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## ***After acquiring the transmission business of Areva*** **Alstom creates a third Sector and opens a new development phase** **with Alstom Grid**

By its acquisition on 7 June 2010 of Areva T&D's transmission business, Alstom completes a decisive stage in its development by forming a new sector, named Alstom Grid, to supplement the existing two sectors in power generation and rail transport, Power and Transport. Priced at €2.3 billion, this acquisition gives a new dimension to the Group, which, now with its three activities, achieves sales of more than €23 billion<sup>1</sup> and employs more than 96,000 people.

*"Alstom Grid, which is Alstom's high-voltage transmission business, will be its third sector alongside Power and Transport. This sector will benefit from all the synergies and all the resources that the Group has, particularly in its international network having a presence in 70 countries, its technological and industrial capabilities and in the existing links between the high-voltage electricity transmission and power generation business",* says Patrick Kron, Alstom's Chief Executive Officer.

### **A new world leader**

The Alstom Group's third sector, alongside Alstom Power (sales of €13.9 billion in 2009/10, 50,000 employees) and Alstom Transport (sales of €5.8 billion in 2009/10, 25,000 employees), Alstom Grid generated sales of over €3.5 billion in 2009. Employing 20,000 people on more than 90 manufacturing sites worldwide, Alstom Grid is among the top three groups specialising in electricity transmission, along with ABB and Siemens.

*"Alstom Grid brings its customers more than 100 years of experience in the development of the world electrical grids, advanced technologies and expertise in key domains such as power electronics, ultra high voltage, direct current interconnections, integration of renewables into the grid and network management solutions. Alstom Grid has all the necessary advantages in terms of technologies, manufacturing and people to continue to be a leading contributor to the smarter grids of the future,"* says Henri Poupart-Lafarge, President of Alstom Grid.

The new sector has four main businesses. It designs and manufactures the electrical equipment of the ultra-high-voltage and high-voltage electricity transmission system, a business that accounts for more than 50% of sales. It supplies electricity network management systems and carries out major turnkey projects accounting for approximately a third of sales. The Automation business develops sophisticated information systems so that the operators can manage electricity grids in real time. Lastly, the Service business runs

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<sup>1</sup> Pro forma accounts 2009/10

after-sales operations (repair, refurbishment, spare parts) and provides consulting, assessment and training services.

Geographically, Alstom Grid is active on all continents, and has an manufacturing base located close to its customers. In terms of market, 2009 sales are equally divided between Europe (27%), Africa-Middle East (31%), Asia-Pacific (28%) and the Americas (14%). Beyond the current economic slowdown caused by the financial crisis, the transmission business is part of a world market which is estimated to be growing at approximately 3% per year over the next five years.

Alstom Grid expects to benefit from this dynamic to create a stable development by strengthening its positions in its target markets, both geographically and technologically. It already benefits from its strong positions in Europe, the Middle East, India and Latin America on which it is planning to build.

For example, India is a key country both in terms of its market and its production facilities. Alstom Grid has an extensive industrial footprint in the country and holds a market-leading position which will be strengthened, while the country's power requirements point to an annual increase in the market of 8%. Alstom Grid is well positioned to serve the current and future ultra high voltage requirements of India with locally manufactured products.

Furthermore, it aims to reinforce its presence in the two key areas of China and North America, essential for its future growth and where there is scope to improve its market share.

In China, which represents around 20% of the global Transmission market, Alstom Grid will reinforce its presence and strengthen its local partnerships in order to extend its commercial positions. It has already established around ten production joint ventures and recently opened a brand new technology centre in Shanghai.

In the United States, where an annual market growth of more than 5% is expected, Alstom Grid will reinforce its local penetration. The strong manufacturing and commercial presence of the Alstom Group, which has installed about a third of the country's electricity generation capacity (1000 GW), will support this strategy.

## **A strategic integration**

The integration of Alstom Grid within the Group is a unique growth opportunity because of the synergies between the three sectors.

Electricity generation in power plants and transmission of the current at high voltage are, in effect, directly connected. Because of this, Alstom Power and Alstom Grid have many things in common. They both operate in a power market that is in the midst of change due to: increasing environmental pressures, deregulation of the electricity markets, the search for increased energy efficiency, development of renewable energies and their connection to the electrical grid, interconnection of national and regional grids, making the increasingly more complex grids operate more efficiently, etc.

Their customer base is similar. It consists mainly of the big utilities, including EDF (France), Duke Energy (United States), RWE and E.ON (Germany), Vattenfall (Sweden), Dewa (Dubai), Electrobras (Brazil), Eskom (South Africa) and of the manufacturers who consume large quantities of electricity (aluminium producers, the oil and steel industries, etc.).

In addition, the two sectors are used to working together. Alstom Power for many years has been one of the leading customers of Areva T&D's transmission business now included in Alstom Grid.

The changes in the power market are also leading customers to look for turnkey proposals, based on integrated technical solutions. Alstom is particularly well placed in this field, bolstered by its world no. 1 ranking in turnkey power stations, and will, in future, develop its offer linking generation with transmission.

These synergies will be an essential advantage in conducting big energy infrastructure projects. Thus, in Brazil, for the Rio Madeira hydroelectric project in the State of Rondônia, situated in the north-west of the country, Alstom Hydro supplies the hydroelectric equipment for the Santo Antônio and Jirau power stations, particularly bulb turbines, turbo-generators, and hydromechanical and lifting equipment. In parallel, Alstom Grid is delivering a High Voltage Direct Current (HVDC) transmission link, for the world's longest transmission line (2,375 km) between the Rio Madeira hydroelectric complex in Amazonia and the State of São Paulo, the main user of the electricity produced.

Alstom Transport's business is also involved. In rail transport, the trend is towards supplying turnkey projects, either for urban transport (such as the Algiers metro) or intercity transport. Alstom Grid's expertise in traction transformers for power cars, in semiconductors or in traction substations will play a key role in this.

In parallel, Alstom and Schneider Electric, as they announced at the end of November 2009, will develop the links between their transmission and distribution businesses. In commercial matters, the two groups plan to conclude agreements for big electricity projects or licences. R&D agreements are also planned to develop innovative technologies which are of interest to both companies.

### **Transmission, an activity essential to the growth in world electricity demand**

The transmission of electricity consists in transporting the electric current from the production sites (power plants, wind farms, etc.) through the electricity grids that deliver it to end users (large industrial plants, mines, infrastructure and ultimately to businesses, private houses, hospitals, etc.). Alstom Grid supplies the equipment and systems for transmitting electric current and managing high-voltage electricity grids (from 52 kV to 800 kV in direct current and 1200 kV in alternating current).

This sector is undergoing major changes of an economic, technological, quantitative and qualitative nature – all at the same time. According to the forecasts of the International Energy Agency, world electricity production is set to increase by approximately 80% between 2006 and 2030. This growth will be particularly marked in the emerging countries outside the OECD, since it is set to reach an annual rate of 3.5%, and even 4.4% in Asia (including China and India). The consequence of this is an expected doubling, over the period, of investment in projects associated with the power transmission (and distribution).

**Increased production of electricity** will have a direct impact on the transmission market which should see annual growth of approximately 3% in the next five years. This increase will initially result in the extension of the electricity grids which is necessary to transport growing quantities of electricity over longer distances, particularly ultra-high voltage grids (UHV - greater than 800 kV) a field in which Alstom Grid benefits from a strong position. It also results in the development of HVDC interconnections between often asynchronous AC grids in different regions or countries, requiring sophisticated grid management. Add to this a considerable market in Europe and North America, particularly in the United States, the business of refurbishing and replacing ageing electricity grids.

The other crucial factors, besides growth in demand, concern **quality and reliability** electricity transmission and the need to integrate the new sources of power generation such as wind, solar and biomass. Increasing automation and intelligence of electrical grids and the associated equipment, often generically dubbed “smart grid”, is inevitable.. Alstom Grid's development of more intelligent equipment and advanced power electronics as well as its capabilities in automation are also central to the “smarter” grid. Automation solutions include systems to manage distributed generation (such as wind), provide network stability, and forecast load, and more sophisticated network management systems to cope increasingly complex grids. The sector is currently involved in a number of SmartGrid pilot projects worldwide.

### **Alstom Grid, an integrated products and systems offer**

Alstom Grid's main business by sales comes from its **Products** business which generates 51% of sales. This business designs and manufactures a comprehensive range of electrical equipment covering the whole high to ultra-high-voltage electricity transmission chain (from 52 kV to 800 kV in direct current and 1200kV in alternating current) which transmits electricity from the power stations via the high-voltage substations and electrical transmission grids to the large end users. It includes power transformers, gas-insulated substations (GIS), and air-insulated switchgear (AIS): such as live tank and dead tank circuit breakers, and disconnectors and instrument transformers. Alstom Grid is the world leader in disconnectors and instrument transformers.

The second business in size, the **Systems** business accounts for 34% of sales. It supplies the grid management systems and manages the big turnkey projects – such as the recent contract for an extra-high-voltage substation for the Anpara power station in India, or the completion of the Gulf's largest HVDC converter station (3 x 600 MW) and the Network Management System that connects the Gulf Cooperation Council International Authority's (GCCIA) six member states' energy systems.

Its expertise in power electronics makes it one of the world leaders in HVDC solutions. HVDC is today's most efficient and secure way of transmitting large quantities of electricity over very long distances. It is also the only way of interconnecting two asynchronous alternating-current grids. The quality of these alternating-current grids has also now grown significantly because of the FACTS (flexible alternating-current transmission systems) technologies in which Alstom Grid is one of the global specialists.

The **Automation** business with 10% of sales, plays an essential role in Alstom Grid's business. It provides utilities and industry with the mission critical software systems and equipment needed to manage the flow of electricity in transmission and distribution grids and to protect and control substations. The sector is the global leader in network management systems, with major references throughout the world. For example, in the USA, Alstom Grid's software manages five out of the seven energy markets and the sector has provided dispatching systems that control over 40% of the country's energy flow. Alstom Grid is also a leading supplier of control systems, protection equipment and intelligent electronic devices for substation automation, and offers a full range of support services.

Finally, as in all the businesses associated with the creation of infrastructure, the **Service** business of Alstom Grid (5% of sales) provides a range of after-sales operations (repair, refurbishment, spare parts) and consultancy, assessment and training services.

## **A global organisation focused on performance**

Alstom Grid forms part of the Alstom Group's three sectors alongside Alstom Power and Alstom Transport. It is led by Henri Poupart-Lafarge, formerly Alstom's Chief Financial Officer, who reports directly to Patrick Kron, Alstom's Chief Executive Officer, and who is a member of the Alstom Executive Committee. Alstom Grid's head office is located in France at La Défense, the business district west of Paris..

The organisation of Alstom Grid is based on four main "business units" (products, systems, automation, service), an international sales organisation (ISO) and functional departments.

The "business units" manage the product offering and the activities. The "products" business is organized by product lines on a worldwide basis around five main product lines: gas-insulated substations (GIS), circuit breakers, power transformers, instrument transformers and disconnectors. The "systems" and "service" businesses are organised by region.

The international sales organisation provides "one face to the customer" and is organised over nine regions. It will operate in coordination with Alstom's International Network which has a presence in 70 countries, and the GPS (Global Power Sales) organisation of Alstom Power. This combination is an essential strength in the integrated approach to customers such as the big utilities.

The functional departments support the operational units and cover innovation and strategy, finance, legal, human resources and communications.

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## APPENDICES



**Henri Poupart-Lafarge** is Executive Vice President of the Alstom Group and President of Alstom Grid from 7 June 2010. He was formerly Alstom's Chief Financial Officer. In his new job, Henri Poupart-Lafarge remains a member of the Group's Executive Committee and reports to Patrick Kron, Alstom's Chief Executive Officer

*Henri Poupart-Lafarge, 41 years old, attended the universities of l'Ecole Polytechnique et l'Ecole Nationale des Ponts et Chaussées and is a graduate of the Massachusetts Institute of Technology. He began his career in 1992 in the World Bank in Washington before joining the French Ministry of the Economy and Finance in 1994 in the Treasury Department, and then in the Office of the Minister of the Economy and Finance. He joined Alstom in 1998 where he was successively in charge of Investor Relations, Management Control and then, in 2000, the Finance Department of the Transmission & Distribution Division, sold in 2004. Since then, he has been the Alstom Group Chief Financial Officer.*

### Alstom Grid key figures (2009)

Sales (in billions of Euros)	3.5
Workforce	20,000
Number of manufacturing sites* <i>*Including sites shared with Schneider Electric</i>	90
Sales* per geographic region (%)	
Europe	27
Middle East-Africa	31
Asia-Pacific	28
Americas	14
<i>* by destination</i>	
Sales by business (%)	
Products	51
Systems	34
Automation	10
Service	5

## **History of the transmission business since the creation of Alstom**

- 1928 : Creation of the Alsthom company
- 1969 : The General Electricity Company (GEC) acquires a majority share in Alsthom's capital
- 1983 : Acquisition of the CEM business
- 1986 : Acquisition of Sprecher & Schuh in Switzerland
- 1989 : Alsthom merges with the British company GEC
- 1996 : Acquisition of the transmission and distribution division of AEG
- 1998 : Acquisition of Cegelec – "Alsthom" becomes "Alstom"
- 2004 : Sale of the T&D business to Areva
- 2006-09 : Acquisitions of Ritz High Voltage, VEI, Nokian Capacitors, Nxtphase, RB Watkins, Powermann
- 2008 : Strategic partnerships with GE Consumer & Industrial in India and Shanghai Electric Corp in China
- 2009 : Alstom and Schneider Electric propose acquiring Areva T&D
- 2010 : Alstom acquires the transmission business of Areva T&D which forms the new Alstom Grid sector