Key Data

- More than 8,000 Employees in India
- 4 R&D Centres in Bangalore (Transport), Vadodara (Power) and Hosur & Padappai (Grid)
- 3 Engineering Centres for Power in Noida, Kolkata and Shahabad
- Manufacturing Units
  - Power - Vadodara, Durgapur, Shahabad, Sanand*
  - Transport – Coimbatore, Sricity
  - Grid - Padappai, Pallavaram, Hosur, Vadodara, Naini

*upcoming facility
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History

1911: First factory built in Kolkata.

1950: Participated in setting up the first major manufacturing unit of BHEL, Bhopal

1959: Power Boilers facility established in Durgapur

1963: Boiler/Mill facility established in Shahabad

1992: Asea Brown Boveri Management Limited (ABBML) established in Bombay

1999: Asea Brown Boveri Management Limited (ABBML) became ABB ALSTOM Power India Limited (ABBPL)

2000: ABB ALSTOM Power India Limited (ABBPL) became ALSTOM Power India Limited

2002: ALSTOM Power India Limited became ALSTOM Projects India Ltd.

2004: Hydro manufacturing facility established in Vadodara

2005: Strategic partnership with Infosys in the areas of Global R&D, Engineering and Engineering services.

2008: Global Technological Centre (GTC) established in Vadodara

2009: Three Green Field manufacturing units were setup in Hosur, Padappai and Vadodara

2011: Air Preheater manufacturing facility started at Shahabad

2012: - Areva T&D became Alstom T&D India Limited
    - ALSTOM Projects India Limited became ALSTOM India Limited

2013: Foundation stone laid for Bhutan Hydro Services Ltd. (BHSL) Hydro Service Centre in Bhutan

2013: Foundation stone laid for ABFPL manufacturing site in Sanand, Gujarat

Partnerships

Alstom in India has made strategic partnerships with strong local players to bring in frontline technologies and enhance the quality and efficiency of its products:

Alstom and Druk Green Power Corporation in 2011
The JV will set up a hydropower service centre in Bhutan to provide repair services for hydro runners and other underwater parts of hydropower plants

Alstom and Bharat Forge Ltd. JV in 2009
The JV will manufacture steam turbines and auxiliary equipment with an annual capacity of 5000 MW

Alstom and BHEL in 2005
Alstom and BHEL entered into a 15-year License agreement for manufacture, supply and technology transfer for supercritical boilers and pulverisers (Coal Mills)

Alstom and Infosys in 2005
Strategic partnership in areas of global R&D, Engineering and Engineering IT services to develop next generation solutions for the power sector

Alstom and NTPC in 1999
This 50:50 joint venture undertakes renovation, modernization, retrofit and refurbishment of old and ageing power plants
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Corporate Social Responsibility

Unique initiative to electrify rural India through Dry Gasification system:

In an effort to minimise water usage and reduce carbon footprint, Alstom Foundation is collaborating with Husk Power Systems (HPS) to fund a dry gasification process for low-cost manufacturing and retro-fitting gasifiers at 65 biomass-based power plant sites in Bihar. The project also promotes women empowerment by providing vocational programmes and training to women for a consistent and high quality manufacturing of incense sticks at the sites. Through this unique initiative Alstom is contributing towards electrification of rural India as also social and economic empowerment of women.

Solar powered school for the Himalayas in Zanskar:

In order to encourage education of young population and promotion of women through parity education, Alstom Foundation in collaboration with Aide au Zanskar – AAZ-is extending and remodelling the only High School in Zanskar Valley in order improve study conditions for a larger number of students, promoting passive solar housing architecture and local culture.

Integrated Natural Resources project:

To provide ecological management techniques of degraded natural resources, education and awareness for bio-diversity, Alstom Foundation with the help of GNCS (Gujarat Nature Conservation Society) is working to restore the quality of the soil by planting Vetiver and setting up check dams and bunds to bind the soil and to provide more drinking water to the residents.

