



Termomeccanica Industrial Process


Termomeccanica Group



Company Profile

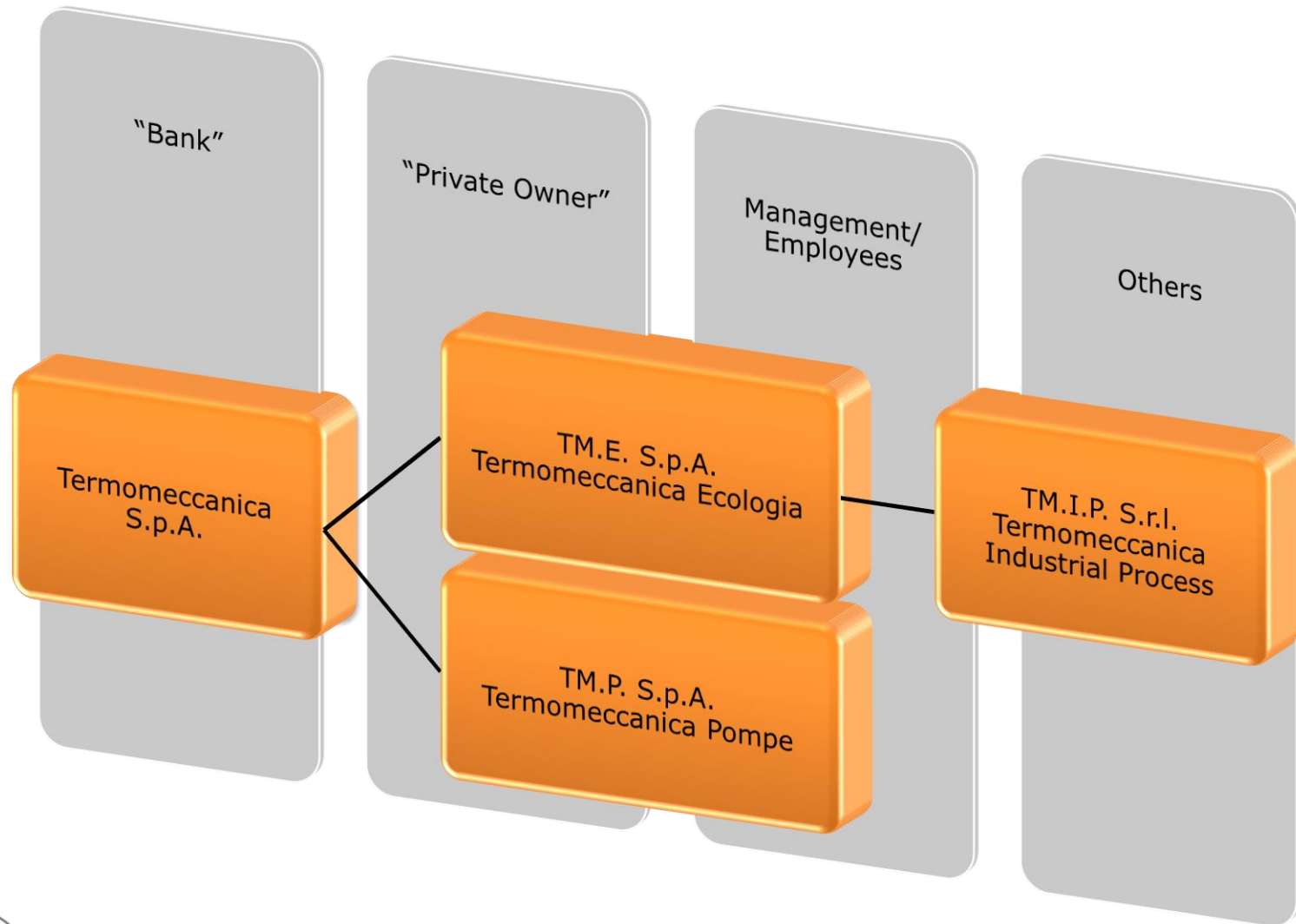
March 2019

Tradition, technology & innovation

- 
- 2012
 - 100 years of history
 - January 1995
 - From “Termomeccanica Italiana” (EFIM Group) to “Termomeccanica S.p.A”, a private company with the aim to carry on the Company tradition.
 - 1950s
 - Widening the range of activities to environmental plant engineering, for civil and industrial waste water treatment, municipal and industrial waste treatment, renewable energy production
 - 1930s
 - Development of projects for refrigeration units, with high-speed compressor (for marine and land applications)
 - ‘14-’18 & following years
 - Manufacturing of machines with different type of motorization (mechanical, electric and steam) for Industry, Military Navy & Merchant
 - 1912
 - Established in La Spezia as “Società CerPELLI & C.”, afterwards turned into a stock company “Termomeccanica Italiana S.p.A.”;
Designing and manufacturing



TM Group



TM.I.P.

