TECHNIP IN THE MIDDLE-EAST: INTRODUCTION

Daniel Valot
Chairman and CEO
MIDDLE EAST - THE BASICS (1): OIL

WORLD OIL RESERVES:
1,048 Bbls
- Middle East: 65%
- ROW: 35%

WORLD OIL PRODUCTION:
74 Mbls/d
- Middle East: 65%
- ROW: 35%

RESERVES (Bbls):
- Saudi Arabia: 261.8
- Kuwait: 96.5
- Iran: 89.7
- Iraq: 112.5
- UAE: 97.8
- Oman: 5.5
- Yemen: 4
- Qatar: 15

OTHER MAIN RESERVES:
- Venezuela: 77.8
- Russia: 60
- USA: 30.4

Source: BP Statistical Review June 03

Middle East reserves: 90 years of production
R.O.W. reserves: 19 years of production
(of which USA reserves): 11 years of production
MIDDLE EAST - THE BASICS (2): GAS

WORLD GAS RESERVES:
5,501 TCF (= 155.8 TCM)

<table>
<thead>
<tr>
<th>Country</th>
<th>Reserves (TCF)</th>
</tr>
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<tbody>
<tr>
<td>Saudi Arabia</td>
<td>225</td>
</tr>
<tr>
<td>Irak</td>
<td>110</td>
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<tr>
<td>Yemen</td>
<td>17</td>
</tr>
<tr>
<td>Oman</td>
<td>29</td>
</tr>
<tr>
<td>Kuwait</td>
<td>53</td>
</tr>
<tr>
<td>Iran</td>
<td>812</td>
</tr>
<tr>
<td>Qatar</td>
<td>508</td>
</tr>
<tr>
<td>UAE</td>
<td>212</td>
</tr>
<tr>
<td>USA</td>
<td>1,680</td>
</tr>
<tr>
<td>Algeria</td>
<td>183</td>
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<tr>
<td>Russia</td>
<td>160</td>
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<tr>
<td>ROW</td>
<td>90.7%</td>
</tr>
<tr>
<td>Middle East</td>
<td>36%</td>
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WORLD GAS PRODUCTION:
2,528 BCM

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<tr>
<th>Country</th>
<th>Production (BCM)</th>
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<tbody>
<tr>
<td>Russia</td>
<td>22%</td>
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<tr>
<td>USA</td>
<td>21.7%</td>
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<tr>
<td>ROW</td>
<td>90.7%</td>
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<tr>
<td>Middle East</td>
<td>9.3%</td>
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<tr>
<td>USA</td>
<td>1,680</td>
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<tr>
<td>Algeria</td>
<td>183</td>
</tr>
<tr>
<td>Russia</td>
<td>160</td>
</tr>
</tbody>
</table>

Middle East reserves: 260 years of production
ROW reserves: 41 years of production
(of which USA reserves: 9.5 years of production)

Source: BP Statistical Review June 03
MIDDLE EAST - THE BASICS (3): LNG/GTL

MAIN EXPORTERS (BCM)
- Indonesia: 34.3
- Algeria: 26.9
- Malaysia: 20.5
- Qatar: 18.6
- Australia: 10.0
- Brunei: 9.1
- Oman: 8.0
- Nigeria: 7.8
- UAE: 6.9
- Others: 7.0
- Total: 150.0

USA + Trinidad: 4.1%

Middle East: 22.3%

Far East: 50%

Africa: 23.6%

LNG: Middle East might overtake Far East as world’s primary LNG center (5 mega trains of 7.8MT in Qatar)

GTL: Qatar goal to be the GTL capital of the world (several mega projects)

Source: BP Statistical Review June 03
REFINING CAPACITY:

6.7 M B/D (8% of world total)

MAIN NEW PROJECTS (announced):

- **UAE:** 1 project (Base oil refinery)
- **Qatar:** 1 project (Laffan Condensate refinery)
- **Iran:** Several upgrade projects (Arak, Teheran, Tabris ...)

Market mature but still potential investment related to environmental requirements and revamping of old installations.
ETHYLENE CAPACITY:
12 MMT/Y (10% of world total)

MAIN NEW PROJECTS (announced):
- UAE: 1 project (Borouge 1 mmt/y)
- Qatar: 2 projects (Ras Ethylene 1.3 mmt/y, QP Petrochemical Plant 0.5 mmt/y)
- Saudi: 4 projects (Rabigh 1 mmt/y, Yanbu 1 mmt/y, Sharq 1 mmt/y, Petrokemya 1 mmt/y)
- Kuwait: 1 project (Dow/PIC 0.850 mmt/y)
- Iran: 4 projects (8th 1 mmt/y, 11th 1 mmt/y, 12th 1.95 mmt/y, Ilam 0.3 mmt/y)
- Oman: 1 project to be confirmed

Middle East is expected to attract 1/3 of world petrochemical capital spending in next decade and to double its capacity by 2010
TECHNIP AND THE MIDDLE EAST

