



United Nations Statistics Division

Energy Statistics - UNSD

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**Training to the National Officials and Experts Responsible
for Sustainable Energy Data Collection**

**8th FORUM ON ENERGY FOR SUSTAINABLE
DEVELOPMENT**

13 June 2017

Astana, Kazakhstan



Overview

- Data compilation
- Dissemination
 - Database
 - Main publications
- Methodological work
 - *International Recommendations for Energy Statistics* (IRES)
 - *Energy Statistics Compilers Manual* (ESCM)
- Technical cooperation

UNSD activities – data compilation

- Annual data collection of energy statistics (database with information going back to 1950, covering currently 229 active countries and territories)
- Questionnaire revised for collection to agree with changes made due to the work on the *International Recommendations for Energy Statistics* (IRES)
- Products include all primary and secondary fossil fuels, various types of electricity and heat generation, biofuels and wastes
- Flows cover main aspects of supply, transformation, own use and consumption

UNSD Energy Stats Questionnaire

(consists of a series of commodity balances)

QUESTIONNAIRE ON ENERGY STATISTICS										
UNITED NATIONS STATISTICS DIVISION										
Country/Area: Brazil (76)										
Hard Coal (CL); Metric tons, thousand (WSR)		Unit	2007 fn	2008 fn	2009 fn	2010 fn	2011 fn	2012 fn		
CL01	Production	WSR	5965	6611	5061	5415	5505	6617		
CL03	Imports	WSR	14864	15311	12462	15909	18007	16486		
CL04	Exports	WSR					71	0		
CL06	Stock changes	WSR	-86	1100	-145	-383	574	-515		
CLGA	Total energy supply	+CL07 WSR	20915	20822	17668	21707	22867	23618		
CLSD	Statistical differences	-CL08 WSR	5	174	51	6	-4	-1		
CL08	Transformation	+CL08 WSR	15554	15166	13233	15706	15936	17048		
CL088	Transformation in electricity, CHP and heat plants	WSR	5173	4821	3952	4753	4585	6207		
CL08811	Electricity plants - Main activity producers	WSR	5075	4511	3860	4412	4295	5907	*	
CL08812	Electricity plants - Autoproducers	WSR	98	310	92	341	290	300	*	
CL081	Coke ovens	WSR	10381	10345	9281	10953	11351	10841		
CL101	Losses	WSR	30	0	48	40	80	19		
CLNA	Final consumption	+CL11 WSR	5326	5482	4336	5955	6855	6552		
CL12	Final energy consumption	+CL12 WSR	5326	5482	4336	5955	6855	6552		
CL121	Manufacturing, construction and non-fuel mining industry	+CL12 WSR	5326	5482	4336	5955	6855	6552		
CL1211	Iron and steel	WSR	3406	3601	2773	3114	3378	3253		
CL1213	Chemical and petrochemical	WSR	155	208	160	281	236	333		
CL1214	Other manuf., const. and non-fuel min. ind.	WSR	1765	1673	1403	2560	3241	2966		
Coke Oven Coke (OK); Metric tons, thousand (WSR)		Unit	2007 fn	2008 fn	2009 fn	2010 fn	2011 fn	2012 fn		
OK01	Production	WSR	8315	8286	7259	9189	9683	9683		
OK03	Imports	WSR	1576	1900	434	1801	2142	1591		
OK04	Exports	WSR	2	1						
OK06	Stock changes	WSR	120	325	-15	82	-82	-328		
OKGA	Total energy supply	+OK07 WSR	9769	9860	7708	10908	11907	11602		
OKSD	Statistical differences	-OK08 WSR	9	112	-1	-1	0	0		
OK101	Losses	WSR	26	33	15	15	10	10		
OKNA	Final consumption	+OK11 WSR	9734	9715	7694	10894	11897	11592		
OK12	Final energy consumption	+OK12 WSR	9734	9715	7694	10894	11897	11592		
OK121	Manufacturing, construction and non-fuel mining industry	+OK12 WSR	9734	9715	7694	10894	11897	11592		
OK1211	Iron and steel	WSR	9310	9287	7334	10523	11371	10997		
OK1214	Other manuf., const. and non-fuel min. ind.	WSR	424	428	360	371	526	595		
Conventional crude oil (CR); Metric tons, thousand (WSR)		Unit	2007 fn	2008 fn	2009 fn	2010 fn	2011 fn	2012 fn		
CR01	Production	WSR	78944	82954	89823	95043	97550	95652		
CR03	Imports	WSR	21081	19335	19020	17182	16831	17495		
CR04	Exports	WSR	21373	21970	26660	32028	30660	27051		

Data requirements

UN energy stats questionnaire

The energy statistics questionnaire requests information from countries on

- coal, peat, coal and peat products, manufactured gases
- primary and secondary oil products
- natural gas
- electricity and heat, by generating source
- biofuels and waste

and for the flows:

