vice-Chairman of SEB and Bernd W. Voss is a member of the Supervisory Board of Dresdner Bank AG.

In June 2003, ABB entered into a ten-year agreement with IBM pursuant to which IBM took responsibility for the operation and support of information systems infrastructure in 15 countries (status as of December 31, 2005) in Europe and North America, representing approximately 90 percent of ABB's information systems infrastructure. The agreement involved the transfer to IBM of 800 ABB employees, in addition to the 380 employees transferred under pilot programs prior to 2003. The final transfer of responsibilities took place in September 2003. The value of the agreement will approach \$1.7 billion over ten years. Hans Ulrich Märki is Chairman of IBM Europe, Middle East and Africa. Jürgen Dormann has been a member of IBM's Board of Directors since February 22, 2005.

During the year 2005, ABB and its subsidiaries were party to several contracts with Companhia Vale do Rio Doce (CVRD) and its subsidiaries, including contracts for engineering services and the supply of electrical equipment for generation and distribution of power. The largest contract was for supply of electrical equipment with value of approximately \$6.4 million. There are also various purchase orders for spare parts and machinery in general, The total value of such contracts and purchase orders is approximately \$21.7 million. The exchange rate used to convert Brazilian Reais into U.S. Dollars was R\$2.14 to US\$1.00. Roger Agnelli is President and CEO of CVRD.

These transactions do not constitute material business relationships, comparing the revenues generated from the business described above to the annual revenues of SEB, Dresdner Bank, IBM and CVRD. Mssrs. Wallenberg, Voss, Märki and Agnelli – as well as the other board members, with the exception of Jürgen Dormann as Chairman and former CEO (until December 31, 2004) – are considered to be independent directors. This determination was made in accordance with the Swiss Code of Best Practice and the independence criteria set forth in the corporate governance rules of the New York Stock Exchange.

#### 5.5 Board committees

The Board of Directors of ABB has appointed from among its members two board committees: the Nomination and Compensation Committee and the Finance and Audit Committee. The duties and objectives of the board committees are set forth in charters issued or approved by the Board of Directors. These committees assist the board in its tasks and report regularly to the board.

## 5.5.1 Nomination and Compensation Committee

The Nomination and Compensation Committee determines the selection of candidates for the Board of Directors and its committees, plans for the succession of directors and ensures that newly elected directors receive the appropriate introduction and orientation, and that all directors receive adequate continuing education and training to fulfill their obligations. The Nomination and Compensation Committee proposes the remuneration of the members of the group Executive Committee. It also governs the deployment of the ABB people strategy.

The Nomination and Compensation Committee comprises three or more independent directors. Upon invitation by the committee's chairman, the CEO or other members of the group Executive Committee may participate in the committee meetings, provided that any potential conflict of interest is avoided and confidentiality of the discussions is maintained.

Members and secretary of the Nomination and Compensation Committee:

Members: Hans Ulrich Märki (Chairman)

Michel de Rosen

Jacob Wallenberg (until July 2005) Roger Agnelli (from July 2005)

Secretary: Gary Steel

### 5.5.2 Finance and Audit Committee

The Finance and Audit Committee oversees the financial reporting processes and accounting practices, evaluates the independence, objectivity and effectiveness of external and internal auditors, reviews audit results and monitors compliance with the laws and regulations governing the preparation of ABB's financial statements and assesses the processes relating to risk management and internal control systems.

The Finance and Audit Committee comprises three or more independent directors who have a thorough understanding of finance and accounting. As determined by the committee's chairman for matters related to their respective functions, the head of internal audit, as well as the external auditors, may participate in the Finance and Audit Committee meetings. As required by the U.S. Securities and Exchange Commission (SEC) the Board of Directors has determined that Bernd W. Voss is an audit committee financial expert.

Members and secretary of the Finance and Audit Committee:

Members: Bernd W. Voss (Chairman)

Jacob Wallenberg

Roger Agnelli (until July 2005) Louis R. Hughes (from July 2005)

Secretary: Michel Demaré

## 5.6 Meetings and attendance

The table below shows the number of meetings held by the Board of Directors and its committees, their average duration, as well as the attendance of the individual board members:

		Nomination	
		and	Finance
	Board of	compensation	and audit
	directors	committee	committee
Average duration (hrs.)	5.5	2	2.5
Number of meetings	7	5	8
Meetings attended:			
Jürgen Dormann	7	_	_
Roger Agnelli	5	1	2
Louis R. Hughes*	3	_	2
Hans Ulrich Märki	6	5	_
Michel de Rosen	7	5	_
Michael Treschow	6	_	_
Bernd W. Voss	7	-	8
Jacob Wallenberg	7	2	6

<sup>\*</sup> Louis R. Hughes could only attend the last three meetings of the Board of Directors due to his leave of absence (see section 5.2).