Backlog in €M

A growth-oriented business

% of total backlog

A lower dependency
TECHNIP AND THE MIDDLE EAST: STRONG LOCAL CONTENT

Qatar
70

Abu Dhabi
780

Iran
(Nargan: Technip 20%)
800

Local Personnel
Total Projects Pursued by Technip: 9.3 B€

Total Projects Awarded to Technip: 3.2 B€

Average Hit Ratio 34%

Of Which:
- QP and Affiliates: 23%
- Saudi Aramco / Sabic: 29%
- NIOC / NPC and Affiliates: 39%
- ADNOC and Affiliates: 63%
TECHNIP IN THE MIDDLE EAST

Jean Deseilligny
SEVP Business and Operations

Nello Uccelletti
CEO Middle East and South West Asia
Strong presence and a high success rate in the Middle East region during the years and in all domains of activities.

In total, Technip has completed successfully 150 EPC Projects:

- 38 Upstream
- 21 Gas
- 22 Refining
- 35 Petrochemicals and Fertilizers
- 35 Diversified Industries
  (Power, Cement, Glass, Pharmaceutical, Food Processing)

and has established an important operating base in Abu Dhabi.
OUTSTANDING PROJECTS AND ACHIEVEMENTS

Recent Years:

- **ARAMCO (Saudi Arabia):**
  - 11 different LSTK projects including 3 projects under execution
  - Total value US$ 2.0 billion

- **ENOC (U.A.E.):**
  - 120,000 BPSD grass-roots condensate refinery
  - LSTK contract - completed in less than 21 months

- **ADNOC/GASCO (U.A.E.):**
  - 2,300 mm SCFD onshore gas development project (OGD: 2 phases)
  - LSTK contract - value of US$ 2.6 billion

- **NIOC (Iran):**
  - 150,000 BPSD grass-roots refinery
  - LSTK contract – value US$ 0.7 billion

- **NPC (Iran):**
  - 3 petrochemical complexes in Tabriz, Arak and Bandar Imam
OUTSTANDING PROJECTS AND ACHIEVEMENTS

Main Current Projects:

- **Oryx GTL Ltd. (Qatar)**
  - World’s first industrial-scale gas-to-liquids complex
  - LSTK contract – value US$ 0.7 billion

- **Oman-India Fertilizer Co. (Oman)**
  - Grass-roots fertilizer project
  - LSTK contract – value US$ 0.8 billion (50/50 JV with SP)

- **NPC (Iran)**
  - 2 mega ethylene projects
    - 9th petrochemical complex - 1.0 million t/y
    - 10th petrochemical complex - 1.4 million t/y

- **ADCO (U.A.E.)**
  - NEB oil field development project - phase 1
  - LSTK contract – value US$ 0.6 billion

- **Abu-Dhabi Oil Refining Co. (U.A.E.)**
  - Refinery expansion project – Takreer
  - LSTK contract – value US$ 0.5 billion
ONGSHORE GAS DEVELOPMENT PROJECT (OGDII)

Steel: 150,000 tons  Concrete: 100,000 m³  Cables: 3,500 km

OGDI + OGDII = 170 MGW
16

MAJOR PROPOSALS AND PROSPECTS

1. PETROCHEMICALS AND REFINERIES

- Q-chem (Qatar)
  - Ethylene and polyethylene/polyolefin grass-roots complex
  - Approximate value US$ 1.1 billion

- PIC (Kuwait)
  - Aromatics complex and ethylene unit
  - Approximate value US$ 0.6 billion

- NPC (Iran)
  - 1 million ton/y ethylene unit
  - Approximate value US$ 0.4 billion

- QP (Qatar)
  - Grass-roots condensate refinery
  - Approximate value US$ 0.4 billion

Technip
MAJOR PROPOSALS AND PROSPECTS

2. GAS

- Worldwide interest in “clean” products makes gas very attractive source.
- Technip in forefront in application of new and consolidated technologies (GTL & LNG) instrumental in the larger use of gas.
- Gigantic Gas Field - North Dome in Qatar/South Pars in Iran - is a source of opportunities and spin-off initiatives.
MAJOR ONSHORE PROPOSALS AND PROSPECTS

2. GAS (continued)

A. Qatar/Iran

- LNG Train (7.5 MM tons/year) for Qatargas with an option for additional 4 trains ≈ US$ 1.0 billion

- Offshore Gas Development and Onshore Gas Treatment in South Pars - Iran > US$ 1.5 billion

- GTL Plant (two lines of 70,000 barrels/day) for QP/Shell in Qatar ≈ US$ 3.0 billion

- LNG and GTL Plants as part of South Pars Field Development in Iran by NIOC and foreign partners > US$ 5.0 billion

B. Others

- Third Phase of the Onshore Gas Development Project (OGD) for ADNOC/GASCO > US$ 1.5 billion

- Gas Development Projects for Aramco in Saudi Arabia > US$ 1.5 billion
The State Companies like ADNOC, S. ARAMCO, QATAR PETROLEUM and NIOC remain the main clients in this market

... and are also increasingly acting in JV with Majors

The type of contract is almost exclusively “Lump Sum Turn Key”

Competitiveness associated with a strong project management capability is the winning key factor

Increasing local content requirement

Competition for the very large EPC Projects is limited to a few European and Far East contractors (Snamprogetti, JGC, Chiyoda, Hyundai...)

