

Energy RD&D 2019

Public Expenditures in Austria

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Austrian Energy Agency
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About the survey

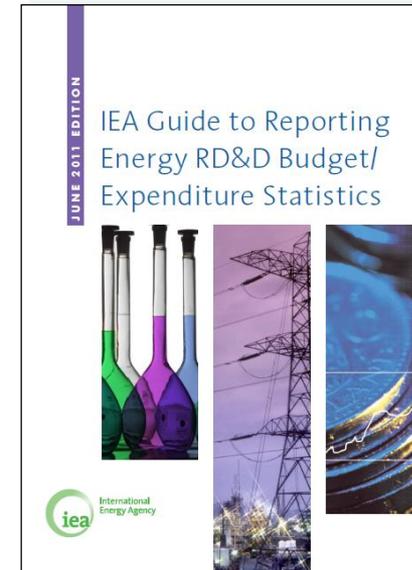
- Austria yearly records all energy-related research, development and first-of-its-kind demonstration projects (RD&D) financed by means of public funds.
- Allows emphasising the importance of energy research for Austria as well as creating and checking policy goals.
- Has been carried out annually since 1974.
- The Austrian Energy Agency has been appointed by the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK) to gather and evaluate the data.



AUSTRIAN ENERGY AGENCY

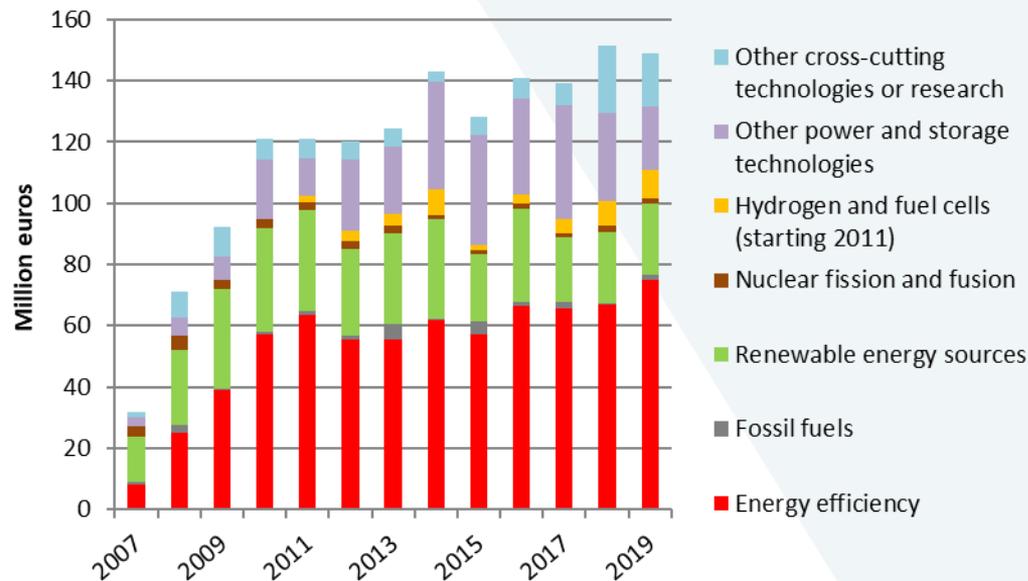
About the method

- International standards set by IEA Guide to Reporting Energy RD&D Budget/Expenditure Statistics (June 2011) and OECD (Frascati Manual)
- Data for Austria shows obligations (money actually committed during the year 2019) – not budgets!



