Technology with business sense
1974
Engineering and Consulting activities begin.

1978
Start up of a new steam generation plant in La Plata, Buenos Aires, Argentina, with TECNA process engineering.

1982
Start up of the RA-6 Nuclear Reactor, located in Bariloche, in the Argentine Patagonia.

1994
TECNA starts up the Borde Montuoso Plant in Neuquén and the Faro Virgenes Plant in Tierra del Fuego, Argentina. Both Gas Plants on a Turn Key condition.

1998
TECNA opens offices in Bolivia.

1999
TECNA's first amine sweetening plant is constructed: Loma La Lata, Argentina. 10 MMSCMD.

2000
TECNA activities in Peru begin.

2003
Sabalo Project. Gas dew point and CO2 removal plant 13.4 MMSCMD. EPC and 5 years of O&M. Tarija, Bolivia.
Growing from the start

TECNA is a global engineering and construction company with proven technological and project execution capabilities.

Since 1974 we stand out in the energy, oil and gas market with products and services highly qualified.

We have developed a modern organization that maintains the service to clients and a culture of compliance to the most strict quality, safety, health and environment international standards.

We are a technologically open company, which allows us to provide in each case the solution that best suits our clients’ needs.

Our aptitude for strategic partnerships allows us to implement competitive alternatives for major project developments.

<table>
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<tr>
<th>2005</th>
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<tbody>
<tr>
<td>TECNA opens its offices in Venezuela.</td>
<td>ISOLUX CORSÁN is incorporated as a shareholder of TECNA. It enables TECNA to enhance its position in the global market.</td>
<td>TECNA offices in Spain become the business focus in Europe, Middle East and Africa.</td>
<td>New TECNA offices in Colombia.</td>
<td>TECNA begins activities in Oman.</td>
<td>TECNA opens offices in Saudi Arabia.</td>
<td>Caraguatatuba, TECNA’s most important project up to date in Brazil, begins.</td>
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Markets
To gain leadership in all markets in which we operate.

Upstream On-shore/Off-shore

Gas Processing
- Gathering and primary separation
- Dehydration
- CO2, SH2 and other contaminants removal
- Dew point control
- LPG recovery, storage and transport
- NGL production, fractionation and storage
- Compression
- Gas pipelines

Oil and water treatment
- Gathering and primary separation
- Oil dehydration
- Water treatment and reinjection
- Contaminants removal
- Pumping stations
- Oil pipelines

Downstream

Refining
- Topping units
- Coker unit
- Hydrotreating and isomerization units
- Fractionation
- Sulfur removal
- Auxiliary services

Petrochemical
- Production units
- Auxiliary services

Biofuels
- Bioethanol
- Biodiesel
- Biogas
- BioOil

Power generation
- Simple cycles
- Combined cycles
- Cogeneration
- Eolic energy
- Solar energy

Nuclear
- Nuclear power plants
- Research and radioisotope production reactors

Mining
- Processing plants
- Auxiliary services
Quality, Safety, Health & Environment
Integrated Corporate Management System
Products and Services
Quality and reliability that distinguish us in the market.

ENGINEERING & CONSULTING
MODULAR PLANTS
TURN KEY PLANTS
PROJECT MANAGEMENT
AUTOMATION & CONTROL
OPERATION & MAINTENANCE
The Engineering & Consulting area originated **TECNA**. Our technological capabilities, experience, work and control methods guarantee the quality of the products & services we offer our clients.

**TECNA** is a technologically open company which allows to provide in each case the best solution tailored to the project.

We have developed efficient, reliable and secure designs, taking into consideration ease of construction and operation, as well as environmental protection.

