





**UR IDENTITY:
AN INTEGRAL SOLUTIONS PROVIDER
IN THE OIL & GAS FIELD**

ur strength... a "loop cycle" service company

ENGINEERING AND PROCUREMENT

Our engineering capabilities are applied to a wide range of works and delivery methods: from EPC projects to maintenance services. Leveraging on field experience, we inject first class engineering solutions into all our activities. Procurement means to manage the overall supply chain through an internal and external network that allows to capitalize the experience.

CONSTRUCTABILITY

We analyze all project processes aiming to optimize construction sequences and practices.

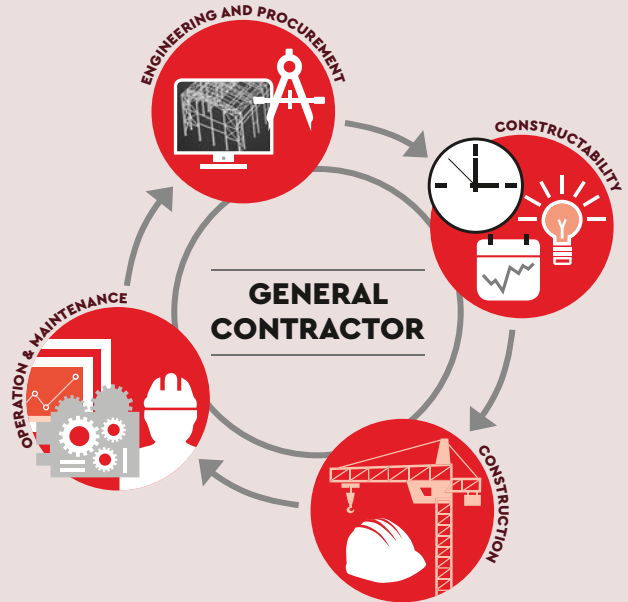
The integration of construction knowledge in all project activities, starting from engineering and procurement up to commissioning, allows us to achieve the overall project objectives in compliance with time, accuracy and HS&E requirements.

CONSTRUCTION

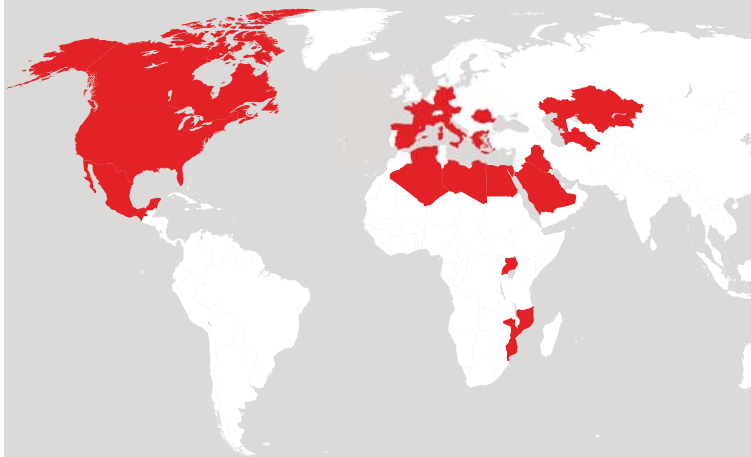
Our experience in construction is a wealth of knowledge developed over decades executing challenging projects all over the world. As a result of our experience in all disciplines, we offer our clients full reliability and performance: this is our main goal.

OPERATION & MAINTENANCE

Our many years of experience in global operation & maintenance services allow us to integrate the client's operational capabilities. The goals are production efficiency and optimised overall project lifecycle costs.



Operating
internationally as
a **Local General
Contractor**



**ALGERIA, AUSTRIA, CANADA, EGYPT, FRANCE,
GERMANY, GREECE, IRAQ, ITALY, KAZAKHSTAN, LIBYA,
MEXICO, MOZAMBIQUE, ROMANIA, SAUDI ARABIA,
SPAIN, TURKMENISTAN, UGANDA AND USA.**

7,000

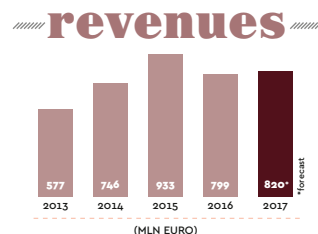
**EMPLOYEES
WORLDWIDE**

4

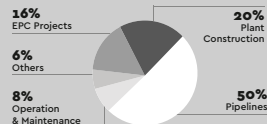
continents

19 COUNTRIES

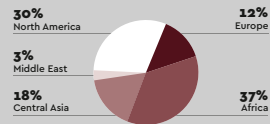
70
years in
Oil & Gas



revenues 2016 BY ACTIVITY



revenues 2016 BY GEOGRAPHIC AREA



Forged in the most challenging areas



Sahara Desert



African Bush



Central Asian Frozen Steppe



Andes Mountains and Atacama Desert

1946

- Saul Bonatti establishes the company "Ing. Saul Bonatti & F.lli".

