



Process Automation Division – March 2015

EPC plants for the Oil&Gas industry

Overview and references

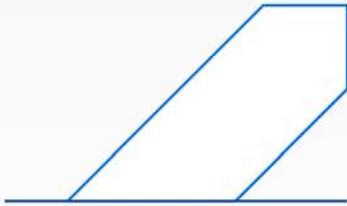
ABB a leader in power and automation technologies

Leading market positions in main businesses

~140,000
employees



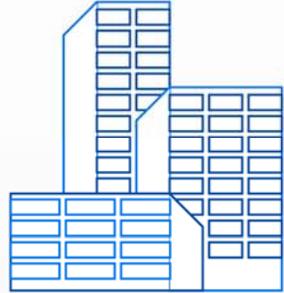
\$40 billion
In revenue
(2014)



Present
in
+100
countries

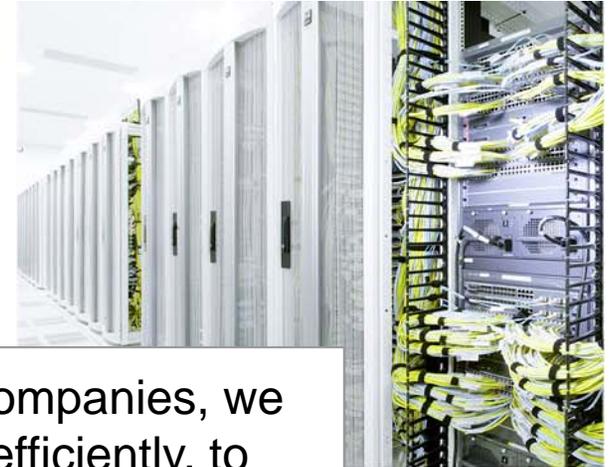


Formed
in
1988

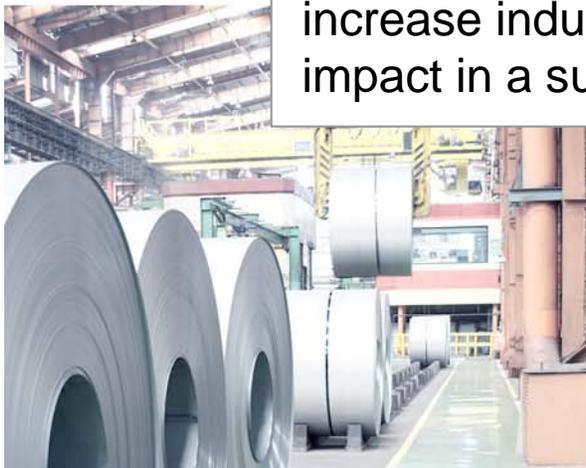


merger of Swiss (BBC, 1891)
and Swedish (ASEA, 1883)
engineering companies

Power and productivity for a better world ABB's vision

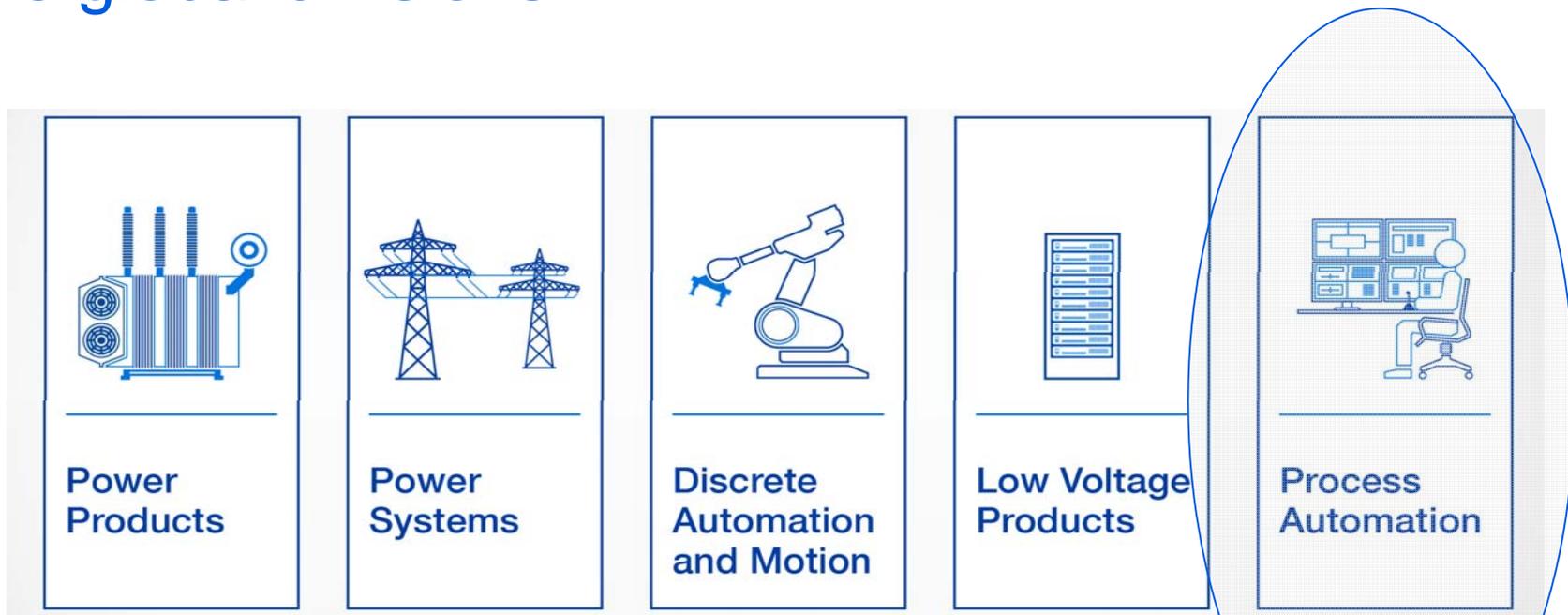


As one of the world's leading engineering companies, we help our customers to use electrical power efficiently, to increase industrial productivity and to lower environmental impact in a sustainable way.



How ABB is organized

Five global divisions



ABB's portfolio covers:

- Electricals, automation, controls and instrumentation for power generation and industrial processes
- Power transmission
- Distribution solutions
- Low-voltage products
- Motors and drives
- Intelligent building systems
- Robots and robot systems
- Services to improve customers productivity and reliability

ABB in Italy

Key facts

Headquarters

- Based in Milan, Italy
- Permanent Employees: 6,308 in 2014
- Orders 2014: \$3 Billion
- Revenues 2014: \$2.9 Billion

SOX

Internal Control Process in compliance with Sarbanes-Oxley Act – SOX

Certifications

- Quality: ISO 9001
- Safety: OHSAS 18001
- EMS: ISO 14001

EPC Unit HSE Commitment and Performances



ABB HSE Commitment

Provide a safe and healthy working environment on sites and take adequate steps to prevent accidents and injuries to health arising from work by minimizing, so far as reasonably practicable, the causes of hazards inherent in the working environment.

