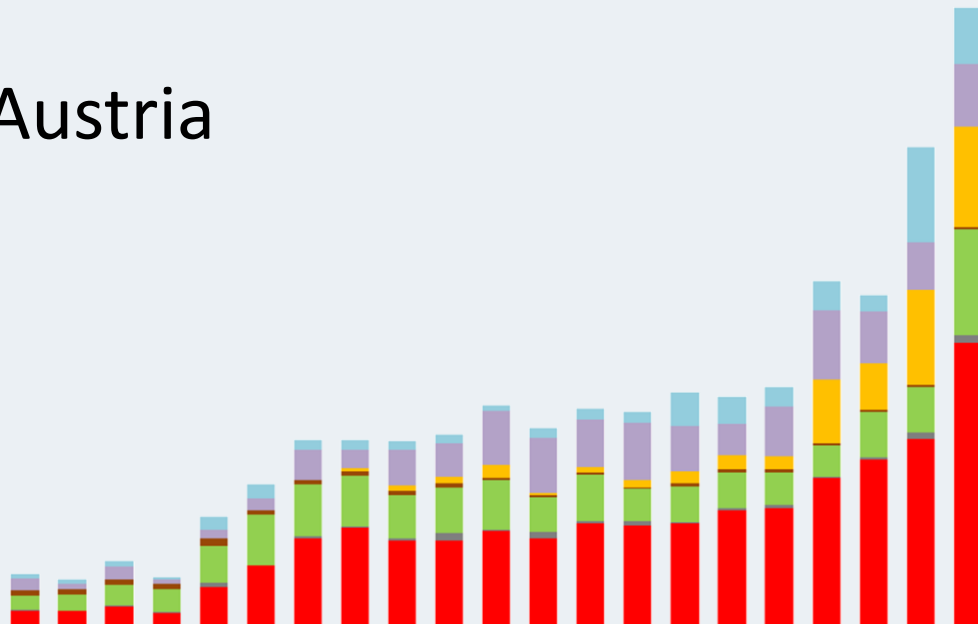


Energy RD&D 2024

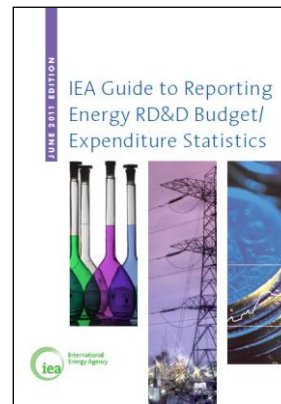
Public Expenditures in Austria

Andreas Indinger, Felix Bettin, Marion Rollings
Austrian Energy Agency
Vienna, 28. May 2025



About the survey

- Yearly survey since 1974, international commitment
- Carried out by the Austrian Energy Agency on behalf of BMIMI
- According to uniform specifications of the IEA
- Comprehensive publication of the Austrian survey and evaluation (BMIMI publication series)
<https://nachhaltigwirtschaften.at/de/iea/publikationen/energieforschungserhebungen.php>
- Annual reporting to the IEA - international overview on the publicly accessible IEA database:
<https://www.iea.org/data-and-statistics/data-tools/energy-technology-rdd-budgets-data-explorer>

