

# FRANKFURT AM MAIN

## City baseline

### Facts and figures



**Population and history:** Frankfurt am Main is Germany's fifth largest city, gathering approximately 750 000 inhabitants with a current population growth of approx. 10 000 inhabitants/year.

**Location:** The city is at the heart of the Frankfurt Rhine-Main Metropolitan region which is Germany's second largest metropolitan region with 5.5 million inhabitants.

**Economic indicators:** The region is home to 365,000 companies and a workforce of 2.88 million, and has an annual GDP of EUR 200 billion.

At the local level, EUR 2 billion from the local budget is coming from company taxes (banks, financial organisations, airport, industrial parks etc).

**Energy and Climate:** Climate protection has been on the agenda for a long time based on the Climate Protection Plan 2008, comprising concrete actions till 2020. The plan was officially adopted by the City Council and City Council Assembly which in 2012 also adopted the goal to supply Frankfurt with 100 % renewable energies the latest by 2050. In 2015, the City Council Assembly acknowledged the "*Masterplan 100 % Climate Protection*" study as a guiding instrument.



## General context

*Frankfurt 2030+* is the Integrated Urban Development Concept setting the local framework for the coming years. It defines six goals and development strategies: Frankfurt for everyone, Dynamic business metropolis, More Frankfurt, Environmental and climate-friendly Frankfurt, The region is the city, Urban development as a joint task.

Energy and climate issues are an integral part of the urban development concept. Nevertheless, a number of strategic development topics have dedicated independent “masterplans” that are part of the overall urban development concept. Energy and climate issues are directly addressed through the “Masterplan 100% Climate Protection”.

In Frankfurt am Main 8.75 million tons of CO<sub>2</sub> were emitted in 2017 corresponding to:

- 7.90 million tons divided as follows: 33% from the tertiary sector, 29% from the industry, 21% from traffic and 17% from the households.

- 0.85 million tons emitted by the airport and the flight movements (up to 3 000 feet). The total emissions caused by the airport and flight movements are shared among three different municipalities as the airport is not uniquely situated on Frankfurt am Main’s territory.

Frankfurt am Main is the capital of commuters in Germany as in no other city more people commute to the City in comparison to the total number of the population: 370 000 people come to the city everyday by car, public transport and airplane. Approximately 60% are commuting by car, meaning a minimum of approx. additional 100 000 cars during the normal working day, causing several obvious problems in terms of congestion and air quality.

In Frankfurt am Main, the real estate values are dramatically increasing and 65% of the inhabitants rent their homes. Rents are high with approximately an average of 10 euros/m<sup>2</sup>. There are 80 000 buildings in Frankfurt am Main and 80% of them will still exist in 2050, but currently, the renovation rate in the private sector is very low. There is currently a missing gap of approx. 90 000 housing units in Frankfurt am Main. The city offers almost as many jobs as it has inhabitants. Thus all these factors will lead to even more commuters. Indeed, the municipal urban department is faced with the fact that social aspects are counteracting environmental aspects: as there is no more land available within the city’s internal boundaries, new housing will be developed on the outskirts, impacting further the emissions due to commuting. The city council has decided that they need to comply with passive house standards, but there are barriers as this decision is not legally binding. It is only a guidance requiring systematically negotiations with the private investors.

The Transition Town Movement is active in Frankfurt am Main and several neighbourhood projects were set up in this context. The municipality has currently a support programme in place which contributes about EUR 1 000-2 000 to small scale community projects as a start-up capital for climate mitigation actions.

The Fridays for Future is a strong movement in Frankfurt am Main, demonstrating weekly and putting pressure on the city council’s Environmental Committee. Among other impacts that resulted in a decision on an extended coalition plan on how to speed up the city’s climate protection actions. This plan, the Frankfurt Climate Alliance, has been agreed on by the city’s council assembly at the end of 2019.

