



© Hessebackshutterstock



BARCELONA

Towards energy self-sufficiency by 2050

KEY FIGURES

INHABITANTS



1,6 MILLION

LONG-TERM VISION

AN ENERGY INDEPENDENT CITY BY 2050

Barcelona, Spain's second city in terms of population, economic development and activity, has been optimising its urban flows for years. Its political vision is to become energy self-sufficient by 2050. The associated roadmap makes the "100% renewable" objective an integral part of the city's official strategy by promoting energy savings and energy production based on solar energy, small-scale wind power and district heating.

📍 THE STARTING POINT

MANAGING URBAN DENSITY IN A SUSTAINABLE WAY

Barcelona's strategy is based on a two-fold observation: the high concentration of urban population is one of the major challenges of the 21st century, and the need for large urban areas to develop efficient energy solutions.

In 2015 this analysis led Barcelona to formally lay out its vision of a transition towards energy self-sufficiency. The municipality has set itself two objectives: reducing its greenhouse gas emissions by 40% by 2030 (compared to 2005) and producing enough energy locally to meet municipal needs.

The municipality is also playing a driving role in the city's transition towards 100% renewable energy by promoting low energy use and energy efficiency, the objective being to reduce energy end-use by 10% by 2020 (compared to 2008).

📝 THE APPROACH

SUPPLYING HIGH-QUALITY ENERGY SERVICES TO CITIZENS BY USING RENEWABLE ENERGY AS MUCH AS POSSIBLE

The City of Barcelona started tackling climate change some twenty years ago. In 1999, the municipality adopted a thermal solar ordinance (Ordenanza Solar Térmica). According to this bylaw, new and retrofitted buildings are required to use at least 60% of solar energy to cover their hot water needs. This legislation has proved to be effective: in 2000, the municipality anticipated the installation of 1,650 m² of solar panels, but in fact the figure had virtually reached 90,000 m² by the end of 2012. The ordinance was subsequently extended to PV solar energy in 2011. If all roofs were fitted with solar panels, Barcelona would be able to produce 5,500 GWh/year, thus covering the electricity requirements of its whole population. Currently, the municipality has 50% of its internal needs covered by renewable energy (buildings, lighting, municipal vehicles, etc.).



Brian Kinney shutterstock

Promoting renewable energy and energy savings has been part and parcel of Barcelona’s strategy since 2000. Its 2002-2010 integrated energy plan (PMEB) provided for quantification of the energy used and emissions generated per sector. It also suggested a number of measures aimed at promoting an environmentally-friendly city, reducing air pollution and the use of fossil fuels.

In 2010, Barcelona published its 2011-2020 “Energy, climate change and air quality plan” (*Pla d’Energia, Canvi Climàtic i Qualitat de l’Aire de Barcelona - PECQ*). Partly prepared on the basis of a participatory process involving local stakeholders, the plan reviews the results obtained in the previous period, takes stock of local stakeholders’ energy use and CO₂ emissions and proposes 108 new measures aimed at promoting the development of renewable energy and energy savings. The plan became the city’s SEAP (Sustainable Energy Action Plan) when Barcelona joined the Covenant of Mayors in 2008, thus committing to reducing its CO₂ emissions by 23.5% by 2020.

After the 2012 municipal elections, a new political vision emerged, providing for Barcelona’s energy independency by 2050. Although never formally adopted by the City Council, an interim technical target of 10% of renewable energy by 2024 is the first step in achieving this vision.

A political change in 2015 brought with it new ambitions: the city’s energy policy was aligned with European and international objectives and a 40% CO₂ emission reduction by 2030 target was introduced. The main objective remained an increase in the share of renewable energy and making energy more affordable. The roadmap towards self-sufficiency made the “100% renewable” target part of the city’s official strategy. It reflects the desire to put citizens’ needs at the centre of the energy policy and to use the city’s roofs to produce renewable energy.

The 22@Barcelona district and Fórum area have been equipped with district heating and cooling networks, leading to one of the major transformations of the city in the past few years. These networks cover 24 km and supply 105 GWh per year. They use waste heat from the Besos incinerating plant as well as biomass waste from the city’s public parks.

THE URBAN-RURAL LINKAGE

COOPERATING WITH RURAL COMMUNITIES TO ACHIEVE THE OBJECTIVES

Barcelona is a densely populated city with few opportunities for expansion, and with limited resources. To supplement the energy generated within the city limits, the municipality plans to cooperate with the wider metropolitan area. The partnership and scope have not yet been defined.

INVOLVEMENT OF LOCAL AND REGIONAL STAKEHOLDERS

CIVIL SOCIETY, A DRIVING FORCE FOR THE ENERGY TRANSITION

Since the new political mandate begun in 2015, energy has truly become a structural and cross-cutting issue for the municipality. A new form of governance is emerging in Barcelona, with an authority responsible for coordinating the city’s energy policy by involving all stakeholders. Anxious to develop the solar roundtable (“*mesa solar*”) initiated some years ago, the municipality intends to create forums and citizens’ advice organisations to make civil society an active player of the city’s energy and climate policy.

Barcelona also plans to set up a power supply company. In addition to selling renewable energy, the company will promote mechanisms aimed at developing new energy generation units in the city, thus linking energy production and consumption for the very first time and making energy a public service accessible to all.

The “self-sufficient Barcelona” website was launched to raise public awareness of the issue. This platform provides citizens with information and advice on local renewable energy production and energy efficiency.

For further information
<http://ajuntament.barcelona.cat/>