EurObserv'ER

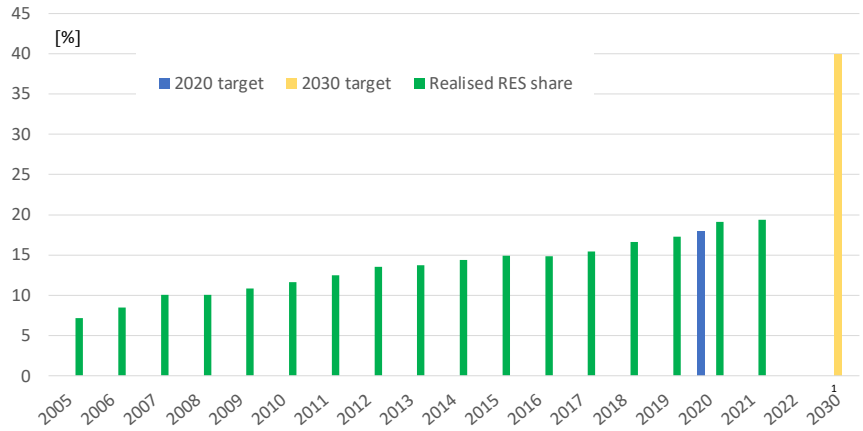
Renewable Energy Policy Factsheet

June 2024

Germany

Renewable energy status

Share of energy from renewable sources in total gross final energy consumption



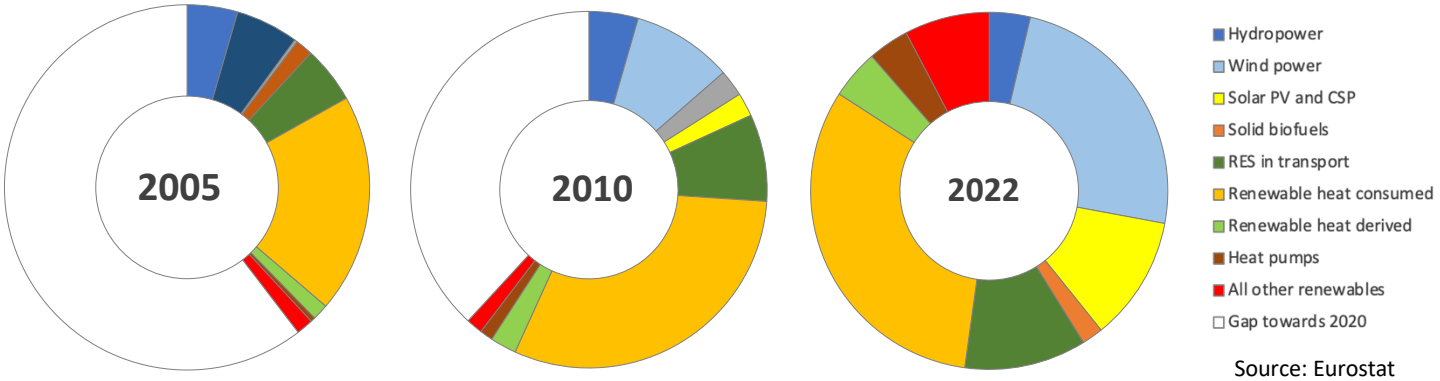
Source: Eurostat

Abbreviations used:

RES: renewable energy sources
RES-E: renewable electricity
RES-H/C: renewable heating/cooling
RES-T: renewable transport fuels

Data for 2022

Overall RES share:	20.8%	Avoided fossil fuels:	52.2 [Mtoe]
Overall RES 2020 target:	18%	Avoided fuel expenses:	28 863 [MEUR]
Overall RES 2030 target:	40%	RES Turnover:	45 880 [MEUR]
Share RES-E in electricity:	47.6%	RES Employment:	299 000 [jobs]
Share RES-T in transport:	9.9%	RES imports[2]:	5 865 [MEUR]
Share RES-H/C in heating:	17.5%	RES exports[2]:	3 512 [MEUR]



Source: Eurostat

	2005	2010	2022		
	Energy in ktoe	Energy in ktoe	Energy in ktoe	Employment in FTE	Turnover in MEUR
Hydropower	1 869.0	1 862.6	1 707	7 300	1 110
Wind power	2 319.9	3 805.3	11 102	85 600	14 180
Solar PV, and CSP	110.2	1 008.5	5 185	93 600	14 030
Solid biomass	643.1	890.0	882	40 300	5 650
Ren. energy in transport[3]	2 095.0	3 291.6	5 067	12 800	1 820
Renew. heat consumed	8 084.5	12 817.4	14 647		
Renew. heat derived	592.8	994.4	2 044		
Heat pumps	168.5	493.0	1 706	31 900	5 090
All other renewables	621.6	621.6	3 531	27 500	4 000

Source: Eurostat, EurObserv'ER

FTE = Full time equivalent, PV=Photovoltaics, CSP=Concentrated Solar Power. Biofuels in transport only covers compliant fuels (employment and turnover additionally cover the non-compliant biofuels). Derived heat includes heat produced in main activity producer plants and heat sold produced in auto-producer plants. Its counterpart is the final heat consumption in the final consumption sectors (such as households).