1946/1973

- Construction and erection of the first Oil & Gas plants in Italy, construction of high pressure Oil & Gas pipelines.

1974/1976

- Bonatti becomes a joint stock company and, with the founder's death, is acquired by the current leading group.

1979

- First contract in Libya.



1980/1984

- Development in EPC projects, offshore structures and civil engineering.

1992

- First contract in Germany.

1994

- First contract in Spain.

1998

- "The highest pipeline in the world", crossing the Andes at 5,000 m.

1999

- First contract in Algeria and in Kazakhstan.

2005

- First contract in Saudi Arabia.

2006

- Acquisition of Carlo Gavazzi Impianti.

2007/2010

- Revenue growth exceeds 20% for three consecutive years.

2011

- First contract in Iraq.

2012

- First contract in Mexico.

2013

- "ENHL-Bonatti LDA" is incorporated in Mozambique.

2014

- First contract in Romania.

2015

- First contract in Mozambique.

2016

- First contract in Greece.

2017

- "Bonatti USA" is incorporated in Houston, Texas.

Our local approach



WORKFORCE

As a multi-national company with a local culture, we are committed to reducing the current 10% expats working locally to under 5% in the next 3 years.

We are dedicated to recruiting and training the workforce locally, and to partnering with universities and educational institutions to help drive the local economy. We aim to create a highly engaging, motivating environment offering targeted training and growth programmes focusing on individuals' needs and goals.

Our ultimate aim is to achieve high local retention rates and to secure the best services and support.



LOCAL PARTNERS

To compete effectively on the global energy market and to sustain local communities, it is important to source goods and services locally, without ever compromising on quality, delivery, timing or costs.

Our strict supplier selection and monitoring procedure ensures every supplier meets our business requirements. Moreover, our tendering and procurement procedures ensure local companies are treated equitably during the bid process.

Our goal is to create a solid network of local partners who comply with our stringent qualification procedures and add value to our client's assets.

COMMUNITY

We are committed to understanding the social and environmental impact of our activities, so as to achieve mutually beneficial coexistence with the communities in the countries where we operate.

Our strong local rooting consolidates our presence, with positive consequences both for business and for the local communities.

We conduct our activities in full respect of the cultural, religious and ethnic traditions of the local communities, with the aim of contributing to the improvement of the socio-economic conditions of the territory in which we operate.



A TASTE OF OUR LOCAL EXPERIENCES



MOZAMBIQUE - DEVELOPMENT THROUGH LOCAL PARTNERSHIP

In late 2013, ENHL and Bonatti were incorporated as the Local NewCo, "ENHL - Bonatti LDA". The scope of "ENHL - Bonatti LDA" is to become the leading Local Contractor for the Oil & Gas Industry in Mozambique. The NewCo provides a full-cycle range of services in the Oil & Gas and Power fields, and relies on strong cooperation with local firms to maximize the local content, combining Bonatti know-how with ENHL in-depth knowledge of the country. In 2015, the company was awarded the first pipeline contract by Sasol.

ALGERIA - WORKFORCE

With over 98% of our 4,000 employees in the country being local, and with our strong commitment to a highly strategic project promoting national economic growth, our Group may be said to be fully integrated in Algeria. Our Algerian personnel is supported by Corporate Social Responsibility initiatives that include several assistances.



The 57th President of Mexico, Enrique Peña Nieto, congratulates Ms. Luz Maria Damien, Head of Bonatti Engineering in Mexico, upon completion of the Los Ramones I Project.



MEXICO - COMMUNITY SUPPORT

We are strongly integrated in the country, with over 92% of local employees at all levels being Mexican. Moreover, our Mexican Branch and the local company Bonatti Mexico support local communities through corporate social responsibility initiatives. In the areas where we operate, like the Tamaulipas State, we support institutes such as orphanages (e.g. Ciudad Mier) and schools (e.g. Camargo) with donations and by restoring their facilities.

QHSE

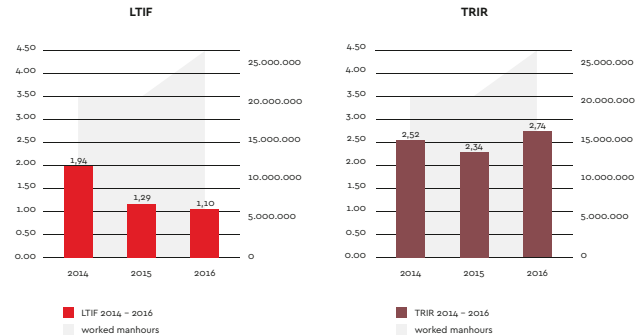
QHSE principles are essential when acting within a competitive market, and must be supported by an effective Quality, Health, Safety and Environment management system. We are committed to ensuring all our staff fully understands and applies these fundamental procedures.

Q/ Our primary aim is to satisfy our clients' needs, in order to meet their expectations with high levels of efficiency throughout the project lifecycle. Our goal is to achieve constant performance improvement in accordance with the current state-of-the-art requirements of the ISO 9000 regulations.

