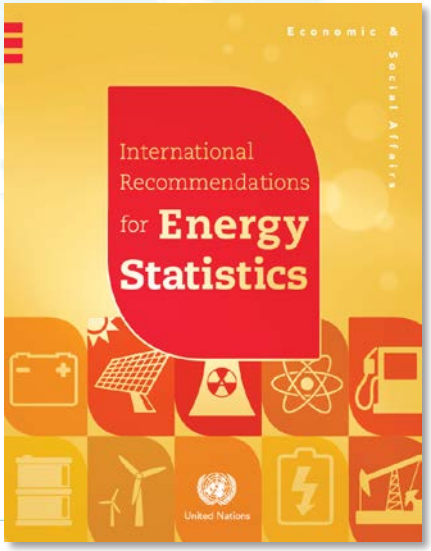
Cape Town, South Africa | 30 April 2019

Better Data – Better Decisions

International recommendations for energy statistics (IRES)



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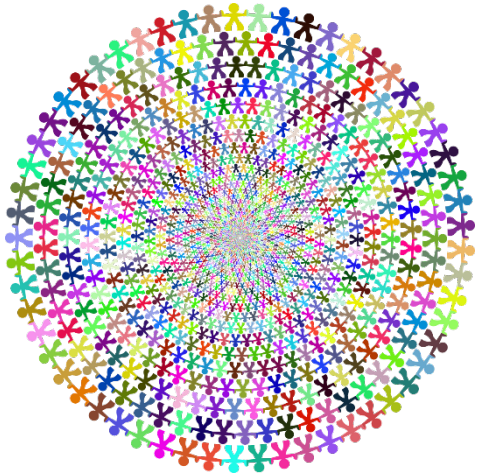
Contents

- *IRES: a very brief history*
- *Key IRES concepts*
- *IRES methodology for oil and gas*
- *ESCM concept*
- *Chapters of manual and examples*



IRES: a very brief history

Energy was in the spotlight at the 36th Session of the UN Statistical Commission

- This led to the Ad-hoc Energy Group Meeting (23-25 May 2005, UN, New York) and the recommendation to establish the Oslo City Group and an Inter-Secretariat Working Group on Energy Statistics

The Oslo Group

- User needs for energy statistics
- Scope of official energy statistics
- National good practices
- Selected methodological and quality problems
- Needs for harmonization of energy statistics systems
- Key content provider for International Recommendation for Energy Statistics **(IRES)** and Energy Statistics Compilers Manual **(ESCM)**
- Methods for improving consistency in different statistical systems and reducing response burden

InterEnerStat

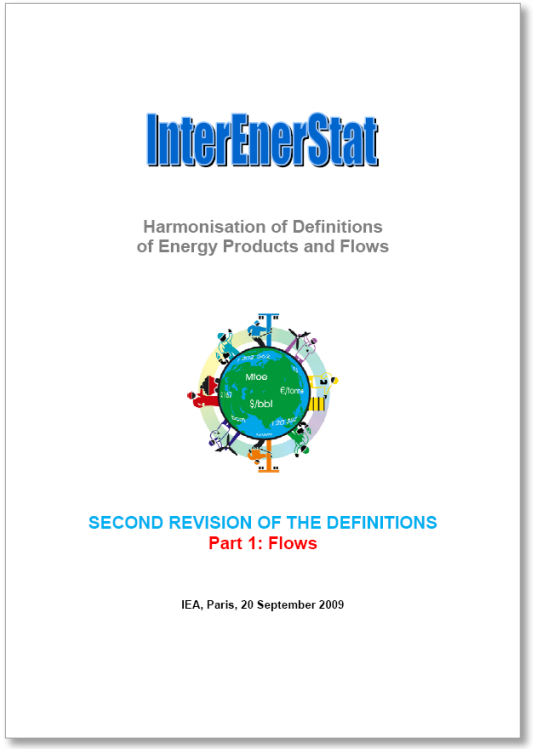
International Energy Statistics initiative started by the IEA in 2005 gathering together 20+ organizations:

