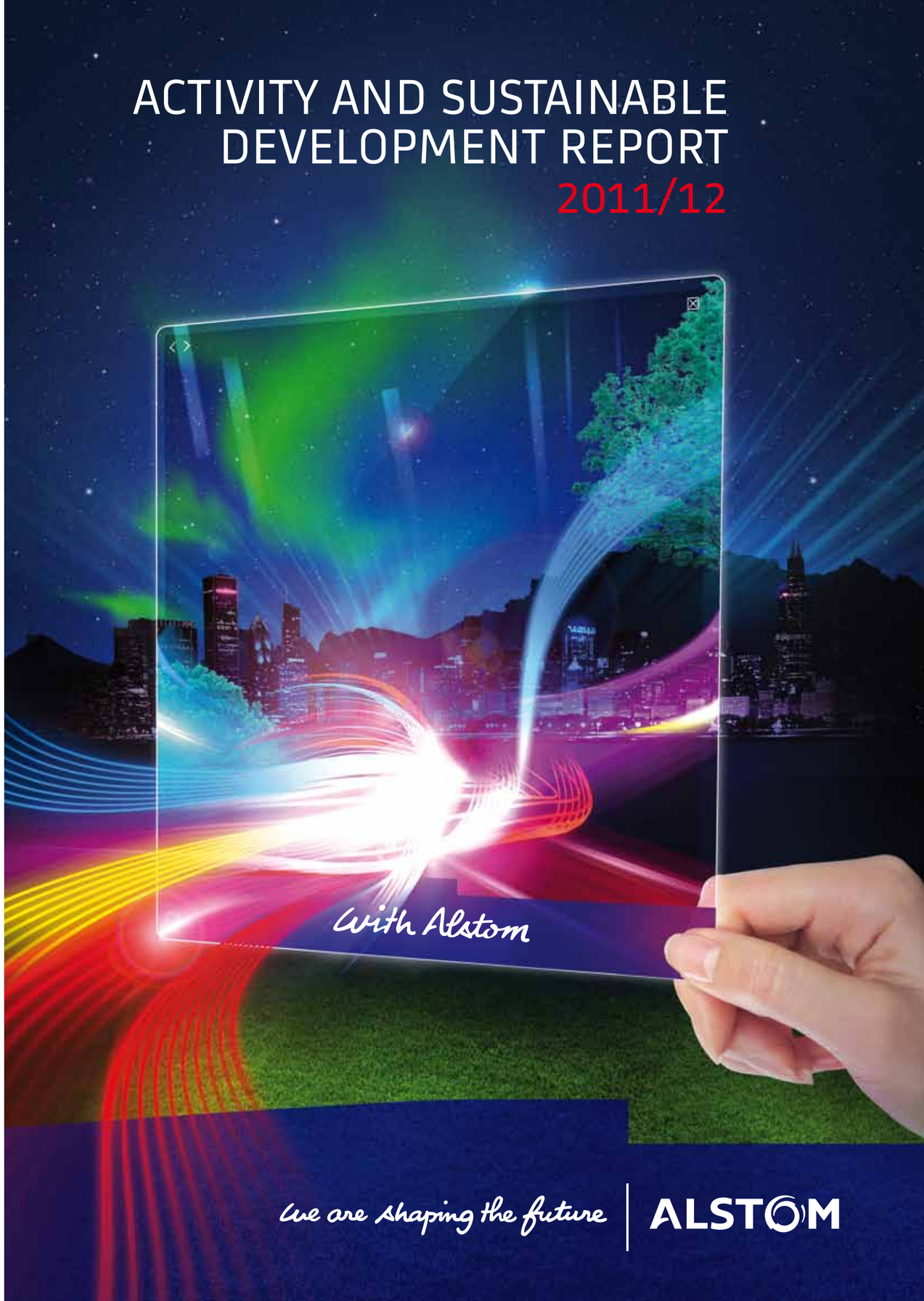
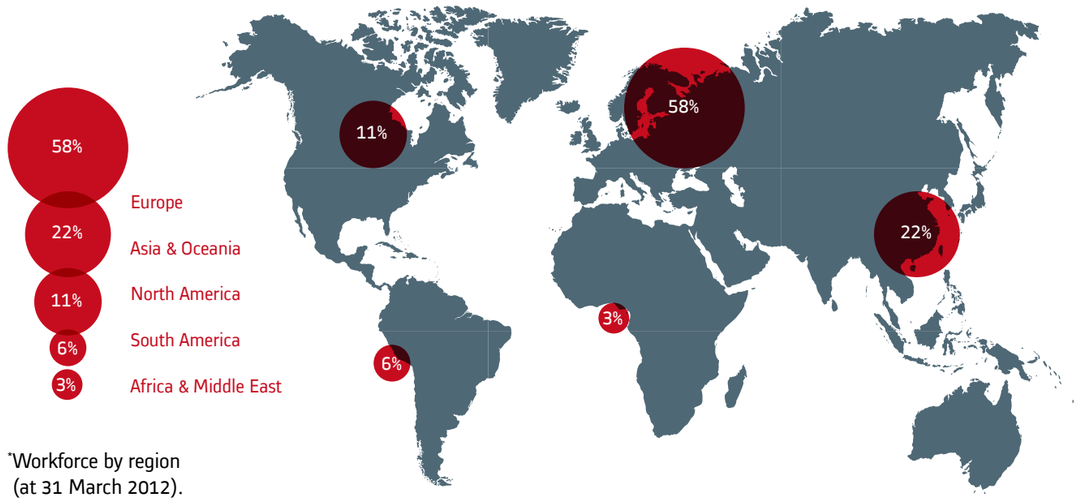
ALSTOM
3 avenue André-Malraux
92309 Levallois-Perret Cedex
France
Tel.: +33 (0)1 41 49 20 00
www.alstom.com

ALSTOM

ACTIVITY AND SUSTAINABLE DEVELOPMENT REPORT 2011/12



92,600 EMPLOYEES IN OVER A HUNDRED COUNTRIES*
€21.7 BILLION ORDERS BOOKED**
€682 MILLION RESEARCH & DEVELOPMENT**



*Workforce by region
(at 31 March 2012).
**For financial year 2011/12.

Alstom's Thermal and Renewable Power Sectors cover the full spectrum of power generation technologies. Together, they have the most comprehensive offer on the market. One in four light bulbs worldwide is powered by electricity from equipment with Alstom technology.

THERMAL POWER has the industry's most comprehensive portfolio of thermal technologies – coal, gas, oil and nuclear – and holds leading positions in turnkey power plants, power generation services and air quality control systems. The Sector is also a pioneer in carbon capture and storage technologies.
Thermal Power has a workforce of 37,500 and booked orders of €9.4 billion in 2011/12.

The most comprehensive range of power generation technologies.

RENEWABLE POWER offers the most comprehensive range of renewable power generation solutions: hydro power, wind power, geothermal today and solar energy, biomass and marine energies tomorrow. The Sector is one of the world leaders in hydro power, the largest source of renewable energy on the planet.
Renewable Power has a workforce of 9,400 and booked orders of €2 billion in 2011/12.

Over 25% of the global hydro power market.

GRID is a leader in the world market for power transmission, developing such key technologies as high voltage AC substations, high voltage direct current power electronics, and solutions for managing and interconnecting power grids.

Grid has a workforce of 19,000 and booked orders of €4 billion in 2011/12.

Smart grid pioneer.

TRANSPORT is a worldwide leader in rail equipment and services with the broadest offer on the market, from rolling stock and infrastructure to signalling and information systems and maintenance. The Sector leads the world in the construction of high speed and very high speed trains and ranks second in urban transport and regional trains.
Transport has a workforce of 25,000 and booked orders of €6.3 million in 2011/12.

World record holder for rail speed.

WITH ALSTOM

With a presence in over a hundred countries and a broad range of products and services in the power generation, power transmission and rail transport infrastructure markets, Alstom is at the forefront of economic, social and environmental progress.

Alstom designs, produces and offers innovative technologies and solutions to its customers which meet essential needs, are increasingly efficient and ever more respectful of the world we live in.

Alstom bases its success on a Code of Ethics that is rigorously applied by its 92,600 employees who work closely with the community of stakeholders that make up the Group's ecosystem.

These shared commitments are expressed in products and services that bear the stamp **with Alstom.**

CONTENTS

INTERVIEW WITH THE CHAIRMAN

"Environmental concerns are a growth driver."

When you released your results for financial year 2011/12, you stressed that the Group's performance had met its forecast.

Yes, we met our goals, and that was by no means a foregone conclusion in this economy. Order intake increased 14%, and sales rebounded gradually throughout the financial year. Operating margin improved during the second half and reached 7.1% for the year, in line with the forecast provided in 2010. Free cash flow turned around and was well into positive territory in the second half. Our employees worked very hard to achieve these results, and I want to thank them here.

Alstom also continued to prepare for the future, as we have in previous years, by investing in a number of areas: adding production capacity, modernising our manufacturing base and continuing to invest in research and development. Throughout the crisis, we have never sacrificed the future for the sake of short term demands.

In last year's interview, you stressed that we had entered a "two-tier world." Do you stand by that analysis?

Absolutely. Continuing the trend from last year, some 60% of our €21.7 billion in orders came from emerging countries, which are growing at a much higher rate than the industrialised countries.

We have continued to make the most of our global reach and our partnership strategy, which we have worked hard to strengthen.

We also finalised a number of major contracts in our traditional markets, particularly in Transport, but it is also true that these markets generally continue to reflect the prevailing wait-and-see attitude of economic players.

Orders began to turn around in 2010/11. Is that a long-term trend? Which Sectors will drive Alstom's sales?

There is still a huge need to build new infrastructures and modernise existing ones.

Naturally, there is short term uncertainty in some segments, but orders should keep moving in the right direction over the next three years. Developing countries continue to present plenty of opportunities, and the industrialised countries should show positive signs, particularly in offshore wind and high-tech power transmission, with HVDC and smart grids.

Over the next three years, we expect sales growth in all four of our Sectors, Thermal Power, Renewable Power, Grid and Transport.

"Throughout the crisis, we have never sacrificed the future for the sake of short term demands."

Patrick Kron,
Chairman and
Chief Executive Officer.

Are environmental concerns becoming a growth driver for Alstom?

Environmental concerns – and the regulations that go along with them – have been and will continue to be a growth driver for us. They spur demand for higher-tech products and more complex services. And that is precisely what sets us apart.
When we and our partners win a huge tender for offshore wind power in France with the most efficient turbine on the market, our offer naturally responds to environmental concerns and simultaneously gives us a competitive edge. The same is true when we invest in smart grid technologies, because these grids are now essential in integrating wind and solar power, which are inherently intermittent, and in managing the increasingly complex balance between power generation and power consumption as intelligently as possible.

Is that also true for power from thermal sources? And for transport?

Naturally that is also true for thermal power – for example, when the Thermal Power Sector wins a large number of contracts to provide environmental protection systems or to retrofit existing power plants.
But in thermal power, meeting environmental challenges also means offering more efficient power plants that burn less fuel to generate the necessary amount of power.
When we launch improved versions of our GT26, GT24 and GT13 turbines, as we did in 2011, we offer equipment that is more powerful, more flexible, and more efficient. These are advantages from an economic standpoint, but they also benefit the environment.

As for rail transport, our offer clearly presents the best possible solutions to the problems of urban congestion and intercity mobility.
In 2011/12, we booked orders for very high speed trains in France, locomotives in Russia, trams in the United Kingdom and metros in Singapore. All these contracts are investments in social responsibility.

Some closing words on the outlook for Alstom?

As I have said, we expect continued progress in business development and in sales, which should grow by more than 5% annually over the next three years.
This sales growth, combined with continued cost-control efforts, should produce gradual improvement in operating margin, which should reach around 8% by March 2015.
At the same time, we continue to focus actively on generating free cash flow, which should be positive for each financial year in the immediate future.

"Environmental concerns spur demand for higher-tech products and more complex services. And that is precisely what sets us apart."

60%
OF ALSTOM'S ORDERS
IN 2011/12
ONCE AGAIN CAME FROM
EMERGING COUNTRIES

BOARD OF DIRECTORS
(at 31 March 2012)

Alstom has been listed on the Paris stock exchange since 1998. The Group has taken active steps to achieve its highly demanding goals for transparent corporate governance based on the AFEP-MEDEF corporate governance code for listed companies. This means that Alstom applies strict corporate governance rules, particularly with respect to the independence of Board Directors and the missions of specialised committees. A robust and broad internal control system encompasses and supports all Group Sectors and functions. By enabling quicker, more reliable and more competitive operations, the internal control system aims to ensure that local laws and regulations are complied with, that information and data including financial information are reliable and that operations are completed in an optimal manner. The Board of Directors is expected to propose the renewal of the terms of office of Jean-Paul Béchat, Pascal Colombani and Gérard Hauser at the upcoming Annual General Meeting on 26 June 2012.

More information about corporate governance can be found on Alstom's internet site: www.alstom.com.

ETHICS AND SUSTAINABLE DEVELOPMENT COMMITTEE

This committee, which was set up in September 2010, comprises three independent directors: Jean-Martin Folz (committee Chairman), Katrina Landis and Pascal Colombani. The committee gives its opinion to the Board of Directors on ethical and sustainable development issues.

1 **Olivier Bouygues**
Deputy Chief Executive Officer, Bouygues

2 **Candace Beinecke**
Chair, Hughes Hubbard & Reed LLP

3 **Jean-Paul Béchat**
Managing Director, ARSCO

4 **Alan Thomson**
Chairman, Hays plc

5 **Georges Chodron de Courcel**
Deputy Chief Executive Officer, BNP Paribas

6 **Lalita Gupte**
Chair, ICICI Venture Funds

7 **Katrina Landis**
CEO and Group Vice-President, BP Alternative Energy

8 **Jean-Martin Folz**
Company director

9 **Patrick Kron**
Chairman and Chief Executive Officer

10 **James William Leng**
Chairman, AEA Investors Europe

11 **Philippe Marien**
Representative, Bouygues SA

12 **Pascal Colombani**
Senior Advisor, A.T. Kearney

13 **Gérard Hauser**
Company director

14 **Klaus Mangold**
Supervisory Board Chairman, Rothschild GmbH (Frankfurt)

EXECUTIVE COMMITTEE
(at 31 March 2012)

Defining strategy and general policies, setting corresponding operational objectives, including budgets and financial targets, in addition to allocating financial resources.

Upholding relations with the Board of Directors and the external environment (shareholders, financial community and the public).

Undertaking any action needed to implement the strategy that cannot be efficiently transferred to the Sectors.

Enhancing the value of human resources, including management of career development and succession planning across the Group, general employee relations, global compensation and benefit-related guidelines and policies.

EXECUTIVE COMMITTEE OVERHAUL

On 15 June 2011, Alstom announced that it would reorganise to step up growth Group-wide. As a result of the move, the Executive Committee has been thoroughly overhauled and operations are now structured into four Sectors instead of three.

By reorganising Power into Thermal Power and Renewable Power, Alstom has simplified operations for the new Sectors, and both are now better positioned to meet specific market needs.

1
Grégoire Poux-Guillaume
President of Alstom Grid

2
Nicolas Tissot
Chief Financial Officer

3
Keith Carr
General Counsel

4
Philippe Cochet
President of Alstom Thermal Power

5
Patrick Kron
Chairman and Chief Executive Officer

6
Bruno Guillemet
Human Resources Director

7
Henri Poupart-Lafarge
President of Alstom Transport

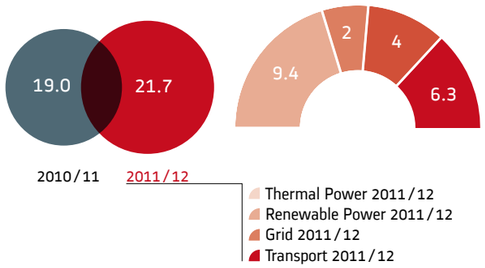
8
Jérôme Pécresse
President of Alstom Renewable Power

A SOUND COMMERCIAL PERFORMANCE

ORDER INTAKE +14%

In billions of euros

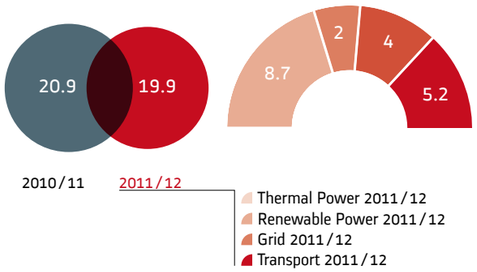
Orders outstripped sales in every quarter of the financial year and were particularly strong in the fourth quarter, the best for the combined Power Sectors and Transport since financial year 2008/09. Business was steady in emerging countries, which accounted for around 60% of total orders, though Transport's European business was very brisk.



SALES -5%

In billions of euros

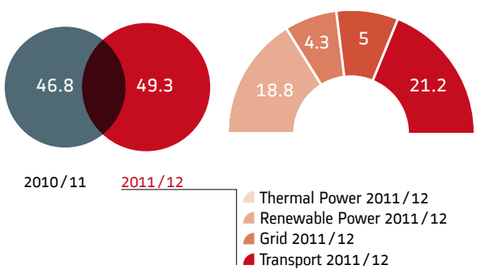
The decline in sales affected Thermal Power (down 10%) and Transport (down 8%) in particular, reflecting the downturn in orders booked in 2009 during the crisis. Meanwhile, Renewable Power's sales were up 4% over last year and Grid reported sales of €4 billion. As expected, overall sales gradually improved over the financial year, rebounding from a low point in the first quarter.



ORDER BACKLOG +5%

In billions of euros

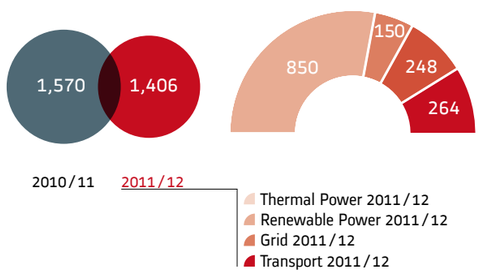
At 31 March 2012, order backlog was nearly €50 billion, representing around 30 months of sales.



OPERATING MARGIN +7.1%

In millions of euros

Operating profit was slightly down as projected. But operating margin rose from 6.7% in the first half to 7.4% in the second half, reaching 7.1% for the entire financial year.

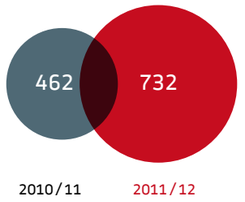


STRONG INCREASE IN NET PROFIT

NET PROFIT +58%

In millions of euros

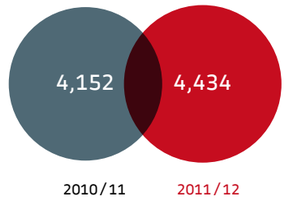
Net profit is up sharply over that for the previous financial year, which reflected high restructuring costs for capacity adjustments in Thermal Power and Transport in North America and Europe.



SHAREHOLDERS' EQUITY

In millions of euros

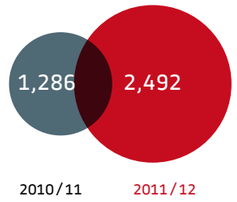
Shareholders' equity was up after accounting for pension adjustments and payment of the dividend.



NET DEBT

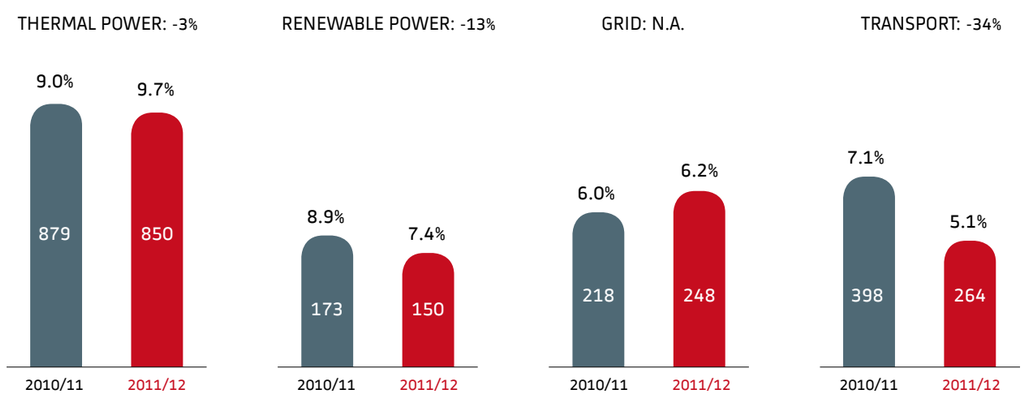
In millions of euros

The change in the Group's debt position primarily reflects negative free cash flow over the period, as well as payment of the dividend for financial year 2010/11.



OPERATING PROFIT AND OPERATING MARGIN PER SECTOR

In millions of euros

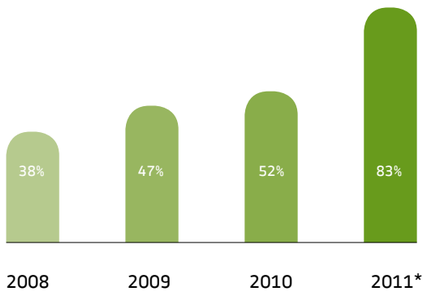


A STEADFAST COMMITMENT TO **SUSTAINABLE DEVELOPMENT**

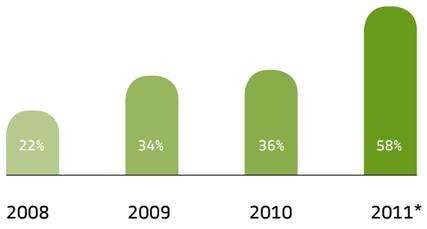
PERCENTAGE OF CERTIFIED SITES
Key indicators for 2008 - 2011

Since 2008 and in line with the Group's targets, the percentage of Alstom sites having achieved ISO 14001 or OHSAS 18001 certification has grown steadily.

ISO 14001 Environmental Management Standard



OHSAS 18001 Occupational Health & Safety Management Standard



* sites with more than 200 employees, including Grid

WORKPLACE ACCIDENTS
Key indicators for 2008 - 2011

The Group's exposure to accident risk affects both its production and construction activities. Preventing workplace accidents has been a Group priority for many years, addressed in particular through Alstom's Zero Severe Injury programme.

	2008	2009	2010	2011
Injury frequency rate* (Alstom employees)	2.8	2.3	1.9	1.8
Severity rate** (Alstom employees)	0.09	0.07	0.07	0.05

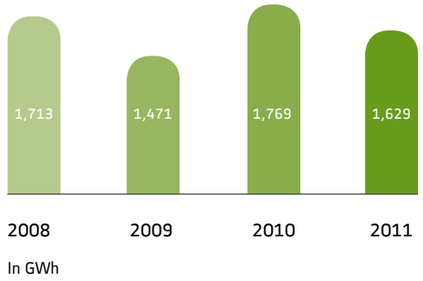
Indicators audited by PricewaterhouseCoopers
* Number of accidents of Alstom employees with time lost due to injury per million hours worked
**Number of lost work days per thousand hours worked

TRAINING
Key indicators for 2008 - 2011

The mission of Alstom University (AU) is to support the attainment of the Group's strategic objectives. Thanks to Alstom's culture of continuous learning and a perspective on the Group as a community, employees have access to the knowledge, skills and tools necessary to ensure Alstom's success as well as their own development.

