



saipem

# OIL AND GAS PRODUCTION AND PROCESSING

ENGINEERING AND CONSTRUCTION PROJECT  
REFERENCES



# OIL AND GAS PRODUCTION AND PROCESSING



●● SAIPEM TODAY	4
●● SAIPEM ENGINEERING & CONSTRUCTION	6
●● OIL AND GAS PRODUCTION	8
●● MAXIMIZING LOCAL CONTENT: A NEED AND AN OPPORTUNITY	12
●● UNCONVENTIONAL CONTRACTUAL SCHEMES	20
●● OIL AND GAS PRODUCTION AND PROCESSING	24
● COMMERCIAL EXPERIENCE	24
● PROJECT REFERENCES	48

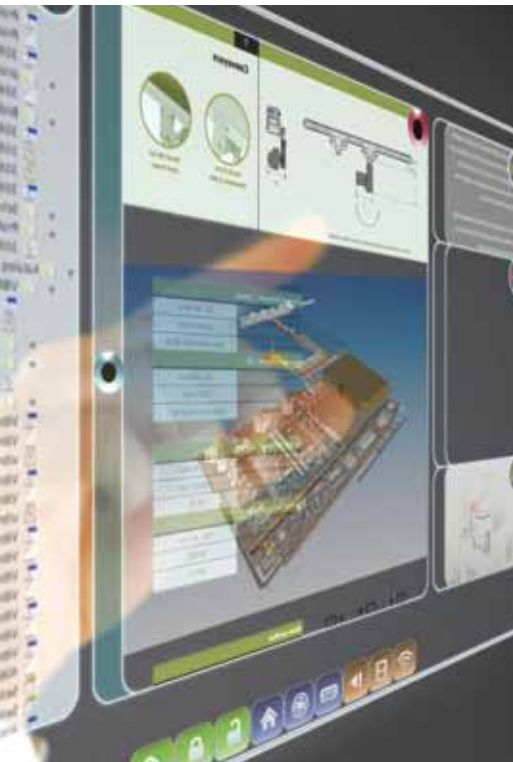
# SAIPEM TODAY

SAIPEM TODAY IS A WORLD LEADER IN THE GLOBAL SUPPLY OF ENGINEERING, PROCUREMENT, PROJECT MANAGEMENT, CONSTRUCTION AND DRILLING SERVICES WITH DISTINCTIVE CAPABILITIES IN THE DESIGN AND EXECUTION OF LARGE-SCALE OFFSHORE AND ONSHORE PROJECTS.

Saipem has a strong bias towards oil and gas frontiers, namely activities in harsh and remote areas, in deep waters as well as in extremely cold and hot environments, applying significant technological competences in many diverse fields such as gas monetization and heavy oil exploitation.

Saipem is organized in two Business Units: Engineering & Construction and Drilling.





# SAIPEM ENGINEERING & CONSTRUCTION

FOLLOWING AN AGGRESSIVE GROWTH STRATEGY, WHICH INCLUDED IN THE LAST DECADE THE ACQUISITION OF MANY CONSTRUCTION, TECHNOLOGY AND ENGINEERING COMPANIES, MOST PROMINENTLY OF SNAMPROGETTI, BOUYGUES OFFSHORE, SOFRESID AND MOSS MARITIME, SAIPEM HAS BECOME ONE OF THE WORLD LARGEST AND MOST COMPLETE ENGINEERING AND CONSTRUCTION COMPANIES IN THE GLOBAL OIL AND GAS MARKETS, ONSHORE AND OFFSHORE.



Ever since its initial steps in the fifties as the construction division of Snam, the pipeline company of the Eni Group in Italy, Saipem has pursued a systematic growth strategy, based on the development of internal assets, expertise and skilled resources, as well as on the acquisition of other players with their own asset bases, such as Micoperi in late eighties, and many others.

In the last decade, Saipem has continued its growth by acquiring Bouygues Offshore and Sofresid in France, Moss Maritime in Norway, IDPE in India and Snamprogetti in Italy, and by carrying out a multibillion investment program into the expansion of its offshore construction and drilling fleets. Since the year 2000, Saipem's market capitalization has grown more than sixfold and its revenues tenfold. (\*)

The organizational integration of this considerable asset base, namely the network of engineering centres, fabrication and support yards in several continents as well as the offshore construction fleet, has been completed gradually over the years - most recently with the creation of a unified Business Unit Engineering & Construction, an entity with over 30,000 employees (excluding corporate and BU Drilling staff) from over 100 nationalities, with over 60 permanent establishments

and numerous project execution centres around the globe, and with yearly revenues exceeding 10 billion €; all held together by outstanding project management skills.

Through the involvement of our global EP(I)C hubs in Milan, Rome and Fano (Italy), Paris (France) and Chennai (India), which operate in connection with a growing number of medium size and smaller regional engineering and project execution centres employing altogether over 7,000 engineers, Saipem balances high project execution quality with a competitive cost and - most importantly - with a major emphasis on local know-how and content.

This well-integrated multicenter approach provides a consistent design and robust execution philosophy on all our projects worldwide. Top priority is provided throughout to all HSEQ aspects.

Saipem therefore offers a complete range of project definition and execution services, offshore and onshore, particularly for the complex "mega-projects" required by the market today: from feasibility and conceptual studies to complex integrated solutions combining design, engineering, procurement, field construction, fabrication and offshore

installation; also revamps, upgrades, maintenance, decommissionings, reclamations and decontaminations.

Saipem today operates in virtually every world market, often in remote locations with harsh environmental conditions and challenging logistics, leveraging on its proven experience across the most significant product lines in the oil and gas production onshore, offshore, in deepwater; gas and oil transportation via offshore and onshore pipeline systems; midstream, refining, chemicals, power generation from fossil as well as from renewable sources; environmental industries, maritime works and infrastructure.

This new series, therefore, outlines Saipem's integrated references in engineering and construction markets offshore and onshore, according to individual business and technology lines.

(\*) Until Dec. 31, 2010



# OIL AND GAS PRODUCTION

SAIPEM: A LEADER IN THE DESIGN AND CONSTRUCTION OF MAJOR OIL AND GAS PRODUCTION PLANTS, WORLDWIDE.

The recent decade has seen a resurgence of large investments in oil and gas production and processing facilities, to satisfy rapidly growing demand and to overcome the disappearance of spare capacity.

The last 25 years have seen a huge growth in primary energy demand, namely from 7.3 Btoe in 1980 to 12.0 Btoe in 2007 (+64%). This growth pattern is expected to continue with the same intensity: another 4.8 Btoe of additional demand by 2030 (°).

More than 50% of this growing thirst for energy has been satisfied by new gas and oil production, which has led to massive investments in new oil and gas production and processing facilities. It is forecast that this trend will continue, namely oil and gas will remain the primary sources of new

energy supply also over the next decade, with consequent further growth in investments in the upstream production facilities.

In addition, even greater investments in new oil and gas fields exploitation will be required in order to compensate for the depletion and declining production from current oil fields, estimated to fall by about 2030 to a level of virtually zero, from over 80 MBSD today(\*)

Therefore, following only a gradual new production capacity growth in the 1980's and 1990's, when at a time of falling oil prices some industry players also tried to rationalize overcapacity, the last decade has seen a massive boom in new and much needed upstream investments in order to bring new oil and gas supplies to market and to restore spare capacity.

(°) IEA World Energy Outlook 2009

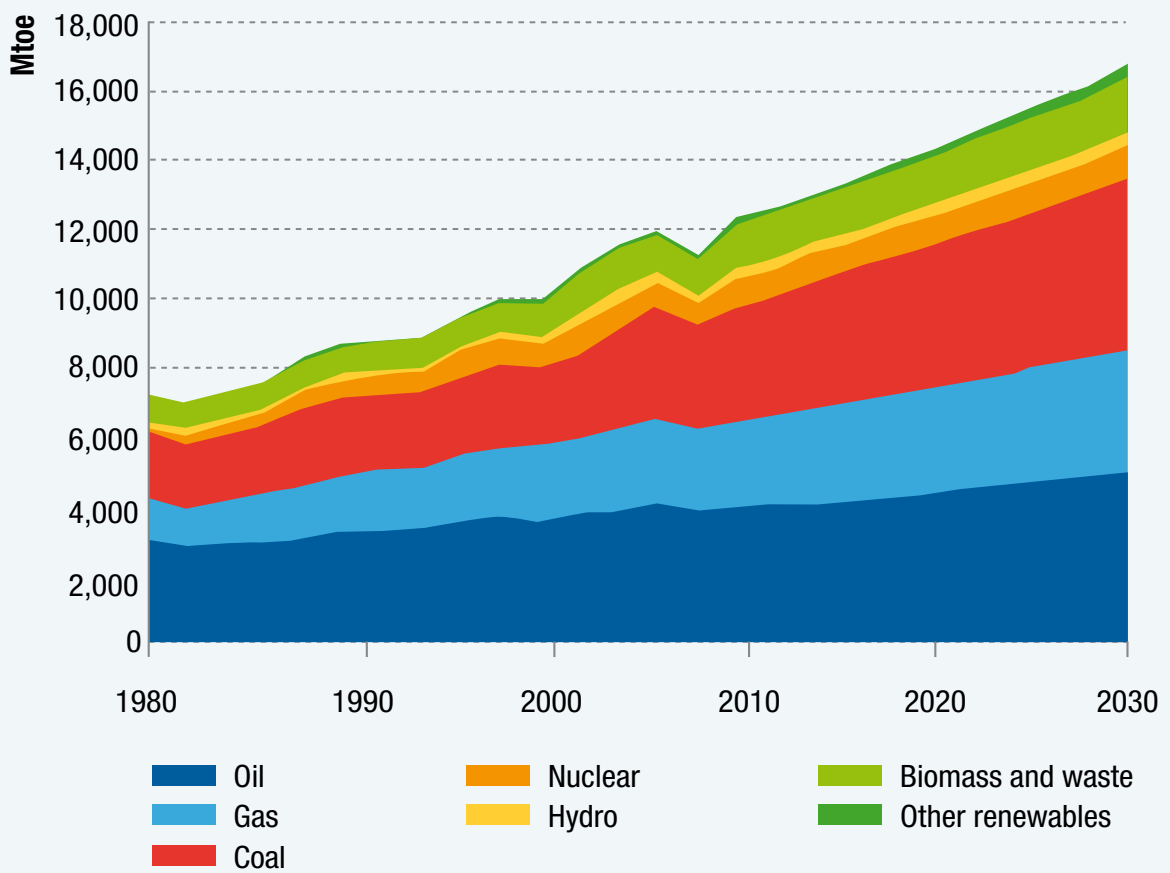
(\*) IHS Cambridge Energy Research Associates





Rhourde Nouss, Algeria, Grass Roots Gasoline Recovery and Gas Reinjection Facilities, one of the early gas and oil production plants designed and built by Saipem (1988).

### World primary energy demand by fuel



From: IEA World Energy Outlook 2009

Furthermore, the last decade has also seen several market shifts:

- Greater investments, growing production and generally increased importance and assertiveness of new oil producing countries and of their National Oil Companies;
- Gradual shift towards oil and gas production from new fields in more distant, accessible with difficulty and less climactically hospitable locations: virgin forests, swamps, deserts or Arctic environments;
- Frequent Owners' requirements to satisfy growing production needs by asking for project execution on a fast-track basis;
- Evolution of Owners' project execution philosophies, with an increasing preference for awarding single large EPC contracts to one Engineering and Construction company or to a joint venture with a single point of responsibility, rather than splitting a large project into several smaller parallel EPC packages.
- The recent upstream projects have therefore became much larger, in more difficult locations, with enhanced time pressure for completion.

Saipem was ready and has taken full advantage of the new market

opportunities offered by this upstream challenge. Indeed, Saipem and Saipem's constituent companies Snamprogetti and Bouygues Offshore have always been active and successful players in most upstream markets, particularly in the Middle East, North and West Africa, Latin America, Asia/Pacific as well as naturally in their home markets in Europe.

With the successful completion of several large projects in the early years of this decade, particularly of the 526,000 bpsd Qatif GOSP-1 Project for Saudi Aramco, completed in a record time of only 29 months, Saipem has fully "graduated" to prove itself as one of the leading global players in the design and execution of multibillion Euro upstream investments, able to implement quickly huge projects in challenging locations. This initial success was followed by many other analogous project awards in Saudi Arabia, Algeria, Libya, Nigeria, U.A.E., Kuwait and other markets.

In the continuing quest to enter new promising oil & gas markets, over the last decade Saipem has established an important local presence also in Canada, with the award of numerous large contracts in oil sands production and processing.

In particular, the Sunrise Project Phase 1 - Central Processing Facilities for Husky Oil Operations Ltd.

This success story is based on the

following key ingredients:

- Ability to mobilize and integrate very large and experienced project design and execution teams, fully dedicated to the substantial task ahead;
- Iron control of the EPC LSTK process, in order to complete a project within the contractual price and schedule;
- Long standing local experience and location knowledge, achieved via substantial investments in local operations in most major markets of Saipem interest, in order to maximize local content (see dedicated chapter).
- Ability to offer customized EPC contractual solutions for project implementation: several variations of either LSTK or "cost-plus" schemes, including recent hybrid "convertible" contract forms (see dedicated chapter).
- Capacity to perform a full range of services, from the early steps of project definition and feasibility studies to the project design and execution on an EPC basis, including start-up, commissioning, operations and maintenance and later revamp services.

Today, mega-projects for the upstream oil and gas markets are a key part of Saipem Onshore project portfolio and current backlog.

# MAXIMIZING LOCAL CONTENT: A NEED AND AN OPPORTUNITY

THE DISCOVERY AND EXPLOITATION OF NEW OIL AND GAS RESERVES PRIMARILY IN SOME EMERGING ECONOMIES AND THE GROWING DEMAND FOR ENERGY AND OIL PRODUCTS FROM DEVELOPING COUNTRIES HAVE SHIFTED THE NEW UPSTREAM INVESTMENTS DECISIVELY TOWARDS NEW WORLD MARKETS.