HSE performances

	LTIF (Lost time Injury Frequency per million man-hours)					TRIR (Total Recordable Incidence Rate)				
	2014	2013	2012	2011	2010	2014	2013	2012	2011	2010
ABB LBU IS EPC	0,15	0,27	0,33	0,7	0,18	1,22	1,21	1,5	2,79	0,92
OGP International Association of O&G	n.a.	0,45	0,48	0,43	0,42	n.a.	1,6	1,74	1,76	1,68

The way we work

EPC Safety Awards



Hours without LTI	Project	Location	Client
6.000.000	TL4 - New Crude Transit Line	Kuwait	Kuwait Oil Company
4.000.000	SNCP- Condensate Stabilization Plant	Oman	PDO
3.000.000	EI Merk – Lot 3&4 – Off site fac.	Algeria	Anadarko/Sonatrach
2.000.000	Sayok Gas Compressor Station	Thailand	PTT
2.000.000	Sawan Gas Compressor Station	Pakistan	OMV
2.000.000	Menzel Ledjmet East	Algeria	Saipem for FCP
500.000	Power Generation Barge No.8	Kazakhstan	Agip KCO

The way we work

EPC Safety Awards



SNCP- Condensate Stabilization Plant – 3,000,000 safe man-hours



TL4 Project – 6,000,000 safe man-hours



EI Merk Project - 3,000,000 safe man-hours



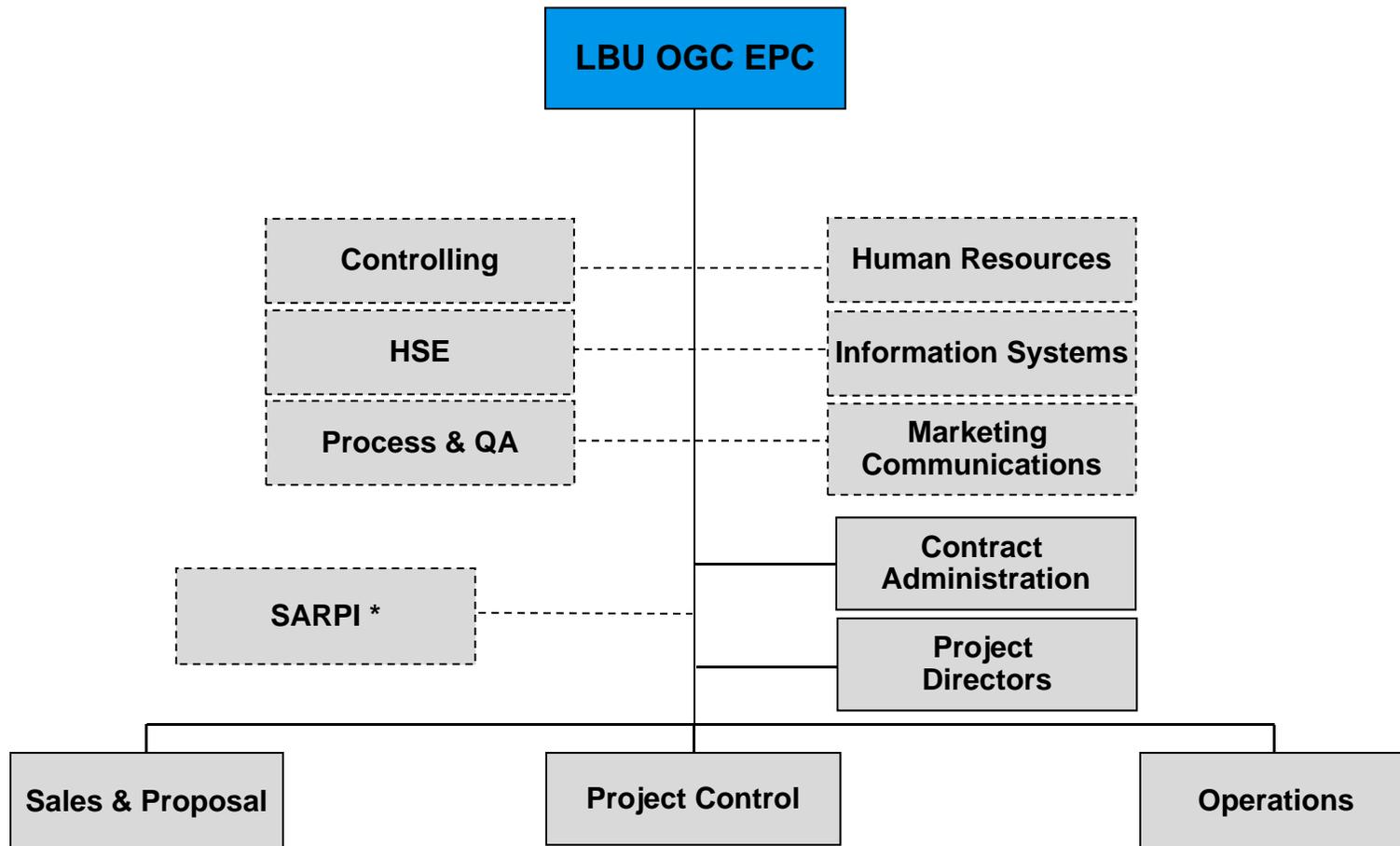
Sawan Project – 2,000,000 safe man-hours