- production
- trade and bunkers
- stock changes, transfers
- transformation (by type)
- own use (by type)
- consumption (energy and non-energy, and by economic sector)

Conversion factors (for solid fuels, crude oil, NGLs, wood)



**United Nations
Statistics Division**



**Annual
Questionnaire**



**Non-OECD
countries**



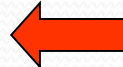
**OECD
countries**



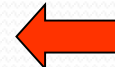
**Data
dissemination:
Publications,
CDs and UNdata**



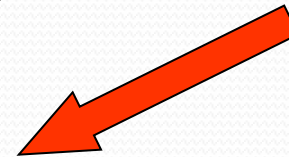
Data validation



**Data processing
and storing**

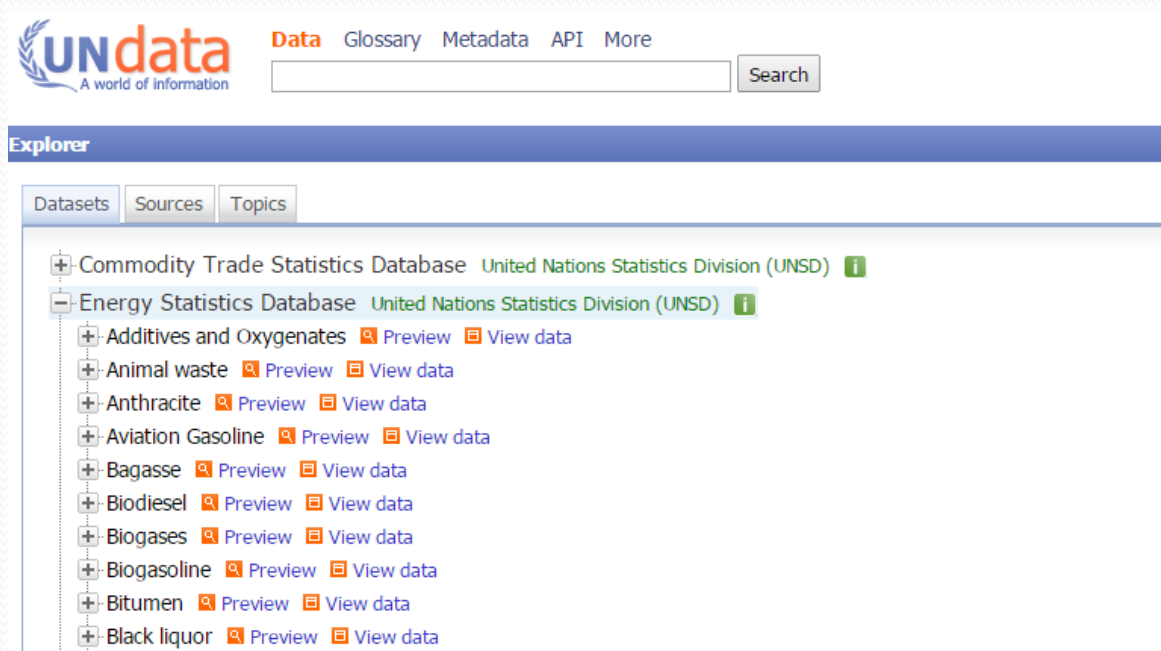


**Supplementary research:
national, regional (e.g.,
OLADE, APEC, AFREC,
OAPEC) and international
Statistical publications**



Dissemination

- Data from 1990 available for free via UNData:
 - <http://data.un.org/Explorer.aspx?d=EDATA>

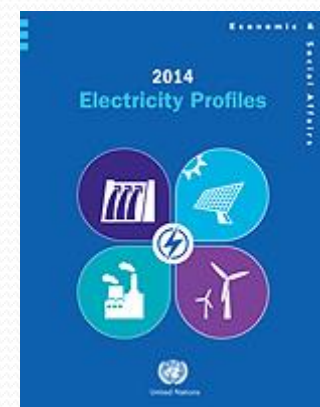
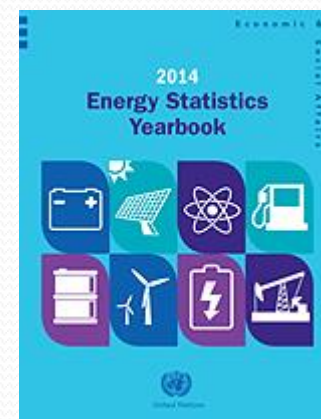
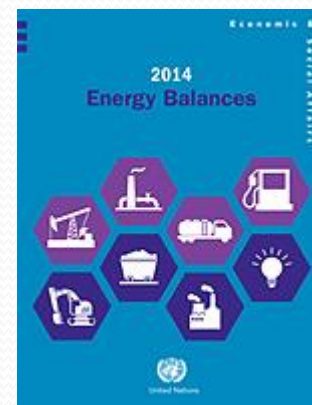


