

## MODENA

### City baseline

### Facts and figures

**Population and history:** 181. 000 inhabitants

**Location:** Modena is situated in the Po Valley, in the Emilia-Romagna region, in northern Italy.

**Economic indicators:**

**Energy and Climate:** Modena, as well as the entire Italy, is characterised by an increase of extreme meteorological events such as heat waves and drought periods alternating with enhanced precipitations and floods.

### General context

Modena is a university and an industrial city, well known for its automotive industry (e.g. Ferrari, Maserati, etc), but also intense farming.

The most critical aspect for Modena is the air quality that is mainly affected by:

- emissions from traffic due to the presence of two highway axes as well as an important use of the private car for local trips, in spite of a dense public transport network;
- emissions from the industry as Modena is one of the areas with the highest industrial concentration in Europe;
- the city's location that favours concentration of pollutants due to poor ventilation, high levels of humidity and low air exchange. This is also the case of other cities in the Po Valley.

Based on data from 2015, the major greenhouse gas emissions are represented by:

- 37,5% from energy production and heating of private buildings
- 36,4% from private transport
- 24% from tertiary/service sector

In the past years, Modena focused on primarily tackling transport emissions. In Modena the modal split of cycling is above 10%. There are several cycling services, such as: bike sharing, bike storage and parking facilities, technological innovation (WeCity app, wi-fi counting sensors), bike promotion initiatives (bicycle registration, incentives for e-bikes, Bici&bus, etc.).

Four years ago there was a strategic transition in the city centre of Modena towards a more sustainable and healthy city, ensuring a better air quality and less noise pollution, guaranteeing an increased quality of life. The limited traffic zone has increased by 7%, and the pedestrian areas by 6% through specific measures implemented:

- the pedestrianisation of part of the city centre (example of Piazza Roma that became a completely pedestrian area in 2016 after being used as a parking area previously);
- 0,69 km<sup>2</sup> of Limited Traffic Zone, inside the old city walls' area;



Comune di Modena



- the Limited Traffic Zone is monitored by checking the authorisation of incoming vehicles through an electronic system;
- more than 37.000 m<sup>2</sup> of pedestrian area in all the main squares and narrow streets;
- all streets in the old town centre (19km) have a 30km/h speed limit.

Currently, there are 86 km of roads with limited speed zones to 30 km/h, representing 17% of the urban roads.

In terms of refurbishment of the public buildings (schools, sport centres, etc), there are more than EUR 7 million invested. Modena is also focusing on refurbishment of private homes and there are several incentives in place, such as tax reductions. However, there is a problem of mentality and focus need to be set on changing resident's mindsets to convince them to give priority to investments in refurbishment works, instead of the private car. This is an important challenge in Modena, home to important car industry.

As far as residential buildings renovation and energy retrofitting actions are concerned, the National Government set up a Renovation Bonus, Ecobonus and Furniture Bonus with a 50% tax deduction in 10 years and a maximum of EUR 96 000 spent per households.

At National level, the National revolving fund for Energy Efficiency guarantees loans for public authorities and ESCOs that support investment in energy efficiency.

At the Regional level, the Emilia Romagna Region supports private companies to implement energy efficiency measures via the Energy Fund, a revolving fund with a green and low interest rate loan.

Furthermore, in 2016 the "Conto Termico 2.0" was established as a subsidy to increase the energy efficiency of existing buildings and the production of thermal energy from renewable sources and high-efficiency systems. The beneficiaries are public administrations, businesses and private individuals.

In 2015 Modena municipality issued a tender for facility management and heat, electricity and air conditioning supply for around 200 municipal buildings, mainly schools and sports facilities. The service was contracted, through a European tender for 9 years: in addition to the ordinary management, the contract provides EUR 7 million for investments in energy efficiency. The minimum savings foreseen are -10% compared to consumption in 2014 (approximately 2,867 MWh).

The heating system in Modena is mostly individual with the exception of 3 small district heating systems covering about 10% of the needs.

The City government political priorities and key issues for the time frame 2019-2024 are oriented towards a "*sustainable and moving city*" and include:

- education for sustainability within an integrated and universal framework, considering UN Agenda 2030 for Sustainable Development;
- urban green areas, forestation and connection between rural and urbanised areas through a contiguous and continuous green infrastructure;
- social agriculture in urban and peri-urban areas;
- waste management;
- energy efficiency;
- cross-cutting actions targeted at climate protection, resilience and air quality through European funded projects;

- sustainable Urban Mobility Plan and Parking Plan that promote soft, sustainable and shared mobility; urban cycle lanes and special routes based on home-school and home-work journeys and competitiveness of local public transport.

