

District Heating and Cooling



Energy Efficiency Solutions

A modern system providing a reliable, ecological and economical response to energy needs

The use of a heat network offers many advantages in terms of energy performance and environmental protection. Faced with the challenges of the Energy Transition, Tractebel supports its clients by designing smart and efficient District Heating and Cooling networks. We provide customised solutions integrating heat usage from low carbon and renewable energy sources, as well as exporting surplus heat from industrial sites for further energy efficient use.

Our approach

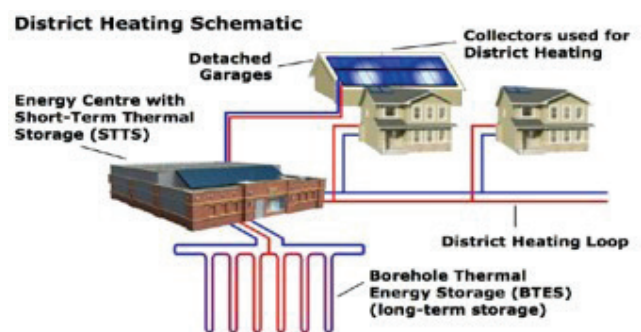
- A holistic approach combining strategic advice (business plan, potential evaluation, development, analysis and energy efficiency improvement of our clients' buildings, factories...) and technical knowledge.
- A multi-disciplinary technical approach for energy sources and distribution:
 - Waste heat from power stations or industrial processes, energy from waste, fuel cells or solar thermal, heat pumps, chilled water, combined heat and power, geothermal sources
 - Distribution network, energy transfer station
 - Energy Management ...

Our added value

- Holistic multi-disciplinary approach (financial and technical)
- Strong capabilities in District Heating and Cooling strategy: analysis of the technical, economic and environmental impacts of a new network or extensions to existing networks
- Strong knowledge of the needs profiles of different client typologies via a large database
- The use of powerful software tools for more accurate calculation of energy efficiency and renewable solutions (design, optimised flow computation...)

Client benefits

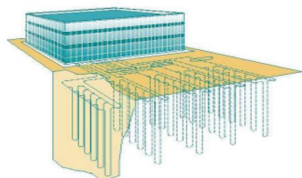
- Solutions supporting and improving energy efficiency in transportation and use through the integration of high efficiency technologies (cogeneration, waste heat, heat pumps...)
- Solutions with renewable energy integration
- Reduction of primary energy and water consumption as well as CO₂ emissions



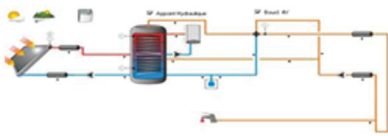
District Heating and Cooling (DHC):

Combining DHC with renewable energy sources can help meet rising urban and industrial energy needs, improve efficiency and reduce CO₂ emissions. We provide DHC Engineering & Consultancy services using powerful software tools combining multi-renewable as well as efficiency solutions to assist public and private decision makers.

The know-how and expertise to provide smart efficient solutions in a sustainable way



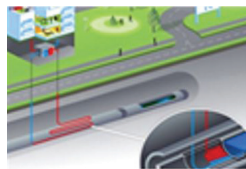
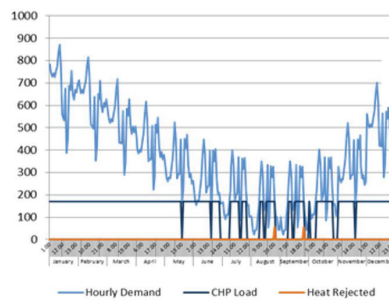
Geothermal Borehole Simulation



Solar Thermal Energy

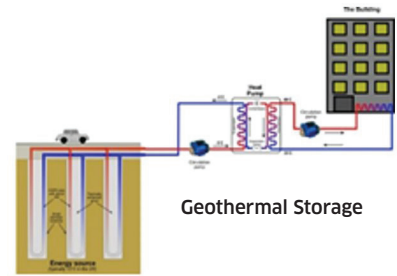
Renewable Energy Solutions

Average Daily Thermal Profile/month

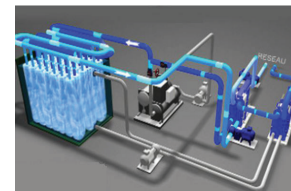


Heat
Recuperation
from used
water

Waste Heat Network Analysis



Geothermal Storage



Ice
Storage

Storage Solutions

Some references

Energy Efficiency Solutions

DHC for 5 cities: Colombia

DHC strategy

Objective:

Develop an energy efficient District Heating and Cooling strategy for 5 cities in Colombia.

Missions:

- Energy demand estimation (heating and cooling)
- Potential of main technological solutions to develop district energy and decrease air pollution to meet allowed limits
- Economic analysis, benefits, barriers, policy requirements
- Identification of potential areas to develop district energy and undertake a pre-feasibility study of a potential project in each city
- Business Plan and financial evaluation for each project
- Conceptual design

Results:

- Action plan to provide the best technical and economical solution on each of the 5 sites

FASEP: Tunis, Tunisia

DHC technical-economic feasibility

Objective:

Feasibility for the construction of the first district cooling network in Tunisia.

Missions:

- Regulatory and environmental framework analysis
- An analysis and summary of the regulatory framework in France and Tunisia
- A proposal to change the regulatory framework adapted to the project
- An environmental study
- A technical feasibility study
- Economic study & institutional support

Results:

- Site demonstrating the technical and economic feasibility of such technology in the Region
- Establishment of a regulatory and institutional framework adapted to development on a larger scale
- Support to Tunisia in the development of its Energy Transition policy

CPCU - Climespace: Paris, France

Geothermal Heating and Cooling Power Plant

Objective:

Provide an innovative project with the production and distribution of hot and cold water with different scenarios in winter and summer

Missions:

- Project management of an underground power plant producing and distributing hot (96 MW) and cold (7 MW) water for two urban networks in the North-East neighbourhood of Paris
- Energy production ensured by geothermal well, reversible heat pumps / chiller, exchange substation

Results:

- A large-scale and innovative project, which was duly rewarded
- Control of combined production of heat and cold with renewable energy
- A convex process with major interactions between the production systems (hot, cold and geothermic)

TRACTEBEL

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