



Plants



## PLANTS

Efficiently managing complexity both in EPC and stand-alone construction projects. We have full control of the entire project lifecycle in direct execution throughout all phases.

Our total-approach model allows to control and integrate each phase of the execution of the project. Managing every detail at the construction site – from logistics to start-up, workforce planning and smart construction techniques – ensures that our clients' expectations are fully met.

Through our wide-ranging experience, we have significantly improved our performance in plant construction for energy industry, 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 Construction
- Mechanical Erection
- Electrical, Instrumentation and Telecommunication Works
- Pre-commissioning
- Commissioning
- Start-up Assistance





## ENGINEERING: FOCUS ON CONSTRUCTION

Our "total-approach" model allows us to control and integrate each phase of the execution of the project. It all revolves around engineering, where constructability and operability drive the project lifecycle.

Our design competences cover:

- pipeline design
- gathering systems,
- oil and gas treatments
- compression and pumping stations,
- power stations
- water treatment facilities
- biogas plants
- green hydrogen production systems
- CCUS systems
- HV electrical transmission systems

Combined with project management, this approach provides solutions in delivering the most complex projects, reduces schedule delays and cost overruns, while complying with safety and quality requirements.

Managing every detail at the construction site – from logistics to commissioning and start-up, workforce planning and smart construction techniques – ensures that our clients' expectations are fully met.

### **3** engineering centres:

*Fano, Italy*

*Milano, Italy*

*San Miguel de Allende, Mexico*

**700,000** hours/year  
engineering capacity

*in the last 5 years:*

**25** EPC projects executed

**30** compressors installed

**3,800** km of pipelines laid







## ALRAR, ALGERIA GAS SEPARATION AND BOOSTING

### *EPC, commissioning and start-up for SONATRACH*

Alrar is a gas and oil field operated by Sonatrach since 1987. The Separation and Boosting Compression Plant is built in order to maintain the production and extend the lifetime of the field.

The scope of work includes civil, mechanical and E&I works for:

- Slug catcher
- Low pressure compression (3+1 PGT25 gas compressors)
- High pressure compression (3+1 PGT25 gas compressors)
- Liquid handling facilities
- Produced water handling and treatment
- All required utilities, as the plant will be stand-alone

