International Energy Agency

Introduction to energy statistics

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SESRIC WEBINAR SERIES ON STATISTICAL EXPERIENCE SHARING ENERGY STATISTICS FOR THE SDG7 INDICATORS - 9 November 2021

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Why collect energy statistics?

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Data and statistics are essential at all stages of the policy cycle

- Inform design based on current state and ambition
- Adapt policy during its implementation
- Understand policy performance
- Evaluate what happened and why

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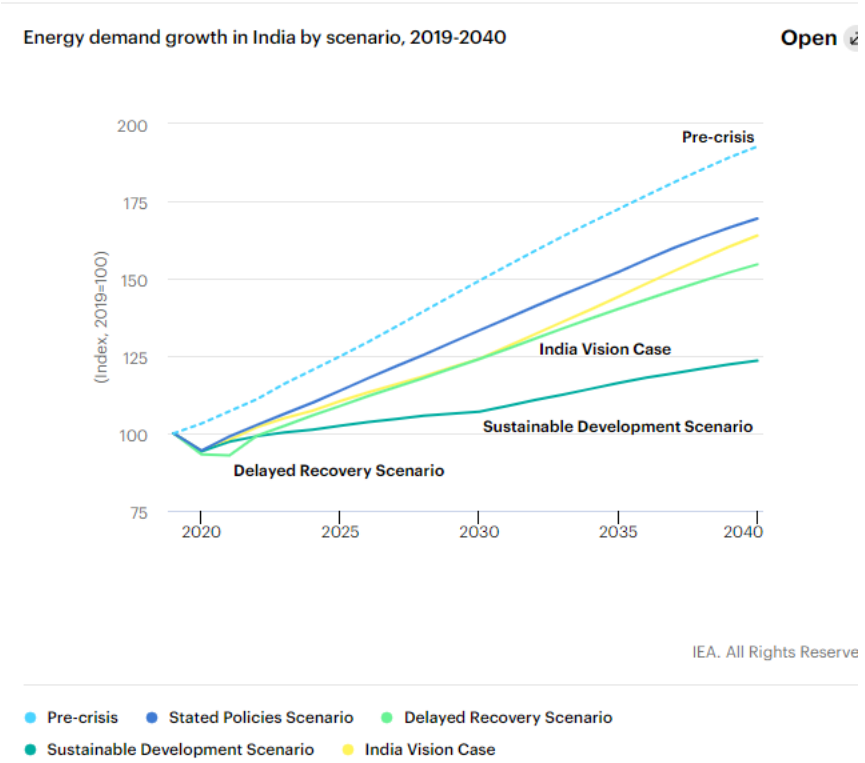
Importance of good & appropriate energy statistics

- Energy is ubiquitous in economic activity.
- Understanding energy use allows for identification of potential efficiency gains, greater output at lower cost.
- Need to understand the effects of market conditions and policy settings on energy flows.
- Required to address public goods problems (climate change) and social objectives (energy access).
- Needed to design, monitor and evaluate policies as well as to ensure security and understand potential disruptions.



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Improving energy statistics together

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Changing context and expanding opportunities in energy statistics

- Liberalisation of the market (from one company to hundreds)
- Confidentiality and accessibility
- Breadth of topics at stake:
  - New forms of data (off-grid, satellite data, real time data…)
  - Energy efficiency (including socio-economic data)
  - Environment (estimation of GHG emissions, ….)
  - Energy access (SDGs…)
  - Innovation (RD&D expenditures…)
  - Policy monitoring (hopefully!).
- Resources:
  - Do they match the work load (IT infrastructure and softwares, budget, staff)?
  - How to upgrade staff skills?
- Data governance (clear mandate, data sharing agreements,…).