We have a solid professional team as well as cutting-edge technological resources that allow us to provide:

- Technical-economical feasibility studies
- Technology selection
- Master oil & gas field planning
- Conceptual engineering
- Basic engineering
- FEED (Front End Engineering Design) packages
- Detail engineering
- Facility performance evaluation and plant troubleshooting
- Process optimization and value engineering studies
- Risk and consequence analysis (HAZOP) and ease of construction studies
- Dispersion and explosion studies
- SIL (Safety Integrity Level) analysis
- Steady state and dynamic simulations of multiphase flow systems
One of TECNA’s specialties is the design and shop fabrication of modular architecture plants, an alternative that entails the following significant advantages over the traditional construction at work site:

- Shorter deadlines
- Lower costs
- Ease of construction & assembly
- Improved fabrication quality and safety
- Shorter precommissioning, commissioning and start up times
- Safer start up
- Future plant relocation capability
- Specialization in off-shore modules
- Pipe rack modular design

This approach allows ease of construction in case of major plants located at sites with difficult access or extreme climates.

More than 1,000 modules delivered and in operation
TECNA executes “turn key” projects in different contract modalities, taking responsibility from design and engineering to construction and start up, including the Build Operation and Transfer (BOT) option.

Independently or in joint ventures, we perform EPC plants that comply with the process guarantees, with special attention to quality and safety. Summarizing our services and products include:

- Project management tailored to a Quality, Safety, Health & Environment Integrated Corporate System.
- High engineering integration between process engineers and the other operating areas.
- Management tailored to the USA Project Management Institute (PMI) guidelines. Many of our professionals are PMI certified.
- Integrated state of the art engineering, management software and project management systems.
- Strong commitment to planning and cost control by issuing project status reports and project management control panels.
- Contingency plan implementation based on project risk analysis.
- HAZOP studies application at the beginning and during the project.
- Local and international suppliers and contractors network.
- Clear management procedures in case of project changes.
- Timely and professional precommissioning and commissioning to guarantee a successful start up.
- Training for client’s plant operators.
TECNA project management integrates client’s capabilities with our expertise and professionalism.

We stand out by our experienced application of integrated management systems by proven procedures and instructives.

EPCm management models are especially applicable when:

- The client requires fast track bid document preparation, quotation requests, bid evaluations and awards.
- Project DEADLINES are critical.
- The SCOPE is not clearly defined at the beginning of the project.
- Project COST has many uncertainties and contingencies.
- The project environment is uncertain, dealing with changing economic, environmental, regulatory, climatic or social issues.
- The client requires a buyout option or the transformation of the project into a regular EPC.

ISO 9001
ISO 14001
OHSAS 18001
Integrated Corporate Management System

Project Management Institute (PMI) certified management
We integrate and develop technology for industrial process automation.

We supply equipment and services for process control and safety, integrating hardware and software top brands.

We develop applications ranging from plant floor to corporate information management systems.

- Architecture conceptual and basic design.
- Qualitative and quantitative studies for process safety.
- Detail engineering: functional specifications, data sheets, component layouts, wiring diagrams, consumption and heat dissipation calculation.
- Packaged control systems including enclosures.
- Configuration, testing, installation, commissioning and start up.
- Special solutions for equipment connectivity.
- Integration and data processing applications.

3,500 telesupervised facilities

More than 180 Automation & Control projects

800,000 input / output signals in various facilities worldwide
TECNA offers O&M services after the project construction, or when a special engineering, technology and management system application is required.

We are committed to a Quality, Safety, Health and Environment Integrated Corporate Management System, that guarantees the plant performance and reliability.

Our EPC+O&M integrated systems reduce uncertainties, enhance facility performance and accelerate business profitability.

- O&M services
- Plant performance evaluation
- Commissioning and start up
- O&M safety studies
- Training

**Start up of more than 80 Plants of hydrocarbon processing**

**O&M main projects:**

**ECUADOR**

**REPSOL YPF**

**8 years**

Power generation and distribution

**ECUADOR**

**REPSOL YPF**

**10 years**

Topping Unit

**BOLIVIA**

**PETROBRAS**

**5 years**

Sabalo Gas Plant

**BOLIVIA**

**TRANSIERRA**

**4 years**

Villamontes Compression Station

**BOLIVIA**

**BG BOLIVIA**

**3 years**

La Vertiente

**BOLIVIA**

**REPSOL YPF**

**3 years**

North & South Fields
Main Projects

Oil & Gas - Upstream

Off-shore Modules

PETROBRAS
P-34 Platform - Natural gas dehydration unit
Victoria, Espirito Santo, Brazil
600 MSCMD
EPC / 2005

