

Germany

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Background

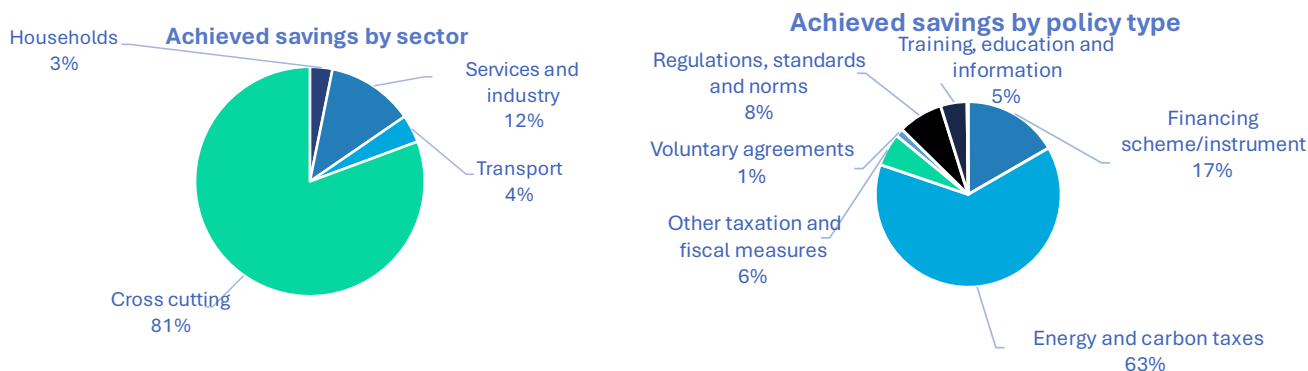
National context, strategy, key measures and results in 2021

- **General strategy:** Alternative measures only
- **Baseline annual Final Energy Consumption¹** (averaged over 2016-2018): 216 890 ktoe/year (source: [NECP](#) / Eurostat)
- **Cumulative energy savings target for 2021-2030: 137507 ktoe** (source: [draft NECP update](#))
- **Expected total annual energy savings in 2030:** not provided
- **Achieved new annual savings (all measures): 3691 ktoe/year in 2021** (source: NECPR 2023), **4219 ktoe/year in 2022, 4560 ktoe/year in 2023** (source: NECPR 2025)

% of new annual savings vs. baseline energy consumption = 1.70% (2021), 2.1% (2023)

On track ; high rates of new annual savings, however, given Germany's heavy reliance on taxation measures, Germany may need to compensate the short-lifetime savings (from taxation measures) with more savings in the next years.

Distribution of annual savings achieved in 2021



Source: own graph from data available in draft NECP update

¹ For more details about trends in energy consumption and energy efficiency, see the country profiles by ODYSSEE-MURE: <https://www.odyssee-mure.eu/publications/efficiency-trends-policies-profiles>



The lion's share of savings has been achieved in cross-cutting measure, with a strong focus on buildings. This is done mainly relying on instruments like energy and carbon taxation and financing schemes.

- **Top5 policy measures**

Name of the measure	Sector	Policy type	% savings in 2021
Energy and electricity tax	Cross-cutting	Energy or CO2 tax	44%
CO2 pricing for transport and heating	Cross-cutting	Energy or CO2 tax	15%
Federal programme for energy and resource efficiency in the economy	Services/industry	Financing scheme	9%
Buildings Energy Act: Existing buildings	Buildings	Regulation	7%
Federal Funding Programme for efficient buildings	Buildings	Financing scheme	5%

Key points, changes vs. 2014-2020 and other recent developments

While some smaller measures have been added to the portfolio, the main measures, particularly regarding achieved savings, are longer-running measures, such as the energy and electricity tax or the CO2-pricing, which will be merged in the expansion of the EU ETS to buildings and transport.

