



FRANKFURT

A German pioneer with a "100% renewable" roadmap

KEY FIGURES

INHABITANTS



717,000

LONG-TERM VISION

100% RENEWABLE ENERGY BY 2050

50% ENERGY SAVINGS

25%
renewable energy produced within the city

25%
renewable energy produced in the region

Frankfurt is a flourishing city with a strong tertiary industry and ranks 4th among European financial centres. The city has been actively fighting climate change for several decades and was among the first German cities to adopt a Masterplan aimed at achieving a 100% renewable energy supply by 2050.

THE STARTING POINT

THE INCLUSION OF CLIMATE PROTECTION IN THE CITY'S ORGANISATIONAL CHART

Frankfurt's commitment to fighting climate change is not new, as demonstrated by the creation of an energy office within the municipality's Building Department as early as 1983, a commitment renewed in 1990 with the establishment of the *Energiereferat*, the local energy agency and department.

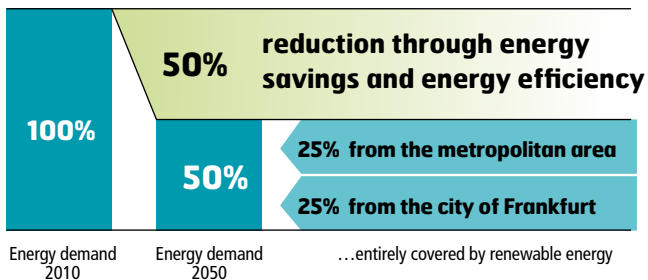
In 2008, the city council adopted a list of 50 measures intended to fight climate change and reduce energy use. Encouraged by a call for projects launched by the German federal government in 2012, the City of Frankfurt developed the "100% efficient and renewable FrankfurtRheinMain" concept. The regional

agency was later associated with the project to add a regional dimension.

The City of Frankfurt was one of the first German cities to adopt a 100% renewable energy supply roadmap. Prior to defining the roadmap, a feasibility study was entrusted to the Fraunhofer research institute. A simulation of the energy needs by 2050, taking into account current and future energy use in all the sectors as well as foreseeable changes in prices and population growth was used to identify several possible scenarios.

Frankfurt's "Masterplan 100% Klimaschutz" (100% Climate Protection Masterplan) adopted in 2015 identifies the strategies and instruments for achieving the objective by 2050. Implementation of the Masterplan is supervised by the municipality's energy department.

100% CLIMATE PROTECTION MASTERPLAN



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Source: Frankfurt Green City

THE APPROACH

ENERGY EFFICIENCY FIRST

With its "Masterplan 100% Klimaschutz", the municipality aims to have all its energy needs covered by renewable energy by 2050. This will require reducing energy use by 50% through building retrofitting, the use of new technologies and further efforts at developing the circular economy. The remaining 50% will be covered by renewable energy produced within the city (25%) and in the metropolitan area (25%). To achieve these objectives, the plan assesses the energy needs, greenhouse gas emissions and areas for improvement in each sector and suggests a number of measures to be implemented in the electricity, heating and transport areas.

The identified renewable energy sources include solar thermal and PV energy, biomass, and, to a lesser extent, wind power produced in the metropolitan area. But the centrepiece of this energy future is heat, Frankfurt planning to massively build up cogeneration units and to further extend its ten district heating (and cooling) networks.

THE URBAN-RURAL LINKAGE

CREATING A WIN-WIN SITUATION

Preliminary studies show that the city of Frankfurt cannot achieve its "100% renewable" target on its own. To meet its energy needs, the city will have to use resources from the metropolitan area and even the wider Land (regional level) for wind power and biomass.

It is a win-win situation: the metropolitan area has renewable energy resources (which should cover 184% of its power needs by 2050) and has developed many good practices whereas the city has expertise in energy efficiency and a longstanding experience with the passive building standard.

INVOLVEMENT OF LOCAL AND REGIONAL STAKEHOLDERS

SHARING AND CONSOLIDATING THE CITY'S VISION OF THE FUTURE

The municipal team was able to convince local stakeholders of its ambitious objective by involving them and by clearly communicating to the general public the results and implications of its energy and climate policy. Pilot projects also helped raise public awareness.

In 2013 and 2014, as part of the preparation phase of its masterplan, the City of Frankfurt organised workshops with economic stakeholders (businesses, banks, etc.) as well as public consultations involving over 800 inhabitants. These workshops made it possible to integrate their needs and ideas into the plan and to convince them of the project's added value for the whole region.

The city council has also set up a steering committee with 30 well-respected persons from very different backgrounds. Its stated mission is to provide advice and evaluate the implementation of the plan by the municipality. Monitoring will also be provided by a regional monitoring structure responsible for publishing energy data on the Frankfurt Rhine-Main metropolitan region based on contributions from the Land of Hesse, municipalities and associations of municipalities as well as energy suppliers and network operators.

The metropolitan region Regionalverband FrankfurtRheinMain is the city's main partner for implementing the "100% renewable" measures. This cooperation opens up new opportunities: whereas previously the city and region were simply energy users, they now create value and have become renewable energy prosumers, like many other stakeholders in the region.

For further information

www.frankfurt.de/sixcms/detail.php?id=3077