



Energy efficiency data collection The IEA Experience

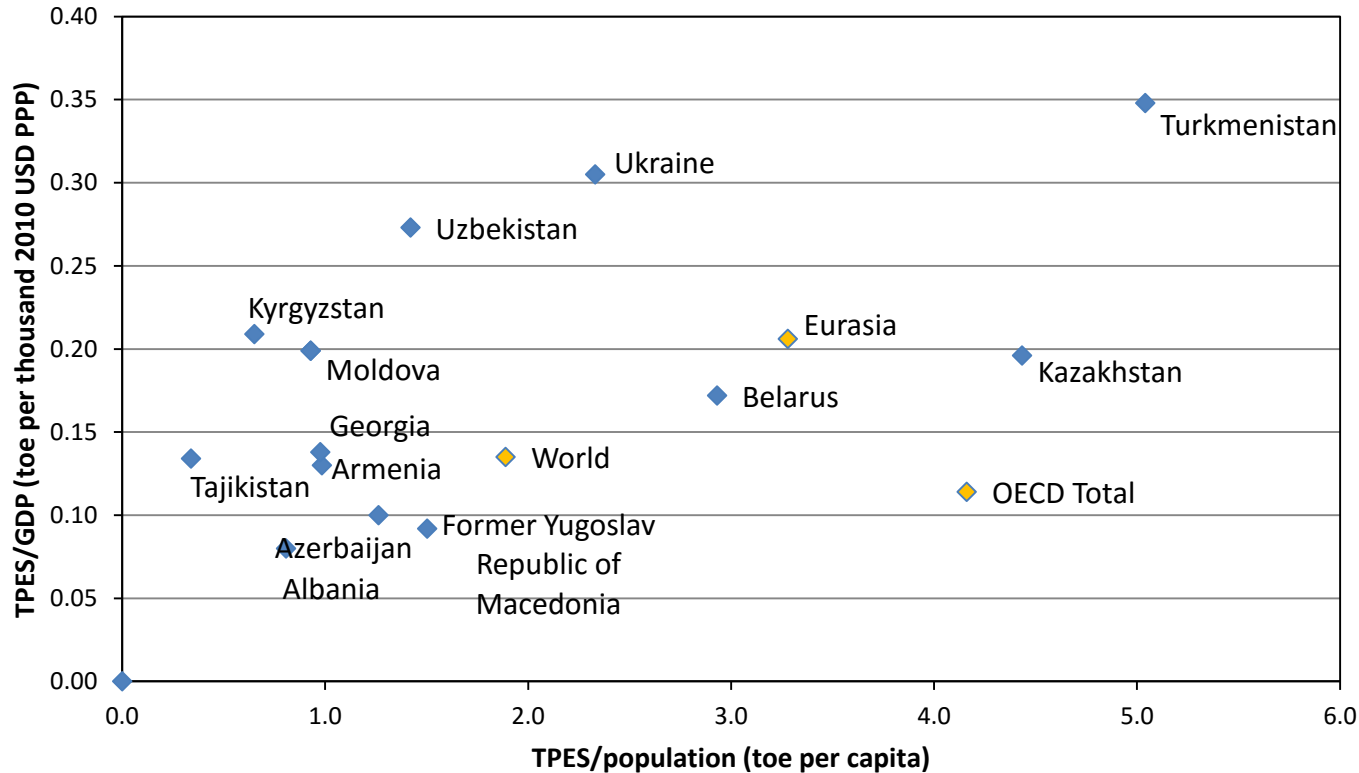
Claire Morel, Statistics Programme Manager, IEA for EU4Energy

Tracking Progress on Energy for Sustainable Development, Astana, 14 June 2017

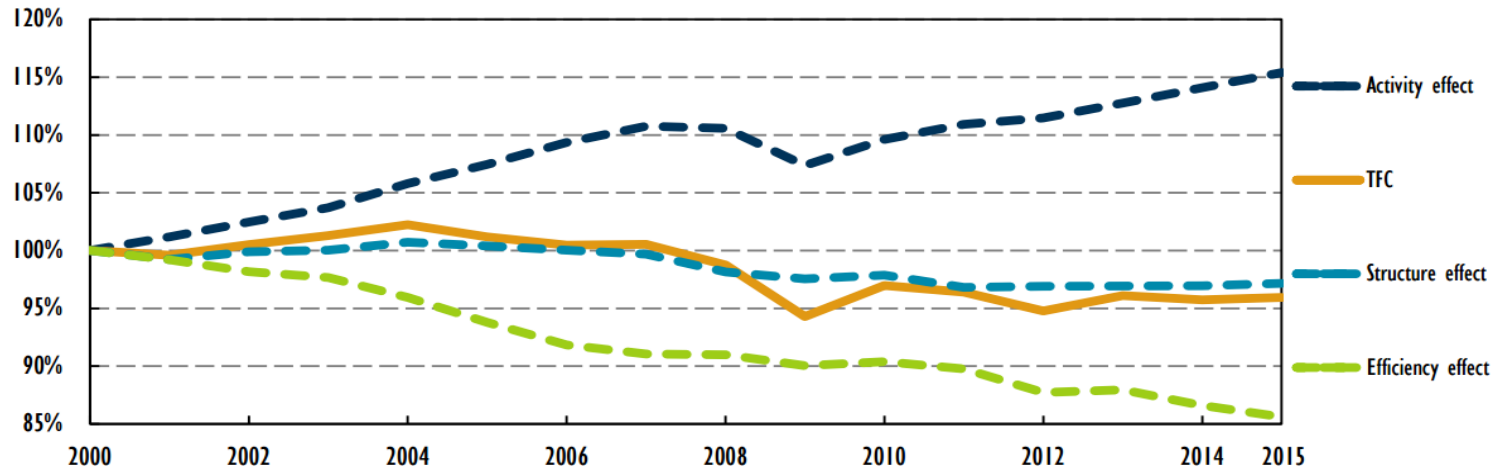
- Why it is important to collect energy efficiency data?
- What information is available from the energy balances?
- What further data are needed to study energy efficiency?
- How to collect Energy Efficiency data?
- Typical problems

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Is energy intensity enough?