Lake restoration Project in Chennai:

This project aims at restoring two local lakes at Tambaram and Pallavaram, near Chennai, contaminated by waste with bad water quality, through removal of debris and waste from lakes with the help of the government. The main benefits of the project will include nature preservation supporting eco-system, good quality of water, sustainable fishing and environmental awareness.

Provision of BioOrja Plant for Akshaya Patra Kitchen:

The Foundation proposes to set up a BioOrja biogas Plant for the Akshaya Patra Vadodara kitchen which aims to provide meals to the underprivileged children in a sustainable way. The Foundation is collaborating with Akshaya Patra and Green Power Systems for the project which aims to use food waste of Akshaya Patra’s kitchen as a source of energy for cooking the meals while saving fuel and reducing pollution.

Establishment of ‘Alstom Eco Village’ in Durgapur:

A comprehensive programme is being developed by the Foundation, in collaboration with Ramkrishna Van Prachar Samiti, to develop an ‘Alstom eco-village’ in Mol-Danga district near Durgapur. The aim of the programme is to provide the citizens of the village with affordable sanitation unit, installation of street solar lights, clean water supply and provision of equipment for dish making.

Education Initiatives:

As a part of the education initiative, Alstom facilities in Durgapur and Shahabad have constructed a school building and provided it with the infrastructure along with financial assistance for the children residing in those areas. Alstom T&D India also supported the Panchayath Union middle school in Athanancheri by providing the school children with uniforms, shoes and Identity cards.

Social empowerment of Tihar Inmates:

Alstom T&D India provides a platform to Tihar inmates who are creative and actively involved in making daily goods. Stalls on various festivals have been put up to motivate them for a good and noble living.

Durlung Khola Project in Nepal:

In order to provide a better life to more than 7000 households near Durlung Khola district in Nepal, Alstom Foundation in association with South Lalitpur Rural Electric Cooperative aims to construction a 900kW hydropower plant to generate 5.1GWh annually along with construction of 3km 11kV line to connect to the grid. Along with training of the local staff, side activities include setting up bio digesters and development of microfinance to ensure that the electricity generated by the plant will be used productively by the local economy.

Rural electrification in Bhutan:

To allow for development of remote communities in Bhutan, without access to electricity, the Foundation is working towards building of community-based pico hydroelectricity generation units in rural Bhutan. Due to the abundance of fast running streams and rivulets in Bhutan, pico hydo is a possible alternative for electrification through the use of appropriate, cheap and simple technologies wherein local stakeholders will take up electricity generation on their own allowing for certain level of self-sufficiency allowing the community to become producers, users and also sellers of electricity.
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Power

Alstom in India has full capabilities in engineering, manufacturing, project management and supply of power generation equipment and solutions for Renewable and Thermal Power. Alstom combines local presence and knowledge with global resources to deliver world-class services and solutions.

**Our Achievements**

- Has an installed capacity of **15 GW and 21 GW projects** are under execution across the country
- Is a leading player in **Hydro** with a **market share of 31%**
- **First to deliver and install high efficiency** advanced class gas turbines for 370 MW Utran CCPP
- **More than 90% of the country’s** aluminium smelters use our pollution control systems
- Boilers from the **largest local manufacturer** come with Alstom technology
- Supplied more than **40 mills for 660MW supercritical boilers** worldwide from Shahabad unit
- Supplying hydro equipment to the **upcoming single largest hydro power project** in the country – Subansiri **2000 MW for NHPC**
- Secured order for **one of the largest ESP retrofit contracts** in India
- Set a new benchmark in the Indian hydro sector with the successfully spinning **of 3 Francis vertical turbines**, at a rated speed of 333 rotations per minute **in a record time of less than 10 hours**

Renewable Power

**Hydro**

As one of the world’s major suppliers of hydropower generation equipment, the Hydro Business offers a complete range of products and services including: key solutions (EPC contracting), hydraulic turbines and pump turbines up to 900 MW, hydro generators up to 1000 MVA, advanced control systems, mini hydro plants from 5 MW to 30 MW, refurbishment and services, water pumps and valves, hydro-mechanical and control equipment and mechanical and electrical balancing of plants.