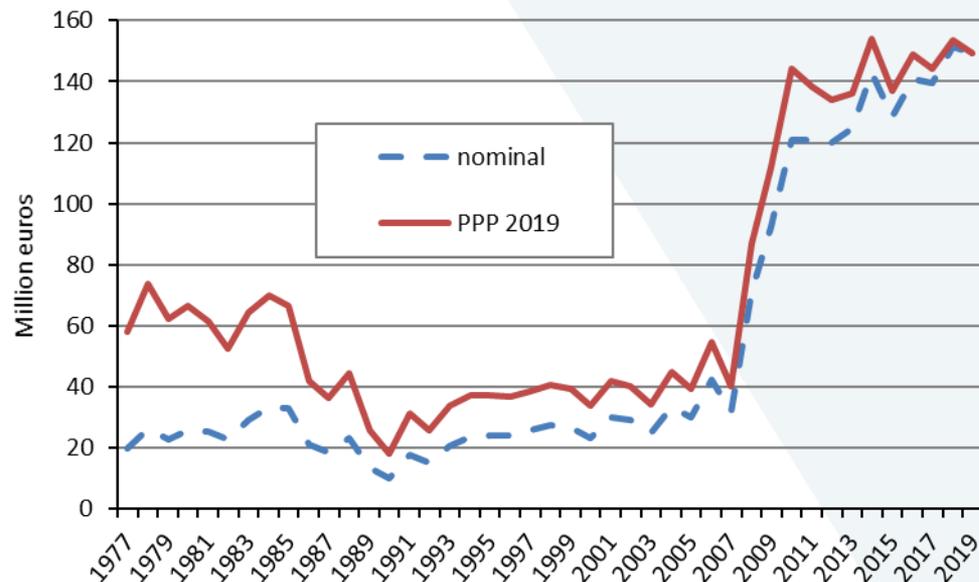
Overview

- About 1,000 projects and activities of publicly funded energy-related RD&D registered in Austria
- 2019: 149.1 million euros ...
- ... decreasing the expenditures compared to 2018 by 2.3 million euros or 1.5%



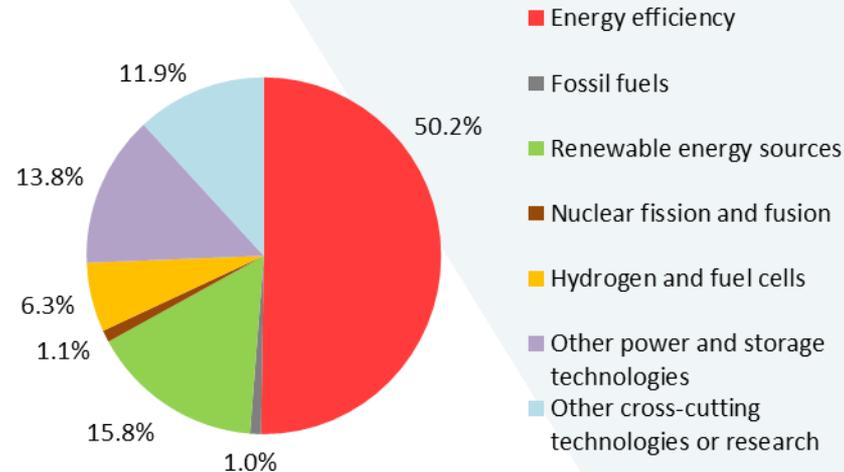
Public energy R&D expenditures in Austria 1977–2019

During the past decade, the moderate levels of RD&D expenditures as experienced between 1990 and 2007 tripled.



Topics 2019

- Energy efficiency in transport, industry and cities/buildings, renewables, and smart grids & storage define the priorities of the publicly financed energy research in Austria.
- 2019 also saw some large cross-cutting projects, each addressing various sectors.
- Hydrogen and fuel cells continued to rise in 2019 for the fifth consecutive year, reaching 9.4 million euros.



Top ten sub-topics

Ranking 2019	Sub-topics	Expenditures 2019 (in million euros)
1	Hybrid and electric vehicles	15.4
2	Energy efficiency in industry	14.0
3	Efficient residential and commercial buildings	13.1
4	Electricity transmission and distribution	12.9
5	Cross-cutting projects	12.2
6	Smart cities and communities	11.8
7	Biofuels	10.2
8	PV	7.1
9	Energy storage (excluding hydrogen, storage in vehicles and portable devices)	6.7
10	Hydrogen	6.7

Changes compared to 2018 – Topics

Topics according to IEA Code	Expenditures 2019 in euros	Changes compared to 2018 in euros	Changes compared to 2018 in %
Energy efficiency	74,920,547	+8,056,897	+12%
Fossil fuels	1,491,410	+891,067	+148%
Renewable energy sources	23,504,861	+315,311	+1.4%
Nuclear fission and fusion	1,603,874	-225,273	-12%
Hydrogen and fuel cells	9,367,377	+1,288,350	+16%
Other power and storage technologies	20,539,176	-8,434,009	-29%
Other cross-cutting technologies or research	17,680,576	-4,186,026	-19%
Total	149,107,821	-2,293,683	-1.5%

Who financed energy research in 2019?



