



From national data to global insight:

Compiling timely & consistent energy RD&D budgets for policy impact

IEA Energy Data Centre

30th June 2026

- This presentations will be recorded, and the recording will be posted to the IEA's YouTube channel for future viewing
- The slides will be shared by email after the webinar
- There will be dedicated time for questions and discussion at the end, but feel free to use the Q&A chat at any point

General objectives:

1. Provide a platform for compilers and the IEA Secretariat to exchange knowledge, foster greater understanding and share best practices to resolve common challenges.
2. Address questions from data compilers compiling public energy RD&D budget data
3. Collect feedback on potential improvements for the next data collection cycle

This year's focus:

- Purpose and impact of RD&D data
- Timeliness of data
- Consistency of boundaries and classification

Time	Session	Speakers
14:00 – 14:05	Opening remarks	Roberta Quadrelli <i>International Energy Agency</i>
14:05 – 14:10	Purpose and impact of RD&D budget data	Simon Bennett <i>International Energy Agency</i>
14:10 – 14:25	The compilation process: enhancing timeliness and consistency at each step	Lia Codrington <i>International Energy Agency</i>
14:25 – 14:45	Canada's data collection	Jiyoung Yu <i>Natural Resources Canada</i>
14:45 – 15:00	Discussion, feedback collection, Q&A, and closing remarks	



Purpose and impact of RD&D budget data

Simon Bennett - Energy Technology Analyst

30th June 2026

Your energy RD&D budget data inform important IEA reports & events

Communicating progress and highlighting gaps



Engaging ministers and stakeholders in high-level events



Reinforcing messages via international initiatives



Mission Innovation

Technology Collaboration Programme
by IEA



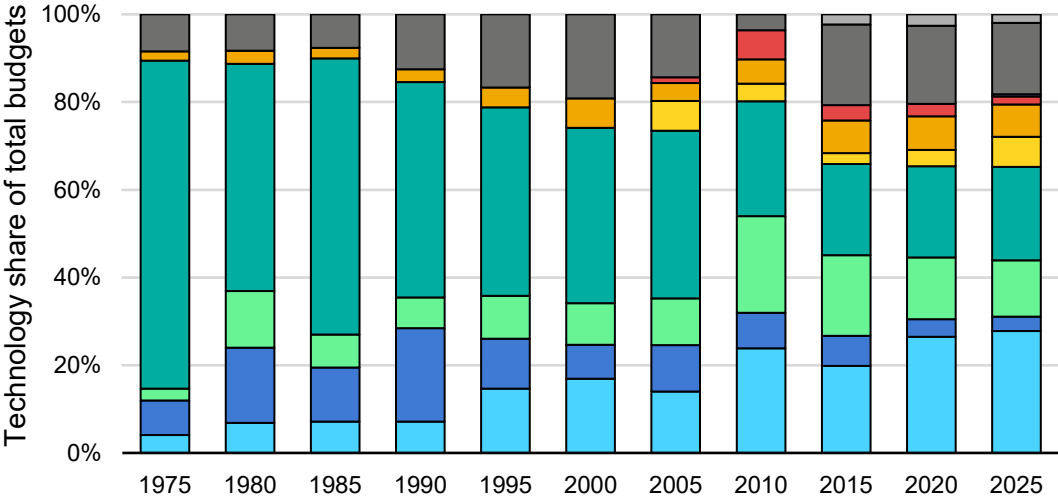
BREAKTHROUGH
AGENDA

Why we value shared public energy RD&D data so highly

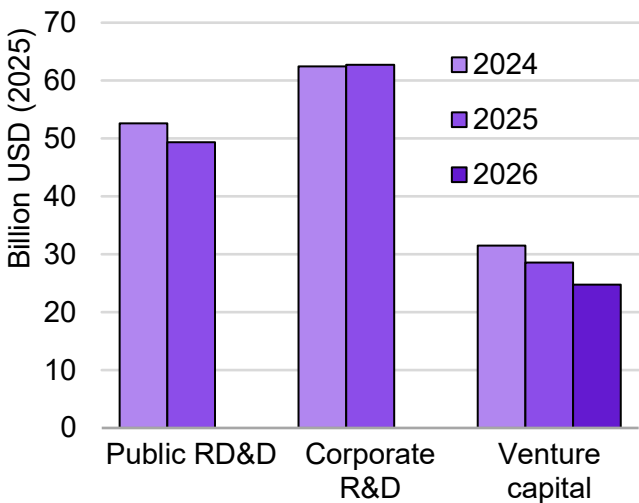
1. Government spending shapes the direction of energy innovation – it is an early indicator of priorities and trends
2. It follows a consistent technology classification and definitions, endorsed by our members
3. International comparisons grab the attention of senior government officials
4. The time series of data that we have collectively developed is long (goes back to the 1970s!) and unique
5. The underlying data are not publicly available from any other source
6. For several countries, very up-to-date information is available (thank you!)