Focus on energy poverty

- **Energy poverty in the country:** 14.3 % of the households below 60% of the median household income were unable to keep their home adequately warm in 2023, up from 7.8% in 2021 (source: [Eurostat](#))
- **Energy poverty target (Article 8(3) EED):** not published yet for 2024-2030, “still being calculated” (source: [final NECP update](#)).
- **Art.8 policy measures targeting energy poverty:**

Name of the measure	Policy type	% savings in 2021	% ‘energy poverty’ savings in the measure
Electricity saving check	Training and education	0.26%	100%
Energy advice	Training and education	4.51%	unknown

Source: [final NECP update](#)

Alternative measure - Federal support for energy and resource efficiency in the economy (EEW)

History

Starting year: 2019

Latest revision: 2023

Current implementing period: 2023 to 2026

Cumulative energy savings reported to Art.7 EED for 2014-2020: the predecessor scheme (“Business investment support incl. further development”) delivered 1417 ktoe over 2014-2020 (i.e. about 4% of Germany’s cumulative savings for 2014-2020)

Expected contribution to 2021-2030 obligation for Art. 8 EED: 9% of Germany’s target

Design and features

Type of policy measure: Financing scheme

Target sector / group: Industry & Services

Key actors and roles:

The **Federal Office of Economics and Export Control (BAFA)** together with the state-owned **KfW Bank** are responsible for the modules 1-4 and 6, while the competition and module 5 are conducted by the promoter **VDI/VDE-IT**.

Criteria for eligibility of the participants and/or of the actions:

All companies are eligible to apply for funding.

Eligible action types:

The programme consists of six different modules (cross-cutting technologies, process heat generation, energy management, process change, preparation of transformation plans, electrification of small companies) and a competitive subsidy scheme mainly for process changes.

The programme covers actions, such as cross-cutting technologies, process heat generation, energy management, process change, preparation of transformation plans, and electrification of small companies.

As expected for any good measure in Germany, there is an extremely comprehensive catalogue of eligible measures.

Possible synergies with other policy measures:

As this is the main measure for industry in Germany, it is not supposed to be coupled with other programmes. The only exception is module 5 concerning the preparation of transformation plans, where an explicit idea is to assess the eligibility of foreseen actions for funding programmes. Yet, this mainly concerns the EEW itself, with planned measures poised to apply funding within the EEW for them.

Relevance to tackling energy poverty or supporting priority groups

No link with tackling energy poverty

Priority groups defined in the measure: SMEs as well as small and micro enterprises

Provisions specific to the priority groups: The subsidy rates are higher for priority groups (10 percent points for medium and 20 percent points for small enterprises).

Evaluation, Monitoring & Verification

Materiality provisions: Merely the fact that subsidy rates are quite substantial

Additionality provisions: The programme has been tweaked several times, since an objective of the programme is to only subsidise technologies and processes that are above market standard (ecodesign standards are considered as well). Revisions have been carried out, when funded technologies became market standard.

Calculation methods: For standard actions like cross-cutting technologies, default coefficients are used. For more complex applications, especially pertaining to process changes, engineers and experts are consulted and tasked with the assessment. All these values are then verified with measurements from the M&V process and the ex-post evaluation. These results are then used to improve the used coefficients.

Verifications and controls: The process to verify and control energy savings is a little unclear. On-site measurements are used to adjust calculation methods and coefficients. Moreover, a focus on more on-site visits for process change measures is stated. Yet, the details are rather unclear.

Data on verification and controls: Not available

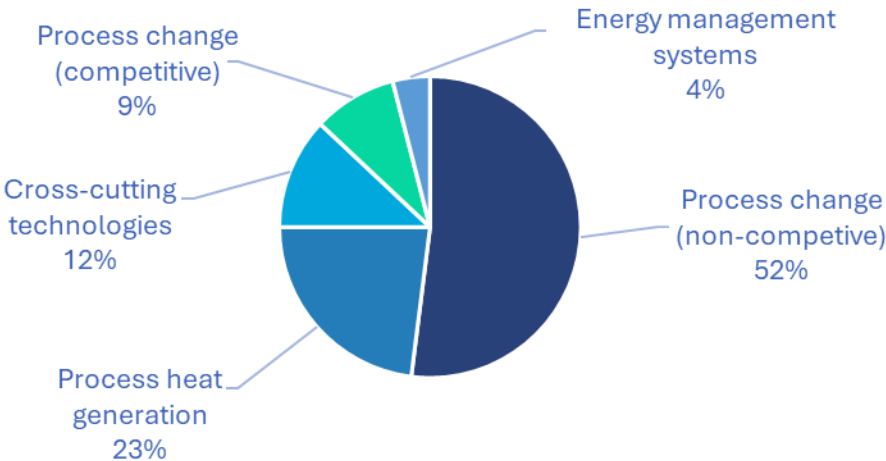
Progress monitoring or reporting: Using the data collected by the responsible authorities for each module, a “regular” monitoring is carried out. However, these seem to be internal.

