

TMPnews

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Message from the Managing Director - 2018 results and forecast for 2019



For our Pumps Business, 2018 was a year characterized by a stagnation of our main markets of interest, both at national and international level.

Such stagnation, started a few years ago, has led to the reduction of market demand, which in turn has led to production overcapacity and successively price reduction. In order to try and counteract this trend, our company has committed itself to consolidating its reference markets and seeking new ones. It also has tenaciously followed a cost reduction strategy and implemented organizational changes aimed at making the company system more suitable to the reality it lives in and to the new challenges it faces. This path, which has now been traced for some time, has led us to maintaining our market share, even in the present unfavorable context. Contrarily, our Compressors Business, for both bare-shaft products and packages, has continued its growth trend.



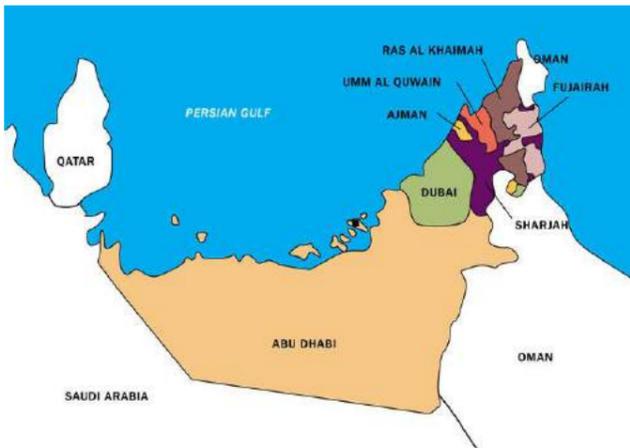
During 2018, product improvements were made and new technologies were developed to meet the demands of an evolving market. The institutions of the industrial plant sector foresee a recovery of investments already from 2019. Personally, I think it is difficult to make forecasts for the near future; it will come down to how the world will rebalance itself from a geopolitical point of view and to how fundamental variables such as customs duties and fossil fuel energy policies will evolve. The general picture is still confused, but one thing is certain: we will be a protagonist because our on-going reorganization process will allow us to seize the opportunities any sign of recovery might bring.

Edoardo Garibotti

Termomeccanica further asserts itself as "system integrator" with a new pump contract for the UAE's Mandous underground oil storage terminal project

After the recent acquisition of strategic contracts in the UAE for the Umm Lulu, Umm Shaif, Sarb and Upper Zakum oil fields, Termomeccanica Pompe (TMP) further strengthens its position as a "system integrator" of customized pumping units for the Oil & Gas sector in the area. In fact, last October, the company signed a contract for the supply of sixteen Main Oil Line pump packages for the Mandous Project (Fujairah – UAE).

This project is particularly strategic, not only for the end user - Abu Dhabi National Oil Company (ADNOC) but also for the Emirate itself as it should allow Fujairah to establish itself as the primary oil depot and commercial center of the area upon its completion in 2022.



In fact, Mandous, with a capacity of 42 million barrels, will be the largest underground crude oil storage structure in the world. Three types of oil will be stored in three different caves, each with a capacity of 14 million barrels: one coming from Murban, via an existing onshore piping system, and the remaining two coming from Das and Upper Zakum offshore fields via tankers.

Termomeccanica Pompe acquired this contract thanks to its experience in the Oil & Gas market as a pump supplier able to supply and test not only centrifugal pumps but also the related automation and control systems.

This contract also marks the beginning of the collaboration with one of the largest Korean EPC contractors, SK Engineering and Construction, a world leader in both civil construction and Oil & Gas plants. TMP's scope of supply includes:

- sixteen main pumps (BB1-type) of the plant, designed according to API610 and DEP Shell standards, performing the loading/ unloading of crude oil;
- the respective sixteen 2MW electric motors working at variable speed to supply the quantity of crude oil needed by the customer, with their sixteen VFDs and sixteen transformers with input voltage to the primary winding of 33 kV;
- the plan 53B type auxiliary systems with forced air draft, machine monitoring systems (MMS), machine control panels (UCP) and "master" control panels (MF-UCP).