3. OFFSHORE

- Offshore projects for South Pars Development
- Bul Hanine Gas Field Development for QP in Qatar ≈ US$ 0.5 billion
- Al Kafji Oil Field Development for AOC/AOGC, Saudi Arabia
- Oil Field Development for ADMA/OPCO in Abu-Dhabi
- Supply and installation of about 120 km undersea lines for ADMA/OPCO in Abu-Dhabi
OFFSHORE MARKET CHARACTERISTICS

- Shallow water
- Several projects integrate offshore and onshore facilities or platforms and pipelines
- Increasing local content requirement

Main competitors
- McDermott
- NPCC
- Saipem
- ...

Technip
OUR BUSINESS STRATEGY

- Continue to anticipate industry trends in order to maintain our leading position in the onshore market
- Increase our share in the offshore EPC Market
- Take full advantage of our skills as both onshore/offshore contractor
- Expand our local engineering offices in order to increase the local content and improve our competitiveness
ARRANGING CONTRACT FINANCING: A LONGSTANDING EXPERTISE

Olivier Dubois

CFO
TWO KEY MISSIONS:

- SUPPORT BUSINESS DEVELOPMENT
  ➡️ Through the arrangement of the financing of clients’ investments related to contracts awarded to Technip

- MITIGATE FINANCIAL EXPOSURE ON CONTRACTS
  ➡️ By assessing and properly hedging the financial risks associated with contracts

Two Key Rules:
- Never lend to clients
- Never invest in clients’ projects
A GLOBAL NETWORK OF FINANCIAL EXPERTS

- UK - Aberdeen 2 professionals
- AUSTRALIA - Perth 1 professional
- MALAYSIA - Kuala Lumpur 2 professionals
- UAE - Abu Dhabi 1 professional
- ITALY - Rome 6 professionals
- ITALY - Rome 6 professionals
- FRANCE - Paris 12 professionals
- GERMANY - Düsseldorf 3 professionals
- NORWAY - Oslo 1 professional
- USA - Houston 3 professionals
- AUSTRALIA - Perth 1 professional
- MALAYSIA - Kuala Lumpur 2 professionals

Headed by the Deputy CFO and reporting to the Group CFO
Over 30 professionals worldwide
Closely working with other Group experts: tax, legal & contracting
THE FINANCING DIVISION IS INVOLVED AT THE:

Proposal stage:
- To advise the client on possible financial schemes
- To act as go-between for financing partners and clients

Bidding stage:
- When the client is requesting a financing offer, which can be a key determinant of contract award
- When the client may need financing to be arranged

Putting-in-force stage:
- By setting up the financial scheme, including down payment and drawdown terms
SUPPORTING BUSINESS DEVELOPMENT (3)

SOME FINANCIAL SCHEMES:

- Plain vanilla corporate credits to public or private entities
- Export Credit Agency credits
- Credit supported by a sovereign guarantee
- Structured financing based on output off-taking
- Project Financing based on project cash flow
SOME REFERENCES

<table>
<thead>
<tr>
<th>Type</th>
<th>Project</th>
<th>Millions</th>
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<tbody>
<tr>
<td>Multi-source</td>
<td>Ethylene 10th complex Iran</td>
<td>330 €</td>
</tr>
<tr>
<td>Export credit</td>
<td>Ethylene 9th complex Iran</td>
<td>200 €</td>
</tr>
<tr>
<td></td>
<td>Refinery - Turkmenistan</td>
<td>450 $</td>
</tr>
<tr>
<td></td>
<td>Refinery - Uzbékistan</td>
<td>330 $</td>
</tr>
<tr>
<td>Multilateral Co-Financing</td>
<td>Accro II Gas Liquids – Venezuela</td>
<td>200 $</td>
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<tr>
<td>Structured Finance</td>
<td>Midor Refinery – Egypt</td>
<td>1,100 $</td>
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<td></td>
<td>Polyethylene 9th complex- Iran</td>
<td>130 €</td>
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<tr>
<td>Project Finance</td>
<td>Fertilizer Plant - Oman</td>
<td>780 $</td>
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<td>QVC Vinyl Project - Qatar</td>
<td>475 $</td>
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</table>
Example: Refining Facility in Turkmenistan

US$ 200 million turnkey contract

Client Requirement
- 100% financing
- support of the Turkmenistan sovereign guarantee
- long maturity

Issues
- the borrower raising other financings for the same project
- a low sovereign rating: not recognized as appropriate by ECAs
- contract amount
Example: Refining Facility in Turkmenistan (cont’d)