[1] From Integrated National Energy Climate Plan

[2] Referring to the International Trade chapter from the publication: EurObserv'ER - *The State of Renewable Energy in Europe, 2022 edition*

[3] Employment and turnover are only referring to biofuels in transport.

CURRENT RENEWABLE ENERGY POLICY

RES-E

The Renewable Energy Sources Act (EEG) has been the central instrument for the expansion of renewable electricity generation since 2000. With the 2023 amendment, the EEG was adapted to the 1.5-degree path of the Paris Agreement: The share of renewable energy (RE) in gross electricity consumption should be increased to at least 80 % by 2030. EEG2023 states that the construction and operation of RE plants is in the public interest and serves public safety, which will speed up planning and approval procedures.
By 2028/29, there will be a significantly higher auction volume for wind and solar power, while projects from citizen energy cooperatives will be excluded from auctions. Self-supply with renewable electricity will become more attractive. There are special subsidies for specialised solar systems such as agri and floating PV. Innovative concepts for combining RE with local hydrogen-based electricity storage are supported.
The remuneration guarantee for electricity generation from RE plants will be maintained for 20 years. KfW provides support to companies investing in renewable energies through low-interest loans, while various financial incentive programs are available for private households.

RES H&C

The Building Energy Act (GEG), which regulates the energy requirements for buildings, came into force in 2020 and was amended in 2023. The objective of the GEG2023 is that, going forward, new heating systems will only be installed if they generate at least 65% of the heat using RE sources. By 2045, the use of fossil fuels for heat supply in buildings is to be phased out. From this date at the latest, all heating systems must be powered entirely by RE sources. GEG2023 has reorganised its funding through the Federal Subsidy for Efficient Buildings (BEG), which is administered by KfW. The changes prioritise energy-efficient measures, reduce funding rates and remove funding for fossil fuel heating systems. Funding for new builds will now focus on low-interest loans, except for local authorities, which will continue to receive grants. This reflects the general trend of moving away from fossil fuels and using renewable energies in the building sector.

RES-T

The greenhouse gas reduction quota (also known as GHG quota) is the legally standardized market-based climate protection instrument to introduce more RE into the transport sector. Companies that place liquid fuels on the market in Germany are obliged under the Federal Immission Control Act to reduce greenhouse gas emissions. This is monitored by the Biofuel Quota Office. Until 2024, it was possible to offset emissions by surrendering certificates from climate protection projects in the upstream oil and gas sector. With an amendment to the Upstream Emission Reduction Ordinance on June 8, 2024, this offsetting option will end with the compliance year 2025. Project applications must be submitted in full to the Federal Environment Agency by July 1, 2024 and the amendment places stricter requirements on the validation and verification bodies.

Table 1: Brief description of key policy instruments aimed at promoting RES in Germany

Instrument	*Description*
Climate Protection Act (Bundes-Klimaschutzgesetz, KSG)	In May 2024, the Federal Council approved the new Federal Climate Protection Act, which aims to ensure that Germany achieves its targets of reducing emissions by 65% by 2030, 88% by 2040 and climate neutrality by 2045. The Act also establishes an independent Climate Change Expert Council to assess the progress and effectiveness of the measures implemented. In addition, the Climate Protection Act requires a comprehensive climate protection programme that sets out the specific measures the federal government will take to achieve the climate targets by 2045.
Renewable Energy Sources Act (Erneuerbare Energie Gesetz, EEG2023	The EEG2023 represents the most significant overhaul of energy legislation in many years. The main tenets of the package are: • Boosting expansion paths for wind energy (10 GW p.a.) and solar PV (22 GW p.a.) and acceleration of planning and approval procedures • Financial relief for households and business sector • Promotion financial participation by municipal authorities • Strengthen citizens' energy cooperatives • Funding for electricity stores and power plants with green hydrogen • Elimination of surcharges for electricity for private supply (Producing electricity for private consumption is becoming far more attractive) The level of the feed-in tariff is defined by law and varies according to specificities of the technologies. The current tariffs are published by the Federal Network Agency (EEG-Registerdaten und -Fördersätze).
National Auctions	Since 2017, the Federal Network Agency has been organising auctions of renewable energy capacity to determine the financial support for renewable energy and combined heat and power plants. With EEG2023, the Federal Network Agency (Bundesnetzagentur, BNetzA) is also organising innovation tenders in accordance with Section 39n of the Renewable Energy Sources Act. Several bidding rounds are held annually.
Building Energy Act 2023 (Gebäudeenergiegesetz, GEG)	The GEG 2020, which came into force 2020, was amended in 2023. GEG 2023 came into force in January 2024. The second amendment to the GEG introduces new requirements for heating technology in buildings: • From 1 January 2024, every newly installed heating system in a new development area has to be powered by 65% renewable energy. Outside a new development area, the new type of heating will apply from 2026. • Outside of a new development area, the new type of heating will apply from 2026. • A heating system fuelled by fossil fuels can still be used until it is irreparable. • The installation of a new, energy-efficient heating system is mandatory for existing properties only if local authorities have already decided on a heating network in their municipal heating plan. • From 2029, heating systems must use an increasing proportion of biomethane or blue or green hydrogen.
Federal Subsidy for Efficient Buildings 2024 (Bundesförderung für effiziente Gebäude, BEG)	The Federal Subsidy for Efficient Buildings (BEG) operated by the German development bank KfW is a tool derived from the Climate Action Programme 2030 aiming to promote building renovation across the country. With the GEG 2023, a new BEG has also been in force since 1 January 2024. • All homeowners, landlords, companies, non-profit associations and local authorities who replace old fossil-fueled heating systems will receive a basic subsidy rate of 30% of the costs. • In addition to the basic subsidy, higher subsidy rates, will be introduced to owner-occupiers to promote a more rapid replacement of fossil fuel heating

