Finished Projects

High Voltage Projects

Supply of high voltage circuit breakers for 24 kV to 420 kV (frame agreements with the main utility companies)
- 100% Frame Agreement with Iberdrola: Circuit Breakers 72.5 kV (2011 - 2013)
- 50% Frame Agreement with Iberdrola: Circuit Breakers 24, 36 and 145 kV. (2011-2013)
- 50% Frame Agreement with Red Eléctrica España (REE): Circuit Breakers 245/400 kV (2011 - 2012)
- 50% Frame Agreement with Endesa: Supply, installation and commissioning of Automatic Circuit Breakers SF6 for the Spanish mainland, Balearic and Canary Islands.

Supply of high voltage disconnectors for 36 kV to 420 kV (frame agreements with the main utility companies)
- 35% Frame Agreement with REE: Disconnectors (2011 - 2012)
- 70% Frame Agreement with Gas Natural Fenosa: Disconnectors (2012 – 2015)

Supply of hybrid compact switchgear (frame agreements with the main utility companies)
- Supply to REE of 5 hybrid compact switchgear 145kV for mobile substations on Balearic and Canary Islands.
- 60% Frame Agreement with Endesa: Hybrid Compact Switchgear in SG6 145 kV (2011 – 2013)
- 50% Frame Agreement with Endesa: Disconnectors 245 kV for REE substations

100% Frame agreement with Endesa to supply generator circuit breakers

Pilot project for Endesa for optical transformers on the mainland

Disconnector project for power plants all over the island for Endesa

Commissioning of transformer of 400/132/25 kV 315 MVA for boilers from Endesa

Network Systems Engineering

- Plana del Vent (Tarragona) 400 kV SF6 Gas Insulated Substation to evacuate power from the Combined-Cycle Station
  Protection and control systems, telecommunications and auxiliary services
- Maragall (Barcelona) Rebuilding of the SF6 Gas Insulated Substation after a fire
  Building remodelling, protection and control systems, telecommunications and auxiliary services with supplies and commissioning
- Escatrón (Zaragoza) Standard 400 kV Substation to evacuate power from the Combined Cycle Station
  Civil works, protection and control systems, a 400 kV evacuation line up to connection with the Power Grid substation and powering the auxiliary services by a 132 kV SF6 Gas Insulated Substation
- Zona Franca (Barcelona) 220 kV SF6 Gas Insulated Substation
  Including protection and control systems, telecommunications and auxiliary services
- Barcelona Port (Barcelona) 220 kV SF6 Gas Insulated Substation to evacuate power from the Combined-Cycle Power Plant
  Including protection and control systems, telecommunications and auxiliary services
- 10 Condenser batteries at 220 and 400 kV of 100 MVAR
  Civil works, protection and control systems, telecommunications, auxiliary services and connection to existing standard substations
Alstom in Spain

REFERENCES AND PROJECTS - GRID

- **4 66-132 kV Mobile Substations**
  Protection and control systems and auxiliary services
- **5 45 kV Substations in containers**
  Protection and control systems and auxiliary services
- **4 45/20 kV Mobile Substations with a 15 MVA transformer**
  Protection and control systems and auxiliary services
- **2 55 kV Mobile Substations with a 15 MVA transformer**
  Protection and control systems and auxiliary services
- **3 220 kV Mobile Substations**
  Protection and control systems, telecommunications and auxiliary services
- **2 132-66/25-20-15 kV Mobile Substations**
  Protection and control systems, telecommunications and auxiliary services
- **Desalination Plant Aguilas (Murcia):**
  Customer Acuamed: Turnkey substation including protection and control systems and connection to the electricity grid of this plant (Murcia)
- **Turnkey 66 kV SF6 Gas Insulated Electric Power Substation for the new data processing centre in Tres Cantos-Madrid**
  Customer BBVA, including protection and control systems, auxiliary services and 5 year maintenance contract.
- **2 Turnkey 55 kV SF6 Gas Insulated Electric Power Substations (2) for the new data processing centre**
  Two 20 MVA transformers in Santander for BSCH - Protection and control systems and auxiliary services
- **2 GIS F35-4 of 145 kV -**
  supply and installation for Abrera and Bescano substations
- **80% Frame Agreement with Iberdrola for GIS – Gas Insulated Substation 72 kV (2011 – 2012)**
- **100% Frame Agreement with Gas Natural Fenosa for GIS F-35 Gas Insulated Substation 66 kV and 132 kV. (2012 a 2014)**
- **80% Frame Agreement with REE for GIS – Gas Insulated Substation 66 kV (2012 – 2015)**
- **40% Frame Agreement with REE for GIS - Gas Insulated Substation 220 kV (2012 – 2015)**
- **Nueva Escombreras for REE – Cartagena (Murcia): Extension of 400 kV gas insulated substation GIS 400 kV model T155.**