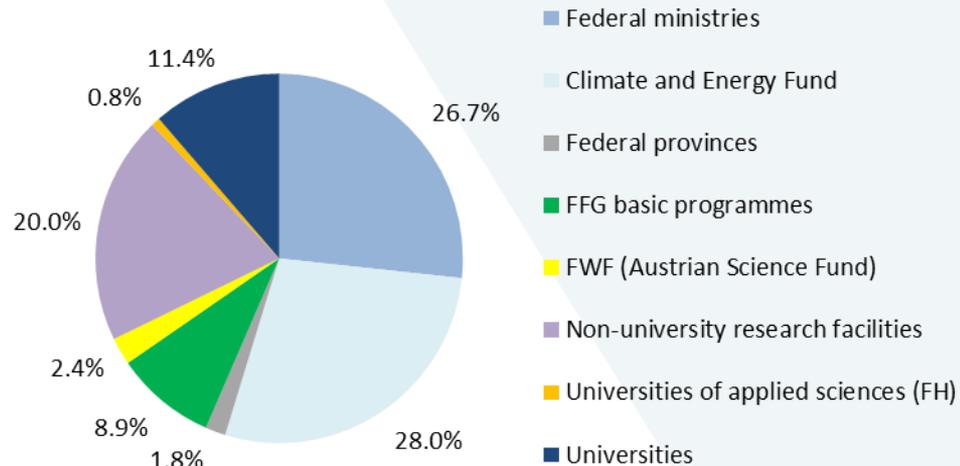
About two-thirds of this expenditure were provided by governmental authorities (federal, regional, funding organisations).



The remaining part came from (publicly funded) research institutions and universities provided with equity capital.

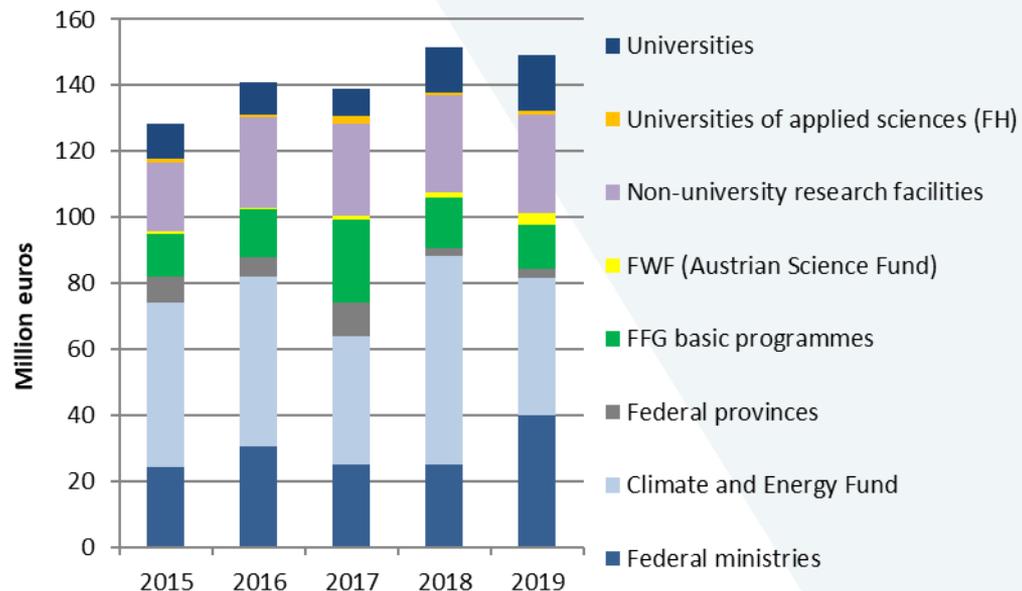


No third-party financing or EU projects were covered in this survey.



