



IN PARTNERSHIP WITH



CITY CASE STUDY

COUNTRY	POPULATION	EMISSIONS IN 2019	MITIGATION TARGET	TOTAL FINAL ENERGY CONSUMPTION
AUSTRIA	1,935,000	7.5 MTCO ₂ e	NET ZERO BY 2040 (-55% BY 2030)	37,005,GWH/YEAR

Vienna • Phasing out fossil fuels in heating to decarbonise buildings

The largest city in Austria, and fifth largest in the European Union, Vienna is working to be climate-neutral from 2040 on, making use of its low per capita energy consumption compared to other provinces in Austria, and despite a growing population. A Green New Deal for the City is being put together, looking at system integration for a global decarbonisation of Vienna and aiming at redirecting 2 to 3% of its GDP to this objective. Phasing-out natural gas in buildings and district heating is the cornerstone of the city’s strategy to decarbonise the built environment. Development of geothermal energy and heat pumps will reduce the dependency on Russian gas from 80% to 0%, and local green energy production is the way to achieve security of supply.

“Green” gases are not the way for buildings’ decarbonisation

The buildings sector accounts for nearly a [third](#) of Vienna’s GHG emissions, 90% of which is stemming from the use of gas for heating. The total heat consumption of the city is around 18,243 GWh per year. There are currently 600,000 households using natural gas for heating and cooking, and experiencing the brunt of the soaring gas prices.

The city does not, however, consider “green” gases, such as green hydrogen, biogas and synthetic gas to replace natural gas for heating houses. Two main reasons underpin this strategy: firstly, a limited amount of green gases is expected to be available in the future; additionally, these high-value energy carriers and sources are preferable for use in sectors in which they are the only option, such as industries requiring high temperatures, or serving as feedstock, used in heavy transport, and/or balancing the energy system.

Political will and integrated planning are key to phase-out natural gas

Since 2020 the city and Urban Innovation Vienna, its energy agency, have been leading the EU-funded project [Decarb City Pipes 2050](#). In this framework, cities of

Bilbao, Dublin, Munich, Rotterdam, Vienna and Winterthur design heat strategies which include spatially-disaggregated heating and cooling plans per district and implementation roadmaps.

This process was boosted in Vienna by the new political agreement signed end of 2020 to achieve climate neutrality by 2040. The city has associated all relevant stakeholders: different city departments, the utility Wien Energie and the grid operator Wiener Netze, to address technical, legal and financial issues of the strategy.

Relying on different local green heat sources to ensure security of supply

Vienna’s strategy relies on the renovation of buildings, the development and decarbonisation of the district heating and deployment of individual heat pumps. Despite the predicted population growth, the renovation rate should lead to a decrease of heat demand by 18% between 2019 and 2040, with a total phase out of gas by 2040.

Secondly, district heating is an essential backbone of Vienna’s future heat supply. Currently, it already supplies more than 1/3 of Viennese households with heat (this equals roughly 430,000 apartments and 7,700 business customers). District heating will be the preferred option in densely built

areas of the city – especially in the inner city – preferably with a connection rate close to 100%.

With these objectives in mind, the city launched work on the ‘Heating and Cooling Vienna 2040’ programme, bringing together working groups to facilitate the heating transition. Two main levers have been identified for its implementation: the first is the creation of a framework to phase out fossil heating, with the first actions being disconnecting buildings near existing district heating pipelines from the gas grid and densifying the district heating network. In less-dense areas, individual heat pumps, especially geothermal-grounded heat pumps, are the most cost-effective solution. The second is the reduction of energy consumption and the promotion of renewables, including ‘thermal rehabilitation’ of housing to reduce heat consumption.