The screenshot displays the UNData Explorer website. At the top left is the UNdata logo with the tagline "A world of information". To the right are navigation links for "Data", "Glossary", "Metadata", "API", and "More", along with a search bar. Below the navigation is a blue header labeled "Explorer". Underneath, there are tabs for "Datasets", "Sources", and "Topics". The main content area shows a tree view of datasets. The "Energy Statistics Database" is expanded, listing various energy-related categories such as "Additives and Oxygenates", "Animal waste", "Anthracite", "Aviation Gasoline", "Bagasse", "Biodiesel", "Biogases", "Biogasoline", "Bitumen", and "Black liquor". Each category includes a "Preview" and "View data" link.

- Database also available via CD (paid service)

Main publications

- Energy Statistics Yearbook
 - comprehensive collection of international energy statistics
 - 36 tables + graphs
- Energy Balances
 - 218 countries/areas (2014 Ed.)
- Electricity Profiles
 - 228 countries/areas (2014 Ed.)
- Monthly Bulletin of Statistics



Methodological work & international cooperation

- Coordination of work and/or collaboration with:
 - Oslo Group on Energy Statistics
 - InterEnerStat (Inter-Secretariat WG on Energy Stats)
 - Regional organizations
- Work on the advancement and standardization of statistical methods, classifications and definitions in energy statistics: IRES, ESCM
- Joint Organisations' Data Initiative – UNSD, Eurostat, IEA, OLADE, OPEC, APEC, GECF, IEF (Oil and Gas monthly data)

IRES

- *International Recommendations for Energy Statistics* improves comparability across products, flows & countries
- By defining:
 - What an energy product is;
 - Concept of production (and all other flows to be measured);
 - Scope of energy statistics.
- By providing:
 - Standard International Energy Product Classification (SIEC), with links to CPC and HS;
 - Harmonized definitions;
 - List of renewable products;
 - And much more (<https://unstats.un.org/unsd/energy/ires>)
- ESCM the accompanying compilers' manual (w/ country examples)

2.18: it's important that the energy output of the energy conversion process is also included in the total energy production.



Primary production is the capture or extraction of energy from the national territory in a form suitable for use in the extracted fuel and quantities collected, flared or vented are not included.

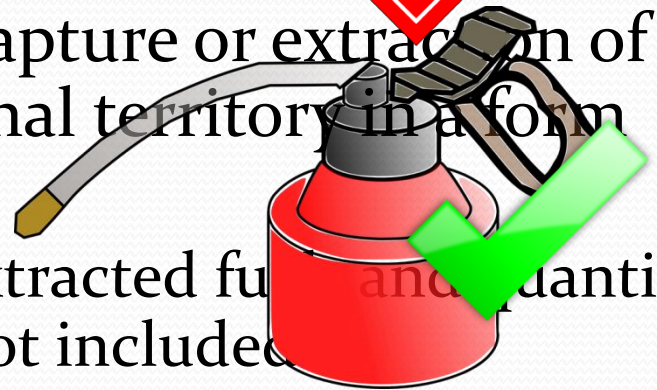
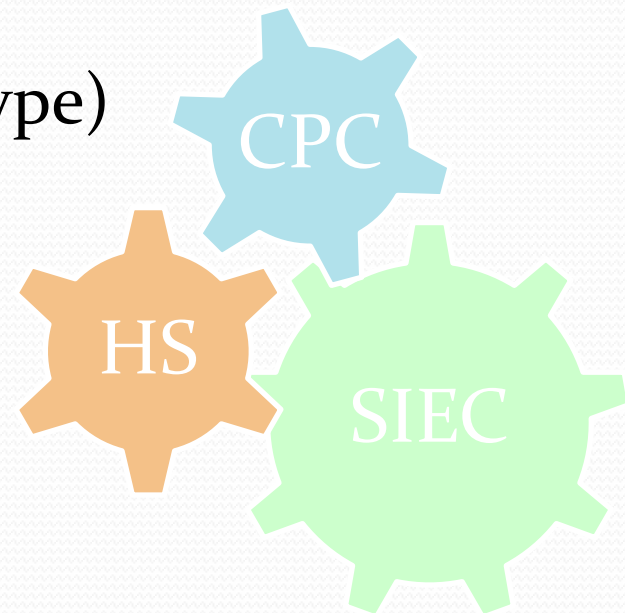


Table 3.1: Standard International Energy Product Classification (SIEC)

