

power generation systems



company

Established in 2013, **CMS ENERGY** (former **CPL Energy Thailand**) it's a Thai-Italian Joint Venture providing a new offer in terms of **high efficiency & energy solutions** for Italy, Thailand and South East Asia markets.

Based on Italian technology and **international quality standard**, we project, design, setup and manage natural gas/biogas Cogeneration and Trigeneration systems, renewable energies systems and high efficiency solutions for existing plants.

The company is also Core Distributor & Service for **LG Electronics Inc.** in Thailand and can provide a full range of chiller and HVAC solutions.



JMS620 Natural Gas
3MW Tri-generation System

how it works

cogeneration and trigeneration



Absorption Chillers piping

A cogeneration system produces electricity and thermal energy simultaneously.

The advantages of such a system are in its CO₂-neutral operation and an efficiency approaching 95%.

CMS ENERGY offers to its customers design and construction of CHP system and the sale of cogeneration modules with rated powers from 35 KW to 4500 KW.

After-sales service and support are the added value of **CMS ENERGY solutions**, which have always guaranteed a high level of quality in the operation of systems.

In addition to cogeneration and thanks to its partnership with **LG Electronics Inc.**, **CMS ENERGY** also builds **trigeneration power plant** (heating, cooling, and electricity). LG Absorption Chiller (lithium bromide absorber for cooling) makes possible to achieve maximum energy efficiency for large volumes

absorption chillers

absorption chillers

Lithium Bromide Absorption Chiller is a refrigerator that uses waste heat to provide the energy needed to drive the cooling system.

The most important waste heats exploitable by ABSchillers are:

- Waste heat from **power generation and cogeneration**;
- Waste heat from **district power station or industry**;
- **Solar thermal** energy.

The standard absorption chiller system uses water, as a refrigerant, and lithium bromide, as an absorbent, in its cycle. The process takes place in a vacuum, allowing the refrigerant (water) to boil at a lower temperature and pressure than it normally would, helping to transfer heat from one place to another.

Absorption chillers can be fired **directly or indirectly**: indirect fired chillers use heat from another source, while direct fired chillers use a natural gas burner to power the cycle.

Double effect chillers recycle some of the waste heat produced during the cycle, and thus are more efficient per unit of input heat.

CMS Energy can offer a wide range of Absorption Chiller:

- Hot water Absorption Chiller (High & Low temperature);
- Exhaust Gas Absorption Chiller;
- Natural Gas Fired Absorption Chiller;
- Steam Fired Absorption Chiller;
- Hybrid Absorption Chiller (with combination of heating source)

advantages

FINANCIAL BENEFITS

Interesting pay-back times for investments through lower electricity bills, high efficiency systems and use of latest technology

ENVIRONMENTAL BENEFITS

Reduction of both Nox and CO₂ pollution through the use of centralised CO-TRIGEN systems

DURABILITY

The plant are designed to operate efficiently over 20 years by the operation of a customised Planned and Predictive Maintenance (PPM) schedule.

QUICK INSTALLATION & PAYBACK TIME

Plug & play containerized version are available to reduce the installation time

RELIABLE

Reliable systems coming from a long expertise design concept.

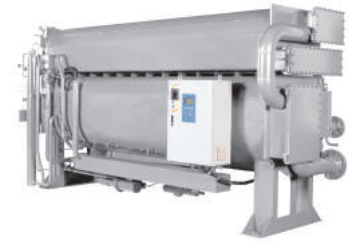
system options

Exhaust Gas Heat Exchanger



Exhaust heat recovery 2,149 kW

ABS HW Chiller (COP = 0.8)



HW heat recovery 1,907 kW
Cooling tower (32 – 37.5°C)
Cooling capacity 3,245 kW (12 – 7°C)

MAN 12V32/40G

Gas Input
10,457 kW
1,101 Nm³/h

Power
4,656 kW el.
 $\eta = 44.5\%$

Dissipated Heat
455 kW



ABS Hybrid Chiller (COP = 0.95)



Exhaust heat recovery 2,149 kW
HW heat recovery 1,907 kW
Cooling tower (32 – 37°C)
Cooling capacity 3,853 kW (12 – 7°C)

ABS HW Chiller (COP = 0.8)



HW heat recovery 1,907 kW
Cooling tower (32 – 37.5°C)
Cooling capacity 1,526 kW (12 – 7°C)

ABS HW Chiller (COP = 0.8)



HW heat recovery 1,907 kW
Cooling capacity 1,526 kW (12 – 7°C)

ABS Exhaust Chiller (COP = 1.1)



Exhaust heat recovery 2,149 kW
Cooling capacity 2,364 kW (12 – 7°C)

Cooling tower (32 – 37.5°C)



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