Solutions

- Multi-source export credit: COFACE, OND, Turkish and Malaysian EXIM

- Export off-take contracts of oil products:
  - offshore account to receive payments
  - offshore reserve

- Sovereign comfort and guarantees
REFINERY UNIT IN TURKMENISTAN

Lenders
- Bayerische Landesbank Commercial loan
- Export Credits COFACE OND Turkish EXIM
- Malaysian EXIM Direct loan

Turkmenistan Government

The State Bank for Foreign Economic Affairs of Turkmenistan Borrower

Oil and Gas Turkmen Ministry

Turkmenneftegaz

International Oil Company

Offshore Payment Account

Offshore Reserve Account

Technip EPC Contractor

EPC Contract

Product Deliveries

Partial Deposit of Loan Proceeds

Return of Excess Funds

Sovereign Guarantee + Comfort Letter

Five Loan Agreements

Loan Agreement

Product Deliveries

Reimbursement of Principal and Interest

Offtake Agreement Pledge

Offtake contract of products

MECIB Malaysia

Partial Guarantee
MITIGATING FINANCIAL EXPOSURE ON CONTRACTS (1)

- **ASSESS** and **QUALIFY** the financial risks at the proposal stage

- Negotiate the terms and conditions of contracts in order to limit the financial exposures and their consequences for Technip:
  
  ➤ **Positive cash flow is systematically required**
    - Down payments
    - Milestone payments
  
  ➤ **Multi-currency contracts are preferred**
  
  ➤ **Sharing/transferring the exposure with/to main subcontractors and suppliers**
  
  ➤ **Strict monitoring of the bank guarantees to be provided (duration, amount, conditions...)**
MITIGATING FINANCIAL EXPOSURE ON CONTRACTS  (2)

- Propose departures from Group “Standard Financial Provisions”

- Implement the management decision: insurance, guarantees

- On a permanent basis, manage Technip bank and other financial partner relationships in order to maintain the most advantageous commercial conditions to protect competitiveness
### MITIGATING FINANCIAL EXPOSURE ON CONTRACTS (3)

<table>
<thead>
<tr>
<th>EXPOSURE</th>
<th>REMEDIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Payment Default</td>
<td>➔ Verify client’s financial solvency</td>
</tr>
<tr>
<td></td>
<td>➔ Set-up financing</td>
</tr>
<tr>
<td></td>
<td>➔ Secure payments</td>
</tr>
<tr>
<td></td>
<td>▪ Confirmed LCs</td>
</tr>
<tr>
<td></td>
<td>▪ Offshore escrow account</td>
</tr>
<tr>
<td></td>
<td>▪ Down payment as a condition precedent</td>
</tr>
<tr>
<td></td>
<td>▪ External guarantee, PCG</td>
</tr>
<tr>
<td></td>
<td>➔ Positive cash flow required</td>
</tr>
<tr>
<td>2. Contract Frustration and unfair Calling of Bonds</td>
<td>➔ Export Credit Agency support</td>
</tr>
<tr>
<td></td>
<td>➔ Private insurance coverage</td>
</tr>
<tr>
<td></td>
<td>➔ Commitment curb strictly monitored</td>
</tr>
<tr>
<td>3. Foreign Exchange Exposure</td>
<td>➔ Multicurrency contracts</td>
</tr>
<tr>
<td></td>
<td>➔ Forward buys and sales, options</td>
</tr>
<tr>
<td></td>
<td>➔ ECA guarantee provided</td>
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CONCLUSION

A POSITIVE CONTRIBUTION TO THE GROUP EARNINGS AND BALANCE SHEET

- FOREX EXPOSURE
  - MARGINAL IMPACT: < 0.1% 2003 GROUP REVENUES

- NO DEFAULTING CLIENT

- NO UNFAIR CALLING OF BONDS

- STRONG CONTRIBUTION OF WORKING CAPITAL TO CASH FLOW GENERATION

- STANDARD & POORS RATING: BBB+ WITH STABLE OUTLOOK
A PROJECT FINANCE EXAMPLE

A FERTILIZER UNIT IN OMAN

Gas supply

Urea/ammonia off-take

LT debt

OMIFCO

Equity

US$ 320 M

EPC Contract

US$ 781 M

US$ 323 M

CL US$ 323 M

US$ 115.5 M

US$ 211.5 M

US$ 650 M

Technip

20 banks

BNP PARIBAS

ANZ

White & Case

IBF

Kribhco

IFFCO

Technip

EPC Contract

US$ 781 M

CL US$ 323 M

US$ 115.5 M

US$ 211.5 M

US$ 650 M
TECHNIP ABU DHABI

Jean-Pierre Giraud
CEO – Technip Abu Dhabi
Largest E,P & C organisation in the Middle East, with a permanent staff of 850 (Total payroll = 1,050 in Abu Dhabi)

Main operating centre of TECHNIP in the Middle East, set-up in 1985

Sustained growth in the past few years, founded on a strong base of local customers