Institutions 2015–2019

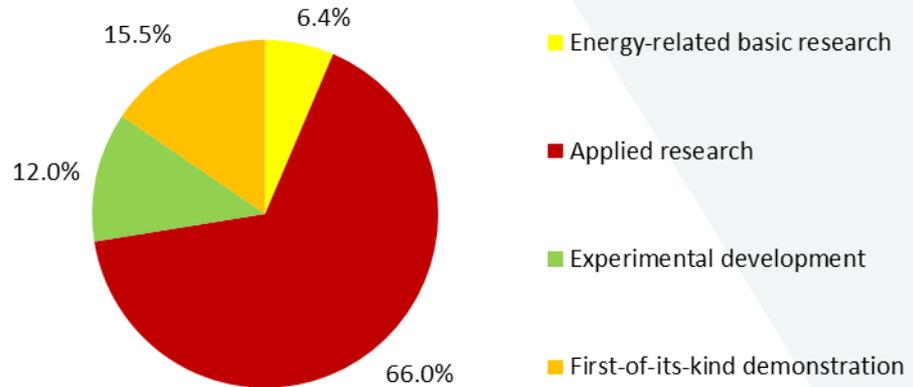
- The Climate and Energy Fund has continually provided the highest amount of finance for energy RD&D for the last decade (2019: 41.9 million euros).
- The expenditures of the federal ministries totalled up to 39.8 million euros in 2019.



Institutions

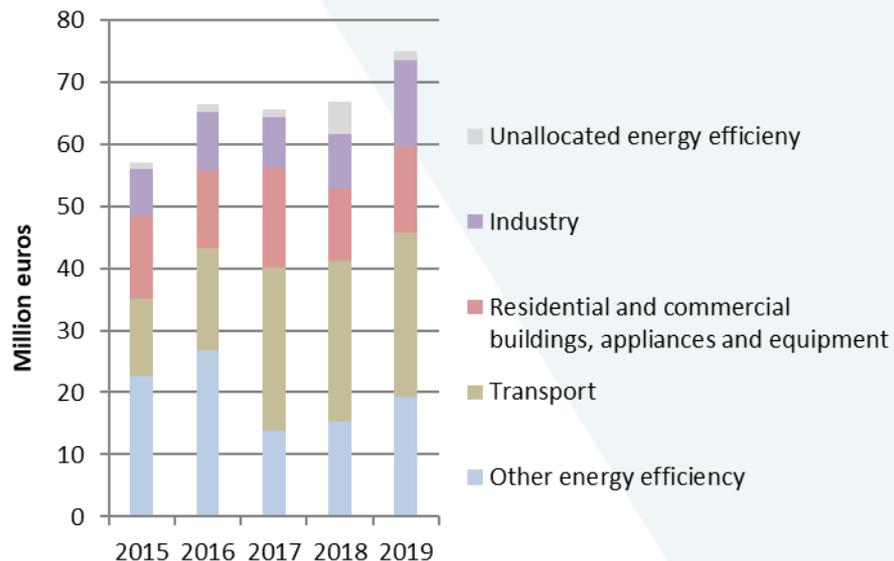
Institutions	Expenditures 2019 in euros	Changes compared to 2018 in euros	Changes compared to 2018 in %
Federal ministries	39,819,081	+14,920,941	+60%
Climate and Energy Fund	41,822,925	-21,496,818	-34%
Federal provinces	2,649,196	+30,072	+1.1%
FFG basic programmes	13,241,173	-1,877,534	-12%
FWF (Austrian Science Fund)	3,570,818	+2,001,975	+128%
Non-university research facilities	29,895,046	+543,083	+1.9%
Universities of applied sciences (FH)	1,171,120	+410,028	+54%
Universities	16,938,462	+3,174,570	+23%
Total	149,107,821	-2,293,683	-1.5%

