Presence of Alstom in Mexico

INFORMATION

Seven buildings in Mexico: two Corporate offices, two manufacturing units, a Regional Centre with Steam Generating Plants and two service centers.

- Alstom Power and Alstom Transport Corporate Offices in Mexico City.
- Alstom Grid Corporate Offices in Mexico City.
- Steam turbines components manufacturing center in Morelia, Michoacán.
- Regional Center geothermal and biomass projects in Latin America and North America in Morelia, Michoacán.
- Alstom Power Services Center in Monterrey, Nuevo León.
- Alstom Grid Services Center in Toluca, Mexico State.

1,162 Employees
Alstom has supplied about 20% of the installed base capacity of the country, generating over 10,500MW. Our World Manufacturing Center in Morelia, Michoacán, has contributed significantly to the competitiveness of Mexico, employing highly qualified engineers and exporting 80% of production to various parts of the world. The turbine components (diagram, rotor, blades and housings) for thermal power, core power and geothermal power plants assembling and balancing turbines are manufactured.

The Regional Centre of Steam Generating Plants, is also located in Morelia. For the first time, Alstom has made a significant investment and infrastructure developed outside Europe and USA to provide its full capacity geothermal engineering together in one place.

The Service Center for power generation based on gas, coal, combined cycle, simple, nuclear and geothermal cycle is strategically located in Monterrey, Nuevo León, in order to provide service to projects located North of Mexico and at the border of the United States of America.

The highlights:

- **2003.** Los Azufres II (Geothermal)/four units 25 MW each. The project included the installation of turbines, substation, generator, cooling system and control center, Michoacán.
- **2004.** Chicoasen (Hydro-electric): The expansion of the plant including three new units that generate a total of 930MW hydropower capacity. Chiapas.
- **2004.** Monterrey II and III (Gas): two units of 225 MW, with an installed capacity of 450MW; Monterrey III, with four units of 250 MW, with a capacity of 990MW. Nuevo León.
- **2007.** Laguna Verde (Nuclear): Rehabilitation and modernization of steam turbines, turbogenerators new power and a new turbine for the safety and control system. The project has increased the generation capacity by 20%.
- **2009.** Los Humeros II (Geothermal) Generating Station with two units of 25 MW. The project includes installation of turbines, substation, generator, cooling system and control center.
- **2010.** Manzanillo (Oil): Modernization of steam turbines for gas conversion project of Units 1 and 2 of the Manzanillo power plant.
- **2013.** Sureste I Phase II (Wind) 34 wind turbines (ECO 100).
- **2014.** Monterrey III (GAS) Provisioning of a power island KA24. The contract includes a GT24 gas turbine, a steam turbine and a steam generator for heat recovery, which will be part of Unit V of the combined cycle center.

### Grid

Alstom Grid has had a significant presence in Mexico since the 70s through AEG Mexicana, S.A. de C.V. Alstom created the Alstom Grid sector in 2010 when it took over the transmission business of Areva T&D, providing the company with considerable experience and know-how in power systems and automation systems (power electronics, high voltage and continuous direct current) connections. Over 40% of the electrical sub stations are equipped with Alstom Grid products.

The Alstom Grid plant in Toluca brings together manufacturing facilities, service and automation. The plant specializes in the design and manufacture of high voltage circuit breakers, switches, transformers and capacitor banks and also offers training in operation, maintenance, modernization, technical support, repair and automation products mains. Alstom Grid also has a Solutions unit in Mexico City that specializes in turnkey projects.

Alstom Mexico, March 2015
br.communication@crn.alstom.com
The highlights:

- **2010 - Capacitive Compensation**: Eleven 115 kV and 292.5 MVAR compensation substations.
- **2011 - Culiacán-Los Mochis**: Changing voltage on the transmission line of Culiacán-Los Mochis, consisting of three transmission lines of 400 kV and two 400/230 kV substations.
- **2011 - South Distribution**: Construction and installation of four distribution substations of 115 kV and 13.8, with a capacity of 90MVA, and 5.4 MVAR compensation of medium voltage and 22 medium voltage feeders, three lines of high voltage 115 kV with 9.83 km-C.
- **2012 - PIF 1114-1-3**: Seven new substations and eleven transmission lines in the states of Puebla, Veracruz and Oaxaca. Joint project with Sademex, Ingeniería y Construcción.
- **2013 - Diana Substation**: The supply of SF6 gas in an underground 230 kV substation to the Paseo de la Reforma in Mexico City.

