



COGENERATION

Boosting your
energy output!

Services



Challenges ●●●

Cogeneration, also known as CHP, is the combined production of heat and power using the waste heat from power generation.

OPTIMIZED ENERGY EFFICIENCY

Combined heat and power production:

- Delivers superior energy efficiency.
- Avoids power losses in the national network when both power and heat are needed.

LOWER ENVIRONMENTAL IMPACT

Cogeneration results in:

- Significantly reduced greenhouse gas emissions.
- Reduced need to upgrade the national power network.

SECURE POWER SUPPLY

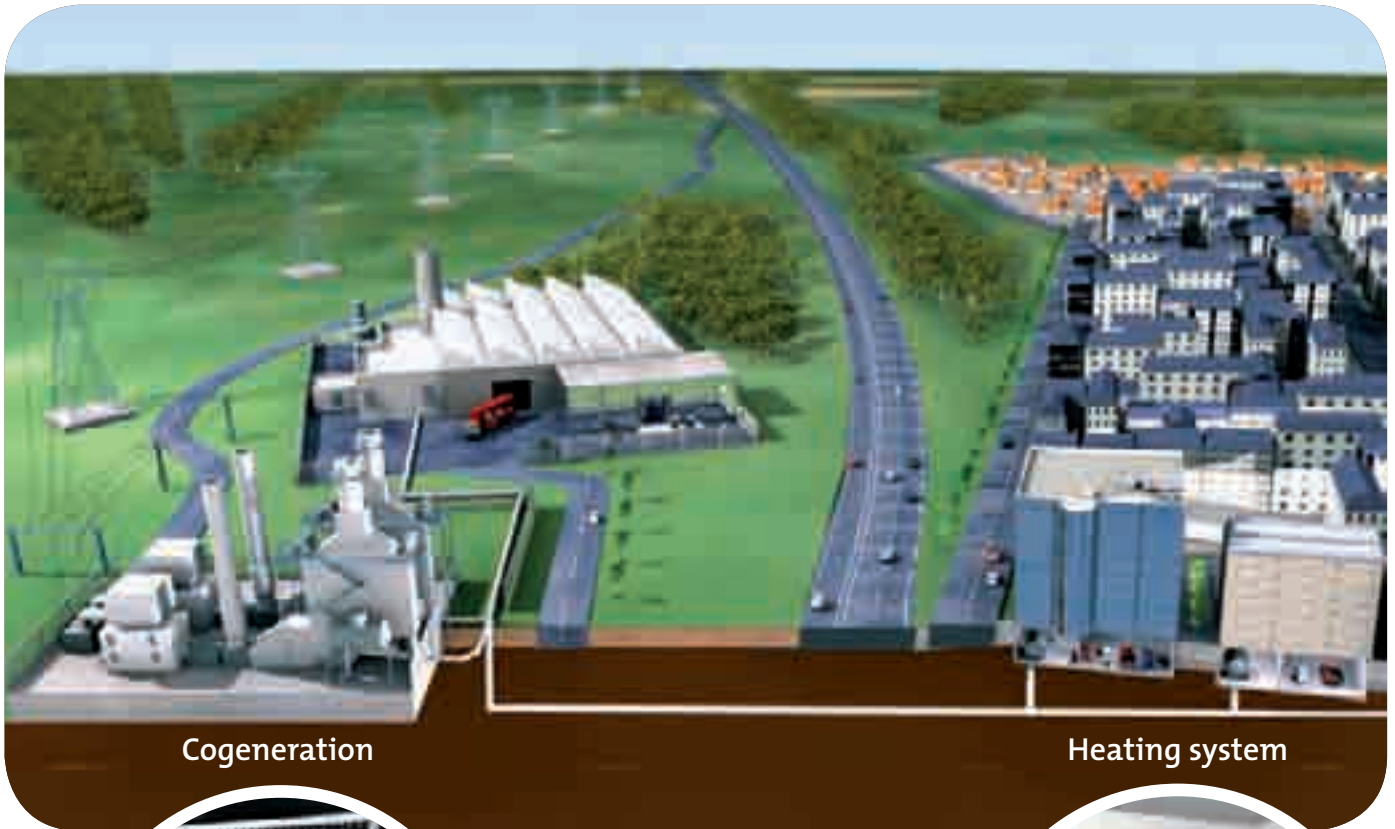
Cogeneration ensures uninterrupted power supply to sites.

Types of cogeneration

	Residential & service sector	Heating systems	Industry
Gas engine	Cogeneration for heating	Cogeneration for heating	Process cogeneration
Gas turbine		Cogeneration for heating	Process cogeneration
Steam turbine		Cogeneration for heating	Process cogeneration

Process cogeneration: The heat recovered is used for an industrial process.