	2008	2009	2010	2011
Percentage of employees having received training	ND	67%	69%	74%
Average number of training hours / employee	ND	21 h	20 h	19 h
Number of employees trained by Alstom University	5,600	6,300	8,900	8,231

TOTAL ENERGY CONSUMPTION
Key indicators for 2008 - 2011



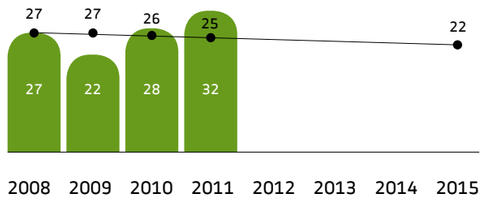
In GWh

GREENHOUSE GAS (GHG) EMISSIONS INTENSITY OF ALSTOM'S SITES
Key indicators for 2008 - 2011

Alstom's industrial sites use gas for heating and cooling and electricity for industrial processes and lighting.

The Group has targeted a 20% reduction in its GHG emissions intensity (the ratio of GHG emissions to revenue) by 2015.

At 31 December 2011, GHG emissions intensity increased by 18% compared to the reference year. This increase is attributable to the inclusion of SF_6 emissions as a result of the integration of Alstom Grid (this sector's SF_6 emissions have been only taken into account since June 2010).

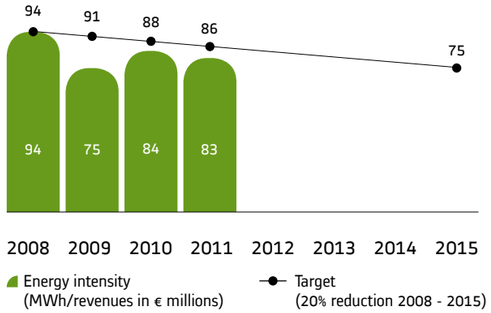


GHG emissions intensity (tons of CO_2 equivalent/ revenues in € millions)

Target (20% reduction 2008 - 2015)

ENERGY INTENSITY OF ALSTOM'S SITES
Key indicators for 2008 - 2011

Alstom has undertaken a vast programme to reduce the energy intensity of its sites (the ratio of energy consumption to revenue), targeting a 20% reduction by 2015. At 31 December 2011, energy intensity decreased by 12% compared to the reference year. The significant reductions in energy intensity recorded by the Thermal Power and Transport Sectors made a positive contribution to the Group's results.

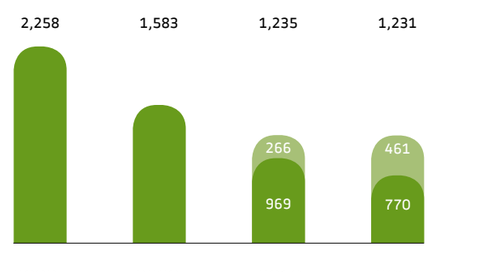


Energy intensity (MWh/revenues in € millions)

Target (20% reduction 2008 - 2015)

WATER CONSUMPTION IN WATER-STRESSED AREA FACILITIES
Key indicators for 2008 - 2011

Alstom aims to considerably reduce water use by its industrial sites, especially at those sites located in water-stressed areas. In 2011, water consumption increased by 4% due to the change in scope resulting from the full integration of Alstom Grid.



In thousands of m³

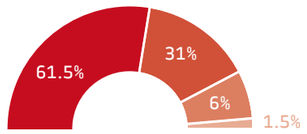
Portion attributable to Alstom Grid (Grid joined the Group in June 2010)

A CONSTANT DIALOGUE WITH SHAREHOLDERS

SHARE OWNERSHIP

at 31 March 2012

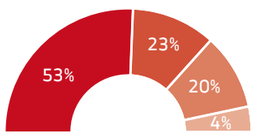
The Group's share capital is held by approximately 230,000 shareholders. (source: Euroclear / King Worldwide)



- Institutional investors
- Individual shareholders
- Bouygues
- Employees

CAPITAL STRUCTURE BY REGION

at 31 March 2011



- France
- Rest of Europe
- Americas
- Asia & Middle East

The role of the Investor Relations team is to provide the entire financial community – individual shareholders, institutional investors and financial analysts – with complete, regularly updated information on the Group's strategy and its implementation.

ACTIVE COMMUNICATION POLICY FOR INDIVIDUAL SHAREHOLDERS

Besides the Annual General Meeting, Alstom is developing opportunities to meet and communicate with its individual shareholders. During financial year 2011/12, the Group took part in information meetings in Nice and Lille in France – organised in association with FFCI (the French Investment Club Federation) and CLIFF (the French Association for Investor Relations). In 2012, the Group will meet with its shareholders in Nantes and Nancy. Site visits are organised in France for individual shareholders to provide a better insight into Alstom's business activities. In 2011/12, one group of shareholders visited Valenciennes to see metro production lines, while others toured the Group's La Rochelle site, where high speed (TGV) and very high speed trains (AGV™) and trams are assembled.
In addition to its periodical financial publications, Alstom offers its shareholders a range of information tools, including the shareholder letter which is published twice a year in conjunction with the main financial dates of the Group.

RELATIONS WITH INSTITUTIONAL INVESTORS AND FINANCIAL ANALYSTS

Roadshows are organised several times a year in major American and European financial centres (United Kingdom, France, Switzerland, Germany, Italy). Information meetings (presentations on Sectors, strategy, etc.), as well as individual meetings with investors and analysts take place throughout the year.
Each year, the Group organises an analysts' and investors' day to present its strategy and activities. This year, the event focused on Alstom's presence and growth in Russia and the CIS and covered all four Sectors. It was held at Alstom Transport's headquarters in Saint-Ouen, with over fifty analysts and investors in attendance.
The Group also participates in sector-specific and general conferences organised by brokerage firms in France, the United Kingdom and the United States. During the financial year, the Group also had the opportunity to present its core principles for corporate governance and social and environmental responsibility.

THE ALSTOM SHARE

at 31 March 2012

Listed on:
NYSE Euronext Paris

ISIN code: FR0010220475

Ticker symbol: ALO

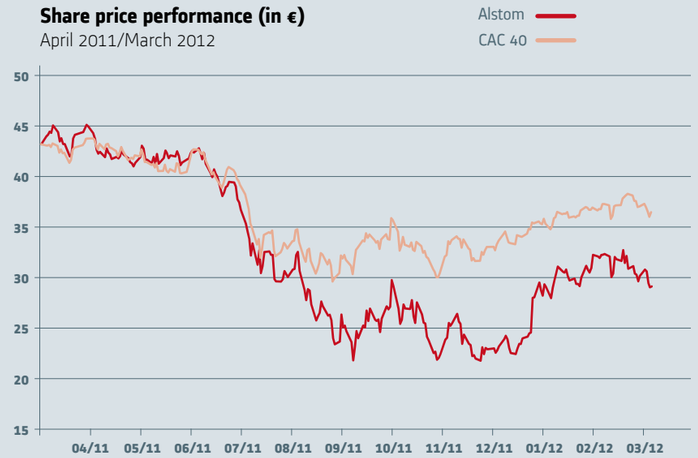
Par value: €7

Number of shares:
294,533,680

Market capitalisation:
€8,618,055,477

Main indexes:
– CAC 40
– SBF 120
– Euronext 100

Share price performance (in €)
April 2011/March 2012



Base: Alstom share price at 1 April 2011: €43.17
Source: NYSE Euronext Paris

STOCK MARKET NEWS

On 31 March 2012, the share price stood at €29.26 and the stock market capitalisation of the Group was €8.6 billion.

DIVIDEND

For financial year 2010/11, Alstom paid a dividend of €0.62 per share on 5 July 2011. The dividend proposed at the Annual General Meeting on the 26 June 2012 amounts to €0.80 per share. This represents a distribution rate of 32% of the Group's net profit, compared to 40% for the prior year. The payment date has been fixed for 3 July 2012.

KEEPING INVESTORS INFORMED

www.alstom.com
The Investors section of the Alstom website has been specially designed to provide shareholders with easy access to all the Group's financial communications: share price quotes, downloadable historical data for the past five years, financial results, presentations, Registration Documents, shareholders' letters, dates of important meetings, frequently asked questions, as well as a service that dispatches press releases by e-mail. Printed copies of the Registration Document for 2011/12 can be obtained in French and English by sending a request to the Investor Relations department.

CONTACTS

Emmanuelle Châtelain
Vice-President
Juliette Langlais
Deputy

Alstom
3 avenue André Malraux
92300 Levallois-Perret
France
Tel: +33 (0)1 41 49 20 00
Fax: +33 (0)1 41 49 79 25

E-mail:
investor.relations@chq.alstom.com

From France:
Toll-free number: 0800 50 90 51
From Monday to Friday,
9am to 7pm CET.

From outside France:
Tel: +33 (0)1 45 30 85 75
(calls charged at operators' standard rate).

THE YEAR IN REVIEW 2011/12

In financial year 2011/12, fast-growing countries were still driving demand for equipment, particularly in the power generation sector, while most western countries will have to renew their infrastructures amid lower consumption and tighter environmental requirements.

APRIL 2011

A GLOBAL BOILER PROJECT

Alstom and Shanghai Electric Group announce plans to create Alstom-Shanghai Electric Boilers Co., a 50/50 joint venture combining the companies' operations in the boiler market for coal-fired power plants. The new company would be the world leader in the segment.

NEW HUB TO CONNECT THREE MAIN US POWER GRIDS

Alstom Grid will supply HVDC* and automation technologies to Tres Amigas LLC for its SuperStation project in New Mexico.

A worldwide first in the transmission of green power (onshore and offshore wind, solar and geothermal power), the new hub will interconnect the three main US power grids: the Eastern, Western and Texas networks.

HVDC: high voltage direct current

In Malaysia, Alstom wins the majority of a contract for construction of what will be Southeast Asia's biggest (1,000 MW) supercritical coal-fired plant. Alstom will supply the boiler, steam turbine, generator and auxiliary systems for the Manjung plant.

In Singapore, Thermal Power gets the green light from power plant operator, KMC, to begin construction on the second unit of an 800 MW gas-fired power plant (2x400 MW). As with the first unit, Alstom will design and build the plant, supply key equipment and provide long-term maintenance for the facility.

In India, Alstom wins a contract for all infrastructure work on lines 1 and 2 of the Chennai metro, following an initial agreement to supply rolling stock in 2010. Construction of the 168 cars will be divided between Alstom's plant in Lapa, Brazil and the future Chennai site, which is scheduled to open in 2012.

In Peru, Alstom Transport is chosen to supply 19 Metropolis train sets for the first metro in Lima, Latin America's fifth-largest city with a population of over 10 million.

2011 MAY

ALSTOM FINALISES ACQUISITION OF 25% STAKE IN TRANSMASHHOLDING (TMH), RUSSIA'S LEADING RAIL MANUFACTURER

Signed on 27 May, the partnership agreement comes after several years of close cooperation between the two companies.

In 2010, Alstom and TMH won two orders totalling 490 locomotives for Russian Railways (RZD) and Kazakh Railways (KTZ).

The first 3rd generation double-decker high speed Euroduplex is symbolically delivered by Alstom CEO, Patrick Kron, to Guillaume Pepy, Chairman of French railway company, SNCF. The only double-decker, very high speed train capable of running on all European rail networks, the new Euroduplex features cutting-edge technologies that significantly improve passenger comfort, information and safety. SNCF has ordered a total of 55 trains: the first of them began running on the new Rhine-Rhône high speed line in December 2011. Euroduplex trains will also be the first to serve the new international Frankfurt-Marseille line inaugurated in March 2012.

Also in Russia, Alstom Renewable Power and partner, OEK, sign an agreement with RusHydro to modernise the nine power plants in the cascade hydro power complex on the Kuban River in the country's southern region.

In Sweden, national power transmission systems operator, Svenska Kraftnät, awards Alstom Grid a turnkey contract to supply and install a 420 kV alternating current substation between the centre of the country and its southern region. The Barkeryd substation will be the northern connection point between Sweden's national grid and the South West Link, a major HVDC line.

Poland enters the high speed era. Operator, PKP Intercity, awards Alstom Transport a €665 million contract to supply 20 high speed New Pendolino trains (250 km/h), plus another contract covering 17 years of maintenance and construction of a new maintenance depot. At PKP's request, the trains will not include the Pendolino tilting system. The first train sets will be delivered in 2014.

HIGHLIGHTS

7.5 GW
WITH 7.5 GW OF INSTALLED CAPACITY IN MALAYSIA, Alstom is one of the country's leading suppliers.

MORE THAN 70% OF INDIA'S POWER runs through networks managed by Alstom systems.

11,230 MW
BELO MONTE DAM, in Brazil, equipped by Alstom, will be the world's largest after China's Three Gorges dam and Brazil's Itaipu.

JUNE 2011

ALSTOM'S REORGANISATION

The Group seeks to boost growth and meet new challenges by becoming more streamlined, flexible and responsive.

At its core, the move reorganises Power and divides Alstom's operations into **four Sectors instead of three** **– Alstom Thermal Power, Alstom Renewable Power, Alstom Grid** and **Alstom Transport.** Other changes include simplifying the Group's working procedures, particularly its decision-making process and overhauling the Executive Committee.

ALSTOM ACQUIRES 40% STAKE IN AWS OCEAN ENERGY

The Group makes a strategic move into marine energy. The Scottish company is a global specialist in wave energy, and its 2.5 MW AWS-III wave energy converter complements the technology used in Alstom's 1 MW Beluga 9 tidal turbine. Both products are still in development.

In Brazil, Alstom signs a contract with Brasventos to build and service three wind farms. The ECO 86 wind turbines for the project will be manufactured at Alstom's new plant in Bahia, Brazil with support from the Group's plant in Buñuel, Spain.

In Germany, Alstom agrees to supply 56 Coradia Lint regional trains to Deutsche Bahn (DB Regio AB). The diesel trains will run on the Cologne/Bonn regional network and are expected to go into service in December 2013.

ALSTOM CONFIRMS LONG-TERM STRATEGIC COMMITMENT IN RUSSIA

Major contracts to modernise energy infrastructures are signed with: RusHydro for hydroelectric power stations, Renova for thermal plants, Soyuz for smart grid technologies and KER Ltd. for HVDC projects.

2011 JULY

IRAQI MARKET OPENS TO ALSTOM

Turkish energy company, Çalik Enerji, awards Alstom Grid a contract to supply gas-insulated substations and transformers for two power plants it is building in Iraq. In September, the Iraqi Ministry of Electricity orders a gas-insulated substation for Mosul East: under these two major contracts, Alstom Grid will help rebuild the country's power grid.

In December 2011, Alstom Power wins a turnkey contract, worth some €400 million, to build the gas-fired Al Mansuriya power plant 80 km northeast of Baghdad. The 728 MW plant will consist of four units based on Alstom's GT13E2 gas turbine.

Australia's largest electricity transmission provider, TransGrid, chooses Alstom Grid to supply three high voltage electric substations in New South Wales.

The contract includes a 300 kV gas-insulated substation, the first to be delivered by Grid to this strategic Australian customer after a number of air-insulated substation projects.

In France, RATP places a €300 million order with the Alstom-Bombardier-Areva TA consortium to supply 66 train sets for line 9 of the Paris Métro. The order represents the third and final phase of the contract, worth €200 million for Alstom Transport.

INDIA ADOPTS VARIABLE SPEED TECHNOLOGY

In consortium with Hindustan Construction Company, Alstom will build a 1,000 MW pumped storage hydro power plant on the Bhagirathi River in the state of Uttarakhand. The plant will be the first in India to use variable speed technology, which is particularly well suited to energy storage.

HIGHLIGHTS

30% of the world's boilers, with output of **800 GW WERE MADE BY ALSTOM.**

4,000 METROS
More than 4,000 **ALSTOM METROPOLIS** trains are in service worldwide.

4 BILLION PASSENGERS TRAVEL ON ALSTOM CITADIS TRAMWAYS.
To date, over 1,600 units have been sold to 37 cities worldwide.

20%
OF SPAIN'S INSTALLED COMBINED-CYCLE POWER PLANTS feature Alstom equipment.

150,000
disconnectors in **130 COUNTRIES** were supplied by Alstom Grid, the **WORLD LEADER IN THE SEGMENT.**

AUGUST 2011

NUCLEAR FUSION

Alstom contributes superconductivity expertise to the ITER project. As part of the international ITER Project, designed to show the feasibility of using nuclear fusion for commercial power generation, Alstom is selected by the French Atomic Energy Commission to supply nine magnetic coils to the JT60SA, an experimental facility under construction in Japan. Weighing in at over 15 tonnes each, the superconducting coils wrap around the core, confining the plasma, which is heated to 150 million degrees, and keeping it away from the chamber walls.

In the Middle East, Alstom Thermal Power expands its leadership in air quality control equipment, securing two contracts worth over €100 million.
In the United Arab Emirates, the Group will deliver two gas treatment units and one fume treatment unit for the second phase of the EMAL aluminium smelter in Abu Dhabi.
In Saudi Arabia, Alstom will supply a seawater flue gas desulphurisation system for phase two of the Marafiq power plant on the Red Sea coast.

2011 SEPTEMBER

EP20: ALSTOM AND TMH UNVEIL THEIR FIRST LOCOMOTIVE

First product of their strategic partnership, the EP20 is an electric locomotive for Russia's most up-to-date passenger trains and one of the most powerful locomotives in the world, developed in just seven months by TRtrans, the joint Alstom-TMH engineering centre.

The two partners also sign an agreement to develop and produce the 2ES5 electric freight locomotive: Russian Railways (RZD) has already ordered 200 of the freight version. Alstom's share of the contract is worth €400 million.

In Malaysia, Alstom Thermal Power signs a contract for long-term servicing of the Lumut power plant. The deal follows an agreement dating from 2004, when the plant went into operation. With nine GT13E2 turbines generating 1,943 MW, the Alstom-built Lumut facility is the largest GT13E2 based combined cycle gas-fired power plant in the world.

TWO NEW CONTRACTS FOR HYDRO IN LATIN AMERICA

Alstom Renewable Power strengthens leading position in hydro power market.
In Brazil, Alstom will provide equipment for the Santo Antonio do Jari run-of-river hydro power plant in the Amazon region, including Kaplan turbines specifically designed for the facility.
In Peru, Alstom will supply the new 450 MW Chaglla dam in Huánuco with a complete electromechanical package, including two vertical Francis turbines.

TWO CARBON CAPTURE AND STORAGE PROJECTS IN CHINA

Each of the two planned sites will capture more than a million tonnes of CO_2 annually.
Alstom and China Datang Corporation form a long-term partnership for joint development of carbon capture and storage (CCS) demonstration projects. Two pilot facilities will be built near large Chinese oilfields: an oxy-firing unit near the coal-fired power plant in Daqing and another using one of Alstom's three suggested CCS technologies. Both units are scheduled to begin operating in 2015.

HIGHLIGHTS

The new KA26 plants reduce CO_2 emissions by 350,000 tonnes per year.

350,000 TONNES OF CO_2

190 MILLION TONNES A YEAR
in emissions were eliminated by **1,323 PROJECTS** and services delivered by Alstom between 2002 and 2010, as certified by PricewaterhouseCoopers.

200 MW will be generated by Costa Head, **THE WORLD'S LARGEST WAVE ENERGY FARM,** to be developed by Alstom and SSE Renewables off the coast of Scotland.

OCTOBER 2011

CHINA CHOOSES ALSTOM GRID FOR MOVE TO ULTRA HIGH VOLTAGE DIRECT CURRENT

Alstom Grid signs a cooperation agreement with China Electric Power Equipment and Technology Co. Ltd (CET), a subsidiary of State Grid Corporation of China, to develop ultra high voltage direct current (UHVDC) power transmission systems.

The main component of the agreement is the development of a 1,100 kV converter transformer, but the partners will also cooperate on manufacturing 800 kV HVDC converter transformers based on Alstom technology.

In Venezuela, an Alstom-led consortium wins a €530 million contract to build line 2 of the Los Teques metro, an extension of the Caracas metro system, which includes 600 Alstom cars. Alstom Transport, which supplied the electromechanical system for line 1, will act as overall coordinator for the turnkey project and will also supply 22 Metropolis train sets.

ETHICAL BUSINESS:

Alstom's Integrity Programme is certified by the ETHIC Intelligence agency after an audit in some ten countries. The new certification covers a number of measures taken by Alstom over several years to strengthen and expand its integrity policy, and particularly to prevent corruption.

APPITRACK NAMED INNOVATION OF THE YEAR IN LONDON

Appitrack, Alstom's automated tracklaying technology for metro and tram lines, is named Innovation of the Year at the 2011 Light Rail Awards. Very quiet and compatible with all types of track surfaces and equipment, Appitrack can lay up to 200 metres of track per day, versus only 50-60 with conventional methods.

HIGHLIGHTS

50%
OF BRAZIL'S POWER is generated by Alstom equipment.

623 CORADIA LINT
regional trains have been sold in Germany, the Netherlands and Denmark since their launch in 2000.

30 MILLION
PASSENGERS A YEAR: the benchmark reached in December 2011 in the UK when Virgin Trains began running **53 PENDOLINOS ON THE WEST COAST MAIN LINE.** That is double the figure for 2004.

2011 NOVEMBER

ALSTOM OPENS FIRST LATIN AMERICAN WIND TURBINE PLANT

in Brazil's Camaçari industrial complex in Bahia state. The new plant will assemble 1.7 MW ECO 86 turbines and manufacture 3 MW ECO 100s. Brazil is among the fastest-growing wind energy markets and the Nordeste region currently holds the most potential for expanding this clean energy source.

In Russia, Alstom and its partner, TMH, sign a letter of intent with the city of Saint Petersburg, establishing a cooperation programme to develop a modern tramway network adapted to the regional climate.

CORADIA IN SWEDEN

In Sweden, operator, Skånetrafiken, signs a new contract with Alstom Transport to supply 20 additional Coradia Nordic regional trains for €100 million, with delivery scheduled for 2013-2014. In all, nearly 200 Coradia trains of this type have been sold to various Swedish operators since 2002.

INNOVATION AWARDS 2011

After a record 399 entries, on 21 November, 13 teams of finalists from all four Alstom Sectors received gold, silver and bronze medals for their achievements in five categories – Innovative Processes, Innovative Systems and Products, Green Innovation and Small But Smart. A Special Prize was also awarded.

Turkey moves towards rail interoperability. National railway operator, TCDD, chooses Atlas ERTMS*, Alstom's interoperable signalling solution, for the Eskişehir–Balikesir corridor linking Ankara to the Aegean Sea. The contract calls for supply of Smartlock electronic interlocking solutions and Iconis integrated traffic control centres.

*European Rail Traffic Management System, or ERTMS, is a command and control system for trans-European rail traffic. Atlas is Alstom's ERTMS solution.

DECEMBER 2011

ALSTOM CHAIR
FOR SOUTH AFRICA'S ENERGY FUTURE

Inaugurated on 1 December at the University of Witwaterstrand in Johannesburg, the Alstom Chair in Clean Energy Systems is created through a partnership with "Wits" University dating back to 2009.

In a country suffering a dearth of engineers, the Alstom Chair will help train the next generation of engineers specialising in clean energies.

A major contract in Poland names Alstom Thermal Power to supply Elektrownia Rybnik S.A. (ERSA, a subsidiary of French utility, EDF) with the core power generation equipment for a future 900 MW supercritical coal and biomass plant at its Rybnik site. Alstom will provide the boiler and coal milling system along with the complete turbine hall, including steam turbine, generator and balance-of-plant auxiliaries. Commercial operation is planned for 2017.

22 CITADIS TRAMWAYS FOR NOTTINGHAM (UK)

The Tramlink consortium wins the €600 million contract to build and operate two new tramway lines. Under its €350 million share of the order, Alstom will be responsible for construction, power supply and signalling for the new lines. The Group will also supply and maintain 22 Citadis trams and maintain the 15 existing train sets for a 23-year period.

2012 JANUARY

ALSTOM GRID SCORES
A EUROPEAN FIRST IN SWEDEN

Operator, Svenska Kraftnät, chooses Alstom Grid's MaxSine™ HVDC technology.
The new €240 million contract with Svenska Kraftnät covers supply of MaxSine™ high voltage direct current technology for Sweden's 1,440 MW South-West Link. MaxSine™ is based on voltage source converters (VSCs), which Alstom will also supply to the Tres Amigas SuperStation in the United States.