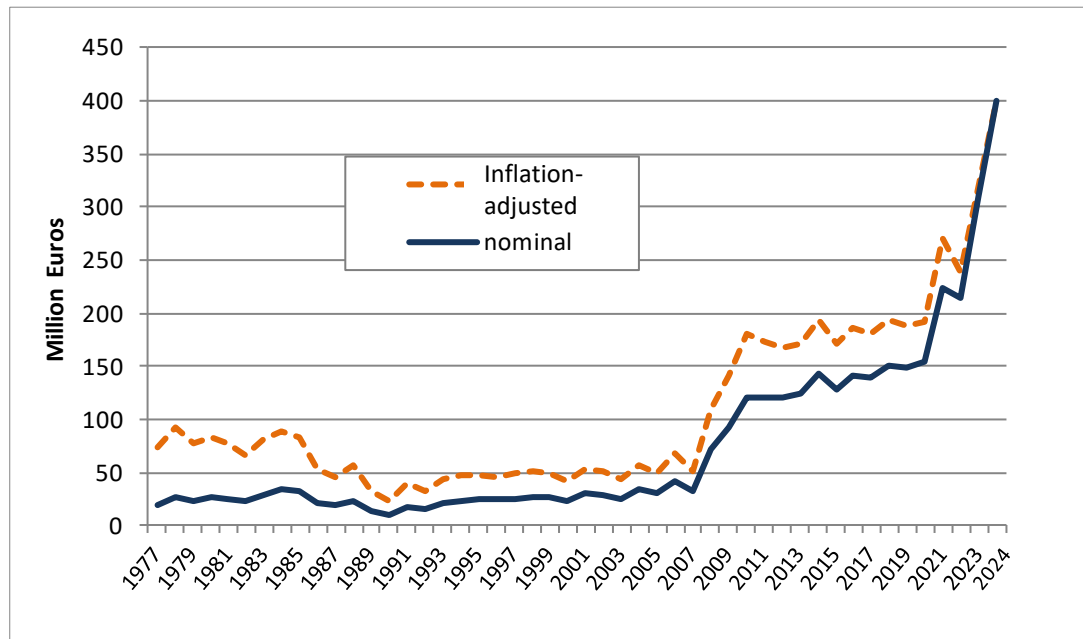


About the method

- Survey of federal provinces, ministries, FWF, FFG, AWS, KPC → funding expenditures are surveyed (commitments entered into; not budgets) - Advantages: contractually fixed, exact amounts; high level of detail in allocation possible, as each project is assigned to one of approx. 140 topics
- Questionnaires to universities, universities of applied sciences and non-university research facilities → Survey of how the share of own funds "basic funding from the federal government and the federal provinces" is used in relation to projects or energy
- High response rate to the voluntary survey!
- Approx. 1,350 projects and activities related to energy research were recorded for 2024

2024: 401.1 million euros

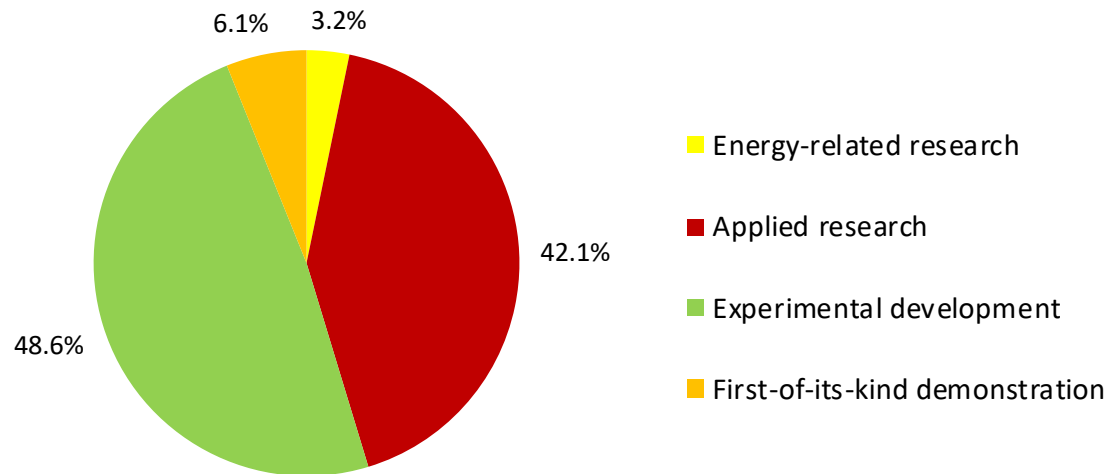
- Public spending on research, development and demonstration projects in the energy sector amounted to 401.1 million euros in 2024
- Compared to the previous year, there was an increase of 90.3 million euros or 29.1%.



Source Purchasing power parity: Statistics Austria

Areas of RD&D 2024

- Four types of activities are considered and distinguished in the survey.



Topics

Expenditure by main topic in 2024 and change compared to the previous year

Energy efficiency: 184.1 million euros – plus 62.5 million euros

- Energy efficiency has clearly been the top priority of Austrian energy research since 2010 and the area with the most expenditure.

Renewable energy sources: 69.1 million euros – plus 39.4 million euros

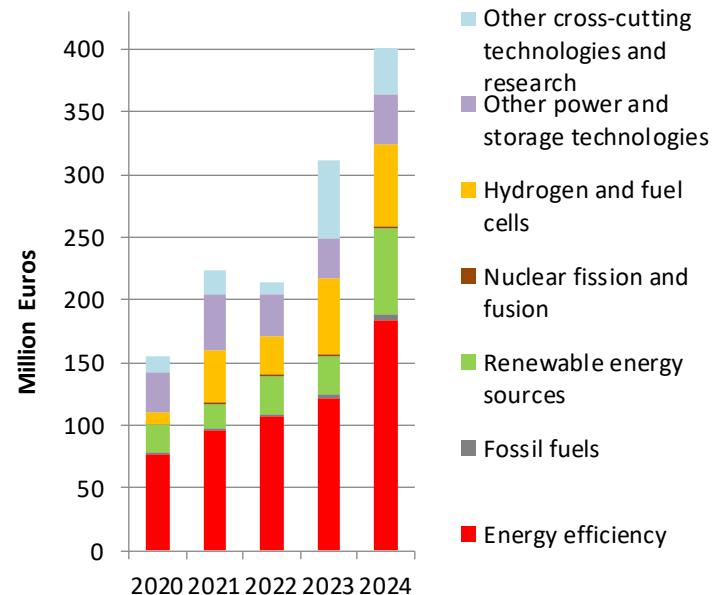
Hydrogen and fuel cells: 65.3 million euros – plus 3.8 million euros

Other power and storage technologies: 40.5 million euros – plus 9.4 million euros