## Institutional context

The internal decision-making takes place at political level via the City Mayor, 9 City Executives and a City Council. Energy and Climate issues are in the hand of the City Executive for Environment, Agriculture and Sustainable Mobility.

After the local elections in 2019, the objectives for 2019-2024 were presented by the Mayor to the City council, they were adopted and translated also at administrative and operational levels.

## On energy and climate policies

### ➤ Local

The local public administration is only responsible for the energy retrofit of public buildings, whereas it has no control of private interventions (on residential, commercial or industrial estates) which remain a responsibility of private owners according to the Regional legislation.

### ➤ Regional

In Italy, the decision-making process on energy and climate issues is based on regional directives in line with national and EU guidelines.

The Emilia-Romagna Region committed to reduce its GHG emissions by 80% until 2050. It finances local PAESC (Climate and Sustainable Energy Action Plan) via a specific call targeted to municipalities.

A Regional Energy Observatory was established in 2015 to gather information on infrastructures and power plants, energy consumption, existing regulatory framework, regional planning instruments and policies and sources of financing and to elaborate/collect data to support local administrations.

Furthermore, the Emilia-Romagna Region recently established that all the regional municipalities with more than 30.000 inhabitants have to identify an Energy Manager in line with the National Law 10/1991.

### ➤ National

Climate risk receives little attention at the National level, the focus being set on mitigation actions. Currently, the National climate adaptation plan lacks financial backing and clear guidance to support regions and municipalities in integrating climate risk into development planning or disaster risk reduction efforts<sup>1</sup>. Therefore, the Emilia-Romagna region developed on a voluntary basis its integrated climate mitigation and adaptation strategy up to 2050, going far beyond national plans.

## Important aspects of climate and energy planning

### Long term vision

In 2015, the City council adopted the “Local Roadmap 2050”, a policy document for the promotion of sustainable development with a low environmental impact, developed with the EU INTERREG IV C

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[https://www.minambiente.it/sites/default/files/archivio\\_immagini/adattamenti\\_climatici/documento\\_pnacc\\_luglio\\_2017.pdf](https://www.minambiente.it/sites/default/files/archivio_immagini/adattamenti_climatici/documento_pnacc_luglio_2017.pdf)

project “*IMAGINE - Low Energy Cities*”.

#### Covenant of Mayors and Sustainable Energy Action Plan

In February 2019, the City Council voted to sign the new “Covenant of Mayor for Climate and Energy” that supports the implementation of the EU 40% greenhouse gas-reduction target by 2030 and the adoption of a joint approach to tackling mitigation and adaptation to climate change. Modena is currently developing its sustainable Energy and Climate Action Plan (SECAP) to go beyond its Sustainable Energy Action (SEAP) that was adopted in 2011.

#### Sustainable Urban Mobility Plan

The new SUMP of Modena will cover the period 2020-2030 focusing on a sustainable transport system with less environmental and social impacts. The Cycling Mobility Plan is aiming to increase the use of bicycles, public transport and walking rather than the use of cars.

The Mobility Plan for home-work trips is addressed to the civil servants of the City of Modena, in order to offer them different mobility options rather than the use of private vehicles and, at the same time, to increase their awareness of individual and collective benefits in terms of health, wellness and savings. The Plan was elaborated in the frame of the MOVECIT EU project.

#### Local urban development Plan

Modena is working on the next city Plan (strategy for urban environmental quality) that should be adopted in 2021, but this deadline will most probably be extended. It is a demand from the Emilia-Romagna Region to work on a strategy on urban quality and environment quality, including energy and climate issues. There are top-down standards fixed at the national level, however they are not well translated and do not correspond to the reality on the ground.

#### Regional Integrated Air Plan

The City of Modena is involved in the implementation of the “PAIR 2020”, the Regional Integrated Air Plan adopted in 2017 by the Emilia-Romagna Region, that foresees 94 measures for the air quality improvement, with the aim of reducing pollutants in the regional territory and being in line with the maximum limits fixed by the Directive 2008/50/EC on ambient air quality and cleaner air for Europe 2008/50/EC Directive and by the Italian Law.