HSE/ Our mandatory goal is to execute projects to a high HSE standard. Continuous training ensures staff remains up-to-date with the latest HSE standards and regulations. Our HSE culture is communicated top-down, from top management to workers on site.

Our HSE Policy states:

ALL BONATTI EMPLOYEES AND THE EMPLOYEES OF OUR SUBCONTRACTORS ARE ENTITLED, AND INDEED HAVE THE RESPONSIBILITY TO REFUSE TO PERFORM WORK IF THEY FEEL THAT SUCH WORK IS UNSAFE OR POTENTIALLY HAZARDOUS.



LTIF = Number of LTI x 1,000,000 / Worked Manhours
 * Data comprehensive of Subcontractors man-hours

TRIR = Number of TRI x 1,000,000 / Worked Manhours
 * Data comprehensive of Subcontractors man-hours





ENGINEERING AND PROCUREMENT

We apply our engineering design skills to a wide range of works in the Oil & Gas sector, right across the engineering project lifecycle: from feasibility studies to commissioning and start up in the execution of EPC projects; from site assistance to operation & maintenance for general services; from detailed engineering design, including technical deliverables, material requisition, technical bid evaluation and supplier follow-up, to planned maintenance shut down and predictive maintenance engineering.

For us procurement is management of the overall supply chain: engineering, purchasing, expediting, logistic, construction works together in a integrated environment with a unique platform that allow priority management and traceability of the resources from the design and the material requisitions until the physical installation in site. Local purchasing and logistics are structured in all the countries in order to support the projects and capitalize the experience of the local markets.

ENGINEERING CAPACITY: 220,000 HOURS/YEAR



Our Engineering Centres are located in Fano and Marcallo (Italy).
Our Engineering is split into the following design departments:

- Process (PRO)
- Mechanical Equipment, Machinery and Packages (MAC)
- Health, Safety and Environment (HSE)
- Piping (TUB)
- Pipeline (PPL)
- Civil (CIV)
- Instrumentation, Automation and Telecommunication (SAT)
- Electrical (ELE)
- Project Engineering Management (PEM)

Each department manages its own spheres of competence, providing the following engineering services:

- Feasibility Studies and Basic Design
- Front End Engineering Design (FEED)
- Detailed Engineering Design
- Procurement Assistance (MR, TBE, supplier follow-up)
- Pre-commissioning, Commissioning and Start-Up procedures
- Operating manuals
- Site assistance

Our engineering design skills combine with the latest software tools for a wide range of work on EPC projects:

- Tri-phase separation (oil, gas and water)

- Crude oil dehydration and desalting
- Gas sweetening
- Water treatment
- Utilities plants
- Power generation
- Gas compression
- Oil pipeline pumping
- Multi-phase pumping
- Production activation (gas lift)
- Production improvement (water and gas injection)
- Gathering systems and Pipelines
- Buildings (control rooms, electrical substations, workshops and warehouses)

The most advanced technologies are employed with a view to keeping the standard of design high and executing projects in compliance with all international and local standards, as well as with the client's technical specifications and any contractual obligation.

The main strength of our Engineering Centres is their involvement in Bonatti Group EPC Projects, which enables our engineering staff to keep constantly up-to-date through "lessons learned" feedback from our site activities.

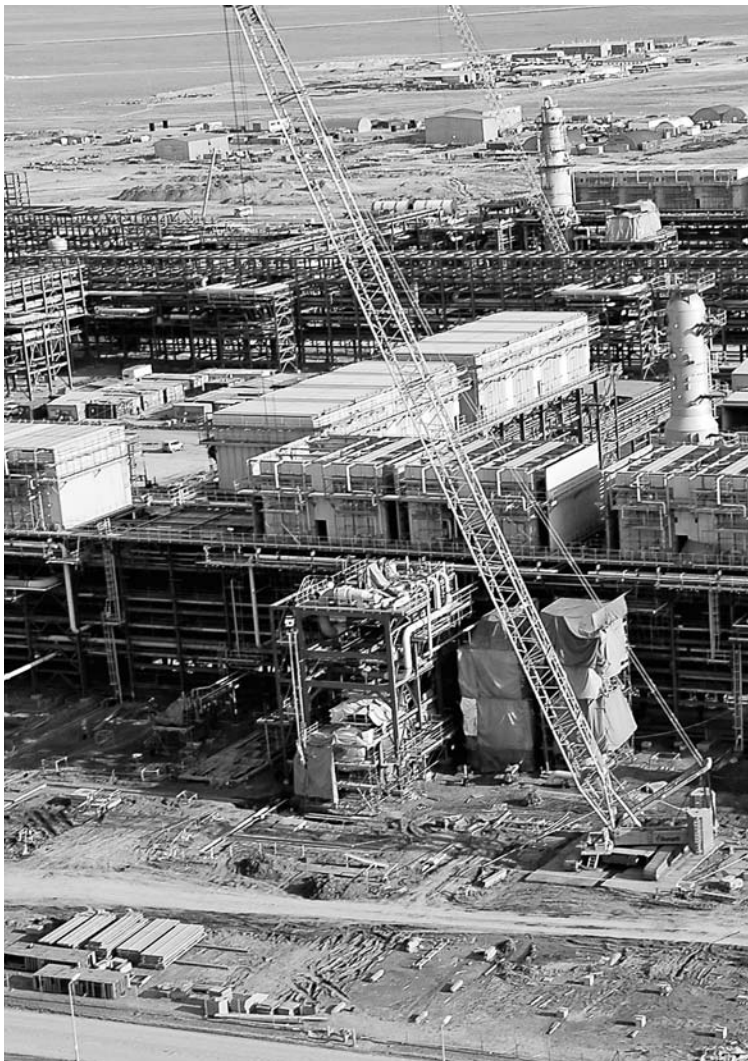
This is a significant advantage that only engineering structures that are fully integrated with EPC general contractors can benefit from.