Other cross-cutting technologies and research: 36.3 million euros – minus 25.3 million euros

Fossil fuels: 4.7 million euros – plus 0.8 million euros

Nuclear fission and fusion: 1.2 million euros – minus 0.2 million euros

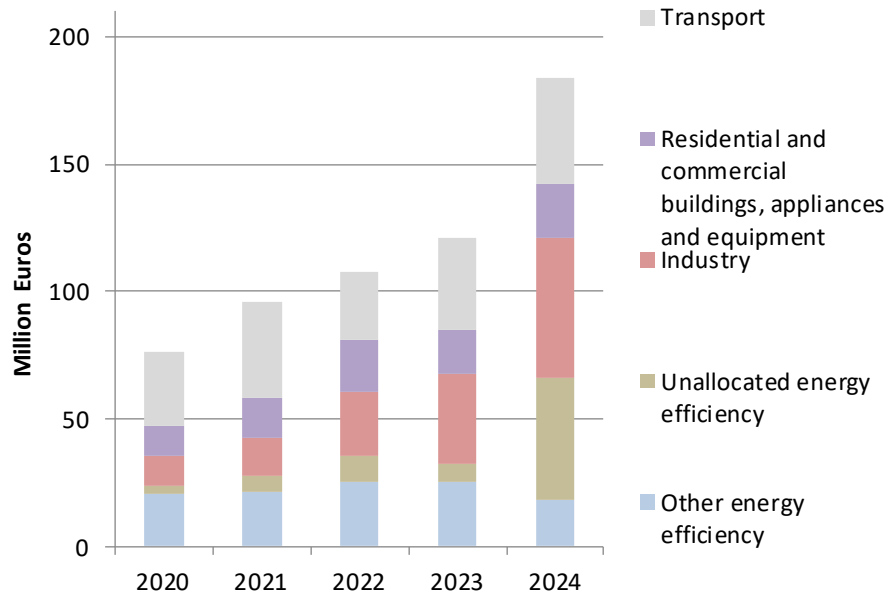


Top Ten

Rank	Subcategory	Expenditures 2024 (in million euros)
1	Hydrogen	60.4
2	Energy efficiency in industry	55.5
3	Cross-cutting energy efficiency	47.8
4	Biofuels	43.1
5	Hybrid and electric vehicles, storage, charging infrastructure	26.9
6	Storage technologies; excl. hydrogen, vehicles or portable devices	22.0
7	Energy system analysis	20.1
8	Energy-efficient buildings	19.7
9	Electricity transmission and distribution	14.2
10	Cross-cutting topics	12.5

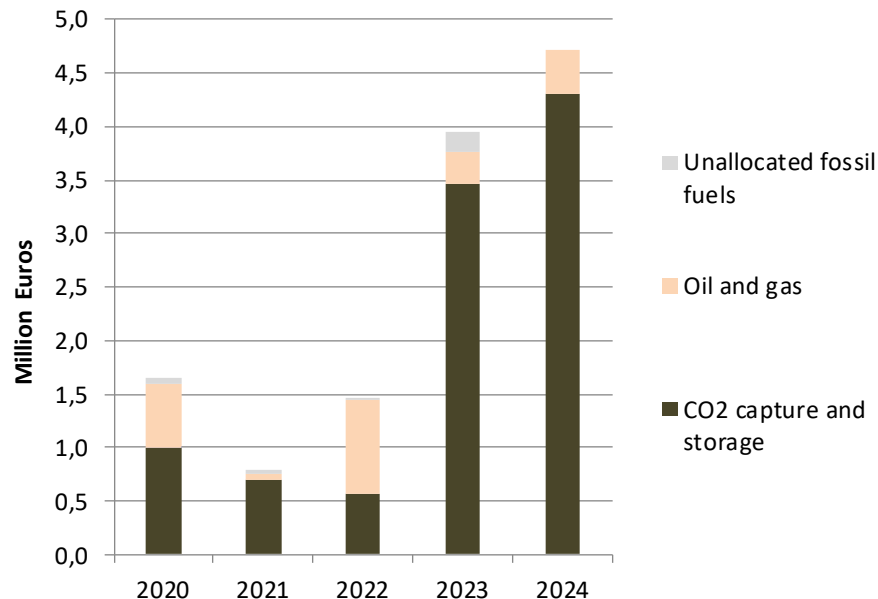
Energy efficiency

- Within energy efficiency, 30.1 % was attributable to the 'Industry' sub-sector, followed by 26.0 % of projects that cannot be allocated to a single sub-topic and 'Transport' with 22.7 %.
- The 'Residential and commercial buildings, appliances and equipment' area accounted for 11.3 % in 2024.
- The 'Other energy efficiency' area accounted for 9.9 %; this area includes urban issues relating to smart cities, heat pumps, etc.