### Key Features:

#### Civil works:

- Concrete: 25,000 m<sup>3</sup>
- Excavation: 434,000 m<sup>3</sup>

#### Mechanical works:

- Piping: 6,000
- Steel Structures: 3,000 tons
- Equipment: 5,800 tons

#### Electrical and instrumentation works:

- Cables: 1,500 km
- Personnel at peak: 2,500





## MLN, ALGERIA GAS CAPACITY INCREASE

*EPC (Phase-4 Development Project ) for PERTAMINA ALGERIA EP*

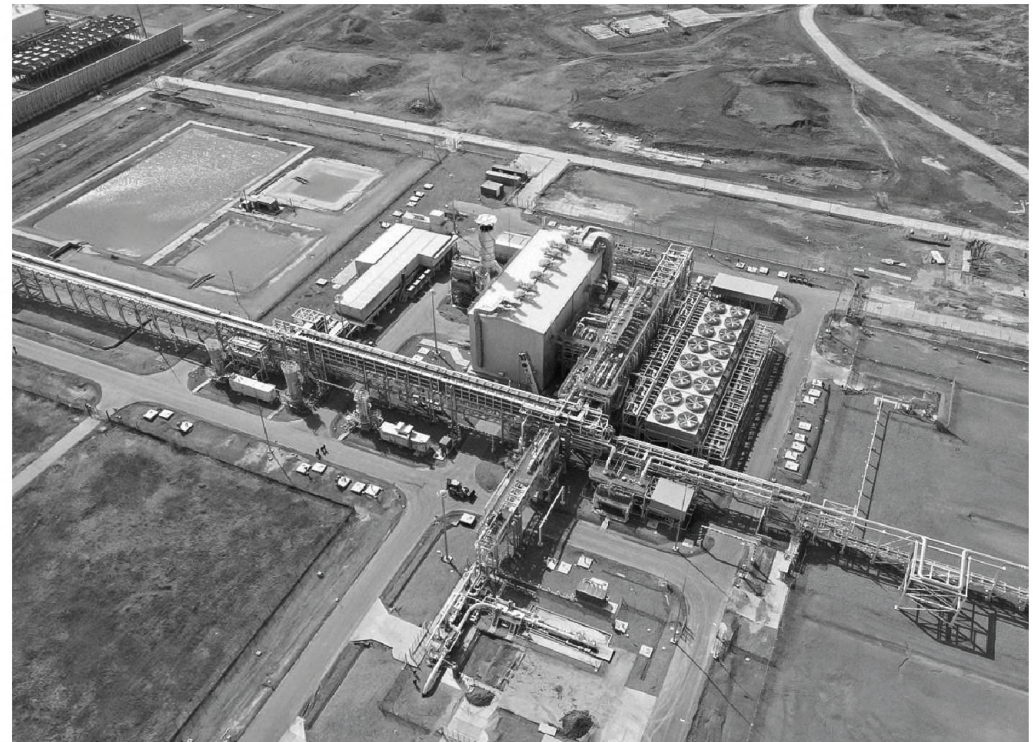
- Being located in an operational field, Bonatti performed the activities in particularly challenging conditions such as brownfield and live plant, avoiding disturbances to the ongoing production
- The aim of the GCIP Project is the development and upgrading of the existing facility for future expected gas treatment and oil production at 2020 by installation of the new 2 × 37,5 MMscfd compressors, a dehydration train and their related systems

## KARACHAGANAK, KAZAKHSTAN 4TH INJECTION COMPRESSOR

*EPC for KARACHAGANAK PETROLEUM OPERATING B.V. (KPO)*

- Fast-track project for the installation of a GE MS5002D gas turbine in Karachaganak Field, in the Uralsk Region where environment is characterized by extreme temperatures that can go down to -30° C
- The project definitely represents a great challenge due to technical and design difficulties and its remote location.

The requested construction schedule was particularly challenging







## HEILBRONN AND ALTBACH, GERMANY COMBINED CYCLE COGENERATION PLANTS

*EPC for EnBW (Public Utility of Baden Wurttemberg Land)*

- The new sister plants are part of the fuel switch program according to which current coal-fired power plants will be replaced by natural gas-fired power plants
- Each of the two plants will produce electricity for over 650 MW and, in parallel, hot water for district heating of the related urban agglomerations
- The two plants are already planned for a future transformation in order to be powered by a mixture containing hydrogen to an increasing extent up to 100% in 2030

## WAFA, LIBYA INLET GAS COMPRESSOR STATION

*EPC (civil, mechanical and E&I works) for MELLITAH OIL AND GAS B.V. (ENI)*

Overall power of the gas compressor station: 94MW

The project, made up of 2 parallel work streams is aimed at maintaining oil and gas production of the field

- Installation of 4 GE frame 5 gas turbines which boost the gas arriving from the wells to the existing treatment plant
- Upgrade of the existing gathering system
- Installation of a new control system for the additional facilities and integration with the existing one







**WATCH**  
THE VIDEO

## RAMONES AND FRONTERA, MEXICO COMPRESSOR STATIONS

*EPC for GASODUCTO DE NORESTE (PEMEX – IENOVA)*

Frontera Compressor Station (Ciudad Camargo, Tamaulipas) and Los Ramones Compressor Station (Los Ramones, Nuevo Leon): overall power 90MW.