“TM.I.P.” was founded towards the end of 2011 to incorporate the know-how, the engineering and constructions technology and of the company “C.M.G.” founded in 1977.

The company operates in the environmental protection and production sectors making use of C.M.G. credentials, patents and technical expertise in synergy with the know-how and industrial experience of “Termomeccanica Group”. **It is organized into two sections:**



The “**Environmental protection plants**” section operates in the design and construction of plants (turn key) for the recovery of chemicals (solvents, light and heavy hydrocarbons, etc.) and for treatment of liquids, sludge and gaseous effluents from industries.

The “**Production plants**” section operates in the design and construction of plants for the production of compound chemicals (adhesive, wood board glue , formaldehyde , resins, PU and PVC paste for coating process , textile auxiliary chemicals , etc.) and in the mixing process for industries.



TM.I.P. – environmental protection

The possible solutions (in order to recover) for the chemical compound are the selective recovery system:

- Distillation;
- Adsorption;
- Absorption.

The recovered product can be used directly in production therefore their installation is high profitable.

Where selective recovery systems are not possible due to economically or feasibility reasons, thermal oxidation plants can be installed. In case of thermal oxidation (regenerative, recuperative, catalytic) can be convenient to equip the plant with a heat recovery system (steam, thermal oil or hot water).

The company has complete know-how in waste gas treatment system (wet and dry cleaning system, catalytic system for NO_x reduction).



TM.I.P. – environmental protection

Distillation

In many processes, solvents are used as solvent mixtures or as water solutions. Solvents can (“must”) be recovered. TMIP manufactures both batch and continuous distillation plants suitable for the above mentioned process. Discontinuous (batch) units are normally used for recovering solvents from complex mixtures, usually present in pharmaceutical industry. Continuous distillers are aimed at chemical industries. TMIP distillation plants include units for operating under pressure or vacuum, double or triple effect, with yields above 95% and controlled by some of the most sophisticated control systems available.

Adsorption

It's adopted for treating exhaust gas recovering pollutants with the possibility of recycling them in a new process. Adsorbing materials are micro porous substances with a huge surface/height (up to 1700 m²/gr) such as activated carbons, synthetic zeolite, silica gel and activated alumina. TMIP designs & manufactures adsorption plants with pollutant removal levels of 97% and with a particularly fast investment payback.

Absorption

TM.I.P. exploits the characteristic of the soluble water solvent that can be recovered by washing the air in counter current air stream with water in a plates tower. Solvent is collected on the bottom of the tower in solution with water. The solution will be distilled to recover pure solvent.



TM.I.P. – environmental protection

Incinerators

Some industrial process produce highly pollutants liquids and gaseous containing solvents or organic compounds, which can not be treated in conventional plants. There are also a huge quantity of distillation residuals and sludge. TM.I.P. build thermal oxidizers working up 1200°C completed with heat recovery system and flue gas cleaning section (dry or wet removal acids).

Thermal Oxidizer (TO)

The Thermal Oxidizer (TO - RTO – Catalytic) is a thermal treatment of exhaust process gas for pollutant removal. It utilizes the thermal power of the pollutants contained in the exhaust waste air for the combustion process. The thermal energy, which is produced during combustion, is recovered and used to heat the incoming exhaust air.

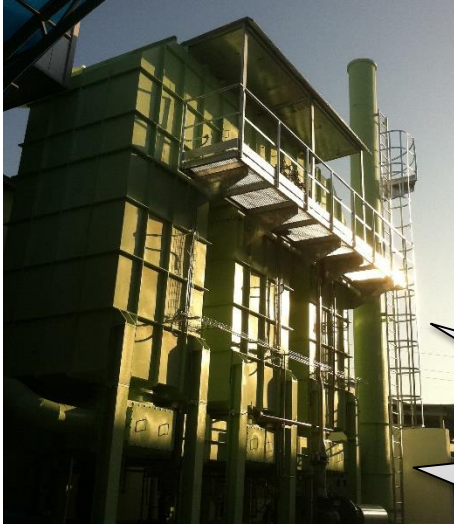
The oxidizer utilizes a fuel gas burner for system start-up and for heat integration if the VOCs concentration is too low.

