Alstom in France

Nearly 100 years’ contribution to the energy and transport markets

Alstom’s Presence

With 18,000 employees (19% of the total workforce), including 9,800 engineers and managers, France is Alstom’s main industrial base. There are 21 main engineering and production sites in France, including Aix-les-Bains, Belfort, Grenoble, La Courneuve, La Rochelle, Le Creusot, Massy, Ornans, Petit-Quevilly, Reichshoffen, Saint-Ouen, Tarbes, Valenciennes, Villeurbanne. At the end of December 2012, Thermal and Renewable Power Sectors employed 5,600 people in France, Grid 2,700 people and Transport 8,900 people. The Group and Alstom Hydro headquarters are located in Levallois-Perret, the Transport and Grid Sectors ones respectively in Saint-Ouen and La Défense, all located the Paris area.

More than a half of Alstom’s turnover in France is made through exports, the figure even reaches 86% for Grid and 69% for Power sectors. France equally plays a key role in Alstom’s research and development strategy, with 25% of Group R&D expenses located in the country, especially in rail transport (70% of the sector’s R&D expenses), renewable energies (43%) or electrical grid (32%). It is also a major partner of French competitiveness clusters I-Trans, System@tic and Aerospace Valley (see below).

Alstom Transport has eight R&D centers (Belfort, La Rochelle, Le Creusot, Ornans, Reichshoffen, Saint-Ouen, Valenciennes, Tarbes). Alstom Renewable Power has a global research center for hydroelectricity in Grenoble, with six test benches for turbines, and a facility dedicated to ocean energy in Nantes. Belfort is Alstom Thermal Power’s center of excellence for conventional islands (generators and steam turbines Arabella) for nuclear power plants where the group is a world leader with 30% market share. Alstom Grid has two research centers, in Villeurbanne for high voltage switchgear and Massy for power transformers.
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History

1928: General Electric’s French sister company CFTH (Compagnie Française Thomson-Houston) and Belfort-based SACM (Société Alsacienne de Constructions Mécaniques) combine a portion of their electrical engineering and rail businesses to form a jointly owned subsidiary, Alstom.

1932: Alsthom merges with Constructions Electriques de France (CEF), a company specialising in rail equipment and rail traction.

1963: Alstom acquires the hydraulic turbine maker Neyrpic, based in Grenoble.

1969: CGE becomes Alsthom’s main shareholder. Following the integration of CGEE, Europe’s largest electrical company, Alsthom employs more than 50,000 people and accounts for a third of CGE’s revenue.

1975: CGE’s rival, Framatome (the future Areva), wins the battle to build nuclear reactors in France, but Alsthom is selected to supply the conventional islands of 58 facilities in the French nuclear energy programme.

1976: Alsthom merges with Chantiers de l’Atlantique and takes the name Alstom Atlantique.

1977: Gradual takeover of Compagnie Electro-Mécanique (CEM), a subsidiary of the Swiss firm Brown Boveri, specialising particularly in reaction steam turbines used in nuclear power plants.

1978: The Belfort plant delivers the first pre-production TGV trainsets to SNCF.

1979: Alstom’s reorganisation, with shipbuilding becoming the third division alongside power generation and rail transport.

1981: The TGV linking Paris and Lyon is inaugurated on dedicated high-speed tracks.

1982: CGE is nationalised and would be reprivatised in 1987. Jean-Pierre Desgeorges takes the helm at Alstom Atlantique.

1985: Alstom Atlantique is renamed Alstom.

1988: CGE and British conglomerate GEC announce the merger of Alsthom with GEC Power Systems. The new group, in which the two firms share equal ownership, is named GEC Alsthom (79,000 employees).

1990: The TGV Atlantique sets a new world rail speed record, reaching 515.3 km/h.


1998: Alcatel and GEC list Alstom on the stock exchange.


In September, Alstom’s rescue plan, backed by the French government, is approved by the EU competition authorities, but the group is compelled to relinquish 40% of its business portfolio.

In December, Bordeaux’s tram is inaugurated, the first in the world to use Alstom’s innovative ground-level switched contact system without overhead wires (known as APS). Chantiers de l’Atlantique delivers the Queen Mary 2, the largest transatlantic cruise liner ever built, to Cunard Carnival.

2004: Alstom sells its Transmission et Distribution business to Areva.

2006: Alstom sells a 75% stake in its subsidiary Alstom Marine to Norway’s Aker Yards. Bouygues, the French civil engineering group, purchases the 21% stake in Alstom held by the French state and later raises its ownership interest to 31%.

2007: Alstom sets a new world rail speed record of 574.8 km/h.

2008: Alstom unveils the AGV, the next generation of very high speed trains. Its first customer is the private Italian operator NTV.

2010: Alstom and Schneider Electric acquire Areva T&D, the Transmission et Distribution unit sold by Alstom to Areva in 2004. Alstom re-acquires the Transmission business and creates a third sector, Alstom Grid.

2011: Alstom reshapess its operational activities into four sectors: Thermal Power, Renewable Power, Grid and Transport.

2012: Alstom is to set up four plants in France, in Saint-Nazaire and Cherbourg, to manufacture offshore wind turbines.
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Partnerships

Alstom is involved in R&D partnership and contributes to 7 “competitiveness clusters” (out of 71 at a national level) which involve higher education and public research establishments, other companies and large industrial groups.