Quality data enable analysis over time or with other funding sources

Shares of IEA public energy RD&D spending by category (left) and main sources of innovation funding (right)



- Unallocated
- Critical minerals
- Heat and power generation, storage, and supply
- Nuclear fission and fusion
- Fossil fuels
- Cross-cutting technologies and research
- CO2 capture and storage
- Hydrogen, hydrogen-based fuels and fuel cells
- Renewable energy sources
- Energy end uses



With timely data, warning messages about funding can be communicated

*Corporate R&D here covers energy supply and infrastructure only



The compilation process: enhancing timeliness and consistency at each step

Lia Codrington – Energy Data Officer

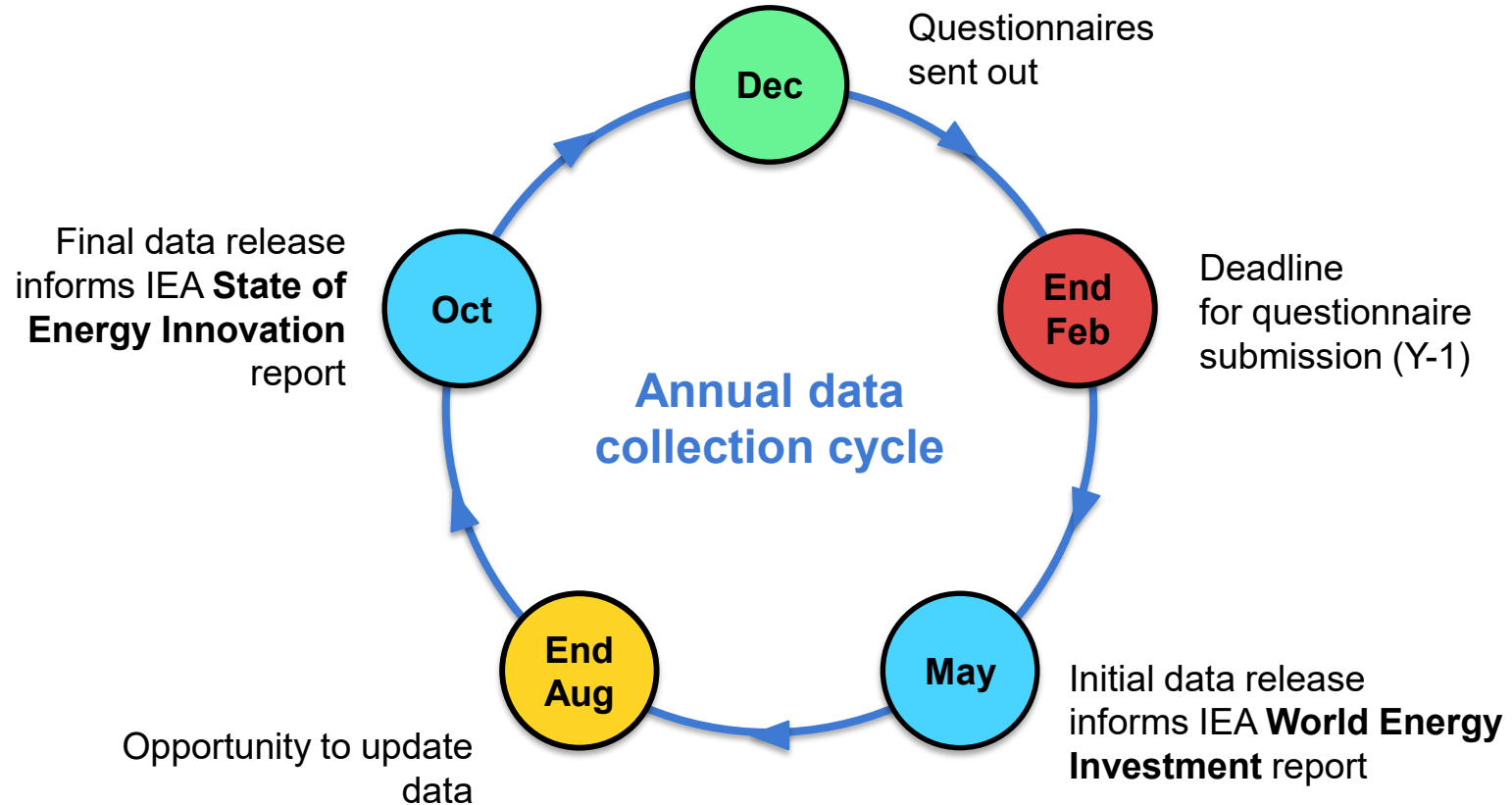
30th June 2026

RD&D budget data are collected through an annual questionnaire

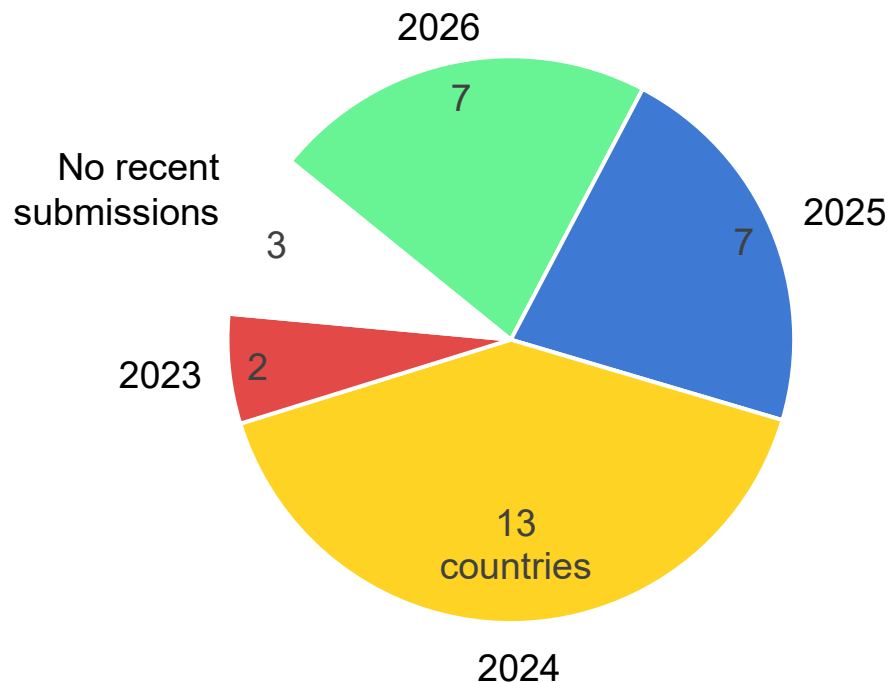
- The IEA has been collecting data on government funding of energy technology RD&D from its [member countries and beyond](#) through a [standardised questionnaire](#) since 1974
- Data in the questionnaire is disaggregated by
 - the stage of the innovation cycle ([R&D](#) vs [demonstration](#))
 - the type of funding institution ([government](#) vs [state-owned enterprises](#))
 - the type of technology funded