CONSTRUCTABILITY

Constructability is the project management technique that allows us to analyze all project processes aiming to optimize construction sequences and practices. We identify interferences and possible schedule impacts before starting construction preventing errors, delays or cost overruns.

We integrate the construction knowledge in all project activities, starting from engineering and procurement up to commissioning. Our final goal is to achieve the overall project objectives in compliance with time, accuracy and HS&E requirements.



CONSTRUCTION

Through our wide-ranging experience, we have significantly improved our performance due to the acquisition of new technologies, the optimization of construction methodologies, and the extensive range of lessons learned.

A large fleet of construction equipment combined with a sizeable team of skilled personnel headed by experienced project teams qualify us as a strong and reliable partner in the following fields:

- Civil
- Mechanical
- Electrical, instrumentation and telecommunication
- Pre-commissioning and commissioning
- Start-up assistance

**ALRAR FIELD – SEPARATION AND
BOOSTING COMPRESSION PLANT,
ALGERIA**

Scope of work: EPC, commissioning and start-up.

Gas turbines installed: no.8 PGT 25

Civil works:

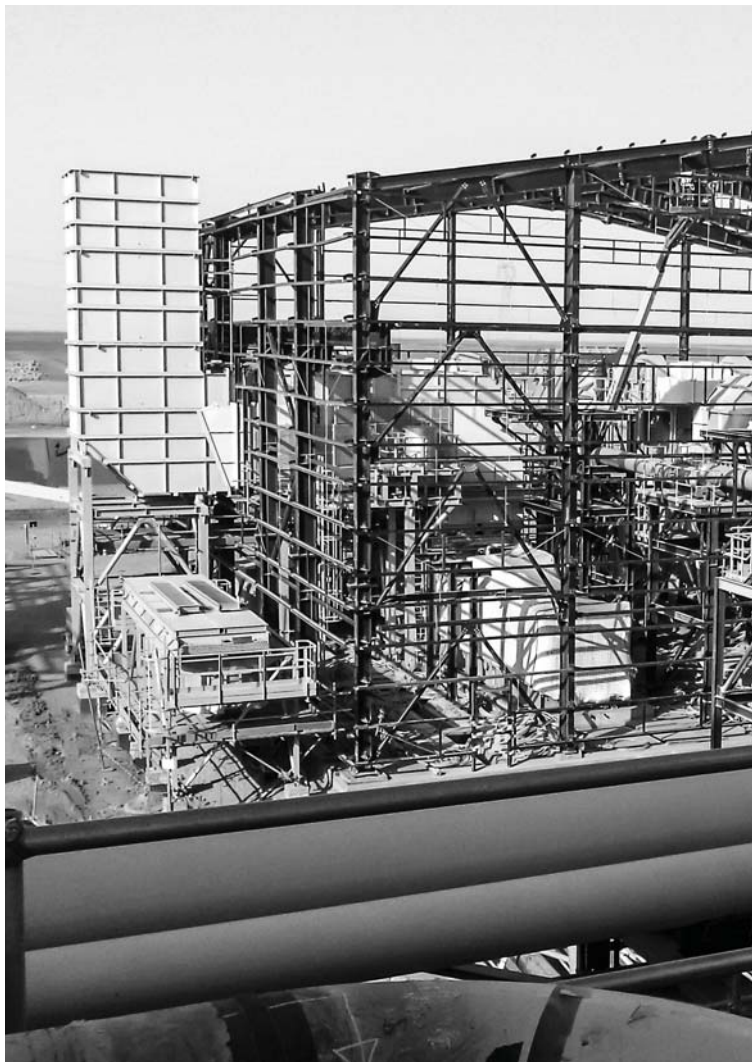
- Cutting 211,000 m³
- Filling 235,000 m³
- Concrete 21,500 m³

Mechanical works:

- Piping 113,500 id
- Steel structure 3,000 tonnes
- Equipment 5,900 tonnes



PERSONNEL AT PEAK: 2,500 PEOPLE
DIRECT MAN-HOURS: 4,200,000





CENTRO OLIO VAL D'AGRI, ITALY

Scope of work: EPC, plant debottlenecking.