The new oil and gas producing countries are mostly characterized by rapidly expanding economies, so there is a great need to provide new jobs to growing local populations. Consequently, in the definition of our new project execution plans, maximizing “Local Content” becomes increasingly important and in certain contexts essential, as this is often even mandated by clear, local governmental policies.

Saipem has been at the forefront among the global Engineering and Construction companies not only in accepting this need, but in making it the essential component of our project execution and corporate growth strategy, starting with the creation of

Saipem Nigeria Ltd., in Lagos, Nigeria, in 1967, Saudi Arabian Saipem Ltd. in Al Khobar, Saudi Arabia, in 1976, and with many others.

In emerging economies with major oil and gas production growth prospects, Saipem increasingly relies on local personnel for the performance of ever more highly specialized and skilled services, such as design, project management, local sourcing, etc. Saipem has therefore invested considerably in the development of many new centres for local engineering, project and procurement management, as well as in sizeable fabrication and construction support facilities, transferring there its know-how.

A few related Saipem highlights:

- More than 25 engineering centres in almost every continent;
- More than 10 prefabrication yards, also in most growth markets of interest;
- More than 70% of Saipem's employees worldwide originate from over 100 developing countries;
- More than 50% of Saipem's current turnover originates from markets where there is a strong and lasting Saipem local presence.

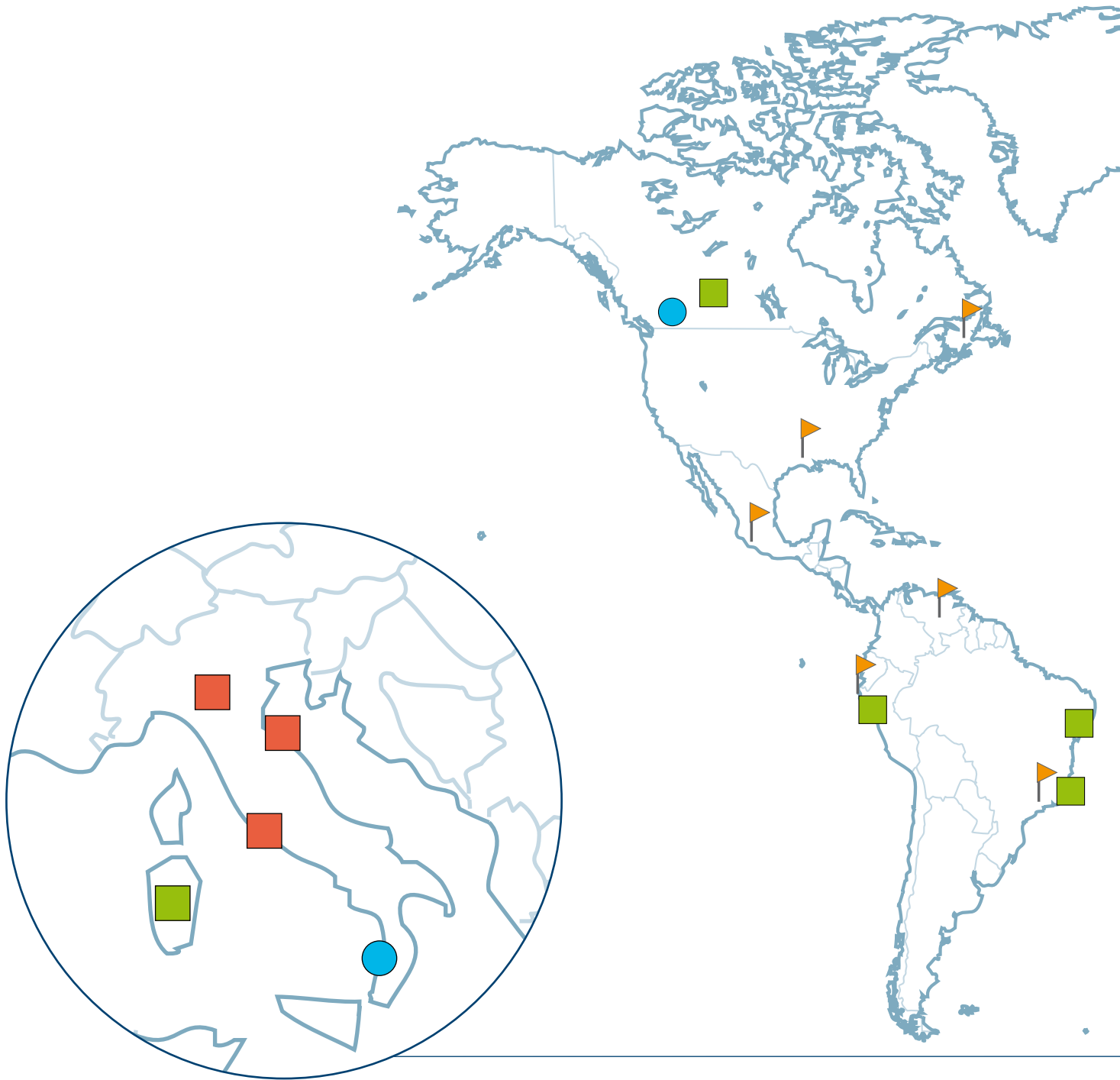


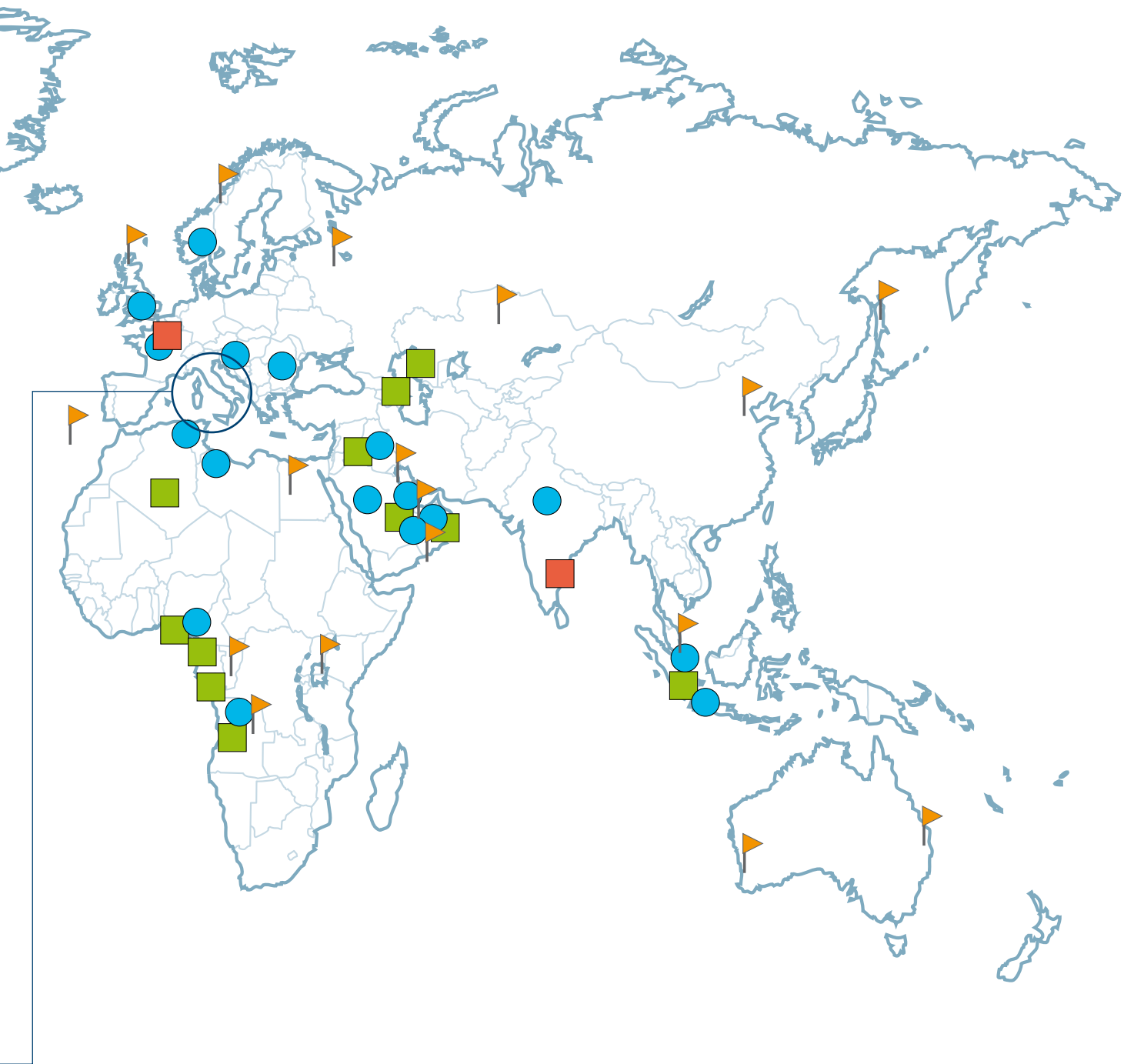


Saipem prefabrication and construction support yard at Port Harcourt - Rumuolumeni Base, Nigeria.



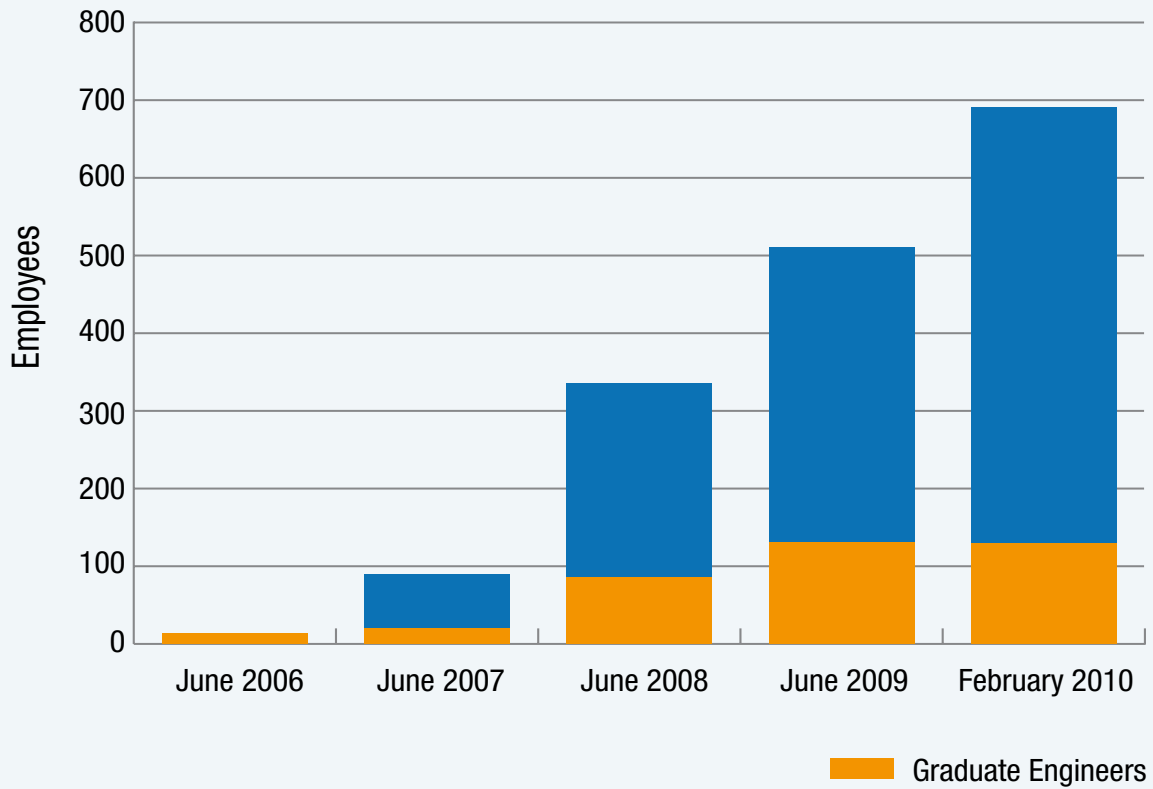
# Worldwide Saipem Project Execution Centers, Support Facilities and Representative Offices



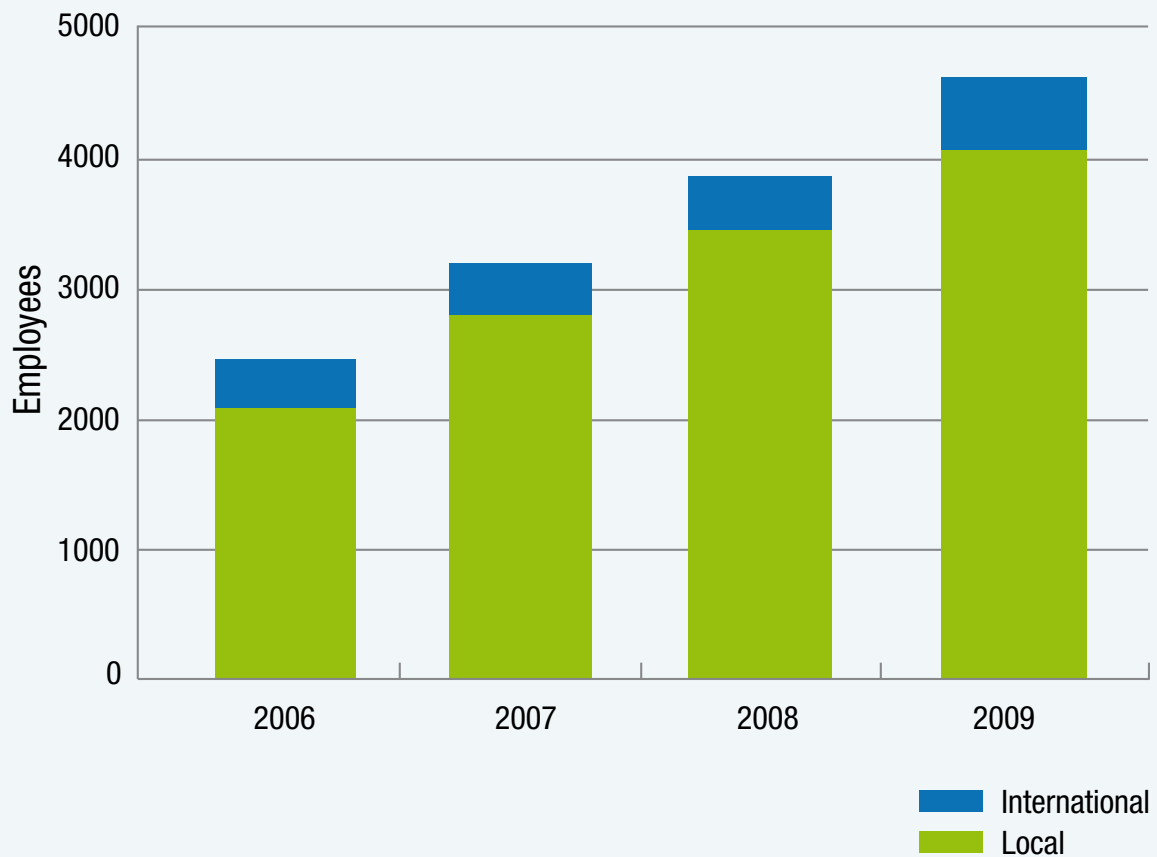


- Project Execution Centres
- Regional Engineering Centres
- Yards & Main Logistic Bases
- ▲ Other Main Areas and Representative Offices

### Local personnel growth in Saipem Contracting Algérie



### Personnel employed in Saipem Nigeria Ltd.



Local presence is much more than hiring local workers and graduate engineers.