- The data is published on the [IEA website](#) and disseminated through report and data visualisation tools such as the [data explorer](#)

Funder: Government (excluding state-owned enterprises) Millions, national currency		Data: R&D budget (excluding demonstration) Statistand				check data	number of decimals
Table 1		2021	2022	2023	2024	2025Est	2026Est
After checking data, orange cells denote that the sub-total does not equal the sum of the elements.		R&D budget	R&D budget	R&D budget	R&D budget	R&D budget	R&D budget
BUDGETARY STAGE (see Section IV.2 of manual on reporting issues)							
FISCAL YEAR STARTING							
A ENERGY END USES		-	-	-	-	-	-
A1 Industry		-	-	-	-	-	-
A11 Energy-efficient industrial management and processes		-	-	-	-	-	-
A12 Energy-efficient industrial equipment		-	-	-	-	-	-
A121 Industrial heat pumps		-	-	-	-	-	-
A129 Energy-efficient industrial equipment not elsewhere classified		-	-	-	-	-	-
Unallocated energy-efficient industrial equipment		-	-	-	-	-	-
A13 Direct use of electricity in industrial processes		-	-	-	-	-	-
A14 CO2 utilisation in industry		-	-	-	-	-	-
A15 Hydrogen use in industry		-	-	-	-	-	-
A19 Industry not elsewhere classified		-	-	-	-	-	-
Unallocated industry		-	-	-	-	-	-
A2 Residential and commercial buildings, appliances and equipment		-	-	-	-	-	-