Satellite office in Doha, Qatar, with over 70 employees

1,200,000 Mhrs executed on Projects in 2003

Wide range of services, from feasibility studies to turnkey projects

Large experience in revamping projects, in high demand in the Gulf Area where facilities are at / or approaching limit of design life

Full technical, commercial and financial support from the TECHNIP Group
TECHNIP ABU DHABI – A SUCCESS STORY

Steady increase of TPAD Staff from 250 in 1995 to 1,050 in 2004

Manhours on Contracts

<table>
<thead>
<tr>
<th>Year</th>
<th>Manhours (1000)</th>
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<td>1995</td>
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<td>2002</td>
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<tr>
<td>2003</td>
<td>1200</td>
</tr>
<tr>
<td>2004</td>
<td>1400</td>
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</table>

- **TECHNIP ABU DHABI**
- **FORECAST**
CAPABILITIES - CORE BUSINESS

MAIN FIELDS OF ACTIVITIES
- Oil & Gas Production and Processing, both Onshore and Offshore
- Onshore & Offshore Revamp Projects
- Enhanced oil recovery (Gas injection, water injection)
- Field development, pipelines
- Gas Treatment Plants
- Refining / Petrochemicals*

*with assistance from TP Group

TYPE OF PROJECTS HANDLED
- Master Plans
- Feasibility/Conceptual Studies
- Basic/Detailed Engineering
- Front End Engineering Design (FEED)
- EPCM / EPC
- Project Management and Consultancy (PMC)
- Field Engineering and Construction Support

DEVELOPMENT STRATEGY
- Expand Geographically: Qatar, Iran, Oman, Yemen, Saudi Arabia, Kuwait, Caspian Sea
- Increase part of Projects in the downstream sector
- Promote advanced engineering tools as well as Process engineering capabilities.
- EPC Projects < US$ 50 Mn
- EPC Projects > US$ 50 Mn with TECHNIP Group support
## CAPABILITIES - AREAS OF ENGINEERING EXPERTISE

| PROCESS | Conceptual Studies in upstream sector  
|         | Transient Studies for multiphase pipelines  
|         | Corrosion prediction and material selection |
| SAFETY  | HAZOP, HAZID, HAZAN, QRA, FSA (Formal Safety Assessment) studies  
|         | Design of active and passive fire protection systems. F&G detection layout and studies  
|         | Dispersion and radiation calculations |
| E & I   | Electrical Power System Modelling  
|         | Major revamp of Instrument/Control Systems  
|         | Field Bus Technology |
# CAPABILITIES - AREAS OF ENGINEERING EXPERTISE

| STRUCTURAL                          | - Family design of offshore platforms. Revamping, modifications and extension of existing facilities  
|                                     | - In-place, fatigue and Installation analysis. Dynamic collapse analyses of existing platforms.  
|                                     | - Re-assessment of existing facilities to extend their service life  
| PIPING                              | - 3D Computer-aided design (world-wide alliance with Intergraph)  
|                                     | - Stress Analysis (static and dynamic)  
| EQUIPMENT                           | - Compression systems up to 450 bar  
|                                     | - Acid gas resistant equipment  
| PIPELINE                            | - Conceptual, FEED and detailed design of onshore & offshore pipelines to allowable stress of limit state design.  
|                                     | - Wide range of experience in shallow and deepwater pipelines  
|                                     | - HP/PT and insulated subsea pipelines  

![Technip Logo]

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3 KEY DATES OF DEVELOPMENT

1985  Engineering Services

1989  EPCM [Engineering, Procurement Services, Construction Supervision, Management]
      (Zadco / Zirku 6th Storage Tank Project)

1998  EPC [Engineering, Procurement, Construction. Lump Sum Turn Key]
      (Gasco RDCS Project)
A CONTINUOUS GEOGRAPHICAL EXPANSION OF TP ABU DHABI

U.A.E Since 1984
ADNOC Group
• ADNOC, TAKREER, ADCO, BOROUGH, GASCO, ADGAS, ADMA-OPCO, ZADCO

Other Abu Dhabi Clients
• TOTAL ABK
• BUNDUQ

Other UAE Clients
• ENOC
• EPCL
• TOTAL
• ATLANTIS
• UOG
• CRESCENT PETROLEUM
• DRAGON OIL
• DUBAI PETROLEUM COMPANY
• DOLPHIN ENERGY LIMITED

QATAR Since 1986
• QP
• QATARGAS
• RASGAS
• BP
• ANADARKO
• OXY
• TOTAL
• MAERSK
• QAPCO, QAFCO, NODCO, DEL

IRAN Since 2001
• SHELL IRAN
• TOTAL Sirri
• ELF Petroleum Iran
• POGC / PEDCO
• AMID / IOEC