#### 5.7 Ownership of ABB shares and options

The table below shows the number of ABB shares, or equivalent U.S. American depositary shares (ADS), held by each board member as of December 31, 2005:

Jürgen Dormann Roger Agnelli Louis R. Hughes Hans Ulrich Märki Michel de Rosen Michael Treschow Bernd W. Voss	shares
Louis R. Hughes Hans Ulrich Märki Michel de Rosen Michael Treschow	737,276
Hans Ulrich Märki Michel de Rosen Michael Treschow	123,265
Michel de Rosen Michael Treschow	51,750
Michael Treschow	278,628
	81,354
Bernd W. Voss	63,477
	121,343
Jacob Wallenberg	137,046

Jürgen Dormann also holds 1,000,000 warrants granted in connection with the 2003 launch of the Management Incentive Program (see section 7.8. for further details on the Management Incentive Program). With the exception of Jürgen Dormann none of the board members holds any options in ABB shares. No person closely linked to any of the board members holds any shares of ABB or options in ABB shares. Persons closely linked is understood to mean: 1) the spouse; 2) children below the age of 18; 3) persons living in the same household for at least 12 months; 4) legal or natural persons acting as fiduciary; and 5) legal entities controlled by a board member.

## 5.8 Secretary to the Board of Directors

John G. Scriven is Secretary to the Board of Directors.

## 6. Group Executive Committee

## 6.1 Responsibilities and organization

The Board of Directors has delegated the executive management of ABB to the CEO and the other members of the group Executive Committee. The CEO, and under his direction the other members of the group Executive Committee, are responsible for ABB's overall business and affairs and day-to-day management. The CEO reports to the board regularly, and whenever extraordinary circumstances so require, on the course of ABB's business and financial performance and on all organizational and personnel matters, transactions and other issues relevant to the group.

Upon proposal by the Nomination and Compensation Committee, the group Executive Committee is appointed and discharged by the board.

#### 6.2 Members

#### Fred Kindle

President and CEO

## Dinesh Paliwal

Automation Technologies until December 31, 2005
Global Markets and Techology as from January 1, 2006

## Michel Demaré

CFO

Number of

## **Gary Steel**

Human Resources

## Ulrich Spiesshofer

Corporate Development as from November 1, 2005

#### **Peter Smits**

Power Technologies until December 31, 2005

No longer a member of the Executive Committee as from January 1, 2006

## Bernhard Jucker

Power Products as from January 1, 2006

## Samir Brikho

Power Systems as from January 1, 2006

## Tom Sjökvist

Automation Products as from January 1, 2006

## Veli-Matti Reinikkala

Process Automation as from January 1, 2006

## Anders Jonsson

Robotics as from January 1, 2006

Further information about the members of the group Executive Committee, including their nationality, education and professional experience, as well as other activities and functions, is available on ABB's Web site under: www.abb.com/about

## 6.3 Management contracts

There are no management contracts between ABB and companies or natural persons not belonging to the ABB Group.

## 6.4 Ownership of ABB shares and options

As of December 31, 2005, the members of the group Executive Committee held (which does not necessarily equal the numbers granted, if the vesting period has lapsed) the following numbers of shares and options (based on the categorizations described in sections 7.8 and 7.9) provided in the table below. The number of shares to be received under the performance incentive share plan is conditional on achieving the criteria as summarized in section 7.9. The exact number of shares to be received under the 2004 launch will only be known in March 2006. The exact number of shares to be received for the 2005 launch will only be known in March 2008.

		Number of shares			Number of options	
		Conditional grants under performance incentive share	Conditional grants under performance incentive share	Launch year	Launch year	
	Shares	plan (2004 Launch)*	plan (2005 Launch)**	2000	2003	
Fred Kindle	2,500	130,480	272,728	0	0	
Dinesh Paliwal***	111,904	110,475	174,960	250,000	1,000,000	
Peter Smits	51,000	113,282	184,616	250,000	1,000,000	
Gary Steel	1,430	89,193	146,854	0	1,000,000	
Michel Demaré***	500	59,001	157,343	0	0	
Ulrich Spiesshofer	0	15,870	107,955	0	0	

<sup>\*</sup> Fred Kindle, Michel Demaré and Ulrich Spiesshofer joined ABB during the evalutation period and therefor received a pro rata conditional grant of shares under the 2004 launch
\*\*\* Ulrich Spiesshofer joined ABB during the evalutation period and therefor received a pro rata conditional grant of shares under the 2005 launch
\*\*\*\* Shares held jointly with his wife.

Other than as stated in the table above as of December 31, 2005 no person closely linked to any member of the group Executive Committee held any shares of ABB or options in ABB shares.