Indeed, Saipem strives to assure a sustainable, long term presence, via in particular:

- ↳ Technology and know-how transfer;
- ↳ Graduates hiring via programs with local universities;
- ↳ Expanded health protection and safety programs.

The results of this approach are highly positive: in the long term, greater local content reduces project risk and improves project execution efficiency, with considerable benefits to project Owners, to Saipem and to the local communities: a real “win-win” outcome.

In conclusion, a continuously improving sustainable local content remains one of the cornerstones of Saipem’s corporate growth strategy.

In this brochure, the largest and most recent projects are grouped according to geographical markets.



Saipem Libya Company, Tripoli Libya



Dammam Onshore Fabrications Facilities, Dammam Saudi Arabia

# UNCONVENTIONAL CONTRACTUAL SCHEMES

THE RAPID CHANGES IN THE GLOBAL MARKET PLACE FOR OIL AND GAS PROJECTS HAVE GIVEN RISE IN RECENT YEARS TO NEW UNCONVENTIONAL CONTRACTUAL SCHEMES, OFTEN A COMPROMISE BETWEEN THE “COST-PLUS/REIMBURSABLE” AND “LUMP SUM” CONTRACTUAL FORMS.

In the interest of maximizing the success of mega-projects, which often need to be executed on a fast-track basis and in which there is sometimes shortage of time and/or information to adequately define all cost and execution items, several Owners and

E&C Contractors, particularly in the Middle East but more recently also in other markets, have started adopting hybrid, combined and “convertible” reimbursable/lump sum contracts for the execution of the entire FEED/EPC project sequence with the single E&C

company under a single contract.

These new contractual forms offer a compromise scheme between two traditional extremes of Cost-plus/ Reimbursable and Lump Sum Turn Key:

## Main Tasks and Responsibilities Under Reimbursable - Cost Plus and Lump Sum Turn Key Contractual Schemes

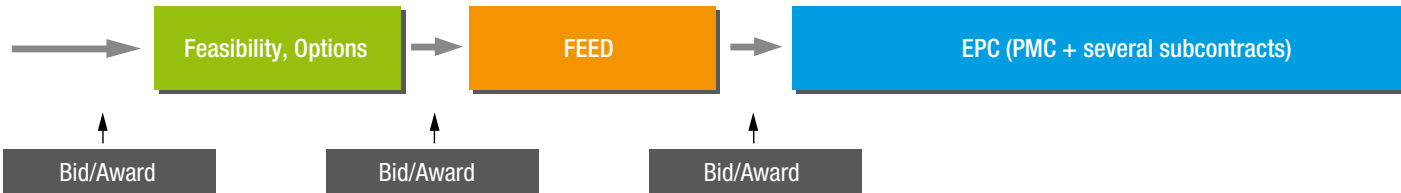
	<b>Cost Plus</b>	<b>LSTK</b>
Contractor selection process	Short, can be subjective	Long, formal and rigorous
Final project definition	Owner	Contractor
Design leadership	Owner	Contractor
Design location	Owner’s	Contractor’s
Variations	Easy	Formal change orders
Project risk	Owner	Contractor
Owner’s involvement	High	Low



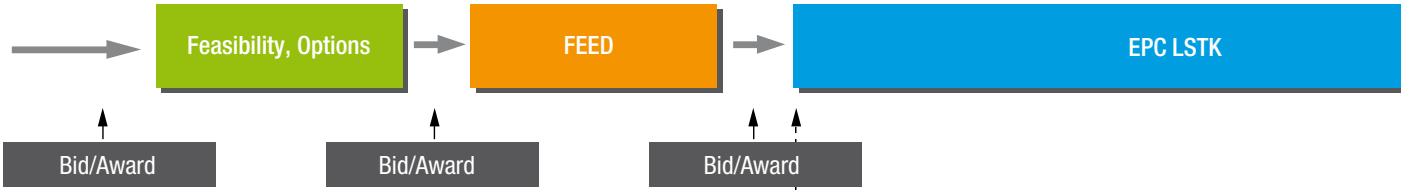
Saudi Aramco Khurais Field Development Program, a section of which was one of the first projects designed and built with the application of “convertible” contracts.

# Execution Approaches

## OPEN BOOK REIMBURSABLE



## LSTK



## “Convertible” LSTK



From: D. Brkic, D. Romani "Unconventional Contractual Schemes for Fast Track Projects in the Oil & Gas Industry", Petrotech 2009, New Delhi, India, January 2009

The “convertible” contracts attempt to provide simultaneously the main advantages of these forms, namely:

- ↘ A significantly shorter overall project execution time, as it is possible to save approximately one year by avoiding the steps of EPC contract tendering, the EPC Lump Sum proposal preparation, the Owner’s tabulation of different bids received and the subsequent negotiations with the chosen engineering and construction contractor.
- ↘ Possibly a lower EPC contract cost than in the LSTK mode, as the E&C contractor’s lower risk profile and the open-book approach should result in a reduced total price contingency.

This new approach optimizes the risk balance between the Owner and the E&C Contractor and it allows time to better define the project and all its surrounding implications.

This reduces the total project risk and thus potentially the EPC contract cost. Most importantly, in all cases, by shortening the project execution time by one year, it reduces the total investment cost.

The project execution mechanics have been well proven: the initial project phases, namely the execution of the FEED and the beginning of the design process, occur under a cost-plus/reimbursable contractual mechanism which favours flexibility and simplicity. Once the project is well defined and under way, once the material quantities are becoming better defined, the main equipment suppliers and subcontractors have been selected and the contracts with them are about to be negotiated, the contractual form is converted on the basis of pre-agreed equations into a Lump Sum by the Owner and the E&C Contractor for the remainder of the project execution. In our experience, the best timing to “convert” has been after performing about 50÷60% of detail engineering.

This “convertible” hybrid formula is gaining market acceptance. It is not necessarily the ideal contractual compromise for all situations in the future. At the Owner’s own choosing and under suitable circumstances, it is increasingly being adopted by the market alongside LSTK and reimbursable contracts. Saipem has executed many projects based on such hybrid contracts, for a total value of many billion Euros.



# OIL AND GAS PRODUCTION AND PROCESSING

## COMMERCIAL EXPERIENCE

### HIGHLIGHTS

▶ MORE THAN ONE HUNDRED PROJECTS BUILT IN ALMOST EVERY CORNER OF THE WORLD: NORTH AND WEST AFRICA, MIDDLE EAST, EUROPE, ASIA, LATIN AMERICA.

▶ IN THE LAST TEN YEARS ENGINEERED AND CONSTRUCTED MORE THAN 10 MULTI BILLION EURO “MEGA” CONTRACTS.

THE CRITICAL SUCCESS FACTORS WERE THE MASSIVE RESOURCE DEPLOYMENT TO BRING THESE HUGE PLANTS ON STREAM ON A FAST TRACK BASIS.

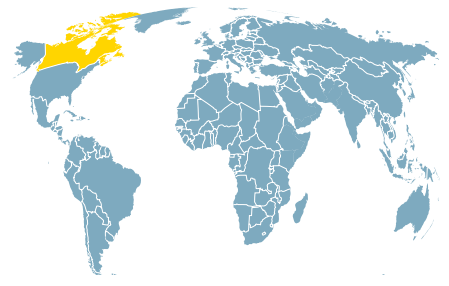
▶ STRONG AND GROWING PRESENCE IN THE LOCAL MARKETS TO IMPROVE THE PROJECT EXECUTION EFFICIENCY AND TO MINIMIZE THE RISKS.

THE FLAGSHIP PROJECTS IN THIS BROCHURE ARE HEREAFTER ILLUSTRATED AND RANKED ACCORDING TO THE MAIN MARKETS IN WHICH SAIPEM HAS DEVELOPED A STRONG LOCAL PRESENCE.





HUSKY OIL OPERATIONS LTD.  
SUNRISE OIL SANDS PHASE 1 - CENTRAL PROCESSING FACILITIES  
FORT MCMURRAY (CANADA)

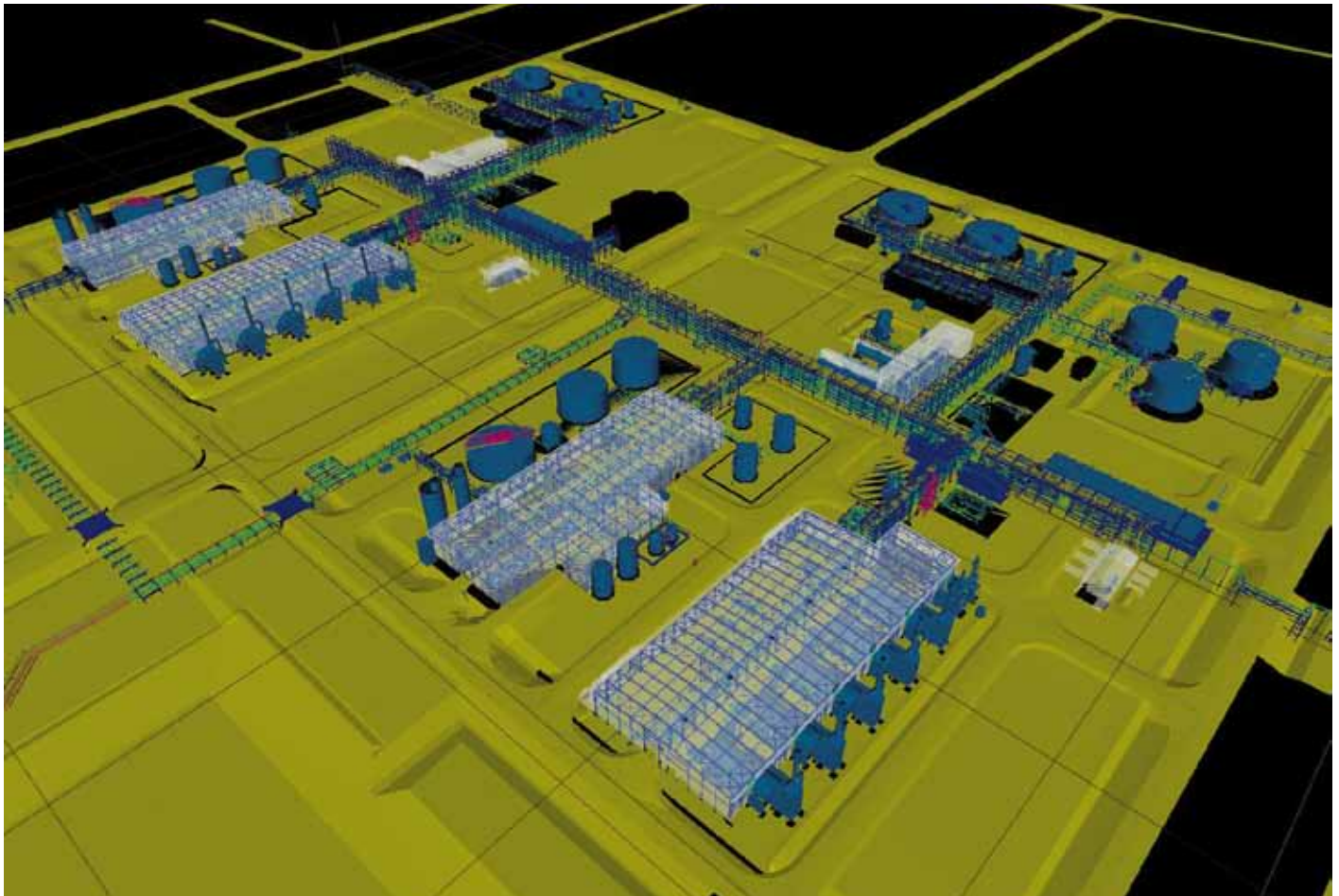


Bitumen treatment, produced water de-oiling, water treatment using warm lime softening technology and once-through steam generation.

**Capacity:** 2 X 30,000 bpsd bitumen

**Contract:** EPC LS convertible

Under execution.



SAUDI ARAMCO  
MANIFA CORE HYDROCARBON FACILITIES  
MANIFA (SAUDI ARABIA)



3 gas / oil separation trains (GOSP), wet crude handling, crude stabilisation and gas gathering.