**References**

- Chamera I 3 x 180 MW for NHPC – 1994
- Chamera II 3 x 100 MW for NHPC – 2004
- Vishnuprayag 4 x 100 MW for Jaiprakash Power ventures Ltd. – 2005
- Dhauliganga 4 x 70 MW for NHPC – 2005-06
- Dulhasti 3 x 130 MW for NHPC – 2006-07
- Chamera Stage III 3 x 77 MW for NHPC – 2012
- Chuzachen 2 x 55 MW for GATI Infrastructure

**Ongoing Projects**

- Ratle 850 MW for GVK
- Tehri 1000MW for THDC
- Phatabyung 2 x 38MW for Lanco
- Subansiri 8 x 250 MW for NHPC
- Jorethang 2x50 MW for Dans Energy
- Lower Jurala 6 x 40 MW for APGENCO
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- Teesta VI 4 x 125 MW for Lanco
- Uri-II 4 x 60 MW for NHPC

Thermal Power

Steam Power Plants, Boiler Plants

Alstom’s Steam business in India designs, engineers and constructs turnkey steam power plants in addition to offering a range of products such as boilers, generators, air quality control systems and CO2 capture & storage technologies.

References

- STCMS – Neyveli ’0’, 1 x 250 MW Lignite Fired Power Plant full turnkey – 2002
- CSEB – Korba – 4x 50 MW R&M - 2007

Ongoing Projects

- NTPC – Barh II – Supercritical Boilers – 2 x 660 MW - under execution*
- APGENCO – Krishnapatnam - Supercritical Boilers – 2 x 800 MW - under execution*
- Jay Pee - Bara - Supercritical Boilers – 3 x 660 MW - under execution*
- NTPC – Mouda - Supercritical Boilers – 2 x 660 MW - under execution*
- NTPC – Solapur Supercritical Steam Turbine Islands - 2 X 660 MW – under execution
- NTPC – Nabinagar Supercritical Steam Turbine Islands and Boilers* – 3 X 660 MW - under execution
- BHEL – Gadarwara Super Thermal Power Plant* - 2 X 800 MW – under execution
- BHEL – Suratgarh Super Thermal Power Plant * - 2 X 600 MW – under execution

* Through our technology licensee, BHEL

Gas Power Plants

Alstom India’s Gas business caters to the Indian sub-continent and also includes the Gas Region Middle East. Alstom India’s Gas business is an engineering hub for Gas Turbine Controls and Gas Plants worldwide and an Execution Centre for Heat Recovery Steam Generators HRSG’s for the MEI region and part of Europe.

References

- Anta 414 MW CCPP for NTPC – 1990
- Kawas 656 MW CCPP for NTPC –1991
- Gandhar 657 MW CCPP for NTPC – 1995
- Jegurupadu Phase I - 235 MW for GVK – 1997
- Hazira 156 MW for GSEG – 2002
- Jegurupadu Phase II - 228 MW for GVK –2006
- Utran 370 MW CCPP for GSECL – 2009
- Gautami 469 MW CCPP for GVK -2009
**Ongoing Projects**
- Khulna 180 MW for NWPGCL

**Nuclear Power Plants**
Nuclear power is playing a significant role in supplying electricity in India. Alstom is looking to play an important role in supplying the turbine islands for India’s nuclear programme. Nuclear offers a full portfolio of components for nuclear turbine island that suit all reactor types, including emergency generators, pumps, nuclear systems and heat exchangers.

**References**
- Kakrapar units 1 & 2 for NPCIL – 1973 and 1981

**Ongoing Projects**
- Rajasthan Atomic Power Project (RAPP) units 7 & 8, 2 x 700 MW for NPCIL
- Kakrapar units 3 & 4, 2 x 700 MW for NPCIL

**Air Quality Control Systems (AQCS)**
Alstom is a market leader in the AQCS business in India offering full spectrum of products and services for power, cement, sugar, chemical, steel, copper, zinc, aluminium and other Industries. Alstom has successful key references with several leading Public and Private sector players in the Mines and Metals segment.