Evaluation(s) of the scheme: The responsible ministry (BMWK) commissions regular ex-post analyses of the programme. The last evaluation has taken place in 2024 and has been carried out by a consortium led by Fraunhofer ISI. These reports are then published on BMWK website. (BMWK, 2024a,b)

Key results

Most popular actions

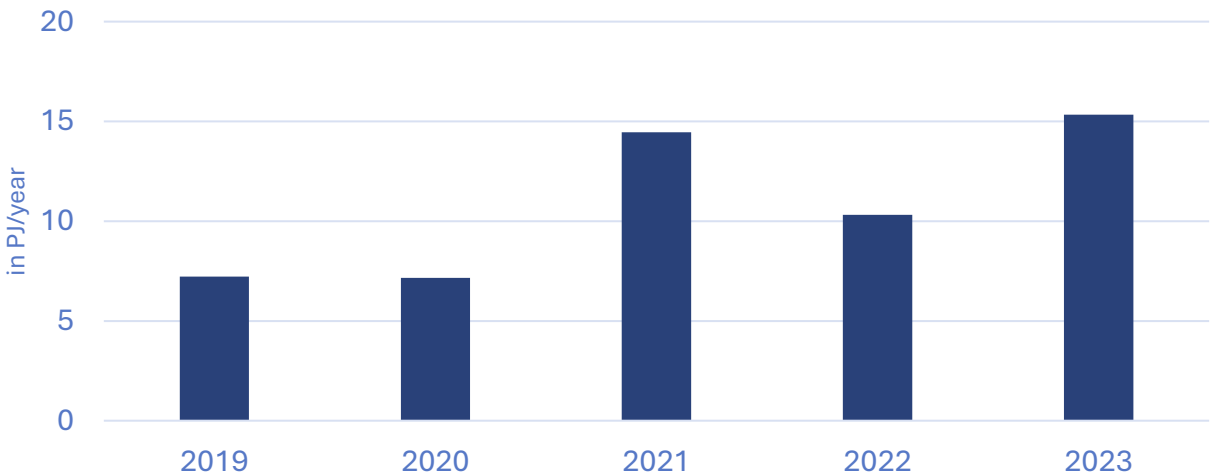
EEW: Most popular actions by share of budget



Source: BMWK (2024a)

Energy savings achieved

EEW - new energy savings over 2019-2023



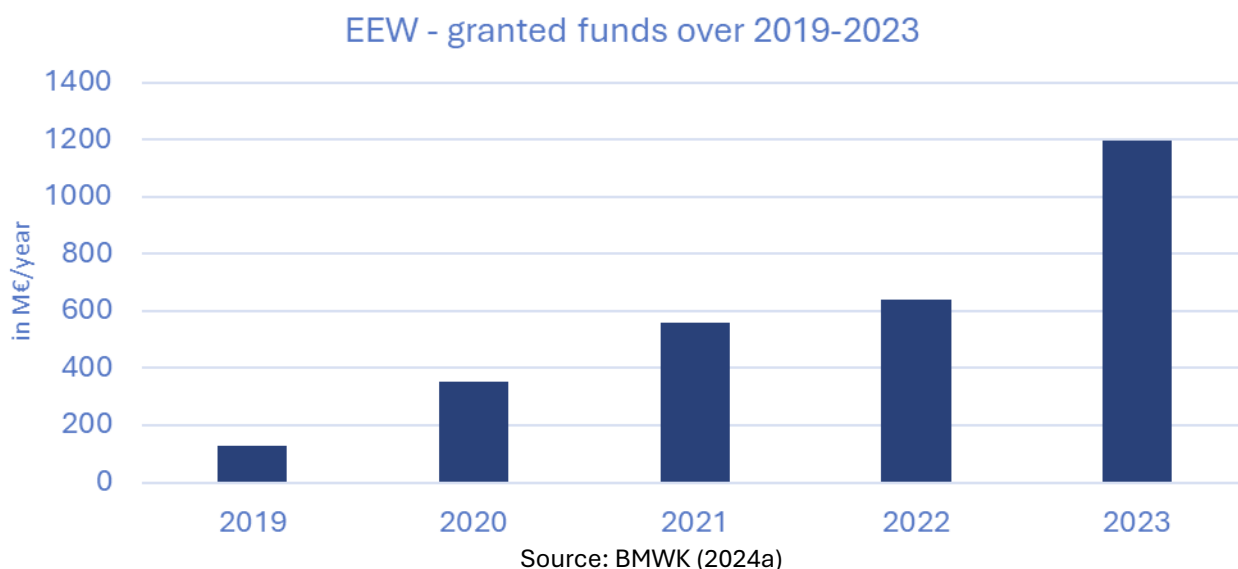
Source: BMWK (2024a)