## 7. Compensation

## 7.1 Principles of board compensation

The compensation levels of the Board of Directors in 2005 were as follows:

Chairman: CHF 1,500,000 CHE 250.000 Member: CHF Committee chairman: 50,000 CHF Committee member: 20,000

The semi-annual payments to board members in 2005 were made in June and November. Board members receive at least 50 percent (and may elect to receive a higher ratio) of their net compensation, i.e. after deduction of social security costs and withholding tax (where applicable), in ABB shares, which they are entitled to receive with a discount of 10 percent of the average share price during a 30-day reference period. During the term of board membership, the ABB shares are kept in a blocked account and may only be disposed of after the respective person has left the Board of Directors.

## 7.2 Details of board compensation

In 2005, the current board members received the following compensation (the calculation of the number of shares and the cash amount varies according to whether the respective person is subject to taxation at source):

	Total annual	Amount	
	compensation	received in	Number of
	(gross), in	cash (net), in	shares
	CHF	CHF	received
Jürgen Dormann	1,500,000	476,418	63,479
Roger Agnelli	270,000	0	25,022
Louis R. Hughes*	168,333	58,364	7,246
Hans Ulrich Märki	300,000	0	38,129
Michel de Rosen	270,000	93,903	12,511
Michael Treschow	250,000	86,907	11,579
Bernd W. Voss	300,000	0	28,074
Jacob Wallenberg	280,000	97,401	13,029
Total	3,338,333	812,993	199,069

Louis R. Hughes received a reduced compensation in October 2005 for the first semester as he was on a temporary leave of absence for a portion of that semester (see section 5.2).

With the exception of Jürgen Dormann while having been both Chairman of the Board of Directors and CEO, board members do not receive pension benefits and are not eligible to participate in any of ABB's incentive programs.

No compensation was paid to former board members.

## 7.3 Principles of group Executive Committee compensation

Members of the group Executive Committee receive annual base compensation. They are further eligible for annual bonus compensation, determined in accordance with the principles explained in section 7.5.

In addition to receiving annual base and bonus compensation, members of the group Executive Committee may participate in the employee share acquisition plan and the performance incentive share plan. Some members of the group Executive Committee have participated in the earlier launches of ABB's management incentive plan (MIP). Group Executive Committee members receive customary additional benefits such as a company car and health insurance compensation, which are not material in the aggregate and contributions to children's education in some cases.

## 7.4 Details of group Executive Committee compensation

In applying the "cash-out principle" the table below shows the gross payments (i.e. compensation before deduction of employee social insurance and pension contributions) that were made to the members of the group Executive Committee, the bonuses paid in 2005 which are based on 2004 business performance, as well as the employer's part of the ordinary pension contributions. All members of the group Executive Committee are insured in the ABB Pension Fund, the ABB Supplementary Insurance Plan and the Tödi Foundation (the regulations are available under www.abbvorsorge.ch), with the exception of Dinesh Paliwal, who is insured under the U.S. pension plan (see footnote below). Section 6.4 shows the numbers of conditionally granted shares under the performance incentive share plan. Members of the Group Executive Committee based in Switzerland who are between the ages of 45 and 60 also participated in the Equalization plan, a defined benefits plan capped under Swiss law, within the Tödi Foundation which was established in 2005. In addition to the figures provided in the table below, Michel Demaré, Ulrich Spiesshofer and Peter Smits, but none of the other members of the group Executive Committee as of December 31, 2005, participated in the second launch of the employee share acquisition plan (see section 7.7) with the maximum annual savings amount of CHF 9,000.

						Employer's
				Additional	Total annual	pension
	Currency	Salary paid in 2005	Bonus 2004 received	compensation	compensation	contributions
Fred Kindle	CHF	1,300,000	400,000	0	1,700,000	412,062
Dinesh Paliwal*	USD	732,333	577,125	800,000	2,109,458	511,906
Peter Smits	CHF	878,340	743,850	0	1,622,190	954,844
Gary Steel	CHF	697,508	585,675	0	1,283,183	888,726
Michel Demaré**	CHF	750,000	0	1,000,000	1,750,000	552,437
Ulrich Spiesshofer***	CHF	108,334	0	0	108,334	23,839
Total****	CHF	4,698,921	2,489,801	2,053,880	9,242,602	3,506,267

As Dinesh Paliwal has a U.S. employment contract, he received his salary in U.S. dollars. His pension contributions are based on the U.S. pension plan. As previously disclosed in our Annual report on Form 20-F that was filed in May 2005 with the U.S. Securities and Exchange Commission, Dinesh Paliwal was paid the additional compensation of \$800,000 in January

<sup>2005</sup> as a bonus agreed by the previous management.