The annual collection cycle deadline is at the end of February



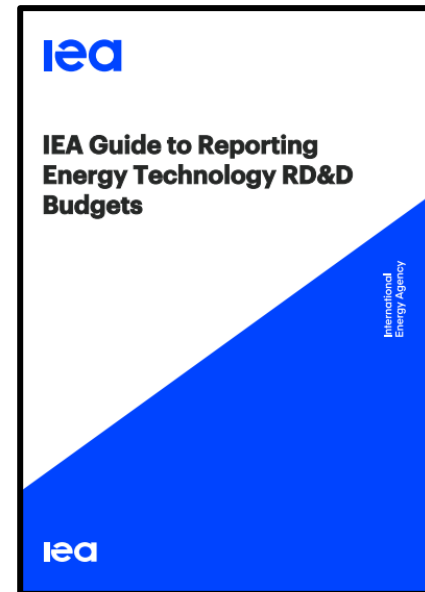
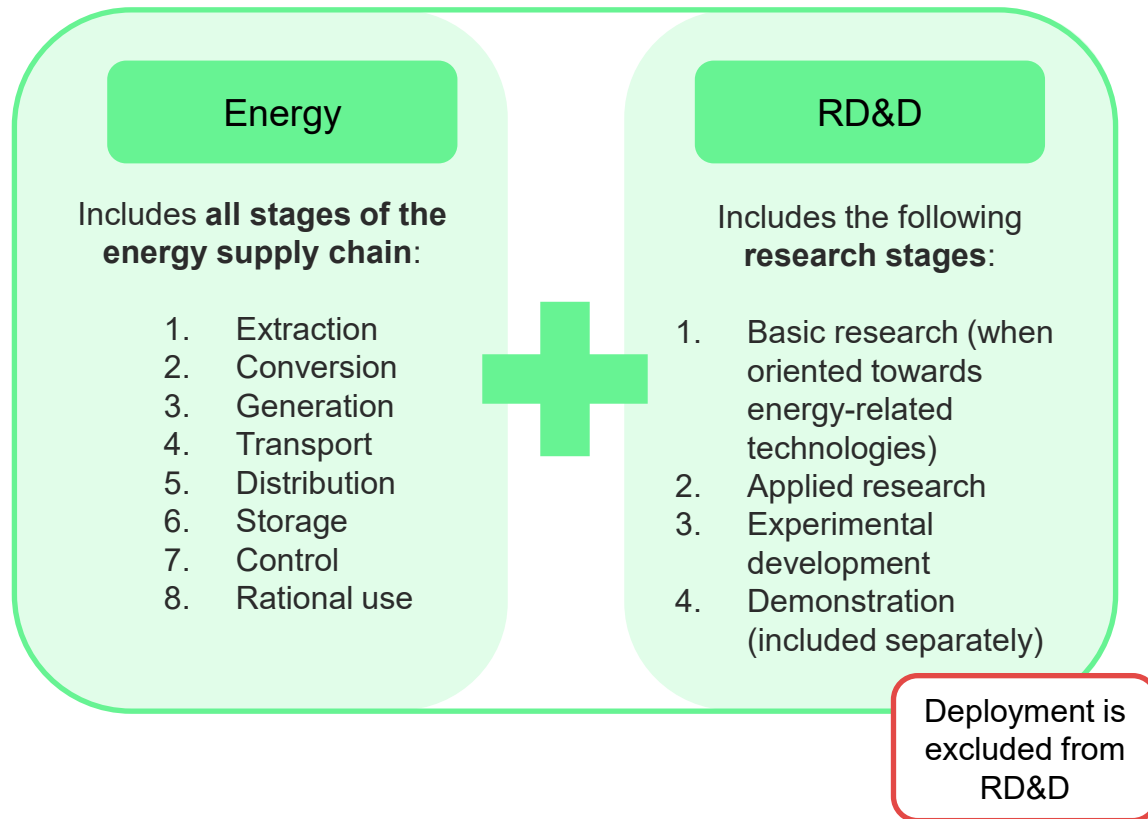
Data available as of June 2026



Lags in reporting reduce the dataset's ability to inform policy decisions, both nationally and internationally.

