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Trends in Germany

Key Facts from the *Renewables in Cities 2021 Global Status Report*

Key Takeaways on Renewable Energy in 2020 in Germany

- German cities are among the global frontrunners in energy and climate issues, they represent nearly 11% of all cities where renewable energy targets and/or policies were identified (140 German cities from a global total of over 1,300 cities)
- While some cities are supporting renewable thermal installations, mainly solar; overall, more action is needed on decarbonising heating and cooling and transport in German cities; renewables only account for a 16% share in district heating and cooling and less than 6% in transport in Germany.
- Rising trend: Mandatory solar PV and/or solar thermal installations on new buildings in several German cities
- National and regional policy engagement contributed successfully in the deployment of renewables in cities, for example with dedicated support programs.

Brand new data shows

- 140 cities with renewable energy targets and/or policies, covering 25.5 million people, 40% of the urban population in Germany.
- 61 German cities had 100% city-wide renewable energy targets in 2020, 17 of which had already achieved their targets as of 2020.
- 119 cities had renewable energy policies and enabling policies, such as low-emission vehicle zones (81 cities in Germany).
- Only a few cities in Germany have set net-zero¹ targets: only 12 German cities had passed net-zero targets, including **Berlin, Frankfurt, Hamburg, Heidelberg** and Hanau (from a global total of around 800 cities with net-zero targets)
- German cities are also frontrunners in setting climate emergencies: 104 cities in Germany had declared a climate emergency by 2020 (up from 98 in 2019); worldwide 1,852 cities have such a declaration.

¹ "Net-zero" emissions can be achieved, for example, by using natural sinks, such as reforesting land or adopting agricultural best practices, or through a technological solution, such as carbon capture and storage. Net-zero targets also are referred to commonly as "climate-neutral", "carbon-neutral" or "zero-emission" targets, although technically these are not the same. Carbon neutrality refers to net-zero emissions of only CO₂, whereas climate neutrality indicates a broader focus on net-zero emissions of all greenhouse gases. There is no agreed-upon definition, and implementation of these targets also varies broadly.

Renewable Energy Developments in German Cities

Urban renewable energy commitments and policies

- German cities are frontrunners in facilitating deployment of renewable energy, often driven by climate change concerns, as well as increasing public pressure: In 2020, **Berlin** adopted a target to increase renewables (25% of solar PV by 2050)
- City-level e-mobility targets exist in **Hamburg, Berlin, and Heidelberg**. **Berlin** and **Hamburg** passed new targets in 2020 (for renewable energy consumption and EVs respectively). In 2020, Hamburg committed to only procuring electric vehicles
- **Rising trend: renewable energy obligations** (typically solar PV or solar thermal) for new buildings exist in at least 11 German cities (e.g., in **Amberg, Freiburg, Hamburg, Heidelberg and Konstanz**): In 2020, both **Bremen** and **Heidelberg** made solar PV mandatory on all new buildings, as well as existing buildings in case of renovations.
- **Rising trend: financial support to shift to renewable-based heating or renewable power – also for existing buildings**
 - At least 23 cities provided financial support for the installation of solar systems
 - **Berlin**: heating exchange programme to replace oil heating systems with wood pellet boilers, solar thermal systems and heat pumps; total budget of up to EUR 6 million
- **Hamburg is the only German city with a fossil fuel ban in buildings**: In the 2020, the city introduced a ban on oil-based heating and air conditioning from 2021.

Scaling up renewables in buildings and transport

- **Working with municipal utilities to increase renewable power in cities**. For example, **Heidelberg** and **Munich** work with their municipally owned utilities to achieve renewable energy goals: **Munich's** municipal energy provider SWM is a co-owner of the DanTysk offshore wind farm, which is helping the city achieve its goal of being fully powered by renewables by 2025.
- **Although district heating in Germany continues to be dominated by fossil fuels (only 16% renewables), some cities are shifting to renewables**:
 - Six new solar district heating systems (totalling 9.9 MWth) were added in 2019. **Ludwigsburg**: the country's largest solar district heating plant.
 - Use of direct geothermal heat for district heating systems has also increased in 2020: **Munich**: drilling was completed in early 2020 for a geothermal plant that exceeds 50 MWth, expected to go online in 2021 to supply heat for more than 80,000 residents.
- **Rising trend of electrification of urban transport in cities**: The sales of battery-electric vehicles in Germany tripled in 2020, to more than 194,000 units, stimulated by the national-level goal to have 7-10 million registered EVs on German roads by 2030: **Pick up of electric buses has kicked off in 2020** - around 500 electric buses were on the road in Germany. New electric buses were delivered to and/or started circulating in 2020, including in **Berlin, Cologne, Eisenach, Frankfurt, Hamburg and Munich**
- **Interest in green hydrogen: Bremervörde**: First hydrogen filling station for trains, scheduled construction for late 2020, with the hydrogen to be produced onsite using renewable electricity.

Financing renewables in cities

- The use of green bonds is rising across Europe, with notable increases in 2019 in Germany (up 144% to USD 18.7 billion).
- In Germany, local governments have relied mainly on their own funds to finance projects, with contributions from national/state governments. Only around 20% of finance for municipal infrastructure in the country has come from borrowed funds, mostly bank loans.
- The **Marburg-Biedenkopf** district subsidises the installation of EV charging stations, with the condition that the electricity supplied to the stations is renewable – this is one of very scarce examples of policies linking EV support with renewable energy.

Citizen engagement to achieve energy and climate goals

- Germany has been a leading country in community energy development, with an estimated 1,750 projects in 2020, spurred by a strong domestic renewables sector and feed-in tariff; changes in national legislation to an auction system have caused difficulties for community energy groups. Only 14 new projects were added in 2019.
- German cities at the forefront of re-municipalisation of utilities (more than 300 cases).
Wolfhagen: citizens initiated a process of remunicipalisation of the local power supplier in 2012, and by 2020 the city together with a citizen co-operative owned the power provider.
- **Participatory governance is on the rise in German cities:** several German city governments have involved their citizens and civil society organisations in developing climate and energy plans. In **Münster**, 1,200 local citizens helped draft the city's 2050 climate roadmap, which targets a 95% reduction in greenhouse gas emissions by 2050.

Germany's Energy Profile

<https://www.iea.org/reports/germany-2020>; <https://www.iea.org/countries/germany>

Regional Trends: Europe

- European cities are global leaders on urban energy and climate issues, often driven by the push for greater climate action and the desire to improve the health of city residents; Europe is spearheading the climate emergency declaration movement, accounting for almost half of the total 1,852 declarations in 2020 (up from around 1,400 in 2019). More than 350 cities had a renewable energy target.
- In line with the EU Green Deal, cities have also committed to net-zero goals, developed more holistic strategies, integrated solutions to decarbonise activities in urban areas: scaling up renewables on municipal buildings, using waste and wastewater as inputs, shifting municipal fleets, integrating solar and geothermal district heating.

Questions? Please contact press@ren21.net or +33 1 44 37 50 99.

All report materials, figures, case studies and the full data pack can be downloaded here: <http://ren21.net/rec2021press>