\*\* The additional compensation was for share options due to change of employment.

\*\*\* Ulrich Spiesshofer joined ABB in November 2005 and therefor received a pro rata share of his salary for 2005.

\*\*\*\* For the purpose of calculating the total, the U.S. dollar amounts relating to Dinesh Paliwal have been converted into CHF at a year-end conversion rate of 1.31735.

#### 7.5 Bonus determination

ABB has a bonus structure to align the performance expectations of its senior managers.

Group Executive Committee members, heads of group functions, business area managers and country managers receive targets and are measured at least 60 percent on ABB Group results.

Resulting bonuses are paid in March each year after full-year results are announced. In applying the scorecard principles, the CEO has a maximum bonus opportunity of 150 percent of his base salary and all other group Executive Committee members have a maximum bonus opportunity of 100 percent of their base salary.

## 7.6 Employee participation programs

In order to align its employees' interests with the business goals and financial results of the company, ABB operates a number of incentive plans, linked to ABB's shares, which are summarized below (for a more detailed description of each incentive plan, please refer to Note 21 of the "Financial review" part of this annual report).

## 7.7 Employee share acquisition plan (ESAP)

To incentivize employees, ABB has an employee share acquisition plan (ESAP Plan). The ESAP Plan is an employee stock option plan with a savings feature. Employees save over a 12-month savings period, by way of monthly salary deductions. The maximum monthly savings amount is the lower of 10 percent of gross monthly salary or the local currency equivalent of CHF 750. At the end of the savings period, employees choose whether to exercise their stock options using their savings plus interest to buy ABB Ltd shares (American Depositary Shares (ADS) in the case of employees in the United States – each ADS representing one registered share of ABB) at the exercise price set at the grant date, or have their savings returned with interest. The savings are accumulated in a bank account held by a third party trustee on behalf of the participants and earn interest.

The maximum number of shares that each employee can purchase has been determined based on the exercise price and the aggregate savings for the 12-month period, increased by 10 percent to allow for currency fluctuations. If, at the exercise date, the balance of savings plus interest exceeds the maximum amount of cash the employee must pay to fully exercise their stock options, the excess funds will be returned to the employee. If the balance of savings and interest is insufficient to permit the employee to fully exercise their stock options, the employee has the choice but not the obligation, to make an additional payment so that the employee may fully exercise their stock options.

If an employee ceases to be employed by ABB, the accumulated savings as of the date of cessation of employment will be returned to the employee and the employee's right to exercise their stock options will be forfeited. Employees can withdraw from the ESAP Plan at any time during the savings period and will be entitled to a refund of their accumulated savings.

The exercise price per share and ADS of CHF 10.30 and \$7.88, respectively, for the 2005 grant, were determined using the closing price of the ABB Ltd share on SWX Swiss Exchange (virt-x) and ADS on the New York Stock Exchange on November 8, 2005.

## 7.8 Management incentive plan (MIP)

ABB maintains a management incentive plan (MIP Plan) under which it offers stock warrants and warrant appreciation rights (WARs) to key employees for no consideration.

Warrants granted under the MIP Plan allow participants to purchase shares of ABB at predetermined prices. Participants may sell the warrants rather than exercise the right to purchase shares. Equivalent warrants are listed on the SWX Swiss Exchange, which facilitates valuation and transferability of warrants granted under this plan. If the participant elects to sell the warrant on the market rather than exercise the right to purchase shares, the warrant may then be held by a non-employee of ABB. Each WAR gives the participant the right to receive, in cash, the market price of a warrant on the date of exercise of the WAR. The WARs are non-transferable.

Participants may exercise or sell warrants and exercise WARs after the vesting period, which is three years from the date of grant. Vesting restrictions can be waived in certain circumstances such as death or disability. All warrants and WARs expire six years from the date of grant.

The details of the various unexpired grants are as follows:

Grant	Exercise price in CHF	Subscription ratio
June 2000	42.05	100:25.21
December 2001	13.49	100:25.21
December 2003	7.00	5:1
December 2004	7.50	5:1
February 2006	15.30	5:1

## 7.9 Performance incentive share plan

ABB has a Performance incentive share plan (Performance Plan) for members of its Executive Committee (EC Members). The Performance Plan involves annual conditional grants of ABB's stock. The number of shares conditionally granted is dependent upon the base salary of the EC Member. The actual number of shares that each participant will receive free of charge at a future date is dependent on (1) the performance of ABB Ltd shares during a defined period (Evaluation Period) compared to those of a selected peer group of publicly-listed multinational companies and (2) the term of service of the respective EC Member in that capacity during the Evaluation Period. The actual number of shares received after the Evaluation Period cannot exceed 100 percent of the conditional grant.

