International collaboration to strengthen energy efficiency data capacity

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Joint APEC-IEA training workshop on end-use energy consumption data – Nov. 15th 2022

Efficiency is the “first fuel” and Energy efficiency improvement will drive more than 40% of the reduction of energy-related greenhouse gas emissions over the next 20 years.

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Where do we come from?

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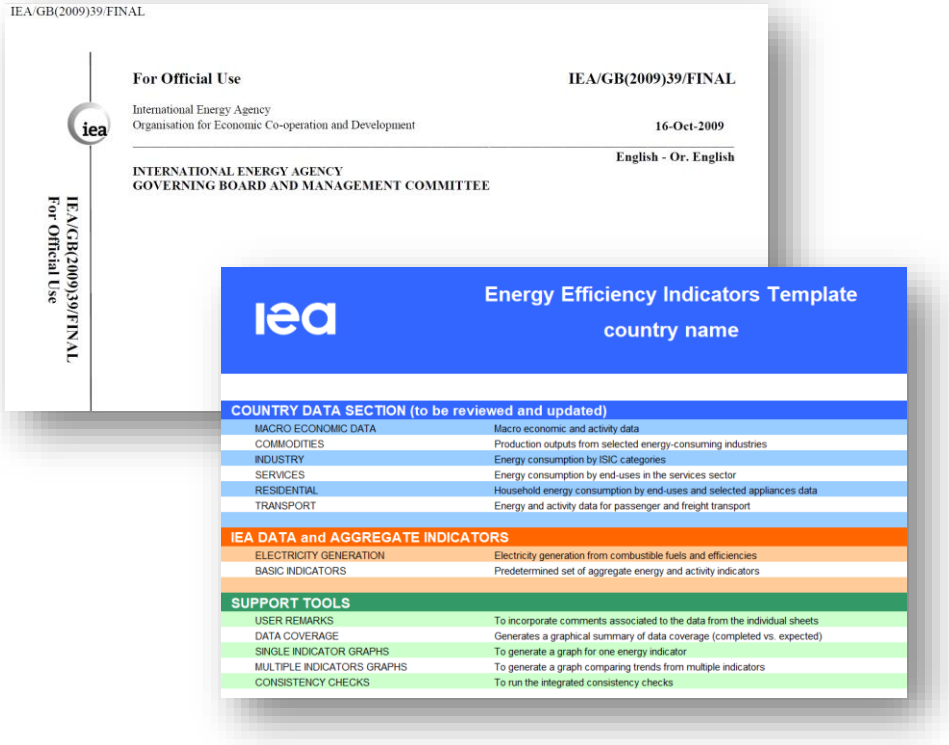
The origin of the IEA data collection

The obligation for IEA members to provide the IEA with energy efficiency data was established at the **2009 Governing Board meeting at Ministerial level**. The “Action Plan” approved at that meeting included the objective to promote energy efficiency.

And therefore to gather annually, end-use data and statistics needed for developing energy efficiency indicators based on the template developed by the IEA in concert with international experts.

An ad-hoc questionnaire was developed and the data collection started in the following years.



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International Energy Agency
Organisation for Economic Co-operation and Development **16-Oct-2009**

English - Or. English

INTERNATIONAL ENERGY AGENCY
GOVERNING BOARD AND MANAGEMENT COMMITTEE

Energy Efficiency Indicators Template
country name

COUNTRY DATA SECTION (to be reviewed and updated)	
MACRO ECONOMIC DATA	Macro economic and activity data
COMMODITIES	Production outputs from selected energy-consuming industries
INDUSTRY	Energy consumption by ISIC categories
SERVICES	Energy consumption by end-uses in the services sector
RESIDENTIAL	Household energy consumption by end-uses and selected appliances data
TRANSPORT	Energy and activity data for passenger and freight transport
IEA DATA and AGGREGATE INDICATORS	
ELECTRICITY GENERATION	Electricity generation from combustible fuels and efficiencies
BASIC INDICATORS	Predetermined set of aggregate energy and activity indicators
SUPPORT TOOLS	
USER REMARKS	To incorporate comments associated to the data from the individual sheets
DATA COVERAGE	Generates a graphical summary of data coverage (completed vs. expected)
SINGLE INDICATOR GRAPHS	To generate a graph for one energy indicator
MULTIPLE INDICATORS GRAPHS	To generate a graph comparing trends from multiple indicators
CONSISTENCY CHECKS	To run the integrated consistency checks

International reporting can push countries towards a more complete and higher quality efficiency data .

