

<b>Title of the measure:</b>	GER109	Energy Efficiency Strategy for Buildings
------------------------------	--------	--

### **General description**

The German government will only be able to meet its climate targets if its policies on environment- and climate-friendly building, the development of energy-efficient neighborhoods and cities and energy efficiency in buildings fit together. This will enable climate-friendly building and housing to make an additional contribution to emission reduction and to become a foundation of the government's climate change policy. As part of the climate-friendly building and housing strategy, more general issues related to housing – for example urban development, development of rural areas and the challenges posed by demographic change – will also be addressed in collaboration with the Alliance for Affordable Housing and Building (Bündnis für bezahlbares Wohnen und Bauen). Cultural and social aspects – such as specific issues relating to villages, towns and cities or neighborhoods and their infrastructure as units that have their own characteristics and challenges – are incorporated into the climate-friendly building and housing policies.

Measures under this strategy include:

The climate-friendly building and housing strategy creates a reliable long-term framework for individuals, villages, towns and cities, and neighborhoods. It thereby contributes to the goal of achieving a virtually **climate-neutral building stock** by 2050. Taking cultural, social, ecological and economic effects into consideration The government will constantly review its cross-cutting strategy to ensure it stays on course towards this long-term goal. It also aims to develop other measures that are not linked to any particular technology and that will gradually help the building stock to move towards the long-term climate target.

The **energy efficiency strategy for buildings (ESG)** was decided up on by the Federal Cabinet in November 2015. The ESG consists of potential for the development of existing measures as well as new measures. It outlines the steps that must be taken to achieve an almost climate-neutral building stock by 2050, based on a combination of energy-saving measures and the use of renewable energies. The development of the measures under this strategy will be evaluated and documented in the monitoring report of the Federal Ministry for Economic Affairs and Energy (BMWi 2015, p. 41). According to the fourth NEEAP (BMWi 2017, p. 16) "current calculations indicate that it will be possible to reduce final energy consumption to approximately 1 600 PJ by 2050 as a result of efficiency measures. This corresponds to a reduction of 54 % in final energy consumption compared to 2008." The reduction goal for 2050 is very ambitious, but not out of reach. Therefore, the Federal Government launched new measures (since 2014) which should bring the 2050 goal in reach. The following bullet points originate from the fourth NEEAP (BMWi 2017, p. 17f.) and summarize the measures launched since 2014:

- The majority of the measures under the National Action Plan on Energy Efficiency (NAPE), including an increase in funding for the CO2 Building Renovation Programme (to EUR 2 billion per year), amendments to the market incentive programme and the Energy Efficiency Incentive Programme as a replacement for the tax incentives which were originally planned, are aimed at the buildings sector.
- Since 2016, the 'Deutschland macht's effizient [Germany Makes It Efficient]' campaign has provided information on efficiency potentials and sources of funding to those involved in the energy transition, with a particular focus on the buildings sector.
- The 'Heating Optimisation Funding Programme' provides funding for low-investment measures to optimise existing heating systems.
- The initiative 'EnEff.Building.2050' provides funding for model projects, which demonstrate ambitious energy concepts for buildings and districts in order to encourage their widespread adoption.
- The initiative 'Solar Construction/Energy-Efficient City' provides funding for research and development into energy-efficient and climate-friendly buildings and districts. It focuses on technologies, which improve energy efficiency and the integration of renewable energies, with a view to supporting the energy transition in buildings and cities.



As well as the measures described above, the following measures are also at the planning stage:

- The Federal Government is planning a funding programme for fourth-generation heat networks in order to leverage existing heat supply potentials.
- The Tailored Renovation Roadmap for Buildings will be launched in 2017, initially for residential buildings and subsequently for other buildings as well.

**Training** on all aspects of energy-efficient building and refurbishment is of key importance to achieving the climate targets that have been set for the buildings sector. A project entitled “BUILD UP Skills – QUALITRAIN” supports vocational training and continuing professional development for people working in the construction industry and the establishment of a national qualifications platform financed by EU funds.

**Climate-friendly housing for low-income household:** Homes that have a high-energy performance standard usually have higher rents but lower heating costs than those with poorer energy performance. However, the maximum rent allowances for people receiving income-support benefits are primarily based on rent that does not include heating costs. This means that homes where energy-efficient refurbishment has been carried out cannot usually be rented by people receiving income support benefits – despite the fact that the heating costs are lower. In order to enable as many people as possible to live in climate-friendly homes, the German government is conducting an open-ended review procedure to add a climate component to housing benefit, which would involve to distinguish the maximum amount payable based on the energy performance of the building being rented.