The performance of ABB compared to its peers over the Evaluation Period will be measured as the sum, in percentage terms, of the average percentage price development of the ABB Ltd share price over the Evaluation Period and an average annual dividend yield percentage (ABB's Performance).

In order for shares to vest, ABB's Performance over the Evaluation Period must be positive and equal to or better than half of the defined peers. The actual number of shares to be delivered will be dependent on ABB's ranking in comparison with the defined peers. The full amount of the conditional grant will vest when ABB's Performance is better than three-quarters of the defined peers.

If during the vesting period, an EC Member gives notice of resignation or, under certain circumstances, is given notice of termination, then the right to shares is forfeited. In the event of death or disability during the vesting period, the conditional grant size for that participant is reduced pro rata based on the remaining vesting period. If, during the vesting period, a Performance Plan participant ceases to be an EC Member for reasons other than described above, the conditional grant size is reduced pro rata based on the portion of the vesting period remaining when the participant ceases to be an EC Member, unless otherwise determined by ABB's Nomination and Compensation Committee. In respect of a Performance Plan grant for which the vesting period has not expired, the Nomination and Compensation Committee can invite a new EC Member to receive a conditional grant, adjusted to reflect the shorter service period.

The details of the various unexpired launches are as follows:

Launch year	Evaluation Period	Reference price (in CHF)
2004	March 15, 2004, to March 15, 2006	7.68
2005	March 15, 2005, to March 15, 2008	7.15

## 7.10 Compensation to former members of the group Executive Committee

In 2005 ABB did not make any payments to former members of the group Executive Committee.

## 7.11 Additional fees and remuneration

Other than as disclosed herein, in 2005 none of ABB's members of the Board of Directors, the group Executive Committee, or persons closely linked to them received any additional fees and remunerations for services rendered to ABB.

# 8. Loans and guarantees granted to the board of directors or group executive committee

ABB has not granted any loans or guarantees to its board members or members of the group Executive Committee in 2005.

## 9. Duty to make a public tender offer

ABB's articles of incorporation do not contain any provisions raising the threshold (opting-up) or waiving (opting-out) the duty to make a public tender offer pursuant to article 32 of the Swiss Stock Exchange and Securities Trading Act.

## 10. Change of control provisions

ABB does not offer "golden parachutes" to its members of the Board of Directors or senior executives. Consequently none of ABB's board members, group Executive Committee members or members of senior management are benefiting from clauses on changes of control. Employment contracts normally contain notice periods of 12 months for group Executive Committee members and three to six months for members of senior management, during which they are entitled to running salaries and bonuses.

## 11. Auditors

## 11.1 Group auditors and special auditors

Ernst & Young is the group and statutory auditor of ABB. OBT has been elected as special auditor to issue special review reports required in connection with capital increases.

## 11.2 Duration of the mandate and term of office of the group auditor

Ernst & Young assumed the existing auditing mandate as auditor of the ABB Group in 1994. The head auditor responsible for the mandate, Charles Barone, began serving in this function in May 2003.

## 11.3 Auditing and additional fees paid to group auditor

The audit fees charged by Ernst & Young for the legally prescribed audit amounted to approximately \$31.7 million in 2005. Audit services are defined as the standard audit work performed each fiscal year necessary to allow the auditor to issue an opinion on the consolidated financial statements of ABB and to issue an opinion on the local statutory financial statements.

This classification may also include services that can only be provided by the group auditor such as assistance with the application of new accounting policies, pre-issuance reviews of quarterly financial results and comfort letters delivered to underwriters in connection with debt and equity offerings.

Included in 2005 audit fees are approximately \$3 million related to the 2004 audit, which fees were not agreed until after the Company had published its 2004 Annual Report to shareholders.

In addition, Ernst & Young charged approximately \$3.1 million for non-audit services performed during 2005. Non-audit services include primarily accounting consultations and audits in connection with divestments, audits of pension and benefit plans, accounting advisory services, tax compliance and other tax services. In accordance with the requirements of the U.S. Sarbanes-Oxley Act of 2002 and rules issued by the U.S. Securities and Exchange Commission (SEC), ABB has, on a global basis, a process for the review and pre-approval of audit and non-audit services to be performed by Ernst & Young.

## 11.4 Supervisory and control instruments vis-à-vis the group auditors

Ernst & Young periodically reads the approved minutes of meetings of our Board of Directors. Ernst & Young is present at the Finance and Audit Committee meetings where audit planning is discussed and the results of our internal audit department's audit procedures are presented. Ernst & Young also periodically meets with the Finance and Audit Committee to discuss the results of its audit procedures.