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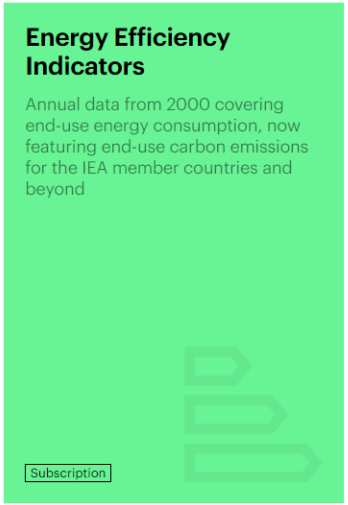
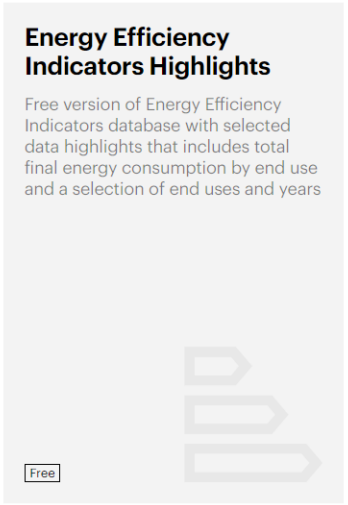
IEA collects end-use data from members and beyond

In 2022, data for **60 economies** were published in the database, including 29 beyond the IEA family.





COUNTRY, TERRITORY OR ECONOMY		
IEA Total	Albania	Argentina
Armenia	Australia	Austria
Azerbaijan	Belarus	Belgium
Bosnia and Herzegovina	Brazil	Bulgaria
Canada	Chile	Colombia
Croatia	Cyprus	Czech Republic
Denmark	Estonia	Finland
France	Georgia	Germany
Greece	Hungary	Ireland
Italy	Japan	Kazakhstan
Korea	Kosovo	Kyrgyzstan
Latvia	Lithuania	Luxembourg
Malta	Mexico	Republic of Moldova
Morocco	Netherlands	New Zealand
Republic of North Mace...	Norway	Poland
Portugal	Romania	Serbia
Slovak Republic	Slovenia	South Africa
Spain	Sweden	Switzerland
Chinese Taipei	Turkey	Ukraine
United Kingdom	United States	Uruguay
Uzbekistan		

Visit https://www.iea.org/data-and-statistics/data-product/energy-efficiency-indicators

Countries' administrations (ministries or agencies) fill an annual questionnaires with the best available data.