Power Generation Barge no. 8 - 500,000 safe man-hours

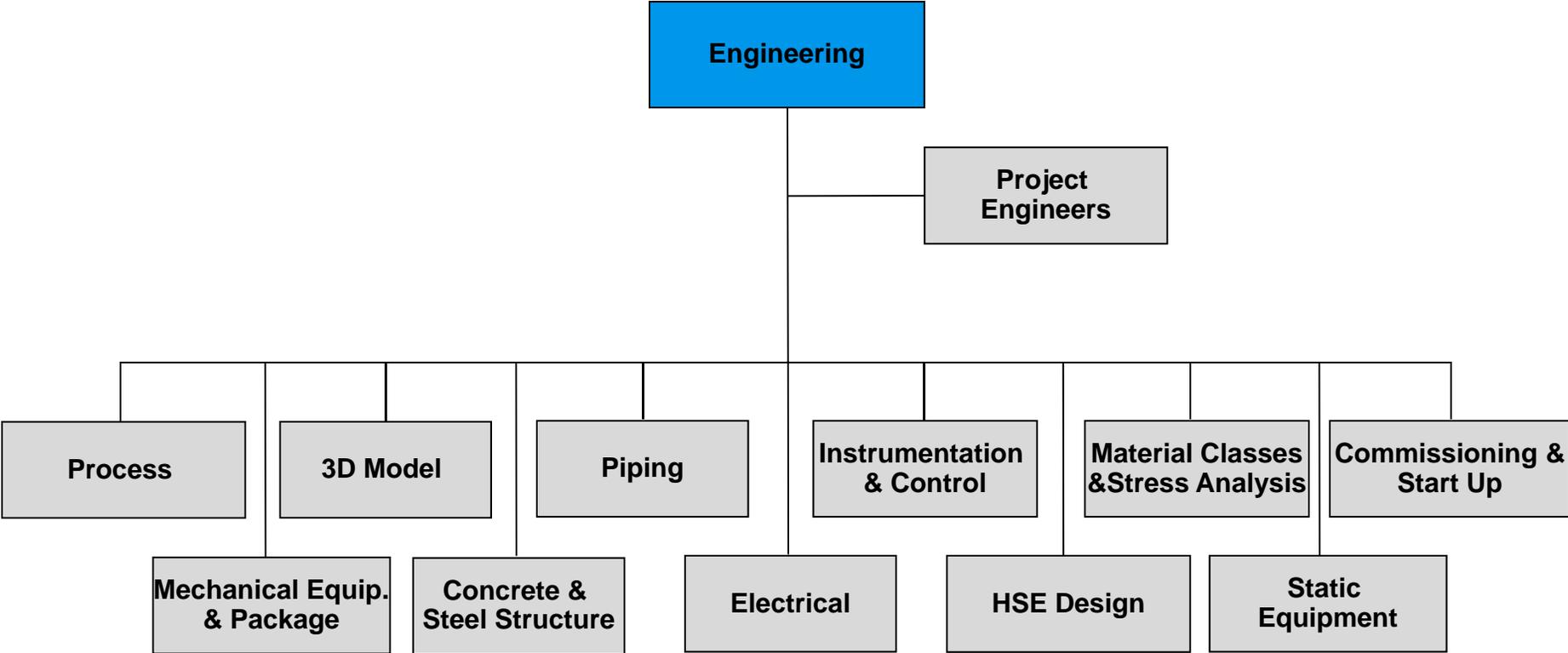
LBU OGC EPC

Our organization

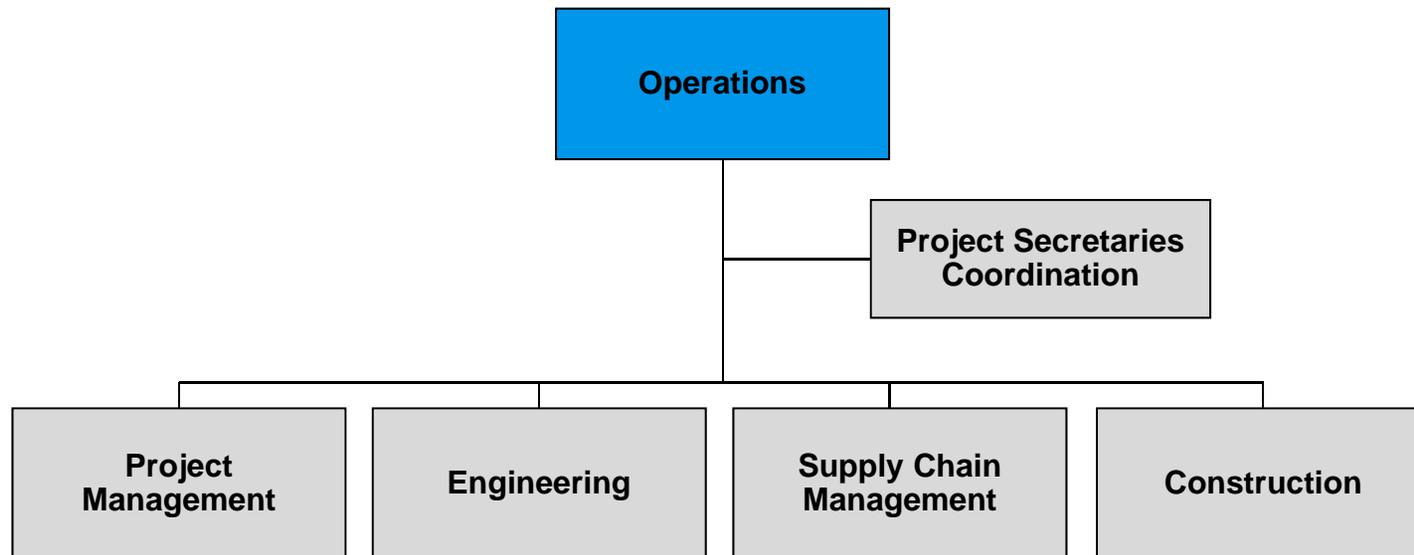


* Company participated by ABB SpA

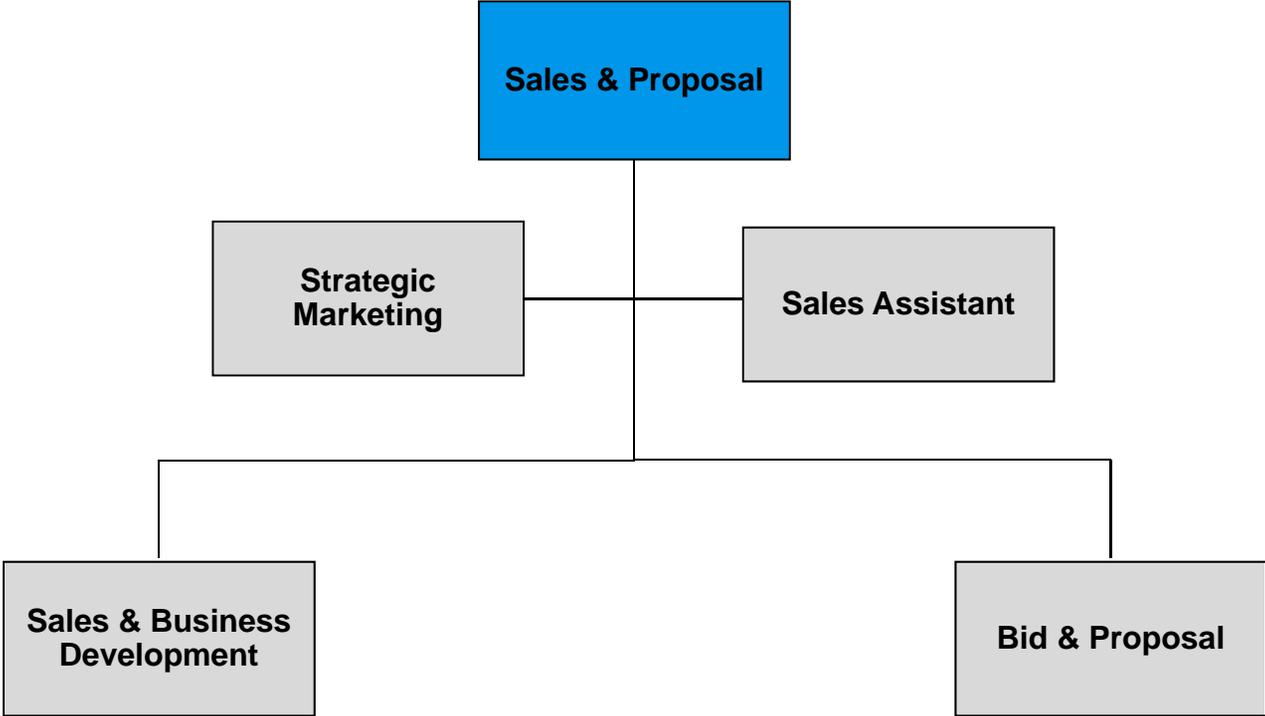
LBU OGC EPC Engineering



LBU OGC EPC Operations



LBU OGC EPC Sales & Proposal



EPC Unit

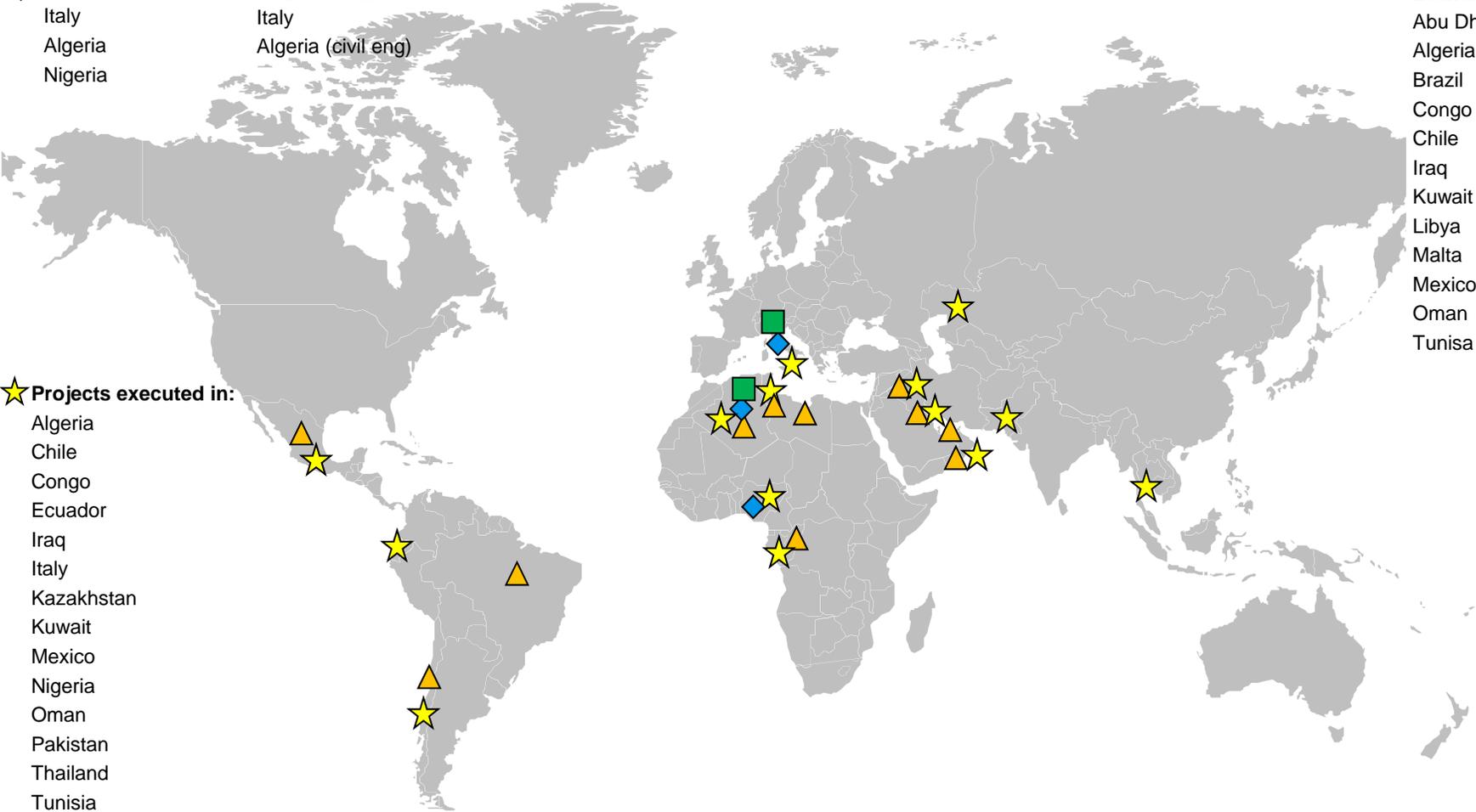
Locations and projects

- ◆ **Companies:**
- Italy
- Algeria
- Nigeria

- **Engineering:**
- Italy
- Algeria (civil eng)

- ▲ **Branches:**
- Abu Dhabi UAE
- Algeria
- Brazil
- Congo
- Chile
- Iraq
- Kuwait
- Libya
- Malta
- Mexico
- Oman
- Tunisia

- ★ **Projects executed in:**
- Algeria
- Chile
- Congo
- Ecuador
- Iraq
- Italy
- Kazakhstan
- Kuwait
- Mexico
- Nigeria
- Oman
- Pakistan
- Thailand
- Tunisia



EPC Unit

Our focus & capabilities



The EPC Unit, builds Medium size EPC Projects in the Oil and Gas Industry, with core competence for the Mid-stream plants, coupled with high specialization for the up-stream and power generation facilities.

The reliability of a major international group, combined with the flexibility of a lean organization: a perfect match for adequately serving medium size projects across the world

EPC Unit

Activities performed and skills



- A multi-disciplinary engineering team
- Basic and detailed plant design including Heat and Material Balances, Equipment and Lines sizing, Process Flow Diagrams, Electrical Loads Calculation, Distributed Control Specification, etc.
- Project Management and Project Control
- Procurement and Subcontracting activities
- Modular approach
- Strong experience in construction and construction supervision
- Commissioning & start-up
- Full Service & Maintenance Services
- Advanced IT systems and interconnections

EPC Unit Turn-key Plants



- **UPSTREAM:** Gas, Oil Separation Plants (onshore/offshore), Gas treatment plants, Gas/Water injection plants