SYSTEM@TIC - Ile de France: Alstom contributes its worldwide expertise in the design of onboard signalling systems and manages a working group “smart energy management”.

I-TRANS – Nord-Pas-de-Calais: Alstom Transport leads three main projects: ULTIMAT (innovative use of new material in railway construction), CEMRAIL (electro-magnetic compatibility in rail) and INOCAP (friction materials for pantograph-catenary)

Aerospace Valley – Midi-Pyrénées: through the public-private research laboratory PEARL, which studies power electronics, Alstom contributes to the ‘onboard signalling systems’ part of this initiative which also includes aerospace and space.

Microtechnique – Franche-Comté: with its worldwide centre of excellence for motors and generators in Ornans, Alstom is developing the “AMIMAC” project (using microtechnologies to improve performance and reliability in onboard electric rotating machines).

TENERRDIS – Rhône-Alpes: Alstom Hydro is participating in hydropower plant redesign project.

Up-Tex – Nord-Pas-de-Calais: in this initiative looking at textiles of the future, Alstom is involved in four R&D projects, particularly in the domains of new textiles for thermal insulation.

Pôle Nucléaire Bourgogne – Le Creusot: in this initiative, Alstom offers its know-how and expertise in metallurgy, mechanics and welding.
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References and Ongoing Projects

Thermal Power and Renewable Power

Alstom is the main supplier of French utilities. Alstom equipped all the conventional islands of EDF’s nuclear power plants (58 reactors), in particular turbines and generators. Between 70 and 80% of France’s hydro and thermal power plants (other than nuclear) include power generation equipment supplied by Alstom.

In association with the EDF EN-led consortium, Alstom is to supply 240 units of its new 6 MW offshore wind turbine Haliade 150 - the world’s most powerful in its category – to the three wind farms located off the coasts of Saint-Nazaire, Courseulles-on Mer and Fecamp which will enter service from 2017. Alstom will build four plants in Saint-Nazaire and Cherbourg, with 800 employees, to manufacture the turbines. The first two facilities, located in Saint-Nazaire, are expected to be commissioned in 2014.

Main recent contracts
- Retrofit of the control systems of EDF 1300 MW nuclear power plants
- Conventional island (1750 MW) for EDF’s Flamanville nuclear power plant
- Combined-cycle power plants of CyCoFos and Combigeolfe (2 x 400 MW) for GDF/Suez
- Gas turbines for simple-cycle power plants of Vaires and Montereau (5 x 175 MW)
- 6 Eco 100 wind turbines for the Vieux Moulin wind farm in the Pithiviers region
- Framework for the refurbishment of generators at nuclear power plants.

Grid

With more than 30% of market share, Alstom Grid is today the leader in the French market for high voltage products and solutions for protection relays and automation solutions and associated services.

Main customers
- Generation, transmission and distribution utilities: EDF Group (EDF generation, RTE, eRDF, EDF EN), Poweo, GDF Suez, electricity boards and Sicae (local distribution companies)
- Infrastructures, industries and tertiary sector (SNCF, RATP, ADP, Total, Arcelor, etc.)
- National and regional installers (Cegelec, Eiffage, Bouygues, Vinci, SPIE, Suez, etc.)
- EPC Contractors (Degrémont, Technip, ALSTOM, GE Power, etc.)

Key references in France
- 2012: e-terra platform to manage renewable energy sources of RTE
- 2011: SVC solution to improve network stability in western France (for RTE)
- 2009: 220 kV AIS substation for Georges Besse 2 aluminium enrichment factory (for Areva)
Alstom has established in France the benchmark for very high speed single and double-deck TGV trains, in service since 1981. In 2007, in partnership with SNCF and RFF, Alstom broke set a new world rail speed record of 574.8 km/h.

In urban transport, 18 French cities are circulating or have ordered the Citadis: Angers, Aubagne, Bordeaux, Brest, Dijon, Grenoble, La Rochelle, Le Mans, Lyon, Montpellier, Mulhouse, Nice, Orleans, Paris, Reims, Strasbourg, Toulouse and Valenciennes.

In regional transportation, SNCF, the French national operator, has awarded Alstom in October 2009 a contract for the new generation of single-deck regional trains (Régiolis) to modernize and expand the fleet during the period 2013 - 2021. Ultimately, the framework contract will reach a volume of 1,000 trains, meaning significant prospects for Alstom’s production sites in France.

Recent major contracts:
- RER A: 70 additional commuter trains MI09 to RATP (June 2012).
- Lille metro: Alstom chosen to renew line 1 automatic metro (May 2012).
- TGV Euroduplex: SNCF takes up a contract option for 40 trains in addition to the 80 units ordered in June 2007 (April 2012).
- Regional trains Régiolis: 171 trains ordered to date by the French regions, with first deliveries scheduled for 2013.
- Tramway Citadis: orders from the town of Aubagne for eight cars (October 2011), Bordeaux for 26 additional trains (June 2011), in Lyon for 10 trains (April 2011).
- Metro: 66 MF01 trains for three RATP metro lines in Paris (July 2011).