**References**
- Nalco - EPC turnkey contract for 8 GTCs
- Balco – 4 GTCs of 250 KT per Annum (Korba) – 2004
- NTPC – Talcher, ESP for 4 X 500 MW - 2006

**Ongoing Projects**
- Hindalco – EPC turnkey contract for 4 GTCs of 2 x359 KT/Annum (Aditya & Mahan)
- Vedanta – EPC turnkey contract for 8 GTC of 1.25 MT/Annum (Jharsuguda)
- JSW – Sea water FGD plant for 4 x 300MW units coal fired power plants
- NALCO –Fume Treatment plant (Angul)
- Rastriya Ispat Nigam Limited (RINL) – Stock House Dust Extraction System for RINL’s Vizag steel plant

**Power Automation and Control**
The Power Automation and Controls business is a major component of Clean Power offering. Alstom’s Power Automation & Controls business of Alstom in India offers energy management for utilities and industrial customers from plant automation and management to grid connection and information solutions.

**References**
- GVK, Jegurupadu Phase II, 235 MW (CCPP) - 2006
- GVK, Gautami, 469 MW (CCPP) - 2008
- GSECL, Utran, 370 MW (CCPP) – 2009
- NHPC, Chamera Stage I, 3 X 180 MW (Hydro) - 2011
- NHPC, Chamera Stage II, 3 X 100 MW (Hydro) - 2011
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- NHPC, Chamera Stage III, 3 X 77 MW (Hydro) - 2011
- Lanco, Kondapalli, 120 MW (STPP)

Ongoing Projects

- Panduranga Energy, Panduranga, 100 MW (CCPP)
- NTPC, Solapur and Mouda II (Maharashtra)  660 MW (Supercritical projects)

Steam Auxiliary - Pulverisers (Coal Mills) and Air Preheater (APH)

Alstom India’s Auxiliary business supplies Pulverisers and APH for Power Industry as well as for Cement, Steel and other Mineral Industries. It caters to the Indian sub-continent and the Rest of Asia.

Mills

References

- Coal Mill HP 743 for HINDALCO Renusagar – 2 x 67.5 MW
- Coal Mill HP 643 for NTPC Tanda - 4 x 110MW
- Coal BRM 109(10) for CESC Budge Budge – 2 x 250MW
- Coal BRM 85(09) for MPSEB Birsinghpur – 2 x 210MW
- Coal Mill HP 643 for Ultratech, Giningera Cement Plant
- Coal BRM 109(10) for Holcim (Ambuja) Rabriyawas Cement Plant
- Clinker Ball Mill for JK Laxmi Jaykaypuram Cement Plant
- Iron Ore Ball Mill for Janki Steel Bellary Plant
- Limestone+Coke Ball Mill for ESSAR Paradeep Plant
- Bentonite RRM 86614 for Essar Paradeep

Ongoing Projects

- Coal Mill HP 1103 for PPGCL Bara – 3 x 660MW
- Coal HP 1103 for RPCL Yermaras – 2 x 800MW
- Coal HP 1103 for KPCL Bellary – 1 x 700MW
- Coal HP 1023 for TNB Manjung, Malaysia – 1 x 1000MW
- Coal HP 1103 for MCB Tanjung, Malaysia – 1 x 1000MW
- Coal Mill HP 1003 for SKS Raigarh - 2 x 300MW
- Coal Mill HP1103 for NTPC Mouda 2 X 660 MW
- Coal Mill HP1103 for NTPC Nabinagar 3 X 660 MW
- Coal SM 29/18 for NMDC Nagarnar Blast Furnace
- Coal HP 1003 JSW Toranagallu Blast Furnace # 4
- Coal Mill BRM 120(10) for Holcim -Ambuja Darlaghat Cement Plant
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Air Preheaters (APH)

References (Aftermarket Orders)

- Tata Power, Trombay
- NTPC Farakka
- NTPC Tanda
- Java Power, Indonesia
- Hongkong Electric Co., Hongkong

Ongoing Projects (New Equipment Orders)

- NTPC Solapur 2 x 660 MW
- NTPC Mouda 2 x 660 MW
- NTPC Nabinagar 3 x 660 MW

Thermal Services

With a focus on environmental performance to meet changing market conditions, Alstom has the experience and offering to best support customers’ requirements throughout the lifecycle of the plant, enabling power plants to remain competitive in a changing market. Through the integration of various technologies, Alstom delivers effective solutions both for its own fleet and the fleet of other equipment manufacturers. Its service and retrofit solutions, adapted to all types of equipment and power plants, ensure efficiency, emission reduction and flexibility.