## 12. Information policy

ABB, as a publicly traded company, is committed to communicating in a timely and consistent way to shareholders, potential investors, financial analysts, customers, suppliers, the media and other interested parties. ABB ensures that material information pertaining to its businesses is disseminated in a manner that complies with its obligations under the rules of the stock exchanges where its shares are listed: the SWX Swiss Exchange (traded on virt-x) and exchanges in Stockholm and New York (where its shares are traded in the form of American depositary shares).

ABB publishes an Annual Report consisting of an Operational review, a Financial review and a Sustainability review. The Operational and Financial reviews provide information on the results of ABB's businesses. The Operational review also provides information on human resources, technology, sustainability and corporate governance. The Financial review provides the audited financial statements for the reported year, as well as a management discussion and analysis of ABB's business results. The Sustainability review provides information on the company's performance in environmental management, social responsibility and employee health and safety.

Apart from this Annual Report, ABB also submits an annual report on Form 20-F to the U.S. Securities and Exchange Commission (SEC). In addition, ABB publishes its results on a quarterly basis as press releases, distributed pursuant to the rules and regulations of the stock exchanges on which its shares are listed. Press releases relating to financial results and material events are also filed with the SEC on Form 6-K. An archive containing Annual Reports, Form 20-F reports, quarterly results releases and related presentations and conference call webcasts can be found on the ABB Web site (www.abb.com/investorrelations). These presentations are not regularly updated but reflect developments within the company over time. The quarterly results press releases contain unaudited financial statements in accordance with U.S. GAAP.

ABB's official means of communication is the Swiss Official Gazette of Commerce (www.shab.ch). The invitation to the company's annual general meeting is sent to registered shareholders by mail.

Inquiries may also be made to ABB Investor Relations:

Telephone: +41 43 317 71 11 Fax: +41 44 311 98 17

ABB's Web site is www.abb.com

## 13. Further information on corporate governance

The list below contains references to additional information concerning the corporate governance of ABB, which can be accessed at: www.abb.com

- Articles of incorporation
- Regulations of the Board of Directors
- CVs of members of the Board of Directors
- CVs of members of the group Executive Committee
- Corporate governance charter
- Charter of the Nomination and Compensation Committee
- Charter of the Finance and Audit Committee
- Business ethics
- Comparison of ABB's corporate governance practices to the New York Stock Exchange rules

## **Management**

Management		Business unit managers:	
Power Products		Chemical and Pharmaceutical	Hartmut Wuttig
Division Head	Bernhard Jucker	Marine	Heikki Soljama
Division CFO	Robert Bakewell	Minerals	Frank Crook
		Oil and Gas	Sandy Taylor
Business unit managers:		Process industries products	Teemu Tunkelo
High-voltage products	Stefan Ranstrand	Pulp and paper	Roger Bailey
Medium-voltage products	Guido Traversa	Service	Kalevi Hasi
Transformers	Brice Koch	Turbocharging	Daniel Arnet
Power Systems		Robotics	
Division Head	Samir Brikho	Division Head	Anders Jonsson
Division CFO	Juerg Seiler	Division CFO	Andreas Krause
Business unit managers:		Business unit managers:	
Grid systems	Per Haugland	Products	Anders Nylander
Network Management	Karl Elfstadius	Robot Automation	Alfons Goos
Power Generation	Michael Hirth	Service	Jo Pauwels
Substations	Claudio Facchin	Systems	Charles Kister
ABB Lummus Global:		Group Functions reporting to CEO, Fr	
CEO	Martin Gross*	Corporate Communications	Adam Roscoe (ad interim)
*reporting to head of Power Systems Samir Brikho.		Group Internal Audit and Verification	Markus Kistler
		Legal Affairs and Compliance	John Scriven
Automation Products			
Division Head	Tom Sjökvist	Group Functions reporting to CFO, Mi	
Division CFO	Erik Elzvik	Assurance and Internal Control	Silvio Ghislanzoni
		Corporate Finance and Taxes	Alfred Storck
Business unit managers:		Group Accounting and Consolidation	Richard Gruenhagen
Breakers and Switches	Thorolf Damén	Information Systems	Haider Rashid
Control products	Bernhard Schmeing	Investor Relations	Michel Gerber
Enclosures and DIN Rail Products	Klaus Hamman	New Ventures & Non-core Businesses	Lars Vagman
Instrumentation	Josef Guth	Planning and Controlling	Hannu Kasi
Low-Voltage Drives	Pekka Tiitinen	Risk Management	Charles Salek
Low-Voltage Motors	Fernando Fernandez		
Low-Voltage Systems	Reino Buchmueller	Group Functions reporting to head of H	<u> </u>
Machines	Juha Silvennoinen	HR Development	Paul Lewis
Power Electronics and Medium Voltage Drives	Remo Luetolf	HR Remuneration	Jimmy Yap
Wiring Accessories	Hans-Georg Krabbe	HR Business Excellence	Ulla Jonsson (ad interim)
Burney Astronoffs		Sustainability Affairs	Curt Henricson (ad interim)
Process Automation		On the French Control of the Control	Our and Brooks and
Division Head	Veli-Matti Reinikkala	Group Functions reporting to head of	Corporate Development,
Division CFO	Ismo Haka	Ulrich Spiesshofer	
		Corporate Strategy	Tobias Becker