#### Key organisations

Within the city administration there are two particularly important departments that need to engage with the ZCC project:

- The “Environment, Civil Protection, Asset and Territorial Safety” Department, mainly in charge of: coordination of communication, dissemination and training on environmental themes; collaboration and support to the department elaborating the general urban tools related to environmental aspects; coordination of environmental projects; promotion of renewables; implementation of SEAP; management and control of service contracts on waste collection and treatment, implementation of procedures on dangerous waste management and on environmental protection; the management of procedures on air pollution; air quality monitoring; management of procedures on environmental noise and electro-magnetic pollution; implementation of procedures on water management; contribution to the management of protected areas and urban forestation areas
- The “Urban Planning and Sustainability” Department, mainly in charge of: external coordination of the preparation of the new Urban General Plan; promotion of urban regeneration; coordination of the activities in the field of environmental planning. The Mobility, Traffic and Urban development Office is part of this department. This office is working on new infrastructure planning, sustainable mobility. The office was responsible for the elaboration of the Cycling Mobility Plan and is currently elaborating the SUMP.

- AESS (Energy and Sustainable Development Agency of Modena) was founded in 1999 as a non for profit association, primarily involved in the promotion of renewable energy sources, energy efficiency and reduction of energy consumption among local authorities, SMEs, schools and consumers. Its major area of interest is the province of Modena, but operates also at regional and national level, gathering approximately 70 members.

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

The SEAP implementation, as certificated in the monitoring report of AESS (Energy and Sustainable Development Agency of Modena) led to 11,9% CO<sub>2</sub> reduction in 6 years (since 2009 up to 2015), in line with the objective of a 20% reduction by 2020. It needs to be noted that the industry sector is not included in the SEAP and that there was less focus on actions in tertiary and residential sector, the focus being primarily on mobility actions.

### **Past projects to build on**

IMAGINE (INTERREG IVC) helped Modena to set up a long term vision for 2050, focusing on increased quality of life with a low carbon impact.

In the framework of the GrowGreen project Modena will develop a local Nature Based Solution strategy in 2022, incorporating it in its hydraulic risk management plan and integrating it with the city's spatial plan.

## **The URBACT Local Group**

In Modena, it is important to focus both on the creation of an internal ULG as well as an external one.

### Internal URBACT Local Group

During the city visit an internal workshop was organised, involving several municipal departments who expressed the need of inter-departmental collaboration in the future compared to the current work they are doing rather in silos. This is crucial for establishing long-term objectives and assign responsibilities to the different departments in terms of climate impact of their respective work.

The following departments expressed interest at this stage: Communication Office, "Urban Planning and Sustainability" Department, "Environment Private Building and Productive Activities" Department, "Service for Environment". The participants also expressed the need of involving the Mobility, Economic and Culture departments.

### External URBACT Local Group

During the URBACT city visit two 2 hours' workshops were organised with the key stakeholders in Modena to plant the seeds for the future ULG. The following stakeholders participated in the workshop and expressed their interest to join the ULG:

### **Associations**

- Fridays for Future, local branch of the students' movement inspired by Greta Thunberg;
- Local ISDE (International Society of Doctors for the Environment) working on health issues and diets that have a positive impact on the environment, but also on health. The main purpose of ISDE is environmental protection, both locally and globally, prevention of numerous illnesses and improvement of the quality of life. ISDE was established as a tool for educating and physicians and the general public, and stimulating awareness and initiatives by public and private bodies, in particular governmental agencies;

- Legambiente (Environmental Association of Italy), the most widespread environmental organisation in Italy, with 20 regional branches and supported by more than 115 000 members' donors and by projects and businesses that are in line with the organization's principles. Among its activities: raise awareness on environment and refurbishment of condominiums; plant trees as an action for forestation.
- FIAB (Italian Environment and Bicycles Federation) is an environmental organisation. Its aim is to spread bicycle use as a sustainable transportation means. At national level it gathers more than 140 local independent associations aiming at promoting cycling both as a daily commuting means and as leisure activity.

### **Agencies**

- ARPAE - Environmental Agency of Emilia-Romagna Region - whose main objective is to promote sustainability in the field of environment, health and territory;
- Modena Agency for Mobility (AMO) in charge of planning, organising and promoting the local public transport;
- AESS, Energy and Sustainable Development Agency of Modena, primarily involved in the promotion of renewable energy sources, energy efficiency and reduction of energy consumption among local authorities, SMEs, schools and consumers.