**Capacity:** Oil 3 X 300,000 bpsd, Gas 180 mmscfd.

**Contract:** EPC LSTK.

Under execution.





With the award of 4 separate contracts, Saipem has performed a very significant portion of the huge Khurais Field Development program.

**KCC - Khurais Crude Facilities.**

4 GOSP trains.

**Capacity:** Oil 4 X 300,000 bpsd.

**Contract:** EPC LSTK.

In operation since 2009.

**KUC - Khurais Water Injection Facilities and Utilities.**

New water injection facilities and Khurais Plant Utilities.

**Capacity:** Water 2,160,000 bpsd.

**Contract:** EPC CLSTK convertible contract.

In operation since 2009.

**WIPS - Khurais Water Injection Plants.**

Revamping, modernization and capacity increase of four existing pumping stations.

**Contract:** EPC LSTK.

In operation since 2008.

**QSTP - Qurayya Sea Water Treatments Plant Facilities.**

Treated sea water capacity increase by 4,500,000 bpsd.

**Contract:** EPC CLSTK convertible contract.

In operation since 2009.



SAUDI ARAMCO  
KHURSANIYAH PRODUCING FACILITIES (KPF)  
KHURSANIYAH (SAUDI ARABIA)



This project was Saipem's first application of the *convertible* EPC LSTK contractual scheme to a mega project.

Oil production and treating facilities including gas oil separation, wet crude handling and crude stabilisation, gas gathering and conditioning.

**Capacity:** Oil 526,000 bpsd, Gas 282 mmscfd.

**Contract:** EPC CLSTK convertible.

In operation since 2008.



SAUDI ARAMCO  
QATIF GOSP - 1  
QATIF (SAUDI ARABIA)



Snamprogetti's, now Saipem's, first "mega" upstream project in Saudi Arabia, completed on a fast track basis in a record time of 29 months.

Gas oil separation, wet crude handling and crude stabilisation, Abu Safah Facilities.

**Capacity:** Onshore Areas North and South 526,000 bpsd, offshore area Abu Safah 316,000 bpsd, Gas 364 mmscfd.

**Contract:** EPC LSTK.

In operation since 2004.



# ABU DHABI GAS DEVELOPMENT COMPANY LIMITED

## SHAH GAS DEVELOPMENT PROJECT

### SHAH FIELD (UAE)



Three EPC contracts as part of the Shah Gas Development Program designed to treat 1 bcf/d of sour gas from the Shah field to produce gas, condensate and NGL, and to transport them via an about 260 km long pipeline system (36" and 16") to Habshan and Ruwais.

**Capacity:** Gas 1 bcf/d, NGL 5,300 t/d

**Contract:** EPC LSTK

Under execution.





**GASCO - ABU DHABI GAS INDUSTRIES LTD.**  
**RUWAIIS NGL 3 - NATURAL GAS LIQUIDS COMPLEX**  
**RUWAIIS (U.A.E.)**



Single treatment train with a processing capacity of 24,000 t/d of NGL. Feedstock supplied from OGD III in Habshan and AGD II in Asab.

**Capacity:** 24,400 t/d.

**Contract:** EPC LSTK.

In operation since 2010.



GASCO - ABU DHABI GAS INDUSTRIES LTD.  
ASAB NATURAL GAS COMPLEX  
ASAB (U.A.E.)



The AGP grass roots complex includes receiving and separation facilities and a two parallel trains stabilization section.

**Capacity:** Gas 856 mmscfd, Oil 2 X 48,000 bpsd.

**Contract:** EPC LSTK.

In operation since 2001.



# QATAR PETROLEUM DUKHAN FIELD GAS LIFT PROJECT DUKHAN (QATAR)

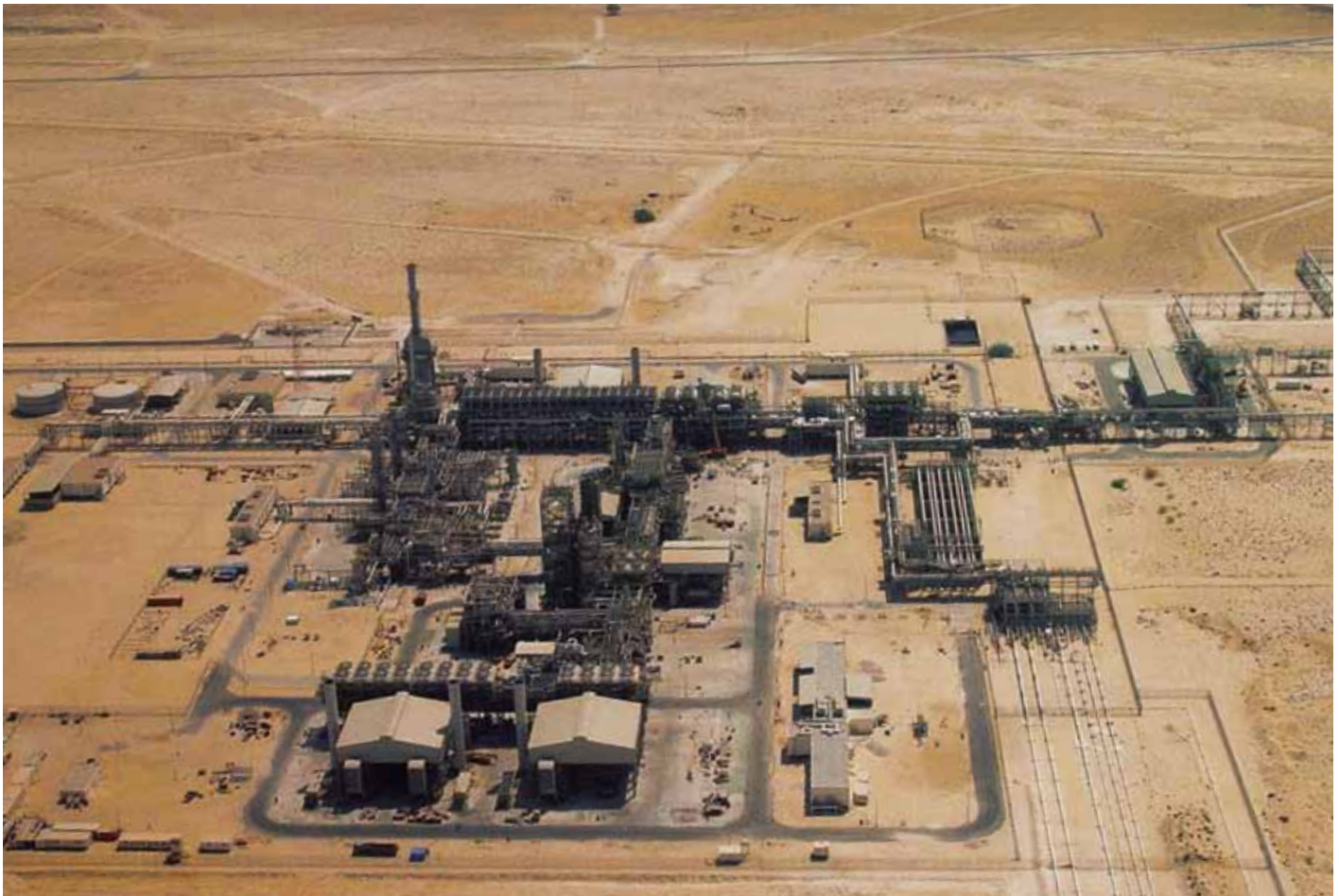


New oil production and treating facilities, revamp of the existing gas / oil water separation plants, design and construction of two hot oil systems for crude oil stabilisation, 4 gas dehydration systems, grass roots gas injection plant.

**Capacity:** Oil 440,000 bpsd, Gas 250 mmscfd.

**Contract:** EPC LSTK.

In operation since 2006.



# QATAR PETROLEUM NGL - 4 NATURAL GAS LIQUIDS COMPLEX MESAIEED (QATAR)



Upgrading of the existing Arab D Plant in Dukhan, construction of 100 km long pipeline, revamping of the existing NGL-3 Recovery Plant in Mesaieed, construction of a new fractionation plant (NGL-4).

**Capacity:** 3,150 t/d ethane, Gas 1,000 mmscfd, 800 mmscfd.

NGL pipeline from Dukhan to Mesaieed - 14", 100 km.

**Contract:** EPC LSTK.

In operation since 2005.



**KUWAIT OIL COMPANY**  
**NEW BOOSTER STATION BS-171**  
**WEST KUWAIT (KUWAIT )**



Three high and low-pressure gas trains fed from the existing gas gathering centres 17, 27 and 28 and the new gathering centre 16.

**Capacity:** 234 mmscfd, condensate 69,000 bpsd, compression station 120 MW.  
Pipelines network 4" to 36", for a total length of 168 km.

**Contract:** EPC LSTK.

Under execution from 2010.

**KUWAIT OIL COMPANY**  
**NEW BOOSTER STATION BS-160**  
**SOUTH EAST KUWAIT (KUWAIT)**

Installation of two trains for gas compression and dehydration.  
The gas will be conveyed to the Mina Al Ahmadi Refinery.

**Capacity:** 250 mmscfd, compression station 140 MW.  
Interconnecting pipelines, 3" to 42", for a total length of 45 km.

**Contract:** EPC LSTK.

Under execution from 2009.



KUWAIT OIL COMPANY  
BS-131 AND INTERCONNECTING LINES  
WITH GATHERING CENTRES AND BS-130  
NORTH KUWAIT (KUWAIT)



Installation of new and interconnecting lines with gas gathering centres and BS-130.

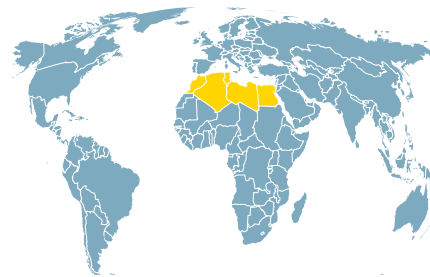
**Capacity:** 250 mmscfd, compression station 90 MW.

**Contract:** EPC LSTK.

In operation since 2005.



# SONATRACH / FIRST CALGARY PETROLEUMS MENZEL LEDJMET EAST PROJECT BLOCK 405B MENZEL LEDJMET EAST (ALGERIA)



Integrated oil and gas production facilities, including field gathering, central processing facility, infrastructure and pipelines for gas, LPG, condensate and oil export.

## Capacity:

Gas	350	mmscfd
LPG	16,200	bpsd
Condensate	10,800	bpsd
Oil	19,500	bpsd

Pipeline system from Gassi Touil to Menzel:

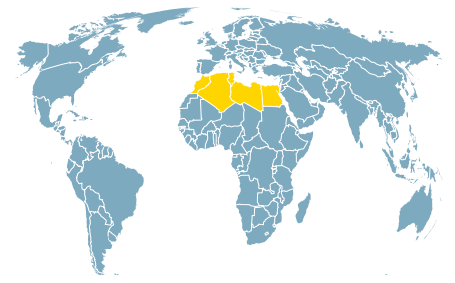
30" Gas	130	km
12" LPG	130	km
14" Condensate	130	km
10" Oil	109	km

**Contract:** EPC LSTK.

Under execution.



# SONATRACH LPG RECOVERY PLANT FROM ASSOCIATED GASES HASSI MESSAOUD (ALGERIA)

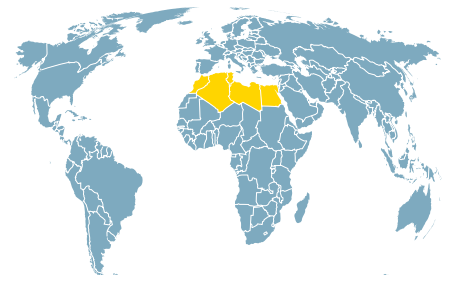


Triple train LPG recovery plant.  
Grass root CPF, including feed gas compression, 3 trains of LPG recovery, product storage and pumping, utilities - pipelines for feed gas and export products.  
**Capacity:** 3 identical trains, each of 283 mmscfd of associated gas.  
**Contract:** EPC LSTK.  
Under execution.





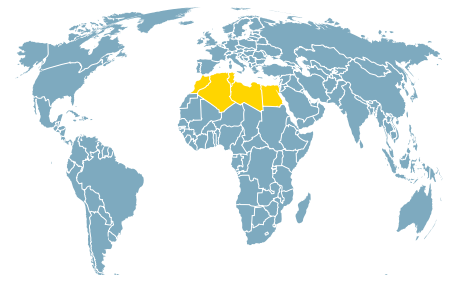
# SONATRACH UTBS - CRUDE OIL TREATMENT AND STABILISATION UNIT HASSI MESSAOUD (ALGERIA)



Crude oil gathering system and oil treatment plant (GOSP type) :  
3 trains for crude stabilization.  
**Capacity:** 3 X 100,000 bpsd.  
**Contract:** EPC LSTK.  
In operation since 2010.



BHP BILLITON / SONATRACH / AGIP  
ROD - INTEGRATED DEVELOPMENT PROJECT  
RHOULDE OULAD DJEMMA (ALGERIA)



Single train central processing facilities.

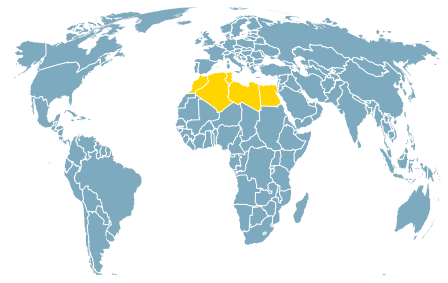
**Capacity:** 80,000 bpsd.

**Contract:** EPC LSTK.

In operation since 2004.



ENIGAS B.V.  
WESTERN LIBYAN GAS PROJECT  
MELLITAH (LIBYA)



Treatment of raw gas and unstabilized condensate feedstocks, received from Sabratha Offshore Platform via two subsea pipelines.

**Capacity:** Sales Gas 215 mmscfd.

Natural gas dehydration 3 X 255 mmscfd, oil production 2 X 23,000 bpsd.