Peter Terwiesch

Frank Duggan

Ulf Hoof John Walker

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Mergers and Acquisitions

Supply Chain management

**Technology, Dinesh Paliwal** Chief Technology Officer

Head of Group Account Management

**Group Functions reporting to head of Global Markets and** 

Region* / Countr	y managers
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* reporting to	hood o	f Global	Markate	and	Technology	Dinach	Paliwal

Region North America	Dinesh Paliwal
Canada	Sandy Taylor
Mexico	Armando Basave
Panama/Central America, Caribbean	Alvaro Malveiro
USA	Dinesh Paliwal

Region South America	Ulises de la Orden
Argentina	Ulises de la Orden
Brazil	Sergio Gomes
Chile	Enrique Rohde
Colombia	Ramon Monras
Peru	Eduardo Soldano
Venezuela	Carmine Tedino

Region North Europe	Sten Jakobsson
Baltic States	Bo Henriksson
Denmark	Claus Madsen
Finland	Mikko Niinivaara
Ireland	Frank Duggan
Kazakhstan	Andrei Tyan
Norway	Peer-Hakon Jensen
Russia	Michel Tchesnakoff
Sweden	Sten Jakobsson
United Kingdom	Trevor Gregory

Peter Smits
Rudolf Petsche
Marco Croon
Kiril Drensky
Olle Jarleborg
Peter Smits
Rikard Jonsson
Miroslaw Gryszka
Peter Simon
Andrej Toth
Slavica Osterman
Jasmin Staiblin
Andriy Abdulakh

Region Mediterranean	Hanspeter Fässler
Algeria	Gilles Tissot
Croatia	Darko Eisenhuth
France	Allan Huldt
Greece and Cyprus	Apostolos Petropoulos
Israel	Ronen Aharon

Italy	Hanspeter Fässler
Libya	Franz Keller
Morocco	Jean-Claude Lanzi
Portugal	Antonio Paiva e Pona
Serbia & Montenegro	Aleksandar Cosic
Spain	Carlos Marcos
Tunisia	Maroun Zakhour
Turkey	Oivind Lund

Region Middle East and Africa	BoonKiat Sim
Angola	Jose Coelho
Bahrain	Basim Akkawi
Botswana	Nikola Stojanovic
Cameroon	Pierre Njigui
Egypt	Bassim Youssef
Iran	Mauro Damonte
Ivory Coast	Gilbert Jeandot
Jordan, Lebanon	Hisham Othman
Kenya, Ethiopia, Uganda	Martin De Grijp
Kuwait	Anders Gullerfelt
Mozambique	Johan Akesson
Namibia	Hagen Seiler
Nigeria	Paul Mair
Qatar	Thomas Jivung
Saudi Arabia	Mahmoud Shaban
Senegal	Olivier Uhlmann
South Africa	Carlos Poñe
Tanzania	lan Robertson
UAE	BoonKiat Sim
Zambia, Zimbabwe	Ruggero Cozzi

Region North Asia	Peter Leupp
China	Peter Leupp
Taiwan	Göran Sundin
Japan	Isamu Suzuki
South Korea	Yun-Sok Han

Region South Asia	Ravi Uppal
Australia	John Gaskell
India	Ravi Uppal
Indonesia	Hemant Sharma
Malaysia	Bengt Andersson
New Zealand	Grant Gillard
Pakistan	Farhat Ali
Philippines	Magnus Wibling
Singapore	James Foo
Thailand	Jonny Axelsson
Vietnam	Erik Rydgren

## ABB on the Web

## www.abb.com

## ABB had about 22 million visitors to its Web site in 2005.

### **About ABB**

This section offers a comprehensive overview of ABB businesses, products, services, systems and solutions. Here you will find our Group reports and an outline of the ABB Group strategy, as well as descriptions of our organizational structure, business principles, corporate governance charter and 120-year history. www.abb.com/about

## **Products & services**

Products, systems and services are the essence of ABB's business. In this section, you will find our product guide – an A to Z list of the products, systems and services we have to offer. Here you will also find our service guide and contact list, with detailed information for the upkeep of power plants and factories, a section for suppliers and sales contacts to help you get whatever you need, wherever you may be. www.abb.com/productguide