- 6 Solar Titan 130 turbo compressors
- Total man/hours: 2,000,000
- Zero incidents
- 50% time reduction for start-up of compressors
- Project executed in 10 months

### LOS RAMONES COMPRESSOR STATION

- Buildings (main control building, power generation building, auxiliary building, battery rooms, etc...): 8
- Welded inches: 65,000
- Km of E&I cables pulled: 200
- Metering and regulating skids: 3
- Solar Titan 130 turbocompressors: 2
- Capstone microturbine 800 KW: 2

### FRONTERA COMPRESSOR STATION

- Buildings (main control building, power generation building, auxiliary building, battery rooms, etc...): 8
- Welded inches: 63,000
- Km of E&I cables pulled: 280
- Metering and regulating skids: 1
- Solar Titan 130 turbocompressors: 4
- Capstone microturbine 800 KW: 3





## WEST NILE DELTA, EGYPT PLANT DEVELOPMENT

*Mechanical erection, electro-instrumental works, telecommunications, fire-fighting systems and commissioning activities for BP*

Cable trays: 125 km  
Cables: 1,700 km  
Connection boxes: 1,500  
Structures: 800 tons  
Piping: 20 km  
Piping spools: 9,800

- West Nile Delta Project is a major gas development located just off the north coast of Egypt
- 100% of processed gas will be conveyed into national grid; the expected gas production is 1.2 billion cubic feet per day (+25% of Egypt's total production)

## CORINTH, GREECE NEW NAPHTHA COMPLEX IN MOH REFINERY

*Construction for MOTOR OIL HELLAS SA*

- Piping Prefabrication: 230,806 DI
- Support: 289 tons
- Piping Painting: 45,259 sqm
- Steel Structures Erection: 5,277 tons
- Equipment Installation: 265 N. Items
- Piping Erection: 85,114 DI

Additional works:

- Steel Structures Erection in Greenfield area
- Steel Structures Erection in Brownfield area

- Activities performed in particularly challenging conditions such as brownfield and live plant, avoiding disturbances to the ongoing production







## ZOHR, EGYPT FAST-TRACK DEVELOPMENT

*E&I works in onshore area PETROBEL*

People: 1,000  
Egyptian Workers: 99%  
Cables: 1,620 km  
Instruments: 2,389  
Lighting system equipments: 2,124

- The Zohr gas field is an offshore natural gas field located in the Egyptian sector of the Mediterranean Sea
- The field is estimated to lie in an area of 100 square kilometers (39 sq mi) and it is located at a depth of 1,450 meters (4,760 ft)
- The field was discovered in 2015 by the Italian energy company Eni and is the largest ever natural gas find in the Mediterranean Sea
- The total gas in place of the Zohr gas field is estimated around 850 billion cubic meters