References

- Major Overhaul – 100 to 500 MW Units at NTPC, MSPGCL, TNEB, DPL, UPRVUNL, NPCIL and many others
- Rihand 500 MW Generator excitor repair
- Mill upgrades at various plants
- ESP retrofits & upgrades – State Electricity Boards and M&M segment

Ongoing Projects

- Utran O&M and other Annual maintenance contract (AMCs) on Turbine Generator, Boiler and Environment
- Long Term Service Agreement with GVK Projects for retrofit and servicing
- NTPC – Jhanor Gandhar 657.39 MW

Transport

Alstom today is the leading supplier of train control and signalling system for metros in India. It has worked diligently to equip the first two lines of Delhi metro and is currently working on the first two lines of Bengaluru metro.

Our Achievements

- Alstom’s first metro rolling stock factory in India for Chennai Metro (CMRL)
- Ballastless track for Chennai Metro
- Alstom design LHB coaches used on India’s fastest trains - Shatabdi and Rajdhani

- Alstom Signaling and Train control systems on Delhi and Bangalore (operational) metro network
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- Associated with the Delhi and Bengaluru Metro networks, covering more than **100 Kms** and **96 stations**

**Ongoing Projects**

**Train Control System to Corridor 2 of the new Jaipur Metro**
- Design, Manufacture, Supply, Installation, Testing and Commissioning of the complete Train control, Traffic management and Signaling systems for Corridor 2 (EW-A section) of Phase I of Jaipur metro

**Metro rolling stock contract for Chennai Metro (CMRL)**
- First metro rolling stock contract in India for supplying 168 cars and 16 additional metro cars to Chennai Metro

**Rail infrastructure contract for Chennai Metro (CMRL)**
- Alstom - L&T JV contract for design and construction of track work in viaduct, tunnel, underground and depot for corridors I & II for Chennai metro

**References**

**Signalling system for Delhi Metro Rail Corp. (DMRC)**
- Design, manufacture, supply, installation, testing and commissioning of train control/signalling systems
- (Phase 1): 32.90 kms covering 28 stations and 2 depots
- (Phase 2): 36.80 kms covering 27 stations and 1 depot

**Electric traction components**
- Converters / inverters & control box, static inverters as per Mitsubishi Electric Corp (MELCO) design to Delhi Metro Rail Corporation (DMRC) RS1 project.
- Auxiliary converters
- 11 kV DC circuit breakers
- 135 kVA aux converters for locomotives

**Signalling system for Bangalore Metro Rail Corp. (BMRC)**
- Design, manufacture, supply, installation, testing and commissioning of train control/signalling systems
- North-South Line (23.6 km/ 24 stations) and the East-West Line(18.1km/ 17 stations)

**References with Indian Railways:**
- Design, supply, installation, testing and commissioning of 3-phase propulsion equipment for refurbishment of 38 motor coaches from existing technology into GTO based 3-phase technology for Western Railway
- Design, supply, installation, testing and commissioning of audio frequency track circuits (AFTC) for zonal railways and Mumbai Railway
- Vikas Corporation Ltd (MRVC)
- Technology for manufacture of Alstom LHB design railway coaches to RCF, Kapurthala

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**Grid**

Alstom Grid is one of the leading global players in electrical transmission and is the market leader in transmission business in India since 2008. Armed with technological expertise, it has always ensured higher safety, reliability and capacity of power grids around the world. At the heart of the development of Smart Grid, Alstom Grid offers products, services and integrated energy management solutions across the full energy value chain. Alstom Grid’s solutions bring electricity from the source onto the power network through high-voltage substations and technologies to manage power grids worldwide.