Decomposition of total energy demand in IEA countries



Note: Analysis based on the *IEA Energy Efficiency Indicators* database (2016 edition). TFC in this analysis covers the following sectors: residential, industry and services, passenger and freight transport. It does not include agriculture, non-energy, and energy supply sectors. The energy consumption decomposed in this analysis represents 90% of TFC in IEA countries in 2015.

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The importance of energy balances...

Supply

Transformation

Final consumption

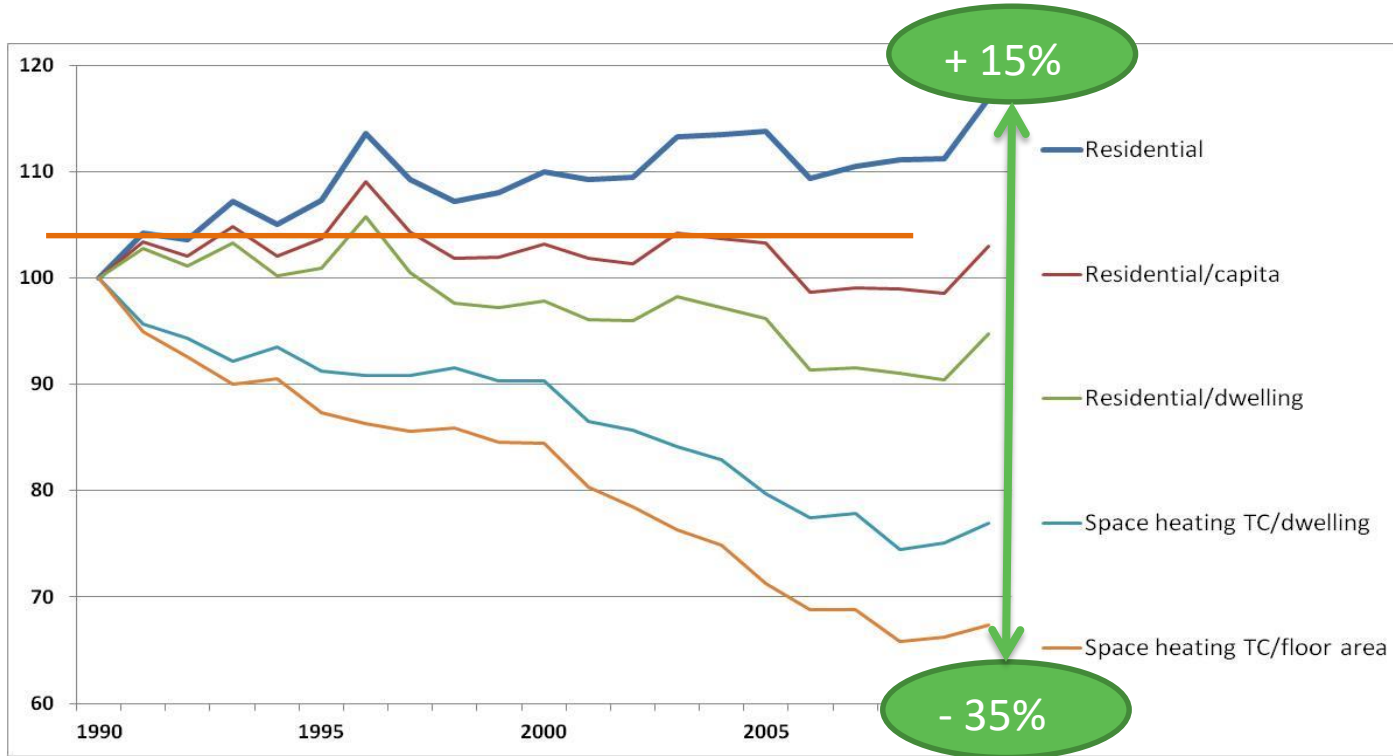
World											
2014											
Million tonnes of oil equivalent											
SUPPLY AND CONSUMPTION	Coal ¹	Crude oil ²	Oil products	Natural gas	Nuclear	Hydro	Geotherm/ Solar/ etc.	Biofuels/ Waste	Electricity	Heat	Total
Production	3976.14	4308.45	-	2923.32	661.35	334.94	181.07	1413.06	-	2.10	13806.44
Imports	942.15	1213.37	-	1103.32	-	-	-	20.32	61.71	0.01	5175.12
Exports	-883.14	-2159.50	-1242.64	-883.25	-	-	-	-18.97	-59.35	-0.01	-5206.85
Stock changes	-36.66	-12.46	-15.23	-8.81	-	-	-	-1.41	-	-	-74.68
TPEs	3918.49	4349.86	-64.56	2900.38	661.35	334.94	181.07	1412.91	2.38	2.10	13699.13
Transfers	-0.47	-204.86	231.24	-	-	-	-	-	-	-	25.92
Statistical differences	-21.91	0.12	4.51	14.68	-	-	-0.06	0.16	-0.43	-0.45	-3.38
Electricity plants	-2112.98	-40.62	-201.89	-771.07	-653.73	-334.94	-140.89	-95.03	1868.42	-0.72	-2483.47
CHP plants	-184.61	-0.01	-17.07	-307.53	-7.62	-	-	-57.43	179.71	148.31	-228.91
Heat plants	-130.32	-0.68	-13.19	-78.82	-	-	-1.00	-11.45	0.38	179.67	-56.17
Blast furnaces	-209.84	-	-0.38	-0.16	-	-	-	-0.05	-	-	-210.43
Gas works	-10.92	-	-2.73	5.08	-	-	-	-0.09	-	-	-8.67
Cokeplant/fuel/BK/PP plants	-76.25	-	-2.80	-0.01	-	-	-	-1.12	-	-	-79.19
Oil refineries	-	-4123.03	4049.00	-	-	-	-	-	-	-	-73.43
Petrochemical plants	-	33.00	-32.62	-	-	-	-	-	-	-	0.38
Liquefaction plants	-9.67	14.03	-	-17.42	-	-	-	-	-	-	-13.07
Other transformation	-0.43	10.07	-0.52	-11.88	-	-	-	-	-	-0.73	-86.40
Energy industry own use	-101.76	-11.42	-205.29	-291.69	-	-0.00	-13.94	-174.52	-34.91	-	-833.44
Losses	-3.89	-8.90	-0.65	-21.77	-	-	-0.01	-0.19	-169.29	-19.58	-224.29
TFC	1075.42	17.57	3743.64	1419.98	-	-	36.54	1151.86	1705.90	273.77	9424.69
INDUSTRY	658.49	6.80	294.67	548.54	-	-	0.78	193.52	725.37	123.00	2751.17
Iron and steel	329.62	-	7.71	55.34	-	-	-	3.50	101.39	15.47	513.02
Chemical and petrochemical	96.40	0.06	55.00	121.06	-	-	0.00	1.63	100.81	50.24	428.20
Non-ferrous metals	24.28	-	4.07	16.80	-	-	0.00	0.06	70.63	3.35	120.09