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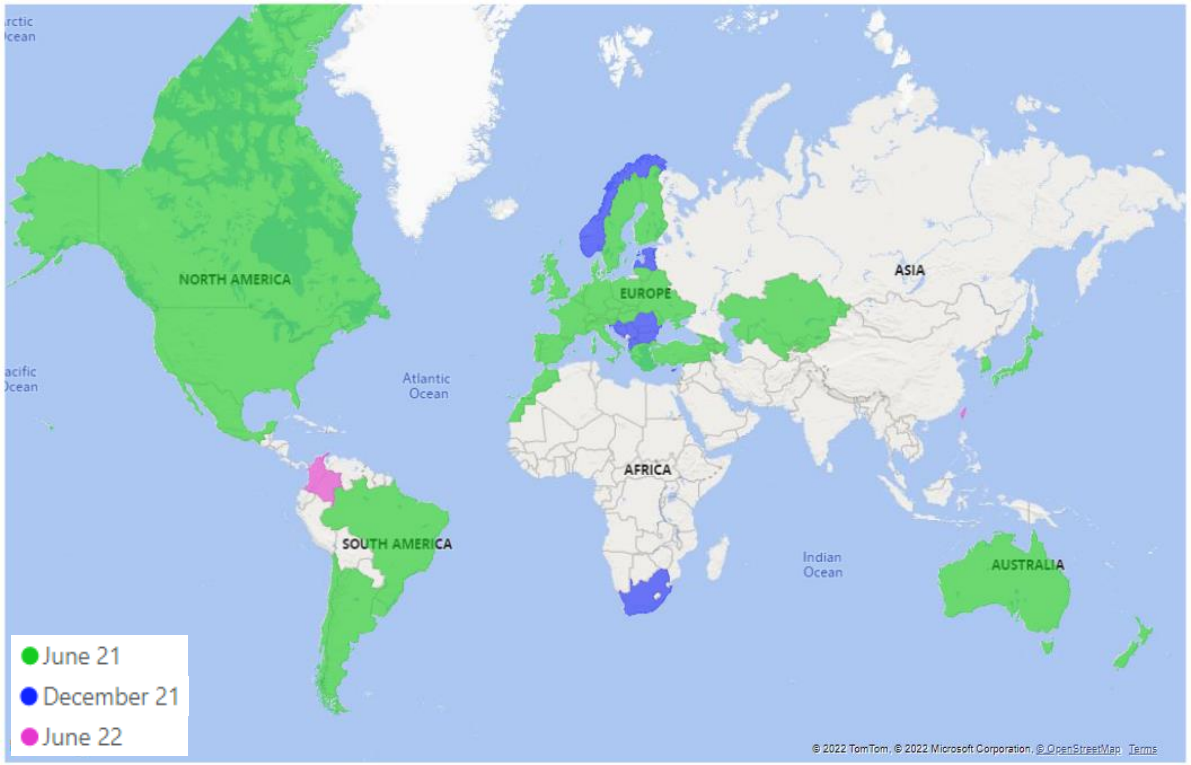
Energy efficiency indicators: a growing database



+16 economies in a year, including

- Colombia (accessing) in June 22
- Chinese Taipei (APEC) in June 22
- 10 European countries (Eurostat) in December 21
- **More to come**…

Now covering at least one economy in every region, including sub-saharan Africa

+38% data points compared to June 2021, reaching **500 000 data points** in June 2022

Between June 2021 and a July 2022, coverage increased significantly thanks to enhanced partnerships!

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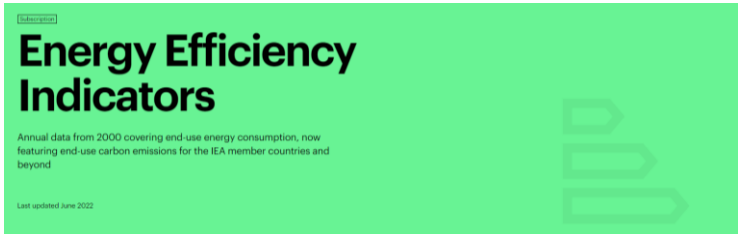
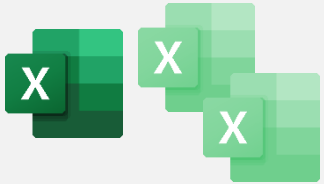
The database end uses, products and flows



5 sectoral IVT files
(as IVT, TXT and ZIP)

1 complete database IVT file
(as IVT, TXT and ZIP)