**Our Achievements**
- The R&D team at the GIS manufacturing plant at Padappai, Chennai, has been recognized as **R&D Competence Center** by Alstom’s Global GRID R&D organization
- Manufactured **India’s first 1200 kV** Capacitor Voltage Transformer
- Commissioned **India’s first 765 kV** indigenously developed substation
- 70% of India’s power flows through the networks managed by **our Network Management System**
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- **Over 50% of India’s** 765kV Extra High Voltage substations are built with Alstom’s technology and solutions
- Commissioned **India’s first digital solution for Substation** in Gujarat
- Delivered and commissioned **a record 88 substations from 66 kV to 765 kV** in 2012-13

Projects

- Alstom T&D India wins two substation orders from AP Transco
- Alstom T&D India will supply its world-leading energy management system to Power Grid Corporation of India
- Alstom T&D India won the order for supplying transformers to NTPC’s Nabinagar project
- Alstom T&D India secures five contracts worth INR 2558 million from PGCIL
- Alstom T&D India supplies Balance of Plant solution to Super Thermal Power Project in Lalitpur
- Alstom T&D India successfully delivers Power Grid’s 230 kV transmission project in Myanmar
- Strengthens India’s AC network with Fixed Series Compensation contract worth INR 650 million from Power Grid
- Inaugurated the world’s first 1200 kV double knee type disconnector to be installed at PGCIL’s 1200 kV national test station in Bina
- Awarded turnkey contract worth approximately €400 million for Champa 800 kV UHVDC contract from Power Grid
- Awarded contract worth 410 MINR for 400/220 kV substation at Daltonganj from Power Grid
- Awarded contract for 400 kV GIS substation from MSETCL in Maharashtra
- Awarded contract for 400 kV substation from Chattisgarh State Power Transmission Co. Ltd.
- Awarded contract for 765 kV Extra High Voltage substation in Gujarat from Power Grid
- Awarded contract worth 1580 MINR for 400 kV substation at Meja from Meja Urja Nigam Pvt. Ltd.
- Awarded Sasaram 765 kV substation contract from Power Grid
- Awarded Supply and installation of a 132/33 kV AIS at the Nazipur plant in Piroipur (northern West Bengal), as well as two bay extension projects for the 132 kV AIS at Amtola, Kolkata
- Awarded project for the manufacture and installation of a 132 kV Air-insulated Substation (AIS) at the Patan plant (central Chhattisgarh)
- Awarded project for the manufacture and installation of a 220 kV (AIS) at the Vishrampur plant (northern Chhattisgarh)
- 2 major GIS Substations orders by Delhi Transco Ltd (DTL) - New Delhi
- Awarded two contracts for Extra High Voltage turnkey projects at the Moga (Punjab) and Bhiwani (Haryana) plants by Power Grid Corporation of India Limited (PGCIL)
- Awarded contract for eBOP for Madhya Pradesh Power Generating Company Ltd for the supply and installation of electrical Balance of Plant solutions for two 600 MW thermal power plants at Malwa in southwest Madhya Pradesh
- Wins 1300 MINR eBOP contract for GMR Group’s Warora Thermal Power Plant for the supply and installation of electrical Balance of Plant solutions for 2x300 MW thermal power plants in Warora Taluka, District Chandrapur, and Maharashtra
- Wins 765 kV Extra High - Voltage substation order from Uttar Pradesh Power Transmission Corporation for 765 kV Extra High-Voltage (EHV) substation at the Anpara “D” thermal power plant in the state of Uttar Pradesh
- Awarded a contract for a Gas-insulated Substation (GIS) package by Bharat Heavy Electricals (BHEL), in Chennai for the manufacture and installation of 420 kV and 230 kV GIS for the Tamil Nadu state utility’s North Chennai Thermal Power Project
- Awarded a prestigious contract for Generator Transformers Package by Indiabulls for their upcoming Power Projects at Nandgaonpeth, Amravati District (5x270 MW) and Sinnar, Nasik district (5x270 MW). Both plants are located in Maharashtra