

India

ABB Limited

Annual Report 2003



ABB

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ABB Limited

(formerly Asea Brown Boveri Limited)

Board of Directors

Dinesh Paliwal, Chairman
Ravi Uppal, Vice Chairman and Managing Director
Peter Smits
N S Raghavan
Nasser Munjee
Umesh Prasad Singh
Peter Leupp
BoonKiat Sim
R N Bhardwaj

Company Secretary

B Gururaj

Corporate Management Committee

Ravi Uppal
I K Sadhu
Biplab Majumder
Amresh Dhawan
K Rajagopal
V Swamy
Bazmi Husain
P C Rajiv
Shyam Karmarkar
P P Gomes

Bankers

ICICI Bank Limited
Canara Bank
Union Bank of India
Industrial Development Bank of India
HDFC Bank Limited
Hongkong & Shanghai Banking Corporation Limited
Standard Chartered Bank

Solicitors

Crawford Bayley & Co.

Auditors

Bharat S Raut & Co.

Registered Office and Corporate Office

2nd Floor, East Wing
Khanija Bhavan
49, Race Course Road
Bangalore – 560 001

Registrar & Share Transfer Agent

Tata Consultancy Services
Park West II
Raheja Estate , Kulupwadi Road
Borivli (East)
Mumbai – 400 066

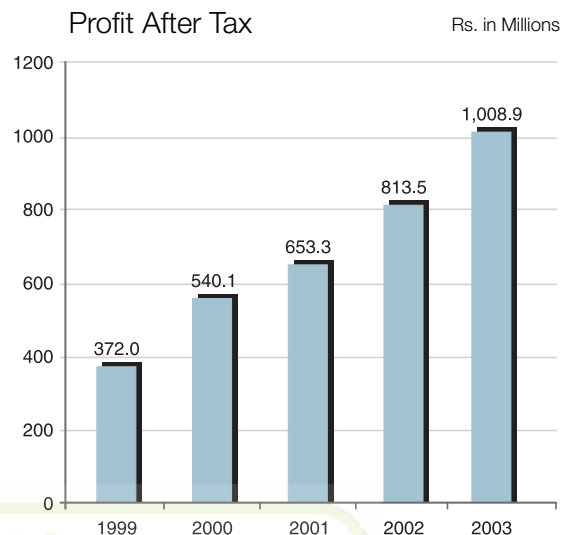
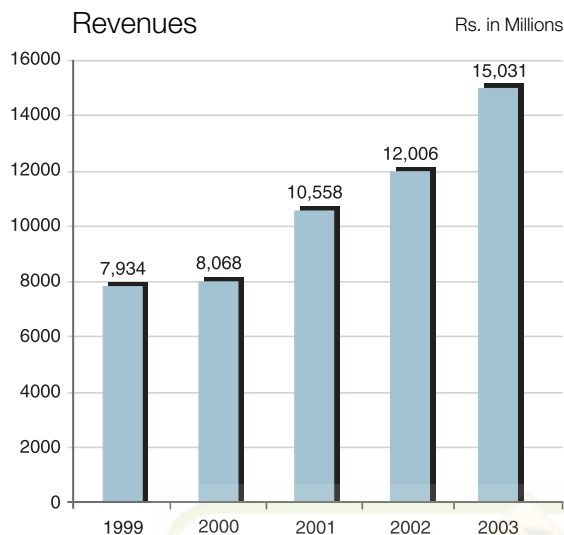
5 Year Highlights