In Frankfurt am Main, small businesses with less than 15 employees, represent 95% of the local businesses. However, their individual impact on the local emissions is not that big, being comparable

to the one of a household. Locally, they are accompanied by *Lust auf besser leben GmbH* to help them act on climate change with specific actions that they could set up. However, this is difficult, since most of them have limited resources and availability. *Lust auf besser leben GmbH* was set up 5 years ago and is funded via non for profit projects (partly financed by the Municipal Energy Agency) and for profit consulting activities.

Frankfurt am Main has three major industrial parks. The biggest one is the Industrial Park Höchst, operated by Infraser and gathering 1 900 employees. The whole industrial park covers 460 hectares by 90 companies and 22 000 employees. The customers of the industrial park are chemical and pharmaceutical businesses (e.g. Sanofi and BASF). Since 2000, the total investments into the park mount up to EUR 7.32 billion. The industrial park is in close cooperation with the municipality and is striving for emissions reductions via the production of steam and electricity and thus avoid 1 million tons of CO<sub>2</sub>/year also by shutting down the coal boilers by 2022 and replacing them by COGEN boilers.

Despite limited land available in the inner city and the presence of large industrial parks, 52% of the city area is green, covered by parks and water. However, currently there are some controversial projects being implemented as they are using land that is allocated for allotments for gardening, that will now become built land. This is the case of the Innovation Quarter: a high density district that is planning for a green corridor and connection for pedestrians, bikes. Innovations are foreseen related to rainwater, energy consumption, production via solar panels, passive house standards, limited parking to 0.5 parking places per household.

In 2014, Frankfurt am Main was among the finalists of the European Green Capital award, a European Commission initiative.

## Institutional context

Approximately 13 000 persons are working for the municipality out of which the core administration represents approximately 10 000 employees covering 62 different departments, public companies and agencies

### The City Council

In Frankfurt am Main there are 10 vice mayors and 1 lord mayor whose role is to represent and support the residents and businesses in comparison to the vice mayors who own the decision making power. The 10 vice mayors represent 10 independent municipal departments.

### The City Assembly

It is the most powerful organisation where elected representatives take the key decisions.

### The Environmental Committee

It is constituted of specialist elected representatives, however the final political decisions are not taken here, but are proposals are elaborated and submitted to the City Council to be adopted.

### The Frankfurt am Main Climate Alliance

It is constituted of all relevant deputy mayors. They met on 22<sup>nd</sup> November 2019 to agree on additional priority actions to be implemented related to carbon reduction and climate adaptation. This agreement has been adopted by the Frankfurt am Main City Assembly. Currently, the responsibilities are allocated to the relevant departments who will be committed to specific targets and measures, evaluate the impact of the actions and develop a business case for each action.

As the Frankfurt am Main Climate Alliance does not cover private businesses yet, there still are relevant gaps which have to be filled in the near future.

In Frankfurt am Main local elections will take place in 2021.

### The Magistrat

The Magistrat is an administrative and executive body, taking decisions on ongoing administrative matters, preparing resolutions for the city council and executing them. The Magistrat is supported by the city administration, with all its departments and municipal companies. With the exception of the lord mayor, the Magistrat is elected by the City Council. The member of the Magistrat cannot be a member of the city assembly at the same time and vice versa. The 10 full-time Magistrat members are responsible for their own business areas via the respective Dezeranat (department).

The Magistrat takes part in the City Council meetings where it is usually represented by the responsible department heads. The Magistrat members have the right to speak, however they are not allowed to vote.

## On energy and climate policies

### ➤ Local

In 2008, the City Council of Frankfurt am Main adopted an energy and climate action plan comprising a set of 50 concrete measures to reduce GHG emissions. Central elements aimed at decreasing heat and energy demand by rewarding electricity savings in private households, public awareness raising campaigns, modernising residential buildings and promoting energy efficiency in businesses. Subsequently to its early climate mitigation concept, Frankfurt am Main developed a so-called “*Master Plan for 100% Climate Protection*”, envisioned that the city’s energy consumption would be covered by 100 % local and regional renewable energy sources until 2050.