Non-metallic minerals	242.62	0.01	41.50	54.75	-	-	0.00	9.07	51.78	3.12	402.84
Transport equipment	3.63	-	2.06	11.93	-	-	0.00	0.05	23.59	4.04	45.31
Machinery	14.39	-	7.21	25.71	-	-	0.00	0.16	78.57	5.35	131.40
Mining and quarrying	10.28	-	23.01	7.20	-	-	0.00	0.17	29.52	2.31	72.46
Food and tobacco	32.20	0.01	10.92	45.22	-	-	0.00	30.82	40.51	11.01	170.69
Paper pulp and printing	19.03	-	4.47	23.25	-	-	0.20	61.18	33.92	11.90	153.95
Wood and wood products	3.63	-	2.07	2.90	-	-	0.00	7.59	10.20	2.02	28.41
Construction	4.86	-	28.81	6.79	-	-	0.00	0.33	15.02	1.34	57.16
Textile and leather	13.95	0.01	4.02	6.24	-	-	0.00	0.27	25.71	0.05	60.16
Non-specified	60.60	6.71	102.91	171.33	-	-	0.57	78.69	131.73	5.91	558.45
TRANSPORT	2.86	-	2426.33	97.90	-	-	0.00	73.89	26.04	-	2627.02
World aviation bunkers	-	-	168.48	-	-	-	-	-	-	-	168.48
Domestic aviation	-	-	107.52	-	-	-	-	-	-	-	107.52
Road	-	-	1894.85	38.10	-	-	-	73.12	0.27	-	1976.14
Rail	2.81	-	29.68	-	-	-	-	0.25	19.95	-	62.66
Pipeline transport	-	-	0.35	59.00	-	-	-	-	2.72	-	62.06
World marine bunkers	-	-	194.64	-	-	-	-	0.08	-	-	194.72
Domestic navigation	-	-	53.35	0.11	-	-	-	0.43	-	-	53.88
Non-specified	0.05	-	7.69	0.70	-	-	0.00	0.01	3.09	-	11.54
OTHER	155.39	0.18	424.53	613.41	-	-	35.76	884.45	954.49	150.78	3218.98
Residential	75.05	-	207.08	419.66	-	-	27.09	847.51	460.41	105.31	2142.13
Comm. and public services	34.97	-	85.50	181.72	-	-	6.48	24.49	376.24	35.25	744.64
Agriculture/forestry	15.13	0.01	106.89	8.68	-	-	1.25	8.63	47.92	3.15	192.87
Fishing	0.00	-	5.94	0.08	-	-	0.07	0.01	0.50	0.02	6.50
Non-specified	30.23	0.16	19.22	3.29	-	-	0.87	2.60	69.42	7.05	132.85
NON-ENERGY USE	58.68	10.60	598.11	160.13	-	-	-	-	-	-	827.52
in industry/transf./energy	58.12	10.60	566.46	160.13	-	-	-	-	-	-	795.31
of which: chem./petrochem.	3.17	10.54	414.10	158.57	-	-	-	-	-	-	586.38
in transport	-	-	5.38	-	-	-	-	-	-	-	5.38
in other	0.56	-	26.27	-	-	-	-	-	-	-	26.83
Electricity and Heat Output											
Electr. Generated - TWh	9707.49	143.71	879.30	5154.83	2535.33	3894.71	1605.26	492.85	-	2.34	23815.80
Electricity plants	9118.58	143.69	813.79	3983.05	2508.32	3894.71	986.84	278.57	-	1.14	21734.90
CHP plants	588.91	0.01	65.51	1165.77	26.81	-	8.42	214.28	-	1.20	2090.90
Heat Generated - PJ	5669.47	19.31	622.05	6071.39	26.46	-	383.65	923.88	8.40	97.64	13822.24
CHP plants	1770.68	0.15	184.33	3661.43	26.46	-	12.46	555.18	0.44	51.42	6262.55
Heat plants	3898.79	19.16	437.72	2409.97	-	-	371.19	368.70	7.96	46.22	7559.69

Energy intensity,
Self-sufficiency ...