ATLAS ERTMS IN SPAIN

Adif, the Spanish railway infrastructure manager, awards a contract to a consortium led by Alstom Transport. Under the contract, the consortium will build a signalling and telecommunications system for the planned high speed Albacete-Alicante line and provide 20 years of maintenance. The key technology for the project is an Atlas ERTMS Level 2 system, supplied and installed by Alstom.

Europe's largest industrial alliance for carbon capture and storage. Alstom and Drax Power team up with British industrial gas provider, BOC, to develop an oxy-fired carbon capture and storage (CCS) demonstration unit at a Drax site in Yorkshire, England.

Scotland to host world's largest wave energy farm. Alstom partners with SSE Renewables for joint development of a 200 MW wave energy farm in waters over 60m deep at Costa Head in the Orkney archipelago. The partners plan to use the AWS III converter, now being developed by AWS Ocean Energy Ltd., a Scottish company in which Alstom holds a 40% stake.

In France, a consortium led by EDF Energies Nouvelles responds to a July 2011 call for tenders by the French government, bidding to build four of five wind turbines off the coast of Normandy and Brittany. The bid also includes an ambitious plan for expanded manufacturing capacity; as the consortium's exclusive supplier, Alstom proposes to build four new plants for large-scale production of its 6 MW Haliade 150 wind turbine.

In early April 2012, the consortium will be chosen to build three projects with a total volume of around 240 wind turbines. Locating the four new factories in France represents a €100 million investment and will create 1,000 direct and 4,000 indirect jobs.

Denmark to replace entire rail signalling system. Banedanmark, owner of Denmark's rail infrastructure, chooses Alstom Transport to supply and install the Atlas ERTMS system in 12 intercity and regional lines in the country's eastern region, which has the highest rail density. At €300 million, the contract is Transport's largest to date in this segment.

HIGHLIGHTS

1,943 MW
OF POWER IS GENERATED BY THE NINE ALSTOM GT13E2 turbines at Malaysia's Lumut plant, the world's largest combined-cycle gas-fired power plant.

73.5 METRES: RECORD BLADE LENGTH FOR ALSTOM'S 6 MW HALIADE 150 offshore wind turbine.

18 CARBON
CAPTURE AND STORAGE PROJECTS AROUND THE WORLD are managed by Alstom including two planned for China.

6 OUT OF 10 RAIL LINES IN EUROPE USE ALSTOM'S ATLAS ERTMS LEVEL 2 interoperability technology.

FEBRUARY 2012

ALSTOM BECOMES THE FIRST WESTERN SUPPLIER IN RUSSIA'S NUCLEAR MARKET

AAEM, the joint venture created in 2007 by Alstom and Atomenergomash, will supply conventional island equipment for both of the 1,200 MW pressurised water reactors at Kaliningrad's Baltic nuclear power plant.

34 NEW METROPOLIS TRAIN SETS FOR SINGAPORE'S METRO

In a deal worth €240 million, Alstom will supply the driverless trains for the recently completed Circle Line and the North East Line and will upgrade the signalling system for both lines. The new train sets are updated versions of the system's current units, delivered previously by Alstom.

In Tajikistan, Alstom Grid is chosen to install a 500 kV gas-insulated substation for the Nurek hydro power plant. The new GIS unit, which will replace the existing air-insulated substation, will be the first of its kind in Central Asia. The new contract is part of a cooperative relationship with the Tajik national utility, Barki Tajik, dating back to 2000.

1,000 MW COAL-FIRED PLANT IN MALAYSIA

Awarded to a consortium formed by Alstom, this contract calls for delivery of a 1,000 MW supercritical coal-fired plant to Tanjung Bin Energy Issuer of Malaysia. As the leading supplier of power generation equipment in the country, Alstom will provide all key equipment for the plant and will handle engineering, project management and commissioning, planned for 2016. This order from Tanjung Bin comes on the heels of a similar contract for the Manjung power plant now under construction.

In Dubai, the consortium of Alstom and Cofely–Besix FM wins a 13-year contract to maintain rolling stock and fixed facilities to be delivered by the two companies for phase 1 of the Al Sufouh tramway: 11 Citadis train sets, 10 km of track and 13 stations. Dubai is the first city in the Gulf region to install a tramway system and the fifth (after Bordeaux, Reims, Angers and Orléans) to choose Alstom's APS ground-level power supply system.

2012 MARCH

WORLD'S LARGEST WIND TURBINE INAUGURATED IN FRANCE

Haliade 150: 6 MW, 180 metres tall, 1,500 tonnes.
The Alstom Haliade 150 turbine was unveiled during an official ceremony at the Carnet site near Saint-Nazaire, west of France, where it will undergo a series of tests. A twin turbine will be installed off the Belgian coast in 2012.

In Colombia, Alstom Grid signs two turnkey contracts to supply 115 kV gas-insulated substations: one to Neiva, in Huila province, and another to Ecopetrol for the 960 km Bicentenario pipeline, which will be the longest in the country.

In Greece, Attiko Metro and the French-Greek-Italian consortium consisting of Alstom Transport, J&P Avax and Ghella, sign a contract to extend line 3 of the Greek capital's metro to the Port of Piraeus. Alstom's share of the project includes designing and installing power supply systems for traction power, including a third rail.

Customers in the Netherlands and Kuwait choose Alstom's e-terra smart grid solutions. Stedin, one of the largest distribution utilities in the Netherlands, will use Alstom Grid's solutions as part of a strategy to deploy smart grid technologies on a large scale for power distribution and to integrate renewable energy sources into the Dutch grid.

Kuwait's Ministry of Electricity and Water will use Alstom's technology to create a single system for managing medium and high voltage in Kuwait City, to make its grid more efficient and reliable, and to maintain existing equipment.

SNCF ORDERS 30 ADDITIONAL ALSTOM EURODUPLEX TRAIN SETS FROM ALSTOM

SNCF's exercise of the option – a firm order for 30 train sets plus ten more – brings to 95 the total number of very high speed double-decker train sets ordered by the French rail operator. Earmarked to operate in France, Germany, Switzerland and Luxembourg, the Euroduplex trains have signalling equipment compatible with these rail networks, and their traction system is adapted to the various electric currents used across Europe. In addition, the Euroduplex delivers the best operating costs and the highest return per seat. The order for 30 train sets is worth nearly €1 billion for Alstom Transport.

HIGHLIGHTS

16 SMART GRID
DEMONSTRATION SITES ARE OPERATED by Alstom Grid in Europe and the United States.

1,750 MW
record output for Arabelle, the Alstom steam turbine planned for the EPR (European Pressurised Reactor) power plant in Flamanville, France.

50%
NEARLY 50% OF QUEBEC'S HYDRO POWER capacity was installed or retrofitted by Alstom.

1st STONE
THE FIRST STONE OF THE TANGIER-CASABLANCA high speed line was laid on 29 September 2011 in Tangier, with the King of Morocco and the President of France in attendance.

2,375 KM
THE WORLD'S LONGEST HIGH VOLTAGE DIRECT CURRENT LINE is in Brazil and was equipped by Alstom Grid.

OUR VISION

Believing that technology and new business models contribute to solving social and environmental issues, Alstom leads in designing innovative, environmentally-conscious technology solutions for power generation, power transmission and transport.

OUR PRINCIPLES

With Alstom's technologies,
we are shaping the future responsibly:

- Our products are designed to minimise the use of natural resources and safeguard people and the environment.
- Our solutions help our clients limit their impact on the environment and improve the quality of life for local communities.
- Our products and solutions provide access to electricity and facilitate mobility, ensuring sustainable economic growth and social progress.

With Alstom's know-how,

- We lead the way in innovation, working in partnership with our stakeholders to achieve sustainable value chains.
- We work ethically and safely, with respect for people and the environment.
- We are all focused on our values of trust, team and action.

THERMAL & RENEWABLE POWER

Thermal Power and Renewable Power build their offer on an in-depth understanding of power generation markets and customer needs.

To give customers maximum return from assets over the entire lifecycle, the power offer is geared around the three goals that drive Alstom's product and portfolio development strategy:

- keep assets competitive by reducing the cost of power generation,
- make assets increasingly eco-friendly by shrinking their environmental footprint,
- make assets more flexible and reliable, so that they can adapt to fluctuating power and fuel markets and generate the necessary electrical load with maximum reliability, availability and ease of maintenance.

Generating reliable, competitive, eco-friendly power.

Workers retrofit a GT11N gas turbine at the Tung Hsiao power plant in Taiwan.

ALSTOM THERMAL POWER

ALSTOM OFFERS ITS CUSTOMERS SOLUTIONS WHICH HELP SECURE ACCESS TO POWER FOR THE GREATEST NUMBER

In a world where more than a billion people still have no access to power and the population continues to grow, there are many challenges. Everyone is aware of the economic, social and environmental importance of sustainable growth, but priorities vary sharply from country to country: environmental issues are often the first concern in developed countries, while emerging countries naturally focus on the social impact of universal access to power, local job creation, education and economic considerations.

In response to these challenges, Thermal Power has developed an offer that gives customers a decisive advantage, both by maintaining their installed base and by ensuring that they can deliver safe power at a reasonable cost. And by offering back-up power supplies, renewables increase their share in the energy mix. Though fossil fuel combustion remains the leading cause of greenhouse gas emissions, coal will continue to play a major role in power generation because it is easily accessible and widely available. As a result, making power plants more energy-efficient and developing carbon capture solutions are critical to reducing emissions.

The challenge is offering our customers integrated solutions which let them deliver power to the greatest number of people at an acceptable cost so that sustainable economic development continues and everyone enjoys a higher standard of living, while limiting effects on the environment and health.

Philippe Cochet
President, Alstom Thermal Power and Executive Vice-President of Alstom

80%
In 2011, 1.3 billion people had no access to electricity. Of that population, 80% lived in rural areas.

WORLD-CLASS TECHNOLOGIES
PRODUCTS AND SERVICES

The market for power generation equipment closely tracks the ups and downs of the world economy. In the United States and Western Europe, the crisis and its attendant uncertainties slowed power consumption and, as excess capacity weighed on the existing infrastructure, construction of new thermal plants.

With most plant operators continuing to postpone investments in new facilities, the recovery that began in autumn 2010 has yet to produce a genuine rebound in demand in these regions.

But this has an advantage: as the installed base ages and the environment continues to be a concern, the need to modernise and replace equipment becomes more acute – a trend that continued in 2011/12.

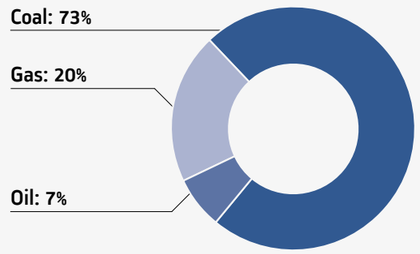
In India, China and other fast-growing countries, by contrast, vigorous growth drove power consumption, and with it, the need to build new production units. As in the previous financial year, these markets accounted for around 60% of Thermal Power's orders.

Although the market for new thermal plants was down overall, Thermal Power booked €9.8 billion in orders, up 17% over 2010/11, with the second half showing stronger growth as expected.

Sales came in at €8.7 billion, up 10% over the previous year, but still reflecting the drop in orders during the recession. Meanwhile, Thermal Power has expanded its production capacity in developing markets, building a new steam turbine plant in India with Bharat Forge and forming partnerships with Renova and RusHydro in Russia.

A WORLDWIDE PRESENCE
An industrial presence in 70 countries, with 30 production sites, over 50 engineering and R&D performance centres and 37,500 employees.

2008 CO_2 EMISSIONS FROM POWER GENERATION
By fuel type



5 POINT STRATEGY:
1. Continue expanding services for the installed base.
2. Boost component sales while continuing to offer integrated turnkey solutions.
3. Expand our presence in the 60Hz market.
4. Broaden our product portfolio.
5. Strengthen our presence in Asia, Russia and the Middle East.

The Lake Road KA24 combined-cycle plant in Connecticut delivers output of 800 MW.

THE UN HAS DECLARED 2012
the "International Year of Sustainable Energy for All".

4,169 GW
of additional capacity to be built from 2009 to 2035.

ACCORDING TO THE INTERNATIONAL ENERGY AGENCY (IEA),
the cost of decarbonising our electricity supply (i.e. removing CO_2) without using CCS technology will be 70% higher in 2050.

NEW NUCLEAR PARADIGM

The Fukushima accident naturally affected the nuclear renaissance that began several years ago, as Germany and Italy pulled out of nuclear power and other countries put existing or planned programmes on hold. But more than 30 countries still have a nuclear power programme. During financial year 2011/12, India ordered a steam turbine – and chose an Alstom-BHEL partnership to supply it. Russia, which had already begun implementing plans to replace its oldest plants, opened its doors to Alstom by awarding two contracts to the Group in rapid succession: one covering five emergency diesel generators for the first of four phases in the Leningrad II power plant project in Sosnovy Bor near Saint Petersburg, and even more importantly, an order for conventional islands to equip the two 1,200 MW units in the Kaliningrad region's Baltic power plant. Service activities for nuclear power plants, which account for half of Thermal Power's nuclear business, remained significant in 2011, with several projects involving retrofits of nuclear steam turbines in the United States and Finland.

CLEANER COAL

The slowdown in Chinese and Indian demand for new coal-fired power plants impacted the market, even though new plants were ordered in the Middle East and Southeast Asia. In Europe, Poland continued to make its installed base greener, awarding a contract to Thermal Power to supply key components for a new 900 MW ultra-supercritical power plant fuelled with coal and biomass.

Germany commissioned the Neurath power plant, which features cutting-edge boiler, turbine and generator technologies made by Alstom.

Amid rising needs for electricity in emerging countries and continued progress towards more efficient combustion and lower emissions, coal will surely continue to play a dominant role in coming years.

With that in mind, Alstom and Shanghai Electric have begun talks on creating a joint venture that would lead the world boiler market. If completed, the agreement would give Alstom access to the enormous Chinese market.

Germany's Neurath supercritical power plant, built by RWE Power AG.

CCS UPDATE

Alstom is conducting or laying the groundwork for a total of 18 carbon capture and storage (CCS) demonstration projects around the world and new customers are expressing interest in this new weapon against global warming. In China, the Group signed a memorandum of understanding to form a long-term partnership with China Datang Corporation to build two pilot sites linked to two coal-fired power plants. In Great Britain, Alstom and Drax Power have partnered with industrial gases provider, BOC, to build a demonstration unit in Yorkshire. The project will link into the CO_2 transport and offshore storage network currently being developed by National Grid, the UK's national power company.

INCREASING INTEREST IN NATURAL GAS

But the most promising signals are coming from the booming natural gas market. Single and combined-cycle gas plants are increasingly attractive, thanks to their advantages in cost, efficiency and emissions – and versatility, since they can be used both to generate electricity and to power industry. As a result, Thermal Power booked a number of large orders in 2011. These included Singapore (KMC), Mexico (El Sauz GT24 plant retrofit) and, marking Alstom's return to the country, Iraq (Al Mansuriya). In another increasingly valuable feature for environmental protection and grid efficiency, Alstom's offer is highly responsive: plant output can be adjusted based on the flow of renewable energies – and particularly wind power, which is inherently intermittent – into the grid.

China is also increasingly interested in natural gas, and particularly in exploiting its ample shale gas reserves.

Workers test a GT26 gas turbine.

CHINA'S POWER DEMAND WILL TRIPLE BY 2035, requiring new construction equivalent to the generation capacity of the United States.

FORECAST FOR 2050: 9 billion human beings, with 70% in urban areas, up from 50% in 2011.

BY **2035**

NON-OECD COUNTRIES are expected to account for 90% of demographic growth, 70% of world economic growth, and 90% of growth in demand for energy (IEA).

NEXT-GENERATION GAS TURBINES

In response to rising demand for gas-fired plants, Thermal Power launched a concentrated Research & Development effort to enhance its gas turbines. The new generation of Alstom's powerful GT24 and GT26 turbines was launched in 2011, along with a corresponding range of combined-cycle power plants: the KA24 plant for 60Hz markets in the Americas and Asia and the KA26 plant for Europe, Asia, the Middle East and other 50Hz markets. When operated in a combined-cycle, 2-on-1 configuration*, the next-generation GT24 turbine can deliver 700 MW of output with 60% efficiency. The GT24 also increases operating time between scheduled inspections by more than 30%, resulting in higher availability and lower maintenance costs. The next generation GT26 turbine delivers over 500 MW of output with 61% efficiency when operated in a combined-cycle, 1-on-1 configuration**, while the GT13E2 turbine was already the top performer in its category, with efficiency of 38% in a single cycle configuration. The latest version of the GT13E2, which recently went into operation, delivers 200 MW of output, a 10% increase. These three next generation turbines give customers the flexibility they need to supplement intermittent power outputs quickly.

THE ACKNOWLEDGED SERVICE EXPERT

Thermal Power's Research & Development programmes are very broad. Focus areas include upgrading and modernising plant components (turbines, generators, boilers and air quality control systems), inspection technologies, control and diagnostic systems and technologies that increase plant efficiency and improve lifecycle management.

The Sector has used its acknowledged expertise in these areas to win a variety of contracts. These include modernising LPGC's gas-fired power plant in California and AEP's coal-fired power plants along the US East Coast, upgrading the Ruwais desalination plant in the UAE, and converting Kuwait's Az-Zour gas-fired plant from single to combined-cycle operations. Modernisation and extending the life of existing plants is another Thermal Power speciality. The Claus C project in the Netherlands, which involved integrating three new GT26 turbines into an existing steam system, was completed in 2011 and is now a showcase for Alstom's expertise.

* Two gas turbines and one steam turbine
** One gas turbine

A Dubal Aluminium plant powered by a GT13E2 gas turbine.

The Langage combined-cycle plant in the United Kingdom features a highly streamlined design.

INTERVIEW - DANIEL GAGNIER

Chair, International Institute for Sustainable Development*

"Change society by helping everyone understand what companies do."

Is it safe to say that we're living through an energy revolution?

D. Gagnier: "I'd rather say we're living through an economic transition. It's a dramatic one, to be sure, but it's going to last for several decades. So we should think of it not as a revolution but as an evolution. Let's face it: we don't have the means to change it all at the same time. The evolution will come slowly, as new standards and new materials are gradually adopted and renewable resources and clean technologies are developed. It won't be a linear process. We'll make mistakes. But ultimately, 20 or 30 years from now, the world will have changed dramatically."

What does society expect?

D. Gagnier: "Our societies are ravenous power consumers. None of us will suddenly stop consuming power for our domestic needs. At the same time, societies are gradually internalising the problem of sustainability. The question is no longer 'Must we change?' but 'Change to what?'. And their awareness doesn't move in a straight line. The economic crisis is having a direct impact on them. If we can't offer satisfactory quality of life today, it's pointless to talk about what the world will be like in 20 years."

What role can businesses play?

D. Gagnier: "The purpose of a business is to grow in order to generate profits for its shareholders, but also – and this is more and more the case – benefits for society in general. Bringing power to people who haven't got it is a huge challenge, because ideally it should happen with minimal impact on the environment. So we need businesses that take an educational approach to these issues. When they can show the environmental benefits of their products, customers will not only be willing to buy them – they'll even be willing to pay a little more." ■

* The International Institute for Sustainable Development is a Canadian organisation that champions sustainable development worldwide through innovation, partnerships, research and communications.

2/3 carbon-free energy and 1/3 coal + gas (versus 2/3 coal + gas and 1/3 carbon-free today): that is the diversified, low-carbon (60g/kWh) worldwide mix recommended by the IEA for 2050.

Russia plans to increase the share of nuclear in its power generation mix to 30% by 2030.

ALSTOM RENEWABLE POWER

ALSTOM IS WORKING ON TOMORROW'S RENEWABLES TODAY

All our customers are eager to generate planet friendly CO_2 free power and to increase the proportion of renewables in their energy mix. We help them reach their goal by providing technology that is as diversified as possible, offering a multi-product approach that covers every type of renewable except for photovoltaic energy.

Our own goal is to ensure that CO_2 emission-free solutions are a major component in Alstom's power generation offer, through organic growth of our current business, through development of tomorrow's new technologies and, where appropriate, through acquisitions that create value.

At the same time, we work tirelessly to optimise our production costs so that solar and onshore wind power (the mature intermittent energy sources) can reach grid parity without subsidies. As we have seen in Europe, subsidies help launch fledgling technologies but become inefficient and are reduced when new energies reach maturity. As the market gradually reaches critical size and our fixed costs and product costs fall, we will be better able to make our customers competitive without subsidy programmes – though subsidies are still required to develop the renewables of tomorrow, such as the technologies of offshore wind and tidal power.

And naturally, we continue to work on shrinking the environmental impact of our products and facilities. To take just one example, our wind turbines (both onshore and offshore) now leave a smaller footprint even though they are more powerful.

Jérôme Pécresse
President, Alstom Renewable Power and Executive Vice-President of Alstom

An ECO 100 wind turbine in Colorado (United States).

25%

ELECTRICITY GENERATED by renewables now totals 1,320 GW, or 25% of total installed capacity.

PROVEN, INNOVATIVE EXCELLENCE FOR A BOOMING WORLDWIDE MARKET

Amid declining fossil fuel reserves, rising fuel prices, more rigorous environmental laws and new incentives to develop CO_2-free energies, the past decade has seen an unprecedented boom in renewable energies worldwide.

The global market for hydro power equipment (by far the largest of these renewable markets) slowed in financial year 2011/12 as major projects in China were postponed. The Chinese market, outpacing Latin America to rank as the world's largest, accounts for around half of worldwide investment. Meanwhile, Europe holds strong potential for pumped storage. As the only technology able to store energy on a large scale, pumped storage hydro power is especially well suited for integrating intermittent energies. And Alstom is a specialist, delivering this technology to over 30% of the pumped storage market.

Wind power is the second largest market for renewable energies and sales of Alstom equipment have remained solid despite sharp competition. Though the market has been dominated by Europe and the United States in the past, emerging countries – especially China – now account for over half of it.

Europe ranks second, followed by the United States and Brazil, and the market should continue to grow steadily as offshore business expands.

New energies are expected to generate the strongest growth. A number of projects are underway in geothermal power, biomass, and even solar thermal, varying with regional resources. Alstom is involved in all these technologies, as well as the marine technologies, though they are not yet ready for commercialisation.

3 POINT STRATEGY

1. Remain the leader in hydro power by tailoring our offer to the special needs of each market and maintaining the most competitive cost structure.

2. Expand our wind power offer, especially offshore and become a leader in the segment.

3. Expand the "new energies" segment of our portfolio – marine (including tidal and wave energy), geothermal, and solar thermal – and establish a presence in promising regions.

The Bujagali hydro power plant will double Uganda's generation capacity.

THE MASDAR SMART CITY PROJECT (the name means "source" in Arabic) near Abu Dhabi runs exclusively on renewable energies, primarily solar power.

25 GW

MORE THAN 25 GIGAWATTS OF PHOTOVOLTAIC POWER were connected to the grid in 2011, with Europe accounting for 75% of that total. A record!

TEN YEARS FROM NOW, renewable energies should account for 40-45% of power plant output.

The fast-growing renewable energy market generated orders totalling €2 billion for Alstom Renewable Power, a 5% increase over the previous financial year. Well positioned to meet the challenges of clean technologies by closely matching each market's special needs, the new Sector expects to contribute a strong share of the Group's business after a year spent launching new products and consolidating manufacturing and technological resources.

HYDRO POWER: THE ORIGINAL GREEN ENERGY SOURCE

In 2011/12, Renewable Power won a number of large orders for hydro power, one of the Group's historic strengths, moving into new markets and strengthening its worldwide manufacturing base, particularly in India and Brazil.