Civil works: concrete 7,200 m³

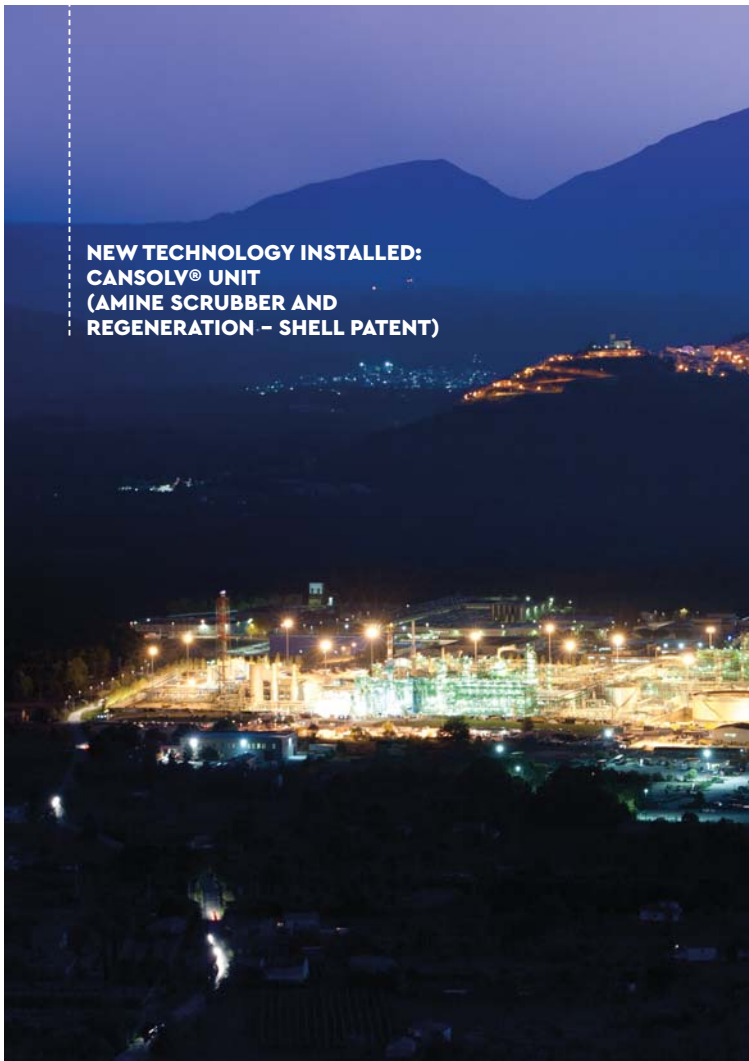
Mechanical works:

- Piping 3,500 tonnes
- Steel structure 2,200 tonnes
- Equipment 3,000 tonnes

ENGINEERING: 180,000 HOURS



**NEW TECHNOLOGY INSTALLED:
CANSOLV® UNIT
(AMINE SCRUBBER AND
REGENERATION – SHELL PATENT)**



**OURHOUD OIL FIELD – INCREASED
WATER HANDLING, ALGERIA**

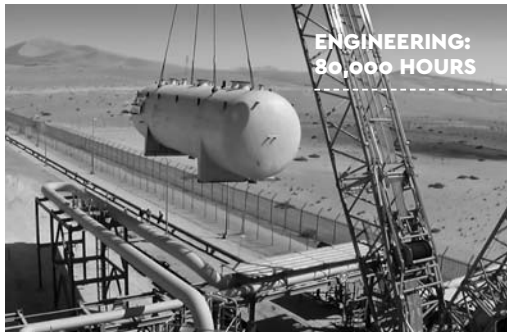
Scope of work: EPC and commissioning.

Civil works: concrete 1,250 m³

Mechanical works:

- Piping 73,000 id
- Steel structure 600 tonnes
- Equipment 1,500 tonnes
- Pipeline 8,550 m

Direct man-hours: 810,000



**ENGINEERING:
80,000 HOURS**

PIPING: 139,000 id



LOS RAMONES I - PHASE II, MEXICO

Scope of work: engineering, procurement, construction, commissioning and start-up of 2 compressor stations.