120 measures were extracted from the Action Plan and 80 are the responsibility of the Energy Agency. Currently a local company in Frankfurt am Main is doing an economic and ecologic evaluation of actions implemented to evaluate their impact on the local emissions. Thereafter, these actions will be prioritised and combined with a budget and broken down per department. It is important that the Energy Agency is seen as a best practice case by other departments. It is also relevant to show that the Energy Agency is responsible for a relatively small amount of emissions and that several other departments have a responsibility that they need to address.

In addition to the “*Master Plan for 100% Climate Mitigation*” having its targets, there are a series of other relevant master plans such as the one on mobility which is currently being updated. These masterplans are not integrated, showing that the different municipal departments are rather working in silos as they are fully decentralised and independent.

The Energy Agency is responsible to produce a CO<sub>2</sub> inventory report every five years which serves mostly internal purposes at the moment. Currently the report mainly contains the contribution from the Energy Agency and very few other departments give inputs. In addition, every two years a report on the implemented actions is also produced by the Energy Agency.

### ➤ National

In November 2019, the German parliament approved the climate protection plan, aiming to cut Germany's greenhouse gas emissions to 55% of the 1990 levels by 2030. The climate protection law fixed an initial carbon price of EUR 10 per ton of CO<sub>2</sub> as of 2021, which is set to rise to EUR 35 by 2025. Thereafter, the pricing will be left to the market. Experts from the Potsdam Institute for Climate Impact

Research, which had advised the Climate Cabinet on this issue, note that the proposed carbon price path is significantly too low to meet the country's 2030 targets, nor to trigger a profound and systemic change in the energy system. They had demanded a starting price of EUR 50 per ton of CO<sub>2</sub>, which would then have increased to EUR 130 by 2030. One positive aspects of the climate protection law concern the ban on the installation of new oil heating as of 2026. In order to reduce energy poverty, households covered by social aid programs will get 10% more subsidies to pay their heating bill. In addition to this, a reduced VAT on train tickets (from 19% to 7%) will be implemented to incentivize citizens to shift to clean public transport in their travels<sup>1</sup>.

As Germany is a decentralised country, the national CO<sub>2</sub> inventory is not broken down to the municipal level, therefore each municipality does it on its own as there is no legal obligation on climate mitigation at local level. However, there is a German standard for CO<sub>2</sub> and city inventories: an online tool that is in line with the CDP and open for each city to use as municipal climate and energy action plans are compulsory.

### Important aspects of climate and energy planning

Frankfurt am Main has key instruments to tackle energy and climate issues. One of the most important ones is the Energy Agency of the City of Frankfurt am Main – known locally as the Energiereferat. It was founded in 1990 and is responsible for the development and implementation of Frankfurt's climate protection policy, working closely with a wide range of local partners, including businesses, investors, planners, households and non-profit-organisations, to support the achievement of the city's greenhouse gas emission goals.

The agency provides services and programmes in the following areas:

- Electricity saving in households and business sector
- Reduction of energy consumption and use of renewable energies in commercial and office buildings
- Energy planning and combined heat and power supply
- Strategic Planning to achieve the city's goal of shifting to 100% renewable energy

The City of Frankfurt am Main is a member of several European organisations and initiatives, including Climate Alliance, EUROCITIES and Energy Cities. Frankfurt am Main is also a Covenant of Mayors Signatory.

Currently 16 persons are working in the Energy Agency which has a budget of EUR 1.7 million (excluding staff costs).

While the Municipal Energy Agency is focusing on climate mitigation, the Environmental Agency is working on climate adaptation issues. The Energy Agency is independent, not being part of the Environmental Agency, meaning it has easily access to the political level, making it easier to plan and set up projects. The Energy Agency and the Environment Agency are part of the Environmental Department. Similar to the Energy Agency (Energiereferat), there are other municipal agencies focusing on different topics (e.g. children, multicultural aspects etc). These agencies are all characterised by the fact that they are independent from the other departments.

#### Local utilities

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<sup>1</sup> <https://energy-cities.eu/germany-fails-to-regain-climate-leadership/>

The local energy provider is the Mainova AG, owned to 75% by the municipality and employing about 2 900 persons. They operate about 200 decentralised CHP systems, primarily gas based.