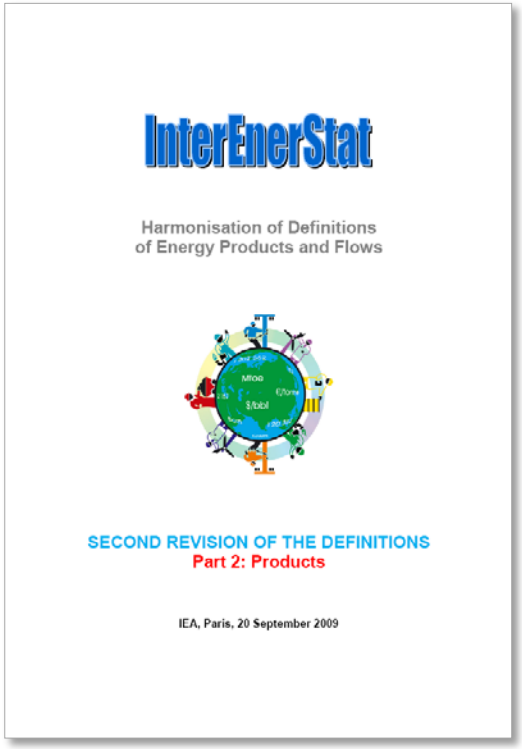
- Participants:
  - 24 major regional and international organisations.
  - Both data providers (IEA, UNSD, OPEC, Eurostat, FAO) and users (WB, IMF, UNFCCC,…)
- Objective:
  - To improve the overall quality of global energy statistics through a stronger international cooperation

InterEnerStat

Organizations involved in the process

Harmonised definitions reached at the end of 2010 after 5 years of negotiations





Agreed at the end of 2010 after 5 years of negotiations.

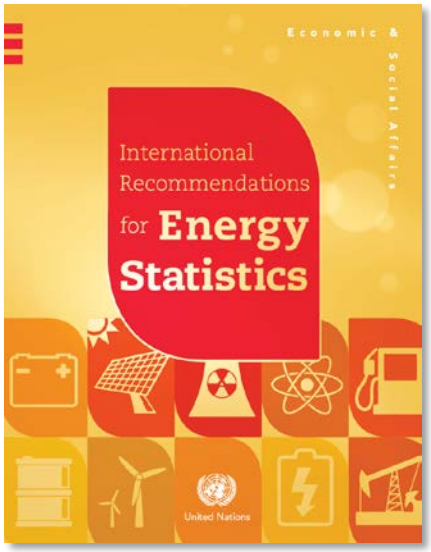
These definitions were incorporated in the IRES and agreed by UN Statistical Commission in February 2011

IRES

The United Nations Statistical Commission, at its forty-second session held in New York (February 2011), adopted the International Recommendations for Energy Statistics (IRES).

Available on:

https://unstats.un.org/unsd/energy/ires/



Key IRES points

- IRES improves comparability across products, flows and countries:
  - Countries **measure** the same thing, reducing systematic errors
  - Countries **publish** data in similar formats, increasing transparency
  - Data for different products are compiled **the same way**, meaning product comparisons/balances are possible
  - Data users understand what the statistics should **represent**
- Now, some specific examples

Definition of Energy Products

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

Practically:

- *Wood, or ethanol **excluded** when not used as an energy product.*
- *Lubricants (fossil non-energy products) **included** (allowing refinery balance checks)*

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.*

➢ Practically, need to be **accounted for:**

- ➢ fuelwood collected and used non-commercially;
- ➢ by-products used by industries for energy (e.g., bagasse, black liquor);
- ➢ output from small teapot refineries

IRES Applications for Oil and Gas

- Units for dissemination: mass (kt) for oil, Terajoules (GCV) for natural gas (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.

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

Bunkers and Non-Energy Use

- IRES 5.14/5: For the purposes of energy statistics, exclude International Marine /Aviation Bunkers from exports and supply
- IRES 5.5: It's important to separately identify the non-energy part of final consumption.