Civil works: concrete 7,000 m³

Mechanical works:

- Steel structure 400 tonnes
- Equipment 2,330 tonnes

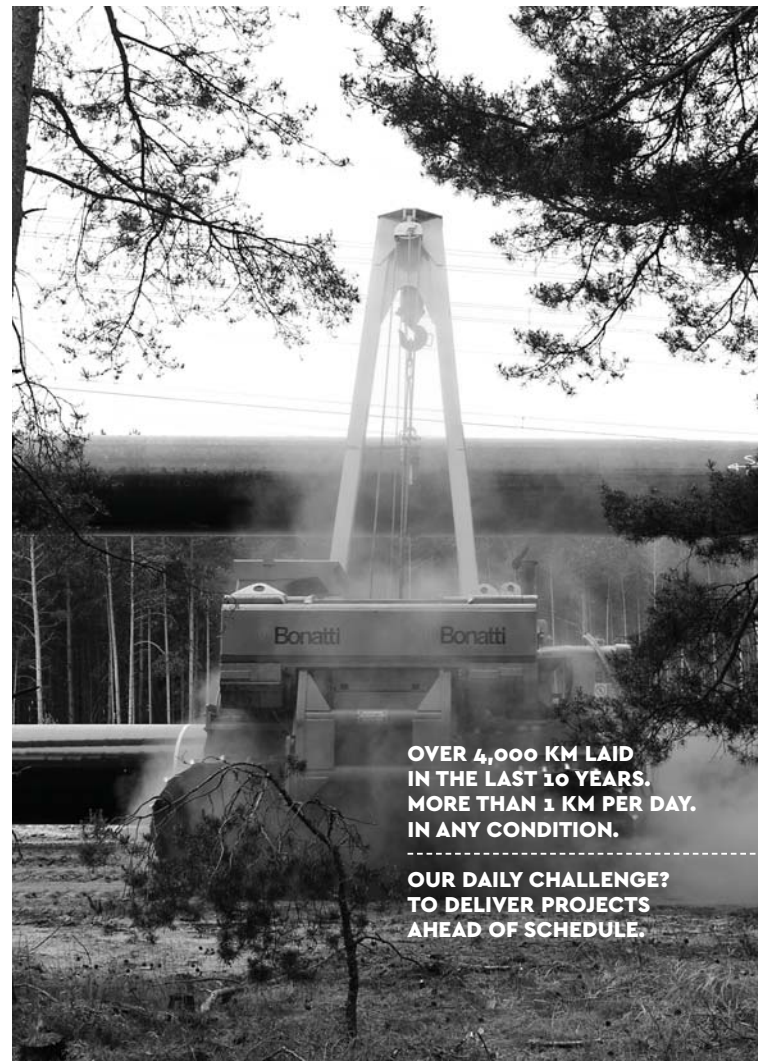
Man-hours: 1,344,000

PIPELINES

We rank among the largest international pipeline contractors, with a strong record of pipes laid around the world under the most difficult environmental and logistical conditions, such as deserts, mountains (up to 5,000 m), forests, jungles, swamps and frozen steppes.

The projects executed for the Oil & Gas industry include onshore pipelines and facilities projects, providing project management, engineering, procurement, construction, commissioning, operation, and maintenance services.

Our large, modern and specialised construction equipment fleet, which includes an in-house manufactured Pipe Mechanical/Electronic Welding System, allows us to execute every type of Oil & Gas pipeline, reliably, flexibly and quickly.



**OVER 4,000 KM LAID
IN THE LAST 10 YEARS.
MORE THAN 1 KM PER DAY.
IN ANY CONDITION.**

**OUR DAILY CHALLENGE?
TO DELIVER PROJECTS
AHEAD OF SCHEDULE.**



OUR MECHATRONIC WELDING SYSTEM

Laying over 4,000 kilometers of pipelines in 10 years deserved a deep experience in the execution of ambitious projects, trusting in professionals which are capable and passionate about their work and have developed cutting-edge equipment.

The passion of our people drives us constantly to look for solutions that provide to our clients the best performance in terms of timing and minimization of error percentage rate.

The latest mechatronic welding system ROB.E 10:01 is the

result of a process of research and study carried out in the field for over 25 years.

Designed to weld pipes of every thickness with a diameter above 10", our automated system has been refined in the construction sites to ensure the profitability of our clients.

The continuous development of the best available technology allows us to have a flexible system and maximum reliability.



TO DATE THE PEAK ACHIEVED IN WELDING PROCESSES IS REPRESENTED BY TWO PROJECTS:

• 'NEW KASHAGHAN TRUNKLINES SYSTEM PROJECT'

OUR PERFORMANCE OF 30 JOINTS PER DAY WITH PIPE MATERIAL "API 5L X65 15.9 MM + CLAD INCONEL 625 3.0 MM (ISO GRADE CRA CLAD CS PIPELINE 3183 L415)" CONTRIBUTED SIGNIFICANTLY TO THE DELIVERY OF WORKS WITH 3 MONTHS AHEAD OF SCHEDULE.

• 'EL ORO - MAZATLAN PIPELINE'

WE REACHED A PEAK OF 302 JOINTS PER DAY WITH A FINAL REPAIR PERCENTAGE RATE OF 0.6% DELIVERING WORKS 6 MONTHS AHEAD OF SCHEDULE.

**TRANS ADRIATIC PIPELINE (TAP),
GREECE**

Scope of work: EPC pipeline.