Differences in energy performance are not always reflected in the market. A BMUB research project has shown that energy performance of buildings is currently included in only about half of **rents maps** in the country. For that reason, the regulations on local reference rents should be reviewed to consider the possibility of taking greater account of the standard of energy-related fittings and energy performance in rents maps.

**Neighborhood-based approaches** play an important role in broadening the energy basis in the buildings sector to include more renewables and in small-scale approaches to improving the energy-efficient refurbishment of the building stock. Many energy-efficient projects can only work if all the stakeholders – in particular local authorities, housing companies and private households – take concerted action. This is the basis of KfW’s energy efficient urban rehabilitation programme. On the one hand, it gives grants for the development of integrated rehabilitation strategies and, on the other hand, assumes a percentage of the costs for rehabilitation managers (“troubleshooters”).

Climate-friendly building and housing means, firstly, keeping the energy consumption of buildings and neighborhoods as low as possible. Secondly, the energy needed for space heating and hot water must be generated in a way that is as efficient and low-carbon intensive as possible. By using the waste heat from the electricity generation process, combined heat and power (CHP) plants have great potential for avoiding greenhouse gases. To drive forward climate-friendly heat generation, the German government will therefore amend the existing guidelines on micro-CHP units, refine them in harmony with its combined heat and power strategy and expand them to take account of the electricity market.

Attempts to harness the vast potential for reducing greenhouse gases by making energy savings in the building stock are still making only halting progress. One way of improving this is to make energy-efficient refurbishment a “lifestyle product”. To that end, a competition for innovative ideas will be held, in which representatives of different disciplines (advertising, psychology, construction, etc.) will seek new communication approaches to make climate-friendly and energy-saving building an attractive option.

## Impact evaluation

The climate-friendly building and housing strategy described here makes a significant contribution to meeting the 2020 climate target – taking overlaps into account – with a total reduction of about 5.7 - 10 million tons of CO<sub>2</sub> equivalent. Of that, 1.5 - 4.7 million tons of CO<sub>2</sub> equivalent are over and above the reductions in the buildings sector already included in NAPE. The distribution of these savings is as follows:

Table. 1: Emissions saving by Climate – friendly building and housing strategy

Climate-friendly building and housing strategy		
Individual Measures	Greenhouse Gas Emissions Reduction (Million tons of CO <sub>2</sub> equivalent)	Start of Impact (Year)
Training initiative	Not quantified	2013
Climate-friendly housing for low income	0.4	2017
Rents map	Not quantified	-
Energy efficient urban rehabilitation	0.6 – 1.2	2015
Climate change mitigation in local authorities	0.3 – 2.0	2015
Micro – CHP heat generation	0.2	2016
Tax obstacles	0.23	2016
Competition for ideas	Not quantified	2015

The more powerful measures that are summarized within this strategy are evaluated separately (e.g. NAPE, 'Heating Optimisation Funding Programme'). In order to avoid double counting of the impact of these various measures, the quantitative impact of this bundle is not assessed additionally.

## References

- The German Government's Climate Action Programme 2020 - Cabinet decision of 3 December 2014  
[https://www.bmub.bund.de/fileadmin/Daten\\_BMU/Pool/Broschueren/aktionsprogramm\\_klimaschutz\\_2020\\_broschuere\\_en\\_bf.pdf](https://www.bmub.bund.de/fileadmin/Daten_BMU/Pool/Broschueren/aktionsprogramm_klimaschutz_2020_broschuere_en_bf.pdf)
- BMWi 2015. Fifth "Energy Transition" Monitoring Report. The Energy of the Future  
[https://www.bmwi.de/Redaktion/EN/Publikationen/monitoring-report-2016-summary.pdf?\\_\\_blob=publicationFile&v=8](https://www.bmwi.de/Redaktion/EN/Publikationen/monitoring-report-2016-summary.pdf?__blob=publicationFile&v=8)
- BMWi 2017: National Energy Efficiency Action Plan (NEEAP) of the Federal Republic of Germany in accordance with the EU Directive on "energy efficiency" (2012/27/EU), April 2017  
[https://ec.europa.eu/energy/sites/ener/files/documents/de\\_neeap\\_2017\\_en.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/de_neeap_2017_en.pdf)
- Öko-Institut 2014: Wissenschaftliche Analysen zu klimapolitischen Fragestellungen - Quantifizierung der Maßnahmen für das Aktionsprogramm Klimaschutz 2020 (Scientific Analysis of the Climate – political Issues - Quantification of the Measures of the Climate Action Programme 2020)  
<http://www.oeko.de/oekodoc/2208/2014-754-de.pdf>