YEMEN Since 2003
• CANADIAN NEXEN
• TOTAL YEMEN

KUWAIT Since 2002
• KNPC

BAHRAIN Since 2003
• BAPCO

SAUDI ARABIA Since 2002
• ARAMCO
• SABIC / SADAF

Yemen Since 2003
• CANADIAN NEXEN
• TOTAL YEMEN
TECHNIP ABU DHABI 2003 MAIN ACHIEVEMENTS

- Expansion of TPAD activities in Iran, Yemen, Kuwait, Bahrain and Saudi Arabia
- First success on an EPC project in Kuwait with KNPC (VRRP Project, US$ 25 million)
- Growth of Technip Doha in the wake of the OXY projects
- Several new clients (Canadian Nexen, SADAF/SABIC, KNPC, PEDCO, POGC)
- Continuous bidding on tenders, as well as execution of EPC projects (up to US$ 50 million)
- Detailed work on major EPC projects in collaboration with Technip France, Technip Italy and Technip Germany
Strategy for growth and development:

- Maintain our leadership in the UAE and Qatar
- Continue to expand our business activities into the following territories:
  - Kuwait: Medium size EPCs
  - Saudi Arabia: Service Contracts for revamp activities as well as medium size EPC
  - Sudan: Potential work from UAE investors
  - Yemen: Good opportunities exist in the area of services
  - Iran: EPC with the Group, engineering services against European contractors
  - Caspian Sea: FEED and medium size projects for UAE based clients
RESOURCES - PERSONNEL

- Experienced multi-discipline professionals covering the full range of engineering services
- 42 nationalities
- Commitment to recruitment of UAE nationals, mainly young university graduates
- Training Programs for young UAE nationals from operating companies (ADCO and ADMA-OPCO)
- Specialists from TECHNIP Group available for support on any specific area of expertise. Resources are shared within the TECHNIP Group on a world-wide basis.
Key Objectives:

- Continue to execute medium size EPC projects
- Actively participate with the Group on major projects in the Middle East
- Increase local Emirati staff to keep in line with regional trends
## TECHNIP ABU DHABI MAJOR PROJECTS FOR THE PAST 4 YEARS

### ONSHORE

<table>
<thead>
<tr>
<th>Company</th>
<th>Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GASCO</td>
<td>Ruwais Facilities Upgrade</td>
</tr>
<tr>
<td>ARAMCO</td>
<td>Sulphur Recovery Unit in Riyadh Refinery</td>
</tr>
<tr>
<td>ADCO</td>
<td>Asab Facilities Upgrade</td>
</tr>
<tr>
<td>KNPC</td>
<td>Vacuum Rerun Revamp</td>
</tr>
<tr>
<td>QP</td>
<td>NGL 1 &amp; 2 Control Systems Upgrade</td>
</tr>
<tr>
<td>QP</td>
<td>Additional Liquefied Petroleum Gas (LPG) Tanks (Mesaieed)</td>
</tr>
<tr>
<td>UOG</td>
<td>Fujairah Water &amp; Power (Pipeline)</td>
</tr>
<tr>
<td>ADNOC</td>
<td>Onshore Gas Development (OGD) Phase 2</td>
</tr>
<tr>
<td>TAKREER</td>
<td>Unleaded Gasoline &amp; Low Sulphur Gas Oil Facilities</td>
</tr>
<tr>
<td>BAPCO BSC</td>
<td>FCCU Resid Processing Project</td>
</tr>
<tr>
<td>ADCO</td>
<td>North East Bab [NEB] – Oilfield</td>
</tr>
</tbody>
</table>

*Cont’d…*
## TECHNIP ABU DHABI MAJOR PROJECTS FOR THE PAST 4 YEARS

<table>
<thead>
<tr>
<th>OFFSHORE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SABIC/SADAF</strong></td>
</tr>
<tr>
<td><strong>SHELL IRAN</strong></td>
</tr>
<tr>
<td><strong>ADMA OPCO</strong></td>
</tr>
<tr>
<td><strong>ANADARKO</strong></td>
</tr>
<tr>
<td><strong>QGPC</strong></td>
</tr>
<tr>
<td><strong>ADMA OPCO</strong></td>
</tr>
<tr>
<td><strong>IOEC/NIOC</strong></td>
</tr>
<tr>
<td><strong>NPCC/OXY</strong></td>
</tr>
<tr>
<td><strong>PETROIRAN</strong></td>
</tr>
<tr>
<td><strong>UOG/ATLANTIS</strong></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>
GASCO RUWAIS FACILITIES UPGRADE PROJECT

CLIENT: GASCO
TYPE OF PROJECT: EPC ($90 Million)
ENGINEERING MANHOURS: Approx. 150,000
PROJECT OBJECTIVE: Upgrade of NGL fractionation plant at Ruwais, UAE

MAIN FACILITIES INVOLVED
- Revamping of two NGL fractionation trains, including re-traying of columns, modifications to furnaces, new exchangers, modifications to ADIP unit.
- Addition of new units (Alkali wash, SRU, Caustic neutralisation, Propane refrigeration loop)