- Pipe size: 48"
- Length: 365 km
- Notes: 14 GBVs block valve stations and 1 Pigging Station in GCS01 are included in the scope of work



**THE TRANS ADRIATIC PIPELINE (TAP) HAS A
KEY ROLE TO PLAY IN SECURING THE
LONG-TERM DIVERSITY AND SECURITY OF
EUROPE'S ENERGY SUPPLY**





**TAP WILL CONNECT WESTERN
AND SOUTH EASTERN EUROPE TO
ABUNDANT NEW GAS SOURCES IN
THE CASPIAN BASIN AND BEYOND**



**ROMPCO LOOP LINE 2 PROJECT,
MOZAMBIQUE**

Scope of work: pipeline construction.

- Pipe size: 26"
- Total length: 127 km



PROJECT EXECUTED BY: ENHL-BONATTI
HOURS WORKED: MORE THAN 1 MILLION
PERSONNEL AT PEAK: 600 PEOPLE
MOZAMBIKAN WORKFORCE: 86,7%



**TIMING: PROJECT COMPLETED 3 MONTHS
AHEAD OF SCHEDULE**

HSE PERFORMANCE
PIPE TRANSPORTATION: MORE THAN 1.5 MILLION KM
ON PUBLIC ROADS WITHOUT ACCIDENTS
LOST TIME INJURY FREQUENCY RATE: 0

**NEW KASHAGAN TRUNKLINES SYSTEM
PROJECT, KAZAKHSTAN**

Scope of work: replacement of oil and gas pipelines.

- Pipe size: 28"
- Total length: 45,2 km
- Onshore stretch: 26,1 km (conventional method)



**STRETCHES LAID WITH
PUSH AND PULL METHOD:**

- SWAMP 4,1 KM
- SHALLOW WATER 15 KM



PIPE SIZE: 28"

**PIPE MATERIAL: API 5L X65 15.9 MM + CLAD INCONEL
625 3,0 MM (ISO GRADE CRA CLAD CS PIPELINE
3183 L415)**

**NO. OF JOINTS EXECUTED WITH BNT AUTOMATIC
WELDING SYSTEM ROB.E 10:01: 1,288**

**PRODUCTION, BEST PERFORMANCE:
30 JOINTS PER DAY**

**ACCEPTANCE CRITERIA : VERY STRINGENT -
MAXIMUM POROSITY ACCEPTANCE 1 MM DIAMETER
(AS A NUCLEAR POWER PLANT)**



**TIMING: PROJECT COMPLETED 3 MONTHS
AHEAD OF SCHEDULE**



EL ORO - MAZATLAN PIPELINE, MEXICO

Scope of work: EPC pipeline.

- Pipe size: 24"
- Total length: 430 km
- Crossings: 400

**UP TO 302 JOINTS PER DAY
WITH AN AVERAGE FINAL
REPAIR PERCENTAGE RATE OF 0.6%**

**TIMING: PROJECT COMPLETED
6 MONTHS AHEAD OF SCHEDULE**



**LOS RAMONES – FRONTERA PIPELINE,
MEXICO**

Scope of work: EPC pipeline.

- Pipe size: 48"
- Total length: 117 km
- Notes: includes two major metering and filtering facilities



TIMING:
**DELIVERED 3 MONTHS
AHEAD OF SCHEDULE**



EL MERK PROJECT, ALGERIA

Scope of work: EPC pipeline.

- Pipe size: various diameters
- Total length: 390 km
- Notes: a 160-km service road was built parallel to the pipelines to allow transportation of workers and materials



TIMING:
DELIVERED 5 MONTHS
AHEAD OF SCHEDULE

AUTOMATION & ELECTRICAL SOLUTIONS

Our Group is a Main Automation Contractor (MAC) for electrical, instrumentation, and automation equipment.

In particular, our subsidiary Carlo Gavazzi Impianti, headquartered in the Milan industrial area, is an International EPC Contractor in power, electrical, instrumentation, control and MEP projects, capable of delivering projects on an EPC basis.

Its competences allow us to operate as a MAC in the following sectors:

- Oil & Gas
- Infrastructure
- Petrochemical
- Power transmission
- Conventional power generation
- Renewable energy power plants

