PRODUCT
TRIGENERATION

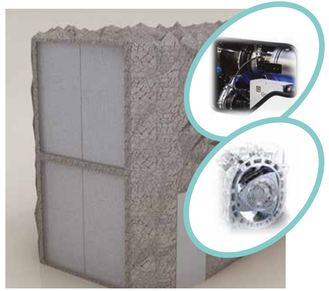
WHAT IT IS.

Trigeneration is a combination of various processes with "total-energy" machines. It is the simultaneous production of electricity (or mechanical energy), heat and cooling from one primary fuel. This way, the percentage of energy potential deriving from fuels is increased, i.e. the portion containing most energy is transformed into high-quality energy (either mechanical or electric), while the one containing least energy - which conventional thermal machines release into the environment - is retrieved and made available for a number of applications, such as environmental heating/cooling.

THE PRODUCT.

It is an efficient system which uses all available energy from diesel engines or natural gas and derived products. It is the combination of various technologies, such as:
The transformation of mechanical power into electricity through alternators and the efficient use of latent heat deriving from the cooling system and the exhaust gas system. It is composed of:

- **Natural gas-, biogas-, diesel oil-, vegetable oil-powered engine generators**
- **Heat recovery boiler**
- **Switchboard and control panel**
- **Noise emission reduction (Container – Cowling)**
- **Medium-voltage transformation system**
- **Gas emission control and reduction system**
- **Cooling production system**



THE SYSTEM PRODUCES

Thermal energy expressed as heat in all its forms:

CALDO:
- **Saturated vapour from 1 to 12 Bar**
- **Diathermic oil up to 250 °C**
- **Overheated water up to 150 °C**
- **Hot water 90°C**

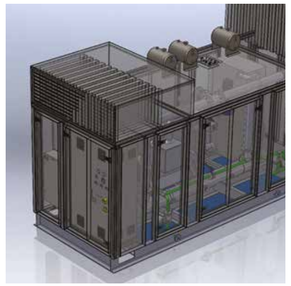
COLD:
- **Cold water for cooling systems from 7°C to 12°C**

APPLICATIONS.

- **Residential**, ideally suited for various kinds of residential buildings (blocks of flats, skyscrapers, small district heating and conditioning systems, semi-detached houses) with a total electricity consumption ranging from 2 KWe to 100 KWe and a corresponding thermal energy ranging from 18 KWt to 120 KWt, considered as heat or chilled water ranging from 16 KWf to 80 KWf.
- **Industrial**, ideally suited for companies, department stores, district heating and conditioning systems, hospitals etc. with a total electricity consumption ranging from 120 KWe to 4300 KWe and a corresponding thermal energy ranging from 150 to 4000 KWt considered as heat or chilled water ranging from 90 KWf to 3000 KWf)

WHY YOU SHOULD CHOOSE IT AND THE BENEFITS ASSOCIATED WITH IT.

- **Low environmental impact, i.e. reduced atmospheric emissions (nitrogen oxides and carbon dioxide) according to the KYOTO protocol (carbon credits)**
- **Low noise emissions**
- **Reduced overall dimensions**
- **Increased energy class of the building**
- **Renewable energy**
- **Reduced energy costs up to 30% of total consumption**



PAY BACK AND DEPRECIATION.

The system can reduce - even to zero - costs linked to electricity-powered air-conditioning.
The system has a less-than-three-year payback period:

SAMPLE APPLICATION IN A CONVENTIONALLY POWERED SUPERMARKET:

1. ELECTRICITY CONSUMPTION: 500 KWE
   - **Cooling-related consumption: about 30% (150 KWe)**
   - **Freezing-related consumption: about 30% (150 KWe)**
   - **Equipment- and lighting-related consumption: about 40% (200 KWe)**
2. ESTIMATED ANNUAL COSTS RELATED TO ELECTRICITY: € 350,000.00

SAMPLE APPLICATION IN A SUPERMARKET POWERED BY TRIGENERATION SYSTEM:

3. NEW ELECTRICITY CONSUMPTION: 315 KWE
   - **Cooling-related consumption: 0% - 150 KWe are replaced with direct production of cold and thus provided directly by the system at no extra cost.**
   - **Freezing-related consumption: about 30% - 150 KWe are the same but correspond to 135 KWe . The cost of KWe is reduced by 10% due to the fuel used.**
   - **Equipment- and lighting-related consumption: about 40% - 200 KWe are the same, but correspond to 180 KWe. The cost of KWe is reduced by 10% due to the fuel used.**

ESTIMATED ANNUAL COSTS RELATED TO ELECTRICITY, INCLUDING SYSTEM MAINTENANCE COSTS: €250,000.00.

ANNUAL SAVING: 30%. LESS THAN FIVE YEARS PAYBACK.

SAMPLE APPLICATION IN A CONVENTIONALLY-POWERED RESIDENTIAL BUILDING, I.E. SMALL BLOCK OF FLATS WITH FOUR FLATS:

5. AVERAGE/HOUR ELECTRICITY CONSUMPTION: 2 KWE
   - **Cooling-related consumption: about 30% (0.6 KWe)**
   - **Household appliances- and lighting-related consumption: about 70% (1.4 KWe)**
6. ESTIMATED ANNUAL COSTS RELATED TO ELECTRICITY: ABOUT € 3,600.00

SAMPLE APPLICATION IN A RESIDENTIAL BUILDING, I.E. SMALL BLOCK OF FLATS WITH FOUR FLATS, POWERED BY TRIGENERATION SYSTEM:

7. NEW ELECTRICITY CONSUMPTION: 1.26 KWE
   - **Cooling-related consumption: 0% - 0.6 KWe are replaced with direct production of cold and thus provided directly by the system at no extra cost.**
   - **Household appliances- and lighting-related consumption: about 70% - 1.4 KWe are the same but correspond to 1.26 KWe. The cost of KWe is reduced by 25% due to the fuel used.**
8. ESTIMATED ANNUAL COSTS RELATED TO ELECTRICITY INCLUDING SYSTEM MAINTENANCE COSTS: € 2,300.00.

ANNUAL SAVING: 30%. LESS THAN FIVE YEARS PAYBACK.

WHY OTE

WE DESIGN AND INSTALL LOW ENVIRONMENTAL IMPACT SYSTEMS
WE DESIGN AND REALIZE HIGH ENERGY SOURCE SYSTEMS

100% of our projects are completed respecting the initial budget

100% of our installations are completed respecting the delivery time set

100% of our customers are satisfied with the performance of our system

ABOUT US

Extensive expertise, broad experience in the industry, innovative management and corporate organization. This is **OTE Energia rinnovabile**, one of the companies with most experience in the market of new energy production technologies aimed at improving energy efficiency with a low environmental impact.
All our technicians and managers have years of experience in alternative energy solutions so as to guarantee the optimal performance of our installations.
Integrity, competence and professionalism are at the heart of our corporate principles.
We are not aiming at selling a product, but at selling the solution which best meets your needs.

OTE offers an alternative energy solution which differs from conventional energy production sources, by providing the most comprehensive answer to businesses, local authorities, hotels, department stores and large apartment complexes, and the ability to meet all our customers' demands, ranging from 2kWe to 4000kWe.

THE NEW ENERGY FRONTIER

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