PARTICULAR FEATURES OF THE PROJECT
- Modifications to be implemented in live plant and during 2 short shutdowns (17 days, 5 days)
- New facilities modelled on 3D CAD
SOROOSH & NOWROOZ INTEGRATED DEVELOPMENT PROJECT

- CLIENT: SHELL Iran
- TYPE OF PROJECT: EPC ($375 Million), in association with NPCC
- YEAR-DURATION: 2001-2003
- TECHNIP’S MANHOURS: 600,000

- SCOPE OF SERVICES (TECHNIP):

- MAIN FACILITIES INVOLVED
  - 3 Main Production Platforms (load out weights 9000 tons, 3900 tons, 3700 tons)
  - 2 Wellhead platforms
  - Export Pipelines
  - 2 Living Quarter platforms

- PARTICULAR FEATURES OF THE PROJECT
  - 190,000 bopd
  - Availability at 97%
  - Use of FLOATOVER Technology
INTRODUCTION TO
THE ETHYLENE BUSINESS

Michel Buffenoir
CEO Ethylene
Ethylene, What is it, actually? It’s: C₂H₄ !! 2 carbons, 4 hydrogens

Made by “cracking” gas or liquid feedstocks: ethane, propane, naphtha, gasoil, …in presence of steam, i.e “Steam-cracking”
ETHYLENE, WHAT IS IT?

Business of US$ 2 to 4 billion yearly

World Production

113 Million t/year 2003

Basic product for 1 billion derivatives

Club of 'five'

Technip
Lummus
S&W
KBR
Linde
The 10 most used plastics in the world:
- Polyethylene
- Polypropylene
- Polystyrene
- Polyurethane
- PVC
- Polyester
- Nylon
- Kevlar
- Perspex
- Teflon

ALL FROM AN ETHYLENE UNIT!!!
# WORLD PRODUCTION (2003)

<table>
<thead>
<tr>
<th>Region</th>
<th>Million t/y</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA / Canada *</td>
<td>35</td>
</tr>
<tr>
<td>Asia / Pacific **</td>
<td>28</td>
</tr>
<tr>
<td>EEC</td>
<td>25</td>
</tr>
<tr>
<td>Middle-East / Africa</td>
<td>14</td>
</tr>
<tr>
<td>E. Europe / CIS</td>
<td>7</td>
</tr>
<tr>
<td>S. America</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL WORLD</strong></td>
<td><strong>113</strong></td>
</tr>
</tbody>
</table>

* consumption: 117 kg/person/y for ~ 300 mm people

** consumption: 14 kg/person/y for ~ 2 000 mm people

Source: OGJ
## THE WORLD’S TOP PRODUCERS

<table>
<thead>
<tr>
<th>Million t/y</th>
<th>2002</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dow (USA)</td>
<td>13.1</td>
<td>11.8</td>
</tr>
<tr>
<td>Exxon/Mobil (USA)</td>
<td>11.4</td>
<td>11.7</td>
</tr>
<tr>
<td>Shell (USA/Holland)</td>
<td>6.7</td>
<td>7.0</td>
</tr>
<tr>
<td>Equistar/Lyondell (USA)</td>
<td>5.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Sabic (S. Arabia)</td>
<td>5.0</td>
<td>6.7</td>
</tr>
<tr>
<td>BP/Amoco (UK/USA)</td>
<td>4.6</td>
<td>4.8</td>
</tr>
<tr>
<td>Chevron-Phillips (USA)</td>
<td>3.5</td>
<td>3.6</td>
</tr>
<tr>
<td>Sinopec (China)</td>
<td>3.0</td>
<td>5.2</td>
</tr>
<tr>
<td>Nova (Canada), AtoFina (France)</td>
<td>3.0</td>
<td>3.1</td>
</tr>
<tr>
<td>BASF (Germany)</td>
<td>3.0</td>
<td>3.2</td>
</tr>
<tr>
<td>NPC Iran</td>
<td>0.7</td>
<td>~3</td>
</tr>
</tbody>
</table>

Source: UBS Warburg
GLOBAL ETHYLENE CAPACITY GROWTH

(Source: OGJ/CMAI)
CRACKING FURNACES: PETROKEMYA
GK6 - Y PIECES CONNECTING 8 COILS TO TLE
PROPANE REFRIGERANT COMPRESSOR
"A PROCESS OF EXTREMES"!

The largest ever turbo-propelled plane, at 60 000 hp each, with counter-rotative, coaxial, propellers of an unusual 5.6 m in diameter! It was heard at more than 20 km, and reached more than 910 km/h, over 16 750 km, with a weight of 185 tons.