3 Excel files
(Extended, Highlights, Demo & availability)

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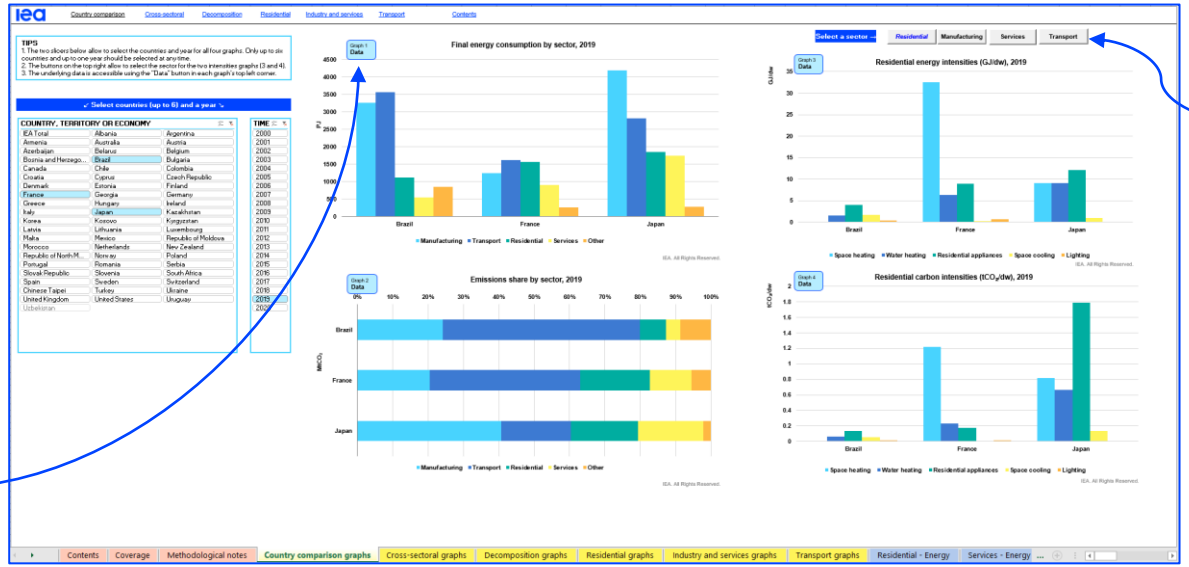
A user-friendly, interactive publication format



To increase database visibility, free version now includes +50% data points.

https://www.iea.org/data-and-statistics/data-product/energy-efficiency-indicators

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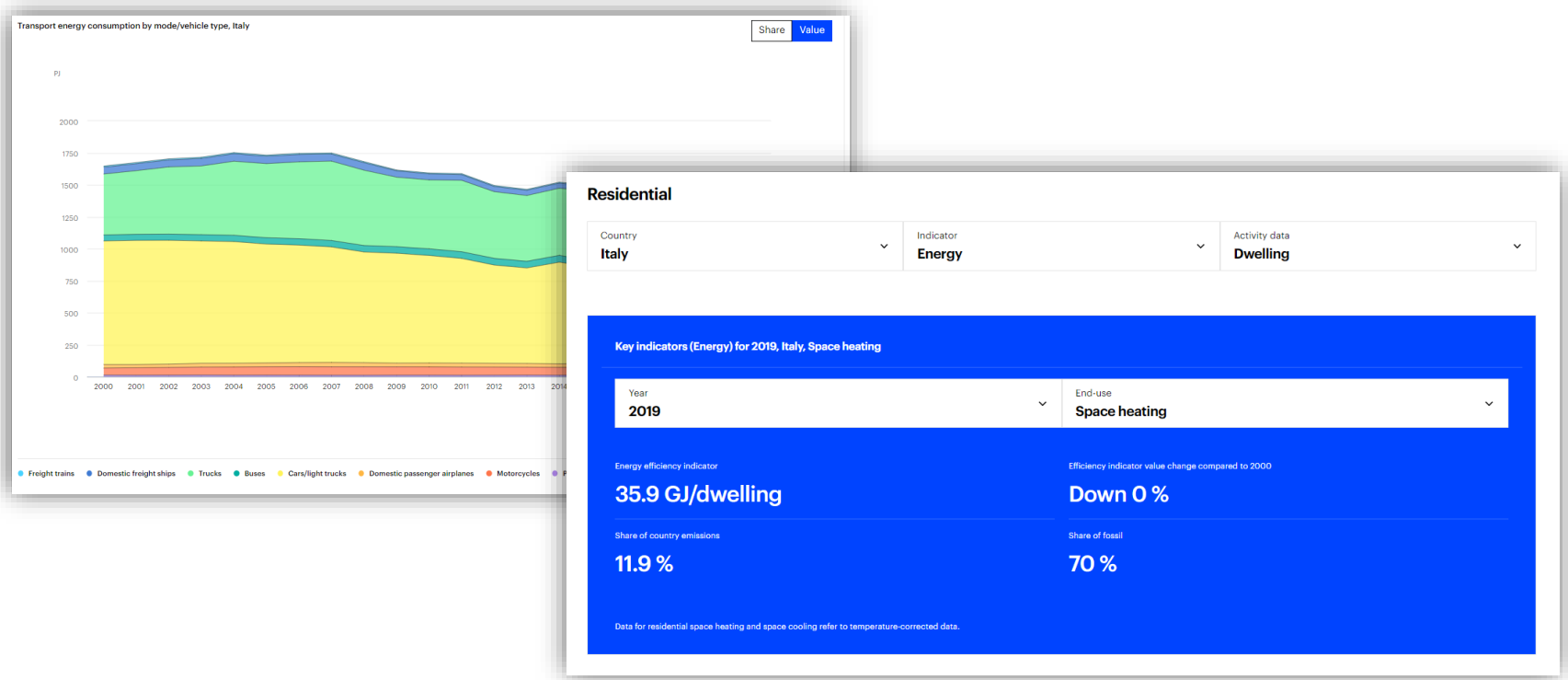
Energy Efficiency Indicators Data Explorer