Sulfur recovery 3 X 265 t/d.

Tail gas treating 3 X 41,000 Nm<sup>3</sup>/h.

**Contract:** EPC LSTK.

In operation since 2007.

Debottlenecked in 2009.



SHELL PETROLEUM DEV. CO. (SPDC)  
SOUTHERN SWAMP ASSOCIATED GAS SOLUTION  
OGBOTOBO, BENESIDE, OPUKUSHI AND TUNU (NIGERIA)



The scope of work includes engineering, procurement, construction and commissioning of compression facilities in four sites in Nigeria's Delta State and of new gas Central Production Facilities in Tunu, which will treat the routed associated gas.

The project will be entirely executed within Nigeria, a first for a project of such scale.

**Objectives:** Delivery of 100 mmscfd of gas to the domestic market.

Elimination of AG routine flares from producing fields (circa 60 mmscfd).

**Contract:** EPC LSTK.

Under execution.

*Project location with some initial site preparation.*



# TOTAL E&P NIGERIA LTD (TEPNG) AND NIGERIAN NATIONAL PETROLEUM COMPANY (NNPC) OML - 58 UPGRADE PHASE I OBITE (NIGERIA)



New gas treatment train and revamping of the existing flow station, interconnecting pipelines and associated utilities, condensate stabilisation and upgrading water injection.

**Capacity:** Gas 550 mmscfd + 90 mmscfd.

Pipeline 25 km.

**Contract:** EPC LSTK.

Under execution.



# SHELL PETROLEUM DEV. CO. (SPDC) ODIDI ASSOCIATED GAS GATHERING FLARE REDUCTION PROJECT NIGER DELTA, ODIDI FIELD (NIGERIA)



Design and construction of associated gas gathering and processing system, 4 new flowstations in swampy area, upgrading of existing flowstations, new central processing facilities.

**Capacity:** Gas 80 mmscfd.

**Contract:** EPCI LSTK.

In operation since 2001.



SHELL PETROLEUM DEV. CO. (SPDC)  
FORCADOS TERMINAL INTEGRATED PROJECT (FTIP), CRUDE OIL  
DEHYDRATION, WATER TREATMENT, OIL EXPORT FORCADOS, NIGERIA



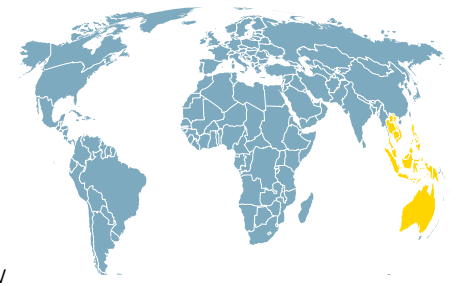
Revamping and extension of the existing terminal, design and construction of continuous dehydration plant and emulsion treatment, water treatment and crude oil export facilities, power generation.

**Contract:** EPC LSTK.

In operation since 1998.



PETRONAS GAS BERHAD  
GRASS ROOTS PENINSULAR GAS UTILISATION PROJECT, GPP5 AND 6,  
PIPELINE AND MARINE TERMINAL KERTEH, TERENGGANU (MALAYSIA)



Design and construction of major new marine terminal and gas processing complex - acid gas removal, gas compression stations, gas gathering and conditioning (2 x 640 mmscfd), NGL recovery and fractionation. Gas processing plants 5 & 6 and backup dew point control unit.

Product pipeline system for a length of 115 km 48".

**Capacity:** 80 MW, Gas 2 X 640 mmscfd.

**Contract:** EPC LSTK.

In operation since 2000.









# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES





# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

## COUNTRY LOCATION

## CLIENT

## PROJECT

### GAS AND OIL PRODUCTION AND TREATING FACILITIES

Nigeria, Ogbotobo, Beneside, Opukushi and Tunu	Shell Petroleum Dev. Co. (SPDC)	Southern Swamp Associated Gas Solutions
Canada, Fort McMurray	Husky Oil Operations Ltd.	Sunrise Oil Sands Phase 1 - Central Processing Facilities
Kuwait, West Kuwait	Kuwait Oil Company	BS-171 New Booster Station
United Arab Emirates Shah Field	Abu Dhabi Gas Development Company Limited	Shah Gas Development Project
Nigeria River State	NAOC	N-LNG Gas Supply Project for Train 6 Upgrading of the OB/OB Gas Plant
Nigeria Obite	Total Exploration and Production	OML 58 Upgrade Phase 1
Saudi Arabia Manifa	Aramco Overseas Co. Bv / Saudi Aramco	Manifa Core Hydrocarbon Facilities
Algeria Hassi Messaoud	Sonatrach	UTBS - Crude Oil Treatment and Stabilisation Unit
Nigeria River State	NAOC	NLNG Gas Supply Project for Train 4/5 Upgrading of the OB/OB Gas Plant
Saudi Arabia Ain Dar, Uthmaniyah Hawiyah and Haradh	Aramco Overseas Co. Bv / Saudi Aramco	Khurais Water Injection Plants (WIPS)
Saudi Arabia Qurayyah	Aramco Overseas Co. Bv / Saudi Aramco	Khurais Water Injection Facilities and Utilities (KUC)



CAPACITY	SCOPE OF WORK	ON STREAM
100 mmscfd	EPC	Under Exec.
2 X 30,000 bpsd	EPC (Convertible)	Under Exec.
69,000 bpsd	EPC	Under Exec.
1 bcf/d	EPC	Under Exec.
155 mmscfd	EPC	Under Exec.
35,000 bpsd	EPCC	Under Exec.
3 X 300,000 bpsd	EPC	Under Exec.
3 X 100,000 bpsd	EPC	2010
312 mmscfd	EPC	2010
1,200,000 bpsd	EPC	2009
Water 2,160,000 bpsd	CLSTK (Converted)	2009



# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

## COUNTRY LOCATION

## CLIENT

## PROJECT

### GAS AND OIL PRODUCTION AND TREATING FACILITIES

Saudi Arabia Khurais	Aramco Overseas Co. Bv / Saudi Aramco	Khurais Crude Contract (KCC)
Saudi Arabia Khursaniyah	Aramco Overseas Co. Bv / Saudi Aramco	Khursaniyah Producing Facilities (KPF)
Saudi Arabia Qurayyaa	Aramco Overseas Co. Bv / Saudi Aramco	Qurayyaa Sea Water Treatments Plant Facilities (QSTP)
Abu Dhabi Bu Hasa	Abu Dhabi Company for Onshore Oil Operations (ADCO)	Bu Hasa Facilities Development - GOSP
Libya Mellitah	Agip Gas BV - Libyan Branch	Western Libyan Gas Project
Qatar Dukhan	Qatar Petroleum (QP)	Dukhan Field Gas Lift Project
Iran Darquain Field	Agip Iran BV	Darquain Oil Field Development
Algeria Rhourde Oulad Djemma	Oil Operating Company	ROD - Integrated Development Project
Saudi Arabia Qatif	Aramco Overseas Co. Bv / Saudi Aramco	Qatif GOSP - 1
Saudi Arabia Haradh	Aramco Overseas Co. Bv / Saudi Aramco	Haradh Arabian Light Crude Increment II (GOSP II)
Algeria	Sonatrach - Agip	Bir Rebaa North Oil Centre Expansion
Abu Dhabi Bu Hasa	Abu Dhabi Company for Onshore Oil Operations (ADCO)	FEED for Upgrade of Bu Hasa Production Facilities



CAPACITY	SCOPE OF WORK	ON STREAM
1,200,000 bpsd	EPC	2009
526,000 bpsd	CLSTK (Converted)	2008
4,500,000 bpsd	CLSTK (Converted)	2009
730,000 bpsd	EPC	2008
2 X 23,000 bpsd	EPC	2007
440,000 bpsd	EPC	2006
68,500 bpsd	EPS	2004
80,000 bpsd	EPC	2004
526,000 bpsd, 316,000 bpsd	EPC	2004
300,000 bpsd	EPC	2003
39,000 bpsd	EP	2002
730,000 bpsd	ES	2001





# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

COUNTRY LOCATION	CLIENT	PROJECT
<b>GAS AND OIL PRODUCTION AND TREATING FACILITIES</b>		
Nigeria	Nigerian Agip Oil Co. Ltd. (NAOC)	N-LNG "Phase 3" Supply Project
Kazakhstan	Karachaganak Operating Group: AGIP, BRITISH GAS, TEXACO, LUKOIL	Karachaganak Field Development Project - Initial Development Phase
United Arab Emirates Asab	Abu Dhabi National Oil Company (ADNOC)	Asab Natural Gas Complex
Angola	Cabinda Gulf Oil Company Ltd CABGOC	Takula Onshore Treating Facility
Nigeria Forcados Terminal	Shell Petroleum Development Corporation Nigeria Ltd. SPDC / NNPC Nigerian National Petroleum Company	Forcados Terminal Integrated Projects (FTIP), Crude Oil Dehydration, Water Treatment, Oil Export
United Arab Emirates Sahil	ADCO	Sahil Field Development Project Phase I
Algeria Bir Rebaa Nord	Agip (Africa) Ltd. Sonatrach	Bir Rebaa North Grass Roots Oil Production Centre
Italy Val d'Agri	Agip S.p.A.	Val D'Agri Front - End Design of a New Oil Centre
Angola	Cabinda Gulf Oil Company Ltd CABGOC	Area B & C - Installation of Onshore Treating Facilities
United Arab Emirates Jarn Yaphour	Abu Dhabi National Oil Company (ADNOC)	Jarn Yaphour Field Development Project
Italy Gela	Agip S.p.A.	Gela Oil Production Facilities Centre
Iraq East Baghdad	State Organization for Oil Projects (SCOP)	East Baghdad Grass Roots Oil Field Pilot Project



**CAPACITY****SCOPE OF WORK****ON STREAM**

23,000 bpsd

ES

2001

165,000 bpsd, 70,000 bpsd, 85 bpsd,  
80,000 bpsd MODIFICATION

ES

2001

2 X 48,000 bpsd

EPC

2001

2 X 60,000, 1 X 25,000, 1 X 20,000 brls

C

1999

95,000 m3 Oil Storage Tank

C

1998

55,000 bpsd

EPC

1998

41,500 bpsd

EP

1996

75,500 bpsd

ES

1996

25,000 bpsd, 16,000 bpsd surge Tanks

EPC

1993

10,000 bpsd

ES

1993

2 X 9,450 bpsd

ES

1992

35,000 bpsd

EP

1987



# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

## COUNTRY LOCATION

## CLIENT

## PROJECT

### GAS AND OIL PRODUCTION AND TREATING FACILITIES

Sudan Heglig	Chevron Oil of Sudan	Unity and Heglig Oil Fields Production Facilities
Tunisia Ashtart Field	Société d'exploitation et de Recherches des Petroles en Tunisie (SEREPT)	Ashtart Oil Field - Gas Lift Project and General Revamping
Iraq Halfaya	Agip S.p.A.	Halfaya Oil Production Facilities
Iran Bahrgan	Société Irano-Italienne des Petroles (S.I.R.I.P.)	Oil Production Facilities for Bahrgan Oil Center

### ACID GAS REMOVAL

United Arab Emirates Shah Field	Abu Dhabi Gas Development Company Limited	Shah Gas Development Project
Algeria Arzew	Sonatrach	GNL- 3Z - Arzew
Saudi Arabia Hawiyah	Aramco Overseas CO. BV / Saudi Aramco	Gas Treating and Compression Facilities at Hawiyah NGL Recovery Plant
Libya Mellitah	Agip Gas BV - Libyan Branch	Western Libyan Gas Project
Qatar Mesaieed	Qatar Petroleum (QP)	NGL - 4 Natural Gas Liquids Complex
Iran Assaluyeh	Hyundai Engineering & Construction Co.	South Pars Gas Field "Phases 4&5"
Iran Assaluyeh	Agip Iran B.V.	South Pars Gas Field "Phases 4&5"
Malaysia Tok Arun	Petronas Gas Berhad	Grass Roots Peninsular Gas Utilisation Project - GPP5 & 6 Pipeline and Marine Terminal

**CAPACITY****SCOPE OF WORK****ON STREAM**

2 X 30,000 bpsd

EC

1986

37,000 bpsd

ES

1986

240,000 bpsd

ES

1982

ES

1964

4 X 250 mmscfd

EPC

Under Exec.

918 mmscfd

EPC

Under Exec.