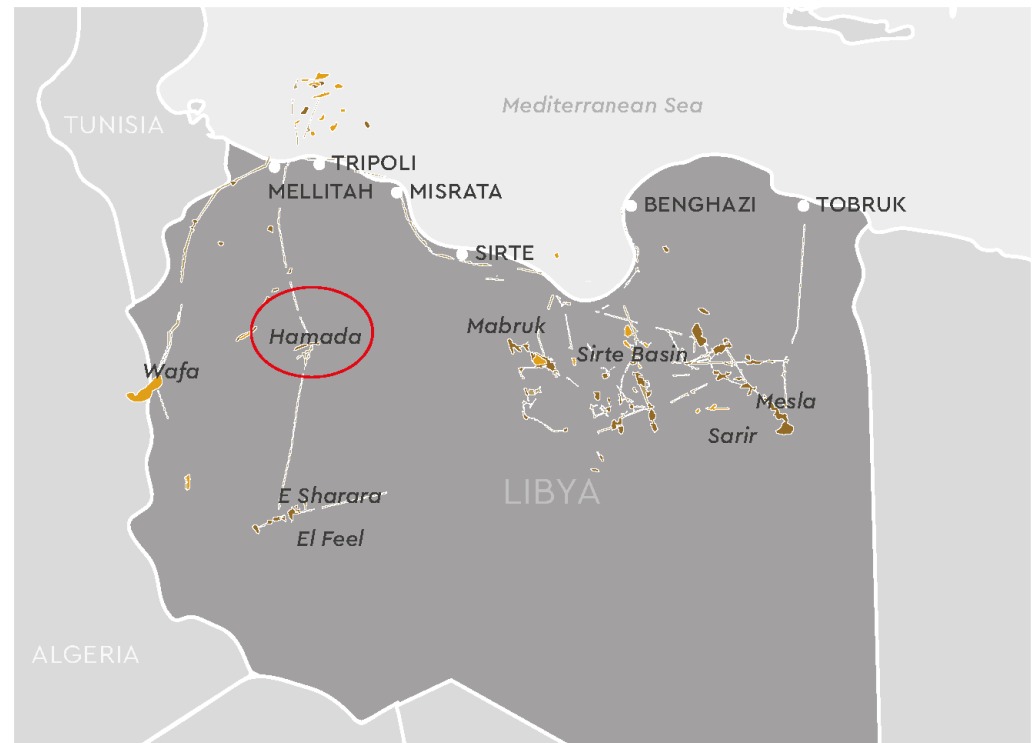
## HAMADA BASIN, LIBYA NORTH HAMADA (AREA 47) DEVELOPMENT

*EPC of an oil gathering system for NAFUSAH*

Nafusah (100% owned by NOC Libya) is developing the Hamada Region, located 200 km south of Tripoli.

The new gathering system links to the early production facility:

- 9 oil wells
- 2 water wells







## HASSI R'MEL, ALGERIA GR4 COMPRESSOR STATION

*EPC for SONATRACH*

Hassi R'Mel is a gas hub in Algeria on which all the pipelines collecting gas produced in the Southern fields converge and from which gas pipelines carry gas to the north to be exported.

Civil, mechanical and E&I works for:

- 1 metering station
- 4 gas compressor trains (25MW each)
- Plant utilities, control room and substation

Main data:

- Civil Works: Concrete 9,000 m<sup>3</sup>
- Piping: 2,000 tons
- Steel Structures: 1,500 tons
- Cables: 510 km of in rock excavation





## TERMINI IMERESE (SICILY), ITALY «ETTORE MAJORANA» POWER PLANT

*Multidisciplinary EPC project related to supply and erection of the balance of plant (mechanical-electrical-instrumental and automation activity) and to the installation of the two 150 MWe open cycle turbines for ENEL*

The project has the aim of supporting the safety of the Italian distribution system and the supply of electricity to cover the load peaks in each area of the Italian grid. The plant is located on the north-western coast of Sicily about 35 km from Palermo.

Main features:

- The intervention assigned to Bonatti and its subsidiary Carlo Gavazzi Impianti involves the replacement of 2 of the 4 existing open-cycle thermoelectric units with 2 new turbogas units designed with the most advanced criteria of efficiency and environmental compatibility, in full compliance with the sector's "Best Available Techniques Reference document"
- This "fast-track" project merges the multidisciplinary specialist skills of Bonatti in construction and mechanical assembly with the engineering and electro-instrumental competencies of Carlo Gavazzi Impianti
- The commitment to involve local companies and workers is a priority of the project

## VENICE AREA, ITALY «PALLADIO» POWER PLANT

*Mechanical erection works (CCGT installation) for ENEL*

In the framework of Capacity Strategy Project, Enel is carrying out a modernization of Italian power plants, including new OCGTs/CCGTs, to be installed in existing sites. The project involves the "Palladio" Power Plant (800 MW CCGT), located in Fusina (municipality of Venice).

Main activities:

- Mechanical erection of the new CCGT cycle unit 7 (equipped with a Gas Turbine GT36-S5)
- Structure and pipe systems
- Material management
- Specialized lifting equipment





[www.bonatti.it](http://www.bonatti.it)