**Services**

- **Maintenance contract for high-voltage switches** - Repsol
- **Modernisation of the Gas Insulated Substation (GIS) substation** at thermal power plant of Teruel for Red Eléctrica de España and Endesa
- **Repair of Power Transformer** - Aluminium manufacturing plant – Avilés (Asturias)
- **Extension of the type 212 Gas Insulated Substation** - Urgell (Barcelona)
- **Retrofit modification of Measurement Transformers** - Gas Insulated Substation – Alcudia (Majorca)
- **Review and spare parts for Generator Switches** – Gas Generation Plant – Ciudad Real
- **Supply of strategic parts to REE** for GIS B105-1, B105-3 and T155 substations
- **Review and maintenance for 20 years for Endesa** of GIS 400 kV in Thermal Plant Compostilla
- **Review and maintenance for 20 years for Endesa** of GIS 400 kV in Hydroelectric Plant Sallente
- **Retrofit Generator Switches** for Hydro plant in Aguayo. Customer: EON

**Automation**

- **100% Frame Agreement with Endesa:** Protection relays Micom P545 and circuit breakers protections Micom P143 - REE standards compliance (2011 – 2016)
- **Turnkey Substation Control System (DS Agile) and Protection System (MICOM).** Engineering, manufacturing and commissioning of High-Speed Railway from Albacete to Alicante
Alstom in Spain

REFERENCES AND PROJECTS - GRID

Ongoing projects

- **Pola de Gordon**: Substation GIS 400kV model T-155 for REE
- **EON (Spain)**: Mobile substation 132-55 kV with transformer 132-55 / 30-20-12 kV 20 MVA. Mobile substation 30-20-12 kV.
- **Alcudia** – Retrofit GIS S105 245kV, Client REE

International references

High Voltage Products

- **Ethiopia**: Supply of high voltage equipment: circuit breakers, disconnectors and measurement transformers for 6 substations for customer EEPCO.

Power Transmission Systems

- **Venezuela**:
  - 4 mobile substations 110/13.8 kV Mobile substations with a 40 MVA Transformer, including protection and control systems and auxiliary services for Customer PDVSA (Petróleos de Venezuela)
  - 2 mobile substations 69/13,8 kV MVA mobile substations for PDVSA
  - 1 mobile substation 34,5 /0,48 kV 42 MVA with transformer for PDVSA
- **Sweden**: 170-50 kV Mobile Substation with a 35 MVA Transformer for Customer E-ON
- **Morocco**: Supply of 72,5 / 245 kV high voltage switches
- **Republic of Angola**:
  - Floating Power Plant: supply of a turnkey substation, including protection and control systems, installed in a container and placed over a non-propelled pontoon
  - 2 Substations GIS 220 kV and 66 kV – disconnectors for 245 and 72,5 kV. Client Elecnor.
- **USA**: Mobile substation GIS 145 Kv for Dominion Virginia Power.
- **Ireland**: Mobile substation GIS 220 Kv for ESB International
- **Colombia**: 4 mobile substations 110 kV, for Electricaribe (Gas Natural subsidiary in Colombia)
- **Ethiopia**: Contract to supply and manufacture equipment for the Ethiopian Utility (EEPCO, including equipment for 6 x 230 kV substations. Client CYMI (ACS Group).