New online tool to explore the dataset available at
https://www.iea.org/data-and-statistics/data-tools/energy-efficiency-indicators-data-explorer

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Why disaggregated data are key?

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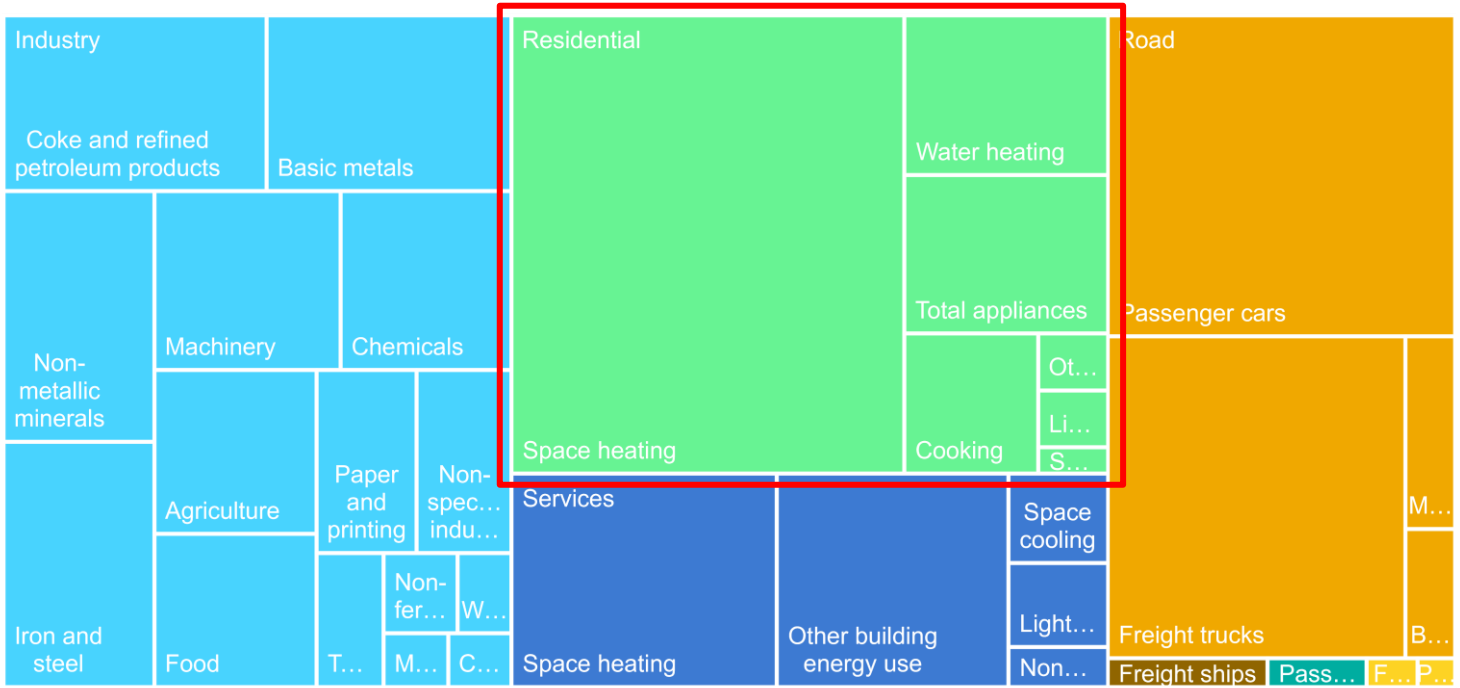
Sectoral demand data for better modelling and inform policy