Both the customer and the end user will have the possibility to control the job's production progress as well as to attend the functional tests of the complete job trains ("Complete Unit Test") at the renewed Termomeccanica Test Center.



Main Oil line API610 BB1-type pump

Service Activities Focus on Supervisor training

The Termomeccanica Pompe Group has always invested in human resources development, with a special focus on training: every year, courses are held on different topics with the aim to improve employees' technical as well as transversal skills.

In this regard, an English language training project was launched at the beginning of the year to increase the abilities of 23 resources engaged in Global Service activities, both in Italy and abroad.

The objective of the project is in fact to further enhance the figure of the Maintenance Technician, also referred to as Supervisor, by completing this mechanical specialist background with foreign language related skills and allow a more effective communication with clients during missions abroad.

The intensive three-month training program consists in two activities:

- access to an interactive platform designed for users to practice talking;
- in-person group lessons with a British School certified native English teacher.

Due to the on-site nature of the activities of the resources following the training, the program is being held in different locations of the Italian territory (La Spezia, Pisa and Voghera) and, in some cases, through the use of a Skype connection.

HR has planned a monthly monitoring as well as a final review of this new mixed training experience for the company, i.e. a training associating e-learning to traditional in-person teaching.

Termomeccanica Pompe's Service Division distinguishes itself again in the nuclear sector with the supply of high-tech pumps

In December 2016, within the context of its nuclear power plants modernization project, the Ukrainian state-owned "National Nuclear Energy Generating Company - Energoatom" awarded a contract of approximately 6 million euros to Termomeccanica Pompe's Service Division. More specifically, the contract is for the Yuzhnoukrainsk nuclear power plant (SUNPP) and regards the supply of five pull out vertical pumps with impeller blade pitch control (TMP model 156 C1PPARS 95) with relative electric motors and soft-starters.



Yuzhnoukrainsk nuclear plant

Plant reference data

The Yuzhnoukrainsk plant is located near the city bearing the same name in the province of Mykolaiv, at about 350 kilometers south of the capital Kiev. It is equipped with three VVER-1000 pressurized water reactors and has a net power generating a capacity of 2,850 megawatts (MW). Currently, it is the second largest of the five nuclear power plants of the country. TMP's supply is part of a broad project called "Modernization of the Water Circulation Service for SOUTH-UKRAINE NPP17".

The aim of such project is to reduce the average temperature of Lake Tashik, which reaches 40°C during summer time, causing limitations in the plant power production.

It is estimated that production will increase by around 700 million kWh per year – without modification of the power generation capacity of the plant (source: <http://nfr.energoatom.kiev.ua/en/investments.php>).

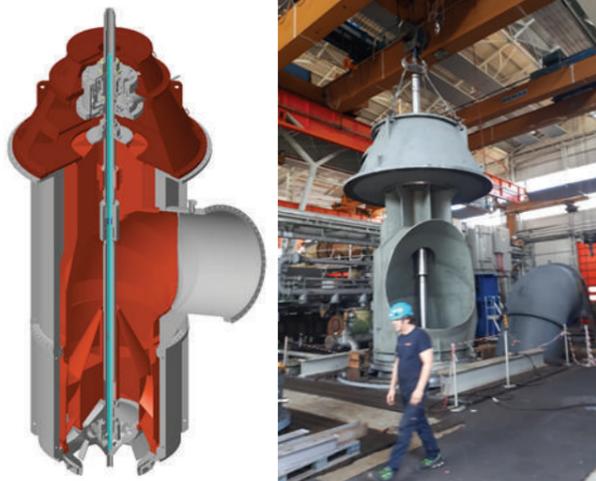
This modernization of the plant involves the use of 5 pumps (supplied by Termomeccanica) and corresponding ponds.