- **OFFSHORE:** production and service platform and FPSO
- **MIDSTREAM:** Compressor & Pumping Stations, Terminals & Storage, Flowstations
- **DOWNSTREAM:** Refinery Process Units, Plant utilities including power distribution & oily water treatment
- **POWER PLANTS:** all types as complete EPC or BOP, Modular and Standard Power Plants

EPC Unit

Core activities: Midstream



- Compressor & Pumping Stations
- Terminals & Storage
- Flowstations

EPC Plants

Major recent references: Midstream

FEED Satellite Units – Hassi Messaoud
Client/Country: Sonatrach / Algeria

FEED (Front End Engineering Design) related to the revamping and upgrading of the existing gathering system and related facilities to increase field production, relevant to Satellite Units South at Hassi Messaoud

Duration: 6 months

Scope of Work: Front End Engineering Design

ELR1 – PUMPING STATION Phase II/12
Client/Country: Sonatrach / Algeria

Realization of Pumping Station SP1 including Tie-In/ interface with pipelines LR1, ELR1 and injections coming from ZCINA and CINA Fuel gas flowline (4", 13 km) from GR1 to SP1; Overhead lines 30 kV, 30 MVA from PDE n.04 to SP1 ELR1; Electrical sub-station; Paved road connecting SP1 to RN3

Duration: 2013 ÷ 2015

Scope of Work: Engineering, Procurement, Construction & Commissioning

EPC Plants

Major recent references: Midstream

Tempa Rossa offshore – Taranto
Client/Country: ENI SpA / Italy (Taranto)

Extension of the existing jetty in the Taranto refinery from Platform P2 to a new Platform P3 for a length of 500 m. Installation of all facilities for the reception and the transfer of the oil from the Tempa Rossa Oil Center. The new P3 Platform will be fitted on the East Direction in order to guarantee the mooring of the ships with a minimum capacity of 30.000 DWT to a maximum capacity of 80.000 DWT.