SIEC Headings		Correspondences	
Section / Division / Group	Class	CPC Ver.2	HS 2007
0			
01			
011	0110	11010*	2701.11
012			
	0121	11010*	2701.19
	0129	11010*	2701.12
02			
021	0210	11030*	2702.10*
022	0220	11030*	2702.10*
03			
031			
	0311	33100*	2704*
	0312	33100*	2704*
	0313	33100*	2704*
	0314	33100*	2704*
032	0320	11020	2701.20
033	0330	11040	2702.20
034	0340	33200*	2706
035	0350	17200*	2705*
036	0360	17200*	2705*
037			
	0371	17200*	2705*
	0372	17200*	2705*
	0379	17200*	2705*
039	0390	33500*, 34540*	2707, 2708.10*, .20*, 2712.90*
1			
11			
111	1110	11050*	2703*
112	1120	11050*	2703*
12			
121	1210	11050*	2703*
129	1290	11050*, 33100*, 33200*, 33500*	2703*, 2704*, 2706*, 2712.90*
2			
20			
200	2000	12030	2714.10
3			
30			
300	3000	12020	2711.11, .21
4			
41			
410	4100	12010*	2709*
42			

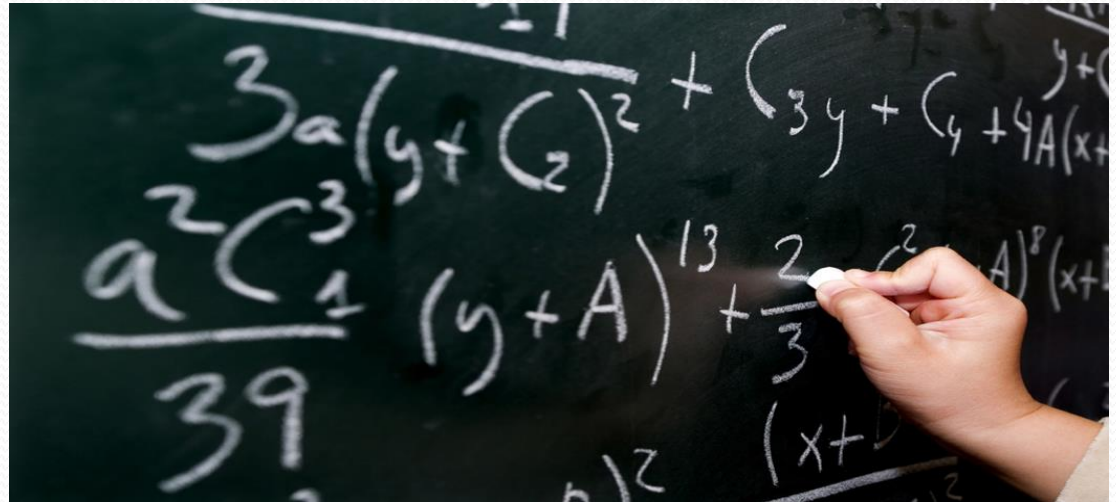
SIEC links to CPC and HS

- HS 2710.11: “Light oils and preparations”
- CPC 33310 and 33320: “Motor spirit (gasolene), including aviation spirit” ; “spirit type (gasolene type) jet fuel”
- SIEC 465: “gasolines”



HS	2710.11*		
CPC	33310	33320	
SIEC	4651	4652	4653

IRES is about definitions of flows/products:
THEORETICAL



ESCM is about practical guidance and country examples:
PRACTICAL

Some 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

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

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

FAO guidance on fuelwood surveys

Confidentiality practices for many countries

Azerbaijan: producing full commodity balances for all products

And many more!

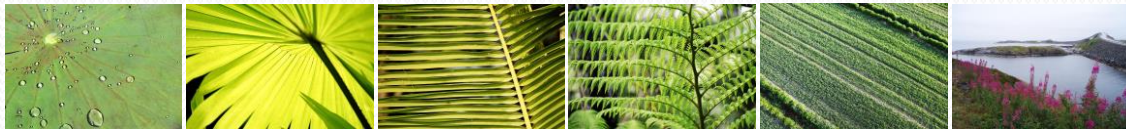
Legal frameworks for many countries

Technical Cooperation

- Recent meetings
 - Panama, Feb 2015; Korea, Nov 2015; Ethiopia June 2016 - Energy SDG workshops
 - Austria, Mar 2015; China, May 2016, Tunisia, Apr 2017 - JODI training workshops
 - Peru, Apr 2015; Viet Nam, May 2015 - Green Economy Indicators
 - IEA, Sept 2015, Dec 2016 - InterEnerStat meetings
 - Mexico, May 2016, Sweden May 2017 - Oslo Group meetings
 - China, May 2016 - international workshop on energy statistics
- Current
 - Training on Sustainable Energy (Kazakhstan, June 2017)
- Upcoming
 - Energy stats workshop for ASEAN countries (Malaysia Nov 2017)₁₈



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Thank you.

<http://unstats.un.org/unsd/energy>