Efficiencies of
transformation sector

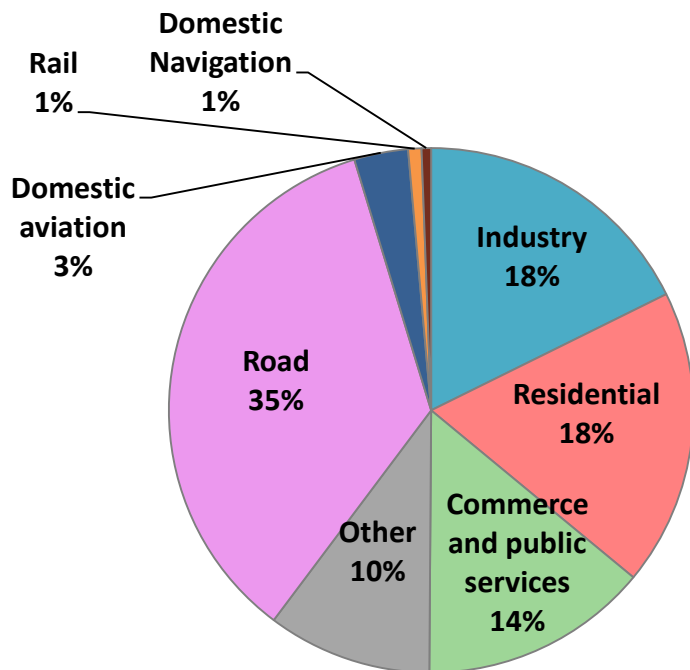
Shares of energy
consumption by sector

Energy Efficiency: A Compelling Case to Collect Detailed Data



Index: 1990=1. Data for IEA18 (Australia, Austria, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, Norway, Slovakia, Spain, Sweden, Switzerland, UK, USA). Source: IEA energy efficiency indicators database.
TC: Temperature Corrected.

United States TFC by sector, 2014



Road Transport is the most consuming.



How do we meter road transport efficiency?



We need more detailed data than balances:

- consumption by vehicle type (e.g. cars, buses, trucks)
- activity data (e.g. distance travelled, passenger/tonnes kilometers etc.)

... and its limitations

WORLD ENERGY BALANCE

2014

Million tonnes of oil equivalent

SUPPLY AND CONSUMPTION	Coal	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Geotherm./Solar/etc.	Biofuels/Waste	Electricity	Heat	Total
Production	3078.14	4308.45	-	2929.32	661.35	334.94	181.07	1413.06	-	2.10	13806.44
Imports	842.15	2213.37	1193.32	844.32	-	-	-	20.22	61.73	0.01	5175.12
Exports	-863.14	-2159.50	-1242.64	-863.25	-	-	-	-18.97	-59.35	-0.01	-5206.85
Stock changes	-36.06	-12.46	-15.23	-8.81	-	-	-	-1.41	-	-	-74.58
TYPES	3918.49	4349.85	-84.56	2900.58	661.35	334.94	181.07	1412.91	2.38	2.10	13689.13
Transfers	-0.47	-204.86	231.24	-	-	-	-	-	-	-	25.92
Statistical differences	-21.91	0.12	4.51	14.69	-	-	-	0.16	-0.43	-0.45	-13.38
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CHP plants	-194.61	-0.01	-17.07	-307.53	-7.62	-	-	-2.58	-57.43	179.71	148.31
Heat plants	-130.32	-0.08	-13.19	-78.82	-	-	-	-1.00	-11.45	-0.38	179.67
Blast furnaces	-209.84	-	-0.38	-0.16	-	-	-	-0.05	-	-	-210.43
Gas works	-10.92	-	-2.73	5.08	-	-	-	-0.09	-	-	-8.67
Coke/peat fuel/BKBF/PB plants	-78.25	-	-2.80	-0.01	-	-	-	-0.12	-	-	-79.19
Oil refineries	-	-4123.03	4049.60	-	-	-	-	-	-	-	-73.43
Petrochemical plants	-	33.00	-32.02	-	-	-	-	-	-	-	0.39
Liquefaction plants	-8.87	14.03	-	-17.42	-	-	-	-	-	-	-13.07
Other transformation	-0.43	10.07	-0.52	-11.88	-	-	-	-82.90	-	-0.73	-86.44
			0.52	-291.69	-	-	-	-0.00	-13.94	-174.52	-34.81
			0.65	-21.77	-	-	-	-0.01	-0.19	-189.29	-19.58
			3.64	1419.98	-	-	36.54	1151.86	1705.90	273.77	9424.68
	4.67	548.54	-	-	-	0.78	193.52	725.37	123.00	2751.11	
	7.71	55.34	-	-	-	-	3.50	101.39	15.47	513.03	
	5.00	121.06	-	-	-	0.00	1.83	100.81	50.24	428.23	
	4.97	16.80	-	-	-	0.00	0.06	79.63	3.35	129.01	
	1.50	54.75	-	-	-	0.00	9.07	51.78	3.12	402.84	
	2.08	11.93	-	-	-	0.00	0.05	23.59	4.04	45.31	
	7.21	25.71	-	-	-	0.00	0.18	78.57	5.35	131.44	
	3.01	7.20	-	-	-	0.00	0.17	29.52	2.31	72.44	
	10.92	45.22	-	-	-	0.00	30.82	40.51	11.01	170.69	
Paper pulp and printing	19.03	-	4.47	23.25	-	-	0.20	81.18	33.92	11.90	153.96
Wood and wood products	3.63	-	2.07	2.90	-	-	0.00	7.59	10.20	2.02	28.41
Construction	4.58	-	28.81	6.79	-	-	0.00	0.33	15.02	1.34	67.16
Textile and leather	13.95	0.01	4.02	6.24	-	-	0.00	0.27	28.71	6.96	60.10
Non-specified	60.60	8.71	102.91	171.33	-	-	0.57	78.89	131.73	5.91	558.45

No breakdown by end-use:

- space heating
- space cooling
- water heating
- lighting
- cooking
- appliances

