

36<sup>th</sup> Euroheat & Power Congress

27-28 May 2013, Vienna, Austria

# Karolina District Cooling

Efficient district cooling in central Europe countries



## OUR AIM

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Become the **global benchmark**  
in **creating energy savings**  
on a regional scale

## OUR STRENGTHS

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- 1** A global approach to energies, technologies and uses
- 2** A unique expertise in developing, constructing, operating and managing high performance energy facilities
- 3** Two shareholders, both worldwide leaders in their sector:  
**Veolia Environment**  
and **EDF** (Electricité de France).



## SCOPE OF ACTION: « SMART CITY »



**837** heating and cooling networks



**5 770** hospitals  
( **467 000** beds)



**4,8 millions**  
housing units



**392** biomass facilities



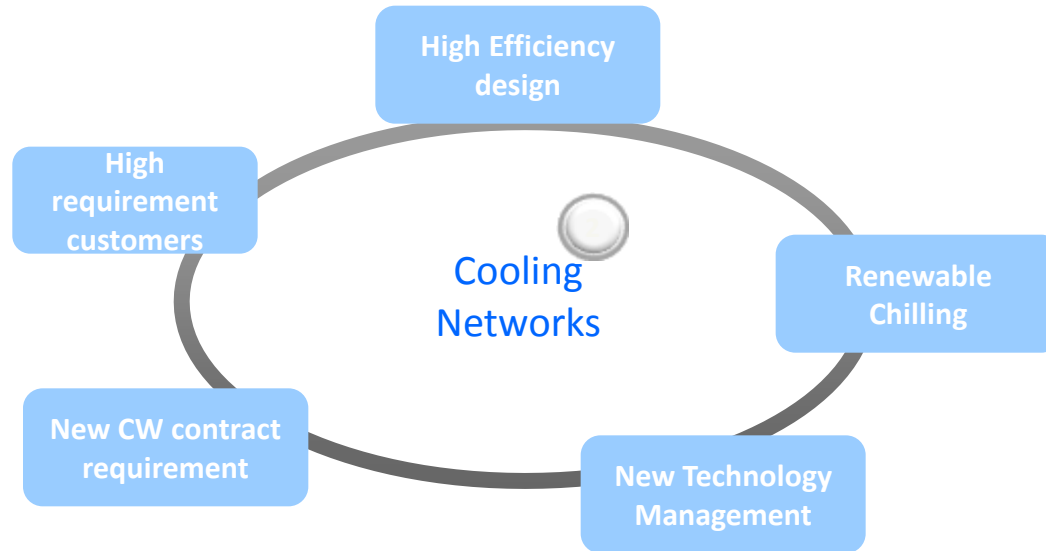
**4 640** industrial sites



**23 800** Educational,  
cultural, leisure  
and sports facilities



## Green Field Efficient DC : Ostrava, Czech Republic



**Energy performance:** Dalkia manages a new project connected to Ostrava DHN. Provide efficient eco-friendly DC in a new development, comprising tertiary and commercial activities.

**The first District Cooling in Czech Republic and Central European Country**



## THE ISSUE

Provide reliable and cost effective energy to a new development

## DALKIA'S SOLUTION

Connection to existing DHC

Innovative frame of DHC

## RESULTS

The first DC in central Europe country

A large part of renewables in the energy mix for chilled water

Competitiveness of the site enhanced by a improved environmental footprint and better availability of utilities





■ Ostrava, Industrial city : Coal mining & Steel production

■ Karolina :

- Formal Coke production site expanding from the end of XIXth century to the 70ties.
- Site resumed its activities by the 80ties end



■ XXIth : decision to create a new area of life including condominiums, offices building and shopping mall.

- CMC Architecture office
- Keeping formal XIXth century hall.



- <http://www.novakarolinapark.cz/karolina/>





# Development Presentation

**Green Field Project on 30 ha**

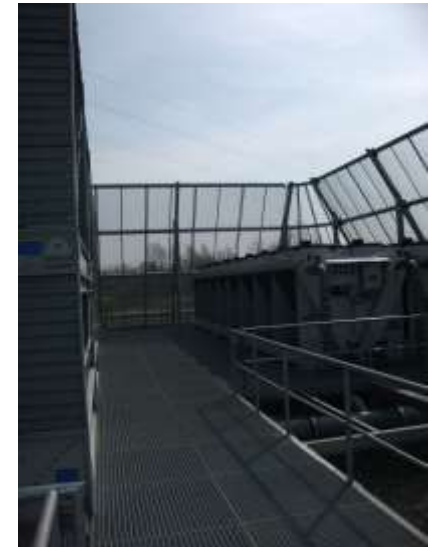
**Shopping mall, offices, residential, more than 200 000 m<sup>2</sup> (2,152,782ft<sup>2</sup>)**



**4 step development  
 2012 to 2019**

# Technical Aspects

- Chilling plant 14MW 1rst step 24,5 MW final step - R134a (HFC)
  - 3,5 MW Centrifugal chillers full VFD
- Cooling
  - Open Cooling Tower (Legionella treatment)
  - Towers are visible behind louvers
- Free cooling
  - 2 Dry cooler for low temperature condition
  - 2 000 m Reticulation of HDPE pipes already buried (3 700 m m final)
  - Lanscape integrated plant







- Chilled water specification
  - 6/14°C (43/57°F) in summer
  - 10/15°C (50/59°F) in winter



- Dalkia scope of services
  - Dalkia O&M service is limited to the entrance of the building and service the 2 isolation valves, the meter and the differential pressure regulator

- High Performance even at part load :
  - Global annual COP 4.8
  - 10% free chilling





**CREATING ENERGY PROGRESS**

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Thanks for your attention  
Any Question ?