Estimates of spending for the current year, even at an aggregated level, are welcome.

Consistent boundaries ensure comparability



<https://www.iea.org/reports/iea-guide-to-reporting-energy-technology-rdd-budgets>

The previous classification system, last updated in 2011, did not adequately cover recently developed technologies, leading to a loss of data quality.

Restructure existing categories where necessary

Ex. Electric vehicle categories restructured to identify overall EV investments

Create new categories for technologies not previously included

Ex. Critical minerals was added due to high demand for data

Relocate some existing categories in the hierarchy

Ex. CCS was moved to its own category

Increase disaggregation under existing categories where needed

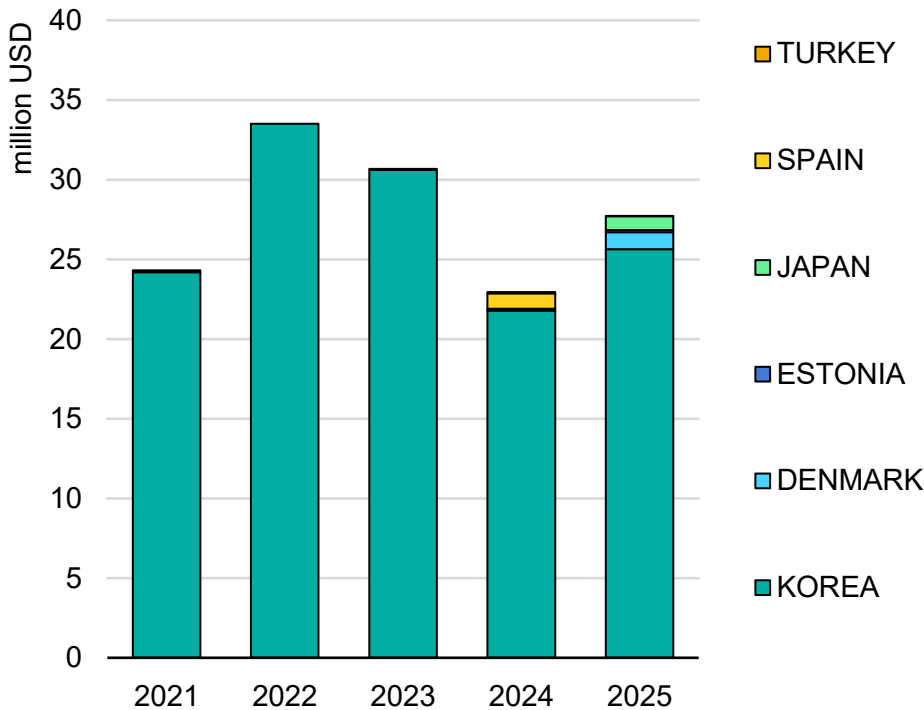
Ex. Aviation, rail, and shipping now have their own subcategories

Key change: a new category for critical minerals

Definition: Techniques, processes, materials, equipment and systems to extract, refine and process mineral resources for the development of energy technologies, such as copper, lithium, nickel, cobalt and rare earth elements.

Category H is divided into the following subcategories:

H1	Critical minerals exploration
H2	Critical minerals extraction
H3	Critical minerals processing and refining
H4	Critical minerals recycling
H9	Critical minerals not elsewhere classified

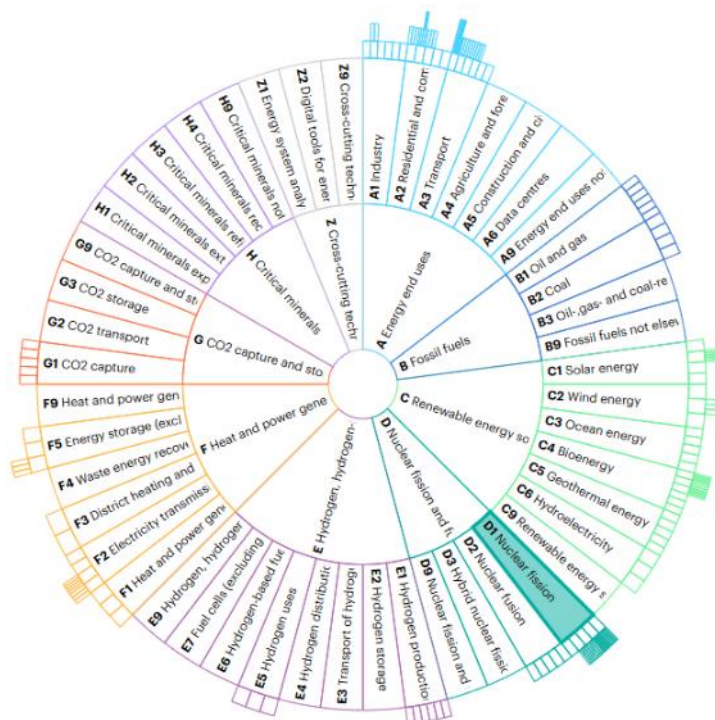


<https://www.iea.org/data-and-statistics/data-tools/critical-minerals-data-explorer>

New classification explorer can help make consistent choices

IEA energy technology classification

- ▼ **A Energy end uses**
 - **A1** Industry
 - **A2** Residential and commercial buildings, appliances and equipment
 - **A3** Transport
 - **A4** Agriculture and forestry
 - **A5** Construction and civil engineering
 - **A6** Data centres
 - **A9** Energy end uses not elsewhere classified
- ▼ **B Fossil fuels**
 - **B1** Oil and gas
 - **B2** Coal
 - **B3** Oil-, gas- and coal-related methane management
 - **B9** Fossil fuels not elsewhere classified
- ▼ **C Renewable energy sources**
 - **C1** Solar energy
 - **C2** Wind energy
 - **C3** Ocean energy
 - **C4** Bioenergy
 - **C5** Geothermal energy
 - **C6** Hydroelectricity
 - **C9** Renewable energy sources not elsewhere classified
- ▼ **D Nuclear fission and fusion**
 - **D1** Nuclear fission
 - **D2** Nuclear fusion
 - **D3** Hybrid nuclear fission and fusion
 - **D9** Nuclear fission and fusion not elsewhere classified
- ▼ **E Hydrogen, hydrogen-based fuels and fuel cells**
 - **E1** Hydrogen production
 - **E2** Hydrogen storage
 - **E3** Transport of hydrogen



Facilitates exploration by hierarchy or 360° visual wheel

Let's test our consistency

Go to
www.menti.com

Enter the code

8947 5371



Or use QR code

Feel free to use the
classification explorer (it's
not cheating!)



<https://www.iea.org/data-and-statistics/data-tools/energy-technology-classification-system>

We've made our choices; now it's time to submit

A grant for **research** into long-term operational safety of small modular reactors, **paid for by the government**, has been proposed in parliament. The grant, a total of \$50M in national currency, is expected to be finalized in 2026.

We know this belongs in row D141 in the **GOVT R&D** tab. Let's add it to our questionnaire along with the appropriate metadata.

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A14 CO2 utilisation in industry		-	-	-	-	-	-

Where does your data go?

Submitted RD&D budget data are free and accessible through the [OECD data dissemination platform](#) and through the [IEA energy technology RD&D budgets data explorer](#).

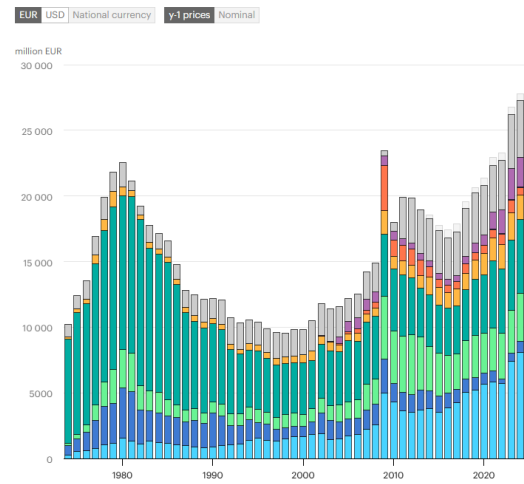
Public energy technology RD&D budgets ①

Country/Region: Total IEA • Frequency: Annual • Sector: Total public • Type: Research, development and demonstration

Time Period	2020	2021	2022	2023	2024	2025
Combined RDD technology area and unit						
Total budget, USD (constant prices and exchange rates), Millions	! 24 164.948	! 25 904.763	! 26 318.777	! 30 242.062	! 31 409.790	! 29 355.045
· Energy end uses, USD (constant prices and exchange rates), Millions	! 6 396.784	! 6 563.405	! 6 432.217	! 8 374.537	! 9 100.906	! 8 153.445
· Fossil fuels, USD (constant prices and exchange rates), Millions	! 969.150	! 1 002.273	! 436.702	! 692.044	! 971.475	! 980.305
· Renewable energy sources, USD (constant prices and exchange rates), Millions	! 3 404.240	! 3 670.169	! 3 894.072	! 3 690.285	! 4 139.971	! 3 749.217
· Nuclear fission and fusion, USD (constant prices and exchange rates), Millions	! 5 018.200	! 5 777.720	! 5 535.880	! 6 013.183	! 6 368.299	! 6 269.737
· Hydrogen, hydrogen-based fuels and fuel cells, USD (constant prices and exchange rates), Millions	! 902.428	! 1 477.971	! 2 086.981	! 2 726.361	! 2 556.307	! 2 012.270
· Heat and power generation, storage and supply, USD (constant prices and exchange rates), Millions	! 1 861.611	! 1 946.597	! 2 094.169	! 2 381.910	! 2 091.484	! 2 159.169
· CO2 capture and storage, USD (constant prices and exchange rates), Millions	! 673.697	! 750.452	! 913.076	! 1 082.383	! 666.280	! 537.008
· Critical minerals, USD (constant prices and exchange rates), Millions	! 0.000	! 24.306	! 33.518	! 30.687	! 22.950	! 154.666
· Cross-cutting technologies and research, USD (constant prices and exchange rates), Millions	! 4 303.229	! 4 007.447	! 4 254.494	! 4 595.121	! 4 873.531	! 4 762.592
· Unallocated, USD (constant prices and exchange rates), Millions	! 635.609	! 684.425	! 637.668	! 655.554	! 618.588	! 576.635

IEA, Terms and Conditions Public energy technology RD&D budgets

IEA Public RD&D in million EUR (y-1 prices and exch. rates), Total budget



Presentation by Canada

1. What are current challenges to ensuring consistency in dataset boundaries or classification, and what steps have you tried to resolve them?
2. What are current challenges to submitting timely data, and how could they be resolved?
3. How has the switch to the new classification system gone for your country?

Other feedback about the new classification system, the questionnaire, and the submission process in general are welcome either here or by email.

- Consistency in applying both the boundaries of the RD&D dataset and the classification system within it ensures data quality and comparability between countries and years. **Please verify that programs are correctly categorized**, especially in reorganized and new categories.
- **The RD&D dataset informs important reports and events**, with policy implications at the international and national level. The data is freely available should your country wish to use it to track trends and make comparisons.
- More timely data means better policy insights. **Please submit estimates up to and including the current year by the end of August**, even if detailed disaggregation is not yet possible. Data for the last two years will automatically be marked as provisional. Data can be marked as confidential if needed.

For any questions: rdd@iea.org

Annex

Research, development and demonstration activities must be:

1. Novel
2. Creative
3. Uncertain
4. Systematic
5. Transferable and/or reproducible

Exclusions

- Deployment
- Education & training (except doctoral students)
- Admin and other supporting activities
- Scientific and technical information services
- General-purpose data collection
- Testing and standardization
- Feasibility studies
- Patent and licence work
- Policy-related studies
- Routine software development
- Other industrial activities

Demonstration

Technical demonstration (including the development of demonstration projects and demonstration models) that meets the 5 criteria is included in R&D as development.

User demonstration, “which takes place when a prototype is operated at or near full scale in a realistic environment to aid the formulation of policy or the promotion of its use” (Frascati Manual, 73) is considered demonstration.

Deployment

the selection and use of a commercially available technology-based product or service in normal operations by businesses, individuals or government agencies with the aim of accelerating the diffusion and adoption of technologies or practices.

Helpful resources

The [IEA Guide to Reporting Energy Technology RD&D Budgets](#) is the best source for detailed information about what programs to include and how to use the new classification system.

The new [Energy Technology Classification System](#) page is an interactive tool that can help identify the best category for a given program.

You can also contact me at redd@iea.org with any questions.