Fossil fuels

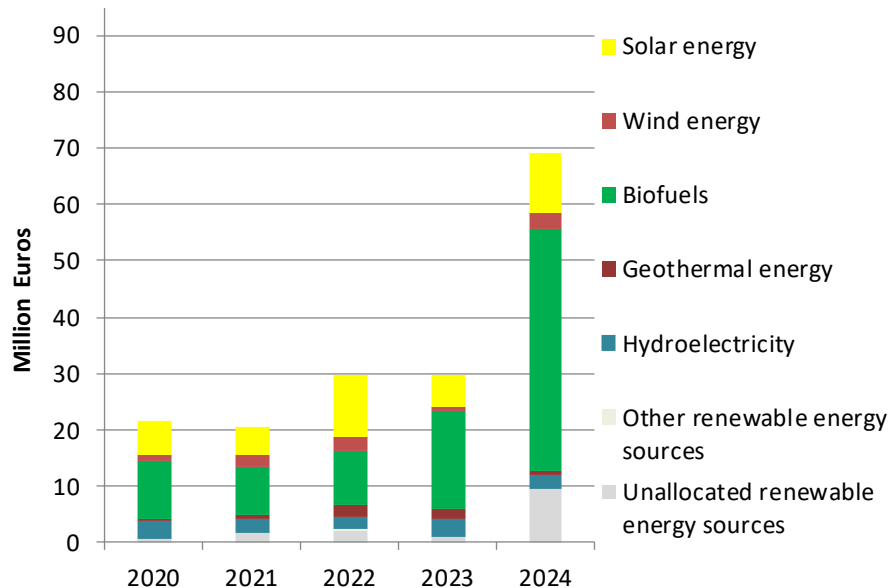
- 2024: at 4.7 million euros, the budget has once again increased compared to previous years.
- Expenditure on CO₂ capture and storage grew particularly strongly, accounting for the largest share of the topic at over 90%.



Renewable energy sources

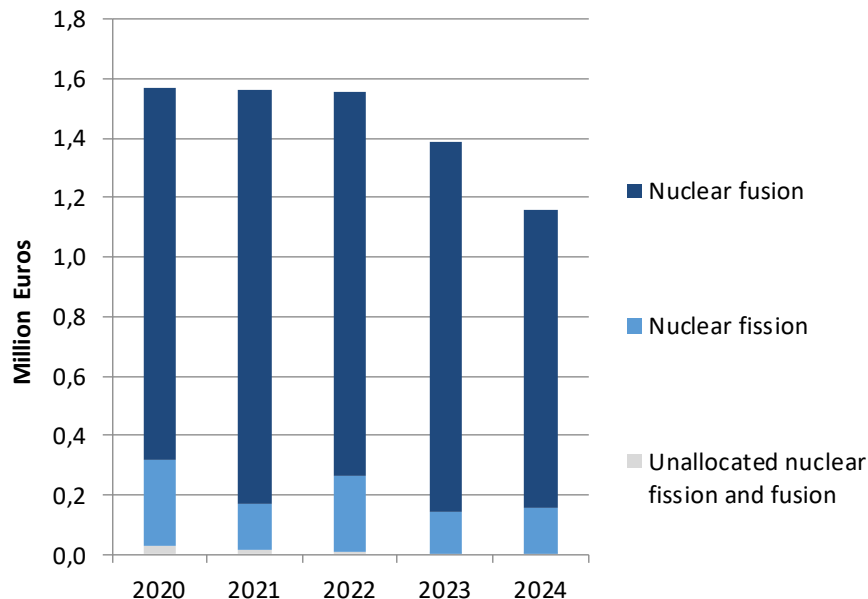
Individual areas 2024 in million euros:

- Biofuels 43.1
- Solar energy 10.5 (thereof 9.4 for PV)
- Wind energy 3.0
- Hydroelectricity 2.3
- Geothermal energy 0.6
- Very low expenditures in ocean energy