Duration: 2012 ÷ 2015

Scope of Work: Engineering, Procurement, Construction

New Crude Transit Line (TL-4)
Client/Country: Kuwait Oil Company (KSC) / Kuwait

EPC for new pipeline 30" – 123 km for a capacity of 315 mbopd with intermediate valve / gathering stations and relevant utilities.

Duration: 2010 ÷ 2014

Scope of Work: Engineering, Procurement, Construction, Transport, Installation and Commissioning

EPC Plants

Major recent references: Midstream



Haoud Berkaoui – Gas Flaring Elimination

Client/Country: Sonatrach /Algeria

Gas compression trains and re-instrumentation at Haoud Berkaoui, Guellala and Benkhala including no. 2 centrifugal compressors 4.5 MW, no. 2 centrifugal compressors 2.5 MW and no.2 reciprocating compressors 2.0 MW. Electrical and I&C upgrading.

Duration: 2009 ÷ 2014

Scope of Work: Engineering, Procurement, Construction and Commissioning



Sawan Gas Compressor Station

Client/Country: OMV (Pakistan) Exploration Gmbh/Pakistan

New compressor station installed upstream of an existing Central Processing Plant to prevent reduced reservoir pressure. The plant includes no. 4 x 7,5 MW/each gas turbine compressors and auxiliaries

Duration: 2007 ÷ 2010

Scope of Work: Engineering, Procurement, Construction and Commissioning

EPC Plants

Major recent references: Midstream



Hassi R'Mel Boosting Station Phase II

Client/Country: Sonatrach Div. ENC/Algeria

Upgrading of No. 3 Gas Compressor stations, including No. 6 x 25 MW ISO/each Gas Turbine Compressors, station DCS upgrading, electrical distribution, infrastructures, tie-ins to the existing plant systems + No. 11 compressors rebundles.

Duration: 2006 ÷ 2009

Scope of Work: Engineering, Procurement, Construction and Commissioning



NK-1 Pumping Stations (SP1/SP3)

Client/Country: Sonatrach TRC / Algeria

2 new pumping stations along the NK1-30" oil pipeline to increase transport capacity up to 18 M t/y. Including: No. 3 x 3 MW/each turbine driven pumps, No. 2 x 2.5 MW/each turbo generators, No. 3 x 800 kW/each Centrifugal Booster pumps, No. 3 x 2,250 kW/each electrical driven centrifugal pumps.

Duration: 2006 ÷ 2008

Scope of Work: Engineering, Procurement, Construction and Commissioning

EPC Plants

Major recent references: Midstream



Poggio Renatico Compressor Station

Client /Country: ENI / Italy

New Compressor Station plus upgrading of the existing block valve and metering station. No. 2 x 11 MW Gas Turbine Compressors plus No. 1 x 25 MW Gas Turbine Compressor, auxiliaries systems, station DCS and SCADA upgrading, electrical distribution, infrastructures, tie-ins.

Duration: 2005 ÷ 2008

Scope of Work: Engineering, Procurement, Construction, Commissioning & Start-up



TFT – GR1 GR2 Project

Client /Country: Sonatrach/ Algeria

New Tin Fouye Tabankort compressor station along the existing GR1/GR2 gas pipeline to increase the gas flowrate up to 2.9 MMNm³/h. Upgrading of four existing compressor stations at Rhourde Nouss, Zina, Ouargla and Hassi R'Mel. Total No. 7 x 25 MW turbo compressors

Duration: 2004 ÷ 2007

Scope of Work: Engineering, Procurement, Construction, Commissioning & Start-up

EPC Plants

Major recent references: Midstream



PTT Public Company Limited



Saiyok Gas Compressor Station

Client / Country: PTT, Thailand

No. 3 x 23 MW turbo compressors, utilities, hot-tap tie-in at the existing block valve BVW#7 of the Yadana gas pipeline system

Duration: 2003 ÷ 2006

Scope of Work: Engineering, Procurement, Construction, Commissioning & Start-up



SONATRACH



OK1 Pumping Station

Client / Country: Sonatrach, Algeria

Revamping of the four existing crude oil and condensate pumping stations along the OK1 34" oil pipeline connecting Haoud El Hamra to Skikda in order to increase the delivered oil flow rate up to 4,750 m³/h.

Duration: 2002 ÷ 2004

Scope of Work: Engineering, Procurement, Construction, Commissioning & Start-up

EPC Plants

Major recent references: Midstream



GPDF Gas Compressor Station

Client / Country: Sonatrach, Algeria

New gas compressor station along the existing GPDF 48" gas pipeline (Maghreb-Europe) to increase delivered gas flow rate up to 1,420,000 Nm³/h. No. 2 x 25 MW turbo compressors

Duration: 2001 ÷ 2003

Scope of Work: Engineering, Procurement, Construction, Commissioning & Start-up



OH3 Pumping Station

Client/ Country: Sonatrach, Algeria

No. 2 pumping stations Hassi Berkine (HBN) and Nezla (NZL) along the existing OH3 30" oil pipeline, in order to increase the delivered oil flow rate up to 3,200 m³/h.

Duration: 2001 ÷ 2003

Scope of Work: Engineering, Procurement, Construction, Commissioning & Start-up

EPC Plants

Major recent references: Midstream



ODIDI Gas Gathering Project

Client/ Country: Shell West, Nigeria

No. 2 Compression Modules (650 t/each): No. 2 Turbo Compressors (2x11 MW) with 3 Stages Compressors; and No. 1 Power Generation Module (1,200 t): No. 1 Gas Turbine (1x11 MW)

Duration: 1998 ÷ 2001

Scope of Work: Engineering, Procurement, Construction, Transportation & Hook-up

EPC Plants

Strong competence: Upstream



- Gas, Oil Separation Plants (onshore / offshore)
- Gas Treatment Plants
- Gas/ Water Injection Plants
- Offshore production and service platforms and FPSO

EPC Plants

Major recent references: Upstream

		<p><u>Nawara Gas Treatment Plant</u> <u>Client/Country: OMV (Tunesien) Production GmbH /Tunisia</u></p> <p>EPC for a new gas treatment plant to fractionate the raw gas coming from the Nawara gas field into methane, propane, butane and LPG, for final sale</p> <p>Duration: 2014 ÷ 2016</p> <p>Scope of Work: Engineering, procurement, construction, installation, pre-commissioning and commissioning activities including gas separation and LPG extraction units.</p>
		<p><u>Saih Nihayda Condensate Stabilization Plant (SNCP)</u> <u>Client/Country: Petroleum Development Oman / Oman</u></p> <p>EPC for a Condensate stabilization plant 4,500 m3/d to secure availability of gas in case the existing Saih Rawl Condensate Process Plant is out of operation including gas compression</p> <p>Duration: 2012 ÷ 2014</p> <p>Scope of Work: Engineering, Procurement, Construction, Installation, Commissioning and Start-up plus 6 months assistance to Operation and Maintenance</p>

EPC Plants

Major recent references: Upstream



PW10 Second Water Injection Train

Client/Country: ENI Congo SA / Congo (Brazzaville)

Installation and electrical connection of the second water injection train including booster and main injection pumps, sand filters, to enhance oil recovery of the M'Boundi field.