Final energy consumption by end uses (Energy efficiency indicators) - Italy



Detailed data collection at the end-use level enables tracking of energy efficiency changes.

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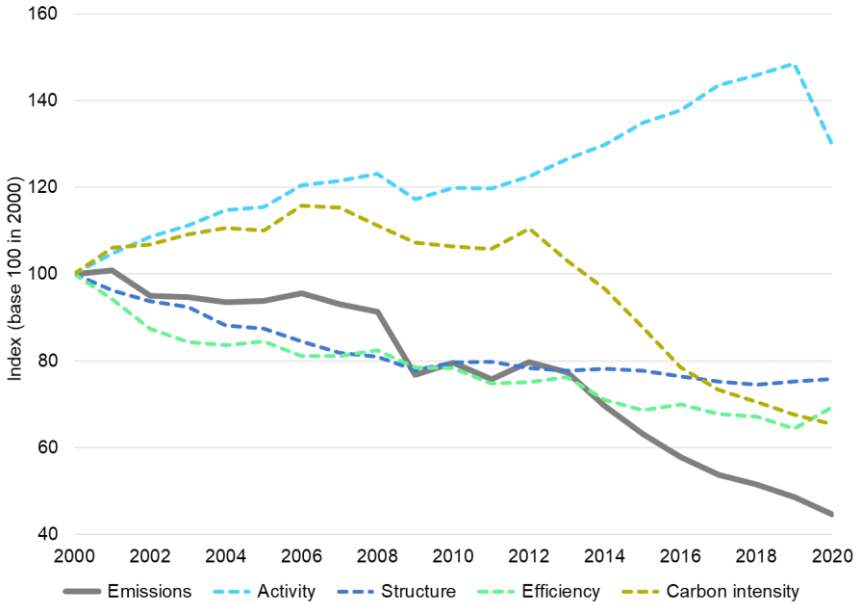
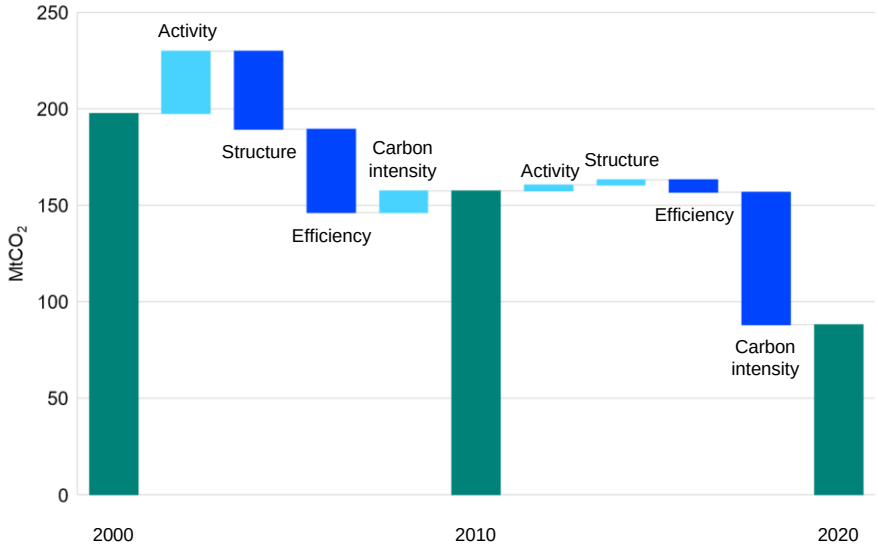
Decomposition analyses

