

## Overview of National DHC Market

Country

Germany

| # | Name and reference of measure | Type of measure | Responsible organ | Existing or planned? |
|---|-------------------------------|-----------------|-------------------|----------------------|
|   |                               |                 |                   |                      |

### Summary of the National DH market

#### District Heating Market

By absolute numbers Germany is, together with Poland the biggest market for District Heating in the European Union. In Germany 50 % of the heat from District Heating grids is delivered to private customers, 44 % is delivered to public buildings and customers from the area of business, trade and services. According to the Federal Statistical Office in Germany District Heating has a market share of 13.3 % relating to all occupied accommodations.

Traditionally, there is a great difference in regards to District Heating market share between West- and East-Germany. The market share is around 9 % in West-Germany and around 30 % in East-Germany. In cities with over 100,000 inhabitants, natural gas and District Heating as grid-bound forms of energy have a combined market share of 70 to 80 %. District Heating alone has a market share of 30 % in this environment.

#### Current Development

In Germany around 60 % of the final energy consumption of households is attributed to space and water heating. The share of renewable energy sources in the heating market was at around 6.6 % in 2007. The share of renewable energy sources in the electricity production had a higher growth rate and was at 14.2 % in 2007.

The total installed District Heating capacity in Germany is around 57,000 MW. Total heat supply was around 350,000 TJ in 2007 (97.2 billion kWh – a decrease of around 10 % caused by the weather). There was a slight increase in the total installed capacity recently, despite the continuous decrease in specific heat demand due to thermal insulation measures, replacement of old buildings and demographic changes followed by urban restructuring.

The decrease in heat demand is compensated by the intensification of existing District Heating grids in urban areas, opening up development areas with isolated networks and local heating and contracting projects. District Heating utilities currently offer these systems and additional energy services to a bigger extent on the market. Renewable energy sources play an increasingly more important role in District Heating, especially in small and medium sized grids.

The ambitious goals of the German government relating to climate change, security of supply and energy efficiency have lead to a beneficial framework for District Heating, especially based on Combined Heat and Power and contribute to the further development of these energy efficient technologies.

Approximately 84 % of District Heating is generated in Combined Heat and Power. Natural gas and hard coal are the main types of fuel being used in Combined Heat and Power with biomass gaining in importance.

The Total length of the pipeline network is around 100,000 km. In 2007 3,000 km of new District Heating pipelines were installed. Therefore the new construction quota was at about 3 %. New pipelines were

predominantly laid underground, with half of the pipelines being plastic jacket and flexible pipes.

#### Prices and Costs of District Heating

Apart from unquestioned ecological benefits of District Heating, analysis of the full costs of District Heating in comparison to other energy sources show that District Heating is a well-priced alternative for customers.

Through the use of heat from highly effective CHP systems and the proven system of a two-part tariff based on a basic and a demand rate. In combination with an incorporation of an element that reflects the heating market into the pricing, high fluctuations of the primary energy prices can be absorbed. For a contract value of 160 kW and a utilization time of 1,800 h/a and 288 MWh of heat delivery the average price for District Heating was EUR 69.39 per MWh on 1 October 2008.

With a very price-sensitive market and District Heating being in direct competition with other forms of heating systems and predominantly gas and oil boilers, a competitive price is a precondition for the further development of District Heating in Germany. The European Union Emission Trading Scheme is therefore considered a barrier towards the further development of District Heating in Germany from the third Trading Period onwards. The European Union Emission Trading Scheme favours installations below 20 MW by not including them in the system. In Germany these installations consist mainly of individual gas and oil boilers. These same systems are also the biggest competitors of District Heating in Germany. Since Germany, unlike other Member States, has no tax on CO<sub>2</sub>, the market balance is heavily distorted to the disadvantage of District Heating.

#### Image of District Heating in Germany

District Heating in general has a very favourable image as a modern and clean heating system. For the past 15 years the total connected load increased by around 1 % per year. Considering the cutthroat market and a very low increase of new buildings, this development is quite respectable and demonstrates the positive image District Heating has.

A survey conducted by AGFW has proven these general assumptions. Target groups were private customers, industrial customers (regardless of whether they were already connected to District Heating or not) and housing enterprises. Compared to gas, oil and other forms of heating solutions District Heating had the highest rate of overall consumer satisfaction, is considered to have the fairest pricing and has the highest customer loyalty.

#### Perspective for District Heating in Germany

Noteworthy development of District Heating is expected because of the favourable new legislative framework that became effective as of the beginning of 2009. District Heating is considered to be among the fundamental future options in regards to ongoing discussions about climate change, security of energy supply, competitive pricing for end customers and energy efficiency. Chances for an increased extension of District Heating have been proven in various studies highlighting the potential for District Heating in Germany. Areas of particular interest will be District and Local Heating based on renewable energy sources, intensification of existing District Heating grids and substitution of gas grids by District Heating grids. Smart Local Heating systems are able to open up the market for new buildings, which are for the most part not realized in the inner cities but the peripheral region.