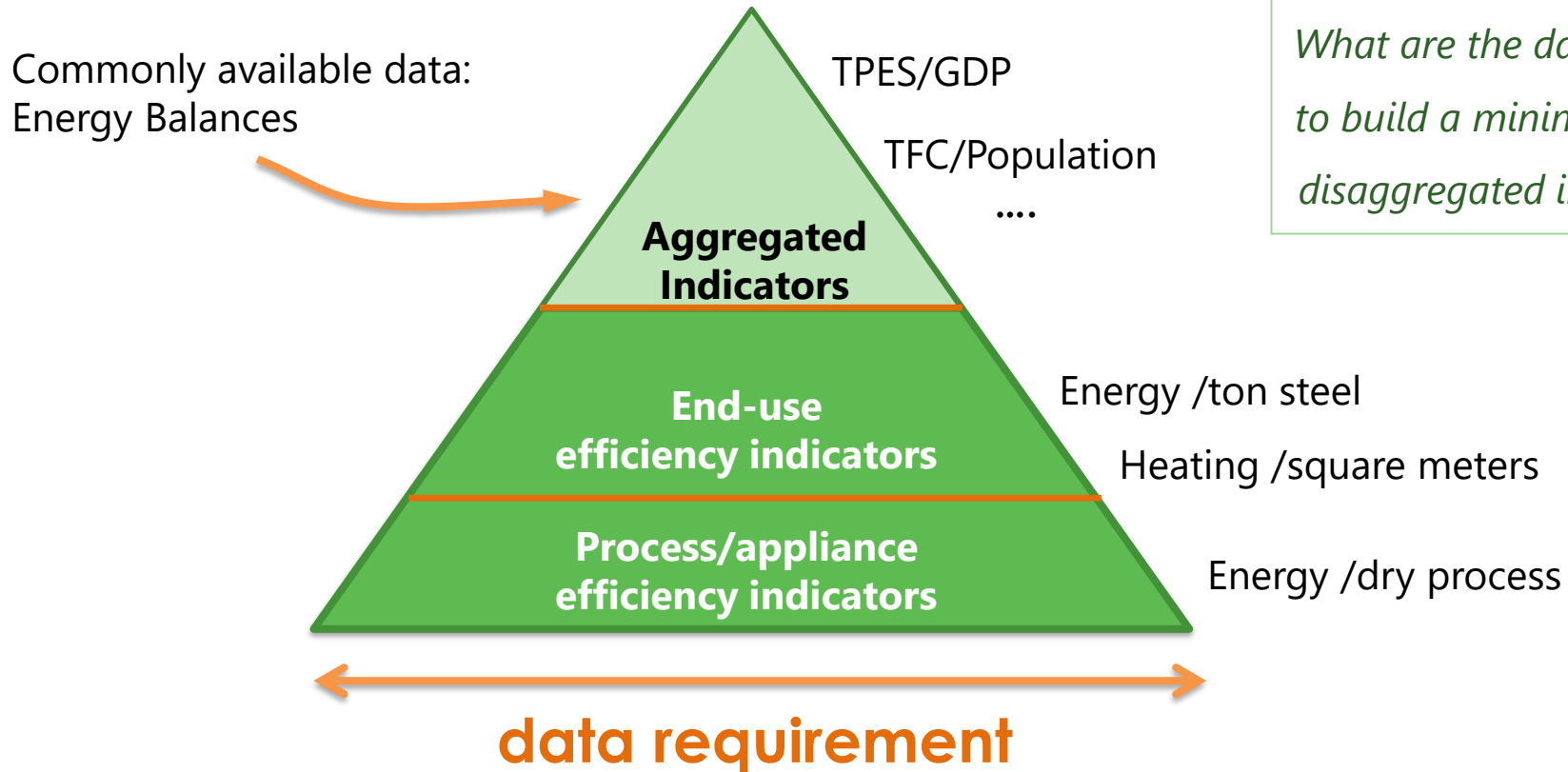
No breakdown by end-use and by service category

What most countries collect on a regular basis is limited to aggregated levels

	Coal	Crude	Oil Products	Gas	Nuclear	Hydro	Geoth/Solar	Biofuels & Waste	Electricity	Heat	Total
OTHER	136.42	0.23	425.87	633.44	-	-	14.37	834.05	820.32	145.22	3036.92
Residential	76.58	-	222.89	418.55	-	-	6.98	805.42	395.81	97.97	2024.19
Comm. and public serv.	23.3	-	107.32	173.79	-	-	1.15	16.33	338.31	32.47	692.67
Agriculture /forestry	9.57	0.02	102.97	5.58	-	-	0.16	7.02	36.2	3.36	164.88
Fishing	0.01	-	5.69	0.02	-	-	0.03	-	0.36	0.06	6.17

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Energy efficiency indicators: what level of detail?



What are the data needed to build a minimum set of disaggregated indicators?

The IEA EEI data collection

- Agreed by member countries in 2009 (IEA Ministerial)
- Developed with international community of experts, based on historical work on indicators (Odyssee, LBNL, etc.)
- A user-friendly Excel template (available online)
- Collects energy consumption and activity data
- Covers four sectors: residential, services, industry, transport