(Rs in Millions)					
Description	2003	2002	2001	2000	1999
Sources of Funds					
Share Capital	423.8	423.8	498.8	414.2	414.2
Reserves	5,461.6	4,539.2	3,805.4	3,478.4	3,192.2
Net Worth	5,885.4	4,963.0	4,304.2	3,892.6	3,606.4
Borrowings	101.0	123.7	108.0	165.6	416.3
Funds Employed	5,986.4	5,086.7	4,412.2	4,058.2	4,022.7
Income and Profits					
Sales & Other Income	15,030.6	12,005.7	10,557.6	8,068.5	7,933.5
Operating Profit Before Interest and Depreciation	1,722.8	1,418.9	1,105.9	911.8	751.2
Profit Before Tax	1,528.9	1,229.7	850.8	705.1	532.0
Tax	520.0	416.2	197.5	165.0	160.0
Profit After Tax	1,008.9	813.5	653.3	540.1	372.0
Dividend / Dividend Tax	319.5	259.1	228.2	253.9	231.9
Retained Earnings	689.4	554.4	425.1	286.2	140.1
Other Data					
Gross Fixed Assets	3,037.9	2,707.0	2,747.9	2,442.3	2,253.5
Debt Equity Ratio	0.02:1	0.02:1	0.03:1	0.04:1	0.12:1
Net Worth Per Equity Share - Rs	138.9	117.1	99.8	94.0	87.1
Earnings Per Equity Share - Rs	23.8	19.1	15.5	13.0	9.0
Dividend Per Equity Share - Rs	6.0	6.0	5.0	5.0	5.0
Profit After Taxes as % to Average Net Worth	18.6	17.6	15.9	14.4	9.2

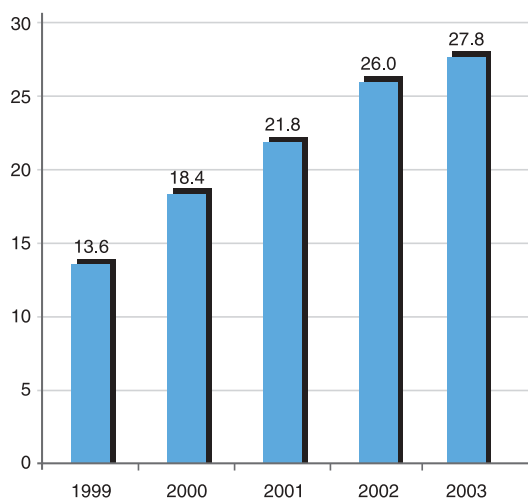
Notes :

- 1) Excludes revaluation of fixed assets, revaluation reserve and extraordinary items.
- 2) Above highlights include figures till 31 March, 1999, the date of demerger of Power Generation business and merger of four entities with the Company from 1 April, 2001.

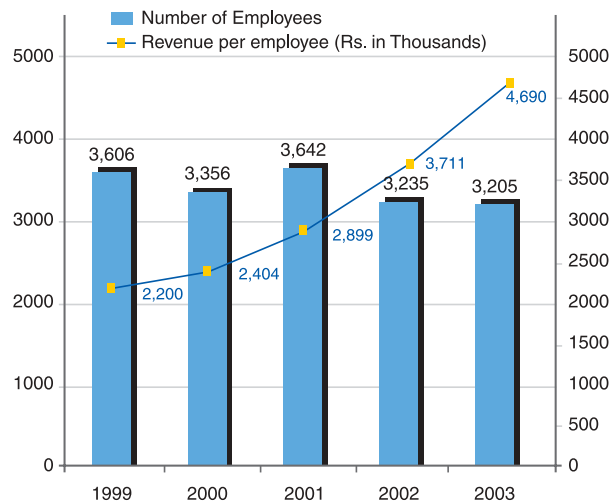
5 Year Highlights



Return On Capital Employed (%)



Employees & Productivity



Notes:

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- 2) Above highlights include figures till 31 March, 1999, the date of demerger of Power Generation business and merger of four entities with the Company from 1 April, 2001.

ABB – a global leader

ABB (www.abb.com) is a global 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. Working closely with customers, understanding their business needs and local market conditions, ABB is committed to ensuring their success through innovative products, systems, services and solutions, combining world-class cutting-edge technologies and proven domain expertise with strong local insight. By ensuring customer success, ABB in turn creates value for other stakeholders i.e. shareholders, employees and the communities in which it operates.

120 years of Technology and Innovation

The history of ABB goes back to the late nineteenth century and is an illustrious record of innovation and technological leadership. ABB has been recognised as a technology leader for over 120 years, since its inception in 1883 and has a proud legacy of many pioneering breakthroughs. ABB invests around one billion USD annually in research and order related development weaved into the fabric of the business offering. The company has a high intensity of innovation and on an average 75% of ABB's current business is based on products developed in the last 5 years, with 27% of total first filings being software related. Industrial^{IT} has been identified as the common technology platform across the company. Industrial^{IT} enables real-time, seamless integration of plant operations and business processes across the entire value-chain based on an open architecture platform, thereby bringing greater efficiencies to customers' operations and making them more competitive in an increasingly networked world.