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How the IEA helps

- Raising the profile of energy statistics and the role of statisticians
  - Ministerial meetings
  - Governing Board Meetings
  - Involvement of statistics in policy
- Harmonisation and cooperation with key partners
- Facilitating the work of newcomers and building capacity:
  - Energy Statistics Manual
  - User-friendly electronic questionnaires
  - Training (including online webinars)

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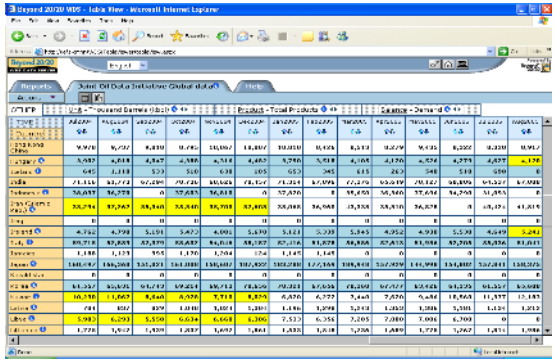
Harmonisation and cooperation key to IEA statistics success



InterEnerStat and IRES

- Cooperation between 20+ organisations
- Harmonisation of all flows and products, leading to IRES
- Cooperation on training and capacity building
- Wider issues: SDGI, classifications
- New challenges – energy use data

The Joint Organisations Data Initiative

- A global oil and gas database updated every month
- Harmonised definitions on oil statistics
- Cooperation between 8 organisations
- Raising profile of energy statistics

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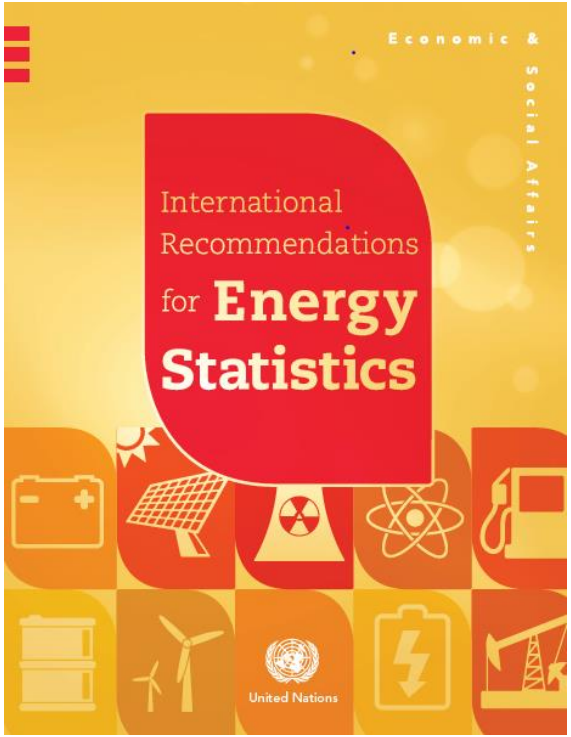
Coherence with international methodologies: IRES

- Milestone for energy statistics as they provide:
  - ✓ Internationally-agreed definitions adopted by UN Commission
  - ✓ Standard classifications (SIEC, ISIC); clear reference to others
  - ✓ Recommendations for data collection, dissemination; institutional arrangements, quality assurance
- Improves comparability across products, flows and countries:
  - ✓ Countries will measure the same thing
  - ✓ Countries will publish data in similar formats
  - ✓ Data for different products will be comparable
  - ✓ Users will understand what the statistics represent
- Improving global transparency based on official statistics (UN fundamental principles)



https://unstats.un.org/unsd/energystats/methodology/documents/IRES-web.pdf

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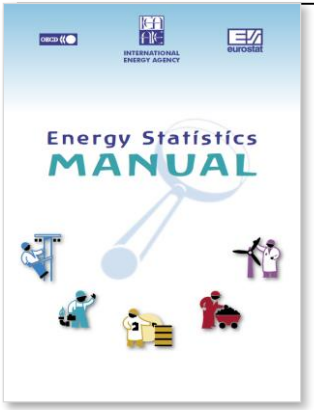
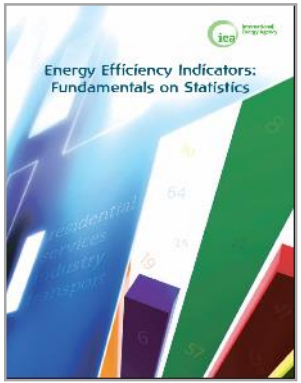
Tools: energy statistics manuals and data collection guidance