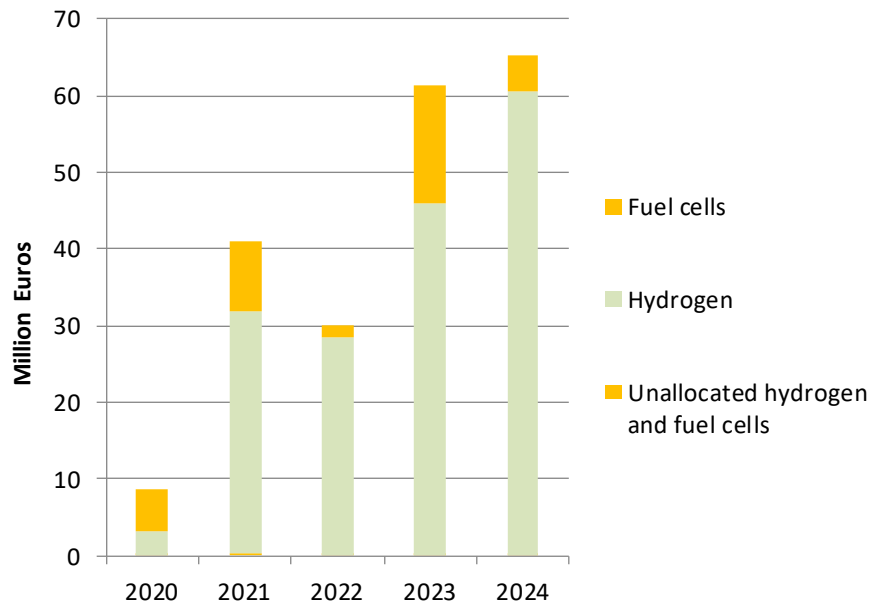
Nuclear fission and fusion

- Spending on nuclear energy R&D is under 1.2 million euros in 2024.
- Nuclear fusion is 1.0 million euros. The activities are predominantly carried out within the framework of the European co-financing scheme EUROfusion.
- Nuclear fission is 0.2 million euros. Primarily self-financed research at the TU Vienna with a focus on reprocessing and safety.



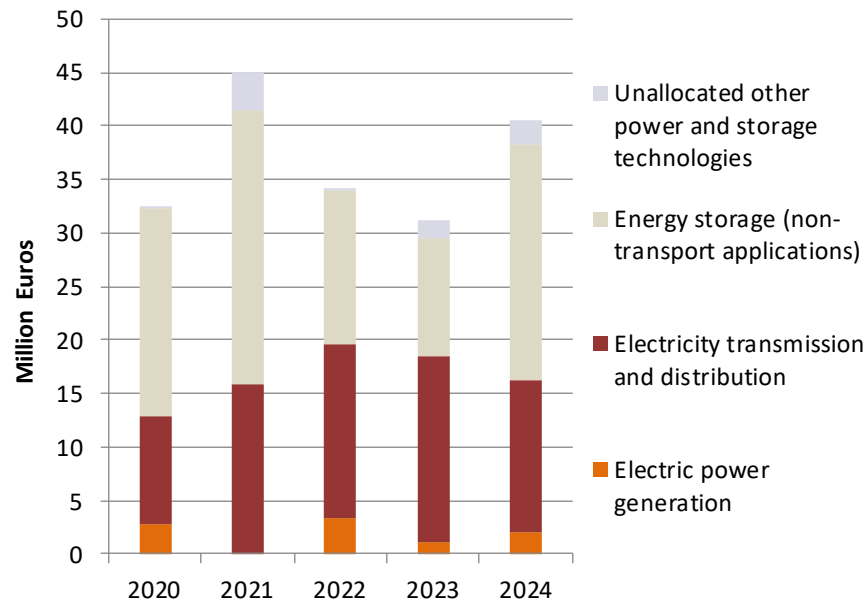
Hydrogen and fuel cells

- **Hydrogen:** Expenditure rose again in 2024 and reached a new peak of 60.4 million euros. At 51.6 million euros, 85% of these funds were provided by the federal ministries in 2024.
- **Fuel cells:** Here, funding fell sharply again after a strong year 2023 and only reached a level of 4.8 million euros in 2024.



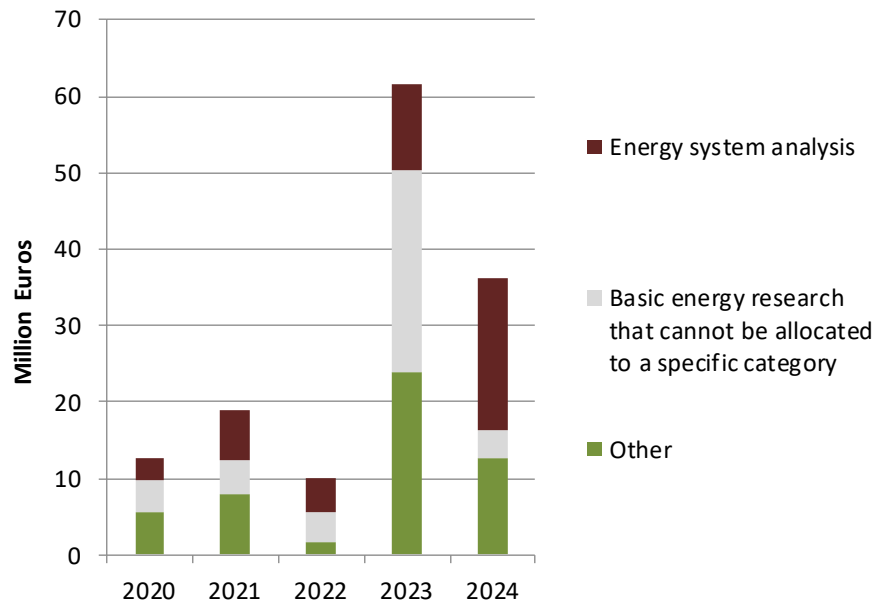
Other power and storage technologies

- 40.5 million euros in 2024
- Strong increase compared to the previous year.
- Storage sub-sector: 22.0 million euros, three quarters of which for battery storage.
- Electrical transmission and distribution: 14.2 million euros, key topics: Integration of renewable energy sources into the electricity system, smart grids.