Analysis of carbon emissions in industry and services, 2000-2020, United Kingdom

Drivers of carbon emissions



Cumulative emission savings from each driver



Activity data and detailed energy end-uses by fuels allows us to disentangle the effect of all the drivers of energy demand and carbon emissions.

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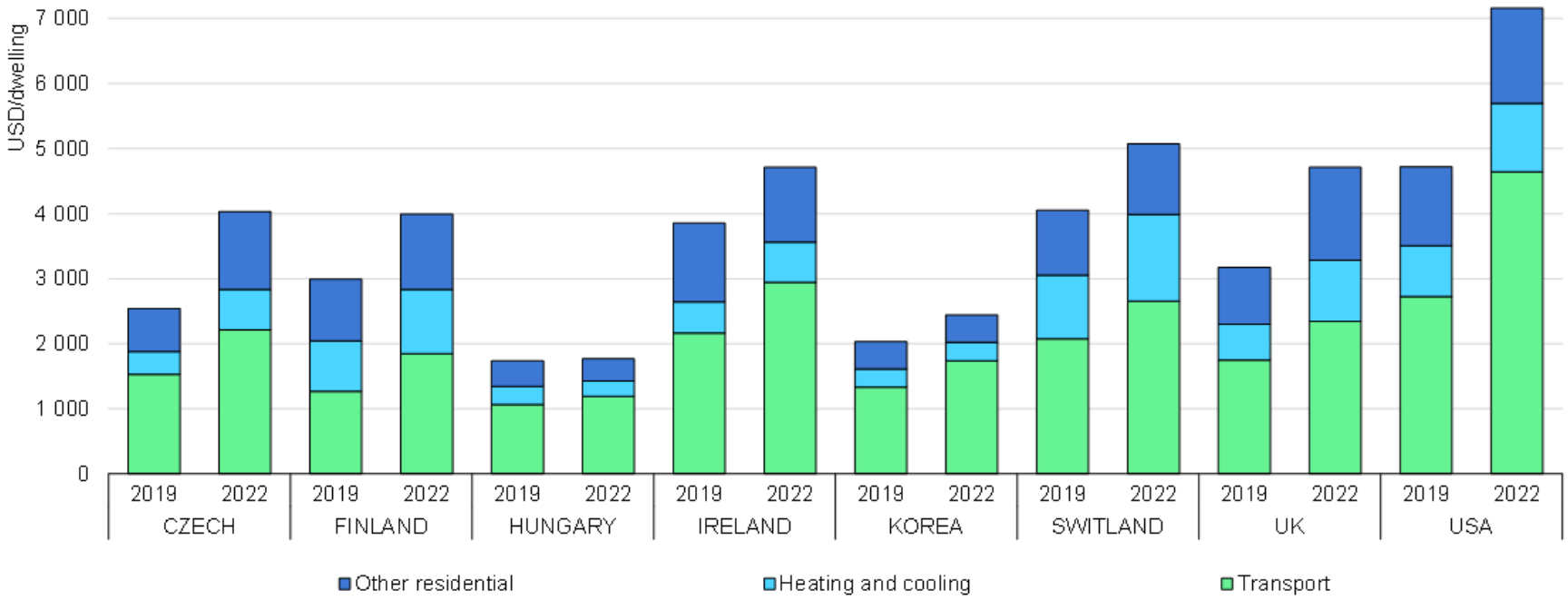
Possible uses: expenditure analysis



Detailed data coupled with other databases allow to perform also secondary analyses such as energy expenditure analysis or energy security analyses.