➢ *Both important principles for accurate GHG emission inventories (but not necessarily on a monthly basis)*

SIEC – general concept

- IRES 3.1: presents the Standard International Energy product Classification (SIEC)
- Provides a tree-structured framework for all energy products; different levels of detail possible depending on the country's need
- A standard to be used across countries; further breakdown possible if desired (coconut oil, olive cake, shale gas, offshore vs onshore)

4 Oil
46 Oil products
465 Gasolines
4652 Motor gasoline

5 Biofuels
53 Biogases
531 Biogases from anaerobic fermentation
5312 Sewage sludge gas

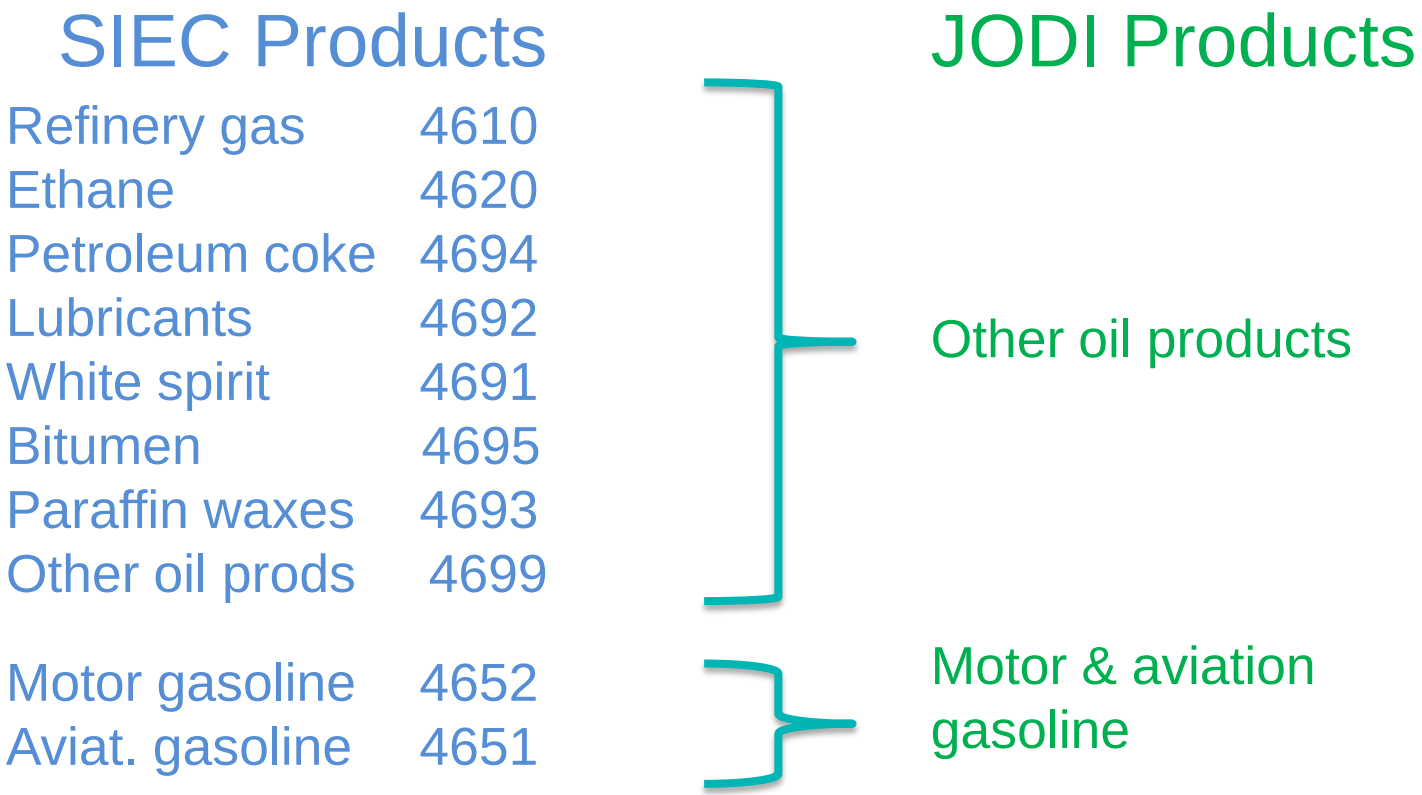
SIEC – relations with other systems

- HS 2710.12: “Light oils and preparations ”
- CPC 33311, 33312 and 33320: “Aviation gasoline”; “Motor gasoline” ; “Gasoline-type jet fuel”
- SIEC 465: “Gasolines”
- JODI: “Motor and aviation gasoline”