	systems. The rates amount to 20% until the end of 2028, after which it will decrease by three % every two years, initially to 17% from 1 January 2029. • A further 30 % subsidy depends on the income: The limit is 40,000 euros in annual taxable household income. A maximum of 70 % subsidy is possible. For single-family homes, a maximum of 30,000 euros of the costs for replacing the heating system is eligible for funding. This also applies to the first residential unit in apartment blocks. Higher costs are subsidised for further residential units. Funding can also be applied for other energy-related refurbishment measures, such as insulation of the building envelope, new windows, system technology or heating optimization.

For further information:

BAFA: Förderprogramme im Überblick (in German), https://www.bafa.de/DE/Energie/Effiziente_Gebaeude/Foerderprogramm_im_Ueberblick/foerderprogramm_im_ueberblick_node.html

Biokraftstoffquotenstelle beim Hauptzollamt, https://www.zoll.de/DE/Fachthemen/Steuern/Verbrauchsteuern/Treibhausgasquote-THG-Quote/Anmeldeverfahren/anmeldeverfahren_node.html

BMWK: Das Erneuerbare-Energien-Gesetz, https://www.bmwk.de/Redaktion/DE/Dossier/erneuerbare-energien.html

Bundesnetzagentur: Auctions on renewable energy, in German), https://www.bundesnetzagentur.de/DE/Fachthemen/ElektrizitaetundGas/Ausschreibungen/start.html

Deutsche Emissionshandelsstelle, https://www.dehst.de/EN/home/home_node.html
Die Bundesregierung: Gebäudeenergiegesetz, https://www.bundesregierung.de/breg-en/issues/new-building-energy-act-2185010

Federal Ministry for Economic Affairs and Climate Action: National climate action policy, https://www.bmwk.de/Redaktion/EN/Dossier/national-climate-action-policy.html

What is meant by …?

Auctions for granting renewable energy support	An auction is a process of granting production or investment support to renewable energy projects based on the lowest bids by eligible project developers.
Feed-in tariff (FiT)	A support scheme which provides for a technology-specific remuneration per unit of renewable energy payable to eligible renewable energy producers. A proper, periodic review of FiT rates is often undertaken with the aim to prevent both too high FiTs so as to minimise regulatory rents, i.e. supra-normal returns and too low FiTs to preclude below-target market uptake because of FiT levels that are perceived by market participants to be less attractive. In addition, feed-in tariffs often include "tariff degression", a mechanism according to which the price (or tariff) ratchets down over time.
Feed-in premium (FiP)	A scheme which provides for a support level per unit of renewable energy to eligible renewable energy producers, typically for a period of 10-20 years, at a pre-set fixed or floating rate. The premium is typically adjusted periodically to exactly offset change in the average energy wholesale market price, based on a pre-specified benchmark market price. A floating FiP may move freely or may only be allowed to move within a pre-set interval.
Grants	Grants are non-repayable funds disbursed by one party (grant makers), often a government department, corporation, foundation or trust, to a recipient, often (but not always) a non-profit entity, educational institution, business or an individual. (Source: Wikipedia.org)
Green public procurement	In Green public procurement contracting authorities take environmental issues into account when tendering for goods or services. The goal is to reduce the impact of the procurement on human health and the environment. (Source: Wikipedia.org)
Renewable quota scheme (RQS)	A RQS mandates certain market actors (typically retail suppliers or large energy end-users) to respect a pre-set minimum share or amount of their total energy procurements from renewable sources of energy. Typically a tradable green certificate (TGC) scheme is operated to enable the obligated parties to prove their compliance with the prevailing renewable quota target by means of TGCs.
Sliding feed-in-tariff	A FiT scheme which pre-sets technology-specific declining feed-in tariffs for certain prospective vintages in line with the technology-specific learning curve, as projected by the National Regulatory Agency (NRA). Often a degression rate is used indicating the %/annum decrease in the rate level.
Soft loans	Loans at concessional (below market-based) terms, for example at sub-market-conform interest rates, made available in several Member States to stimulate certain renewable energy technologies.
Tax credits	These are amounts a tax paying entity is allowed to deduct when declaring payable taxes, for example company tax or income tax, to the tax authorities, for example the producer tax credits (PTCs) used in the United States to stimulate among others wind energy deployment.

Funded by the European Commission