Average savings lifetime: 8 years (based on data for actions implemented in EEW)

Cost effectiveness

Financial incentives amounted to **798 million euros per year** on average in 2021-2023. Administration costs are estimated to amount to 5 to 10 million euros per year on average in 2021-2023 (i.e. slightly above 1% of the scheme’s total cost), with a peak of 11.3 million euros in 2023 due to the cost-intensive assessment of module 4, targeting complex process changes. New annual energy savings from actions implemented in 2021-2023 are estimated to amount to 11.1 TWh/year. Considering an average savings lifetime of 8 years, this means these actions will deliver 89.1 TWh savings over their lifetime.

The cost-effectiveness ratio of the policy measure would therefore be 2.6 eurocents/kWh saved considering lifetime savings (or 21.5 eurocents/kWh saved considering first-year savings only).



Sources

BMWK (2024a). *Abschlussbericht: Evaluation der Bundesförderung Energie- und Ressourceneffizienz in der Wirtschaft*, Bundesministerium für Wirtschaft und Klimaschutz, Berlin.

BMWK (2024b). *Evaluation der „Bundesförderung für Energie- und Ressourceneffizienz in der Wirtschaft“ (Zuschuss und Kredit/Förderwettbewerb)*, Bundesministerium für Wirtschaft und Klimaschutz, Berlin.

Kimmel, A. (2024). [Alternative Measures in Industry – The German Federal Support for Energy and Resource Efficiency in the Economy](#). Presentation at the Budapest workshop of ENSMOV Plus, March 2024.

Neusel, L. (2025). [Evaluation of multi-measure schemes: Lessons learnt from the German scheme “Energy and Resource Efficiency in the Economy”](#). Presentation at the third Dialogue Meeting of streamSAVE Plus, March 2025.

Interview with Johann Duvigneau (BMWK)

What is the general approach of Germany to delivering the higher energy savings obligation for 2024-2030?

Germany is solely counting on alternative measures. Historically, the policy landscape has been dominated by funding instruments. Given this position, this is probably going to continue similarly for years to come.

Moreover, given Germany's current budgetary constraints, there has been a stronger focus on comparatively cost-effective programmes.

What is the approach of Germany to deliver energy savings among target groups, and especially for priority groups (cf. Article 8(3) EED)

In German policy, there is a principle of frugality, basically to use as little money as possible to reach a policy's target. This fundamental principle might go against the concept of measures targeting energy poor households, which might inherently lead to higher costs per saved energy unit due to the need for higher subsidies and subsequent rebound effects ("Zielkonflikt" or trade-off with funding efficiency).

Considering social issues as an aspect of energy policy has also been a controversial question within past and present governments between different departments, with some renouncing the concepts of "energy poverty" or "mobility poverty", claiming there merely exists poverty.

Yet, it is also accepted that it is often more expedient to address the cause of poverty instead of alleviating its symptoms. In the case of energy poverty, this means embedding it in energy policy.

Thus, the topic is being considered and addressed, but considerable hurdles still

exist, whether it is identifying energy poor households or landlord-tenant split incentives.

As a result, different approaches are developed. However, the target of savings to achieve among energy poor households is quite considerable.

The new Energy Efficiency Directive includes provisions in its Annex V to progressively exclude energy savings from new fossil fuel technologies (for achieving the Article 8 target). Will these new provisions have implications on the policy measures reported by Germany?