Draft Energy Efficiency Indicators Template
country name

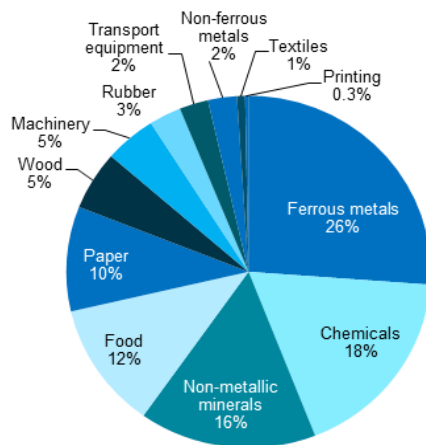
COUNTRY DATA SECTION (to be reviewed and updated)	
MACRO ECONOMIC DATA	Macro economic and activity data
COMMODITIES	Production outputs from selected energy-consuming industries
INDUSTRY	Energy consumption by ISIC categories
SERVICES	Energy consumption by end-uses in the services sector
RESIDENTIAL	Household energy consumption by end-uses and selected appliances data
TRANSPORT	Energy and activity data for passenger and freight transport
IEA DATA and AGGREGATE INDICATORS	
ELECTRICITY GENERATION	Electricity generation from combustible fuels and efficiencies
BASIC INDICATORS	Predetermined set of aggregate energy and activity indicators
SUPPORT TOOLS	
USER REMARKS	To incorporate comments associated to the data from the individual sheets
DATA COVERAGE	Generates a graphical summary of data coverage (completed vs. expected)
SINGLE INDICATOR GRAPHS	To generate a graph for one energy indicator
MULTIPLE INDICATORS GRAPHS	To generate a graph comparing trends from multiple indicators
CONSISTENCY CHECKS	To run the integrated consistency checks

Energy consumption data
(major ISIC sub-sectors):

- Chemical
 - Aluminum
- Iron and steel
- Non-ferrous metals
 - Cement
 - Clinker
- Pulp and paper
 - Pulp
 - Paper
- etc.

Activity data:

- Value added
- Physical production

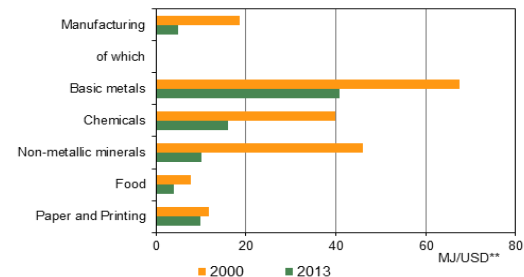


Energy consumption by end-use, country A



Volume

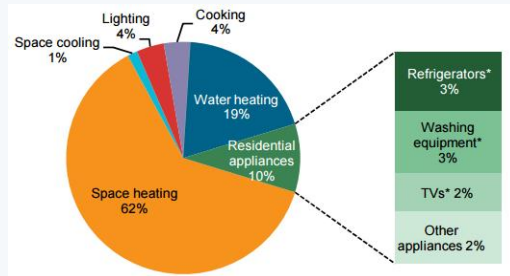
Value



Selected energy intensities, country A

Energy consumption data:

- Space heating*
- Space cooling*
- Water heating
- Cooking
- Lighting
- Appliances energy consumption:
 - Refrigerator
 - Freezer
 - Dishwasher
 - Clothes washer
 - Clothes dryer
 - TV
 - Computers



Energy consumption by end-use, country B

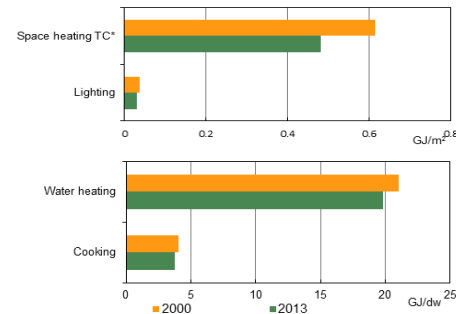
* Temperature corrected, using HDD & CDD

Activity data:

- Population
- Number of occupied dwellings
- Residential floor area
- Appliances stock and diffusion



of people # of dwellings Surface # of appliances

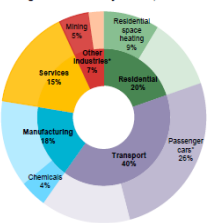


Selected energy intensities, country B

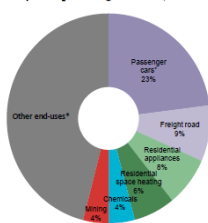
Energy Efficiency Indicators Highlights

Cross-sectoral overview

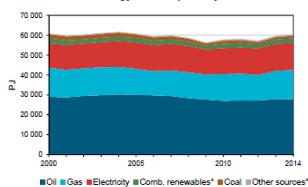
Largest end-uses by sector, 2014



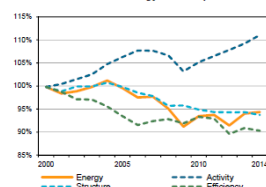
Top-6 CO₂ emitting end-uses, 2014**



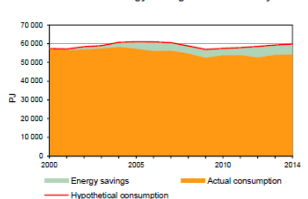
Final energy consumption by source



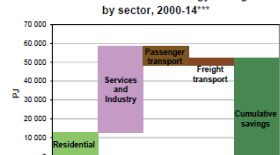
Drivers of final energy consumption***



Estimated energy savings from efficiency***



Estimated cumulative energy savings by sector, 2000-14***

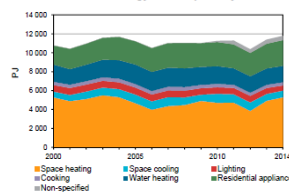


*Other industries includes agriculture, mining and construction; passenger cars includes cars, sport utility vehicles and personal trucks; other end-uses includes the remaining part of emissions beyond the top-6; comb. renewables includes combustible renewables and wastes; other sources includes heat and other energy sources.