### **Businesses representatives**

- Confindustria Emilia Area Centro is an association gathering 3 500 enterprises from the mechanics, textile and food industry;
- Confesercenti Modena (Business Association), the major association gathering 4 000 small and medium local enterprises from the commerce, tourism and handicraft sector;
- CNA - the National Confederation of Crafts and Small and Medium Enterprises (SMEs) is an association of businesses and entrepreneurs that are politically, culturally and economically independent. In the Province of Modena, it gathers 12 000 enterprises, out of which 2 000 in Modena ranging from commercial to very little enterprises.

### **Public service providers and multi-utilities**

- SETA, the Local Transport Company in the Province of Modena and also in other two provinces of the Emilia-Romagna Region (Reggio Emilia and Piacenza). It also manages the sale of tickets and subscriptions;
- Hera Group (Multi-utility company) has concession in Modena for the management of waste, water, distribution of energy, power and gas. Their budget is of EUR 6 million/year out of which 50% is public cofinancing. They manage several power plants, one third from their energy production comes from renewable energy sources (RES), mainly geothermal and photovoltaic. 12% of the energy provided by Hera Group comes from RES. In 2018 they made the commitment to 100% RES, but in practice it is too expensive. Hera Group is using waste from Modena and other municipalities to produce biogas.

### **University and academic institute**

- University of Studies of Modena and Reggio Emilia. The university has a sustainability coordinator and monitors commuting practices of students and employees. The university does its own emission inventory, trains students and high schools on topics related to the environment. Currently the sustainable energy plan of the university is being drafted. The university can support the municipality with the monitoring of its emissions.



### Other stakeholders:

- BPER (Bank Group) of Modena is a strong entity of five banks, all autonomous and well-established in their various areas of operation. In addition to the banks, the Group also includes numerous product companies (asset management, personal loans, etc.) and special purpose vehicles;
- Public General Hospital of Modena – University Hospital Organisation of Modena

The City of Modena will try to enlarge this group of stakeholders, including other potential territorial actors.

### Initial SWOT

<b>Strengths</b> Motivated local stakeholders Modena is located in the dynamic region of Emilia Romagna committed to 2050 CO <sub>2</sub> reduction targets AESS is supporting the municipality with the development of the SECAP	<b>Weaknesses</b> The main challenges in terms of private mobility are: high traffic flows during peak hours, excessive use of the private car, safety issues, noise and air pollution, low use of park and ride facilities. In some cases, there is a lack of coordination and inter-departmental collaboration
<b>Opportunities</b> There is a good urban transport system, however its attractiveness needs to be improved, as well as the road-rail interchange.	<b>Threats</b> Modena does not have a local plan on air quality, but needs to apply the regional plan which is linked to climate change; however sometimes actions that are estimated to have a positive impact on climate change are not necessarily positive for air quality improvement. Today the working groups on these issues are not interacting. Example: the main air pollution sources are traffic and heating from wood pellets as their use increased due to incentives in order to phase out natural gas.

### How Modena wants to use the ZCC project?

In Modena the ZCC project will be used to:

- strengthen inter-departmental cooperation and integrate better the different sectorial objectives. The carbon budget approach will be useful to give clear responsibility to each department in terms of CO<sub>2</sub> emissions.
- develop and communicate the socio-economic aspects, both internally at the political decision making level, but also externally with the key local stakeholders. Therefore, at a first stage an internal training will be needed on the socio-economic aspects of climate change and on how to communicate this to the external stakeholders.
- engage with the industry sector and expand the SECAP also to the industry sector
- create a local brand and logo for the engaged stakeholders with specific actions towards CO<sub>2</sub> emission reduction; companies could use this logo to communicate and show they are actively contributing to fight climate change.
- focus on the citizen engagement and changing of mindsets and lifestyles, now based on the intensive use of the private car
- focus on energy consumption in the public sector and in the residential sector.

In Modena it is important to link the Zero Carbon Cities project and integrated action plan to be developed in 2022, with other projects such as GrowGreen where a nature-based-solutions action plan will also be developed in 2022. The first monitoring of the SUMP will also take place in 2022.

### Sources:

- One internal workshop involving representatives of different departments
- Two external workshops with the local stakeholders mentioned above
- Documentation from ULG members' websites