In Russia, the Sector signed two contracts with RusHydro: one to modernise the nine power plants (including one pumped storage plant) in the cascade hydro power complex on the Kuban River in the country's southern region and the other to build a joint equipment factory in Ufa City in the Republic of Bashkorstostan. In India, which has begun expanding its hydro power infrastructure to reduce its dependence on fossil fuels, Alstom won four contracts to build new power plants. One of the four, signed with Tehri Hydro in Uttarakhand, is for a 1,000 MW variable speed pumped storage plant, which will be the first in the country. Variable speed, the latest innovation in pumped storage, adds to the technology's efficiency and flexibility in storing electricity on a large scale. In Brazil, where Alstom holds nearly 40% market share, Renewable Power will supply and commission key components of the Santo Antônio do Jari plant in the Amazon region and will do the same for the new 450 MW Chaglla dam in Peru. The Sector also has a strong presence in Turkey, which has decided to step up power generation and to increase the share of renewables in its energy mix. Renewable Power will supply equipment for power plants at two new dams, at Artvin in the northeast and at Beyhan in the east.

Renewable Power also won contracts to retrofit the installed base, one of the Group's primary business areas. Examples include key projects in Canada, where Hydro-Quebec chose Alstom to modernise northern Quebec's 5,600 MW Robert-Bourassa complex, the world's largest underground hydro power plant with 16 underground units, and in Sweden, where Vattenfall Vattenkraft AB has tasked the Sector with refurbishing and upgrading the Laxede power plant, one of 15 located along the Lule River in the north.

The world's aging hydro power installed base holds so much potential for business that Alstom has established a new site to leverage its experience and develop innovative new processes. The new facility is the Sorel-Tracy technology centre in Quebec, Alstom's first worldwide facility dedicated entirely to retrofitting existing plants.

HYDRO: A WORLDWIDE NETWORK

Hydro has a global network of five technology centres: the large-scale testing laboratory in Grenoble, France, the specialised generator centre in Birr, Switzerland, the Pelton turbine testing centre in Vadodara, India, the new Sorel-Tracy centre in Canada, for retrofitting existing plants and the facility in Taubaté, Brazil, which will soon welcome a unit specialising in Kaplan turbines.

The Pont Baldy hydro power plant in France generates 18 million kWh annually.

OFFSHORE WIND ENERGY

Alstom is already the supplier to nearly 130 wind farms worldwide, including sites in India and Japan. Pursuing its global strategy to expand renewable energies and invest in emerging countries, the Group is aiming for a leading position in the wind market, both onshore and offshore. In November 2011, the Group inaugurated its first wind turbine assembly facility in Bahia, Brazil. The plant will supply ECO 86 turbines to three wind farms for Brasventos S.A. in Rio Grande do Norte, which will power more than 100,000 households.

Also in 2011, the 3 MW ECO 100 wind turbine at the National Renewable Energy Laboratory (NREL) in Boulder, Colorado went into operation. This turbine reflects the successful long-term strategic cooperation agreement between Alstom and NREL. Alstom has already built a wind farm in Minnesota and a nacelle assembly plant in Amarillo, Texas. Another ECO 100, the first of seven units, was installed in Senkoy in southern Turkey, and a group of Alstom wind turbines went into operation in Whitelee, Scotland – the first of 75 planned for the expansion of Europe's largest wind farm.

The first Haliade offshore wind turbine, at the Carnet site in France.

WINDFALL SAVINGS

The 2.7 MW ECO 122 turbine, the latest in Alstom's onshore range, sets a new standard for locations with light winds. With a swept area of nearly 12 hectares – the most powerful in the 2-3 MW segment – it boosts wind farm yield by 25%, reducing the number of turbines required.

WAVE ENERGY
– available throughout the world –
is estimated to be capable of generating
200-300 GW of power.

30 M DOWN

30 METRES BELOW THE SURFACE,
the Beluga 9 tidal turbine will operate in
powerful 9 knot currents, equivalent to
150 km/h winds.

NO.1

THE UK HAS EUROPE'S LARGEST TIDAL ENERGY RESERVES in Europe with 5-6 GW, followed by France with 3 GW.

But the biggest breakthrough is expected to come in offshore wind. To move into this highly technical but very promising market, Alstom developed the 6 MW Haliade 150 wind turbine, which has the longest blades in the world. Following the French government's ambitious decision to increase renewable energies to 23% of total power generation by 2020, an EDF Energies Nouvelles-led consortium selected the Haliade for a bid to build five initial offshore farms totalling 3 GW. Alstom and EDF Energies Nouvelles won the contract for three of them and the deal will enable the Group to build four new French factories specialising in the manufacture of offshore wind turbines, both for the French market and for export. Mass production is expected to begin in 2014.

NEW ENERGIES ARE MAKING WAVES

With over 350 MW installed geothermal power to its credit, Renewable Power is an established player in the geothermal market. The same is true of biomass: the Sector brought in two new contracts for plants in Plainfield, Connecticut and South Boston in the United States. In solar thermal power, the Group's recent investment in the US company, BrightSource Energy Inc. expanded its range of concentrated solar power (CSP) solutions, which are increasingly playing a key role in renewable power generation. The Sector has also begun a special effort to develop new power generation technologies using reliable, carbon-free marine energy.

The rotor prototype for the Beluga tidal turbine.

In tidal energy, Alstom is developing the Beluga 9 – its first 1 MW tidal turbine and the product of a cooperation agreement with the Canadian company, Clean Current – and will conduct preliminary tests in 2013 in Canada's Bay of Fundy, which has the some of the world's strongest currents.

The Beluga will be followed by the Orca 7, designed for less powerful currents. Rounding out its portfolio of marine technologies, Alstom has also invested in wave energy by acquiring a 40% stake in Scotland's AWS Ocean Energy, which has developed a wave energy generator. The 2.5 MW AWS III, a device that floats at depths of 65-150 metres, will undergo large-scale testing beginning in 2012 and then be deployed at Costa Head, the site that Alstom and SSE Renewables, Scotland's leading producer of marine energy, plan to create in the Orkney archipelago. At 200 MW of output, the facility will be the largest in its category.

INTERVIEW - PAAL FRISVOLD

Chairman, Bellona Europa*

"Be part of the solution."

Why do we need to start thinking about renewable power generation?

P. Frisvold: "Because we're headed for a carbon-constrained world. Little by little, people are accepting the idea that the future is zero emissions. For energy specialists, this is a fascinating time. Of course, we still have a long road ahead. It's true that renewable energies have grown significantly since Kyoto, but we all need to do more. In my view, there is no one universal solution, and we need to have the humility to admit that. We also need to explain to the public that fighting global warming doesn't mean giving up travel, manufacturing, eating meat and so on...
We have the technologies. We just need to get more people to use them."

What is the challenge for business?

P. Frisvold: "The challenge is to look ahead. Businesses should already be looking beyond 2020 to 2040.

By then, the world will have changed dramatically, because global warming will be a reality.

The question for business is how to stay competitive in a world that will be radically different, with new constraints and new opportunities."

* The Bellona Foundation is an international environmental NGO, founded in 1986 and based in Oslo, Norway.

How can businesses help build this new society?

P. Frisvold: "They can start by beginning to change their position.
For a long time, businesses have been part of the problem. Now they need to become part of the solution.
I don't think NGOs or governments are going to change the world. Businesses will.

With all the technological know-how they've accumulated, they are the only ones with the legitimacy to start and maintain the conversations that will get us on the right paths and help us find solutions for the future.
One of the reasons I got involved is to convince them of that." ■

50%

SCOTLAND IS ON THE CUTTING EDGE of marine energy development and plans to generate 50% of its power with these technologies by 2020.

20%

HYDRO POWER still supplies only 20% of Russia's power needs, compared with 66% from thermal and 11% from nuclear.

CANADA'S 475 hydro power plants supply 60% of its electricity, or 13% of annual production worldwide.

ALSTOM GRID

ALSTOM DEVELOPS SOLUTIONS FOR RELIABLE, CLEAN AND SMART POWER TRANSMISSION

Grid is at the forefront of today's challenges in energy and the environment: we are building tomorrow's grid, the infrastructure that will link users to every kind of power source — thermal, hydro, wind and solar. Our customers include major transmission, distribution and renewable operators, infrastructures as well as power-intensive industries such as aluminium plants. Power transmission systems must be reliable and efficient and keep losses to a minimum, like the ultra high voltage direct current links that transmit power over long distances at ever higher voltages. Transmission must also be intelligent, integrating intermittent energy sources without sacrificing the all-important balance in the power supply and anticipating peaks in demand to avoid using *ad hoc* generation capacity, which often comes from non-renewable energy sources. To meet this challenge, we need grid analysis and management tools that optimise the relationship between supply and demand. That is the essence of smart grids.

Power transmission must also be eco-friendly and discreet, creating the smallest possible visual and physical footprint and complying with increasingly stringent regulations. For all these reasons, it is essential for Alstom Grid to use sustainable solutions and develop replacement technologies. In Sweden, for example, operator, Svenska Kraftnät, is constructing a high-performance HVDC link between the centre and south of the country that will provide rural areas with better power at a comparable cost. Finally, we are working to make our installations attractive and architecturally sophisticated – a request that more and more Alstom customers are making – and to minimise their impact on forests and other natural habitats. The lighter and cleaner we can make our equipment, the less impact it will have on the environment and the more competitive it will be.

Grégoire Poux-Guillaume
President, Alstom Grid and Executive Vice-President of Alstom

HVDC link between Denmark and Sweden Lindome Station, Sweden.

NEW POWER TRANSMISSION TECHNOLOGIES using high voltage direct current (HVDC) reduce line losses by 30% compared to conventional alternating current.

AGENT OF CHANGE:
MOVING TRANSMISSION SYSTEMS TOWARDS TOMORROW'S GRIDS

Increasing power generation capacity and integrating alternative energies have had a direct impact on the worldwide transmission market.

Led by China, India and Brazil, major emerging countries are adding new generation capacities. As a result, they are investing massively to expand their existing alternating current systems and increasingly, they are installing direct current systems over very long distances to support their industrial growth and deliver electricity to the greatest possible number. Meanwhile, industrialised nations are modernising their infrastructures, which are now expected to achieve maximum reliability – especially because they are required to use increasing volumes of renewable energy. This in-depth modernisation is supported by smart grid deployment and by the trend toward powerful interregional and transcontinental super grids, which will soon be intercontinental.

Over the medium and long term, all these factors will spur market growth, particularly for high voltage direct current (HVDC) systems and smart grids, driven by a triple imperative: reliability, safety and efficiency. In 2011/12, Alstom Grid won a number of large contracts in the United States, Sweden and other markets, made a successful return to Iraq, consolidated its leadership position in offshore installations and other specialities and forged key partnerships in China, Russia and the United States, thus making major strides towards achieving its strategic objectives. Orders now stand at some €4 billion.

In a rapidly changing market, Alstom Grid offers a comprehensive range of well-established products and services, backed by its technological expertise, its capacity for innovation and its worldwide industrial and technical presence.

MARKET-LEADING PRODUCTS AND SOLUTIONS

Alstom Grid provides integrated and customised turnkey solutions for both alternating and direct current to the entire transmission sector and is one of the main providers of high voltage alternating current (HVAC) and ultra high voltage alternating current (UHVAC) air- and gas-insulated electricity substations, including 765 kV units installed in India and other key markets.

3 POINT STRATEGY

1. Maintain our competitiveness in the global smart grid market by assisting customers with systems deployment.
2. Expand our range of long-distance HVDC transmission solutions (super grids).
3. Increase market penetration in the conventional AC segment.

An instrument transformer at the Alstom site in Ludwigslust, Germany.

ALSTOM GRID AROUND THE WORLD

- 5 technology centres in the United Kingdom, the United States, France and China.
- More than 90 production, engineering and R&D sites worldwide, including eight in India.
- World leader in offshore electrical substations.
- 4,000 electrical substations installed across all continents.
- 1,000 new transformers delivered every year.

20/20/20

The European Union has pledged to reduce greenhouse gas emissions by 20%, meet 20% of energy needs with renewable sources and achieve an additional 20% savings in primary energy consumption, all by 2020.

€60 BILLION

By 2020, the market potential for HVDC technologies will reach €60 billion.

Alstom Grid also supplies offshore wind equipment, with self-floating, self-installing substations now serving major wind farms off the United Kingdom and Northern Germany.

The market's number-one supplier of disconnectors and circuit breakers (72-1,200 kV), Alstom Grid is also one of the leaders in gas-insulated substations and lines (GIS and GIL). In one telling example, the Sector received a major order from TransGrid, Australia's largest power transmission provider, which had never before awarded a GIS project of comparable scope to a single company. Alstom's substations incorporate technical innovations that set them apart from the competition – smaller size, reduced volume of SF_6 gas and a compact design in line with the growing need for these facilities in cramped urban environments.

Lastly, Alstom Grid is a major player and pioneer in transformer technology. Its demonstrated expertise recently led to a strategic cooperation agreement with Chinese Electric Power Equipment and Technology (CET) to develop and manufacture 1,100 kV and 800 kV transformers for ultra high voltage direct current transmission systems.

Alstom has made substantial investments to increase plant capacity – at sites in Stafford (United Kingdom), Rocklea (Australia) and Saint-Jean sur Richelieu (Canada), for example – and has set up a cutting-edge UHVDC test unit at its facility in Canoas, Brazil.

DEPLOYING SMART GRIDS

Digital information systems improve operating performance considerably by providing operators with comprehensive, real-time data on grid conditions. A key driver in the transformation of power networks, smart grids are a strategic priority for Alstom, which is firmly positioned at the forefront of this new market. A substantial R&D budget is dedicated to smart grid technology, with 16 demonstration projects currently in operation around the world. Alstom Grid offers transmission and distribution operators an integrated, customised approach, based on digital equipment and software solutions. These systems have already been successfully rolled out for leading customers in Canada, Denmark, South Africa and France, and will soon be deployed in Russia under an agreement signed with FSK, the state-owned electricity transmission firm. Alstom's smart grid solutions are geared around two main technologies for network management and substation automation. The first is built on Alstom Grid's *e-terra* software, the brain behind the operator's control and command centre, managing power generation, transmission, distribution and sales.

Consider just one example: the renewable energies control room at Energinet.dk in Denmark, a country that generates more than 30% of its energy from renewable sources. Every day, the control room integrates this renewable input, balancing the energy load from thermal sources with power from wind farms. Two acquisitions have reinforced Alstom Grid's leadership position in this field: Psymetrix, a network security specialist and UISOL, worldwide leader in demand response applications and developer of DRBizNet. In addition, Alstom Grid and its US partner, S&C Electric Company, have developed an integrated smart grid solution, combining its integrated distribution management system (IDMS) software platform with IntelliTeam SG, S&C's automatic restoration system.

Alstom Grid and its US partner, S&C Electric Company, have developed an integrated smart grid solution combining its integrated distribution management system (IDMS) software platform with IntelliTeam SG, S&C's automatic restoration system.

The second essential technology for Alstom smart grid solutions is automation systems for electrical substations. A digital substation combines command systems, protection relays and digital sensors in a single facility, as well as providing real-time data on these components to the control room. As part of its strategy to develop tomorrow's smart grid substations, Alstom Grid is building a specialised site in Montpellier, France that will showcase its digital technology expertise.

TRANSMISSION: NEW SHAPE, NEW SPEED

Countries with the largest land mass are setting up grids operating at ever higher voltages. In China, Alstom Grid has partnered with China Electric Power Equipment and Technology, a subsidiary of State Grid Corporation of China, to develop 1,100 kV direct current electricity transmission systems – a strategic agreement that will pave the way for other major HVDC projects, especially since Alstom has already entered into partnership with another SGCC subsidiary.

In India, where the electricity transmission market is growing 10% annually owing to investments in ultra high voltage systems (up to 800 kVdc), Alstom Grid and Power Grid Corporation of India, the country's main operator, have signed a memorandum of understanding on joint development of a 1,200 kVac system. In Russia, Alstom Grid and KER, a local electrical engineering specialist, have formed a 50/50 joint venture to design and manufacture equipment for HVDC projects, like the effort to connect Finland with the line linking Vyborg, Russia to the Leningrad II nuclear power plant (LAES-2).

The control room for the IFA 2000 project linking France to the United Kingdom.

A UNIQUE SELF-FLOATING SUBSTATION FOR MEG 1

The MEG 1 wind farm, 45 km north of the island of Borkum in the German North Sea, will benefit from Alstom Grid's latest-generation offshore substation: entirely built on land, with all the electro-technical components for its four transformers already installed, the platform will be towed into position, where it will lift quasi-automatically into its operating configuration in record time. Supplied by a consortium including Alstom Grid and its German partner, SIAG Schaaf Industrie, the substation will connect eighty 5 MW wind turbines to the public grid beginning in 2013.

In India, all conventional electricity suppliers **MUST INTEGRATE AT LEAST 5% RENEWABLE POWER** into their total generation capacity.

Ideally suited to solar projects, India receives between 1,600 and 2,200 kWh/m² of solar radiation per year, the equivalent of **6 BILLION GWH OF ENERGY PER YEAR**.

9.8 BILLION DOLLARS

According to Pike Research, this is the amount Europe's smart grid market will be worth by 2017. HVDC links can transmit three times more power than conventional high voltage lines.

A UHVDC transformer for the Rio Madeira project.

The partners also plan to create an HVDC engineering centre in Saint Petersburg.

Evolving toward the super grid of the future requires efficient, reliable solutions. High voltage direct current (HVDC) systems, which can transmit three times more electricity than alternating current (AC) systems over the same infrastructure, offer greater stability and improved control, can adapt to all voltages and frequencies, and can be used in conjunction with AC transmission.

For all of these reasons, HVDC is becoming the clear technology of choice for long-distance transmission.

To enhance direct current performance, Alstom Grid has refined its voltage source converter (VSC) technology and in 2010, launched HVDC MaxSine™, the ideal solution for connections between offshore wind farms and the grid, and for multi-terminal smart grid applications. This technology will also interconnect the three main US electrical grids (Eastern, Western and Texas) via the Tres Amigas SuperStation, the world's first energy transmission hub and the largest smart grid project in the United States.

HVDC MaxSine™ technology will have its first European application in Sweden, where national grid operator, Svenska Kraftnät, chose Alstom Grid technology for its South-West Link project.

ALSTOM'S SMART GRID SOLUTIONS FOR WECC

The Western Electricity Coordinating Council chose Alstom to supply key components for the Western Interconnection SynchroPhasor Programme (WISP), including its e-terravision and PhasorPoint software solutions. When complete, the WISP project will involve 18 power companies deploying over 340 phasor measurement units and will cover nearly all of 14 states in the western US, as well as two Canadian provinces and a portion of Mexico's Baja Peninsula.

The Sector will deliver HVDC converter stations for both ends of the line, as well as all related systems and equipment for the new 1,440 MW, 400 kV HVDC line, which will cover southwest Sweden and will later be interconnected with the Norwegian grid.

Connecting large-scale production directly to renewable energies and multi-terminal direct current networks is one of Alstom Grid's key R&D objectives.

Embedded power electronics are a key element in the evolution of long-distance AC transmission systems.

Alstom Grid's range of flexible AC transmission systems (FACTS) offers radical improvements in reliability. These include Alstom SVC MaxSine™ Static VAr Compensators (SVCs). Designed for offshore wind farms and power-intensive industries, these solutions significantly reduce disruptions in AC power supply.

INTERVIEW - ANDRÉ SANTINI

Former Minister, Supervisory Board Chair of Société du Grand Paris, Député and Mayor of Issy-les-Moulineaux.

"Preparing for the revolution in energy and the economy."

What are the sustainability challenges for a community like Issy-les-Moulineaux?

A. Santini: "A mayor's first responsibility is to prepare his city to meet the challenges of tomorrow as successfully as possible. That is why we invested in digital technology starting in the mid-1990s. Today, Issy-les-Moulineaux is connected, so we want to be in the forefront of the new challenge – urban energy and operational ecology, which means ecology at every level of daily life."

What choices has the city made to do that?

A. Santini: "By 1991 we had already signed an environmental charter, and for many years Issy-les-Moulineaux has applied a very high standard of environmental quality to the construction of public facilities. Three years ago, we took the next step. We began working with construction industry professionals to ensure that our building projects would consume less energy and comply with stricter standards than required by France's Grenelle environmental law. All the stakeholders in the sector signed the Isséo charter, which covers all new construction – office, residential and commercial – anywhere in Issy-les-Moulineaux. The charter is now being updated to look ahead to new challenges."

With its eco-friendly developments and IssyGrid, the town is a green pioneer. What are Issy's goals?

A. Santini: "IssyGrid has become a model well beyond Issy-les-Moulineaux. We're at the beginning of a revolution in energy and the economy. With power supply becoming tighter and tighter, IssyGrid represents a solution for the energy challenges of the next few years. It addresses the need for diversified power generation, growing price pressures and the emergence of electric vehicles and other lifestyle changes." ■

16%
of world power output never reaches end users. **HVDC LINKS** offer the benefit of significantly lower transmission losses.

$3.4 BILLION
In 2009, the US government announced a $3.4 billion plan to develop smart grids in the United States.

ALSTOM TRANSPORT

ALSTOM DESIGNS RAIL TRANSPORT PRODUCTS THAT TAKE INTO ACCOUNT A KEY ELEMENT: ENERGY EFFICIENCY

Rail is more sustainable than any other mode of transport. At Alstom, we strive constantly to make it more efficient. One of the main areas of focus for our trains is energy efficiency. With power consumption increasingly taking a larger share of their budgets, our customers are paying close attention to sustainability.

Not only are more of our customers asking us for energy diagnostics, their sustainable development requirements are becoming more complex. As an example, consider the specifications for the Amsterdam metro: reduced weight, regenerative braking, less noise, a higher rate of recyclability – plus water-soluble paints.

Customers are also sensitive to the social aspects of sustainable development, such as accessibility for the elderly and the disabled. In some calls for tenders, especially in France, as much as 20% of our score can depend on sustainable development criteria. This includes social, environmental and energy-related requirements, as well as health and safety. As a result, Alstom Transport's high scores on these criteria give us a competitive edge.

In terms of mobility, the car has reached its limits, as measured either by top speed, which is limited in nearly every country, or by average speed, which is limited by congestion. Only trains can give us better mobility – not merely because of their high capacity, but because their speed is not limited. That's why it isn't unusual for people to commute on a very high speed train, with ever increasing distances between home and work. And mobility breeds mobility, which is why some economists are saying that this potential is a key factor in economic growth and that the future lies in rail.

Henri Poupart-Lafarge
President, Alstom Transport and Executive Vice-President of Alstom

Citadis tramway, Angers - France.

EXPO 1,520

The name of the international rail industry meeting held each year in Moscow comes from the standard track gauge in Russia and the countries of the former Soviet Union (1,520 mm). As Finland uses a gauge width of 1,524 mm, the Pendolino Allegro was designed for a gauge of 1,522 mm to ensure its interoperability on the Helsinki–Saint Petersburg line.

RAIL TRANSPORT AND SUSTAINABLE DEVELOPMENT

Demand for mobility is rising, spurred by demographic growth, hyper-urbanisation, saturated road networks and environmental concerns – and the rail market is evolving along with it.

The centre of gravity of the rail infrastructure market is shifting towards China, India, Latin America, Russia and the CIS as North America and Europe continue to suffer from weak growth and the financial crisis, particularly in the Southern European countries which are constrained by cuts in public spending.

In the face of these market conditions and rising competition, Alstom Transport has continued to leverage its worldwide presence and its broad range of products and services. Orders booked in 2011/12 totalled €6.3 million, a rise of 11%.

A number of major contracts were signed: Euroduplex trains for France, New Pendolino trains for Poland, Citadis tramways for the United Kingdom, signalling solutions for Denmark, Coradia regional trains for Sweden and Germany, metros for Latin America and Singapore and infrastructure for India. In Russia, the close partnership developed with Transmashholding (TMH) delivered its first tangible benefits and is now expanding to include other ambitious projects.