**Transport**

The Transport Division of Alstom has been present in Mexico since 1967, when the first metro line was built. Alstom is a leader in Key Infrastructure Projects for the Metro of Mexico City and has provided all the signaling system, including the line 12. Alstom has supplied more than eighty trains for the Metro of Mexico City since 1968 and over 40% of trains are equipped with Alstom traction systems. Alstom is the leading provider of rectifying substations for the subway system.

Alstom Transport offers maintenance of tracks and locomotives for the main cargo operators in Mexico. It has supplied the Traffic Control Center in Guadalajara Mexican Railway and is currently conducting a series of long-term locomotive maintenance contracts for Ferromex, Ferrosur and Ferrovalle.

The highlights:

Alstom has supplied 100% of the signaling systems of the Mexico City Metro: line 1 to line 9, line A and line B line 12

- **2008** - Maintenance and repair of + then 150 locomotives for more than ten years with Kansas City Southern Mexico.
- **2008** - Maintenance and repair of + than 150 locomotives for more than eight years with Ferrosur Locomotives.
- **2014** - Key Project for line 3 of Metrorrey in Monterrey with Garza Ponce company and Moyeda construction companies.

**History**

- **1905**: First sale of transmission products recorded in Mexico.
- **1957**: Incorporation of AEG Electric Mexicana, SA (later became Alstom T&D, S.A. de C.V.)
- **1967**: Train supply contract with rubber tires for Metro Line 1 of Mexico City.
- **1969**: Inauguration of Line 1 of Mexico City Subway.
- **1970**: Supply of Signaling Systems for line 2 and start of construction of Line 3 of Mexico City Subway.
- **1977**: Manufacture, assembly, testing and commissioning of the first high voltage equipment by AEG Mexicana, S.A. de C.V.
1980  Incorporation of TURALMEX with the merger of Nacional Financiera (NAFINSA) and B.B.C. BROWN, BOVERI & COMPANY, LIMITED (BBC). BBC sells its shares to NAFINSA before starting operations from 1983.

1982  Lines 4 and 5 of the Mexico City Subway are in operation. Alstom supplies rolling stock and signaling.

1987  Alstom was chosen from ABB, MHI and Siemens to form a partnership with NAFINSA: Alstom (49%) and NAFINSA (51%).

1988  The first orders received from the Federal Electricity Commission to build two 350 MW equipment for units 3 and 4 of the Coal Power Plant II in Coahuila.

1989-1994  Signaling lines 8, 9 and A (running steel wheels) Mexico City Subway.

1991  First contract to build a key power plant in Tuxpan, Units 3 and 4.
       GEC Alstom acquires NAFINSA shares creating GEC Alstom Mexico.

1993  First refurbishing contract signed by the Mexico City Subway for 25 trains with rubber tires.

1994  Start of Turnkey Projects for Power Substations for AEG Mexicana, S.A. de C.V.

1995  Design, propulsion and information systems for thirteen trains with steel wheels FM68A for the Mexico City Subway.

1996  Modernization of thirty trains with rubber tires (MP68) for the Metro of Mexico City.

1998  First Rail Service for private locomotives.
       AEG Mexicana, S.A. de C.V. changed its name to ALSTOM T&D, S.A. de C.V.
       ALSTOM T&D, S.A. de C.V. undertakes the business of CEGELEC and merges with GEC Alstom T&D Balteau, S.A. de C.V.

1999  Alstom T&D, S.A. de C.V. merges with GEC Alstom T&D Elmex, S.A. de C.V.

2000  Alstom buys the shares of ABB to create Alstom Power México, S.A. de C.V.

2004  Alstom T&D, S.A de C.V. converts into Areva T&D, S.A. de C.V.

2006  All corporations in Mexico merge to become Alstom Mexicana, S.A. de C.V.

2007  Modernization and maintenance contract of 25 trains with rubber tires MP82.

2008  First turnkey project to build the infrastructure of line 12 of Mexico City subway.

2010  Purchase of Areva T&D Energy Transmission Power Line Division and New Division of Alstom: Alstom Grid.

2012  Entry into service of the first air pollution control system.

2013  First contract of wind power signed in Mexico.

2014  Alstom received the "Recognition of Social Responsibility" (ESR)

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**Corporate Social Responsibility**

**EJUTLA, OAXACA**

2009 – The purpose of this project was the supply of electricity to Ejutla Community in the State of Oaxaca. Once hybrid power generation systems of 500 watts (wind and solar) were built in partnership with Group to Promote Education and Sustainable Development, AC (GRUPEDSAC) to supply power to 23 families in the area. The training courses were also taught to replicate these systems.