120 years of Technology and Innovation

1883
Ludvig Fredholm establishes Elektriska Aktiebolaget in Stockholm as manufacturers of electrical lighting and generators.



1960s
Asea builds the first nuclear power plant in Sweden and goes on to build nine of the country's 12 reactors.



1889
Jonas Wenström invents the three-phase system for generators, transformers and motors.



1963
The first data transmission at carrier frequency by BBC over a 735-kV HV to a power station control unit.



1890
Elektriska Aktiebolaget merges with Wenströms & Granströms Elektriska Kraftbolag to form Allmänna Svenska Elektriska Aktiebolaget (ASEA)



1969
BBC develops the first gearless cement drive in the world.



1891
Charles E.L. Brown and Walter Boveri establish Brown Boveri & Cie in Baden, Switzerland – shortly the first company to transmit high voltage AC power.



1971
BBC builds the most powerful transformer in the world at 1300MVA.



1893
Asea builds the first three-phase transmission system in Sweden.



1974
Asea invents one of the first industrial robots. In 2002, ABB becomes the first industrial supplier to deliver 100000 robots.



1901
BBC builds the first steam turbine in Europe.



1984
BBC generators for the world's largest hydroelectric power station at Itaipu in South America.



A new simpler ABB

ABB has further simplified its organisational structure with the key objective of serving customers faster and more efficiently across the value chain and building on its market leadership in power and automation technologies. The Power Technologies division now comprises five business areas while the Automation Technologies division primarily has three business areas.

ABB's Power Technologies division serves industrial and commercial customers, as well as electric, gas and water utilities, with a broad range of products, services and solutions for power transmission and distribution.

ABB's Automation Technologies division offers products, systems and services ranging from complete process automation and optimisation solutions to products like electrical machines, drives and power electronics, low-voltage products, instrumentation, controls and robotics. The division serves the entire spectrum of process, manufacturing and consumer industries and is a market leader with unparalleled domain expertise and global experience.

Power Technologies



High-Voltage products



Medium-Voltage products



Transformers



Utility Automation Systems



Power Systems

Automation Technologies



Process Automation



Automation Products



Manufacturing Automation

1932
Asea builds the world's first self-cooling transformer and expands its fan business by acquiring AB Svenska Fläktfabriken.



1933
BBC obtains a patent for turbine rotors constructed of individual steel disks that are welded together.



1939
BBC builds the first combustion gas turbine for generating electricity.



1944
BBC develops the first high-speed locomotive with driving shafts fitted exclusively in bogies.



1952
The first 400 kV transmission line is built by Asea.



1954
Asea supplies the first HVDC transmission system in the world.



1988
Asea and BBC merge to form Asea Brown Boveri Ltd – one of the largest electrical engineering companies in the world



1990
Azipod is conceived to give ships more maneuverability with a motor that is 360-degrees steerable.



1997
ABB sets out to create a single Industrial^{IT} architecture for seamless real-time integration of business and manufacturing processes.



1999
ABB divests its nuclear power, power generation and rail businesses.



2002
ABB is one of the first companies to apply wireless technology for industrial applications, enabling data to be transmitted via radio waves rather than a cable.



2003
ABB further simplifies its divisional structure.



Corporate Management Committee



Sitting (L to R): Amresh Dhawan – Head-Power Technologies (Products), K Rajagopal – Chief Financial Officer, Ravi Uppal – Vice Chairman & MD, Biplab Majumder – Head-Automation Technologies, Inder Sadhu – Head-Power Technologies (Systems)
Standing (L to R): V Swamy – Head-Building Systems, Bazmi Husain – Head-R&D Center, Peter Gomes – Head-Service, P C Rajiv – Head-Human Resources, Shyam Karmarkar – Head-Marketing.

ABB in India

ABB in India serves utility and industry customers with the complete range of ABB's global offerings. The company has a vast installed base, extensive local manufacturing across 8 units and a countrywide marketing and service presence. ABB has also developed a national network of around 400 channel partners, to ensure deeper market penetration.