Given the German measures mix, this should work quite well, since a lot of measures have already been adapted accordingly. The energy crisis has definitely helped there.

Would you have lessons from recent evaluations of policies for future delivery? (Or what would be the main points you would like to highlight about implementation and achievements in recent years?)

In order to reduce the considerable administrative costs, a focus on fewer but larger measures could be fruitful. And of course, it would maybe make sense to also involve the market to shoulder a part of the obligation.

What would be the main challenges you see for the coming years?

At some point, the low-hanging fruits will be harvested, and measures may become more expensive.

If you could go back in time, what would you do differently?

Maybe rethink the legal text of Article 8, as it is a complicated article in structure. In order to accommodate every Member State, a smorgasbord of provisions and exceptions has bloated the article to 10 pages, if you count the annex, with many of them not even applicable anymore. Yet, the freedom these provisions are supposed to grant Member States in implementing the obligation in a way applicable to their circumstances leads to a diffusion of responsibility in implementing governments, with ministries

trying to ditch their fair share of the obligation. Clear sectoral targets could help here.

One could even go a step further and allow the trading between Member States, with overachievers selling their additional savings to underachieving countries, as is the case for Effort Sharing targets.

Interview with Lisa Neusel (Fraunhofer ISI)

Have there been changes in the EEW in recent years? (if so, what would be the main ones?)

Yes, actually a substantial number. In this sense, the EEW has been a quite dynamic measure.

While it mainly started as an energy efficiency programme, the focus has been extended to also include resource efficiency, so reducing the consumption of materials (e.g. raw material, preliminary products) consumed in the production process. Moreover, for the energy efficiency part, there has been an increasing focus on funding the electrification of plants and processes.

Then, there has also been changes to better address SMEs and even small and micro-enterprises.

Finally, the scope has been extended to not only fund single technologies and whole processes but also systemic measures, such as the preparation of transformation plans. As a result, companies could then apply again for funding to actually implement the drafted measures.

Did you see an impact of the energy prices crisis on the EEW? (e.g. in terms of budget, participation, ...)

This effect was assessed in the framework of the annual evaluation. 90% of interviewees stated a higher or considerably higher willingness to invest in energy efficiency given these increased energy prices.

What could be bottlenecks or drivers that could hinder or support the achievement of higher results?

Bottlenecks are mainly the difficulty in reaching SMEs, which make up for a substantial share of the German industry sector. Similarly, there seems to be an issue in reaching companies in the East of Germany, which tend to be underrepresented. Furthermore, the possibility to start implementing the measure once the proposal has been submitted, was recently withdrawn for legal reasons. Yet, this was a key selling point, as many factors around investments can change between the time of application and the final decision (which can sometimes take up to a year), rendering previous cost-benefit assessments obsolete by that time.

In order to alleviate these issues, multipliers could play a role, to extend information to hard-to-reach SMEs but also to manage their applications and shoulder administrative tasks. Of course, a reduction of administrative work would go a long way as well. Finally, while it might be difficult to go back to allowing the start of measures before the final decision due to legal concerns, a way to enable more flexible implementations would surely help a lot of applicants.

Are there specific provisions to ensure the quality of the actions implemented?

Of course! The set of subsidy requirements, around materiality, eligibility, monitoring and verification is very German in its comprehensiveness. The assessment of funding applications is also well structured and quite rigorous: while standard measures' approval is typically rather swift, experts and engineers are routinely involved in the assessment of more complex applications.

How were the priority groups (or eligibility criteria) defined?

Given their considerable share in the German industry sector, a focus of the EEW are SMEs. By offering higher subsidy rates, graduated by company size, SMEs have been incentivised to participate, resulting in them contributing roughly three quarters of granted proposals and receiving half of the funding.

If you could go back in time, what would you do differently?

In general, reducing administrative burden for simplified access and push for more digitisation. Furthermore, rather use modern advertisement material and maybe even social media, instead of opening with a complex 15-pager on technical details and funding criteria of the programme. Additionally, while alterations might sometimes be sensible, maintaining stable eligibility criteria where possible would go a long way in underlining the EEW as a reliable funding programme.