Areas of RD&D 2019



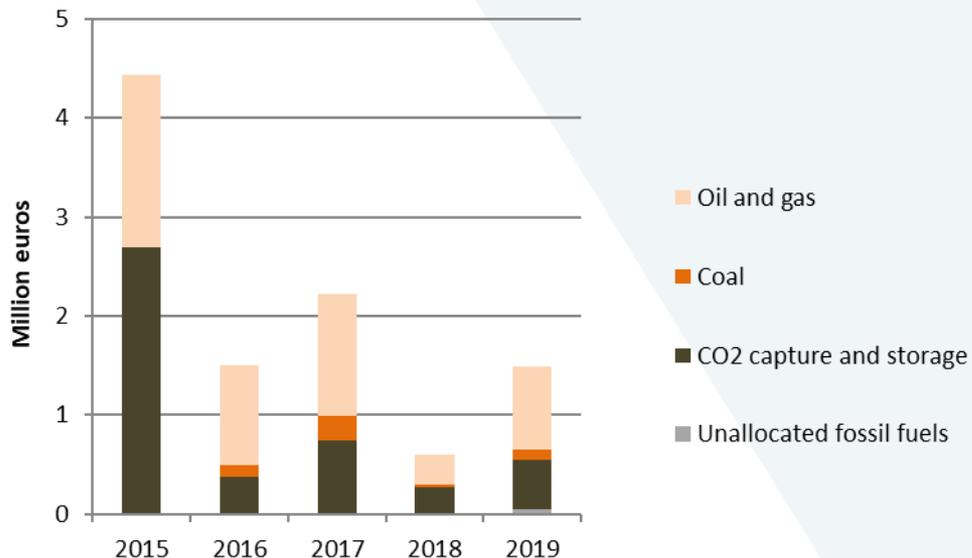
Energy efficiency

- Transport: 26.4 million euros (of which 15.4 million euros spent on technologies for HEV, batteries & charging)
- “Other energy efficiency”: smart cities (11.8 million euros), heat pumps (3.3 million euros), waste heat recovery (3.1 million euros)
- Industry: 14.9 million euros
- Buildings, etc.: 13.8 million euros

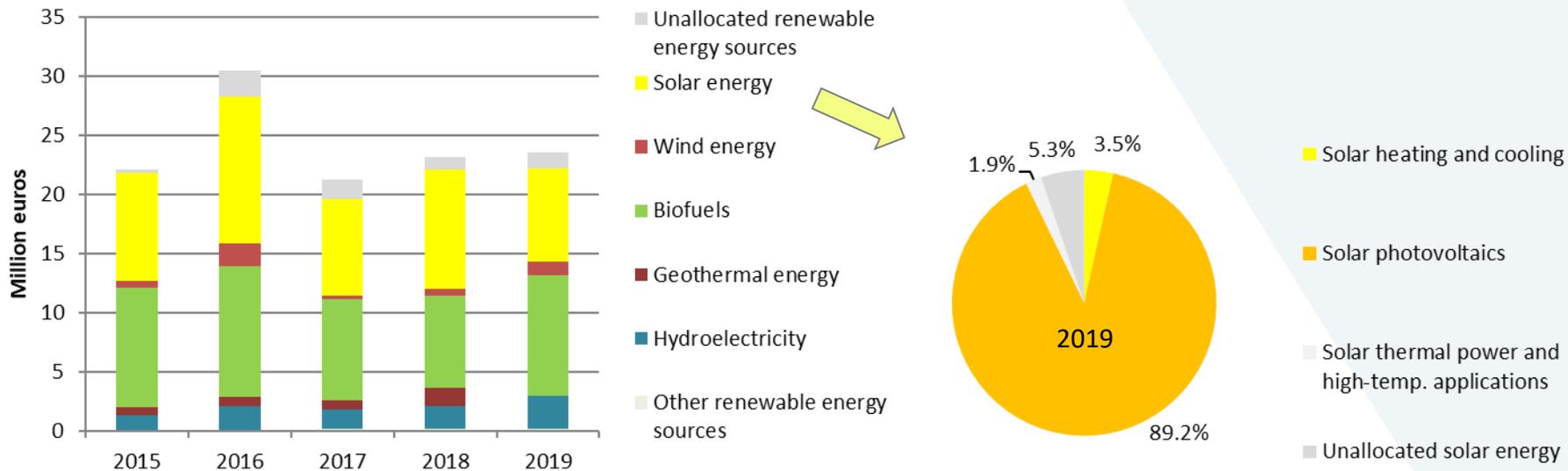


Fossil fuels & CCS

This thematic area is not a priority in publicly funded energy research in Austria and far behind in terms of funding (2019: 1.5 million euros).