ABG Frankfurt is the largest public housing company in Frankfurt am Main, maintaining more than 52,500 apartments in Frankfurt am Main, a fifth of the population living in these houses. They refurbish more than 1 000 housing buildings/year, the funding coming from the cash flow.

ABG Nova is a company owned by ABG Frankfurt and Mainova, both of them being owned by the municipality. ABG Nova links the demand and the supply side.

### **Main achievements in past SEAPs**

Frankfurt am Main joined the Covenant of Mayors in 2008 with the ambitious target of reducing its CO<sub>2</sub> emissions by 40% by 2030. The city's Sustainable Energy Action Plan (SEAP) gives priority to three areas of action to decrease greenhouse gas emissions: transport, buildings and local energy production.

Since 2006, ABG build nearly zero energy buildings with an achievement of 3 500 NZEB so far. They also have energy plus buildings. In 2020, ABG Nova need to build another 10 000 dwellings in Frankfurt am Main and are currently reflecting on how to do it climate neutral by focusing on heat from waste and water management. Currently they are leading in selling photovoltaic on the roof for tenants.

### **The URBACT Local Group**

In Frankfurt am Main it is important to focus both on the creation of an internal ULG as well as an external one.

#### Internal URBACT Local Group

In Frankfurt am Main, an improved cross-departmental cooperation is a crucial aspect of the organisational behaviour of the administrative body to manage and to negotiate the different climate mitigation actions which have to be taken to realise the goals of the Masterplan 100% Climate Protection. In addition to the activities within ZCC, the Environmental Department just recently gained the political mandate to set up a new cross-organisational cooperation structure between the departments of the City Council to manage and to monitor the newly formed Climate Alliance in Frankfurt am Main. In this sense the Alliance is Frankfurt answer to the climate emergency state, which has been announced by many European cities during the last couple of months.

The idea behind the Climate Alliance is to establish a stronger responsibility between the different departments of the City Council. The Mayor for Environmental Affairs is responsible for the coordination and the management of the process. The Energy Agency will play a strong roll to set up and manage the underlying process with all topics which will relate to climate mitigation.

Furthermore, the Climate Alliance also involves actions to foster the Climate Adaption strategy of the City Council. Both processes will involve closer cooperation with all departments. At the very same time the cooperation and the several working groups which will be in place to coordinate the different topics and themes will be a part of the Internal URBACT Local Group in Frankfurt am Main.

#### External URBACT Local Group

Previously, local stakeholders were involved in the preparation of the Climate Protection Concept as well as the Masterplan 100% Climate Protection. To support the impact of the climate mitigation concepts, the Environmental Department established an external advisory group, the Climate Mitigation Council, which consists of 30 appointed members, covering different areas and perspectives

throughout the urban society. However, the cooperation was not active enough as there was no governance structure and management in place. Furthermore, it is necessary to cover other areas of the society as well as not involving only experts. It is the plan to involve stakeholders who are directly responsible for the CO<sub>2</sub> emissions in the different sectors in the city (e.g. businesses).

To extend the impact of the Climate Mitigation Council, the Environmental Department is planning to develop the concept of the group further and to establish the Frankfurt Climate Partnership. This concept is very much inspired by the example of the Manchester Climate Partnership, which proved to be an effective instrument to share responsibilities throughout a wider range of stakeholder in the city. Potential actors to be involved in Frankfurt am Main in the ULG: local utilities (Mainova, ABG Frankfurt), Lust auf besser leben gGmbH (representing 55 small businesses), Industrial Park Höchst and its operator Infraser. Over time, more and more stakeholders who are responsible for CO<sub>2</sub> emissions are supposed to be involved. Based on the cross-departmental process and setting up a Climate Partnership, the Environmental Department will be able to set up an integrated approach to manage the Climate Mitigation plan for Frankfurt am Main.

The ULG would also interlink the existing active parallel networks by gathering their respective representatives (e. g. the Climate Adaptation Group and the Forum on environmental topics initiated 20 years ago by a representative from the city council focusing on the ISO certification).

