Overview

- Historical background
- The need for IRES
- Key IRES concepts
- IRES practical applications for collecting energy statistics

Previous manuals for energy statistics

- UNSD data collection goes back to 1950
- International guidance on energy statistics existed in a number of publications:
  - *UN **Concepts and Methods in Energy Statistics** (1982)* [Focused on Energy Accounts and Balances]
  - *UN **Energy Statistics: Definitions, Units of Measure and Conversion Factors** (1987)*
  - *UN **Energy Statistics: A Manual for Developing Countries** (1991)*
  - *IEA/EUROSTAT **Energy Statistics Manual** (2005)*

The Need for IRES

- The older documents were reflected in country methodologies, but were descriptive in nature, and didn't focus on harmonization.

- Important topics were covered but needed updates to reflect energy market developments

- References to other international classifications (ISIC, CPC, HS) were absent.

- Guidance on energy balance compilation, classification of energy industries, treatment of newer biofuels was necessary.

IRES: a very brief history

- 2005: UN Statistical Commission recognised the need for development of energy statistics guidance, and set up the Oslo Group and InterEnerStat.

- Oslo City Group established to "contribute to the development of improved methods and international standards for national official energy statistics". It helped draft IRES.

- InterEnerStat is a group of over 20 international organisations working in the field of energy statistics. Has mandate to harmonize differing definitions across organisations as close as possible. It published a harmonized list of products and flows in 2010. This fed in to IRES

Principles of IRES

- Do the data meet the needs of policy makers, producers and users of energy, the general public?
- Are energy statistics comparable with other statistics?
- Recommendations had to consider:
  - The availability of data sources
  - The reporting burden
  - Can **most** countries implement them?

IRES

- Important milestone for energy statistics as they provide:
  - Standard International Energy product Classification (SIEC)
  - Internationally-agreed definitions
  - Clear reference to other international classifications
  - Reference list of energy-specific data items for collection
  - Recommendations for data collection and dissemination
- The goal: to improve comparability across countries

  http://unstats.un.org/UNSD/energy/ires/default.htm

- Draft version published in 2011; white cover version released in January 2016. Translation to other UN languages now pending

Key IRES points

- IRES improves comparability across products, flows and countries, so that:
  - 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

Comparability & Transparency

"But my country is different!"

Every statistician, in all domains, worldwide

Geographical Scope of Energy Statistics under IRES

- The **territory principle** (rather than residency principle) used

- More relevant for energy policy decisions about supply, consumption and pollution in a given country

- Easier to collate

- Care is needed when combining with other statistics (e.g. national accounts compiled on the residency principle), but often a negligible difference
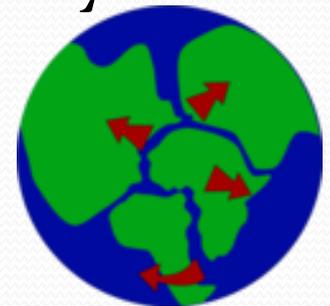
IRES energy products and flows

- Provides the Standard International Energy product Classification (SIEC), and links this to other product classifications (HS, CPC)

- Lists data items to be collected, both for all products and specific to (e.g.) coal, oil, gas, electricity

IRES Transformation Flows

Energy balances should only recognise these activities as transformation, representing energy industries as defined by their principal activity (blast furnaces an exception).

Electricity plants
CHP plants
Heat plants
Coke ovens
Coal liquefaction plants
Patent fuel plants
Brown coal briquette plants
Gas works
GTL plants
Blast furnaces
Oil refineries
Charcoal plants
Peat briquette plants
Natural gas blending plants
Petrochemical plants
Other transformation processes not elsewhere classified

Definition of energy product

- IRES 2.9: "Energy products" refers to products exclusively or mainly used as a source of energy. Biomass and waste included only when used for energy purposes

- Result: energy statistics exclude wood or ethanol when not used as an energy product. Fossil fuels used for non-energy purposes (e.g. lubricants) are always included by definition, allowing efficiency checks

IRES: Scope of Energy Statistics

- IRES 2.18: it's important that data on the production of energy outside energy industries is also collected and included in total energy production.

- Result: fuelwood collected and used non-commercially needs to be properly accounted for; small "teapot" refineries should have their output measured and be included under transformation

The Concept of Production

- 5.10: Primary production is the capture or extraction of fuels or energy... within the national territory in a form suitable for use. Inert matter removed from the extracted fuels and quantities reinjected, flared or vented are not included.

Data for oil and gas production should be NET of reinjected, flared and vented quantities (and water, sand etc.)

Data items for specific products: Coal and Electricity

For each major product, IRES provides product-specific flows to collect

	COAL
Item number	Data item
2.1	Production
2.1.1	Of which: Underground
2.1.2	Of which: Surface
2.2	Production from other sources

|	ELECTRICITY
5.1	Gross Production (by type of producer, by type of plant and by production process)[a]
5.2	Own Use
5.3	Net Production (by type of producer, by type of plant and by production process)[a]
5.4	Use of energy products (by energy products and by transformation processes)

Data items for specific products: Oil and Gas

	NATURAL GAS
Item number	Data item
3.1	Production
3.1.1	Of which: Associated gas
3.1.2	Of which: Non-associated gas
3.1.3	Of which: Colliery and Coal Seam Gas
3.2	Production from other sources
3.3	Extraction losses[a]
3.3.1	Of which: gas flared
3.3.2	Of which: gas vented
3.3.3	Of which: gas re-injected
3.4	Gas flared (except during extraction)
3.5	Gas vented (except during extraction)

	OIL AND OIL PRODUCTS
Item number	Data item
4.1	Backflows from petrochemical industry to refineries
4.2	Refinery intake (by products)
4.3	Refinery losses
4.4	Direct use (of crude oil, NGL, etc.)

Bunkers and Non-Energy Use

- IRES 5.14/5: For the purposes of energy statistics, exclude International Marine and Aviation Bunkers from exports and supply

- IRES 5.5: It's important to separately identify the non-energy part of final consumption.

- Why? Both important principles for accurate GHG emission inventories
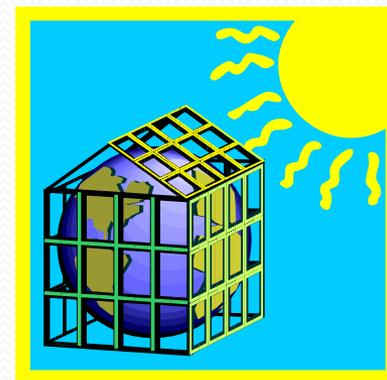
IRES Calorific Values

- Units for Dissemination: mass (kt) for coal and oil, Terajoules (GCV) for natural gas, TJ (NCV) for solid biofuels and wastes (IRES 4.29).

- Net calorific values (aka lower heating values) should be used to compile balances in TJ (IRES 4.36), as interest lies in *useful* energy output and TJ is a SI unit.

- Country-specific calorific values should be collected. Default values should only be used as a last resort

Conclusion

- IRES provides methodology to compile energy statistics that are comparable across products and countries, and consistent with other areas of statistics
- This applies to everyone! IRES-compliant data can be used to compile annual data for international organisations (UNSD, IEA, APEC…)
- These principles will be shown and emphasised throughout the workshop

Thanks!

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