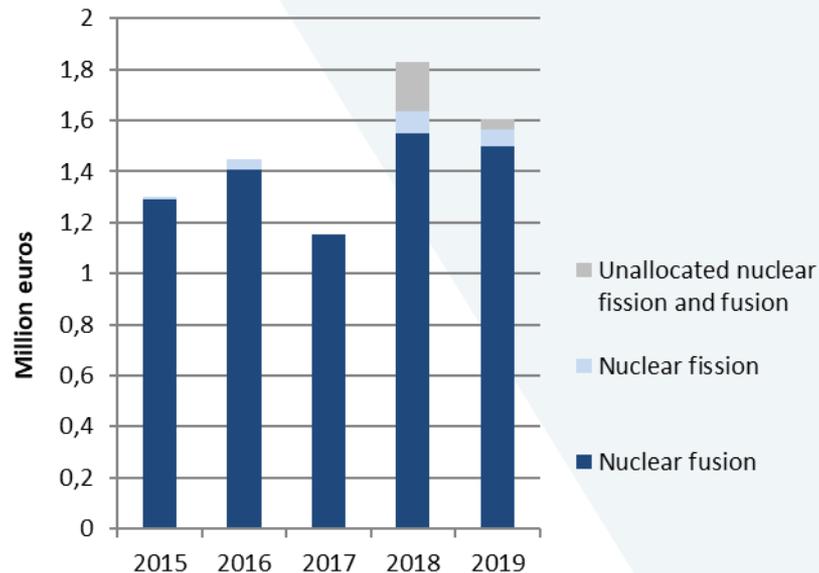


Renewables



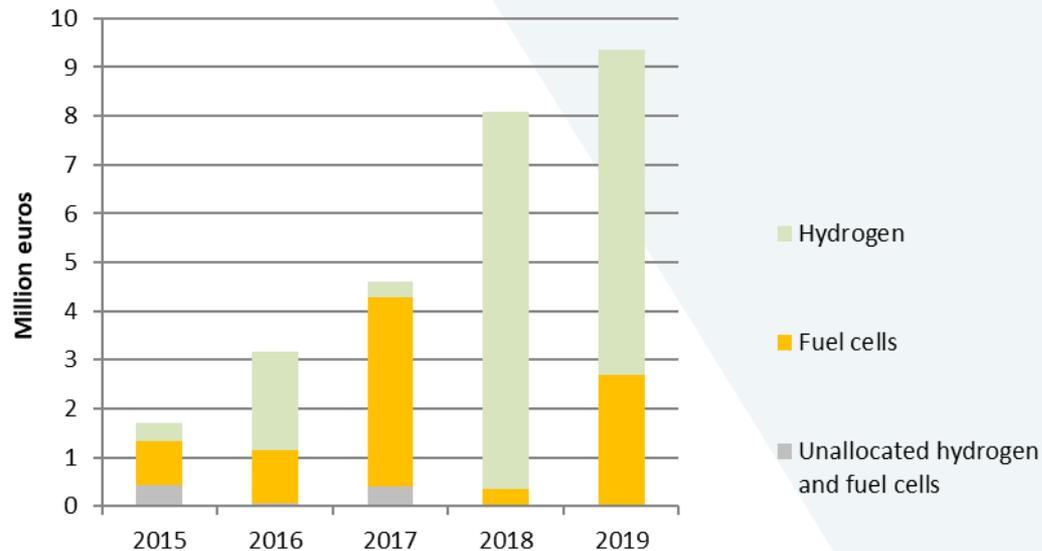
Nuclear fission and fusion

- Projects in nuclear fusion are implemented primarily at universities under Fusion@ÖAW (ÖAW: Austrian Academy of Sciences) within the Horizon 2020 EUROfusion programme (started in 2014).
- Data only includes national financial contributions.