Length : 49,13 m
Wingspan : 50,10 m
Height: 13,20 m

Get me 3 of these TU-95

1957 : TU-95 (Tupolev)
How much in $?
## ETHYLENE BUSINESS UNIT

Source: ECN

<table>
<thead>
<tr>
<th>Material</th>
<th>Price Range (€/t - $/t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene</td>
<td>580 - 620</td>
</tr>
<tr>
<td>Propylene</td>
<td>480 - 460</td>
</tr>
<tr>
<td>Polyethylene</td>
<td>700 to 800</td>
</tr>
<tr>
<td>Polypropylene</td>
<td>750 to 850</td>
</tr>
<tr>
<td>Naphtha, Europe</td>
<td>330</td>
</tr>
<tr>
<td>Natural Gas, USA**</td>
<td>6 to 7+ $/mmBTU</td>
</tr>
</tbody>
</table>

*Contract prices. Spot prices are 15/20% higher.
**US gas crackers were built at a gas price of $1...

Propylene, also produced in crackers, now has a much higher growth & demand than ethylene, worldwide.
COSTS TREND

ISBL Plant, $ MM

Ethylene Capacity, KTA

Naphtha Crackers

Gas Crackers

CURRENT LIMITATION

Technip data 2003
<table>
<thead>
<tr>
<th>Million t/y</th>
<th>2001/02</th>
<th>2002/03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technip</td>
<td>1.3</td>
<td>1.5</td>
</tr>
<tr>
<td>4 Others:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KBR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ Linde</td>
<td>5.7</td>
<td>1.8</td>
</tr>
<tr>
<td>+ Lummus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ Shaw S&amp;W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Awarded</td>
<td>7.0</td>
<td>3.3</td>
</tr>
<tr>
<td>Total % Technip</td>
<td>20%</td>
<td>45%</td>
</tr>
</tbody>
</table>
ON-GOING PROJECTS

- Iran 9th (1 mmt/y, Pars Petrochemical, EP services, start-up: 2005)
- Iran 10th (1.4 mmt/y, largest in the world: Jam Petrochemicals, EP, start-up: 2006)
- Arak revamp: Iran
- Shell Rebound, France (Gas-oil cracking, 1 additional furnace)
- Kharg Island, Iran (500,000 t/y, PIDMCO, start-up: 2007)
- Kemya furnace, S. Arabia
- Kuwait
- Jilin furnaces: China: revamp of existing furnaces
PROSPECTS TILL MID-2004

- Kuwait (0.8) * ~$ 350 mm LSTK
- Iran 8th Arvand (1.0) * ~$ 400 mm LSTK
- Iran Ilam, 11th, 12th (~2.1)* ~$ 700 mm LSTK
- Qatar, Ras Laffan (1.3) * ~$ 700 mm LSTK
- Aramco Rabigh, S. Arabia (1.0) * ~$ 400 mm LSTK
- S. Arabia Yanbu (1.0)
- S. Arabia : Sharq (1.0)
- Qatar Petroleum *
- Abu Dhabi Borouge (1.0)
- India IOCL (0.8), GAIL,(0.8)...*
- SPC China (0.5) * ~$ 150 mm
- Fujian * (0.8), China
- Panjin,… China
- DSM/Sabic, Holland *
- Numerous furnaces worldwide * ~$ 150 mm
- i.e roughly US$ 3.5/4 billion to be awarded in 2004

* : inquiries received &/or bids already submitted
E-P-C DISTRIBUTION IN A LSTK PROJECT

- **E**: engineering services  
  ~15% of TIC, $ value
- **P**: procurement of equipment & transportation to site  
  ~30 to 50 % of TIC
- **C**: construction costs: manpower, supplies, logistics (cranes, dozers, etc.)  
  ~30 to 45% of TIC

- **E**: manhours for 1 mmt/y ethylene: 500 to 700,000 over ~18/20 months
- **C**: number of workers on site: 3/4,000, peak at 6/8,000 over 26/28 months

Project duration from award to “mechanical completion”: 36/39 months
A steam-cracker is an upgrading, cleaning “garbage can”, that transforms otherwise highly polluting heavy oils (e.g., vac. gasoil) into safe products, now vital for day-to-day life.

Environmentally safe plants, for essential basic raw materials

- Plastics now replace metals (much more polluting to produce)
- Huge progress in recycling, self-elimination and even helper in nature (ecologic plastic sheets: heat & humidity provider for plantations)
- Used in textile, medicines, safety, airlines, automobiles, farming, leisure & entertainment, fertilizers, food preservation businesses...
OUR TEAM IN THE GROUP

Claremont
Houston
Paris
Düsseldorf
Rome
Zoetermeer
Moscow
Shanghai
Kuala Lumpur
WHY SELECT TECHNIP?

- Expert in LSTK, with own technology: i.e only one able to deliver, and guarantee, from conceptual to ready for start-up
- Youngest in the competition as a whole technology supplier: hence more innovative, eager to succeed!
- Strong financial position, ensuring confidence from the clients
ETHYLENE TECHNOLOGIES FOR MEGA-CRACKING

TECHNIP IS ONE MEGA-CRACKER AHEAD!

TECHNIP is currently giving birth to the largest steam cracker in the world (1.4 million tons per year) based on its proprietary technologies. That's experience – unmatched experience – and leadership.

Technip
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E-mail: ethylene@technip.com · www.technip.com