Alstom in Taiwan

References and Ongoing Projects

Alstom’s Presence

**Key Data:**
- Alstom Taiwan Ltd. (HQ)
- Alstom Power Heat Exchange Taiwan Branch
- Alstom Signalling Inc. Taiwan Branch (1990)
- Alstom Transport SA Taiwan Branch (2003)
- 1 Power site, Haifu O&M site
- 3 Transport sites: Neihu Office (HQ), Luzou office (OBLEX), Fuxing Office (Taichung & Xinyi)
- 170 employees
## Alstom in Taiwan

### References and Ongoing Projects

#### History

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1963</td>
<td>Construction of 200 MW Air Preheater for TPC Shen-Ao Power Station</td>
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<tr>
<td>1972</td>
<td>Supply of 300 MW Steam Turbine to TPC Linkuo Coal-fired Power Plant</td>
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<tr>
<td>1978</td>
<td>Supply first 170kV GIS to TPC</td>
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<td>1980</td>
<td>Execution of the Electrification of the Taipei-Kaohsiung Line for Taiwan Railway Administration in Taiwan</td>
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<td>1980</td>
<td>Establishment of TPC Tunghsiao Unit 3, 4, 5, 6 Combined Cycle Power Plant</td>
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<td>1990</td>
<td>First establishment of a Taiwan Branch of Alstom Transport Signalling Inc. with the signature of Taipei Red/Green Lines - Signalling Contract</td>
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<td>1990</td>
<td>First delivery of Steam Condensers 8 x 550 MW for TPC Taichung Power Plant</td>
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<tr>
<td>1990</td>
<td>Supply of Steam turbine LP-Rotors retrofit to TPC Maanshan Power Plant (NPP-3)</td>
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<tr>
<td>1997</td>
<td>Turnkey contract to build Hai-Fu 960MW Combined Cycle Power Plant for Ever Power Company with an 8-year O&amp;M contract.</td>
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<tr>
<td>1998</td>
<td>Supply of Steam turbine LP-Rotors retrofit to TPC Chinshan Power Plant (NPP-1)</td>
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<tr>
<td>1999</td>
<td>Turnkey contract to build Ho-Ping 2x660 MW coal-fired power station</td>
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<tr>
<td>2000</td>
<td>Technical transfer agreement 23kV GIS with Tatung Co, TECO.</td>
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<tr>
<td>2000</td>
<td>Technical transfer agreement 170kV GIS with Fortune Electrical Co.</td>
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<tr>
<td>2009</td>
<td>TPC Master Contract 2009 to provide integrated solutions to TPC Chinsan, Manshan Nuclear and Mingtan Hydro plants</td>
</tr>
<tr>
<td>2003</td>
<td>Establishment of a Taiwan Branch of Alstom Transport SA with the signature of the first turnkey project: Orange &amp; Blue Line Extension (OBLEX).</td>
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<tr>
<td>2003</td>
<td>Successfully awarded 40 bays 170KV GIS with Fortune Electrical. 300 bays 23kv GIS with TECO.</td>
</tr>
<tr>
<td>2004</td>
<td>Partnership with CHEM for 170kV s/s SCADA, successful award 17 TPC s/s.</td>
</tr>
<tr>
<td>2009</td>
<td>TPC Master Contract 2009 to provide integrated solutions to TPC Chinsan, Manshan Nuclear and Mingtan Hydro plants.</td>
</tr>
<tr>
<td>2010</td>
<td>TPC Maanshan Nuclear Power Station Unit 1 &amp; 2 HP turbine retrofit.</td>
</tr>
<tr>
<td>2011</td>
<td>EPIC award Haifu Upgrade and O&amp;M service extension contract.</td>
</tr>
<tr>
<td>2012</td>
<td>Partner with CTCI for TPC Linkou 3 x 800 MW FF+SWFGD system.</td>
</tr>
<tr>
<td>2013</td>
<td>Partner with CTCI for TPC Talin 2 x 800 MW FF+SWFGD system.</td>
</tr>
</tbody>
</table>

#### Partnerships

**Power:**
- Alstom is the exclusive supplier of Air Quality Control System to CTCI for TPC Linkou 3 x 800 MW coal fired power plant project
- Alstom is the exclusive supplier of Air Quality Control System to CTCI for TPC Talin 2 x 800 MW coal fired power plant project.

**Transport:**
- Alstom Transport is partnering historically with CTCI in Taiwan and for Metro (Medium Capacity) with Kawasaki

**Grid:**
- CHEM: Grid substation automation system partner
- Baufarm Co. Grid FACT / Power compensation product partner for Taiwan + China.
- CTCI for TPC Linkou Transformer
- CTCI for TPC Talin Transformer
- Monisun for Industry project
## Alstom in Taiwan

### References and Ongoing Projects

### Awards and Certification

#### Power:
- O&M Award 2009: Most reliable O&M / O&M Power Station, Hai Fu CCPP, 2 x KA24 – 2
- Asian Power Awards – 2011: Best O&M Project in Asia – Hai Fu CCPP, 2 X KA24 – 2
- Certification for Hai Fu - ISO 9001; OHSAS 18000; ISO 14001

#### Transport:
- The certifications are managed at HQ level for the whole worldwide activity: Alstom Transport SA and Alstom Transport Sig Inc.