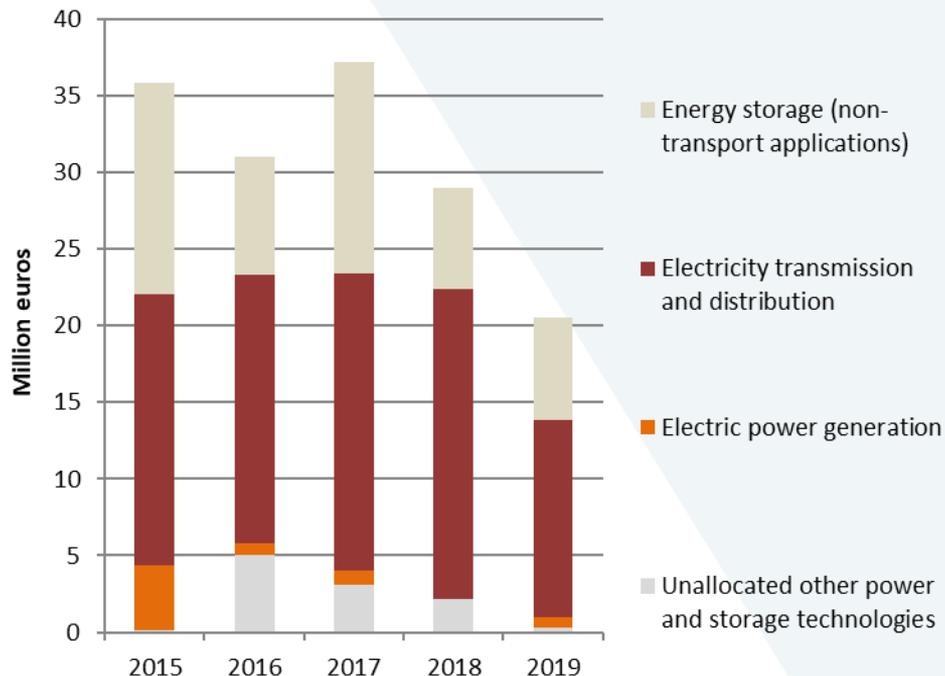
Hydrogen and fuel cells

In 2019, expenditures amounted to 9.4 million euros.



Other power and storage

- Transmission, distribution (including smart grids) declined to 12.9 million euros.
- Storage: 6.7 million euros (of which 4 million euros for stationary batteries)



Austrian Federal Ministries

BMLFUW: Agriculture, Forestry, Environment and Water Management
(till 2017)

BMWFW: Science, Research and Economy (till 2017)

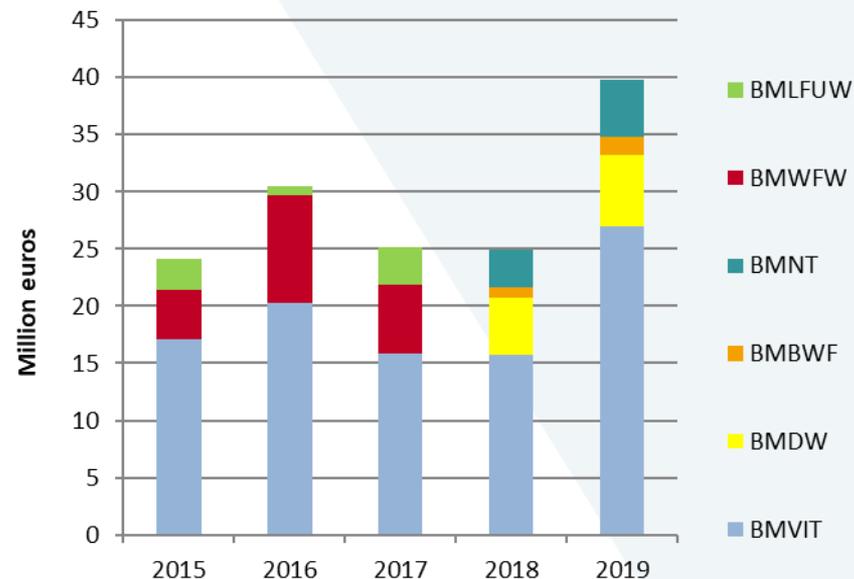
BMNT: Sustainability and Tourism (till Jan 2020)

BMBWF: Education, Science and Research

BMDW: Digital and Economic Affairs

BMVIT: Transport, Innovation and Technology (till Jan 2020)

Expenditures of the Climate and Energy Fund, bottom-up programmes of FFG and the Austrian Science Fund (FWF) are not included, but shown separately.