Duration: 2012 ÷ 2014

Scope of Work: Engineering, Procurement, Construction, Installation, Commissioning and Start-up



PW1 Gas Compression and Treatment Plant

Client/Country: ENI Congo SA / Congo (Brazzaville)

Gas Treatment plant including dehydration to reach the required water dew point. Gas injection in wells and gas compression station to increase pressure of gas separated in the existing oil plant and deliver it to the CEC and CED power plants in Djeno.

Duration: 2011 ÷ 2014

Scope of Work: Engineering, Procurement, Construction, Transport, Installation and Commissioning

EPC Plants

Major recent references: Upstream





Menzel Ledjmet East – MLE
Client/ Country: Saipem for FCP/Sonatrach / Algeria
Utilities, storage and export facilities for the MLE Central Processing facilities. Including no. 4 LPG spheres, no. 10 tanks, hot oil system, electrical and instrumentation systems
Duration: 2009 ÷ 2012
Scope of Work: Engineering, Procurement, Construction, Commissioning & Start-up





El Merk – Lot 3&4 – Off site facilities
Client/ Country: Groupement Berkine (Anadarko/Sonatrach) / Algeria
Field Gathering stations, Gas Distribution Manifolds, well sites, 900 km flow lines and trunk lines. Utilities
Duration: 2009 ÷ 2014
Scope of Work: Engineering, Procurement, Construction, Commissioning & Start-up

EPC Plants

Major recent references: Upstream





PB-KU-H Platform

Client /Country: Pemex E&P/ Mexico

Realization of the PB-KU-H Production Platform - 100.000 BBLD oil and 90 MMscfd gas

Duration: 2005 ÷ 2009

Scope of Work: Engineering, Procurement and Supply, and Commissioning of process packages





BBK/BBKN OIL FIELD

Client /Country: Sonatrach/ Algeria

Block 404 Bir Berkine/ Bir Berkine Nord Oil Fields development. Including: crude oil and gas processing facilities, oil (25.000 BOPD), gas (2,4 MMNm³/d), infrastructure requirements

Duration: 2003 ÷ 2007

Scope of Work: Engineering, Procurement, Construction, Commissioning & Start-up

EPC Plants

Major recent references: Upstream



Villano CPF Oil Treatment Plant

Client / Country: Agip Ecuador B.V., Ecuador

Expansion of existing Central Processing Facilities to achieve higher oil treatment and delivery rate from 30,000 BOPD to 45,000 BOPD, and addition of water separation and injection facilities

Duration: 2001 ÷ 2003

Scope of Work: Engineering, Procurement and Support Services



Hassi R'Mel Oily Water Plant

Client /Country: Sonatrach/ Algeria

Realisation of no. 2 Oily Water treatment Plants at Hassi R'Mel, with a capacity of 14.286 BWPD including Filtering, De-oiling, Desalting and Water Conditioning Units and gathering lines

Duration: 2003 ÷ 2005

Scope of Work: Engineering, Procurement, Fabrication and Construction, Commissioning & Start-up

EPC Plants

Major recent references: Upstream



MPF Santa Barbara

Client / Country: SPDC, Nigeria

Santa Barbara Mobile Production Facilities 30,000 bpd capacity and concrete floating barge

Duration: 1998 ÷ 2001

Scope of Work: Engineering, Procurement, Construction, Transport, Installation, Commissioning and Start-up

EPC Plants

Proven expertise: Power Plants



- Simple cycle power plants
- Combined cycle power plants
- Cogeneration
- Modular plants
- Balance of Plant
- Modular and Standard Power Plants

EPC Plants

Major recent references: Power



Zirku Cogeneration Plant
Client / Country: Zadco, UAE

Power Generation Plant with 2 Gas turbine 50 MW driven generators, step up transformers and new 22 kV HV switchgear and associated facilities. Waste heat recovery results in savings in gas usage and reduction in CO2 load on environment.

Duration: 2014 ÷ 2016

Scope of Work: Engineering, Procurement, Construction, Installation, Pre-commissioning & Commissioning



Khor Al Zubair (KAZ) Power Plant
Client / Country: Shell Gas Iraq BV, Iraq

New power plant 2 x 26 MW, with the potential to be upgraded to 4 x 26 MW in the future. Purpose of the new power plant is to increase the reliability of electrical feeder of existing KAZ NGL/LPG plant.

Duration: 2012 ÷ 2014

Scope of Work: Engineering, Procurement, Construction, Commissioning and Start-up services

EPC Plants

Major recent references: Power



Integrated Power Plant

Client / Country: ENI Congo S.A., Congo

Realization of a new power generation plant open cycle aimed at providing 320 MW electrical power to the ENI Oil & Gas plants. The plant includes 2 gas turbine generators 166 MW each

Duration: 2008 ÷ 2010

Scope of Work: Engineering, Procurement, Construction, Commissioning and Start-up services



Power Generation Plant – Kashagan

Client / Country: Agip KCO, Kazakhstan

Power generation barge complete of a steel hull (95 m L x 16 m W x 5 m H) equipped with a total 4 X 30 MWe jet derivative turbo generators, no. 3 diesel generators 2 MW, dedicated auxiliaries and topsides facilities

Duration: 2004 ÷ 2007

Scope of Work: Engineering, Procurement, Fabrication, Commissioning and Start-up services

EPC Plants Downstream



- Refinery Process Units
- Plant utilities including power distribution & oily water treatment
- Special Applications: bio-ethanol

EPC Plants

Major recent references: Downstream



KNO₃ Crystallization Plant.