## Sustainability

ABB follows the reporting guidelines of the Global Reporting Initiative (GRI) – an international, multi-stakeholder undertaking supported by the United Nations. The GRI guidelines are based on a "triple bottom line" approach to reporting economic, environmental and social performance. ABB's multilateral efforts to promote human rights, and its Access to Electricity program, are also highlighted. www.abb.com/sustainability

## News center

This section is for the media, and includes our media contact information, all press releases past and present, news about

our products, systems and services, speeches and presentations, downloadable pictures of our people and technology, plus an up-to-date library of ABB reports, publications, videos, and a calendar of important ABB dates. www.abb.com/news

## **Technology**

ABB's business is based on innovative technology, and to keep our technical edge razor sharp we run two global research and development labs and nine research programs focusing on power and automation technology. In ABB's technology section you will find our technical publications, including research papers, periodicals, technology reviews and reports. www.abb.com/technology

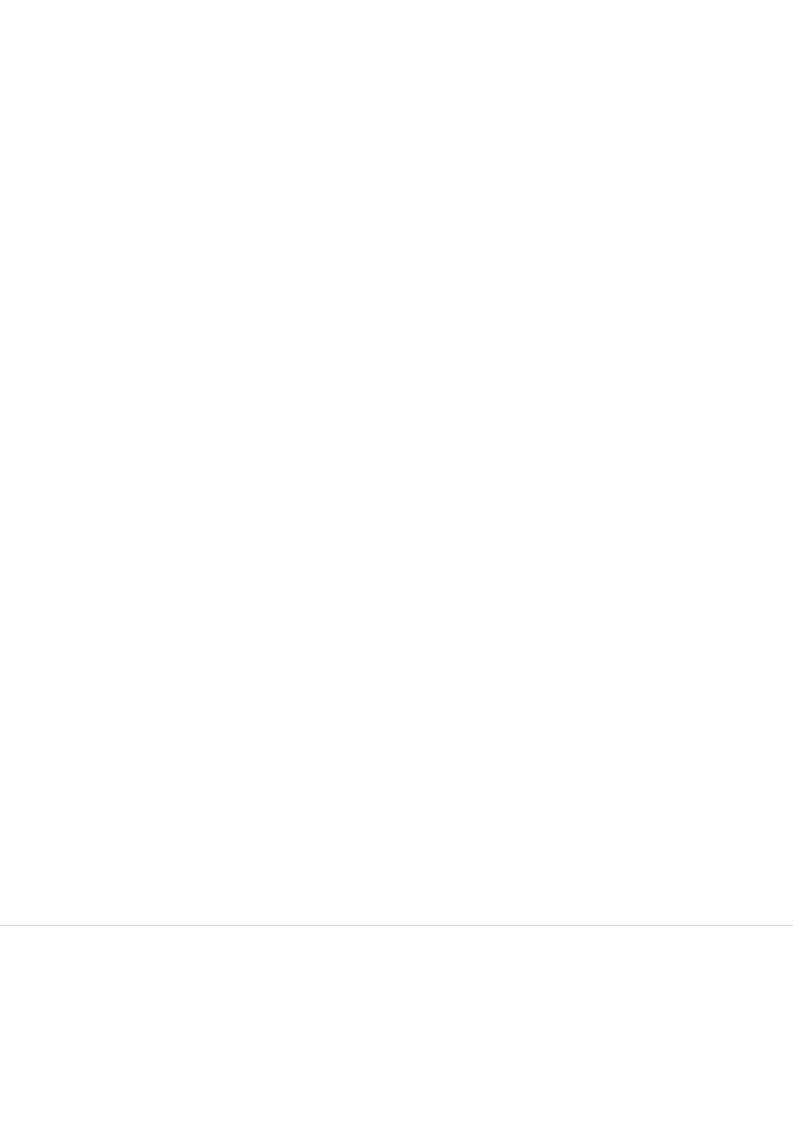
#### Careers

The careers section on ABB's Web site offers a wealth of information for students, recruits or professionals looking for new challenges. You will find the most recent job postings at ABB, background information on the company, interviews plus videos-on-demand with current employees. You can also register your CV and apply for a job with ABB online. For students and interns, ABB offers a variety of international assignments for trainees. www.abb.com/careers

#### **Investor relations**

This section includes ABB's share price ticker, listings and ticker symbols. It displays per share, dividend and stock split history and has all of ABB's quarterly financial releases, an information archive, outlook statement, annual reports and shareholder updates. Here you will also find contact information for our Investor Relations staff in Europe and the U.S. www.abb.com/investorrelations





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The ABB Annual Report 2005 consists of an Operational review, a Financial review and a Sustainability review.

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