Funding agencies for RD&D

Austria's national funding agencies assign the overwhelming share of financial resources to energy RD&D provided by federal budgets. In 2019, 95.2 million euros had been contracted via these institutions.

- The **Austrian Research Promotion Agency (FFG)** contracted 76.7 million euros, the main share of ministries' budgets with additional bottom-up programmes for companies of 13.2 million euros.
- **Kommunkredit Public Consulting (KPC)** administered 13.9 million euros for first-of-its-kind demonstration.
- The **Austrian Science Fund (FWF)** financed energy-related basic research with 3.6 million euros.
- **Austria Wirtschaftsservice (aws)** provided 1.0 million euros out of their seed financing programmes.

Equity capital for RD&D infrastructure

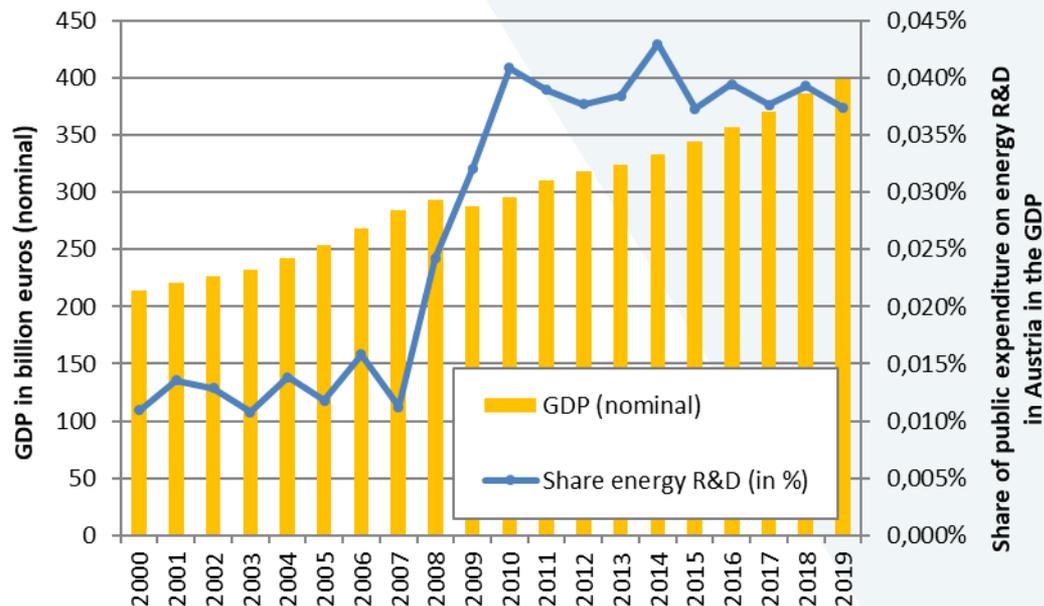
- The expenditures based on equity capital of the (non-university) research institutions provided by the government were 29.9 million euros; the predominant part of this sum was invested by the Austrian Institute of Technology (AIT).
- The universities spent 16.9 million euros of equity capital in total (lead: TU Wien).
- The amount of 1.2 million euros of equity capital was invested by the sector of universities of applied sciences (so-called “Fachhochschulen” or FH).

Gender-specific project information

- 18.7% of 230 evaluated projects are headed by women.
- On average, however, female consortium leaders manage smaller projects than their male colleagues.
- The proportion of female technicians in the projects is 14.6%.
- The gender-specific evaluation of project data shows that Austria certainly has some catching up to do in terms of the participation of women in energy research projects.

Public energy RD&D expenditures in Austria per GDP

- 2019: 0.037%
- The importance of energy research – measured in terms of share of public expenditure in the GDP – has stagnated in the last decade.



Annual publication of data as full report

<https://nachhaltigwirtschaften.at/de/iea/publikationen/energieforschungserhebungen.p>

[hp](#) (only available in German)

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