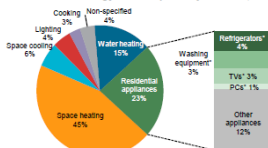
Residential sector

	Residential consumption (PJ)	Share of fossil fuels* in space heating (%)	Population (million)	Consumption per capita (GJ/person)	Average dwelling surface (m ²)	Average dwelling occupancy (person/dwelling)
2000	10 772	84	282	38	106	2.8
2014	11 792	79	319	37	181	2.8

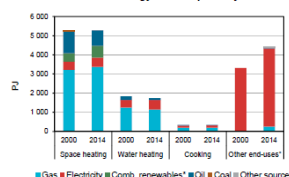
Residential energy consumption by end-use



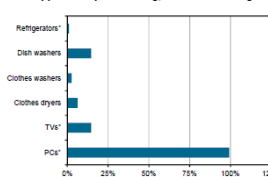
Residential energy consumption by end-use, 2014



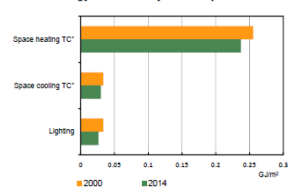
Residential energy consumption by source



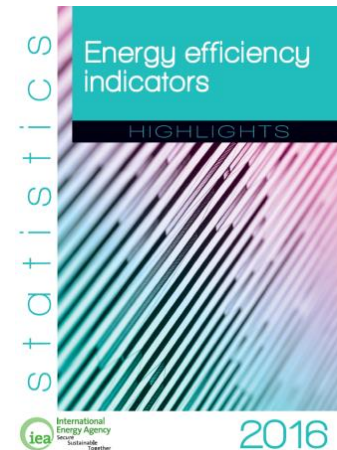
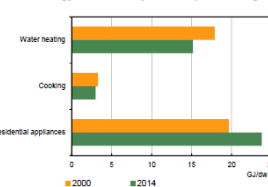
Appliances per dwelling, 2000-14 % change



Energy intensities by end-use per floor area



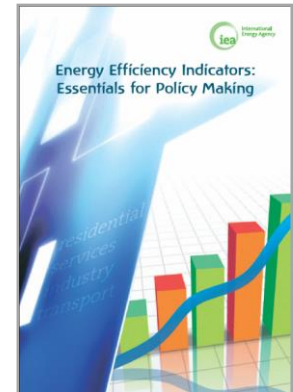
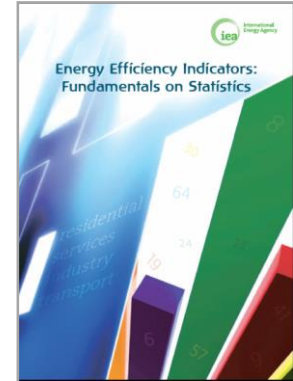
Energy intensities by end-use per dwelling



1st dissemination of the EEI data Country by Country selected figures

- Cooperation across institutions
- Need for new surveys or estimations
- Ensuring quality and consistency
 - with official energy statistics
 - between energy and activity data
- Delivering timely data

- Fundamentals on statistics:
to provide guidance on how to collect the data needed for indicators
 - Includes a compilation of existing practices from across the world
 - <https://goo.gl/Y8QD1G>
- Essentials for policy makers:
to provide guidance to develop and interpret energy efficiency indicators
 - <https://goo.gl/agcNg2>
 - Both available also in
 - **Russian**
 - Spanish
 - Chinese



Country practices database

- Practices in surveying, administrative sources, modelling and metering across sectors
- Questionnaires and other material available
- Links to various national administrations work

Information for country practice (R/Su/05)	
Background	
Country	Canada
Sector	Residential
Methodology	Surveying
Organisation	Natural Resources Canada
Name	Survey of Household Energy Use (SHEU)
Purpose	To determine total residential energy consumption To determine residential appliances energy consumption To collect residential appliances diffusion To collect household energy expenditure To collect dwelling physical characteristics To collect household occupants characteristics
Data collection	
Sample design	Stratified random sampling approach
Sample sources	The respondents for the households and the environment survey (HES) were per community health survey (CHS) who were interviewed for the CHS. The respon portion of the HES to get the SHEU.
Sample/Population size	21 690 / 12 932 350
Response rate	45%
Time to complete	60 minutes
Mandatory	No
Incentive	None
Survey respondents	Households, property managers/landlords

The screenshot shows the Natural Resources Canada website. The main heading is "Office of Energy Efficiency (CEE) Energy Use Inside and Outside the Dwelling - 2007 Survey of Household Energy Use - Supplemental Report". Below this, there are sections for "Appendix B. Questionnaires" and "Energy use inside the dwelling". A sidebar on the left contains navigation links like "Home", "Databases", "NEED Publications", "Directory of programs", "Data & Analysis Centres", and "Glossary".

Energy Efficiency Indicators Statistics: Country Practices Database

A supplement to the publication *Energy Efficiency Indicators: Fundamentals on Statistics*, this data indicators from a variety of OECD Members and non-Members.

Practices are searchable by country and territory, sector, methodology and type of available documents. Organisations to develop their own energy efficiency indicators programmes.

Countries and territories	Sector	Methodology	Available content
<input type="checkbox"/> Albania	<input type="checkbox"/> Industry	<input type="checkbox"/> Administrative sources	<input type="checkbox"/> methodology
<input type="checkbox"/> Australia	<input checked="" type="checkbox"/> Residential	<input type="checkbox"/> Measuring	<input type="checkbox"/> project web site
<input type="checkbox"/> Austria	<input type="checkbox"/> Services	<input checked="" type="checkbox"/> Modelling	<input type="checkbox"/> questionnaire
<input type="checkbox"/> Belgium	<input type="checkbox"/> Transport	<input type="checkbox"/> Surveying	<input type="checkbox"/> report
<input type="checkbox"/> Bosnia and Herzegovina			<input type="checkbox"/> results
<input type="checkbox"/> Brazil			
<input type="checkbox"/> Bulgaria			
<input type="checkbox"/> Canada			

Energy Efficiency Indicators Statistics: Country Practices Database

26 results found
(Tip: sort columns by clicking on the column header)
Perform another search

PRACTICE	COUNTRIES AND TERRITORIES	SECTOR	METHODOLOGY	AVAILABLE CONTENT
R/Su/01	Albania	Residential	Surveying	questionnaire
R/Su/02	Austria	Residential	Surveying	methodology, questionnaire, results
R/Su/03	Belgium	Residential	Surveying	report
R/Su/04	Portugal, Belgium, Bulgaria, Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, Norway, Romania	Residential	Surveying	methodology, project web site, questionnaire, report, results
R/Su/05	Canada	Residential	Surveying	project web site, questionnaire
R/Su/06	China	Residential	Surveying	
R/Su/07	China	Residential	Surveying	
R/Su/08	Croatia	Residential	Surveying	
R/Su/09	Croatia	Residential	Surveying	report
R/Su/10	Bosnia and Herzegovina	Residential	Surveying	report, questionnaire, results

An example of how to benefit from each other's work

<http://www.iea.org/eindicatorsmanual/>

What is EU4Energy doing to help countries with EEI?