816 mmscfd

EPC

2008

3 X 255 mmscfd

EPC

2007

15 mmscfd , 55 mmscfd , 110 mmscfd

EPC

2005

2,000 mmscfd , 70 mmscfd

ES

2004

2,000 mmscfd , 70 mmscfd

ES

2001

2 X 44 mmscfd , 2 X 640 mmscfd

EPC

1998

# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

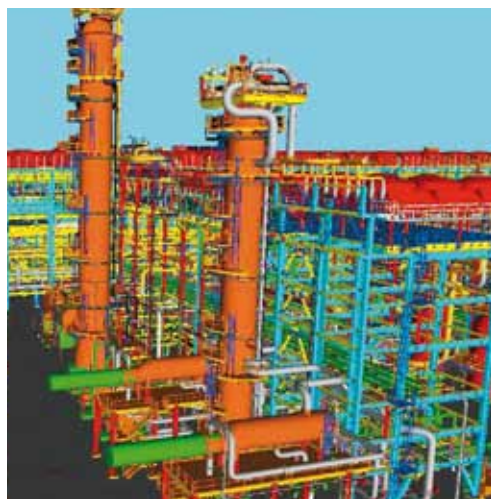
## COUNTRY LOCATION

## CLIENT

## PROJECT

### ACID GAS REMOVAL

Italy Val d'Agri	Agip S.p.A.	Val D'Agri Front-End Design of a New Oil Centre
United Arab Emirates Jarn Yaphour	Abu Dhabi National Oil Company (ADNOC)	Jarn Yaphour Field Development Project
Italy Ferrandina	Agip S.p.A.	Ferrandina Acid Gas Removal - Retrofitting with Selexfining
Italy Ferrandina	Agip S.p.A.	Ferrandina Acid Gas Removal Plant Revamping
Italy Cupello	Agip S.p.A.	Cupello Acid Gas Removal Plant
Russia Grozny	V/O Machinoimport	Grozny Grass Roots Ethane Recovery
United Arab Emirates	Government - Public Works Department	Abu Dhabi Acid Gas Removal Plant
Russia Perm	V/O Machinoimport	Grass Roots Ethane Recovery and Gas Fractionation Plant
Argentina Pico Truncado	Gas del Estado	Pico Truncado Grass Roots Gas Project
Italy Ferrandina	Agip S.p.A.	Ferrandina Acid Gas Removal Plant



CAPACITY	SCOPE OF WORK	ON STREAM
90 mmscfd	ES	1996
60 mmscfd	ES	1993
12 mmscfd Expansion	L	1986
35 mmscfd	ES	1983
46 mmscfd	ES	1980
261 mmscfd	EP	1973
50 mmscfd	EPC	1969
63 mmscfd	EP	1969
224 mmscfd	ES	1965
35 mmscfd	ES	1965

# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

COUNTRY LOCATION	CLIENT	PROJECT
<b>GAS COMPRESSION STATIONS</b>		
Kuwait, West Kuwait	Kuwait Oil Company	BS-171 New Booster Station
United Arab Emirates Shah Field	Abu Dhabi Gas Development Company Limited	Shah Gas Development Project
Algeria Hassi Messaoud	Sonatrach	LPG Recovery Plant
Algeria Berkine Basin	Sonatrach - First Calgary Petroleum	Menzel Ledjmet East Project Block 405B
Kuwait South East Kuwait	Kuwait Oil Company	New Booster Station BS-160
Austria Eggendorf - Weitendorf	OMV A.G.	TAG Expansion 04
Nigeria	NAOC	Ebocha Flaring Down for Early Gas Recovery Project
Tunisia Sbeitla	Société pour la Construction du Gazoduc Transtunisien (SCOGAT)	Algeria - Italy Transmediterranean NG Pipeline (Tunisian Section)
Tunisia Korba	Société pour la Construction du Gazoduc Transtunisien (SCOGAT)	Algeria - Italy Transmediterranean NG Pipeline (Tunisian Section)
Tunisia Feriana	Société pour la Construction du Gazoduc Transtunisien (SCOGAT)	Algeria - Italy Transmediterranean NG Pipeline (Tunisian Section)
Tunisia Cap Bon	Société pour la Construction du Gazoduc Transtunisien (SCOGAT)	Algeria - Italy Transmediterranean NG Pipeline (Tunisian Section)



CAPACITY	SCOPE OF WORK	ON STREAM
120 MW	EPC	Under Exec.
30 MW	EPC	Under Exec.
4 X 17 MW	EPC	Under Exec.
71 MW	EPC	Under Exec.
140 MW	EPC	Under Exec.
68 MW, 69 MW	EPS	2012
	EPC	2010
69 MW	EPC	2008
69 MW	EPC	2008
23 MW	EPC	2008
26 MW	EPC	2008





# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

COUNTRY LOCATION	CLIENT	PROJECT
<b>GAS COMPRESSION STATIONS</b>		
Tunisia Cap Bon	Société pour la Construction du Gazoduc Transtunisien (SCOGAT)	Algeria - Italy Transmediterranean NG Pipeline (Tunisian Section)
Abu Dhabi (U.A.E.) Bu Hasa	Abu Dhabi Company for Onshore Oil Operations (ADCO)	Bu Hasa Facilities Development - GOSP
Austria	OMV A.G.	Trans Austria Gasleitung Loop 2
Qatar Al Khaleej	Exxonmobil Middle East Gas Marketing Ltd.	Al Khaleej Gas Project (AKG-1)
Libya Mellitah	Greenstream B.V.	Libya Gas Transmission System Project - 250 Km
Qatar Dukhan	Qatar Petroleum (QP)	Dukhan Field Gas Lift Project
Kuwait North Kuwait	Kuwait Oil Company	BS-131 and Interconnecting Lines with Gathering Centres and BS-130
Qatar Dukhan	Qatar Petroleum (QP)	NGL - 4 Natural Gas Liquids Complex
Switzerland Ruswil	Transitgas A.G.	Holland-Italy NG Pipeline (Swiss Section) Extension of Ruswil Compression Station "Phase 2"
Iran Assaluyeh	Hyundai Engineering & Construction Co.	South Pars Gas Field "Phases 4&5"
Russia	Blue Stream Pipeline Company	Blue Stream Project



**CAPACITY****SCOPE OF WORK****ON STREAM**

21 MW Expansion

EPC

2008

24 MW

EPC

2008

22 MW

ES

2007

3 MW

EPC

2006

130 MW

ES

2006

56 MW

EPC

2006

90 MW

EPC

2005

60 MW

EPC

2005

2 X 20 MW

ES

2004

140 MW

ES

2004

6 X 25 MW

EPC

2003



# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

## COUNTRY LOCATION

## CLIENT

## PROJECT

### GAS COMPRESSION STATIONS

Algeria	Sonatrach	Gassi Touil, Gas Gathering and Recompression
Italy Masera	Snam S.p.A.	Holland-Italy NG Pipeline
Oman	Petroleum Development Oman (PDO)	Central Oman Expansion "Phase 1"
Nigeria Odidi	Shell Petroleum Development Company of Nigeria Ltd.	Odidi Associated Gas Gathering Flare Reduction
Iran Assaluyeh	Agip Iran B.V.	South Pars Gas Field "Phases 4&5"
United Arab Emirates Asab	Abu Dhabi National Oil Company (ADNOC)	Asab Gas Development
Oman Saih Rawl	Petroleum Development Oman (PDO)	Saih Rawl LNG Upstream Facilities
United Arab Emirates Saih Rawl	Abu Dhabi Company for Onshore Operations (ADCO)	Sahil Field Development Project "Phase 1"
Italy Sergnano	Snam S.p.A.	Sergnano Gas Compression Station Expansion
Malaysia Tok Arun	Petronas Gas Berhad	Grass Roots Peninsular Gas Utilisation Project GPP5 & 6 Pipeline and Marine Terminal
Switzerland Ruswil	Transitgas A.G.	Holland - Italy NG Pipeline (Swiss Section) Ruswil Compression Station Expansion
Tunisia Cap Bon	Société pour la Construction du Gazoduc Transtunisien (SCOGAT)	Algeria - Italy Transmediterranean NG Pipeline Expansion of Feriana and Cap Bon



CAPACITY	SCOPE OF WORK	ON STREAM
	EC	2003
36 MW	ES	2003
42 MW	ES	2002
	EPCI	2001
140 MW	ES	2001
76 MW	EPC	2001
3 X 7 MW	EPC	1999
9 MW	EPC	1998
25 MW	ES	1998
80 MW	EPC	1998
20 MW	ES	1998
23 MW, 24 MW	ES	1998



# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

## COUNTRY LOCATION

## CLIENT

## PROJECT

### GAS COMPRESSION STATIONS

Italy Cinisello Balsamo	Snam S.p.A.	Cinisello Balsamo Natural Gas Storage System New Compression Station
Italy Melizzano, Enna, Tarsia	Snam S.p.A.	Algeria - Italy Transmediterranean NG Pipeline Expansion (Italian Section) From Mazara Del Vallo (Trapani) to Minerbio (Bologna) 1,488 km
Austria Baumgarten	OMV A.G.	Russia - Italy NG Pipeline (Austrian Section) (TAG) Extension 2
Italy Messina	Snam S.p.A.	Algeria - Italy Transmediterranean NG Pipeline Expansion (Italian Section) from Mazara Del Vallo (Trapani) to Minerbio (Bologna) 1,488 km
Italy Terranova Bracciolini	Snam S.p.A.	Algeria - Italy Transmediterranean NG Pipeline Expansion (Italian Section) from Mazara Del Vallo (Trapani) to Minerbio (Bologna) 1,488 km
Italy Gallese	Snam S.p.A.	Algeria - Italy Transmediterranean NG Pipeline Expansion (Italian Section) from Mazara Del Vallo (Trapani) to Minerbio (Bologna) 1,488 km
Italy Ripalta Cremasca	Snam S.p.A.	Ripalta Gas Compression Station Expansion
Austria Grafendorf	OMV A.G.	Russia Italy NG Pipeline (Austrian Section) (TAG) Extension 2
Italy Montesano	Snam S.p.A.	Algeria - Italy Transmediterranean NG Pipeline Expansion (Italian Section) from Mazara Del Vallo (Trapani) to Minerbio (Bologna) 1,488 km
Italy Minerbio	Snam S.p.A.	Minerbio Compression Station Expansion
Algeria Bir Rebaa Nord	Agip (Africa) Ltd. Sonatrach	Bir Reeba North Grass Roots Oil Production Centre



**CAPACITY****SCOPE OF WORK****ON STREAM**

20 MW

ES

1997

3 X 23 MW

ES

1997

23 MW, 47 MW

ES

1997

24 MW

ES

1997

31 MW

ES

1997

46 MW

ES

1997

47 MW

ES

1997

47 MW

ES

1997

68 MW

ES

1997

21 MW

ES

1996

38 MW

EP

1996



# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

COUNTRY LOCATION	CLIENT	PROJECT
<b>GAS COMPRESSION STATIONS</b>		
Italy Malborghetto	Snam S.p.A.	Russia - Italy NG Pipeline (Italian Section) Expansion of Malborghetto Compression Stations
Italy Istrana	Snam S.p.A.	Russia - Italy NG Pipeline (Italian Section) Expansion of Istrana Compression Stations
Italy Val d'Agri	Agip S.p.A.	Val D'Agri Front-End Design of a New Oil Centre
Algeria Hamra Field	Sonatrach	Hamra Grass Roots Natural Gas Process Complex
Italy Cortemaggiore	Snam S.p.A.	Cortemaggiore Gas Injection Stations
Italy Cupello	Snam S.p.A.	Cupello Gas Compression Stations Expansion
Tunisia Cap Bon	Société pour la Construction du Gazoduc Transtunisien (SCOGAT)	Algeria - Italy Transmediterranean NG Pipeline Expansion (Tunisian Section) from Algerian Border to Cap Bon (368 km)
Italy Cortemaggiore	Snam S.p.A.	Cortemaggiore Gas Compression Stations
Morocco Ain Ben Mathar and Tanger	U.T.E. Initec Tecnicas Reunidas for Europe Maghreb Pipeline Ltd.	Maghreb Europe Gas Pipeline (Morocco Section) Compression and Metering Stations
Tunisia Cap Bon	Société pour la Construction du Gazoduc Transtunisien (SCOGAT)	Algeria - Italy Transmediterranean NG Pipeline (Tunisian Section) Expansion of Cap Bon Compression Station
Egypt Abu Madi	Agip S.p.A.	El Qar'a Integrated NGL Plant



**CAPACITY****SCOPE OF WORK****ON STREAM**

47 MW

ES

1996

47 MW

ES

1996

9 MW

ES

1996

54 MW

EP

1995

4 MW

ES

1995

45 MW

ES

1994

23 MW, 48 MW, 24 MW

EPC

1994

66 MW

ES

1994

100 MW

ES

1994

24 MW

ES

1992

3 MW

ES

1992





# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

COUNTRY LOCATION	CLIENT	PROJECT
<b>GAS COMPRESSION STATIONS</b>		
Italy Masera	Snam S.p.A.	Holland - Italy NG Pipeline - Masera Compression Station Modernization
Italy Istrana	Snam S.p.A.	Russia - Italy NG Pipeline (Italian Section) Malborghetto and Istrana Compression Station Upgrading
Italy Malborghetto	Snam S.p.A.	Russia - Italy NG Pipeline (Italian Section) Malborghetto and Istrana Compression Station Upgrading
Italy Cortemaggiore	Snam S.p.A.	Cortemaggiore New Gas Compression Stations
Italy Messina	Snam S.p.A.	Messina Compression Station Expansion Combined Cycle Installation for Energy Saving
Italy Bussolengo	Snam S.p.A.	Bussolengo Compression Station
Austria Baumgarten	OMV A.G.	Trans Austria NG Pipeline - Expansion of Baumgarten Compression Station, Upgrading of Ruden and Grafendorf Stations
Switzerland Ruswil	Transitgas A.G.	Holland - Italy NG Pipeline - Ruswil Compression Station Expansion
Algeria Rourde Nouss	Sonatrach	Rhourde Nouss Grass Roots Gasoline Recovery & Gas Reinjection Facilities
Egypt Abu Madi	Egyptian General Petroleum Corporation (EGPC)	Abu Madi Gas Plant Expansion - NGL Unit
Germany Mittelbrunn	Trans Europa Naturgas Pipeline (TENP)	Holland - Italy NG Pipeline (German Section) Expansion of Hugelheim and Mittelbrunn Compression Stations



**CAPACITY****SCOPE OF WORK****ON STREAM**

Modification

ES

1990

19 MW

ES

1990

19 MW

ES

1990

20 MW

ES

1990

5 MW

ES

1990

3 MW

ES

1989

21 MW

ES

1989

6 MW

ES

1989

118 MW

EPC

1988

14 MW

EPC

1987

11 MW

ES

1986



# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

## COUNTRY LOCATION

## CLIENT

## PROJECT

### GAS COMPRESSION STATIONS

Turkey Hamitabat	Boru Hatlari Petrol Tasima A.S. (BOTAS)	Hamitabat Natural Gas Pipeline System
Germany Hugelheim	Trans Europa Naturgas Pipeline (TENP)	Holland - Italy NG Pipeline (German Section) Hugelheim, Mittelbrunn and Stolberg Compression Stations
Italy Cassano Ionio	Snam S.p.A.	Cassano Ionio Compression Station
Italy Gallese	Snam S.p.A.	Algeria - Italy Transmediterranean NG Pipeline (Italian Section) from Mazara del Vallo to Minerbio
Italy Settala	Snam S.p.A.	Settala Compression Station
Italy Tarsia	Snam S.p.A.	Algeria - Italy Transmediterranean NG Pipeline (Italian Section) from Mazara del Vallo to Minerbio
Italy Enna	Snam S.p.A.	Algeria - Italy Transmediterranean NG Pipeline (Italian Section) from Mazara del Vallo to Minerbio
Italy Melizzano	Snam S.p.A.	Algeria - Italy Transmediterranean NG Pipeline (Italian Section) from Mazara del Vallo to Minerbio
Italy Messina	Snam S.p.A.	Algeria - Italy Transmediterranean NG Pipeline (Italian Section) from Mazara del Vallo to Minerbio
Italy Ripalta	Snam S.p.A.	Ripalta Gas Injection Station Revamping
Italy Tresigallo	Snam S.p.A.	Tresigallo Gas Injection Station