**CERRO ALTO, VERACRUZ**

2010 – The objective of this project was to help preserve and maintain the biodiversity of the central coastal area of Veracruz, one of the most important migratory routes of the world for birds of prey, used by more than 4.5 million migratory birds each season. In partnership with Pronatura, AC, 186-hectare nature reserve of Cerro Alto Gallegos is retained thus ensuring a second year of nesting. An area of local flora and environmental education center is also provided.

**LOS PRADOS DE VALLE JANOS, CHIHUAHUA.**

2010 – The purpose of this project is to promote green technology, sustainable farming (reintroducing bison) and environmental
awareness in Meadows Valley Janos, Chihuahua. In partnership with The Nature Conservancy green technology center was created and education programs on ecosystems and species conservation programs providing education on ecosystems and the conservation of local species are also provided. Twenty-three bison were reintroduced to the reserve and there are now thirty-one.

**LA PATRONA, VERACRUZ**

2011 – The purpose of the project was to promote the eco-art and to provide training in nutrition in order to improve the quality of life of the local community through the proper use of the land, and achieving self-sufficiency in food and economy. Initially, twenty families have benefited from the project and there are plans to extend it to the whole community of La Patrona, Veracruz. In partnership with GRUPEDSAC, two stoves (wood) "Patsari" have been built using ferrocement, and a water tank, gardens, bedrooms and a multifunctional hall.

**EL ORO, MEXICO STATE**

2012/2013 – Establish a participative action plan for the conservation of the species Ambystoma granulosum Brockman Dam (El Oro, Mexico State), by creating strategies that can preserve this species, together with the activities of the environmental community that will improve the quality of life. The project was launched by GRUPEDSAC and researchers from the National University (UNAM).

**Assistance project for the disaster of the Manuel Hurricane - Rebuilding a school in the state of Guerrero**

2014 – Assistance due to the Natural Disaster caused by Hurricane Manuel. In Coyuca of Benites, Guerrero, Alstom Foundation will work to rebuild a school destroyed by Hurricane Manuel, building an environmentally friendly building (incorporating ecological and sanitary solar panels) for daily use of over 100 students. The building will be located in a highly secure area to extreme weather events that have the functionality to become a shelter in case of a new natural disaster. For the project a reconstruction fund was created to unite the population and local businesses and implement resource efficient and transparent manner. The project will be conducted in conjunction with United Way (United Ways) and Niños en Alegria, A.C.

**Strengthening of Rural and Indigenous Communities to preserve the limits of Rio Papaloapan**

2014 – In the Tuxtepec area in Oaxaca, work in reforestation and forest conservation Chinantla which is the third largest and most important of Mexico, the Papaloapan River Basin and its biodiversity through the proper management of resources, water and forest to ensure the sustainability of the project. This 390 hectares of forest will be redeemed, and will contribute to the conservation of the Papaloapan River Basin provides drinking water to 1.5 million people in Oaxaca, Veracruz and Puebla. This project will be conducted jointly with Ecologic Development Fund (USA) and The Regional Environmental Fund Chinantla Oaxaca (FARCO).

**Sustainable Development of Water Resources in Tumbisca**

2014 – In Tumisca, Michoacán, Alstom, aims to contribute to the protection and improvement of the quality of water resources and the equitable distribution among users. The project will be conducted in conjunction with La Universidad Nacional Autónoma de México (UNAM) Fundación Gonzalo Río Arronte, El Programa de Conservación Comunitaria de la Biodiversidad (CONABIO), U.S. Finish and Wildlife Service and the City of Morelia.

**RECOGNITION OF CORPORATE SOCIAL RESPONSIBILITY**

Alstom was awarded the "Certificate of Corporate Social Responsibility" (ESR), granted by the Mexican Center for Philanthropy (Cemefi) and the Mexican Alliance for Corporate Social Responsibility (AliaRSE). Such distinction is awarded to companies in Mexico that promote and support the principles related to the social responsibility of business as part of its strategy and business culture with respect to certain areas, such as quality of life within the organization, business ethics, management social responsibility, community outreach and the environment. The ESR distinction recognizes the culture and the view held by Alstom in Mexico to help improve the quality of life of families in the country through the actions and initiatives of social responsibility.