## Initial SWOT

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• The Municipal Energy Agency (Energierferat) is independent, not being part of the Environmental Agency, meaning it has direct access to the Magistrat, making it easier to plan and set up projects.</li> <li>• Local utilities owned by the municipality are engaged in the energy transition and climate protection</li> <li>• ABG needs to build another 10 000 dwellings in Frankfurt am Main and is currently reflecting on how to do it climate neutral by focusing on heat from waste and other ways of climate friendly energy supply. Currently ABG is strongly engaged in the developments of PV-projects on their buildings in cooperation with the Mainova AG</li> <li>• The Transition Town Movement is active in Frankfurt am Main and there are many community projects.</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Working in silos on the preparation and implementation of the different masterplans, each department being decentralised and fully independent 370 000 commuters/day out of which approx. 60% are commuting by car causing several problems in terms of congestion and air quality. Urban planning and transportation planning needs to be much better coordinated</li> <li>• There are lots of sectoral policies, in Frankfurt am Main strategic planning was mostly project related since the 80s. Many things happen already at building level, but not so much at neighbourhood and city spatial level strategically.</li> <li>• One priority is the transport sector. The city divides transport into tiny chunks instead of a global strategy.</li> <li>• Real estate values are dramatically increasing and 65% of the inhabitants rent their homes. Rents are high with approximately 10 euros/m<sup>2</sup>.</li> <li>• There are 80 000 buildings in Frankfurt am Main and 80% of them will still exist in 2050, but currently, the renovation rate in the private sector is very low.</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Pressure from independent groups like “Fridays for Future”, creating momentum as well as political pressure on the decision making process</li> <li>• Businesses have their own climate protection agendas and to some degree ask for actions on energy and climate</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• At the moment the city does not have any control possibilities to channel the increasing number of data centres (currently about 40 bigger ones) covering an area of approx. 600 000 m<sup>2</sup></li> </ul>

<ul style="list-style-type: none"> <li>• There are several parallel stakeholder cooperation networks, but they are not always interlinked and sometimes quite specific</li> </ul>	<ul style="list-style-type: none"> <li>• In some cases, there are no housing areas around these data centres or they are too far away, so there are limitations to utilise the available waste heat.</li> <li>• There is a missing gap of approx. 90 000 housing units in Frankfurt am Main</li> </ul>
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## How Frankfurt am Main wants to use the ZCC project?

Frankfurt am Main wants to set up a local carbon budget to support the development of a more integrated inter-departmental cooperation process in the area of climate mitigation and climate adaptation. This would serve at the political level to the 10 vice mayors to attribute responsibility for CO<sub>2</sub> emissions to the different departments and see their influence in the different sectors throughout the city.

As the *Frankfurt Climate Alliance* does not cover private business yet, there will still be gaps on this issue. Beside the establishment of an integrated cooperation approach between the different departments, the Energy Agency wants to extend the current “Climate Alliance” approach to involve also other, non-pub sector related stakeholders.

As an additional element, the Energy Agency of the City of Frankfurt am Main currently explores the possibility to set up a local Climate Fond. Such a financial instrument could be used to offer an alternative for compensation projects and which could make sure to direct investments to locally relevant developments.

## Sources:

- Interviews with:
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  - Dr. Alexandra von Winning, Lust auf besser leben gGmbH, Managing Director
  - Ms Janina Steinkrüger, Dezernat X, Frankfurt am Main City Council, Referent and Office Supervisor to Mayor of Environmental Affairs Rosemarie Heilig
  - Mr Peter Kreis, Frankfurt am Main City Council, Agency of Urban Planning, Head of Urban Development Department
  - Dieter Jobb, Head of Energy Management, InfraserV GmbH & Co. Höchst KG
  - Prof. Dr. Hannes Utikal, Director of the Center of Industry and Sustainability, ProVadis School of International Management and Technology AGs
  - Mr Florian Unger, Head of Energy Efficiency, Energy Agency (Energierreferat)
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