

# MASTERPLAN 100% CLIMATE PROTECTION, 100% RENEWABLE ENERGY SUPPLY: FRANKFURT



**Frankfurt, Germany**

Year of Initiation: 2013

## Project Highlights

- 100% shift to regenerative sources of energy by 2050
- People centric approach to ensure energy savings

## Background

Frankfurt am Main is among the most built-up cities in Germany; the population rose to around 690,000 in 2013. In 2010, approximately 22,600 gigawatt hours (GWh) of final energy were consumed—just under 1% of German’s final energy consumption. 95% of this energy was imported, i.e. generated outside of Frankfurt and, as a rule, outside of the region. Ever since the founding of

the Energy Agency and the co-founding of the Climate Alliance in 1990, Frankfurt has put a great deal of effort into climate protection. In 2012, the City Council decided to convert the city’s entire energy supply to renewable energies by 2050 and to develop the “Master plan 100% Climate protection” for its implementation.

## Project Objectives

The master plan aims to change the energy landscape of the city and ensure the adoption of regenerative forms of energy. The specific objectives of the master plan are:

1. Conversion of entire energy supply to renewable energies by 2050
2. Halving energy consumption and reducing CO<sub>2</sub> emissions by 95% by 2050

## Key Stakeholders

Frankfurt Energy Agency; Climate Alliance; Frankfurt city council; Federal Ministry for the Environment

## Approach

The master plan focuses on three areas heat, electricity and local traffic. The plan aims at not only drastically cutting the consumption but also aligning and optimizing demand and supply. The current Master Plan envisions that approximately 25% will be supplied from energy generated within the City, 25% from outside the City, and total energy consumption will be decreased by 50%. The plan included:

- Converting to an exclusively regenerative energy supply; energy production largely from renewable sources in Frankfurt and the Rhein-Main Region; promoting sustainable regional material cycles
- Participation of residents, companies, energy providers, housing industry, universities and science; involvement in brainstorming and concept development; motivation to implement own measures
- The program also supports initiatives like:
  - “Saving with a bonus – Frankfurt is saving electricity”. The initiative encourages participants to save electricity by providing them with incentives, for instance, participants have saved an average of 65 euros and also protected the climate
  - Linking up for more efficiency – Mainova AG is expanding its district heating network
  - Climate-friendly nutrition – climate gourmet: This initiative specifically targets the nutrition sector of the city
  - Reduction in operational costs of various organizations

## Financial Structure

Receives funding from Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

## Achievements



- Climate Change Mitigation
- Carbon-emissions mitigation and adoption of renewable energy alternatives
- Behavioral changes and mass awareness among the residents of the city about the issues of climate change

## Success Factors

- Strong and stable Institutional and legislative capacity
- Innovative and integrated strategy targeting a large spectrum of stakeholders
- Adoption of Incentive based mechanism for promoting energy savings and shift to clean energy
- Consistent and regular monitoring and evaluation mechanism
- Highly educated work force
- Citizenry that supports climate action



Source:

1. <https://www.frankfurt-greencity.de/en/status-and-trends/climate-and-open-spaces/renewing-frankfurts-energy/>
2. Masterplan 100 % Climate Protection – Frankfurt am Main, City of Frankfurt am Main, Municipal Energy Agency

For more Information

1. <https://www.100-percent.org/frankfurt-am-main-germany/>
2. <https://www.futurepolicy.org/renewable-energies/100-renewable-energy-urban-areas-frankfurt-germany-2012/>
3. <https://www.renewables-networking.eu/documents/Case-Study-Frankfurt-DE.pdf>