PETROBRAS
P-58 & P-62 Platforms - Natural gas dehydration units
Baleia Azul & Roncador Fields, Brazil
6 MMSCMD
EPC / 2010

PETROBRAS
Mexilhão Platform - Natural gas and condensate dehydration unit
Santos, Mexilhão Field, Brazil
Gas: 15 MMSCMD / Gasoline: 3,200 CMD
EPC / 2008

BPZ
Albacora Platform - Engineering and project management
Offshore Tumbes, Peru
10,000 BPD
EPCm / 2011
Main Projects

Oil & Gas - Upstream Compression Stations

TRANSIERRA
Villamontes Compression Station
Tarija, Bolivia
22 MMSCMD
EPC & O&M / 2004 - 2008

TBG
TRANSPORTADORA BRASILEIRA DE GAS
Capao Bonito Compression Station
Sao Paulo, Brazil
31 MMSCMD
EPC / 2010

TRANSPORTADORA URUCU MANAUS
Juaruna & Coari Compression Stations
Amazon, Manaus, Brazil
5.5 MMSCMD
EPC / 2010

TGI (TRANSPORTADORA DE GAS INTERNACIONAL)
Jagua del Pilar, Curumani, San Alberto & Puente Guillermo Compression Stations.
Colombia Northeast
3 x 9.3 MMSCMD + 1 x 12.7 MMSCMD
EPC / 2011

PLUSPETROL
PCC1, PCC2 & PCN Compression Stations
Ramos, Tartagal, Salta, Argentina
4.6 / 3.1 / 1.4 MMSCMD
EPC / 2005
Main Projects

Oil & Gas - Upstream

Gas Treatment Plants

PAN AMERICAN ENERGY
San Pedrito Gas Dew Point & CO2 Removal Plant
Salta, Argentina
3 MMSCMD
EPC / 2001

TOTAL
Carina & Aries Onshore Production Facilities
Tierra del Fuego, Argentina
14 MMSCMD
EPC / 2005

PETROBRAS
Sábal Gas Dew Point and CO2 Removal Plant
Tarija, Bolivia
13.4 MMSCMD
EPC & O&M / 2003 - 2008

REPSOL YPF
Loma La Lata CO2 Removal Plant
Neuquén, Argentina
10 MMSCMD
EPC / 2000
Main Projects

Oil & Gas - Upstream

LPG Recovery & Fractionation

CAPEX
Agua del Cajón
LPG Recovery Plant
Neuquén, Argentina
2.5 MMSCMD
EPC / 1998

PLUSPETROL
EPC1, Malvinas
LPG Recovery Plant
Malvinas, Peru
14.2 MMSCMD
EPC / 2004

PLUSPETROL
EPC21, Malvinas
LPG Recovery Plant
Malvinas, Peru
14.9 MMSCMD
EPC / 2011

PLUSPETROL
EPC2, Malvinas
LPG Fractionation Plant
Malvinas, Peru
8,750 CMD
EPC / 2004

PLUSPETROL
EPC21, Malvinas
LPG Recovery Plant
Expansion
Malvinas, Peru
14.9 MMSCMD
EPC / 2011
Main Projects

Oil & Gas - Downstream

Refining

REPSOL YPF
Luján de Cuyo Distillery - Splitter Unit
Luján de Cuyo, Mendoza, Argentina
1,440 CMD
EPC / 2006

REPSOL YPF
La Plata Distillery
Naphtha Processing Unit
La Plata, Buenos Aires, Argentina
4,800 CMD
EPC / 2006

REPSOL YPF
La Plata Distillery
Coke Unit Revamping
La Plata, Buenos Aires, Argentina
4,440 CMD
EPC / 2008

PETROBRAS
San Lorenzo Distillery
Topping and Vacuum Heaters
Rosario, Santa Fe, Argentina
6,300 CMD
EPC / 2006
We support the renewable energy development with a strong participation in biofuel and unconventional power generation production projects.

Through engineering development, project management and turnkey plants we contribute to sustainable development.