CAPACITY	SCOPE OF WORK	ON STREAM
180 MW	ES	1986
5 MW	ES	1986
3 MW	ES	1985
21 MW	ES	1985
21 MW	ES	1985
40 MW	ES	1985
40 MW	ES	1985
40 MW	ES	1985
62 MW	ES	1985
10 MW	ES	1984
21 MW	ES	1984



# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

## COUNTRY LOCATION

## CLIENT

## PROJECT

### GAS COMPRESSION STATIONS

Italy Cupello	Snam S.p.A.	Cupello Gas Injection Station
Tunisia Sbikha	Société pour la Construction du Gazoduc Transtunisien (SCOGAT)	Algeria - Italy Transmediterranean NG Pipeline (Tunisian Section) Sbikha Compression Station
Tunisia Feriana	Société pour la Construction du Gazoduc Transtunisien (SCOGAT)	Algeria - Italy Transmediterranean NG Pipeline (Tunisian Section) Feriana Compression Station
Italy Rimini	Snam S.p.A.	Rimini Compression Station
Tunisia Cap Bon	Société pour la Construction du Gazoduc Transtunisien (SCOGAT)	Algeria - Italy Transmediterranean NG Pipeline (Tunisian Section) Cap Bon Compression Station
Italy Biccari	Snam S.p.A.	Biccari Compression Station
Italy Minerbio	Snam S.p.A.	Minerbio Gas Injection Station
Italy Ripalta Cremasca	Snam S.p.A.	Ripalta Cremasca Gas Injection Station for Underground Storage
Switzerland Ruswil	Transitgas A.G.	Holland - Italy NG Pipeline (Swiss Section) Ruswil Compression Station Expansion
Italy Malborghetto	Snam S.p.A.	Russia - Italy NG Pipeline (Italian Section)
Italy Istrana	Snam S.p.A.	Russia - Italy NG Pipeline (Italian Section)



**CAPACITY****SCOPE OF WORK****ON STREAM**

21 MW

ES

1984

42 MW

EPS

1984

63 MW

EPS

1983

11 MW

ES

1981

123 MW

ES

1981

4 MW

ES

1981

44 MW

ES

1981

8 MW

ES

1981

5 MW

ES

1979

21 MW

ES

1977

21 MW

ES

1977

# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

## COUNTRY LOCATION

## CLIENT

## PROJECT

### GAS COMPRESSION STATIONS

Italy Sergnano	Snam S.p.A.	Sergnano Gas Injection and Distribution Station
Italy Recanati	Snam S.p.A.	Recanati Compression Station
Italy Masera	Snam S.p.A.	Holland - Italy NG Pipeline (Italian Section)
Italy Mortara	Snam S.p.A.	Holland - Italy NG Pipeline (Italian Section)
Switzerland Ruswil	Transitgas A.G.	Holland - Italy NG Pipeline (Swiss Section)
Italy Ferrandina	Snam S.p.A.	Ferrandina Compression Station
Germany Mittelbrunn	Trans Europa Naturgas Pipeline (TENP)	Holland - Italy NG Pipeline (German Section) - Mittelbrunn
Germany Hugelheim	Trans Europa Naturgas Pipeline (TENP)	Holland - Italy NG Pipeline (German Section) - Hugelheim
Germany Stolberg	Trans Europa Naturgas Pipeline (TENP)	Holland - Italy NG Pipeline (German Section) - Stolberg
Argentina Santa Cruz to Buenos Aires	Snam S.p.A. for Gas del Estado	Santa Cruz - Gran Buenos Aires Natural Gas Pipeline
Argentina Pico Truncado	Gas del Estado	Pico Truncado Grass Roots Gas Project



CAPACITY	SCOPE OF WORK	ON STREAM
23 MW	ES	1975
9 MW	ES	1975
11 MW	ES	1974
11 MW	ES	1974
12 MW	ES	1974
3 MW	ES	1973
22 MW	ES	1973
22 MW	ES	1973
22 MW	ES	1973
54 MW	EPC	1965
82 MW	ES	1965





# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

## COUNTRY LOCATION

## CLIENT

## PROJECT

### GAS COMPRESSION STATIONS

Italy Brugherio	Snam S.p.A.	Brugherio Gas Injection Station
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### GAS GATHERING AND CONDITIONING

Nigeria, Ogbotobo, Beneside, Opukushi and Tunu	Shell Petroleum Dev. Co. (SPDC)	Southern Swamp Associated Gas Solutions
Kuwait, West Kuwait	Kuwait Oil Company	BS-171 New Booster Station
United Arab Emirates Shah Field	Abu Dhabi Gas Development Company Limited	Shah Gas Development Project
Algeria Hassi Messaoud	Sonatrach	LPG Recovery Plant
Nigeria Obite	Total Exploration and Production Nigeria Limited	OML 58 Upgrade Phase 1
Saudi Arabia Manifa	Aramco Overseas CO. BV / Saudi Aramco	Manifa Core Hydrocarbon Facilities
Saudi Arabia Khursaniyah	Aramco Overseas CO. BV / Saudi Aramco	Khursaniyah Producing Facilities (KPF)
Nigeria Soku	Shell Petroleum Development Company SPDC	Soku LGSP Debottlenecking Project
Saudi Arabia Qatif	Aramco Overseas CO. BV / Saudi Aramco	Qatif GOSP - 1



CAPACITY	SCOPE OF WORK	ON STREAM
3 MW	ES	1964
100 mmscfd	EPC	Under Exec.
234 mmscfd	EPC	Under Exec.
1 bcf	EPC	Under Exec.
3 X 283 mmscfd	EPC	Under Exec.
550 mmscfd + 90 mmscfd	EPC	Under Exec.
180 mmscfd	EPC	Under Exec.
282 mmscfd	CLSTK Converted	2008
1,038 mmscfd	EPC	2006
364 mmscfd	EPC	2004



# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

COUNTRY LOCATION	CLIENT	PROJECT
<b>GAS GATHERING AND CONDITIONING</b>		
Indonesia Grisik	PT Perusahaan Gas Negara Persero / PGN	Transmission and Gas Distribution Project, Grisik to Singapore Gas Pipeline Section Panaran to Pemping Island
Russia	Blue Stream Pipeline Company	Blue Stream Project
Algeria Gassi Touil	Sonatrach	Gassi Touil, Gas Gathering and Recompression
Saudi Arabia Haradh	Aramco Overseas CO. BV / Saudi Aramco	Haradh Arabian Light Crude Increment II (GOSP II)
Pakistan Bhit	Lasmo Oil Pakistan Ltd.	Bhit Gas Field Development
Oman Saih Nihayda	Petroleum Development Oman (PDO)	Central Oman Expansion "Phase 1"
Nigeria Odidi	Shell Petroleum Development Company of Nigeria Ltd.	Odidi Associated Gas Gathering Flare Reduction Project
Kazakhstan Aksai Field	Karachaganak Operating Group: Agip, British Gas, Texaco, Lukoil	Karachaganak Field Development Project - Initial Development Phase
Oman Saih Rawl	Petroleum Development Oman (PDO)	Saih Rawl LNG Upstream Facilities
Oman Barik	Petroleum Development Oman (PDO)	Barik Rawl LNG Upstream Facilities
Malaysia Tok Arun	Petronas Gas Berhad	Grass Roots Peninsular Gas Utilisation Project GPP5 & 6 Pipeline and Marine Terminal



CAPACITY	SCOPE OF WORK	ON STREAM
800 mmscfd	E	2003
48 mmscfd	EPC	2003
5 mmscfd	EC	2003
143 mmscfd	EPC	2003
260 mmscfd	EPS	2003
700 mmscfd	ES	2002
80 mmscfd	EPCI	2001
230 mmscfd	ES	2001
1,550 mmscfd	EPC	1999
420 mmscfd	EPC	1999
2 X 640 mmscfd	EPC	1999



# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

COUNTRY LOCATION	CLIENT	PROJECT
<b>GAS GATHERING AND CONDITIONING</b>		
Algeria Bir Rebaa Nord	Agip (Africa) Ltd. Sonatrach	Bir Reeba North Grass Roots Oil Production Centre
Italy Val d'Agri	Agip S.p.A.	Val D'Agri Front-End Design of a New Oil Centre
Argentina Loma La Lata	YPF S.A.	Proyecto Mega Front-End Design of NGL Recovery Complex and Transport
Algeria Hamra Field	Sonatrach	Hamra Grass Roots Natural Gas Process Complex
Libya Bu Attifel	Agip (N.A.M.E.) Ltd.	Bu Attifel Grass Roots Natural Gas Liquids Recovery
United Arab Emirates Jarn Yaphour	Abu Dhabi National Oil Company (ADNOC)	Jarn Jaiphour Field Development Project
United Kingdom Caythorpe	Kelt Uk Ltd.	Caythorpe Natural Gas Processing Facilities and Pipeline
Egypt El Qar'a	Agip S.p.A.	El Qar'a Integrated NGL Plant
Algeria Rhourde Chouff and Rourde Hamra	Sonatrach	Rhourde Chouff and Rourde Hamra Gas Field Development
Italy Gela	Agip S.p.A.	Gela Oil Production Facilities Centre
Nigeria	Shell Nigeria Ltd.	Utorogu Gas Facilities
Algeria Rhourde Nouss	Sonatrach	Rhourde Nouss Grass Roots Gasoline Recovery & Gas Reinjection Facilities

**CAPACITY****SCOPE OF WORK****ON STREAM**

141 mmscfd

EP

1996

90 mmscfd

ES

1996

1,480 mmscfd

ES

1995

530 mmscfd

EP

1995

388 mmscfd

EPC

1993

60 mmscfd

ES

1993

111 mmscfd

ES

1992

200 mmscfd

ES

1992

247 mmscfd

EP

1992

1 mmscfd

ES

1992

220 mmscfd

C

1988

1,437 mmscfd

EPC

1988

# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

## COUNTRY LOCATION

## CLIENT

## PROJECT

### GAS GATHERING AND CONDITIONING

Oman Birba	Petroleum Development Oman (PDO)	Birba Gas Injection Project - Conceptual Study
Italy Falconara	Agip S.p.A.	Revamping of Natural Gas Dehydrating Station at Falconara
Iraq South Iraq	Ministry of Oil (MINOIL)	Gas Gathering Expansion
Egypt Abu Madi	Egyptian General Petroleum Corporation (EGPC)	Abu Madi Gas Plant Expansion - NGL Unit
Egypt Abu Madi	Belayim Petroleum Company (Petrobel)	Abu Madi Low Temperature Separation Plant Expansion
China Zhong Yuan Whenlin	China National Technical Import & Export Corp.	Zhong Yuan Whenlin LPG Plant
Italy Minerbio	Agip S.p.A.	Minerbio Grass Roots Gas Field
Iraq Buzurgan	Agip S.p.A.	Buzurgan Gas Gathering and Compression Project
Iraq Misan	Agip S.p.A.	Misan NGL Project
Iraq North Rumaila	State Organization for Oil Projects (SCOP)	South LPG Project
Oman Yibal	Ministry of Petroleum	Yibal Grass Roots Natural Gas Project

**CAPACITY****SCOPE OF WORK****ON STREAM**

32 mmscfd

ES

1988

343 mmscfd

ES

1988

1,866 mmscfd

1987

251 mmscfd

EPC

1987

120 mmscfd Expansion

EPC

1985

45 mmscfd

ES

1985

1,590 mmscfd Expansion

ES

1984

110 mmscfd

ES

1982

298 mmscfd

ES

1982

1,046 mmscfd

ES

1981

124 mmscfd

EPC

1978



# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

COUNTRY LOCATION	CLIENT	PROJECT
<b>GAS GATHERING AND CONDITIONING</b>		
Italy Malossa	Agip S.p.A.	Malossa Grass Roots LPG Recovery and Condensate Stabilization Plant
Iraq Rumaila	Iraq National Oil Company (INOC)	Haditha - Rumaila Strategic Crude Oil and Condensate Gas Pipeline System
Italy Sergnano	Agip S.p.A.	Sergnano Gas Field
Russia Grozny	V/O Machinoimport	Grozny Grass Roots Ethane Recovery
Russia Perm	V/O Machinoimport	Grass Roots Ethane Recovery and Gas Fractionation Plant
Argentina Pico Truncado	Gas del Estado	Pico Truncado Grass Roots Gas Project
Iraq Rumaila	Ministry of Industry and Minerals	Rumaila - Basrah Natural Gas Pipeline
<b>NATURAL GAS DEHYDRATION</b>		
United Arab Emirates Shah Field	Abu Dhabi Gas Development Company Limited	Shah Gas Development Project
Kuwait West Kuwait	Kuwait Oil Company	BS-171 New Booster Station
Turkmenistan	Dragon Oil (Turkmenistan) Ltd.	Consultancy Services for Gas Development Facilities - FEED
Algeria Arzew	Sonatrach	GNL-3Z Arzew



CAPACITY	SCOPE OF WORK	ON STREAM
424 mmscfd	ES	1976
53 mmscfd	EPC	1976
1,271 mmscfd	ES	1975
261 mmscfd	EP	1973
63 mmscfd	EP	1969
373 mmscfd	ES	1965
53 mmscfd	EPC	1962
2 X 340 mmscfd	EPC	Under Exec.
234 mmscfd	EPC	Under Exec.
202 mmscfd	ES	Under Exec.
875 mmscfd	EPC	Under Exec.



# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

COUNTRY LOCATION	CLIENT	PROJECT
<b>NATURAL GAS DEHYDRATION</b>		
Kuwait South East Kuwait	Kuwait Oil Company	New Booster Station BS-160
Algeria Hassi Messaoud	Sonatrach	LPG Recovery
Libya Mellitah	Agip Gas Bv - Libyan Branch	Western Libyan Gas Project
Qatar Al Khaleej	Exxomobil Middle East	Al Khaleej Gas Project (AKG-1)
Kuwait North Kuwait	Kuwait Oil Company	BS-131 and Interconnecting Lines with Gathering Centres and BS-130
Iran Darquain Field	Agip Iran BV	Darquain Oil Field Development
Iran Assaluyeh	Hyundai Engineering & Construction Co.	South Pars Gas Field "Phases 4 & 5"
Saudi Arabia Qatif	Aramco Overseas Co. Bv / Saudi Aramco	Qatif GOSP - 1
Egypt Port Said	BP Global Investment Ltd.	Port Said NGL Plant
Qatar Ras Laffan	Ras Laffan LNG Co. Ltd	Rasgas Onshore Expansion Project Ras Laffan - Train n. 3
Qatar Dukhan	Qatar Petroleum (QP)	Dukhan Field Gas Lift Project
Iran Assaluyeh	Agip Gas Bv	South Pars Gas Field "Phases 4 & 5"

**CAPACITY****SCOPE OF WORK****ON STREAM**

250 mmscfd

EPC

Under Exec.

3 X 283 mmscfd

EPC

Under Exec.

3 X 255 mmscfd

EPC

2007

750 mmscfd

EPC

2006

250 mmscfd

EPC

2005

83 mmscfd

EPS

2004

4 X 500 mmscfd

ES

2004

364 mmscfd

EPC

2004

1,000 mmscfd

ES

2004

730 mmscfd

EPC

2003

250 mmscfd

EPC

2002

4 X 500 mmscfd

ES

2001

# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

## COUNTRY LOCATION

## CLIENT

## PROJECT

### NATURAL GAS DEHYDRATION

Nigeria Obiafu, Obrikom, Irri, Kwale	Nigerian Agip Oil Co. Ltd. (NAOC)	N-LNG "Phase 3" Supply Project
United Arab Emirates Asab	Abu Dhabi National Oil Company (ADNOC)	Asab Gas Development Project
Oman Saih Rawl	Petroleum Development Oman (PDO)	Saih Rawl LNG Upstream Facilities
Oman Barik	Petroleum Development Oman (PDO)	Barik LNG Upstream Facilities
United Arab Emirates Sahil	ADCO	Sahil Field Development Phase I
Malaysia Tok Arun	Petronas Gas Berhad	Grass Roots Peninsular Gas Utilisation Project GPP5 & 6 Pipeline and Marine Terminal
Algeria Bir Rebaa Nord	Agip (Africa) Ltd. Sonatrach	Bir Reeba North Grass Roots Oil Production Centre
Argentina Loma La Lata	YPF S.A.	Proyecto Mega Front-End Design of NGL Recovery Complex and Transport
Algeria Hamra	Sonatrach	Hamra Grass Roots Natural Gas Process Complex
Libya Bu Attifel	Agip (N.A.M.E.) Ltd.	Bu Attifel Grass Roots Natural Gas Liquids NGL Recovery
United Arab Emirates Jarn Yaphour	Abu Dhabi National Oil Company (ADNOC)	Yarn Yaphour Field Development Project

**CAPACITY****SCOPE OF WORK****ON STREAM**

347 mmscfd

ES

2001

2 X 375 mmscfd

EPC

2001

2 X 520 mmscfd

EPC

1999

777 mmscfd

EPC

1999

36 mmscfd

EPC

1998

2 X 640 mmscfd

EPC

1998

141 mmscfd

EP

1996

2 X 740 mmscfd

ES

1995

530 mmscfd

EP

1995

388 mmscfd

EPC

1995

60 mmscfd

ES

1993

# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

COUNTRY LOCATION	CLIENT	PROJECT
<b>NATURAL GAS DEHYDRATION</b>		
Italy Gela	Agip S.p.A.	Gela Oil Production Facilities Centre
Egypt El Qar'a	Agip S.p.A.	El Qar'a Integrated NGL Plant
Algeria Rhourde Nouss	Sonatrach	Rhourde Nouss Grass Roots Gasoline Recovery and Gas Reinjection Facilities
Oman Birba	Petroleum Development Oman (PDO)	Birba Gas Injection Conceptual Study
Italy Falconara	Agip S.p.A.	Revamping of Natural Gas Dehydrating Station at Falconara
Tanzania Songo-Songo Island	Tanzania Petroleum Development Corporation (T.P.D.C.)	Songo - Songo Gas Gathering and Transmission System
Egypt Abu Madi	Egyptian General Petroleum Corporation (EGPC)	Abu Madi Gas Plant Expansion - NGL Unit
Egypt Abu Madi	Belayim Petroleum Company (PETROBEL)	Abu Madi Low Temperature Separation Plant Expansion
China Zhong Yuan Whenlin	China National Technical Import & Export Corp.	Zhong Yuan Whenlin LPG Plant
Italy Minerbio	Agip S.p.A.	Minerbio Grass Roots Gas Field
Iraq Buzurgan	Agip S.p.A.	Buzurgan Gas Gathering and Compression

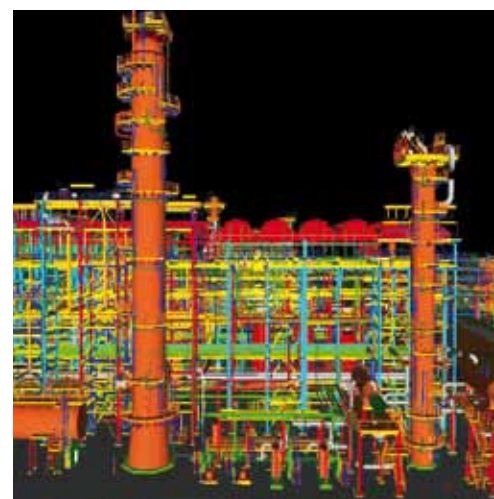
**CAPACITY****SCOPE OF WORK****ON STREAM**

2 mmscfd	ES	1992
300 mmscfd	ES	1992
4 X 375 mmscfd	EPC	1988
32 mmscfd	ES	1988
343 mmscfd Expansion	ES	1988
100 mmscfd	ES	1987
251 mmscfd	EPC	1987
120 mmscfd Expansion	EPC	1985
45 mmscfd	ES	1985
1,590 mmscfd Expansion	ES	1984
110 mmscfd	ES	1982



# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

COUNTRY LOCATION	CLIENT	PROJECT
<b>NATURAL GAS DEHYDRATION</b>		
Iraq Misan	Agip S.p.A.	Misan NGL Project
Iraq North Rumaila	State Organization for Oil Projects (SCOP)	South LPG Project
Oman Yibal	Ministry of Petroleum	Yibal Grass Roots Natural Gas Project
Italy Malossa	Agip S.p.A.	Malossa Grass Roots LPG Recovery and Condensate Stabilization Plant
Iraq North Rumaila	Iraq National Oil Company (INOC)	Haditha - Rumaila Strategic Crude Oil and Gas Pipeline System
Italy Sergnano	Agip S.p.A.	Sergnano Gas Field
Russia Grozny	V/O Machinoimport	Grozny Grass Roots Ethane Recovery
Russia Perm	V/O Machinoimport	Grass Roots Ethane Recovery and Gas Fractionation Plant
Argentina Pico Truncado	Gas del Estado	Pico Truncado Grass Roots Gas Project
Iraq Rumaila	Ministry of Industry and Minerals	Rumaila - Basrah Natural Gas Pipeline



CAPACITY	SCOPE OF WORK	ON STREAM
298 mmscfd	ES	1982
1,046 mmscfd	ES	1981
124 mmscfd	EPC	1978
424 mmscfd	ES	1976
53 mmscfd	EPC	1976
1,271 Expansion	ES	1975
261 mmscfd	EP	1973
63 mmscfd	EP	1969
373 mmscfd	ES	1965
53 mmscfd	EPC	1962



# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

## COUNTRY LOCATION

## CLIENT

## PROJECT

### NGL RECOVERY / LPG FRACTIONATION

United Arab Emirates Shah Field	Abu Dhabi Gas Development Company Limited	Shah Gas Development Project
Algeria Arzew	Sonatrach	GNL-3Z Arzew
Algeria Berkine Basin	Sonatrach - First Calgary Petroleum	Menzel Ledjmet East Project Block 405B
Algeria Hassi Messaoud	Sonatrach	LPG Recovery Plant
Abu Dhabi Ruwais	Gasco - Abu Dhabi Gas Industries	Ruwais NGL 3 - Natural Gas Liquids Complex
Qatar Al Khaleej	Exxonmobil Middle East Gas Marketing LTD.	Al Khaleej Gas Project (AKG-1)
Egypt Port Said	BP Global Investments Ltd.	Port Said NGL Plant
Iran Assaluyeh	Hyundai Engineering & Construction Co.	South Pars Gas Field "Phases 4 & 5"
Qatar Mesaieed	Qatar Petroleum (QP)	NGL-4 Natural Gas Liquids Complex
Qatar Dukhan	Qatar Petroleum (QP)	NGL-4 Natural Gas Liquids Complex
Qatar Mesaieed	Qatar Petroleum (QP)	NGL-4 NGL Fractionation



CAPACITY	SCOPE OF WORK	ON STREAM
4,400 t/d	EPC	Under Exec.
874 mmscfd	EPC	Under Exec.
350 mmscfd	EPC	Under Exec.
3 X 283 mmscfd	EPC	Under Exec.
24,400 t/d	EPC	Under Exec.
750 mmscfd	EPC	2006
1,100 mmscfd	ES	2005
4 X 500 mmscfd	ES	2004
1,000 mmscfd Modification	EPC	2005
800 mmscfd Modification	EPC	2005
2 X 5,000 t/d	EPC	2005



# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

COUNTRY LOCATION	CLIENT	PROJECT
<b>NGL RECOVERY / LPG FRACTIONATION</b>		
Abu Dhabi Asab	Abu Dhabi National Oil Company (ADNOC)	Asab Natural Gas Complex
Iran Assaluyeh	Agip Iran BV	South Pars Gas Field "Phases 4 & 5"
Oman Saih Rawl	Petroleum Development Oman (PDO)	Saih Rawl LNG Upstream Facilities
Malaysia Tok Arun	Petronas Gas Berhad	Grass Roots Peninsular Gas Utilisation Project - GPP5 & 6 Pipeline and Marine Terminal
Malaysia Tok Arun	Petronas Gas Berhad	Grass Roots Peninsular Gas Utilisation Project - GPP5 & 6 - Dew Point Control Unit
Argentina Bahia Blanca	YPF S.A.	Proyecto Mega Front-End Design of NGL Recovery Complex and Transport
Algeria Hamra Field	Sonatrach	Hamra Grass Roots Natural Gas Process Complex
Libya Bu Attifel	Agip (N.A.M.E.) Ltd.	Bu Attifel Grass Roots Natural Gas Liquids (NGL) Recovery Project
Egypt El Qar'a	Agip S.p.A.	El Qar'a Integrated NGL Plant
Egypt Abu Madi	Agip S.p.A.	Abu Madi Low Temperature Separation 5/6 Plant Expansion
Algeria Rhourde Nouss	Sonatrach	Rhourde Nouss Grass Roots Gasoline Recovery & Gas Reinjection Facilities

**CAPACITY****SCOPE OF WORK****ON STREAM**

856 mmscfd

EPC

2001

4 X 500 mmscfd

ES

2001

2 X 520 mmscfd

EPC

1999

2 X 640 mmscfd

EPC

1998

530 mmscfd

EPC

1995

100 mmscfd, 2 X 635 mmscfd

ES

1995

482 mmscfd

EP

1995

388 mmscfd

EPC

1995

330 mmscfd

ES

1992

120 mmscfd Expansion

ES

1989

1,500 mmscfd

EPC

1988

# OIL AND GAS PRODUCTION AND PROCESSING PROJECT REFERENCES

COUNTRY LOCATION	CLIENT	PROJECT
<b>NGL RECOVERY / LPG FRACTIONATION</b>		
Egypt Abu Madi	Egyptian General Petroleum Corporation (EGPC)	Abu Madi Low Gas Plant Expansion NHL Unit
Egypt Abu Madi	Belayim Petroleum Company (Petrobel)	Abu Madi Low Temperature Separation Plant Expansion
China Zhong Yuan Whenlin	China National Technical Import & Export Corp.	Zhong Yuan Whenlin LPG Plant
Iraq Misan	Agip S.p.A.	Misan NGL Project
Iraq, North Rumaila / Zubair	State Organization for Oil Projects (SCOP)	South LPG Project
Italy Malossa	Agip S.p.A.	Malossa Grass Roots LPG Recovery and Condensate Stabilization Plant
Russia Grozny	V/O Machinoimport	Grozny Grass Roots Ethane Recovery
Russia Perm	V/O Machinoimport	Grass Roots Ethane Recovery and Gas Fractionation Plant - Perm

CAPACITY	SCOPE OF WORK	ON STREAM
251 mmscfd	EPC	1987
120 mmscfd Expansion	EPC	1985
45 mmscfd	ES	1985
298 mmscfd	ES	1982
1,046 mmscfd	ES	1981
424 mmscfd	ES	1976
261 mmscfd	EP	1973
63 mmscfd	EP	1969





# NOTES

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