Other cross-cutting technologies and research

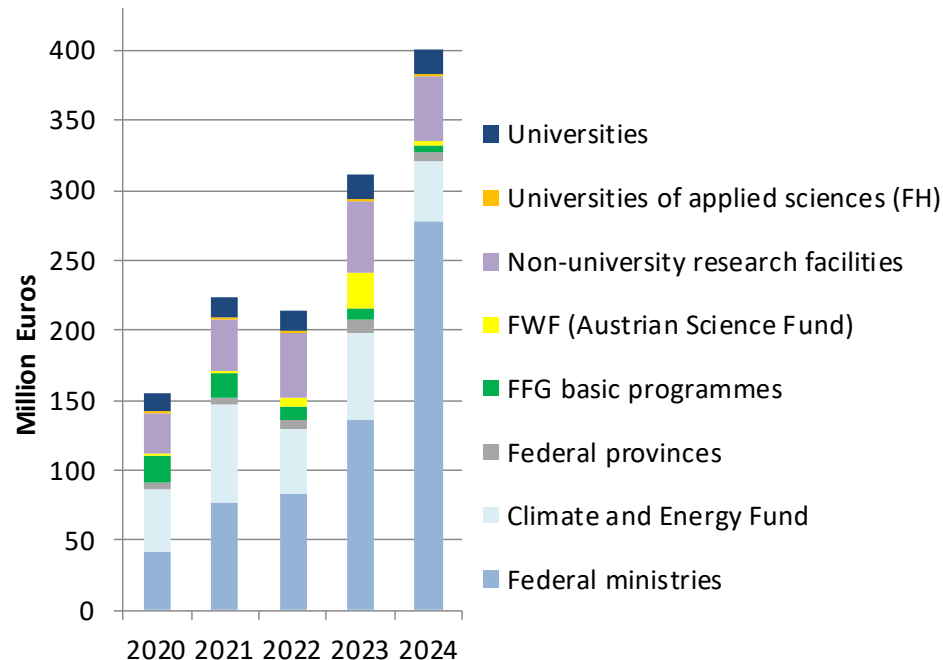
- Sharp decline in the area of Other cross-cutting technologies and research to 36.3 million euros.
- There were decreases in the areas of “Basic energy research” and other cross-cutting topics.
- Around half of the funding in the sub-area “Energy system analysis” (2024: 20.1 million euros) was provided by the federal ministries.



Institutions 2024 – Who financed?

 83.5 % of the expenditure represented direct funding from funding agencies.

 Remainder: own research at research institutions with basic funding from the federal or state government



Finanzierung

Institutions	Expenditures 2024 in euros	Changes compared to 2023 in euros	Changes compared to 2023 in per cent
Federal ministries	278,069,745	141,756,623	104.0%
Climate and Energy Fund	43,440,692	-18,889,941	-30.3%
Federal provinces	5,667,012	-4,119,469	-42.1%
FFG basic programmes*	4,736,041	-2,480,807	-34.4%
FWF (Austrian Science Fund)	2,844,536	-22,877,616	-88.9%
Non-university research facilities	46,847,264	-3,861,680	-7.6%
Universities of applied sciences	1,700,054	202,109	13.5%
Universities	17,831,616	637,249	3.7%
Total	401,136,960	90,366,468	29.1%

* In 2024, 18.5 million euros of the basic programmes were allocated directly to the ministries.

Institutions 2024

- Expenditures of federal ministries – either directly or via programmes within their fields of responsibility – totalled 278.1 million euros, double the amount of the previous year.
- At the Climate and Energy Fund, expenditure on energy-related R&D fell by almost a third and totalled 43.4 million euros.
- Expenditures by the federal states totalled 5.7 million euros, with Styria (1.8 million euros), Upper Austria (1.5 million euros) and Vienna (0.9 million euros) contributing the most.
- The Austrian Research Promotion Agency (FFG) as the national funding agency for industrial research and development provided 4.72 million euros. The lower level compared to the years up to 2021 can be explained by the fact that projects from UG34 budget funds have been allocated directly to the BMK since 2022. So in 2024, 18.5 million euros of the basic programmes were allocated directly to the ministries.
- At 2.8 million euros, the Austrian Science Fund (FWF) only recorded around a tenth of the exceptionally high level of activity in the previous year.

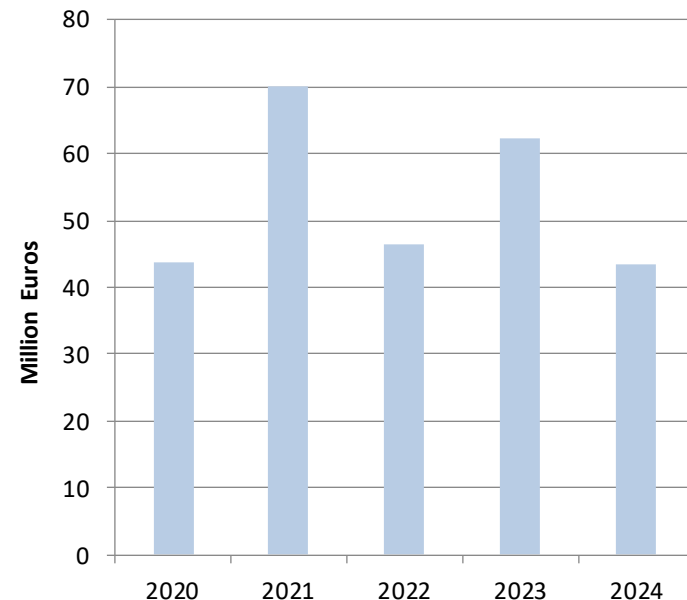
Federal ministries in 2024: 278.1 million euros