HS	2710.12*		
CPC	33312	33311	33320
SIEC	4651	4652	4653
JODI	Motor and aviation gasoline		

SIEC and JODI

- JODI products are aggregation of SIEC products (no mapping problems)



SIEC detailed definitions

- JODI (short) definition: *"LPG comprises Propane and Butane"*

Simple and clear; ideal for a monthly data collection

- SIEC definition: *"LPG refers to liquefied propane (C3H8) and butane (C4H10) or mixtures of both. Commercial grades are usually mixtures of the gases with small amounts of propylene, butylene, isobutene and isobutylene stored under pressure in containers."*

More exhaustive, relevant for more accurate annual data, or when deriving energy data from CPC or HS data

SIEC detailed definitions

JODI Term	SIEC Scope
• *"Demand"*	• Final consumption • Energy industries own use • International bunkers • Transformation

This difference reflects both the oil-specific nature of JODI, and that some data (bunkers, own use) are difficult to obtain or are less relevant on a monthly basis.

Moving Forward…

IRES provides useful definitions of flows/products.
But…

- *Can I see some examples of other countries' practices?*
- *How should I compile metadata, or handle confidentiality?*
- *How do these recommendations relate to MY country?*

The need for a Compilers Manual

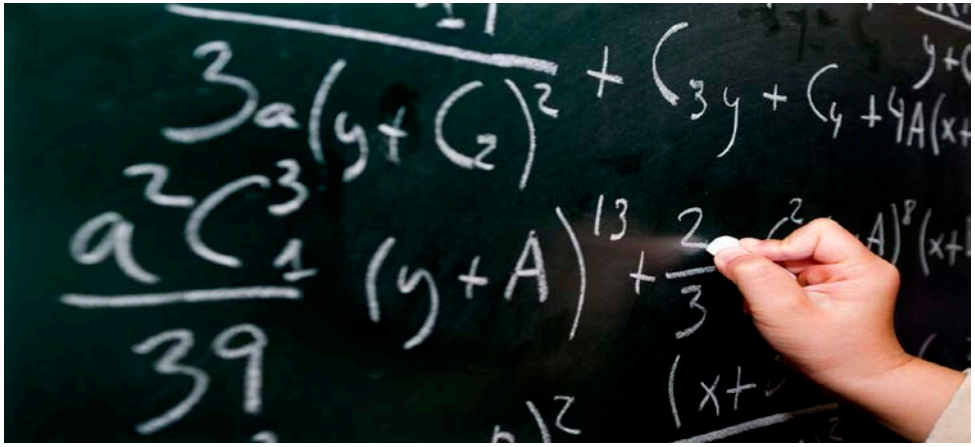
- A Compilers Manual should be a more hands-on, example-heavy document, to complement IRES.

- It is NOT a set of recommendations or “best” practices, but a set of voluntary guidance and examples for countries to use **if they want to**

- *White-cover version available on https://unstats.un.org/unsd/energy/ESCM.htm*

IRES and ESCM

IRES is about definitions of flows/products: **THEORETICAL**



ESCM is about practical guidance and country examples: **PRACTICAL**

Some country practices are published on

United Nations Statistics Division

Home | Databases | Publications | Methods & Classifications | Meetings & Events | Newsletters | [Site search] Go

Energy Statistics

- Description of Activities
- International Recommendations for Energy Statistics (IRES)
- Energy Statistics Compilers Manual (ESCM) NEW!
  - Country Practice Examples
- Energy Yearbook
- Energy Balances
- Electricity Profiles
- Energy Statistics Database
  - UNSD Annual Energy Questionnaire
- Supporting developing countries measure progress towards achieving a Green Economy
- Joint Organizations Data Initiative (JODI)
- Oslo Group
- Intersecretariat Working Group on Energy Statistics
- Meetings and Workshops
- Publications
- Energy Newsletter
  - Mailing List
- Contact us

