

Powering the city through cogeneration

Warsaw, Poland

Mayor: Hanna Gronkiewicz-Waltz

As a signatory to the ambitious Covenant of Mayors initiative, and as part of its ongoing commitment to reducing carbon emissions, Warsaw is addressing a number of issues including promoting energy-efficient vehicles and renewable energy resources, but is also turning to cogeneration to supply the city with heat and power.

Warsaw's cogeneration consists of using the heat that is produced during electricity production in power plants for heating buildings and water, instead of treating it as waste and dissipating it in warm water that is channelled to nearby reservoirs. Energy specialists call this combined heat and power (CHP) cogeneration.



There are two main CHP plants in Warsaw, Siekierki and Zeran - which produce in total 3640 MWt of heat and 970 MWe of power per year - as well as two heat plants, Kaweczyn and Wola - which produce 930 MWt of heat. Warsaw has one of the largest cogeneration systems in Europe, with 1700 km of pipes supplying 76% of the city's building and water heating demands.

“For the future Warsaw decision makers opt for more decentralised cogeneration, which also secures basic energy provision in case of a blackout in the centralised electro-energetic grid. An upgrade to trigeneration (producing also cooling energy from the previously generated heat for needs of house cooling systems) is also considered for implementation.” Jarosław Kochaniak, Deputy Mayor of Warsaw.



Cogeneration gives Warsaw an extra 3.5 TWh of energy every year, and it is estimated that by producing the power and heat together, the city saves two million tonnes of CO₂ emissions annually.

The city of Warsaw is stepping its efforts even further up by adapting its heat and power network to accommodate the use of bio fuels. Plants such as Zeran and Siekierki are being fitted with measures which will allow them to use bio fuels in place of traditional fossil fuels for producing electricity. It is envisaged that Warsaw will achieve a biomass share of 15% of combusted fuels by 2020.

Cogeneration is also used in municipal solid waste incineration plant ZUSOK, which will be extended, while construction of another such plant is planned. As a result, in 2020 the share of renewable energy from solid waste should reach 8%.

With its massive CO₂ emissions savings and its large dimension, CHP cogeneration plays an important role in Warsaw's efforts to meet its commitments in the Covenant of Mayors.

Warsaw - key facts*:

- City population - 1 680 000
- Population of Warsaw metropolitan area - 3 000 000
- Signed up to the Covenant of Mayors on 5 February 2009
- Baseline year against which commitments are measured is 2007
- Until 2020, Warsaw aims to reduce CO₂ emissions by 2.6 million Mg/year, which equals energy savings of 5.7 million MWh/year; compared with "business as usual" scenario for 2020, these savings will be respectively 6.1 million Mg/year and 10.6 million MWh/year
- The city administration targets to reduce its CO₂ emissions by 1 million Mg/year
- In 2020 expected energy bill savings (not including transport sector) are 88 million zlotys (approx € 21 million) per year

*Figures taken from Warsaw's profile at the Covenant of Mayors website and from Warsaw's Sustainable Energy Action Plan.

As a signatory to the Covenant of Mayors, the city of Warsaw voluntarily commits itself to reducing its CO₂ emissions by at least 20% by 2020.

Contacts & further information:

Marcin Wróblewski, Covenant coordinator - Warsaw
 mwroblewski@um.warszawa.pl
 www.um.warszawa.pl

Covenant of Mayors contact point:

press@eumayors.eu