- Of this, 152.3 million euros were allocated to the Federal Ministry for Climate Protection, Environment, Energy, Mobility, Innovation and Technology (BMK).
- Federal Ministry of Labour and Economic Affairs (BMAW): 94.0 million euros
- Federal Ministry of Agriculture, Forestry, Regions and Water Management (BML): 28.8 million euros
- Federal Ministry of Finance (BMF): 1.6 million euros
- Federal Ministry of Education, Science and Research (BMBWF): 1.4 million euros
- The expenditures include projects awarded directly by the ministries as well as programmes in their respective areas of responsibility that are handled by the funding agencies FFG, KPC and AWS on behalf of these ministries.

Climate and Energy Fund

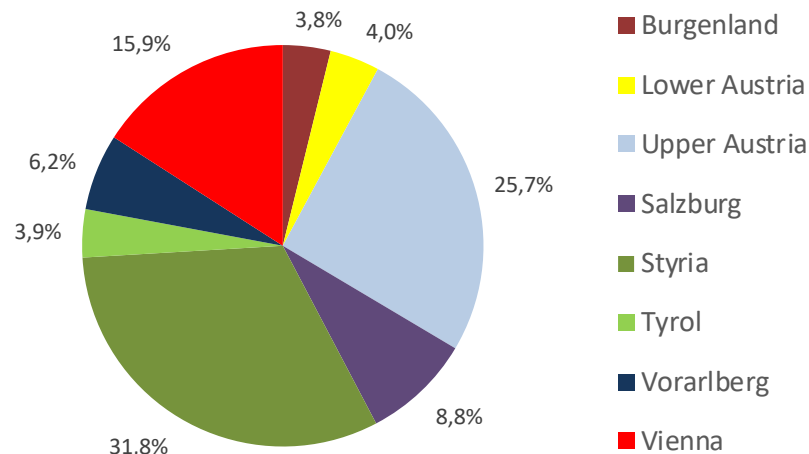
Energy research-related expenditure in 2024 was found in the following programme lines handled by the FFG:

- Energy research (20.7 million euros)
- Zero Emission Mobility (9.0 million euros)
- Climate-neutral industry (5.0 million euros)
- Austrian Climate Research Programme (2.9 million euros)
- Technologies and innovations for the climate-neutral city (2.7 million euros)
- European and international cooperation (2.5 million euros)
- Technology cooperation programmes in the IEA (0.2 million euros)



Federal provinces

- The expenditure mentioned by eight out of nine federal provinces for 2024 amounted to 5.7 million euros and decreased - compared to the previous year - by 42.1 %.
- Styria accounted for almost a third, followed by Upper Austria with a quarter and Vienna with 16%.

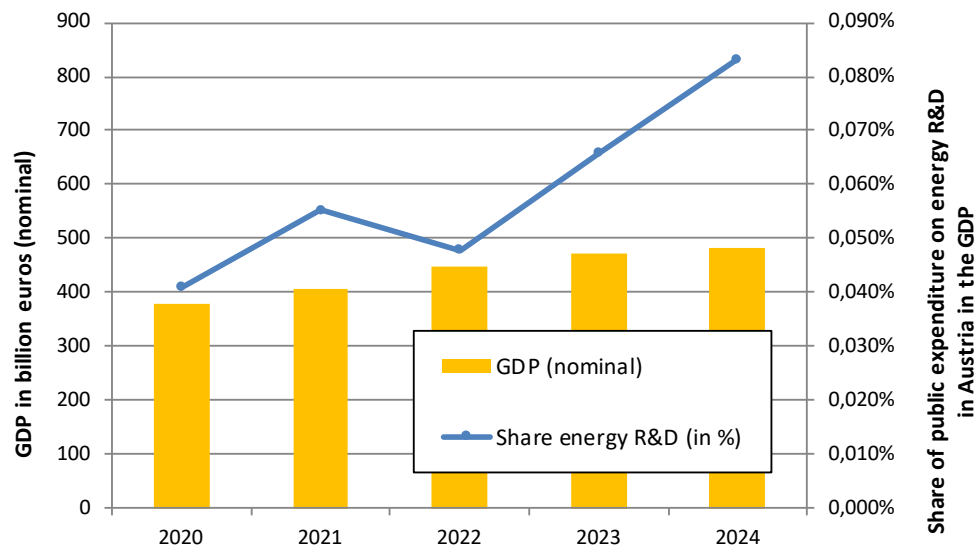


Equity capital for RD&D infrastructure 2024

- The AIT and Silicon Austria Labs dominated the use of own funds in energy research at **non-university research institutions** with 26.8 and 18.4 million euros, respectively.
- Expenditure from the own funds of **universities of applied sciences** (called Fachhochschulen or FHs) increased slightly to 1.7 million euros in 2024. Eleven FHs reported activities here.
- The **universities'** reported own resources expenditure rose slightly to 17.8 million euros. By far the highest expenditure came from TU Wien (12.9 million euros). A further six universities and the Institute of Science and Technology Austria (ISTA) also reported own funds.