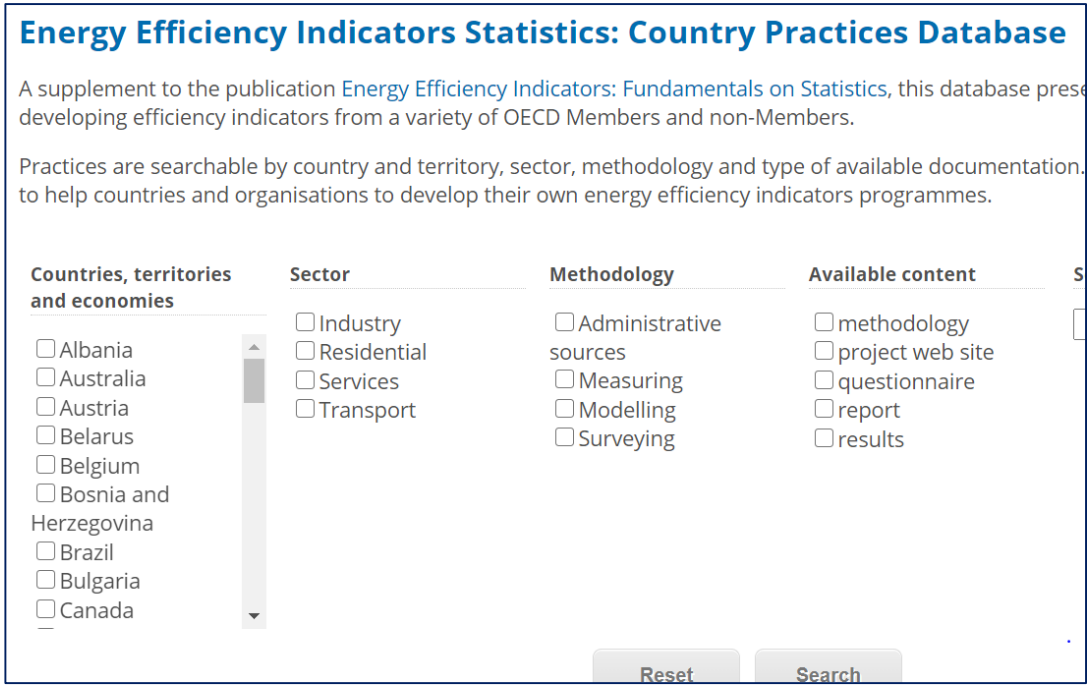


Available in 10 languages



Available in 4 languages

https://www.iea.org/areas-of-work/data-and-statistics/manuals



Over 170 country practices for collecting energy data

https://delegates.iea.org/delegates/eeindicatorsmanual/

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Energy statistics: basic principles

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A few basic steps for establishing an energy information system

- Determine needs
- Allocate proper resources to collect/process the data
- Establish a legal basis
- Explore options for use of administrative data
- Establish a proper reporting mechanism:
  - Questionnaires (as user friendly as possible)
  - A network of contacts
  - An agreed timetable
- Establish proper dissemination mechanisms
- Review methodology and process, to anticipate and adapt to changes in needs

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Principles of data quality – “fitness for use”

- **Relevance** – does the data serve the needs of the users?
- **Accuracy** – how close is the data to the “true” (but unknown) value?
- **Credibility** – is the data (and the data provider) trusted?
- **Accessibility** – is the data easily available in a usable format to users?
- **Interpretability** – is there scope for ambiguity in the meaning of the data?
- **Timeliness** – what is the lag between the phenomenon to be measured and the provision of the associated?
- **Cost-efficiency** – are the resources devoted to the collection and provision of the data commensurate with the value to the users?
- **Coherence** – are different data points mutually consistent (across time, variables, countries)?

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A few words to conclude

- Energy statistics are the basis for any sound energy policy and to monitor SDG 7
- You don't build reliable statistics overnight. It takes appropriate resources, time, effort, regulation/law, …
- It is a never ending process: need to constantly expanding coverage, improving quality and updating skills to use cutting edge methods
- Harmonisation and cooperation are key to improve quality and coverage of energy statistics
- The IEA is committed to strengthen cooperation with all countries as well as with regional and international organisations
- We are delighted to be with you – virtually - over the next three hours of workshop.

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