The water pumped from Lake Tashik to cool units 1 and 3 of the plant will no longer be re-introduced directly into the lake. Instead, it will be sprayed, thanks the new pumps, at a height of about 20m to be cooled and collected into the ponds before being re-introduced into the lake and re-used again to cool the power plant's production units.

Pumps of exceptional size and technical complexity

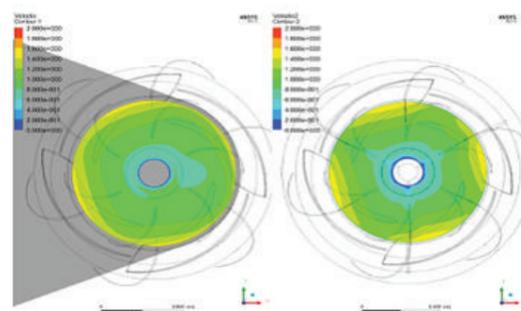
The project's pumps contract was entrusted to Termomeccanica Pompe whose century of experience in the design and supply of engineered pumps and their related systems allows to meet the most stringent customers' needs.

The TMP pumps will work at variable flow rates ranging from a minimum of 49,320 m³/h to a maximum of 50,400 m³/h, with respective heads of 24.8m and 17.7m. The variation between these two working conditions will be effected by the actuation of a control system of the impeller blades mounted on the pumps and operated by a control panel.



TMP 156 C1PPARS 95 pump– 3D simulation and actual pump under test at TMP' test center

The pump hydraulics, specifically designed for this project by Termomeccanica Pompe's R&D Department, has ensured the reaching (and even exceeding) of the contractual operating parameters, with a maximum efficiency of 87% that the customer was able to witness during the tests carried out at TMP's La Spezia Test Center, one of the largest and best equipped in Europe.



Hydraulics calculations made by TMP's R&D's Department

The pumps use a water-cooled electric motor of a rated power of 4.3 MW and are designed with a fixed stator part, installed in a dry pit, and a removable rotor part. In fact, due to the performance required in terms of flow, the pump weighs almost 100 tons while the removable part weighs 50 tons, consequently allowing an easier maintenance of the wear parts.

An example of successful integrated logistics Integrated logistics has played a predominant part in the project. Considering the size and weight of the pumps, Termomeccanica has involved leading logistics companies in the planning of material flows from start (at suppliers' facilities) to finish (delivery of the products to the customer).

More specifically, upon the completion of the design activities, the various pump parts were assigned to sub-suppliers, carefully chosen amongst Termomeccanica's qualified base and equipped with the latest generation CNC machines, thus able to guarantee the tolerances required by the "removability" of the pump. To make the supply chain more efficient, only one stator part kit was brought to Termomeccanica's La Spezia plant: the one needed for the functional test. The other 4 kits were sent directly to the customer by suppliers, obviously after the performance of due checks by Termomeccanica personnel.



Loading on truck of pump's stator part kit for direct shipment from TMP's sub supplier to customer

On the other hand, the five removable parts kits were assembled at TMP's La Spezia workshop as the assembly activities involved required the company's in-house expert know-how.

Once the first pump was completed, its functional test was carried out in the presence of the customer to check contractual parameters and, in particular, the mechanical operation of the pump and the impeller's blades rotation system.

Considering the importance of the supply, a time-lapse video of the assembly and test of the pump was made at Termomeccanica's La Spezia plant, a video available on Youtube at the link <https://www.youtube.com/watch?v=1fBRDZWlbt8>

Upon test completion and process validation of the first unit, its shipment was organized and the company went on with the assembly and successive shipment of the next 4 units.

To date, the parts of the 5 pumps are stored at Yuzhnoukrainsk nuclear power plant's central warehouse, waiting for the completion of the pumping station and "spray ponds".

The installation of the first 2 pumps is scheduled for the summer of 2019.

Our mission
To contribute to the success of our customers through our experience and know-how. We pursue this goal giving the utmost consideration to the hard work and commitment of both employees and suppliers, respecting the environment and complying with the expectations of our shareholders.

We think outside the box for you

Chose a unique partner for your unique needs

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