FROM VERY HIGH SPEED TRAINS TO METROS: ALSTOM'S SPECIALITIES

Alstom holds a unique position in high and very high speed markets worldwide, thanks to its long experience and extensive offer. Two key projects began commercial service in 2011/12. In France and Germany, the international Frankfurt-Marseille line began operations with the Euroduplex, the only very high speed double-decker train on the market. In all, SNCF ordered 95 Euroduplex third-generation Duplex trains, which will operate on networks in France, Germany, Switzerland and Luxembourg. Meanwhile, the AGV.*italo*, whose first of 25 train sets built for NTV, a private Italian operator, officially began commercial service on the Venice-Rome line and on the Turin-Salerno line running through Rome and Naples. AGV.*italo* is the world's first fully interoperable very high speed train, compatible with all signalling systems and all network voltages.

TRANSFORMATIVE 3D TECHNOLOGY

Alstom's 3D room has revolutionised the work of its engineers. Located at Transport's headquarters in Saint-Ouen near Paris, the facility speeds the approval process for design, engineering and ergonomics by enabling Alstom and its customers to see each option as it will appear in reality.

The AGV.*italo* arriving at Naples station, on its maiden voyage.

39 countries
The population of 39 countries in Africa, Asia, Oceania and Latin America should more than triple by 2050, rising from 1.2 billion to 4.2 billion.

12,000 TRAMWAYS are currently in service in Russia and Ukraine. Moscow and Saint-Petersburg plan to upgrade their rolling stock.

By 2015, more than 500 cities, including 300 in Asia, will have over 1 million residents.

In the high speed (250 km/h) segment, the Pendolino continues to sell very well in a broad range of countries. After its success in Finland, where the highly specialised Allegro model has been operating on the Helsinki-Saint Petersburg line since December 2010, the Pendolino will debut in Poland, where it will run at 250 km/h on all of the country's major lines, as well as in Austria, the Czech Republic and Germany. Virgin Trains, operator of Britain's West Coast Main Line, also placed new orders with Alstom during the financial year. A privately held rail operator, Virgin has made its trains and meticulous maintenance programme a showcase for rail industry excellence.

Modular and diversified, with single and double decker versions, Alstom's Coradia range of regional trains has become one of the most reliable, effective trains in its category. Alstom transport has sold over 600 Coradia Lint diesel trains to the Netherlands, Denmark, and more recently, Germany, where operator DB Regio (Deutsche Bahn) ordered 56 for Greater Cologne and the Eiffel region. Environmentally-friendly and economical, these trains meet the most rigorous European standards for emissions, impact resistance and passive safety.

And so does the Coradia Nordic, the "winterised" model for cold climates, which continues to be very popular with Swedish operators. To date, nearly 200 of these specialised train sets have been sold to six different operators in Sweden and Skånetraffiken's latest order brings its total fleet to 89. Meanwhile, the next-generation Coradia Polyvalent will soon be running in France, where 171 Regiolis train sets have already been ordered, due to enter into service in 2013.
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THE WORLD OF ALSTOM TRANSPORT

- 70 sites around the world.
- 11 rolling stock production centres with at least one on every continent and 5 engineering centres in Europe.
- 6 centres of excellence for rail traffic control systems in Europe, the United States, Canada and Brazil.
- 15 partnerships in Europe, Asia, Russia and CIS countries, forming a solid, effective network.

Alstom's Coradia Continental at Munich station in Germany.

Barcelona's Line 2 metro, equipped by Alstom.

Alstom Transport's Citadis ranks among the most popular trams in a market that is attracting a growing number of cities worldwide. To date, nearly 1,600 train sets have been sold to 37 cities worldwide, from Bordeaux to Melbourne and from Dublin to Algiers. The city of Nottingham (England) recently expanded its network, adding two new lines and 22 train sets. Five cities, including Dubai, have opted for the aesthetically appealing Citadis with Alstom's APS wireless power supply system. Bordeaux, the first of the six, already operates 74 train sets and has ordered 24 more.

In Russia, Alstom and its strategic partner, Transmashholding (TMH), are preparing to break new ground. After successfully producing the EP20 and 2ES5 locomotives and developing a new regional train (EMU) together, the partners will move into urban transport with Moscow and Saint Petersburg, which are eager to develop fast, modern tram systems that can tolerate the regional climate. Alstom and TMH plan to set up an engineering and production centre in Saint Petersburg.

The list of cities that have chosen Alstom's Metropolis is also expanding, with more than 4,000 trains sold worldwide.

STRATEGY

- Continue expanding into new geographic territory and establish a presence in strategic markets.
- Maintain a high-level Research & Development programme and make existing products more competitive.
- Ensure excellence in operations, with a special focus on improving the supply chain.

70%
of the world's rail markets require local production and/or local partnerships. The age of co-development has arrived.

LUCKY 13/33: the last segment of Singapore's Circle Line, inaugurated in October 2011, counts 13 stations and 33 km of in-tunnel track, making it the world's longest automated underground metro line.

Alstom Transport had previously won contracts for the metro systems in Panama and Santo Domingo, Dominican Republic, and will supply the first metro for Lima, Peru and will also carry out the new extension of Venezuela's Los Teques metro, itself an extension of the Caracas metro which has 600 Alstom cars.

In 2013, a factory now under construction in Chennai, India will begin producing rolling stock for this city's metro, later to supply the entire Indian market.

BEYOND ROLLING STOCK

In addition to supplying rolling stock for urban and intercity rail lines, Alstom Transport offers a comprehensive range of infrastructure products and services. This line of business covers designing and building new lines (like the Chennai metro), extending and modernising existing lines, providing project management and handling maintenance for entire rail infrastructures. Modernising track and infrastructure allows trains to run faster and increases line reliability.

Alstom also makes rail systems more environmentally friendly by offering products with lower weights, more efficient engines, regenerative braking and other energy efficient features. Other examples include solutions that optimise the availability of rolling stock, such as Traintracer, a maintenance system that reduces the downtime of train sets.

Demand for Alstom Transport's signalling expertise is also increasing among operators. For intercity lines, Alstom's offer includes standalone products and integrated solutions that comply with ERTMS* and PTC**, and for urban transport, options range from traditional solutions to driverless systems such as Urbalis.

Alstom Transport's contract to supply the Atlas ERTMS signalling system for the rail network in Denmark's East region is the Sector's biggest to date: it will serve as a high-profile signalling reference not only in Scandinavia, where calls for tenders are expected in Norway and Sweden, but in other European countries with plans to upgrade rail equipment. Turkey's rail operator recently chose Alstom's Atlas ERTMS system for one of its lines and Atlas will soon be a feature of Spain's high-speed Albacete-Alicante line.

*European Rail Traffic Management System
**Positive Train Control, used in the US

THE 2ES5 DOUBLE-BOGIE LOCOMOTIVE

Developed by TRtrans, Alstom's joint venture with TMH, and manufactured in Novocherkassk, the 2ES5 is an asynchronous double-bogie freight locomotive (two times two bogies with two motorised axles) that can run at 120 km/h over very long distances – and with 7,600 kW of power, it can pull convoys weighing over 6,000 tonnes. The 2ES5 will be designed to withstand the most extreme cold and preheating systems will be incorporated into electronic components and other sensitive equipment.

The Urbalis signalling solution is being used to control automated metro systems in a number of cities, including Lausanne.

Worldwide, more than 60 cities have a tramway project in hand.

The world rail transport market is projected to average €103 BILLION ANNUALLY IN 2012-2014, with two thirds generated by business other than rolling stock.

Technicians working on a Pendolino used on the West Coast Main Line at a Manchester maintenance depot in the United Kingdom.

INTERVIEW - BERNARD GLEIZE

Executive Director, Ecomobility and Innovation Division, SNCF Proximités*

"Ecomobility: a revolution in our approach to mobility."

Worldwide, what is the number one challenge facing the transport industry?
B. Gleize: "Meeting rising demand for mobility in ways that fully incorporate the three key aspects of sustainable development. Obviously the transport industry needs to limit its environmental footprint, but we also need to build community and make mobility accessible for as many people as possible, both geographically and economically. Finally, sustainability requires profitability: delivering mobility at a fair price for individuals, businesses and communities. Ecomobility represents radical change – a revolution in our approach to mobility. We're moving from a "transport operator" mentality to a "mobility operator/integrator" mentality. That is a new paradigm, and it means that we need to offer more than trains. Today we need to think door-to-door and offer our clients a whole package of sustainable mobility solutions that fit together."

In concrete terms, what does ecomobility mean?
B. Gleize: "Very clearly, given the congestion in major cities worldwide, it means offering an attractive, credible, competitive alternative to individual cars and urban goods transport. There are many challenges here: interconnecting various modes of transport, coordinating them without creating conflicts, and using intermodal synergies to make travel simple and seamless. Each mode of transport has its own strengths. With ecomobility, people are the centre of these mobility systems: the passenger becomes mobile and multimodal, able to communicate and to play a role in designing and producing his or her own mobility. Meeting the challenge of sustainable, door-to-door mobility also means meeting the challenges of digital mobility and intermodality. To give people a different experience of mobility – a "positive client experience" – we need to create new services that make their commuting and travelling time "productive and pleasant." Beyond that, we need to find effective solutions to meet growing demand for urban logistics. The goal is to take a big-picture approach to mobility for both people and goods, and rail transport is a necessary - but not sufficient - part of the mix."

What can industry do to promote ecomobility?
B. Gleize: "Industrial companies should foster mobility that is increasingly eco-sustainable, and they should make eco-design an integral part of the entire product lifecycle. They should also promote innovation, and to step up the pace, we need close relationships and win/win partnerships everywhere, between major industrial companies like us and innovative, responsive start-ups. Innovation will generate mobility offerings designed for new lifestyles, but that means getting the entire ecosystem involved and developing truly innovative solutions tailored to new ways of doing things." ■

* SNCF Proximités, a division of SNCF, provides urban, suburban and regional mass transport services for commuters.

Alstom Thermal Power's manufacturing site in Chattanooga (USA) was designed to meet the highest environmental standards.

ALSTOM ECO-COMPANY

Working together to protect the environment

Alstom works hard to limit its environmental impact and has set five targets for greener operations: raise the number of ISO 14001 certified sites, reduce greenhouse gas emissions and energy consumption, reduce water use, limit the impact of operations on air quality and manage waste efficiently. All these risks have been incorporated into the Group's environmental management system and all are measured against quantified goals.

And because the Group is aware that the commitment and skills of its employees are critical to its social and environmental performance, it encourages employee initiatives and is providing employees with information and training on environmental issues. Two 2011 surveys found that employees were actively engaged and felt a shared commitment to continued environmental progress.

AN ACTIVELY MANAGED ENVIRONMENTAL POLICY

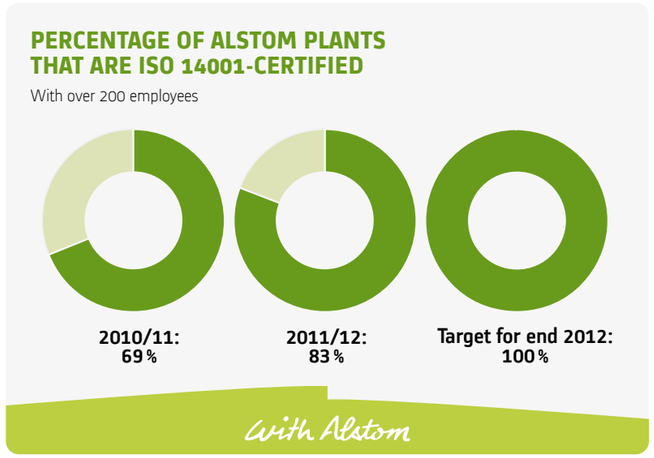
- **A network of 520 managers** under the leadership of the Group's Environment, Health and Safety (EHS) Department.
- **A management system** geared around the EHS Roadmap, a set of criteria for environmental management, safety, health and risk prevention in the workplace.
- **Self-evaluations** based on the EHS Roadmap and audited by in-house specialists or outside auditors.
- **A monthly report** that covers more than 90% of employees working at permanent sites.

140 FACILITIES, representing 60% of the Group's operations, had carried out self-assessments at 31 March 2012.

In 2011, Alstom was listed in the DOW JONES SUSTAINABILITY WORLD AND EUROPE INDICES.

FIVE TARGETS FOR PROGRESS

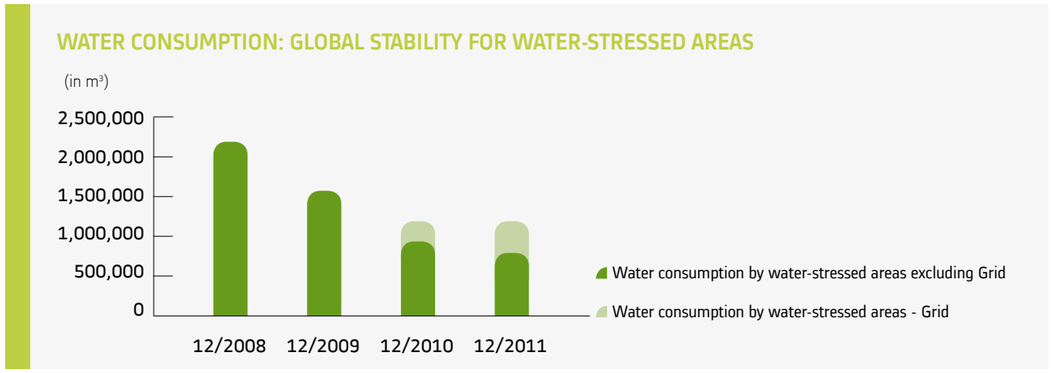
In 2011, the Group's results were in line with its environmental targets, except for the reduction of greenhouse gas emissions and volatile organic compounds.
Target N°. 1: earn ISO 14001 environmental certification for all plants with more than 200 employees by 2012.
By late 2011, 83% of these plants had earned ISO 14001 status, up from 69% in late 2010, and many are also certified under ISO 9001 for quality and OSHAS 18001 for safety. Some Alstom sites in Germany have also won certification under EMAS (EU eco Management Audit and Scheme).



The new Alstom Hydro site in Tianjin, China, an exemplary plant in terms of energy efficiency.

ENERGY: EFFICIENCY FIRST

Target N°. 2: Alstom aims to reduce its energy intensity and greenhouse gas emission intensity by 20% by 2015. At the end of 2011, energy intensity was down 12% from 2008 levels, with a very sharp improvement for Thermal Power and Transport. Energy consumption fell 8% in 2011, owing in part to the mild winter but resulting primarily from higher energy efficiency. For example, Alstom Renewable Power's Tianjin site has deployed a wide range of solutions to limit energy consumption: solar-powered lighting, geothermal heating, temperature-controlled offices and meters on shop floors and in key facilities. Alstom Transport has opted for an energy management system at its Valenciennes site and variable speed compressors at Sesto and Salzgitter. But despite the drop in CO_2 emissions achieved through lower energy consumption, greenhouse gas emission intensity is up 18% over 2008, owing to the integration of Alstom Grid, which operates equipment that uses sulphur hexafluoride (SF_6), a powerful greenhouse gas. However, at constant scope of consolidation, greenhouse gas emissions were down 6% in 2011. Grid is restricting its use of SF_6, improving seal quality on affected equipment and improving its gas-handling practices with the goal of reducing its SF_6 emissions.



WATER: TRACKING DOWN WASTE

Target N°. 3: between 2010 and 2015, Alstom also plans to reduce water consumption by 20% at 38 sites in regions that have been identified by the World Resources Institute as water-stressed. In 2011, Thermal Power, Renewable Power and Transport reduced their consumption by 20%. The focus has now shifted to reducing consumption at other sites and especially the 30 units that consume more than 70% of the Group's water. In Wuhan, China, for example, Grid saves 5,000 tonnes of water per year by collecting rainwater to water green space and wash roads and vehicles. Meanwhile, Alstom Transport uses a closed-loop system at its Villeurbanne location (France) and is implementing a leak detection scheme at its British sites and Alstom Renewable Power is stepping up its water surveillance systems in Baroda, India. These efforts helped offset integration of Alstom Grid and limit the Group-wide increase in consumption to 6%.

GREEN BUILDINGS

In March 2012, Alstom's Chattanooga plant in the United States earned LEED Gold certification. The buildings were constructed with recycled steel and roads were built with concrete demolition debris. Buildings feature wide usage of natural lighting for shop floors and in offices, heat is recycled through a centralised heating and cooling system, exterior insulation is in place and rainwater is collected and used for irrigation. The Chattanooga campus is accessible by public transport and has parking facilities for bicycles and low-CO_2 vehicles.
In China, Alstom's Wuhan transformer manufacturing plant also received LEED certification and the new wind turbine assembly plant in Bahia, Brazil was built to meet the environmental criteria of the LEED certification programme.

LOWER ENERGY CONSUMPTION at permanent sites: 1,629 GWh, versus 1,769 in 2010). This includes 651 GWh of natural gas (822 in 2010) and 771 GWh of electricity (664 in 2010).

LOWER CO_2 EMISSIONS from energy consumption: 520 kilotonnes CO_2 equivalent in 2010, versus 508 in 2011.

-3%
The annual SF_6 emission reduction target set by Alstom Grid.

LIMITING EMISSIONS, RECYCLING WASTE

Target N°. 4: reduce volatile organic compound (VOC) emissions by 10% between 2010 and 2015. To meet this goal, Alstom is using more and more water-based paints and cleaning products instead of their VOC intensive, solvent-based counterparts. Yet VOC emissions rose by 28% in 2011. The increase resulted from overall growth in operations, and particularly from manufacture of electromechanical equipment for hydro dams in Tianjin, China.

Target N°. 5: the Group continues to reduce waste production and increase recycling. Though integrating Alstom Grid raised waste volume by 20%, Alstom's waste recycling rate is still 78% overall, in line with its 2015 target of 80%.

Alstom's goal is to eliminate 10% of its volatile organic compound emissions by 2015, particularly in the manufacture of hydro power generators.

RAISING AWARENESS

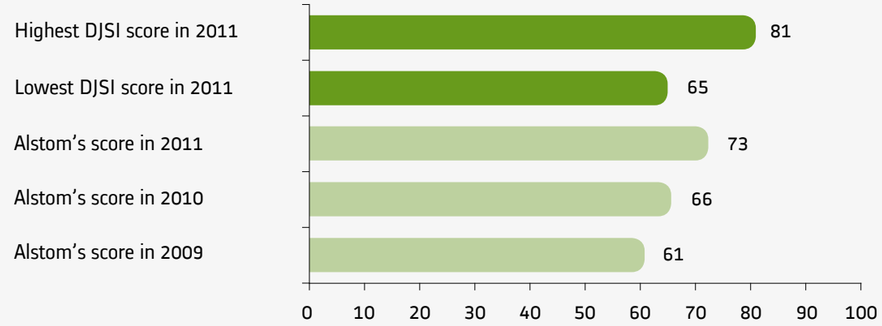
Because environmental protection is integral to overall performance, Alstom builds it into employee profit-sharing agreements through a variety of site-specific criteria. For example, the Group's headquarters in France assesses paper consumption, while Alstom Grid's site in Aix-les-Bains takes account of SF_6 emission reductions, and Villeurbanne monitors the number of employee suggestions relating to the environment, health and safety.

At Villeurbanne, Alstom Grid has launched a programme called Energy Treasure Hunts, which uses production downtime to identify areas where energy is wasted and to make the plant's operations as energy efficient as possible. Procedures and equipment have been re-assessed and employees have been trained for this programme, which will be deployed throughout France and China starting in 2012.

The Group also encourages employees to use eco-friendly local transport. At Redmond in the United States, Grid is rolling out a complete programme that includes: remote working, flexible hours and compressed work schedules to reduce work-related travel; an on-site cafeteria and gym for fewer trips offsite; and a changing-room and covered parking for employees who cycle to work. Car-pooling is also encouraged through an online sign-up tool and dedicated parking spaces. A subsidy rewards use of public transport and employees who choose alternative transport receive a bonus.

EXPERT ASSESSMENT

SAM (Sustainable Asset Management), EIRIS, Vigéo, Oekom and other rating agencies evaluate Alstom's social responsibility performance using a variety of methods and criteria.
In 2011, the Swiss-based SAM rated Alstom as "Bronze Class" for strong overall performance on sustainability criteria. This places Alstom in the top 4% of the world's best performing industrial engineering companies, recognising strong overall performance on sustainability criteria, and particularly in relation to the environment.



Thanks to the score achieved in 2011, Alstom is now a member of the Dow Jones Sustainability Indices (both World and Europe).

HIGHLY MOTIVATED

In January 2011, the Group assessed stakeholder expectations by conducting a survey of opinion leaders and an internal poll in both developed and emerging countries. The high response rate from Country Presidents reflected strong interest worldwide.
The poll showed that protecting the environment is the top priority and that Alstom needs to step up its involvement in local development and education initiatives in emerging countries – conclusions that will help Alstom take the right steps to benefit its neighbours around the world.

In November 2011, another poll went out to 60,000 employees to assess their awareness of sustainability and social responsibility issues, as well as their familiarity with corporate policies in these areas. Employees were also asked to suggest initiatives and to indicate whether they would be willing to participate. The results were extraordinary – a rate of return of almost 60% – with 210,000 suggestions for initiatives and hundreds of people volunteered to make an active contribution to the Corporate Social Responsibility (CSR) community.

ASBESTOS: GONE BEFORE END 2015

under reasonable, economically feasible conditions. That is Alstom's goal. Since 2006, regularly updated instructions have protected employees and guided surveillance. In every unit, a survey has been conducted, followed by asbestos removal plans and cost estimates. At more than 100 sites in 40 countries, Alstom Grid has inventoried its facilities for compliance with Group standards.

RECYCLING: Alstom Transport's sites in the United Kingdom have earned a Silver Award from the National Recycling Stars programme.

ALSTOM THERMAL POWER'S OFFICES in Belfort are certified for High Environmental Quality.

LOW-CONSUMPTION BUILDINGS, solar panels and parking for electric vehicles are in the blueprints for Alstom Grid's Centre of Excellence in Montpellier, France. The first stone was laid in late 2011.

77%
OF STAFF SURVEYED
in 2011 consider sustainable development as "very important" to set the Group apart in its markets, but their familiarity with Alstom's performance in this area shows room for improvement. An action plan has been launched, with the roll-out of an initial awareness campaign in 2012.

ALSTOM ECO-DESIGN

Alstom Hydro research centre in Grenoble, France.

Green by design

60% of the infrastructures that will supply the world's power in 2030 have yet to be built. And they must be based on sustainable, environment-friendly technologies. Alstom is developing solutions to meet growing power and mass transport needs in the decades to come, working to make these technologies cost-effective and meeting the challenge of limiting their environmental impact.
In line with its commitment to sustainability, the Group monitors and limits environmental impact throughout the product lifecycle, from manufacture to recycling, and as a rule integrates eco-design principles into new product development. Alstom is also working hard to reconcile energy security with the need to integrate growing quantities of energy from intermittent, CO_2-free renewables.

OPTING FOR BIODEGRADABLE OR RECYCLABLE MATERIALS.

Replacing mineral oil with biodegradable oil, lubricating hydraulic turbines with water, using water-soluble paints on trains instead of solvent-based ones and replacing epoxy resins with thermoplastic polymers in power substations – Alstom seeks to eliminate heavy metals (hexavalent chromium, cadmium and lead) and other hazardous substances to the greatest extent possible, opting for biodegradable or recyclable materials that minimise the environmental impact of its products and improve their conditions of use.

ALSTOM HAS BEEN A SIGNATORY OF UITP'S CHARTER (INTERNATIONAL ASSOCIATION OF PUBLIC TRANSPORT) FOR SUSTAINABLE DEVELOPMENT SINCE 2004.