- Increasing access to existing materials
- Regional training on Energy Efficiency Indicators (October, 16th-20th, Tbilisi)
- Helping countries audit the existing data availability for EE indicators (ongoing, with support from Croatian Energy Institute)
- Encouraging countries to adopt step by step approach , strengthen energy balance as a first priority

Thank you for your attention!

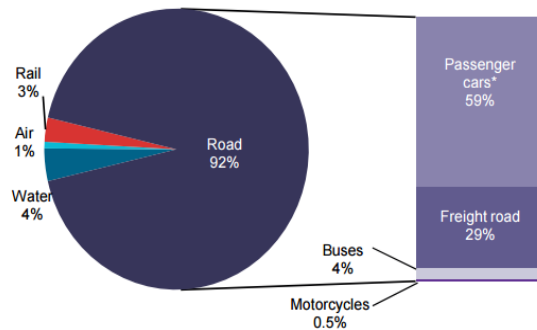


Contact:

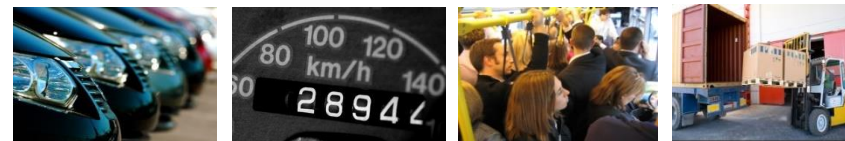
- Energyindicators@iea.org
- Claire.morel@iea.org

- Energy consumption data:
- Transport segment
 - passenger / freight
 - Transport modes
 - road, rail, air, water, etc.

- Activity data:
- Vehicle stocks
 - Passenger-kilometers
 - Tonne-kilometers



Energy consumption by mode/vehicle type, country D

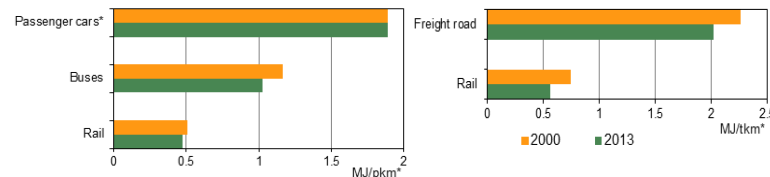


Vehicle stock

Distance travelled

Occupancy

Load

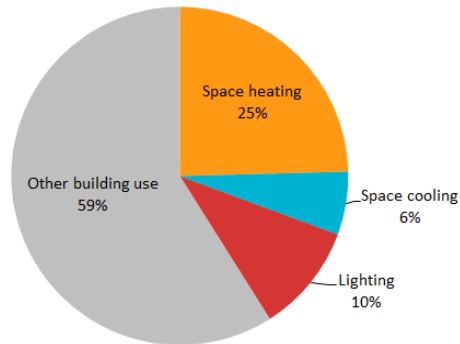


Selected energy intensities, country D

Energy consumption data:

- Space heating*
- Space cooling*
- Lighting
- Other building use
- Non-building use

* Temperature corrected, using HDD & CDD



Energy consumption by end-use, country C

Activity data:

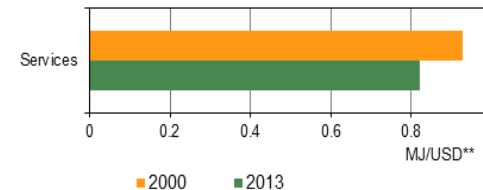
- Value added
- Number of employees
- Services floor area



of people

Value

Surface



Selected energy intensities, country C

- Why it is important to collect energy efficiency data?
- What information is available from the energy balances?
- What further data are needed to study energy efficiency?
- How to collect Energy Efficiency data?
- Typical problems



Energy Efficiency Indicators Template country name

COUNTRY DATA SECTION (to be reviewed and updated)

MACRO ECONOMIC DATA	Macro economic and activity data
COMMODITIES	Production outputs from selected energy-consuming industries
INDUSTRY	Energy consumption by ISIC categories
SERVICES	Energy consumption by end-uses in the services sector
RESIDENTIAL	Household energy consumption by end-uses and selected appliances data
TRANSPORT	Energy and activity data for passenger and freight transport

IEA DATA and AGGREGATE INDICATORS

ELECTRICITY GENERATION	Electricity generation from combustible fuels and efficiencies
BASIC INDICATORS	Predetermined set of aggregate energy and activity indicators

SUPPORT TOOLS

USER REMARKS	To incorporate comments associated to the data from the individual sheets
DATA COVERAGE	Generates a graphical summary of data coverage (completed vs. expected)
SINGLE INDICATOR GRAPHS	To generate a graph for one energy indicator
MULTIPLE INDICATORS GRAPHS	To generate a graph comparing trends from multiple indicators
CONSISTENCY CHECKS	To run the integrated consistency checks

Energy consumption & Activity data for:

- ➔ INDUSTRY
- ➔ SERVICES
- ➔ RESIDENTIAL
- ