



Roadmap to tracking public investment in energy research

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Online – 5th April 2023

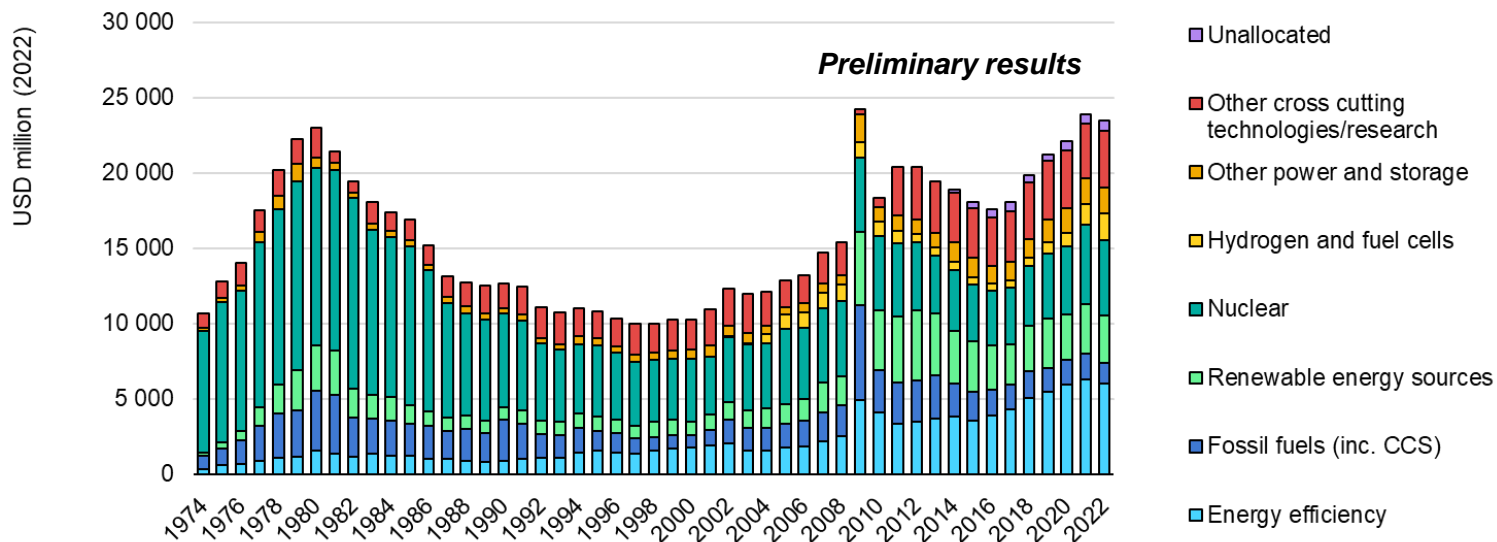
Why collect public energy RD&D data?

- Design, evaluate and adjust public innovation policies
- Identify gap and opportunities
- Evaluate effectiveness of programmes and policies
- Help the private sector define their own innovation strategies

The latest update of the database will be released on **May 3rd** and available for download on its [IEA data product page](#).

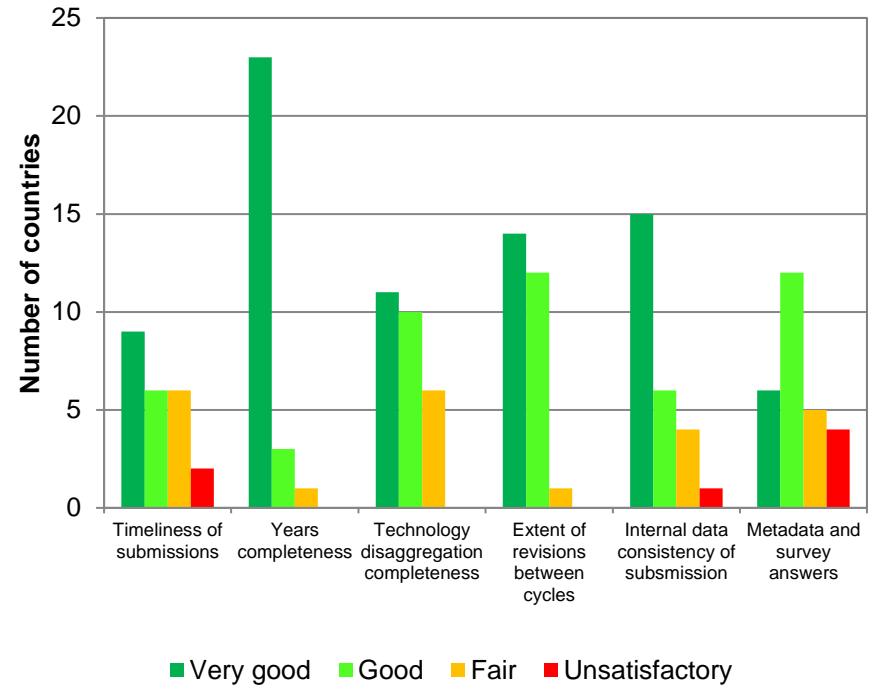
What is in the IEA RD&D database?

Research, development and demonstration budgets data funded by **national governments** and **state-owned enterprises** from **1974 to 2022**, for **184 different technologies**.



- Setting up a completely new data collection system
- Identifying possible improvements
- Expanding the coverage
- Improving the disaggregation
- Maintaining data quality
- Ensuring metadata accuracy

Submission assessment of IEA countries



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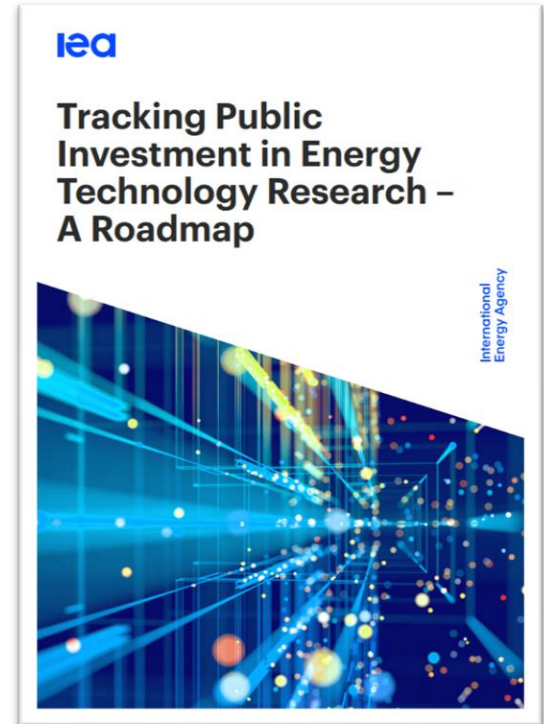
- [Published](#) in September 2022
- Description of the variety of country approaches to set up a public energy RD&D data collection system
- Based on a set of interviews with 20 governments between November 2021 and March 2022
- Roadmap intended as a guide for countries near the beginning of their journeys towards the collection of public energy RD&D budgets data, but also for countries with more advanced systems, looking at strengthening specific areas