RECORD RECYCLABILITY
95% : Haliade 150 offshore wind turbine
95% : Hamburg metro
98% : Stockholm's Coradia Lirex train

A STRUCTURED APPROACH

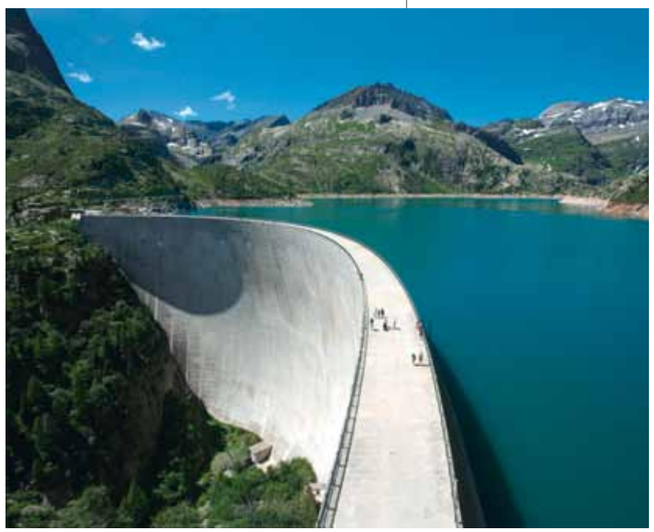
As part of its commitment to sustainable mobility, Alstom Transport builds environmental considerations into its products from the design phase, evaluating their impact with Environmental Information and Management Explorer (EIME), a software tool developed with Ademe, France's energy management agency.

As early as 2003, Transport began setting up its eco-design centre in Valenciennes and in 2009, published a new policy geared around saving energy, using recyclable materials, reducing noise and vibration, controlling emissions and integrating transport systems into their surroundings.

Lifecycle analysis (LCA) is carried out for many projects: these include Citadis, the next-generation tram-train, the DT5 metro in Hamburg, the Regiolis train and the new metro systems in Montreal and Amsterdam. Alstom Transport also assists customers with carbon footprint studies, recyclability evaluations and environmental product declarations.

Thermal and Renewable Power also conduct LCAs on certain products – gas turbines and the Haliade 150 offshore wind turbine, for example. Alstom Grid has defined an eco-design roadmap based on the IEC 62430 standard, quantifying the environmental impact of Grid products with SimaPro software and confirming the results with LCA. Each Grid solution is assessed based on seven criteria covering every phase of its lifecycle: production (consumption of natural resources), use (energy efficiency, CO_2 emissions, environmental risks, noise pollution and product footprint) and end of life (recyclability).

New solutions must present significant advantages over previous products for at least one of the seven criteria and must be at least equivalent for the others. Alstom's most recent gas-insulated substations reflect significant progress, with the aluminium in their housings down 36% by mass, sulphur hexafluoride (SF_6) down 13% by volume, energy loss reduced, risk of SF_6 leaks reduced, and recyclability increased from 93% to 95%.



Alstom will be equipping the Nant de Drance dam in Switzerland with a new pump/turbine system, considerably boosting its performance.

PUSHING RECYCLABILITY TO THE LIMIT

With their easily recyclable materials (aluminium, steel, copper) as well as bolts and rivets to simplify disassembly, Alstom's Metropolis metro cars and Citadis trams are themselves at least 85% recyclable. Alstom Transport is continuing to research the use of natural materials like wood, hemp and wool for insulation and sound proofing and is working with its partners in the Finather project to develop innovative thermosetting composites with low environmental impact.

PRESERVING QUALITY OF LIFE

Alstom places special emphasis on integrating power and transport facilities into their surroundings, whether natural or urban. Examples include the Langage power plant in the UK, which was designed to blend harmoniously into Dartmoor Natural Park. In transport, Alstom has developed systems without overhead wires, such as the ground-level APS (for *alimentation par le sol*) power supply solution for trams in cities such as Bordeaux and Angers, and on-board batteries to circulate in protected cityscapes in Nice. Finally, the Group's Appitrack automatic track-laying method reduces impacts from construction of metro and tramway systems.

Reducing noise pollution is another priority. In 30 years, TGVs have doubled in speed but their noise level has remained unchanged, thanks to aero-acoustic modelling, streamlined contours for leading bogies, and changes to TGV nose design that help trains move more smoothly through the air. Low-noise wheels and noise-absorbing skirts for the AGV and Pendolino trains, the Citadis Dualis tram-train and the Prima locomotive have also helped make Alstom transport solutions quieter. The Group is working to reduce vibration levels by laying elastomer base plates under the cross ties of the new Paris-London line.

TGVs (shown above, a TGV Duplex) now operate at higher speeds than their predecessors, without any increase in noise levels.

THE FOOTPRINT
of a TGV line running Duplex trains is 14 metres, versus 40 metres for a 2x3 lane motorway handling the same number of passengers.

403 METRES
of track were laid by Appitrack in a single day to reduce inconvenience during tramway construction in Orleans, France.

ALSTOM'S APS
ground-level power supply solution was chosen for systems in Bordeaux, Angers, Orleans, Reims and Tours in France and for Dubai in the UAE.

3-5 DB REDUCTIONS
in noise levels are achieved with next-generation trains.

The first next-generation GT24 gas turbine, manufactured at the Chattanooga site (USA), offers enhanced operational flexibility.

MORE FLEXIBLE THERMAL PLANTS

To help integrate ever more massive quantities of intermittent solar and wind energy – without compromising grid reliability – Alstom is making gas-fired power plants more flexible and responsive. With next-generation GT24, GT26 and GT13E2 turbines, operators have reserves that can be activated in less than 15 minutes to compensate for variable intermittent energies (wind and solar) and they can use Alstom's new range of automation and control solutions to coordinate asset management and match power output to network demand.
Hydraulic pumped storage power plants – one of Alstom's specialities – are the only way to store electricity on a grand scale and help to secure the electricity supply. Finally, new solutions being studied include solar tower plants.

INTERVIEW - NARAYAN PANT

Strategy consultant and professor at INSEAD business school*

"Businesses are at a tipping point."

How can we make sustainability an integral part of innovation strategies?
N. Pant: "We live in a changing world and rising sustainability concerns are making it even more complex. At the centre of this complexity, businesses are at a tipping point between two models. For them, the biggest challenge is to manage today's constraints even as they try to look ahead to tomorrow's. So their question on innovation is 'How do we become the new standard setter – or at least stay ahead of our competitors – without jeopardising our current business model?' That's the whole point of making sustainability an integral part of innovation strategies."

Do you think the markets are ready to take the plunge?
N. Pant: "Customers are the only ones who can decide. Ultimately, they're the ones who will approve – or reject – the decisions and actions taken by business, and their attitude toward sustainable innovations can be ambivalent. Often they will praise the advances companies make, but refuse to pay more for them. Yet these are the same people who say that they don't want to leave a blighted world to their children…"

What can businesses do to change that?
N. Pant: "I don't think businesses should try to save the world. It's not their responsibility. But in addition to developing new technological solutions, they can use their tremendous strengths to start the conversations that will move society forward. They have the expertise, they know what's at stake and what the impact of each choice would be. As a result, they are in the best position to help us take a collective look at key sustainability issues. If businesses rise to this challenge, it will have a powerful impact." ■

* INSEAD is one of the world's premier-ranking business schools.

THANKS TO THE FIRST PARTICULATE FILTER FOR DIESEL TRAINS, the Coradia Lint operating in the Frankfurt area emits 95% less soot.

ALSTOM JOINED JOHANNESBURG'S "WITS" UNIVERSITY in late 2011 to inaugurate a Chair for clean power generation and power transmission technologies.

450 MW
EXTRA IN LESS THAN 10 MINUTES.
That's what operators get with the next-generation GT24 gas-fired turbine. The new GT26 delivers 350 MW in 15 minutes.

THE NEW GT13E2 GAS-FIRED TURBINE can operate at half load.

Alstom's research centre in Växjö, Sweden.

ALSTOM ECO-SOLUTIONS

Sustainable solutions

All over the world, operators are facing tighter environmental regulations.

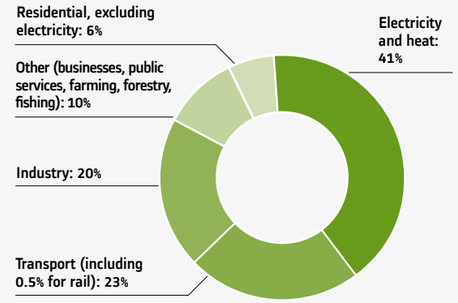
From design to maintenance to renovation, Alstom supports customers by meeting two goals: improving performance and reducing environmental impact.

Alstom's power generation solutions are less carbon-intensive, rendering new and existing plants more efficient and giving a larger role to renewable energies and technologies that eliminate or sharply reduce atmospheric pollution from sulphur dioxides, nitrogen oxides, particulates and mercury.

For power grids, progress means optimising infrastructures and boosting efficiency with high voltage and ultra high voltage direct current technologies. Alstom is also a pioneer in developing smart grids, which optimise integration of decentralised power output, largely from renewables, and manage power supply and demand with maximum efficiency.

And in the rail transport sector, Alstom is developing solutions that reduce power consumption.

CO_2 EMISSIONS FROM HUMAN ACTIVITIES WORLDWIDE IN 2010.



Source: IEA

CO_2 IMPROVING EFFICIENCY OF COAL-FIRED POWER PLANTS FROM 30% TO 40% would reduce their CO_2 emissions by 24%.

230,000 TONNES OF CO_2 AVOIDED each year by the 50 MW geothermal power plant in Puebla, Mexico.

POWER GENERATION: MORE EFFICIENCY

Alstom offers customers every kind of renewable energy except photovoltaic – hydro power, onshore and offshore wind, concentrated solar power, biomass and geothermal – delivering a broad range of solutions that help reduce environmental impact.

At the same time, Alstom is cutting emissions from coal and gas-fired power plants – the source of 60% of the world's electricity and 40% of its CO_2 emissions – by making them more energy-efficient. Greater efficiency enables operators to produce the same amount of power with less fossil fuel and a corresponding reduction in CO_2 emissions.

With the latest versions of Alstom's GT13E2, GT24 and GT26 turbines, gas-fired power plants are generating more energy. The GT26 produces up to 61% more for a combined-cycle gas-fired plant, saving 350,000 tonnes in CO_2 emissions annually.

In addition to renovation solutions that make current power facilities 5-10% more efficient, Alstom is developing very high temperature coal-fired power plants that are more efficient and produce less pollution. In Germany, for example, Niederaussem's supercritical power plant delivers 43% net efficiency, compared with an average of 35% for today's traditional plants, and the RDK 8 ultra-supercritical plant will exceed 46%. In 2011/12, Alstom won several contracts for supercritical units in Tanjung Bin and Manjung, Malaysia, in Rybnick, Poland, and in Kusile, South Africa.

Another promising avenue is co-firing of coal and biomass, which is avoiding 2 million tonnes of CO_2 emissions annually at the 4,000 MW Drax power plant in Yorkshire, in the United Kingdom.

In 2011/12, Alstom also strengthened its positions in systems that reduce emissions of sulphur oxides, nitrogen oxides and particulates, winning major contracts in the United States of America, Saudi Arabia, the United Arab Emirates, Taiwan and India.

CARBON CAPTURE: SCALING UP

With its partners, Alstom has completed or is currently completing installation of 18 pilot and demonstration units designed to capture and store carbon from coal and gas-fired power plants.

According to the International Energy Agency, carbon capture and storage (CCS) could meet 20% of required reductions in CO_2 emissions between now and 2050.

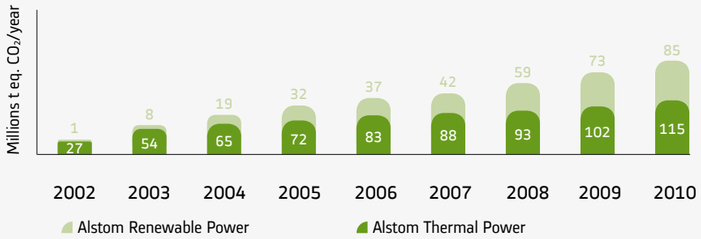
Alstom is concentrating on two processes: solvent-based post-combustion technology that captures CO_2 using advanced amines or chilled ammonia and oxy-combustion.

In 2011/12, the Group launched projects in the United Kingdom, with Drax Power and BOC to test a 426 MW demonstration unit, as well as in China, with China Datang Corporation, and Romania.

EFFICIENCY: THE BOTTOM LINE

To measure the CO_2 reductions achieved with its technology solutions, Alstom uses a method reviewed by PricewaterhouseCoopers. Analysis of 1,323 power generation projects, commissioned between 2002 and 2010, showed that 189 million tonnes of CO_2 emissions had been avoided.

At the end of 2010, 68% of the cumulative reductions (130 million tonnes annually) had been achieved in developing and emerging countries, making Alstom the leading supplier of ambitious, economically viable carbon reduction solutions. Starting in 2002, Alstom's thermal projects reduced emissions by 121 million tonnes, and renewable projects account for a growing share of reductions, rising from 31% at the end of 2006 to 36% at the end of 2010. During the same period, reductions from maintaining existing power plants and improving their energy efficiency also increased, rising from a 3% share in 2002 to a 7% share in 2010.



Projects commissioned from 2002 to 2010: cumulative reduction in annual CO_2 emissions in millions of tonnes of CO_2 equivalent

Detail of a carbon capture system installed by Alstom at the EDF power plant in Le Havre.

POST-COMBUSTION SOLUTIONS. Air quality control systems eliminate up to 99% of SO_2 emissions, up to 95% of NO_x and more than 99.75% of particulates from gas and coal-fired power plants.

OVER 90% OF THE MERCURY emitted by gas and coal-fired power plants can be eliminated with KNX, Filsorption and MerCure technologies.

THE CCS DEMONSTRATION UNIT at the Mountaineer coal-fired plant has captured 75-90% of its CO_2 and separated it from combustion gases. CO_2 purity exceeds 99%.

A PARTNER IN EUROPE'S GREEN eMOTION PROGRAMME for electric vehicle development, Alstom is contributing expertise in smart grid integration and direct current technologies.

SMART GRIDS...

Today's electrical grids must simultaneously meet rising demand for safe, reliable electricity, adapt to fluctuating consumption, and integrate a growing share of power from intermittent wind and solar sources. In addition, grids are expected to reduce CO_2 emissions and other environmental impacts and become smarter, more efficient and more flexible so that utilities can manage assets as close to their limits as possible. To meet these challenges, networks are being transformed into smart grids that circulate real-time data among producers, grid managers and end consumers – some of whom may also be energy producers. Smart grid technology also integrates power from positive energy buildings and other new, decentralised resources.

Alstom is a leading player in the smart grid market with an integrated approach and solutions featuring key technologies in power electronics, integrated systems for managing distribution, digital transformers and control room information technology. In late 2011, Alstom's real-time grid-monitoring solutions were chosen for the Western Interconnection SynchroPhasor Programme (WISP), which will involve 18 utilities covering 14 US states, two Canadian provinces and part of Mexico's Baja California peninsula. In partnership with government, industry and grid managers, Alstom is participating in 16 demonstration projects, including the North Carolina and Pacific Northwest smart grids in the United States, the Fenix and Twenties projects in Europe, and the NiceGrid and IssyGrid "smart district" projects in France.

Alstom's grid management R&D centre, in Massy (Paris region).

... AND SUPER GRIDS

In the future, super grids will link power networks from country to country and continent to continent, reducing losses, optimising asset use, resolving conflicts between different frequencies and integrating renewable energy sources in remote locations. Super grids use high voltage and ultra high voltage direct current (HVDC) technology – an area where Alstom is a recognised expert. In 2011/12, Alstom's HVDC solutions were selected by Svenska Krafnät in Sweden, by ATCO Electric in Canada, and by Tres Amigas for its SuperStation, which will link the three primary transmission grids in the United States. Alstom has also signed two cooperation agreements: one with Russian contractor Ker for HVDC projects and the other with China Electric Power Equipment and Technology for ultra high voltage direct current systems (1,100 kV).

A PIONEER IN CONNECTING OFFSHORE WIND FARMS

HVDC lines have another advantage: they are submersible. A pioneer in connecting offshore wind farms to grids onshore, Alstom designed and built the first substations off the coasts of Germany and the United Kingdom and developed the HVDC MaxSine voltage source converter, the most efficient solution for transmitting offshore wind energy to onshore grids via direct current. Alstom has also designed self-floating substations to connect offshore assets to networks on land and in 2011/12, won contracts to supply substations for the Meerwind, EnBW Baltic 2, Borkum West II and Nordsee Offshore MEG 1 wind farms in Germany.

Finally, Alstom was also chosen to maintain Germany's Alpha Ventus wind farm and the Robbin Riggs farm in the UK.

Grid connection for an offshore wind farm in the Baltic Sea.

ALSTOM IS A PARTICIPANT IN THE MEDGRID PROJECT, aimed at linking Europe to North Africa. The Group also supports the Mediterranean Solar Plan.

€210m, including €72m in funding from the French government, is earmarked for the SuperGrid project, coordinated by Alstom and spearheaded by the Institute for Excellence in Carbon-Free Energy (IEED).

OFFSHORE WIND FARMS TOTALLING 2 GW are linked to onshore grids by Alstom.

ENERGY CONSUMPTION AND MASS ARE DOWN 10-15% in Alstom's high speed trains, metros and regional trains since.

The Hesop system recovers tram braking energy and returns it to the grid.

SUSTAINABLE, HIGH-PERFORMANCE TRANSPORT

Of all forms of motorised travel, rail transport is the most eco-friendly, with the lowest energy consumption, the smallest footprint and the highest efficiency in terms of passenger and freight capacity. In Europe, for example, rail handles 7% of passenger traffic and 10% of freight, yet accounts for only 1% of the transport sector's CO_2 emissions.

To make rail systems even more environmentally-friendly, Alstom optimises their energy consumption by reducing train weight, making traction systems and auxiliary equipment more efficient, and recovering braking energy.

Alstom's AGV very high speed train takes full advantage of these solutions, with lighter metal components, an outer skin only 2.5 mm thick and bogie-to-car connecting bars made of composite materials. In addition, up to 8 MW of power can be recovered and returned to the grid with Alstom's braking solutions. Alstom Transport is also developing new systems, including the reversible Hesop substation, which returns tram braking energy to the grid. And as part of the STEEM project with the Paris regional transport authority, Alstom Transport has developed supercapacitors that store braking energy, allowing trams to run without catenaries between stations.

As the market leader for permanent magnet motors – which are lighter, more compact and more efficient – Alstom deploys them in AGVs, regional trains, tram-trains and trams. The Group is also developing hybrid engine systems that combine a thermal engine with a battery, halving the energy consumption of shunting locomotives.

Alstom delivered the first of five hybrid locomotives to MEG, a subsidiary of DB Schenker Rail.

Efficiency is also important in heating and ventilation for Regiolis, M109 and the Singapore metro: managing these systems can reduce their energy consumption by 30% outside rush hour. And for lighting, LED technology is becoming the norm.

THE AMSTERDAM METROPOLIS

- At 116 m x 3 m, the trainsets are king-sized but lightweight, with an aluminium body that reduces axle load to 12 tonnes.
- The braking system is 100% electric and can bring the Metropolis to a complete stop, with energy recovery.
- Lighting is 100% LED.
- Energy consumption is down 30%.
- Greater accessibility and less noise improve passenger comfort.
- "Clean" materials include water-soluble paints.

INTERVIEW - PAUL SIMPSON

CEO, Carbon Disclosure Project*

"Businesses could cut CO_2 emissions by one-third with existing technologies."

How do you view the business community's efforts to reduce CO_2 emissions?
P. Simpson: "I see some real leaders emerging: highly innovative companies that have made sustainability an integral part of their strategy and have already reduced their CO_2 emissions considerably. It's also worth noting that the vast majority of companies are now heading in this direction and their investments (though still fairly scattershot) should start paying off soon."

Which sectors are on the cutting edge?
P. Simpson: "In my view, the electric utility sector is one of the most effective in reducing CO_2 emissions. This is surely because they are often national companies and highly regulated. Other, more internationally-oriented sectors still have significant room for improvement, however. Mass-market brands are often doing a very good job because they know that their customers are aware of these issues and are likely to consider them when they make a purchase."

What are the major challenges for the next few years?
P. Simpson: "To make a carbon-free economy a reality, we need to step up investments in renewable energies and technology. Businesses could cut emissions by a third if they adopted all of the existing technologies now. In the energy sector, we need to promote renewable solutions and especially solar, which is becoming more and more competitive. At international level, what we need now is a protocol that will pick up where Kyoto leaves off." ■

* An NGO that helps businesses reduce their carbon footprint and water consumption.

THE AGV™

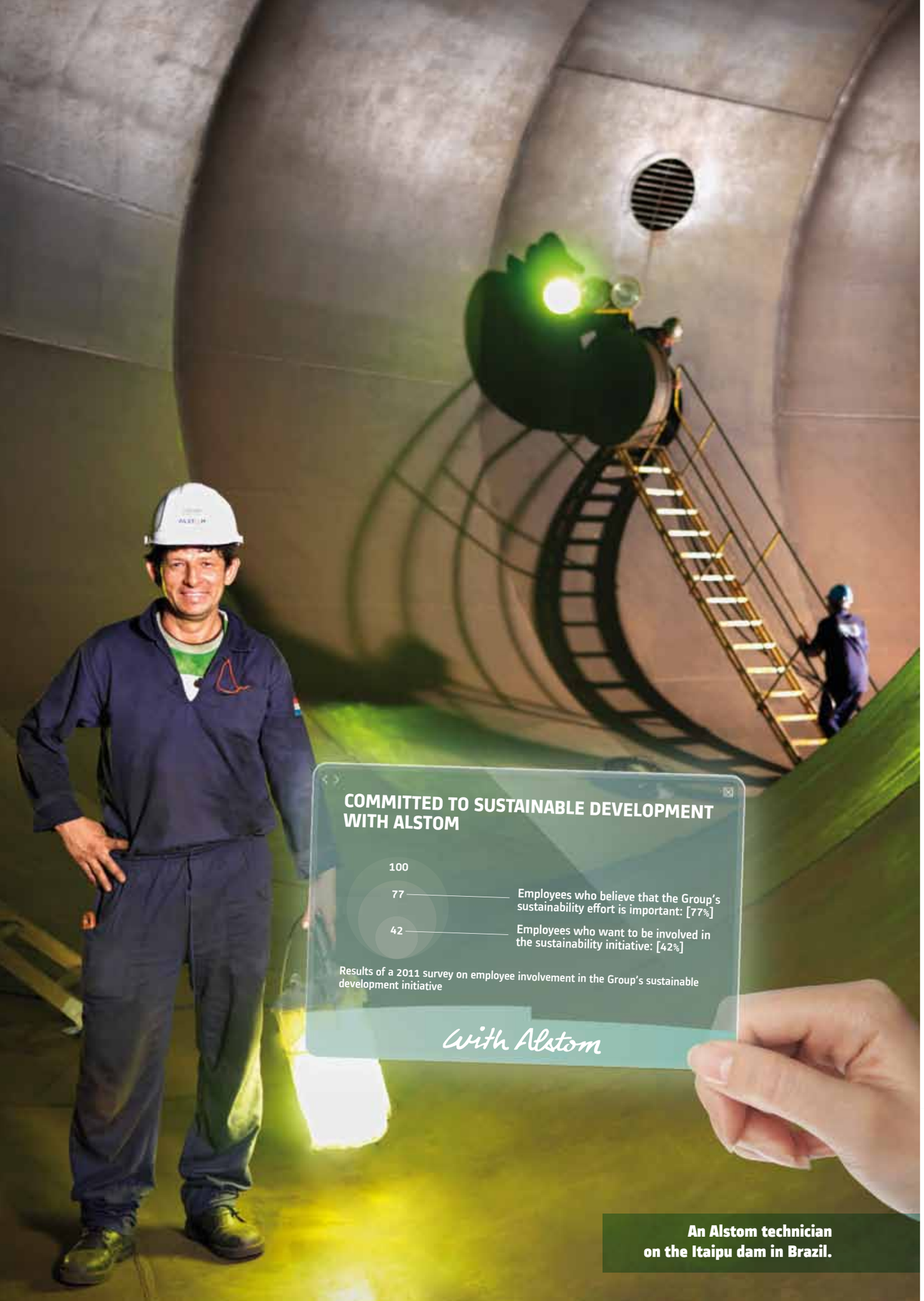
CONSUMES the equivalent of 0.4 litres of fuel (for primary energy needs) per 100 passenger km, i.e. 5 times less than an airplane (in primary energy equivalent).