PRIMARY AND SECONDARY CABLES: 5,800 KM

BOLASHAK ONSHORE PROCESSING FACILITY (KASHAGAN PROJECT), KAZAKHSTAN

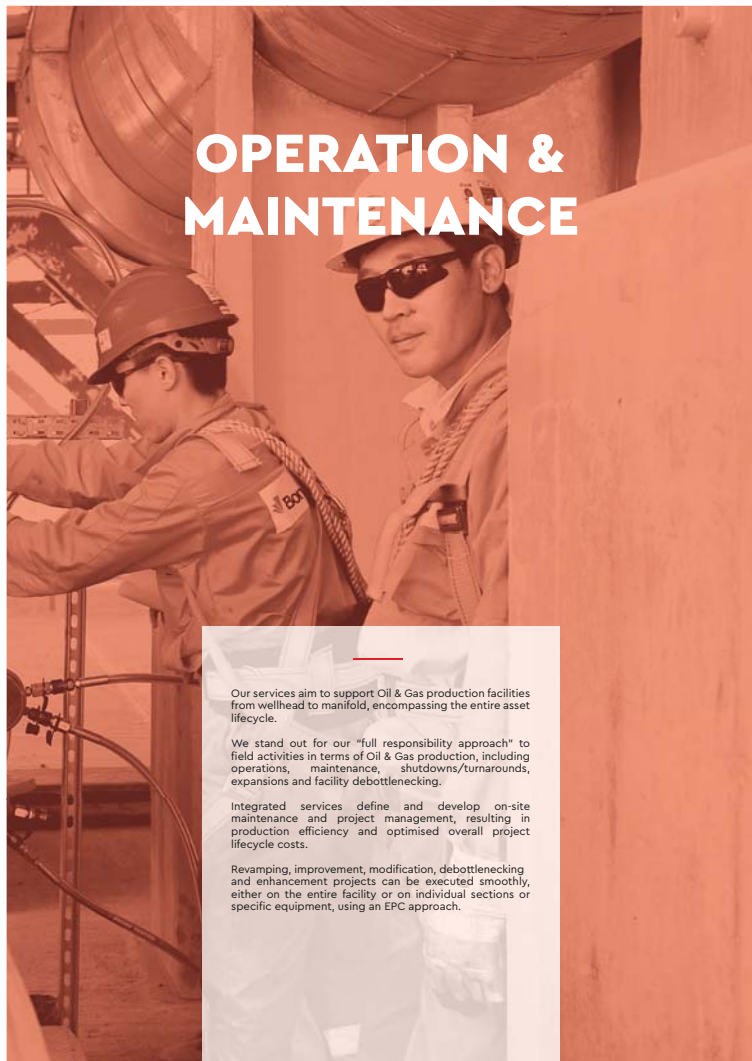
Scope of work: electrical, instrumentation and telecommunication installation for oil, gas, sulphur, slug catcher and flaring plants and systems.

- Total man-hours: 12,000,000
- Staff at peak: 2,650
- Electrical buildings: 13 (9 substations + 4 satellite buildings)
- Instruments: 12,000 (calibration on 4,000 + items)
- Junction boxes: 2,700
- Electrical cabinets: 220
- Wiring connections: over 380,000





OPERATION & MAINTENANCE



Our services aim to support Oil & Gas production facilities from wellhead to manifold, encompassing the entire asset lifecycle.

We stand out for our "full responsibility approach" to field activities in terms of Oil & Gas production, including operations, maintenance, shutdowns/turnarounds, expansions and facility debottlenecking.

Integrated services define and develop on-site maintenance and project management, resulting in production efficiency and optimised overall project lifecycle costs.

Revamping, improvement, modification, debottlenecking and enhancement projects can be executed smoothly, either on the entire facility or on individual sections or specific equipment, using an EPC approach.

WEST QURNA 2 POWER PLANT, IRAQ

Scope of work: commissioning, start-up assistance and operation & maintenance services.

No. OF WELLS: 2,579



MAINTENANCE & LOGISTIC SERVICES, ROMANIA

Scope of work: multi-disciplinary maintenance and logistics tasks on upstream plants.

- Area: Targoviste and Bolintin Districts
- No. of oil treatment centres: 8
- Gas treatment centres: 2
- Compression stations: 7
- Tank farms: 11
- Water and steam injection plants: 5
- Electric power lines: 700 km
- No. of technicians: 450

**FULL HANDOVER
OF THE PLANT**



**MELLITAH AREA, LIBYA: COMPLEX AND
GAS COMPRESSOR STATION**

Scope of work: general maintenance services
and assistance with operations.



BONATTI LOGISTIC BASE

AREA: 15,000 SQMT
CAPACITY: 1,000 PEOPLE
OFFICES: 1,500 SQMT
WORKSHOP: 500 SQMT
WAREHOUSE: 1,000 SQMT



WELL PRODUCTION SERVICES

We offer a wide range of innovative production services for remote or marginal wells that can shift clients' costs from CAPEX to OPEX, optimising financial resources and sharing costs and responsibilities.

The main services we provides are:

- **Multiphase production**
- **Water injection**
- **Gas storage and Gas Boosting**
- **Salt dilution and Desalting**
- **Artificial lifting**

We control and monitor all facilities in real time by means of satellite remote control (no staff presence).

We ensure secure web-server access anytime, anywhere, 24/7.

- **Zero environmental impact (no gas flaring)**
- **Capacity to operate up to a 95/100% gas-oil ratio, both with progressive cavity pumps and twin screw technology**

**OUR MULTIPHASE PUMPS
ARE CURRENTLY IN OPERATION
IN THE FOLLOWING AREAS:**

- **HASSI MESSAOUD**
- **BERKINE**
- **MENZEL LEDJMET EAST (MLE)**
- **BRN – ROM**







WE FACE CHALLENGES.
WITHOUT COMPROMISE.
NOTHING ELSE MATTERS.

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