UNdata — A world of information

February 2017

Country Practice Examples

As part of the preparation of the Energy Statistics Compilers Manual (ESCM), a country practice template was developed by the Oslo Group in cooperation with UNSD. The use of a common format facilitated the review and comparisons of country practices and has fed into the ESCM. As the ESCM is foreseen to be periodically reviewed and updated, national institutions responsible for energy statistics are encouraged to keep using this template to share their practices in the collection, compilation and dissemination of energy statistics. This way, future revisions of the ESCM will reflect new methodological developments and keep data compilers abreast of new country practices.

The Country Practice Template is available here. It provides a common format for countries to report and share their practices in the collection, compilation and dissemination of energy statistics. The filled template can be submitted to UNSD at energy_stat@un.org .

Responses by Topic

see responses by country

Electricity

Chile	Electricity index
Czech Republic	Annual electricity statistics
Czech Republic	Electricity production
Hungary	Electricity production
Ireland	Electricity supply
Italy	Annual electricity statistics
Japan	Electricity production
Malaysia	Electricity supply
Rwanda	Electricity generation
Rwanda	Electricity use
Slovakia	Electricity generation

Energy Balances

Austria	Energy Balance
Azerbaijan	Energy Balance
Bosnia and Herzegovina	Energy Balance

https://unstats.un.org/unsd/energy/escm/country_examples/responses_t.htm

ESCM Chapters

- Legal Framework
- Classifications and linking with other international standards (HS, CPC, ISIC)
- Generic Statistical Business Process Model
- Data sources (surveys and administrative data sources, estimation, modelling)
- How to compile energy balances
- Data quality, Data dissemination

Highlights: Balances Structure

Presentation of primary and secondary oil products in energy statistics versus energy balances

Primary production = 0

Commodity Balance

	Crude oil (kt)	Motor Gasoline (kt)
Production	100	30
Import		
Export	10	24
Supply	90	6
Oil Refineries	88	
Final Consumption	2	6

Energy Balance

	Crude oil (TJ)	Motor Gasoline (TJ)
Production	4230	
Import		
Export	423	1063
Supply	3807	-1063
Oil Refineries	-3722	1329
Final Consumption	85	266

Motor gasoline in kt x 44.3 TJ/kt = Motor gasoline in TJ

Crude oil in kt x 42.3 TJ/kt = Crude oil in TJ

Examples

Austria: Adding an energy module to Labor Force Survey increased the response rate and reduced costs

Bulgaria: NSO's metadata policy

Norway: lessons from publishing preliminary monthly statistics and balances

South Africa: experience with social media and dissemination in a developing country

UK: Energy Efficiency Data framework measures the result of energy efficiency policies

Azerbaijan: producing full commodity balances for all products

FAO guidance on fuelwood surveys

Confidentiality practices for many countries

Legal frameworks for many countries

And many more!

Legal framework

Essential elements of the legal framework include:

- a data collection entity with legal authority to collect, compile and disseminate statistics;
- the confidentiality of information collected;
- legally enforceable penalties;
- the privacy of respondents;
- secure data systems and repositories.

Institutional Collaboration

Institutional collaboration can improve the functioning of the national statistics program through:

- Formal arrangements (i.e. specified in legislation)
  - Data-sharing
  - Use of administrative data
- Informal arrangements (through Working groups/Committees):
  - Priority setting
  - Harmonization of concepts
- Data validation and analysis
- Coordination of data dissemination

IRES and ESCM - Conclusion

- IRES provides **methodology** to compile energy statistics that are comparable across products and countries, and consistent with other statistics
- ESCM provides guidance on **HOW**, with real examples
- This applies to JODI! JODI data agree with IRES definitions and concepts, and can be used to compile annual data for international organisations (UNSD, IEA, OPEC, AFREC…)
- ESCM contains guidance and examples that are relevant for JODI

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eurostat EUROPEAN COMMISSION
GECF
iea
IEF
olade
OPEC
UN