Client/ Country: SQM (Sociedad Química y Minera de Chile S.A.) / Chile

New Potassium Nitrate Plant suitable for a production capacity of 48.000 kg/hr. The plant includes the following units: Dissolution of raw nitrate salts, Conversion of the raw KCl, Crystallization of the potassium Nitrate with all relevant Utilities

Duration: 2007 ÷ 2009

Scope of Work: Engineering & Procurement and Construction



CDU 3 Revamp Project 2006

Client/ Country: Thai Oil Ltd, Thailand

Sriracha Refinery Revamping, including refurbishment of CDU3 Unit to increase capacity from 16,000 to 24,000 t/d. Revamping of some connected units/facilities and installation of new KMT (UOP) and SCOT (Shell) Units

Duration: 2005 ÷ 2006

Scope of Work: Engineering & Procurement

Reference List

Last 15 years

EPC Plants

Reference list

Country	Location	Project	Technical features	Client	Description of ABB scope of work	Scope of work			Start	Compl.	Execution Basis
						E	P	C			
Algeria	Hassi Messaoud	FEED Satellite Units	FEED (Front End Engineering Design) related to the revamping and upgrading of the existing gathering system and related facilities to increase field production, relevant to Satellite Units South at Hassi Messaoud.	Sonatrach	Front End Engineering Design	X			2015	2015	FEED
Tunisia	Gabes City	Nawara Gas Treatment Plant	EPC for a new gas treatment plant to fractionate the raw gas coming from the Nawara gas field (in the southern Tunisian desert) into methane, propane, butane and LPG, for final sale.	OMV (Tunesien) Production GmbH	Engineering, Procurement, Construction, Installation & Commissioning	X	X	X	2014	2016	LSTK
UAE	Abu Dhabi - Zirku Island	Zirku Cogeneration Plant	Power Generation Plant with 50 MW Two Gas turbine driven generators, step up transformers and new 22 kV HV switchgear and associated facilities. SOW foresees also the supply and installation of no.2 WHRU (hot oil).Waste heat is recovered from the exhaust of the new gas turbines for heat input to the existing hot oil system. Waste heat recovery results in savings in gas usage and reduction in CO2 load on environment.	Zakum Development Company (ZADCO)	Engineering, Procurement, Construction, Installation, Pre-commissioning & Commissioning	X	X	X	2014	2016	LSTK
Algeria	Haoud El Hamra	ELR1 – PUMPING STATION Phase II/12	Realization of Pumping Station SP1 including Tie-In/interface with pipelines LR1, ELR1 and injections coming from Z.C.I.N.A. and C.I.N.A.. Fuel gas flowline (4", 13 km) from GR1 to SP1; Overhead lines 30 kV, 30 MVA from PDE n.04 to SP1 ELR1; Electrical sub-station; Paved road connecting SP1 to RN3; SCADA including FOC procurement and installation	Sonatrach TRC	Engineering, Procurement, Construction & Commissioning	X	X	X	2013	2015	LSTK
Italy	Taranto	Tempa Rossa Offshore - Taranto	Extension of the refinery existing pier in order to guarantee the reception and the transfer of the crude oil, extracted from the Tempa Rossa Oil Center. The new pier shall be extended from Platform P2 to a new Platform P3 for a length of 500 m in South-East direction.	ENI SpA	Engineering, Procurement, Construction	X	X	X	2012	2015	LSTK

EPC Plants

Reference list

Country	Location	Project	Technical features	Client	Description of ABB scope of work	Scope of work			Start	Compl.	Execution Basis
						E	P	C			
Oman	Saih Nihayda Site	Saih Nihayda Condensate Stabilization Plant (SNCP)	EPC for a Condensate stabilization plant 4,500 m3/d to secure availability of gas in case the existing Saih Rawl Condensate Process Plant is out of operation including gas compression	Petroleum Development Oman	Engineering, Procurement, Construction, Installation, Commissioning and Start-up plus 6 months assistance to Operation and Maintenance	X	X	X	2012	2014	LSTK
Congo	M'Boundi	EPIC for the second water injection train at M'Boundi	Installation and electrical connection of a new water injection train (booster and main injection pumps, sand filters), at the M'Boundi Oil Field to increase the onshore Water Treatment and Injection System of M'Boundi Oil Plant in order to meet the new design water injection flowrate requirements of 240 kWPD.	Eni Congo SA	Engineering, Procurement, Construction & Construction Supervision	X	X	X	2012	2014	LSTK
Iraq	Basra (Khor Al Zubair field)	New Power Plant at Khor Al Zubair (KAZ)	New power plant 2x26 MW gas turbine generators ((rising to 150MW in subsequent phase), to increase the reliability of electrical feeder of existing KAZ NGL/LPG plant.	Shell Gas Iraq B.V.	Engineering, Procurement, Construction, Commissioning and Start-Up	X	X	X	2012	2014	LSTK
Congo	M'Boundi	PW1 Gas Compression and Treatment Plant	EPC for Gas Treatment plant 3 MMSCMD with dehydration and a new gas compression station to deliver the gas to the CEC and CED power plants in Djeno.	ENI Congo SA	Engineering, Procurement, Construction, Transport, Installation and Commissioning	X	X	X	2011	2014	LSTK
Kuwait	Kuwait	New Crude Transit Line (TL-4)	EPC for new pipeline 30" - 123 Km for a capacity of 315 mbopd with intermediate valve/gathering stations and relevant utilities	Kuwait Oil Company (KSC)	Engineering, Procurement, Construction, Transport, Installation and Commissioning	X	X	X	2010	2014	LSTK
Algeria	Haoud Berkaoui	Gas flaring recovering and re-instrumentation of the production centers in the Haoud Berkaoui Region	New gas compression trains (no.3) and reinstrumentation at Haoud Berkaoui, Guelalla and Benkhala	Sonatrach	Engineering, procurement, construction, commissioning and Start-up	X	X	X	2009	2014	LSTK
Algeria	Menzel Ledjmet East (Block 405b)	Menzel LedjMet East development project	Utilities, Storages and Export facilities for the MLE Central Processing Facilities	Groupement First Calgary Petroleum / Sonatrach	Engineering, procurement, construction, commissioning and Start-up	X	X	X	2009	2012	LSTK

EPC Plants

Reference list

Country	Location	Project	Technical features	Client	Description of ABB scope of work	Scope of work			Start	Compl.	Execution Basis
						E	P	C			
Algeria	South-East of Hassi Messaoud	El Merk Project – Lot 3&4 – Offsites Facilites	No.120 well sites, No.10 Field Gathering Stations, No.6 Gas Distribution Manifolds. 900 km of flowlines and trunklines Water treatment units. Utilities.	Groupement Berkine (Anadarko/ Sonatrach)	Engineering, procurement, Construction, commissioning and start-up	X	X	X	2009	2014	LSTK
Congo	Djeno	Integrated Power Plant - work package 5	Power generation plant open cycle 320 MW (2 x 166 MW Gas Turbine Generators)	ENI Congo S.A.	Engineering, Procurement and Construction	X	X	X	2008	2010	LSTK
Pakistan	Sawan	Sawan - Gas compressor station	Compressor station installed upstream of an existing Central Processing Plant to prevent reduced reservoir pressure. The plant includes no. 4 x 7,5 MW/each gas turbine compressors and auxiliaries	OMV Exploration GmbH	Engineering, Procurement, Construction and Commissioning	X	X	X	2007	2010	LSTK
Chile	Coya Sur	Coya Sur – KNO3 Crystallization Plant	Potassium Nitrate Crystallization Plant. Production capacity 48,000 kg/h	SQM - (Sociedad Química y Minera de Chile S.A.)	Engineering, Procurement and Construction	X	X	X	2007	2010	LSTK
Algeria	Hassi R'Mel	Hassi R'Mel Boosting Station Phase II - Upgrading of no. 3 compressor stations	Gas compression station rehabilitation: No. 6 x 25 MW ISO/each gas turbine compressors, no. 6 air coolers, no. 11 compressor rebundles, upgrading of anti-surge system. Station DCS upgrading, electrical distribution, infrastructures, tie-ins to the existing plant systems	Sonatrach	Engineering, procurement, construction and commissioning	X	X	X	2006	2009	LSTK
Algeria	Haoud El Hamra - Skikda	NK1 Oil Pumping Stations lot No.3 on 30" Oil Pipeline NK1 - Haoud El Hamra - Skikda	Pumping Stations: No. 3 x 800 kW/each centrifugal vertical type booster pumps, no. 3 x 2250 kW/each electrical driven centrifugal main pumps, no. 3 x 3 MW/each gas-turbine driven pumps, no. 2 x 2.5 MW/each turbogenerators	Sonatrach	Engineering, procurement, construction and commissioning	X	X	X	2006	2008	LSTK