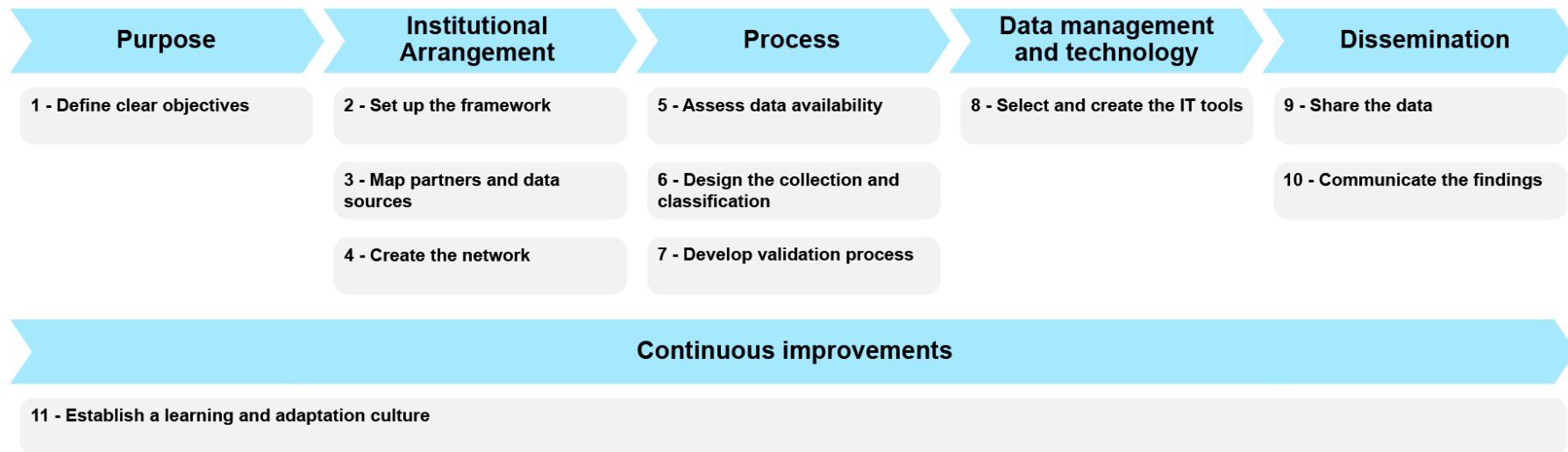
Thanks to:

Austria
Brazil
Canada
Czech Republic
Estonia
Finland
France

Germany
Hungary
Ireland
Japan
Lithuania
Netherlands
Norway

Poland
Portugal
Spain
Switzerland
United Kingdom
European Union





Structure of the roadmap – Country annexes

France

Institutional arrangement	
Reporting institution	Ministry for Ecological Transition Department of Data and Statistical Studies
Role of reporting institution	Responsible for preparing and implementing the government's policy in the fields of sustainable development, climate, energy transition and biodiversity
Funding responsibilities of the reporting institution	No funding responsibilities
Way to formalise relationship between institutions	No specific legal framework Good collaboration between public and semi-public institutions and the ministry
Collection, classification and validation process	
Type of data collection	Structured survey
Type of survey	IEA questionnaire
Survey frequency	Annual
Classification	IEA classification already in the survey
Data validation	Check for breaks in the time series at the aggregated and technological levels
Data management and technology	
Data platform	Exchange of Excel files by email
Advanced data analytics	No
Data dissemination	
Main data users	Government, public
Dissemination channel	Website
Main publication	Public Spending in Energy R&D in 2020 - Sharp Increase in Funding for New Technology

Purpose

France collects energy RD&D to assess innovation in the field of energy technology, in addition to the submission to the IEA. The data are used to inform policy makers and the public through reports produced by the Ministry of Ecological Transition.

Hungary

Institutional arrangement	
Reporting institution	Ministry for Technology and Industry (TIM) State Secretariat for Energy and Climate Policy Department for Strategic Planning and Programming National Research, Development and Innovation Office (NRDIO)
Role of reporting institution	Ministry for Technology and Industry: Manages and implements domestic energy policies and provides data to the IEA NRDIO: Supports the scientific and innovation ecosystem and provides data to the Ministry for Technology and Industry
Funding responsibilities of the reporting institution	NRDIO is a major RD&D funder
Way to formalise relationship between institutions	Non-energy R&D data are typically collected and provided to the European Union and international organisations by the Hungarian Energy & Public Utility Regulatory Authority , regulated by Act No. LXXXVI of 2007 on Electric Energy. The national report on GHG Emissions and Climate Change is set in Govt. Decree No. 278 of 2014 (XII. 14) .
Collection, classification and validation process	
Type of data collection	Public and private databases
Contacts	Data collected directly from performers
Classification	Internal classifications
Data validation	Data validated using data from the Hungarian Central Statistical Office
Data management and technology	
Data platform	NRDIO manages a central database and a platform to request RD&D funding
Advanced data analytics	Filtering by fields of science classification (tier 1-3)
Data dissemination	
Main data users	Policy makers
Dissemination channels	Events, newsletters