**Biofuels**
- Bioethanol from sugar cane, maize and sorghum
- Biodiesel from vegetable oils
- Biogas from solid waste
- BioOil from low commercial value biomass

**Power**
- Solar (photovoltaic and thermal)
- Wind
- Geothermal
At TECNA we recognize that nuclear technology will play a growing role as part of the energy mix.

Many countries are renewing their interest in nuclear power generation, in addition to the applications of nuclear technology to medicine and industry.

We have experience in nuclear power plant projects, supported by the qualification of our human resources, our professionals and technicians.

- Engineering and consulting
- Project management and construction
- Safety analysis
- Plant start up assistance

NASA
Atucha II Nuclear Power Plant (745 MWe)
Radiation Monitoring System
Lima, Buenos Aires, Argentina
EPC / 2011

NASA
Atucha II Nuclear Power Plant
Calculation code development and transient analysis
Lima, Buenos Aires, Argentina
Engineering / 2010

NASA
Atucha II Nuclear Power Plant Services
Lima, Buenos Aires, Argentina
Engineering and start up assistance / 2009 - 2011
Main Projects

Power Generation

Power Plants

PAMPA ENERGÍA
Loma de la Lata Power Plant Expansion to Combined Cycle
Neuquén, Argentina
3 Heat Recovery System Generators (HRSG)
+ 1 x 180 MW Steam Turbine
EPC / 2011

YACIMENTOS CARBONÍFEROS RÍO TURBIO
Rio Turbio Coal Fired Power Plant
Santa Cruz, Argentina
2 circulating fluidized bed boilers
+ 240 MW (2 x 120 MW) Steam Turbines
EPC / 2011

ENARSA
Ensenada de Barragán
Thermal Power Plant
Buenos Aires, Argentina
560 MW (2 x 280 MW) Gas Turbine,
Simple cycle
E / 2011
Main Projects
Engineering & Consulting
Conceptual, Basic & Detail Engineering

PAE / REPSOL / YPF / PLUSPETROL / CHEVRON / SIPETROL
- Engineering framework contract

PETROBRAS
- Caraguatatuba gas treatment unit adequacy conceptual engineering. Brazil. 2011
- Extended basic engineering for Itaú Field development, Phase II. Bolivia. 2010
- Sabalo Plant 3rd train basic engineering. Bolivia. 2008

PLUSPETROL
- Extended basic engineering for heavy oil project. Ecuador. November 2008
- SIEMENS gas inlet compressor engineering for Malvinas Plant. Peru. March 2011

TOTAL
- Emergency discharge system and electrical distribution control system analysis. Argentina. March 2004

YPF
- La Plata Refinery flare and CCR revamping - ODEBRECHT. Argentina. November 2009
- Las Heras Area surface facilities master plan. Argentina. June 2008
- La Plata Distillery coke unit FEL 3 revamping. Argentina. 2007

BPZ
- Corvina off-shore production facilities basic engineering. Peru. August 2009

BRITISH GAS
- Palo Marcado Field conceptual and basic engineering. Bolivia. 2007

REPSOL SPAIN
- Reggane - Azrafil project conceptual engineering. Algeria. September 2007
- Gassi Touil NGL recovery technologies study. Algeria. April 2005

PAN AMERICAN ENERGY
- Cerro Dragón CTP and Zorro 4 and Zorro 1000 batteries basic engineering. Argentina. 2011

ANCAP

CEPSA
- Rhourde El Krouf Field (RKF) field development reengineering. Algeria. July 2010

YPFB
- Rio Grande LPG Plant conceptual and basic engineering. Bolivia. April 2010

SHELL
- Valle Morado gas treatment plant basic engineering and hazop. Salta, Argentina. February 1999
A technology company is built on the basis of the persons composing it.

Mixing experience and youth, culture and languages with up to date knowledge management systems are the cornerstones of TECNA’s philosophy.

We work, learn and teach.

30,000 hours per year invested in training

As a community oriented company, we support and promote the development of all communities where we are present.

Considering that education is a key tool in the social inequality reduction, TECNA’s main objective is to support and drive projects in the areas of culture and education.
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