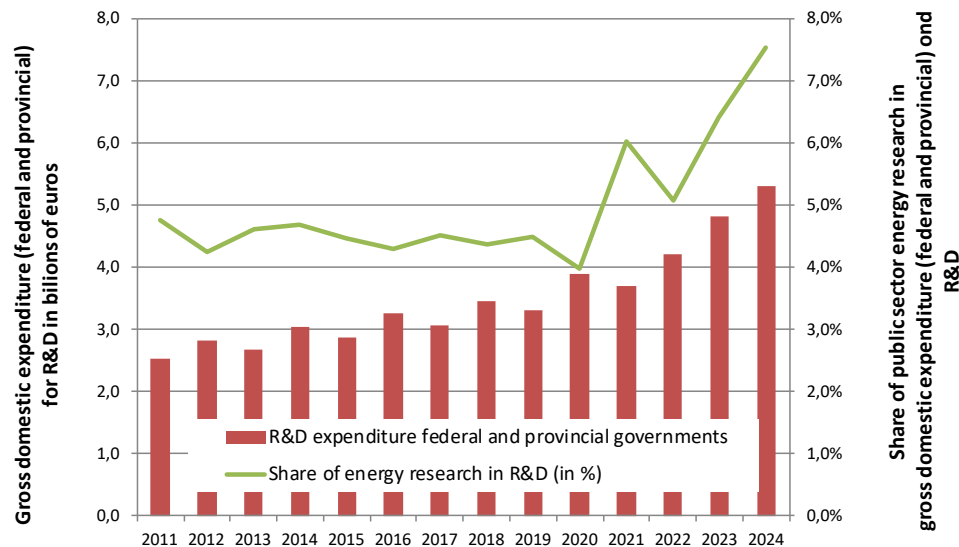
Public energy RD&D expenditures in Austria per GDP

- The importance of energy research can also be measured by its share in the economic performance of a national economy (expressed by the gross domestic product GDP).
- In 2024, the high increases in the energy sector led to a substantial rise to 0.083 %.



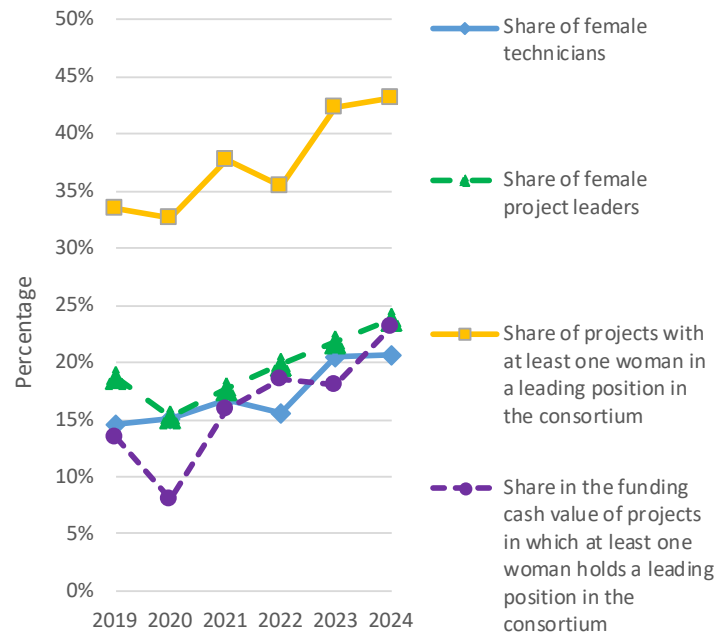
Research expenditure in Austria

- In 2024, research expenditure rose again to a new high. The share of energy research in gross domestic expenditure on R&D rose to 7.5%, the highest value to date.
- Indirect R&D funding in the form of the research premium is not taken into account here.



Gender-specific evaluation

- In 167 out of 387 of the projects commissioned by or via the FFG in 2024, at least one woman holds a leading position in the consortium.
- In 2024, more projects were led by women than in previous years: 92 projects or almost one in four projects, which would be the minimum target value.
- On average, these female project managers were responsible for projects with a comparable funding value to their male colleagues, almost closing the gap for the first time.
- The proportion of women responsible for the technical coordination of an organisation in the consortium is 20.6%.
- The respective proportions vary greatly between the topics worked on and the funding programme lines.



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