### Thermal & Renewable Power

#### References:
- TPC Chinshan 2 x 636 MW nuclear power plant LP turbine retrofit. (COD in 1999, 2000)
- Steam Turbine for TPC Linkou Power Plant, 1x300MW (1972)
- Steam Turbine for TPC Tunghsiao Unit 3 Combined Cycle Power Plant, 273MW (1982)
- TPC Kuosheng Nuclear Power Station MOPS/SCRUP Retrofit (1986)
- Generators for TPC Ming Tan Hydro Power Plant, 6x250MW (1987)
- TPC Chinshan Nuclear Power Station MOPS/SCRUP Retrofit (1988)
- Steam Turbine LP-Rotor retrofit on TPC Maanshan Nuclear Power Station (1990)
- TPC Chinshan Nuclear Power Station Steam Dilution System Retrofit (1991)
- Ever Power’s Hai-Fu 960 MW Combined Cycle Power Station, COD in 2001
- TPC Tunghsiao Unit 6 Combined Cycle Power Plant, 305MW (1997)
- Steam Turbine LP-Rotor retrofit on TPC Chin-Shan Nuclear Power Station (1998)
- TPC Tunghsiao Units 3, 4, & 5 LNG Conversion (1998 - 2002)
- Ho-Ping Power Station 2x660 MW coal-fired for Taiwan Cement Corp. and China Light and Power Hong Kong (1999, COD in 2001)
- Condensing and Feed Heating Plants, Auxiliary Exchangers for TPC Lungmen ABWR Nuclear Power Plant, 2x1350MW (NPP4, 2001)
- TPC Tunghsiao Unit 4 NM Upgrade (2004)
- Ho-Ping IPP Long Term Service Agreement (2005)
- TPC Tunghsiao Unit 5 NM + NMC Upgrade (2005)
- TPC Tunghsiao GT4-3 MNC Upgrade (2006)
- TPC Hsinta Power Plant TR Set Control System Upgrading (2006)
- TPC Tunghsiao GT6-1 N2M Upgrade (2008)
- China Steel Sinter #1 Plant ESP Upgrade (2009)
- Steam Turbine HP retrofit on TPC Maanshan Nuclear Power Station (2010)
Alstom in Taiwan

References and Ongoing Projects

- TPC Tungshiao GT6-1 11N2M Upgrade (2011)
- TPC Master Contract 2010 - 2012
- EPIC Hai Fu O&M Contract Extension (2011)
- TPC Tungshiao GT4-1, GT4-2 NMC Upgrade (2013)

Ongoing Projects:
- TPC Linkou 3 x 800 MW coal fired power plant Air Quality Control System
- TPC Talin 2 x 800 MW coal fired power plant Air Quality Control System
- TPC Master Contract 2014
- TPC Mintang Hydro SCAD Retrofit

Transport

In the Transport sector, Alstom has provided expertise in Mass Rapid Transit (MRT) railway system in Signalling and in turnkey projects.

References:
- Taipei Red/Green Lines Signalling for SEMPO (1990)
- Taipei Blue Line Signalling for SEMPO (1994)
- Tucheng Signalling for SEMPO/CEC (2000)
- Redundant VPI Signalling for TRTC (2005)
- Taipei OCC Signalling (ICONIS) (2005)

Ongoing Projects:
- Xin-Yi Line Signalling (2007)
- Taichung Signalling, Project Management and AFC/COM (2011)
- TRTC AFTC Module Replacement (2013)
- TRTC VPI Remote Function (2014)

Grid

References:
- 94 High Voltage Minimum Oil Circuit Breakers for TPC outdoor substations (1976-1985)
- 90 High Voltage 69/161 kV AIS Circuit Breaker for TPC Substations (1984-2001)
- Medium Voltage Switchgear for Taipei Blue Line MRT (CTCI/DORTS, 1997)
References and Ongoing Projects

- 500 Protective Relays for TPC 161 kV Gas Insulated Substations Switchgear (2002)
- Medium Voltage Switchgear for Taipei Neihu Line MRT (Bombardier/DORTS, 2005)
- 17 SCADA System in TPC 161kV GIS Substations (2002 – 2007)
- Formosa Kuan-shen 220kV GIS (2008)
- Flame contract order from Baufarm (Nokia’s Taiwan Rep) for Capacitor (2008 - now)
- China Steel Vietnam 110kV GIS substation with SCADA
- CTCI Xingyi Line protection system

Ongoing Projects:
- China Steel Vietnam 110kV GIS system
- TPC Tongshiao power plant GCB retrofit
- TPC various service project on going GIS maintenance (Chin Xin s/s)
- TRTC Mucha Line GIS modification
- TPC Linkou Transformer
- TPC Talin Transformer

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