Flue Gas Treatment

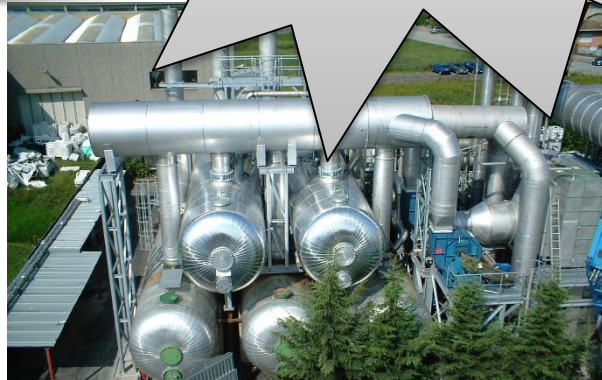
After combustion process (waste, liquid or sludge), the flue gas with high content of pollutant (SO_x, HCl, etc.) need to be treated in order to achieve the law limits and to respect the environment through a dry, semi dry or wet system.



TM.I.P. – environmental protection



...some example of treatment of effluent coming from industrial process



TM.I.P. – production plant

TM.I.P. builds production reactors and mixers from a capacity from 2'000 to 60'000 litres.

TM.I.P. designs and builds:

- “Turnkey” plants for batch or continuous production of chemicals products with the latest automation systems
- Reactors – vacuum and pressure mixers with more settings for the pharmaceutical and cosmetics industries
- Complete plants for production of chemical products

TM.I.P. is able to provide to the basic and detailed engineering for the construction of the entire production plants; when necessary, TM.I.P. can also adapt the new production line at the “old” recipe with the training and start up assistance to ensure the customer the quality and characteristics of finished product.



TM.I.P. – production plant

The above mentioned plants can be used to prepare:

- ✓ Chemicals for different uses
- ✓ Cosmetics
- ✓ Detergents
- ✓ Auxiliary chemicals to be used in textile or tanning industries for finishing
- ✓ Blending of lubricants

Complete plants for adhesive paste production (to be used in adhesive tapes production or in shoes production or to be sold in the market).

Mixers equipped with special stirrer, feasible for an efficient and fast dissolution of components to be mixed.

Complete plants for preparation of PU paste (polyurethane) /PVC paste in synthetic leather production.

Formaldehyde production plant with new technology allowing the use of formaldehyde to improve the efficiency of Urea fertilizers.



TM.I.P. – production plant



...some example of reactor / mixer.



Main projects



“Semi dry – Flue gas treatment of WtE” project in Poland

Status: ***In operation***

«Thermal Oxidizer + flue gas treatment» project in *Italy*

Status: ***In operation***



Main projects



“**Solvent recovery plant**”
project in **Greece**
Status: ***In operation***

«**RTO**» project in **Czech Republic**
Status: ***In operation***



Main projects



«**Distillation + Concentrator + Evaporator**» project in **Italy**
Status: **In operation**



«**Adhesive production**» project in **Serbia**
Status: **In operation**



Main projects



«**Solvent recovery**» project in **China**
Status: ***In operation*** – **500.000 m³/h**
of air treated

«**Odour mitigation and Odour abatement**» project in **Oman**
Status: ***In operation***



TM.I.P. - CPTM



Consorzio Polo Tecnologico Magona

TM.I.P. is also partners of "**Consorzio Polo Tecnologico Magona**", a consortium which the aim is to promote the technological research and innovation transfer in all the sectors of Chemical Engineering and of Process and Material Industry.

CPTM represents a meeting point between companies searching for new solutions and the applied research, result of the synergetic competencies gained by universities, engineering consulting companies, and manufacturers. Applications include chemical and material engineering, environmental protection, industrial safety, energy industry, renewable energy and green chemistry.

Our main reference:

...more than 40 years of expertise in the design and supply of plants for chemical process, energy and environmental protection tailored to Customers requirements.

TM.I.P: A reliable company for non-conventional processes and solutions...



thank you



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TM.I.P. S.r.l. - Termomeccanica Industrial Process

Via Fossamastra 22- 19126

La Spezia – Italy

Tel. +39 0187 513.410 - Fax. +39 0187 515.352

www.tmip.termomeccanica.com