EPC Plants

Reference list

Country	Location	Project	Technical features	Client	Description of ABB scope of work	Scope of work			Start	Compl.	Execution Basis
						E	P	C			
Mexico	KU-MALOOB-ZAAP Sonda de Campeche	PB-KU-H Production Platform	Offshore platform suitable for 100.000 BBLD oil and 60 MMscfd gas plus 3 x 4kVA power generation system	Pemex Exploration and Production	Engineering, Procurement and Supply, and Commissioning of process packages	X	X	X	2005	2009	LSTK
Italy	Poggio Renatico (Ferrara)	Compressor Station plus upgrading of the existing block valve and metering station	No. 2 x 11 MW gas turbine compressors + 1 x 25 MW gas turbine compressor, auxiliaries systems, station DCS and SCADA upgrading, electrical distribution, infrastructures, tie-ins	Snam Rete Gas	Engineering, procurement, construction, commissioning and start-up	X	X	X	2005	2008	LSTK
Thailand	Sriracha	CDU 3 Revamp Project 2006 - Sriracha Refinery	Revamping of CDU3 Unit to increase the capacity from 16,000 to 24,000 t/d. Revamping of connected units/facilities and installation of a new KMT and SCOT Units	Thai Oil Public Company Limited	Engineering & Procurement	X	X		2005	2006	LS
Algeria	Tin Fouye Tabankort, Rhourde Nouss, Zina, Ouargla and Hassi R'Mel	TFT compressor station along GR1/GR2 gas pipeline and upgrading of four existing stations	No. 2 x 25 MW turbo compressors + No. 5 x 25 MW turbo compressor, utilities, dwelling facilities, tie-ins with the existing departure and arrival terminals of GR1/GR2 48" gas pipeline	Sonatrach TRC	Engineering, Procurement, Fabrication, Commissioning & Start-up services	X	X	X	2004	2007	LSTK
Kazakhstan	Kashagan Field	Kashagan Field Power Generation Barge	- No. 4 x 30 MWe jet derivative turbo generators - No. 1 steel barge dimensions: 95 L x 16 W x 5 H meters - HV and MV switchboards and relevant control system - No. 3 diesel generators 2.5 MW/each	Agip KCO	Engineering, Procurement, Fabrication, Commissioning and Start-up services	X	X	X	2004	2007	LSTK
Algeria	Bir Berkine / Bir Berkine Nord	BBK/BBKN Oil fields development	Crude oil and gas processing facilities, oil (25.000 BOPD), gas (2,4 MMNm3/d), and infrastructure requirements. Well site facilities, pipelines including gathering of production fluids, crude oil export system, gas lift and water injection system	Sonatrach	Engineering, Procurement, Fabrication & Construction, Commissioning & Start-up	X	X	X	2003	2007	LSTK

EPC Plants

Reference list

Country	Location	Project	Technical features	Client	Description of ABB scope of work	Scope of work			Start	Compl.	Execution Basis
						E	P	C			
Thailand	Khanchanaburi Province	Saiyok Gas Compressor Station	No. 3 x 23 MW turbo compressors, utilities, hot-tap tie-in at the existing block valve BVW#7 of the Yadana gas pipeline system	PTT Public Co. Ltd	Engineering, Procurement, Fabrication & Construction, Commissioning & Start-up	X	X	X	2003	2006	LSTK
Algeria	Hassi R'Mel	Oily water treatment plants	Realization of no. 2 oily water treatment plants with a capacity of 500 m3/d including filtering, de-oiling, desalting and water conditioning units and gathering lines	Sonatrach	Engineering, procurement, fabrication and construction, commissioning & start-up	X	X	X	2003	2005	LSTK
Algeria	Haoud El Hamra Skikda	OK1 pumping station	Pumping station to increase pipeline flow-rate from 3,791 m3/h up to 4,734 m3/h by installing a new pumping station (SP3 bis) and revamping no. 4 existing pumping stations (SP1, SP2, SP3, SP4)	Sonatrach	Engineering, procurement, fabrication & construction, commissioning & start-up	X	X	X	2002	2004	LSTK
Algeria	El Abiodh Sidi Cheick	GPDF Compressor Station SC-3	No. 2 x 25 MW turbo compressors, utilities, dwelling facilities, departure and arrival terminals of GPDF 48" gas pipeline (Maghreb - Europe)	Sonatrach	Engineering, procurement, fabrication & construction, commissioning & start-up	X	X	X	2001	2003	LSTK
Ecuador	Villano	Expansion of the capacity of Villano producing facilities	Expansion of the CPF from 30,000 BOPD to 45,000 BOPD and addition of water separation and injection facilities	Agip Oil Ecuador B.V.	Engineering, procurement and project support services including project management, construction supervision, commissioning and start-up	X	X	X	2001	2003	EPCM LS
Algeria	Hassi Berkine / Nezla	OH3 Storage Farm and delivery stations	- Realization of No.6 tanks (41,000 mc) with floating roof combined with No. 3 booster pumps and No. 4 transfer pumps. - Realization of pumping station complete with No.4 transfer pumps and No.4 oil filter units	Sonatrach	Engineering, procurement, fabrication & construction, commissioning & start-up	X	X	X	2001	2003	LSTK

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Country	Location	Project	Technical features	Client	Description of ABB scope of work	Scope of work			Start	Compl.	Execution Basis
						E	P	C			
Nigeria	Santa Barbara	No. 1 Mobile Production Facilities	30,000 bpd	SPDC	Engineering, procurement, construction, transport, installation, commissioning and start-up	X	X	X	1998	2001	LSTK
Nigeria	Obiafu Obrikom	N-NLG Gas supply project	Upgrade and retrofit of existing gas plant from 80 up to 250 Mscfd	NAOC	Engineering, procurement, construction, commissioning and start-up	X	X	X	1998	2001	LSTK
Nigeria	Odidi	ODIDI Gas Gathering Project	No. 1 utility module (weight 1,500 ton) + no. 2 compression modules (weight 650 ton each)	Shell West	- Basic and detailed engineering of utility module - Detailed engineering of compression bulk material - Construction - Transportation and Hook-up	X	X	X	1998	2001	LSTK

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