THE CITADIS DUALIS TRAM-TRAIN CONSUMES 3 times less energy than a bus and 4 times less energy than a car, measured in kWh per passenger.

THE HESOP braking energy recovery system was recognised in the French Environment Ministry's Business and Environment awards.

DRIVERS OF NEW TRAINS like Alstom's Regiolis have real-time access to energy-consumption data and can adjust their driving habits for optimum efficiency.

ALSTOM
LIFE AT WORK



An Alstom technician on the Itaipu dam in Brazil.

It's all about people

The quality and competitiveness of the solutions and services Alstom delivers to its customers are a direct result of the excellence and motivation of its employees. They are the key to success, and Alstom invests in them from the moment they are recruited until the end of their careers.

Safety for employees and for outside contractors is the number one priority and the Group is strengthening programmes to prevent and eliminate serious accidents at all its sites worldwide.

As a high-tech company, Alstom emphasises skill-building and training (through Alstom University in particular) to meet employees' expectations and improve their performance. Alstom also promotes mobility, a key component of career satisfaction, and uses new information technologies to encourage employees to share expertise and best practices.

To motivate employees and earn their loyalty, Alstom cultivates an attractive working environment and develops compensation policies that recognise individual and group achievements. With a presence on every continent, the Group views diversity as a powerful tool for performance, recruitment and innovation. That means promoting equal opportunities, regardless of gender and ethnic or cultural origin, and hiring people with disabilities. Finally, Alstom responds to changing market conditions by fostering workforce-management dialogue at both local and regional level.

AN ACTIVE HR POLICY

- **A network of 880 managers** under the leadership of the Group's Human Resources (HR) Department.
- **"It's all about people":** employee-oriented policies and mandatory HR procedures.
- **A Group-wide information system** (HRIS), deployed at Alstom Grid since April 2011.
- **A management system to prevent workplace accidents,** based on the EHS Roadmap.
- **A dashboard** of indicators derived from the Group's HRIS and a survey of employees in the 21 countries representing 87% of Alstom's workforce.
- **30 health and safety indicators,** monitored monthly as part of the Group's dashboard.

92,600 EMPLOYEES

58% in Europe (70% in 2006)
22% in Asia-Pacific (11% in 2006)
17% in the Americas (18% in 2006)
3% in Africa and the Middle East (1% in 2006).

OVER 9,900 PERMANENT HIRES and 8,000 temporary hires in 2011/12.

PRIORITY N°. 1: WORKPLACE SAFETY

Alstom makes the safety and health of both employees and outside contractors its number one priority. Alstom has reduced its injury frequency rate[1] from 2.8 in March 2009 to 1.8 in March 2012, in line with its Zero Severe Injury programme, which seeks to bring the rate below 1 by 2015. But even one serious or fatal accident, whether it affects employees or contractors, is one too many, and the Group is now making high-risk activities and increased compliance with accident prevention its safety priority. In November 2011, the Executive Committee approved a Fatality Prevention plan designed to prevent serious accidents using three measures: in-depth analysis and close monitoring by Sector Presidents of actions taken, strict compliance with the Ten Fundamental Rules of Safety and increased supervision of contractors that are required to know and comply with Group standards. This plan focuses on the main causes of serious accidents: working at height, lifting operations and electrical work and will be accompanied by awareness-raising campaigns and training, such as the EHS International Passport programme, which requires a refresher session every three years.

[1] Number of accidents with time lost due to injury per million hours worked.

NEW OPPORTUNITIES FOR SENIOR EMPLOYEES

A 2012 agreement signed in France promotes active employment up to retirement by focusing on mentoring and skills transfer. In Switzerland, 50-year-old employees are invited to a retirement planning seminar that gives them financial and legal information, and at age 57, they can attend a "57 Plus" seminar on end-of-career and retirement issues, including health and social services.

BETTER WORKLIFE, STRONGER MOTIVATION

Local programmes focus on improving workplace health and well-being. In India, where key sites include a dispensary, the Group has launched a health campaign: a dedicated portal provides information on nutrition and preventing waterborne and other diseases; employees have anonymous access to analysis of their medical data and treatment plans; and the Group negotiates favourable rates with healthcare providers. In Germany, employees with professional or personal issues can consult a psychologist or call a hotline, and in Turkey, a psychologist provides confidential support to workers who have conflicts with their managers.

ALSTOM COLLABORATIVE WAY (ACW)

	2009/10	2011/12
Telepresence: average hours per month per site	54 h (11 sites)	77 h (21 sites)
Web conferencing	1,100 web meetings 3,400 participants	54,614 web meetings 223,951 participants
Document management systems	21 docspaces 25,000 visits per day	48 docspaces 20,000 visits per day
Wikis	75	89
Blogs	7	7

Alstom uses the ACW programme to foster the growth of social networks that allow employees to exchange know-how and best practices. Its goals are to strengthen cooperation between entities, encourage transfer of best practices and innovation and help new employees become part of the Alstom team.

CAREER DEVELOPMENT: SUCCESS AND SATISFACTION

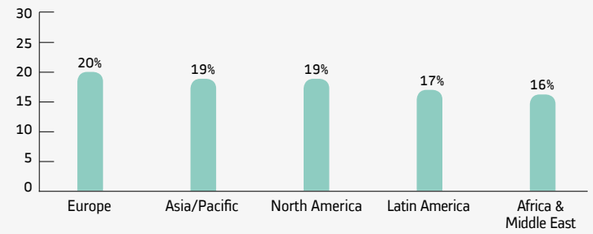
Alstom maintains an active career management policy that offers employees the best opportunities for professional and personal growth.

The Alstom Connection programme helps new employees settle in by familiarising them with the Group and helping them begin to build a network, and Group resources are rounded out with local schemes. India's Young Engineers Graduate (YEG) programme, which focuses on behaviours rather than technical skills, organises workdays in villages and orphanages to support the Alstom Foundation's projects.

During their annual evaluations, employees work with managers to set individual goals and to map out a personal career development plan.

The Group has stepped up training for the managers who conduct these evaluations and Alstom University has designed a new module. People Reviews, which match unit needs to employee skills, help employees structure their careers with the Group perspective in mind. This programme is being rolled out Group-wide, with a steadily increasing number of managers participating.

PERCENTAGE OF WOMEN
By region in 2011



with Alstom

Alstom Wind employees hold an EHS meeting at the Haliade wind turbine assembly plant in Saint-Nazaire, France.

THE 4 GOALS OF THE ZERO SEVERE INJURY PROGRAMME: develop a culture of safety, update self-assessment criteria, improve the analysis of severe accidents, managed specific risks of contractors.

STANDARDISED WORLDWIDE, ALSTOM'S INTERNATIONAL EHS PASSPORT is recognised by the United Kingdom's National Examination Board in Occupational Safety and Health.

LIFE INSURANCE

- 99% of Alstom employees covered by a life insurance in case of accidental death (97% in 2008).
- 94% covered by life insurance giving one year of salary (72% in 2008).

ALL 400 OF ALSTOM'S EMPLOYEES IN CHILE received bicycles as an incentive to exercise and practise ecomobility.

FROM MOBILITY TO PERFORMANCE

Alstom is a high-tech company that manages complex, long-term projects. The calibre of its employees, their skills and their commitment are key to its competitiveness.

The Group fosters internal mobility through monthly forums, its JobsOnline e-recruitment site, and local schemes that focus on managerial skills and internal mobility.

In China, programmes for managers (MAP) and technicians (PAP) were launched in 2011: half of the participants have now been promoted. Local successes like this one inspired the Accelerated Management Programme, a Group-wide scheme.

Other initiatives for employees include Poland's Generation Exchange & Successor Development programme, which focuses on replacing the skills of retiring employees.

ALSTOM GRID 2011: 4 PATHS TO PROGRESS

Employee satisfaction surveys provide regular input on making Alstom a better place to work. 63% of Alstom Grid employees responded to an opinion survey conducted in June 2011 and results show that their perceptions of the Group and its commitments to labour and social progress are very positive. Four paths to progress were identified: strengthen the culture of quality, encourage direct communication between management and teams, improve the employees' perception of the Group's competitive image and develop and recognise individual talent. A worldwide action plan has been launched, with indicators to monitor its progress.

Alstom plans to increase the number of women in its workforce (Soto de Ribeira power plant, Spain).

ZERO TOLERANCE FOR DISCRIMINATION

Alstom strives to promote diversity and equal opportunities in all aspects of its business. Because Alstom specialises in predominantly male fields, it helps women move up the ladder by giving them special attention during People Reviews by providing management and leadership training for women. The Group also supports in Switzerland, Women Adding Value to Engineering, an internal network of 170 women engineers in 20 countries and the launch of the Women Empowerment for Business programme. Among its many other initiatives are harassment prevention and positive discrimination schemes, work/life balance programmes and awareness campaigns. Four agreements signed in France provide benefits that include special work schedules for pregnant women and those returning from maternity leave, paid paternity leave and support for single parents. The Group also supports the EVE women's leadership programme and NGOs that support women's causes, including the French groups *Déployons nos Elles* and *Elles bougent*.

Providing job opportunities for people from disadvantaged districts is another focus area. In 2012, Alstom signed a French agreement on hiring candidates from underprivileged areas: under the agreement, the Group's La Courneuve site will recruit 20 individuals and host 25 apprentices and 15 interns between now and 2014. In Mazatlan, Mexico, 15 young people with no qualifications attended an apprenticeship programme.

At Alstom, discrimination based on health or disability is strictly prohibited. The Group complies with local laws on hiring and retaining employees with disability. HR managers are trained to prepare appropriate job interviews and to help employees with disability settle in.

REWARDING EMPLOYEES

Information-sharing, sound compensation policies and employee share ownership schemes help motivate employees and foster a sense of belonging. In addition to receiving updates on Group and Sector news, employees are invited to participate in programmes like Alstom's Innovation Awards, which judges projects based on two criteria: "It's new" and "It works." In 2011, the programme attracted 1,154 participants from 22 countries.

Compensation for managers includes variable components tied to individual goals and Group performance: at 31 March 2012, more than 25,000 employees qualified for this programme. Collective performance is also rewarded under a profit-sharing system in 13 countries.

22% of Alstom employees work in the Asia-Pacific region (Ling Ao nuclear power plant, China).

ALSTOM UNIVERSITY: OVER 8,200 EMPLOYEES TRAINED

Nearly three-quarters of Alstom's staff have benefited from training, notably at the specialised centres operated by the various Sectors or at Alstom University, which currently offers 80 training courses. Alstom University organised 630 classroom-based training sessions and 3,000 e-learning sessions in 2011. Having already achieved ISO 9001 certification for its main campus in France, Alstom University extended the scope of this certification during the year to its regional campuses in Switzerland, India, China, Brazil and the United States of America, while the Project Management Institute certified its "Project and Contract Management" programme. The winner of a Best Practice Award in the "Alliances" category at Corporate University Xchange's 12th Annual Awards for Excellence and Innovation, Alstom University was also named "Best New Corporate University" by this international corporate training research and consulting firm.

47%
of engineers and managers in the Group.

132 YOUNG ENGINEERS RECRUITED IN INDIA
thanks to the YEG induction programme.

39,000 ANNUAL PERFORMANCE INTERVIEWS (23,000 IN 2008)
- 33,000 People Reviews (15,000 in 2008).
- 85% internal promotion rate for the Group's 1,570 senior executives (60% in 2008).

AVAILABLE IN 8 LANGUAGES, WITH 100 VIDEOS ONLINE AND MORE THAN 30,000 VISITS: Alstom University Tube encourages the exchange of ideas and experiences between employees.

CONTINUING DIALOGUE

Locally, Alstom has entered into many union agreements on working hours, employee share ownership, compensation, reorganisations and medical care. At European level, the Group maintains a dialogue with the European Works Forum. Recent talks have focused primarily on adapting the Group's labour force to its workload and structuring the Information Systems and Technology (IS&T) department under "Anticipating Change", a February 2011 agreement with the European Metalworker's Federation (EMF).
The agreement uses national best practices within the Group (such as workforce and competency planning in France, temporary worktime reduction in Germany and geographic mobility in Italy) to preserve jobs, accompany the redeployment of employees and increase employee competencies. The agreement is also used to structure the dialogue within the Group at European, national and local levels.

Starting from the principle that nobody is left to cope alone with an employment problem, the Group works hard to reduce the impact of reorganisations on its workforce through redundancy plans. Some of these plans are governed by the EMF agreement.

• In Italy, a local agreement was signed on 31 August 2011, under the European agreement which created a redundancy plan mitigating the loss of 280 positions in Colleferro, Guidonia, Bologna and Savigliano by offering internal transfers, early retirement, voluntary redundancy and reduced working hours.

• In Salzgitter, Germany, an initial plan to restore profitability called for structural cost reductions and productivity enhancement measures equivalent to the elimination of 700 jobs. After negotiations and an agreement signed with the works council and local union in July 2011, that number was reduced by revising the plan to include voluntary redundancies, early retirements, internal mobility, flexible working hours and variable compensation tied to productivity.

Two employees confer at Alstom Transport's plant in Katowice, Poland.

• In Barcelona, Spain, a redundancy plan involving 400 jobs was set up under a union agreement which included early retirements, reductions in working hours and internal transfers.

• In Switzerland, a reorganisation affecting 760 positions was announced in October 2010. A redundancy plan negotiated with the works council opened the door to extended notice periods subject to certain conditions, financial outplacement support, early retirements, qualification for new positions and support for mobility. Two outplacement units were set up: they counselled some 200 people and found outplacement solutions for 170 of them.

• In Lapa, Brazil, where 150 positions needed to be cut, a union agreement provided for a redundancy plan involving reduced working hours, voluntary separations and four- to five-month training programmes to enhance qualifications.

• In Calgary (Canada), a workshop closed in August 2011, resulting in the loss of 50 positions. However, as the Group had been preparing for the closure for two years, solutions were offered to all employees, including retirement and outplacement.

In Ottawa, Thermal Power lost 50 positions: 30 people were reassigned within the Group.

INTERVIEW - NICOLE NOTAT

Chairwoman, Vigeo*

"Increasing corporate social responsibility is an unexpected consequence of globalisation."

What are the major social responsibility challenges facing global companies today?
N. Notat: "Multinational companies were the first to be exposed to CSR issues. Originally they were challenged to respond to climate change and dwindling natural resources and now they are facing questions on how they create and redistribute wealth in each of the countries where they do business. Today, they are required to take a position on the labour standards they will apply at each site and on the inequality in working conditions and pay from one country to the next. Now, the expectation is not only that they will not follow the lowest standards but, in fact, will help raise them."

That being the case, what kind of relationships should a company cultivate with its local ecosystem?
N. Notat: "A multinational has a responsibility wherever it does business, directly or indirectly, and that means being held accountable for its local behaviour. Without local subcontractors, it no longer exists. Today, a company cannot achieve its goals by working under conditions that conflict with the interests of its local stakeholders."

You are uniquely positioned to observe companies. How do you view the changes in their commitment to social responsibility?
N. Notat: "The trend curve is clearly rising. Today, I encounter companies which understand the need to provide concrete, verifiable information on how they are living out their commitment to social responsibility. For them, CSR concepts are not just rhetoric anymore — they are strategic priorities.

While we are on this subject, I have to say that European companies tend to be among the good guys, and that French companies, in particular, have nothing to apologise for. Very early on, France required companies to publish a sustainable development report and I believe that once they were obligated to report on CSR, they felt obligated to practice CSR. So they chose to act. For some of them, their published material now reflects a genuine commitment, not just an exercise in public relations."

* Vigeo is Europe's leading expert in analysing, rating, auditing and providing consulting to organisations as regards their practices and performance on environmental, social and governance ("ESG") issues.

INNOVATION AWARDS: 399 ENTRIES
(up 60% over 2010)
- 41 projects selected
- 13 finalists from six different countries
- 4 categories: Innovative Processes, Innovative Systems and Products, Green Innovation and Small But Smart.

A LOYALTY BONUS is paid to managers in India and China who meet their targets and are still with the Group after three years.

37,000 EMPLOYEES PARTICIPATE in profit-sharing programmes.

1.45% OF ALSTOM'S CAPITAL was held by current and former employees at 31 March 2012, either directly or through mutual funds.

Comanche power plant (United States).

ALSTOM
SHARING ETHICS AND RESPONSIBILITIES

Group-wide commitment

Alstom employees are united around three shared values: trust, team and action.

At Alstom, business development is grounded in a culture of integrity and transparency – and in ethical principles that permeate the Group's strategy, procedures, working methods and relationships with stakeholders. Alstom is a member of the United Nations Global Compact and the Group deploys in all its businesses an Integrity Programme, which was certified in 2011 by ETHIC Intelligence. The Alstom Integrity Programme is based on Alstom's Code of Ethics which is distributed to all employees.

Compliance with ethical principles and sustainability criteria also guide purchasing and selection of the suppliers that are fully part of the Group's growth.

GLOBAL COMPACT

Alstom is a member of the Working Group on Anti-Corruption and the Expert Group on Responsible Business in Conflict-Affected and High-Risk Areas.

ALSTOM'S CODE OF ETHICS
was updated in 2010 and is available in 21 languages.

THE E-ETHICS MODULE
on the Code of Ethics has been deployed at Alstom Grid and translated into eight languages.

A COMMITMENT TO BUSINESS ETHICS

When ETHIC Intelligence certified the Alstom Integrity Programme in 2011, it was a testament to the Group's continual efforts to strengthen its ethics rules and to ensure that all employees share its culture of integrity.

Implemented under the supervision of the Ethics & Compliance (E&C) Department, the Alstom Integrity programme is based on the Group's Code of Ethics, which applies to all employees, and an instruction related to business ethics.

The Code of Ethics provides the rules for relationships with business partners and suppliers, Alstom's commitments to socially responsible business practices, human resources policies, and protection of Group assets.

It contains an alert procedure that employees may use to report any violation of Alstom's rules on ethics, especially concerning competition law, corruption prevention or securities and accounting laws and regulations.

Strict instructions govern relationships with business advisors, resellers and consulting companies, as well as conflicts of interest, gifts and hospitality, political and charitable contributions and sponsorship.

Training courses are part of the programme and information is disseminated through a broad range of channels, including a special section of Alstom's Intranet, posters and articles in the Group's weekly newsletter.

Another key component of Alstom's commitment to ethics is its community of 250 E&C Ambassadors. The Country Presidents and representatives of the Legal, Finance and HR departments who volunteer to serve as E&C Ambassadors promote the culture of integrity and relay ethics questions to the E&C Department.

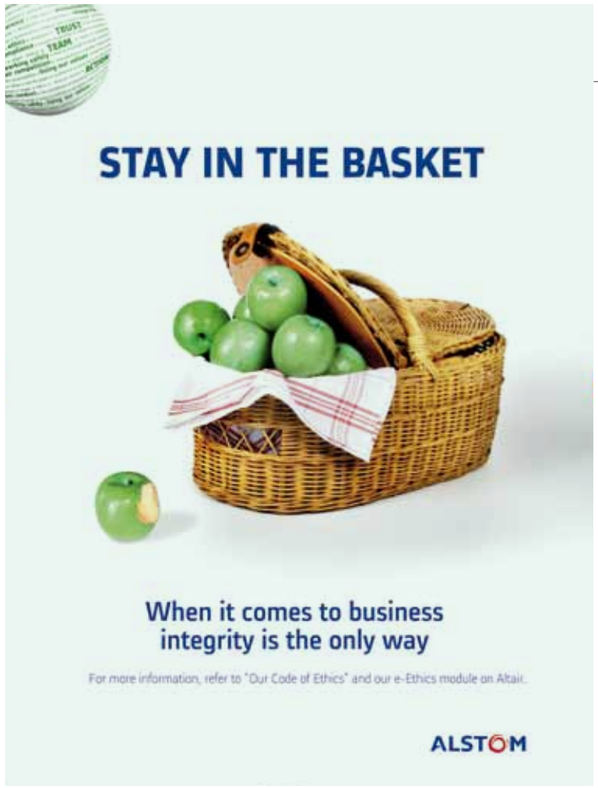
Alstom is a member of the Global Compact Working Group on Anti-Corruption, the Ethics and Compliance Officer Association in the United States, the Institute of Business Ethics in the United Kingdom and the International Chamber of Commerce in France.

At a local level, the Group sponsors the Ethos Institute in Brazil, the Center for Business Ethics and Corporate Governance in Russia and the Chair in Business and Law Ethics at the University of Cergy-Pontoise in France. Created in 2007, the Chair brings researchers and business professionals together and prepares students for a Master's degree.

First graduating class from the Business Law and Ethics programme at the University of Cergy-Pontoise, sponsored by Alstom.

THE ETHICS, COMPLIANCE AND SUSTAINABILITY COMMITTEE COMPLETES ITS FIRST YEAR OF FULL OPERATION

The EC&S Committee met four times during the financial year. The Committee approved structuring the Group's CSR programmes around three core principles: building relationships of trust with stakeholders to ensure that Alstom's offer is acceptable, offering products and services that create environmental value and make CSR a unifying element for all employees of the Group, thereby promoting a sense of belonging and pride in the company. The Committee also called for regular reports on efforts to prevent severe accidents and recommended that the Group identify key risks associated with sustainable development, clarify its policies favouring communities and diversity and make more use of its environmental management system. The Committee was informed of three certifications awarded by ETHIC Intelligence during the financial year and reviewed and approved the new organisation of the Ethics & Compliance Department. It submitted a report on its work to the Board of Directors.



A business ethics campaign raised employee awareness in 2011.

OVER 40,000 EMPLOYEES
have completed the Group's e-learning programme in Ethics and Compliance since 2006, and 7,200 more have been trained in person.

1ST CLASS
OF STUDENTS SPONSORED BY ALSTOM HAS RECEIVED MASTER'S DEGREE
in Business Law and Ethics from the University of Cergy-Pontoise.

RESPECT FOR HUMAN RIGHTS

As a member of the United Nations Global Compact, Alstom complies with the Universal Declaration of Human Rights and with International Labour Organisation conventions. Respect for human rights is among the criteria reviewed by the Group's Risk Committee when assessing projects and a charter with suppliers and contractors requires that they respect human rights as well. Finally, Alstom conducts an annual survey to ensure that there are no incidents of exploitation of children, forced labour, violation of freedom of association, or discrimination of any kind.

RESPONSIBLE PURCHASING: 8,500 SUSTAINABLE DEVELOPMENT CHARTERS HAVE BEEN SIGNED BY SUPPLIERS AND SUBCONTRACTORS.

	2009/10	2010/11	2011/12
Amount of purchase in € million	11,800	12,400	11,600
Number of Charters signed	1,500	4,500	8,500
Number of suppliers assessed	492	850	1,225
Number of people trained through specific programmes	89	300	680

RESPONSIBLE SOURCING

Alstom seeks to foster long-term ties involving suppliers and contractors in its growth strategy, in line with a responsible sourcing approach.