Lithuania

Institutional arrangement	
Reporting institution	Lithuanian Energy Agency , with oversight from the Ministry of Energy of the Republic of Lithuania
Role of reporting institution	Assessing the state of renewable energy and energy efficiency, and the progress towards the energy sector targets under the National Energy and Climate Plan (NECP)
Funding responsibilities	Not a funding institution
Way to formalise relationship between institutions	In the process of setting up a legal framework for energy RD&D data collection
Collection, classification and validation process	
Type of data collection	Voluntary survey
Type of survey	Same as the IEA survey
Survey frequency	Annual
Classification	IEA classification at the survey stage
Data validation	High-level assessment of the figures
Data management and technology	
Data platform	Exchange of Excel files by email
Advanced data analytics	No
Data dissemination	
Main data users	Policy makers Co-operative research programmes in the Baltic region
Dissemination channel	IEA publication
Main publication	Assessment of the need for an internal publication

Purpose

In 2020, Lithuania started to collect energy RD&D data. Before, the only data available were the general RD&D data produced by the national statistics office. However, these statistics were at a much higher level than the IEA classification, without a breakdown by technology. This effort to collect data that are more detailed was undertaken because of a combination of three main drivers.

Purpose

1 - Define clear objectives

Examples of key questions

- What are the national needs for the public energy RD&D data collection process?
- What type of data has to be collected?
- What are the requirements of the different innovation stakeholders?



In 2018, **Brazil** launched an ambitious project to improve its process for collecting and compiling energy RD&D data. The main objectives in boosting this effort were to guide public policy and fill gaps to efficiently compile investment in energy RD&D statistics.

Institutional Arrangement



2 - Set up the framework

3 - Map partners and data sources

4 - Create the network

Examples of key questions

- Who will coordinate the public energy RD&D data collection and what resources are available?
- Who funds and performs public energy RD&D in the country?
- Who will be the key contacts for collection and validation in the relevant institutions and how to ensure and maintain a working relationship?

 In **Austria**, the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology externalized the data collection
 through a tender. It is currently carried out by the Austrian Energy Agency.

Process

5 - Assess data availability

6 - Design the collection and classification

7 - Develop validation process

Examples of key questions

- Is there an existing data collection process in place that could be built upon?
- What would be the best means to collect the data: surveys, database?
- How can data be checked for consistency and accuracy and by whom?



In **Switzerland**, the Federal Office of Energy set up a data collection process including existing projects databases, surveys to research organisations and secondary data sources.

Data management and technology

8 - Select and create the IT tools

Examples of key questions

- What IT tools will be used to collect the data?
- Would AI be useful in the process?
- What type of software tool could be used to store the data?



In **Estonia**, the data collection is done fully through a database and the project categorization is based on keywords related to energy.

Dissemination

9 - Share the data

10 - Communicate the findings

Examples of key questions

- How can the data be effectively communicated to the ministries and RD&D actors? To the public?
- Can the data be published in open access?
- What methodology and metadata documents should be published with the dataset?



In **Canada**, the data are published annually by Natural Resources Canada in their [Energy Fact Book](#).

- Tool for countries to **internally assess** their data collection system
- **Basis for discussion** with countries on how to improve or set up their data collection
- For any questions on the roadmap, please **contact** RDD@iea.org
 - **The IEA would be happy to collaborate with interested countries to assess the status of their data collection and identify priority steps through this tool. Don't hesitate to express your interest.**

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