Besides catering to India's domestic market, ABB India is also playing an increasing role in the Group's regional and global operations and is today recognised as one of ABB's key growth engines. ABB India's state-of-the-art manufacturing facilities at Vadodara and Nashik are global sourcing bases for 72.5 kV outdoor and indoor circuit breakers and 11 to 40.5 kV outdoor vacuum/SF6 circuit breakers as well as magnetic actuators and indoor HPA SF6 breakers. Several other products and components manufactured in India are also increasingly being exported across the world.

The development of South Asian markets, being driven from India, has also made good progress. ABB India is also working on projects in the West Asian region including Syria. In addition to product exports and executing overseas projects, ABB India is leveraging its 'people competence' and 'domain expertise' to offer services like design, engineering, commissioning etc. across geographical borders. In fact, ABB India is recognised as the Asian centre of excellence for the metals and cement business.



Bangalore facility



Nashik facility



Vadodara facility



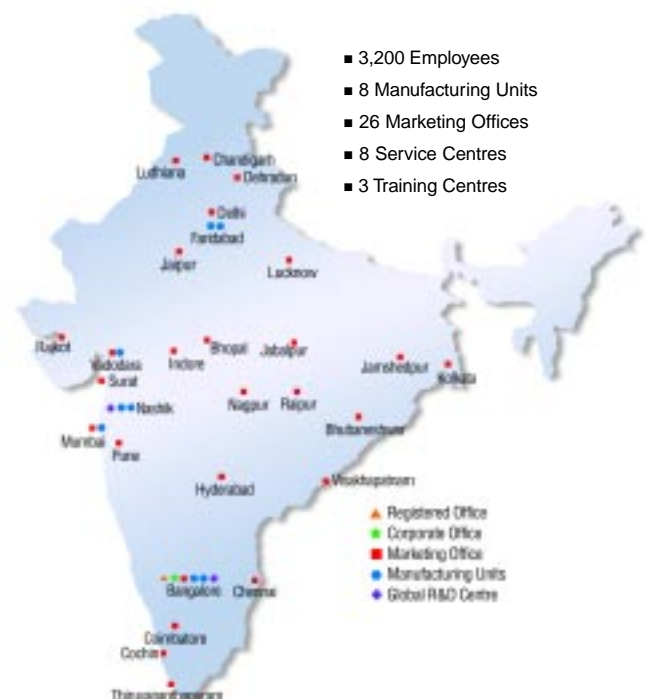
Vadodara – Transformers



Faridabad – Instrumentation facility



Faridabad – Motors facility



Power Technologies

ABB's Power Technologies division offers electric, gas and water utilities as well as industrial and commercial customers a wide range of products, system and service solutions for power transmission and distribution.

The offering encompasses a wide spectrum of products across the entire voltage range, including outdoor and indoor circuit breakers, air and gas insulated switchgear, disconnectors, capacitor banks, reactive power compensators, power and distribution transformers as well as instrument transformers.

ABB provides cutting-edge solutions like High Voltage Direct Current (HVDC) and Flexible AC Transmission System (FACTS) that facilitate higher capacity utilisation and efficient transmission of power while minimising the risk of cascaded line tripping. ABB also offers turnkey solutions for substations, distribution automation and network management like Supervisory Control & Data Acquisition (SCADA), Wide Area Protection (WAP) and a host of technologies that reduce T&D losses, increase uptime and improve the overall reliability of the grid.

ABB has pioneered several technologies in India including the introduction of self-blast SF6 technology, first High Voltage Direct Current (HVDC), first Static Var Compensation (SVC), first 400 kV switchyard, India's first IPP, turnkey substation for the first barge mounted IPP and many more. In 2003, the company commissioned India's first APDRP project at Bijapur, Karnataka and also received its single largest export order till date from PEEGT, Syria for the design and supply of six substations. Another pioneering breakthrough was an order for the first FACTS project in the country for PGCIL's Raipur-Rourkela line. In addition to expansion of existing capacities during the year, new world-class manufacturing lines were established for 400 kV power transformers, HV bushings, Ring Main Units (RMUs) and medium voltage outdoor breakers.