Alstom has identified the environmental, social and ethical risks associated with its suppliers and contractors and has set up a Charter for Sustainable Development. By signing the charter, suppliers who sign the Charter agree to comply with the major conventions of the International Labour Organisation and the OECD, particularly with respect to child labour, health, safety, environment and business ethics.

Alstom also works with a specialised provider to evaluate the environmental, social and ethical practices of main suppliers and contractors, including the requirements they impose on their own suppliers.

A risk map covering 6,500 suppliers – 80% of Group procurement – helps to prioritise the evaluation process.

Suppliers that do not comply with the Charter's standards must take corrective action: Alstom works with them to identify the necessary steps and then conducts a second evaluation. To help sourcing people and qualiticians understand the Group's priorities, use the evaluation tools and help suppliers with their improvement plans, Alstom has developed a specialised training programme. Employees also have access to online training.

PURCHASING **60%** of Group sales.

150 EMPLOYEES IN INDIA AND CHINA have been trained in responsible sourcing.

ONLINE TRAINING FOR BUYERS is available in 7 languages.

Maintenance operations at Algeria's Marsat power plant.

INTERVIEW - ALEJO SISON

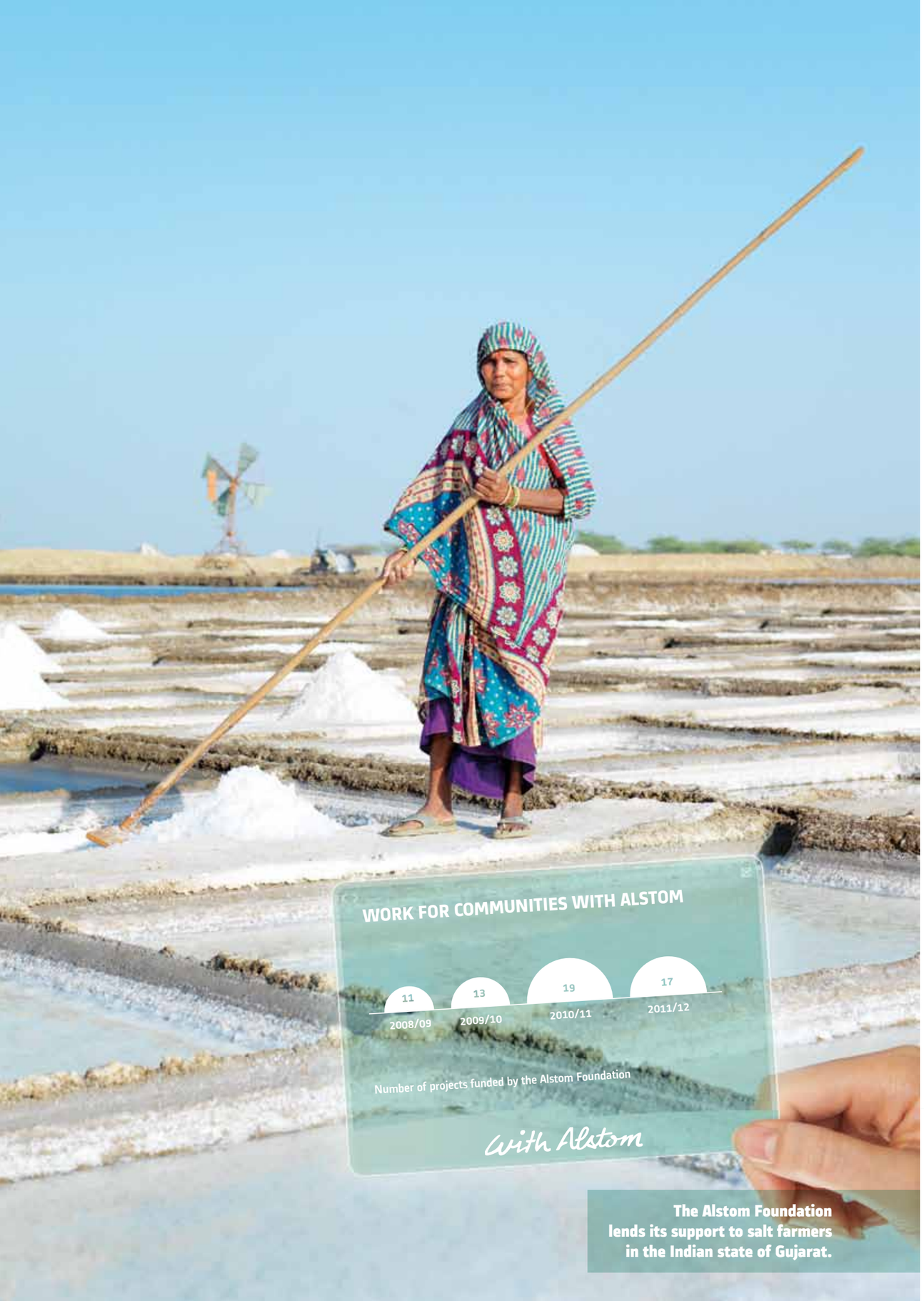
Executive Committee President, European Business Ethics Network*

"Ready to sacrifice part of our profit to improve our ethical profile."

What progress have large companies made in taking ethical principles on board?
A. Sison: "Large companies have made a lot of progress over the past few years. It's true that, because of their size, they attract more attention and come under more pressure than other companies. For them, the real question today is this: are we ready to sacrifice part of our short-term profit to improve our ethical profile? It seems to me that many big companies have already answered this question with a yes."

What are the major ethical challenges facing them today?
A. Sison: "There are two types of challenge. First, we should note that over the past few years, legislatures have made a lot of progress towards motivating companies to take new ethical requirements on board. The most obvious example is the Dodd-Frank reform in the United States which aims to increase supervision of the financial sector. Adapting to these new laws is the first challenge facing companies today. But we should also remember that companies have worked very hard on this and many have created Ethics Manager positions. The challenge now is to educate and train everyone in the company: executives, employees, all the company's stakeholders need to be more aware of ethical issues. The rules and charters that companies have developed are necessary but they are only the first step. To make real headway against corruption and conflicts of interest, nothing can replace training people. That is how companies will succeed in fostering a genuine culture of ethics."

* A European network of executives dedicated to promoting ethics in business.



The Alstom Foundation lends its support to salt farmers in the Indian state of Gujarat.

ALSTOM LIFE TOGETHER

Committed to communities

Wherever Alstom operates, it forges ties with local partners, cultivates close relationships with its customers built on trust and engages in efforts to support communities. The Group joins initiatives that promote innovation and competitiveness and lends assistance to start-ups specialising in energy efficiency, renewable energies and sustainable mobility. Worldwide, employees are encouraged to join development initiatives in partnership with local associations and communities.

These long-term outreach initiatives reflect Alstom's openness to society and its commitment to promoting responsible growth that combines economic and social progress, preserves each region's natural and cultural heritage and considers the needs of local communities living near Group facilities and project sites.

Since its creation at the end of 2007, the Alstom Foundation has backed these efforts by providing technical and financial support to some 60 community service projects championed by Group employees and carried out in partnership with local organisations and associations. The Foundation also provides emergency aid to communities, living near Alstom sites, who are struck by natural and industrial disasters.

60 PROJECTS WERE FUNDED
by the Alstom Foundation
from 2009 to 2008.

€30 MILLION COMMITTED TO THE ASTER II CAPITAL FUND UNTIL 2022.
Aster II supports start-ups specialising in eco-friendly energy, materials and chemicals.

CLOSE TO CUSTOMERS

Alstom builds close customer relationships based on trust. Customer opinion is solicited through satisfaction surveys, followed by corrective action as needed.

In Alstom Grid, Strategic Key Account Management programmes also contribute to customer satisfaction, using in-depth dialogue and customised action plans to anticipate needs and meet them more effectively.

Innovation programmes and R&D are guided by working groups made up of customers and Alstom experts and organised around specific products and technologies. Meetings, seminars and events with a more technical focus – such as the Power Sector's Clean Power Days– encourage dialogue between technical associations and customers.

Alstom Grid also supports customers through its Technical Institute and its 16 centres, which delivered 13,000 days of training in 2011.

A VOICE IN THE SUSTAINABILITY DEBATE

Alstom contributes to the sustainability debate within national and international organisations, stressing the need for pro-active public policy to encourage innovation and non-polluting technology, promote access to electricity for all, encourage fair competition and open trade and expand long-term investment policies.

The Group is also active in many international and European organisations, including the UN Global Compact, the World Business Council for Sustainable Development, the International Association of Public Transport, the International Emissions Trading Association, The Climate Group, the Corporate Leaders Group on Climate Change and the EU Corporate Leaders Group on Climate Change. In 2011, Alstom joined *Comité 21*, a French network of public and private stakeholders.

CONTRIBUTIONS TO INTERNATIONAL SUSTAINABILITY PROGRAMMES

Low-carbon technologies – Alstom is a participant in Europe's carbon capture and storage (CCS) demonstration projects and in the New Entrants Reserve programme (NER 300) for industrial deployment of innovative CCS, offshore wind and smart grid technologies (€4 billion). Working with several partners, the Group has submitted proposals and it is also involved in the International Energy Agency's programmes including the Greenhouse Gas programme and the Clean Coal Center and in the US Department of Energy (DOE) programmes.

Smart grids – Alstom Grid contributes to Europe's Twenties project, focusing particularly on developing direct current power transmission technologies that can link wind power and other renewable energy sources to a future European network.

Energy storage – Alstom offers advanced solutions based on hydro power (pumped storage variable speed turbines) and smart energy management solutions and Group experts participate in conferences and other events.

Smart cities – The European Union supports the development of eco-friendly communities that combine renewable energy, positive-energy buildings and eco-friendly mobility solutions. Alstom and its partners, Bouygues and Embix, will participate in the smart cities demonstration programme launched in 2012 by the European Commission.

HELPING INNOVATIVE COMPANIES GROW

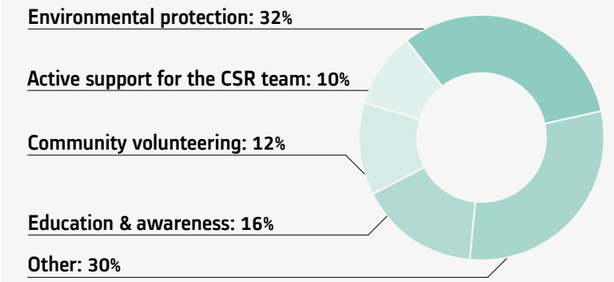
Alstom cultivates partnerships with start-ups offering new materials, components, concepts and solutions that contribute to sustainable development and are compatible with its markets and products. The Group also invests in innovative companies through venture capital funds like Emertec 4, which backs 15 start-ups in energy efficiency, renewable energies, environmental protection and mobility. It has also committed €30 million through 2022 to the Aster II Fund, which focuses on start-ups specialising in eco-friendly power generation and transmission, materials and chemicals. In addition, Alstom has partnered with high-tech specialists Rotem Industries, Ltd. and Gefen Biomed Investments to create Horizon, a joint venture that finances innovative companies that focus on renewable energies and energy efficiency.

The Group also contributed to the Third National Eco-Enterprise Forum, held in Paris, which fosters relationships between big companies and innovative small ones, and in 2009 it signed the International SME Pact, proposed by the French government to support innovative small and medium-sized businesses at international level. Alstom advises these businesses on export strategy, connects them with its local partners and customers and offers them the use of its premises.

In France, Group engineers contribute to the work of eight of the country's competitiveness clusters: onboard systems (System@tic), transport systems of the future (I-Trans), new textiles (Up-Tex), microtechnology, new energies (Tenerrdis), nuclear pole, renewable energies, and power electronics. In Belgium, Alstom chairs the Board of Directors for the "Logistics in Wallonia" cluster.

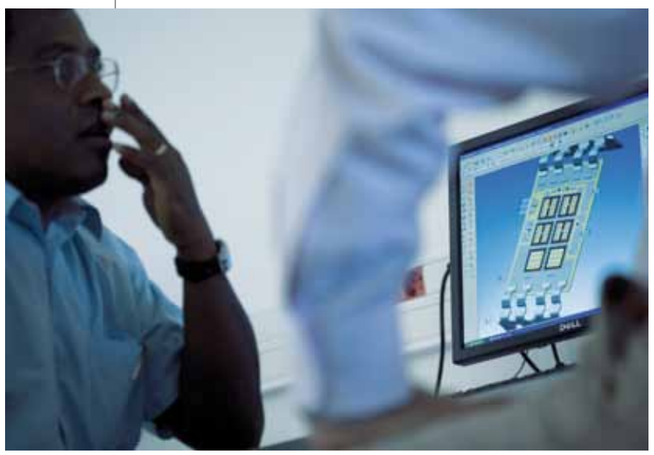
AN ACTIVE ROLE IN SUSTAINABLE DEVELOPMENT

Areas where employees want to get involved



with Alstom

Transport's site in Tarbes, France is participating in a research programme on onboard systems as part of the Aerospace Valley competitiveness cluster.



MORE THAN 480 CUSTOMERS
responded to the 2011 satisfaction survey for the two Power Sectors. Customers are also surveyed at the end of most projects.

ASTER II GLOBAL VENTURE CAPITAL FUND
- 4 partners: Alstom, Rhodia-Solvay, Schneider Electric and, since 2012, the European Investment Fund.
- 4 investments in Europe and in the United States.

18 COMPANIES
INTERNATIONAL SME PACT:
18 French companies have been supported by Alstom since 2009.

TOMORROW'S TRANSPORT
Working with RATP, the Paris transport authority, Alstom created Metrolab, a research laboratory dedicated to designing tomorrow's automated metro. The Group has also joined Deutsche Bahn and 12 industrial companies and research centres in supporting the ECO-rail Innovation project, which seeks to reduce rail sector emissions to zero by 2050.

The Alstom Foundation supports a bamboo replantation project in Indonesia.

60 PROJECTS FUNDED BY THE FOUNDATION

Alstom works with local associations to make life better for neighbouring communities, participating in charitable causes, supporting health and education initiatives and backing cultural and sporting events. Group employees around the world are encouraged to take part. The Group gives special attention to education projects that help the jobless find work.

The Alstom Foundation supplements and coordinates these efforts by financing social and environmental initiatives. Each project is championed by Group employees and developed in partnership with local stakeholders.

With an annual budget of €1 million, the Foundation has financed 60 projects since its creation in 2007. Five of the 17 projects chosen in 2011 focused on combining economic development with environmental protection. These included eco-tourism at El Mirador Park in Guatemala, technologies to reduce water consumption by micro-power plants in India, waste recovery in Brazil, support for refuse collector cooperatives and a recycling awareness campaign in Argentina and development of a recycling infrastructure in Egypt.

The Foundation was also involved in seven other projects that placed more emphasis on social issues: setting up irrigation and rainwater harvesting structures in Bargarh, India; building 15 rainwater tanks in Bali, Indonesia; renovating a park in Santiago, Chile as well as a school and a children centre in Argentina; planting forests in the Dominican Republic; installing solar panels for 50 Bedouin in Israel's Negev Desert and renovating a community kitchen for women living alone in Mexico.

Education and environmental awareness are also priority issues for the Foundation: in 2011, it provided eco-friendly stoves to 300 families in Bhutan and worked to protect Malaysian coral reefs for the fourth year in a row. Two other projects promoted conservation by building wells and planting trees in Mali and restoring Brazil's Atlantic forest for the third consecutive year.

ALSTOM FOUNDATION

INTERVIEW - CARLOS MANUEL RODRIGUEZ

Vice President for Conservation Policy, Conservation International*

"Helping to transform our economies"

What are the key issues in today's interactions between multinational companies and the communities where they do business?
CM Rodriguez: "The first priority is to help make local economies more sustainable. For the moment, that is obviously not the case. Nor is it true of our production methods and consumption habits, which need radical transformation. Success hinges on two premises. First, we have to make a technological leap. With support from our partners, we can do that. Second, we need to make the leap in such a way that it creates jobs. This is non-negotiable: moving towards a more sustainable economy is meaningless unless it benefits society. Failing that, we'll never convince anyone that these issues are important or that things need to change."

What role can multinationals play in this process of change?
CM Rodriguez: "In my view, the transformation will not succeed unless they throw themselves into it, 'body and soul', with a thorough understanding of local needs. If they do, their experience and innovation will be enough to expand and amplify the change now under way. On the ground, companies should take steps to help make production methods, behaviours and national policies more sustainable. That, I think, would be a very valuable contribution towards transforming our economies."

What about civil society?
CM Rodriguez: "Creating country-level partnerships is another essential contribution that multinationals must make partnerships with other businesses, organisations and all of the stakeholders in civil society, including NGOs, the scientific community and academia. I believe that these connections and the communication that grows out of them are extremely productive. When they are based on the perception of a common interest, they very quickly generate new ideas and projects that make tangible changes to society." ■

* Conservation International is an NGO specialising in the protection of flora, fauna and the environment. Founded in 1987, CI is active in some thirty countries over four continents.

9 ECO-SCHOOLS have been created in South Africa with support from the Alstom Foundation.

THE 2,000 VILLAGERS IN N'SEKE (DRC) now have access to drinking water, thanks to a joint project with the NGO, Objectif Ô.

50,000 TREES have already been replanted in Rio Turvo State Park (Brazil).

SINCE 2008, THE ALSTOM FOUNDATION has supported projects in 32 countries.

FINANCIAL RESULTS

CONSOLIDATED INCOME STATEMENT

FINANCIAL YEAR ENDED 31 MARCH (IN € MILLION)	2012	2011
SALES	**19,934**	**20,923**
Cost of sales	(16,144)	(16,938)
Research and development expenses	(682)	(703)
Selling expenses	(900)	(902)
Administrative expenses	(802)	(810)
INCOME FROM OPERATIONS	**1,406**	**1,570**
Other income	3	46
Other expense	(337)	(852)
EARNINGS BEFORE INTEREST AND TAXES	**1,072**	**764**
Financial income	55	57
Financial expense	(232)	(193)
PRE-TAX INCOME	**895**	**628**
Income tax charge	(179)	(141)
Share of net profit attributable to equity-accounted investments	28	3
NET PROFIT	**744**	**490**
Attributable to:	0	0
- Equity holders of the parent	732	462
- Non controlling interests	12	28
NET PROFIT PER SHARE (€)		
- Basic earnings per share	2.49	1.57
- Diluted earnings per share	2.46	1.56

CONSOLIDATED BALANCE SHEET

FINANCIAL YEAR ENDED 31 MARCH (IN € MILLION)	2012	2011
ASSETS		
Goodwill	5,483	5,396
Intangible assets	1,921	1,934
Property, plant and equipment	2,852	2,651
Associates and non consolidated investments	531	207
Other non-current assets	545	567
Deferred taxes	1,472	1,287
TOTAL NON-CURRENT ASSETS	**12,804**	**12,042**
Inventories	3,138	3,363
Construction contracts in progress, assets	3,752	2,479
Trade receivables	5,692	6,053
Other current operating assets	3,557	2,945
Marketable securities and other current financial assets	13	50
Cash and cash equivalents	2,091	2,701
TOTAL CURRENT ASSETS	**18,243**	**17,591**
TOTAL ASSETS	**31,047**	**29,633**
EQUITY AND LIABILITIES		
Equity attributable to the equity holders of the parent	4,327	4,060
Non-controlling interests	107	92
TOTAL EQUITY	**4,434**	**4,152**
Non-current provisions	804	1,095
Accrued pension and other employee benefits	1,417	1,145
Non-current borrowings	3,863	3,346
Non-current obligations under finance leases	477	491
Deferred taxes	176	88
TOTAL NON-CURRENT LIABILITIES	**6,737**	**6,165**
Current provisions	1,414	1,387
Current borrowings	634	578
Current obligations under finance leases	48	51
Construction contracts in progress, liabilities	9,508	9,166
Trade payables	4,080	4,071
Other current operating liabilities	4,192	4,063
TOTAL CURRENT LIABILITIES	**19,876**	**19,316**
TOTAL EQUITY AND LIABILITIES	**31,047**	**29,633**

CONSOLIDATED STATEMENT OF CASH FLOWS

FINANCIAL YEAR ENDED 31 MARCH (IN € MILLION)	2012	2011
NET PROFIT	**744**	**490**
Depreciation, amortisation and expense arising from share-based payments	621	671
Post-employment and other long-term defined employee benefits	(61)	(150)
Net (gains)/losses on disposals of assets	1	70
Share in net profit attributable to equity-accounted investments (net of dividends received	(27)	0
Deferred taxes charged to income statement	(94)	(107)
NET CASH PROVIDED BY OPERATING ACTIVITIES - BEFORE CHANGES IN WORKING CAPITAL	**1,184**	**974**
CHANGES IN WORKING CAPITAL	**(968)**	**(743)**
NET CASH PROVIDED BY OPERATING ACTIVITIES	**216**	**231**
Proceeds from disposals of tangible and intangible assets	24	44
Capital expenditure (including capitalised R&D costs)	(813)	(791)
Increase/(decrease) in other non-current assets and liabilities	15	(1)
Acquisition of Grid (€- 2,323 million) net of cash acquired (€328 million)	28	(2,023)
Acquisitions of businesses, net of cash acquired	(93)	(242)
Disposals of businesses, net of net cash sold	(73)	(68)
NET CASH USED IN INVESTING ACTIVITIES	**(912)**	**(3,081)**
Capital increase/(decrease)	(1)	9
Dividends paid, including payments to non controlling interests	(206)	(378)
Issuance of bonds and notes	560	1,500
Changes in current and non-current borrowings	13	33
Changes in obligations under finance leases	(42)	(41)
Changes in marketable securities and other current financial assets and liabilities	(237)	57
NET CASH PROVIDED BY FINANCING ACTIVITIES	**87**	**1,180**
NET DECREASE IN CASH AND CASH EQUIVALENTS	**(609)**	**(1,670)**
Cash and cash equivalents at the beginning of the period	2,701	4,351
Net effect of exchange rate variations	0	24
Other changes	(1)	(4)
CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD	**2,091**	**2,701**
Income tax paid	(264)	(248)
Net of interest received and paid	(170)	(107)

ANALYSIS OF CHANGE IN NET CASH POSITION

FINANCIAL YEAR ENDED 31 MARCH (IN € MILLION)	2012	2011
ANALYSIS OF THE CHANGE IN NET CASH/(NET DEBT) (*)		
Changes in cash and cash equivalents	(609)	(1,670)
Changes in marketable securities and other current financial assets and liabilities	237	(57)
Changes in bonds and notes	(560)	(1,500)
Changes in current and non-current borrowings	(13)	(33)
Changes in obligations under finance leases	42	41
Net debt of acquired entities at acquisition date	(303)	(289)
Decrease/(increase) in net debt	(1,206)	(3,508)
NET CASH/(NET DEBT) AT THE END OF THE PERIOD	**(2,492)**	**(1,286)**

(*) Net cash/(net debt) is defined as cash and cash equivalents, marketable securities and other current financial assets and non-current financial assets directly associated with liabilities included in financial debt, less financial debt.

CONTACTS

ALSTOM
3 avenue André-Malraux
92309 Levallois-Perret Cedex
Immeuble Sextant
France
Tel.: +33 (0)1 41 49 20 00
www.alstom.com

ALSTOM THERMAL POWER
Brown Boveri Strasse 7
CH-5401 Baden
Switzerland
Tel.: +41 (0) 56 205 77 33
www.alstom.com/power

ALSTOM RENEWABLE POWER
4 avenue André-Malraux
92309 Levallois-Perret Cedex
Immeuble Octant
France
Tel.: +33 (0)1 41 49 20 00
www.alstom.com/power

ALSTOM TRANSPORT
48 rue Albert Dhalenne
93482 Saint-Ouen Cedex
France
Tel.: +33 (0)1 57 06 90 00
www.alstom.com/transport

ALSTOM GRID
Immeuble Galilée
Quartier Michelet-La Défense 10
France
Tel.: +33 (0)1 49 01 61 00
www.alstom.com/grid