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IEA's 10 point plans for energy security

Action 8

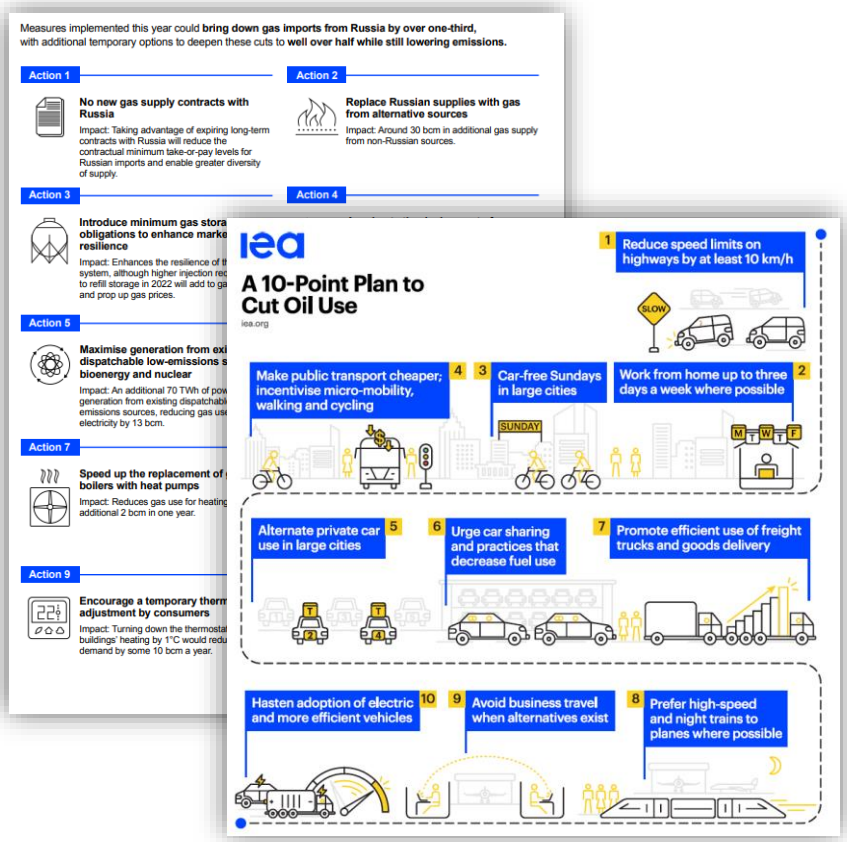
Accelerate energy efficiency improvements in buildings and industry

Impact: Reduces gas consumption for heat by close to an additional 2 bcm within a year, lowering energy bills, enhancing comfort and boosting industrial competitiveness.

Action 9

Encourage a temporary thermostat adjustment by consumers

Impact: Turning down the thermostat for buildings' heating by 1°C would reduce gas demand by some 10 bcm a year.



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Conclusions

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Conclusions

Disaggregated data are key to identify patterns and drivers of the energy consumption and emissions of our economies, specifically are key to:

1. **Analyse** and understand the current situation of the economy
2. **Set targets** for policies
3. **Check** policy **results**
4. **Analyse vulnerabilities** and energy security
5. **Benchmark** with other economies

Therefore **this workshop aims at understanding what data are available in each economy** and how to **use the available data at best to have a dataset as complete as possible** .

End-use disaggregated data might be challenging to collect but are essential to ensure an equal and just energy transition. They are worth the effort. And IEA stands ready to support any economy willing work on this area

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