Energy Efficiency Indicators Workshop

New Challenge: Doing so much more with so much less

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IEA Energy Efficiency Manuals

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Why EE manuals?

- Growing recognition of the importance of energy efficiency (the “hidden fuel”)
- More detailed data needed to build meaningful energy use indicators
- The IEA received many requests from countries, individuals, organizations on several issues:
  - What indicators to use?
  - How to build these indicators?
  - How to collect the data needed for these indicators?
Two complementary Manuals

Analysis of energy indicators

- What are the basic indicators
- How to track the improvement in appliances energy efficiency
- What are the key insights from end-use level information

Data for energy indicators

- Where to find the basic information
- How to collect or develop data on unit energy consumption
- What are the different method used to develop data at the end-use level
How to gather information?

Manual on Statistics for Energy Efficiency Indicators

- To guide the establishment of a data framework for energy efficiency indicators
- To support collection of internationally comparable data (e.g. those required by the IEA template and beyond)
- To exchange information and expertise on best existing practices across countries
- To identify main challenges and areas for improvement in the data collection
Table of Content

- Introduction: why a manual?
- What are energy efficiency indicators?
- How to collect the data for indicators?
- Collecting what and how for the Residential sector
- Collecting what and how for the Services sector
- Collecting what and how for the Industry sector
- Collecting what and how for the Transport sector
- Validating the data
- Disseminating the data
- Annex: country practices
Structure of sectoral chapters

- What does the residential sector mean and cover?
- Why is the residential sector important?
- What are the main end-uses driving the consumption of the sector?
- What are the most frequently used indicators?
- The data behind the indicators
  - Energy consumption data
  - Activity data
- How to collect data?
  - Administrative sources
  - Surveying
  - Measuring and Metering
  - Modelling
What are the most frequently used indicators?

Figure 6 - Pyramid of services space heating indicators

One recommended indicator for each sector and end-use/subsector
How to collect data?
Synthesis from practices

Administrative sources
As for the residential sector, administrative sources, such as those from government, utilities, international organizations or private companies, should be the first sources scanned to identify what data are already available and how those data could best be used. Tapping into those existing sources would generally lead to savings in time and costs. The following description of administrative data for the services sector is based on the submission of practices received by the IEA.

Surveying
Surveys were the most common methodology used to collect services data within the sample of practices submitted to the IEA. Surveys were performed for most of the service categories: office, retail space, health care, education, warehousing, food service, lodging, arts and entertainment. Of course, surveys alone may not be enough, and may need to be complemented by information deriving from building energy audits, or from modelling studies. The next paragraphs summarise the main characteristics of surveys derived from the practices received by the IEA.

Measuring
Countries recognize the importance of undertaking measurements in the services sector to inform not only building owners about energy saving opportunities, but also government on potential policy interventions. Measurements in the services sector are particularly intensive because of the heterogeneous nature of the services categories and of the types of buildings. However, in the absence of other data, even small sample measurements can be effective to make initial estimates.

Modelling
Modelling is an integral part of the process to estimate energy consumption by end-use in the services sector, by itself, or to complement results from another methodology, such as for example a national survey. The key steps of a modelling work include: establishing the modelling framework, setting model assumptions, inputting data, running the model, validating its outcomes against data, and analysing results. The following paragraphs are based on the practices submitted to the IEA for services sector modelling.
Annex: country practices

- A compilation of existing practices from across the world
- listed by end-use sector
  - residential
  - services
  - transport
  - industry
- and by methodology group
  - survey
  - measuring
  - modelling
  - administrative
Questions for discussion

- For each core chapter (residential, services, industry): what is your overall impression on the content?
- For each core chapter: is there anything major you would like to add or change?
- Do you have any comments on the proposed pyramids, for each sector and for each end use / subsector?
- Any other comment?
Manual on Analysis of Energy Efficiency Indicators

How to develop and interpret energy efficiency indicators?

- Will provide selection of indicators that can be developed at each level of the indicators pyramid.
- Will assess each indicator by providing pros/cons; strengths and weakness.
- Will provide methodologies to quantify savings from energy efficiency.
- Will cover the residential, services, industry, transport and power sector.
Targeted Audience

- Energy analysts
- Academia
- Statisticians
- Policy-makers

In both IEA Member and non-Member countries
Structure of the Manual

- Introduction
- IEA methodology and concept
- Developing indicators for ...
  - Residential, services, industry, passenger transport, freight transport and power sector
- Annexes
  - Decomposition methodologies
  - Initiatives on the development of energy efficiency indicators
Structure of end-use chapters

- What is driving energy use
- How energy is used and how it has evolved recently
- How to prioritise development of indicators
- Development of indicators by level of the pyramid
- Additional indicators explaining the changes in energy consumption
- Decomposition of changes in residential energy demand
Country examples

- Provide “real-life” examples of indicators
- Use of indicators in different context
  - Tracking efficiency improvement (e.g. ODEX, OEE Index, etc)
  - Assessing the impact of policies and programmes (e.g. appliances labeling)
  - Prioritising areas for immediate actions

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Efficiency indicators manuals: timeline

- Fall 2011: Launch of survey on practices
- Nov 2012: Workshop (residential)
- June 2012: Workshop (preliminary findings)
- June 2013: Workshop (overall drafts)
- Fall 2013: Release of manuals
- July 2013: External review EE develop manual

Thank you!
Please contact us at EnergyIndicators@iea.org
You can contact our indicators team for more information

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