Dalkia's services

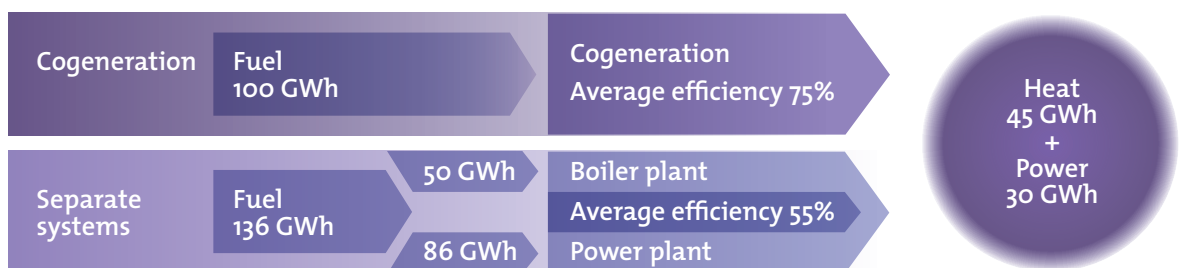


Supply of heat and power for industrial processes



Supply of heat and power for the residential and tertiary sector

Energy balance comparison





Dalkia's services

Dalkia's commitments

Customer benefits

Guaranteed performance

- Cogeneration plant operation: inspecting, configuring, monitoring and supervising
- Complete maintenance of all equipment, including major repairs

- Guaranteed performance

- Cogeneration plant reliability and performance



Thermal metering

- Primary energy purchasing and management
- Cogeneration plant technical management
- Supply of heat to the site

- Supply of heat with quality, quantity, reliability and price guarantees
- Supply of power for consumption or sale by the customer

- Cogeneration plant reliability and performance
- Optimized heat supply

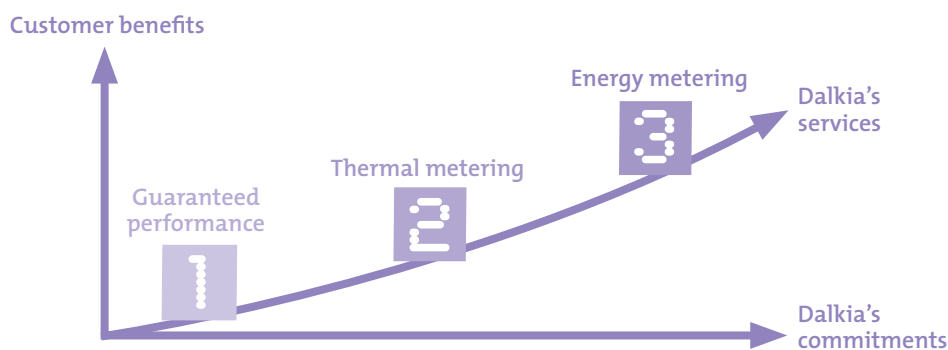


Energy metering

- Primary energy purchasing and management
- Cogeneration plant technical management
- Supply of heat to the site
- Sale of the power produced

- Supply of heat with quality, quantity, reliability and price guarantees
- Delivery of the power produced to the external grid
- Sale of the power in the local market

- Optimized total energy supply
- Optimum terms for the sale of the power produced
- Substantial reduction in the energy bill





Dalkia's solutions ●●●

As part of our cogeneration plant management package, Dalkia provides:

UNINTERRUPTED ENERGY SUPPLY AT REDUCED COST

- Guaranteed total energy efficiency reducing the amount of primary energy used by up to 40%*.
- Local energy management based on the optimal choice amongst available energy sources, including gas, power, hot water, steam and other primary energies.
- Secure heat and power supply to the site.

A SUBSTANTIAL ENVIRONMENTAL BENEFIT

- Significantly reduced environmental impact, with greenhouse gas emissions reduced by more than 30%, rising to up to 60% when cogeneration replaces fuel or coal, thereby avoiding the emission of up to 500 grams of CO₂ per kWh produced.
- An environmental allowance whose value is determined by national regulations.

THE EXPERTISE OF ENERGY SERVICE PROFESSIONALS

- With recognized capabilities in long-term management of energy resources, Dalkia supplies more than 80 TWh of primary energy every year.
- Technology monitoring to identify opportunities provided by environmental legislation, such as biomass, biogas and fuel cells.
- Technical expertise in quality, safety and environmental best practices, delivered by a specialist in technical energy services.

Dalkia's services are delivered in three phases:

DESIGN :

Based on the site's heat and power needs, Dalkia defines and designs the cogeneration plant, taking into consideration technology, power and any adjustments of the heat/power ratio with the installation of afterburners.

INSTALLATION :

Carrying out all administrative and regulatory steps necessary and the installation of the cogeneration facility.

OPERATION AND MANAGEMENT :

Operation and maintenance of the cogeneration facility, with energy management of the site.

* Taking into account reduced losses on the external power grid, since no power transmission is involved.

Dalkia's strengths ●●●

As a subsidiary of Veolia Environnement and EDF, Dalkia offers local authorities, hospitals and companies the unparalleled expertise of the European leader in the energy services sector.

BIOMASS-FUELLED COGENERATION

European Union regulations promote the use of renewable energy sources—in particular biomass—in cogeneration facilities. With our expertise, we can provide tested, reliable technical solutions that deliver long-term financial savings.

TRIGENERATION

With our recognized expertise in cooling, we can help energy users whose heat, power and cooling requirements are sufficient for the installation of a trigeneration plant. Operating in the same way as a cogeneration facility, trigeneration uses absorption chillers to provide additional cooling from the heat produced.

TOTAL ENERGY MANAGEMENT

The European leader in energy services, Dalkia can provide total management of the various types of energy required by the site, including power, heat, cooling and compressed air.

Dalkia manages
4500MW
produced
by cogeneration



Energy is our future -don't let it go to waste!

Dalkia
www.dalkia.com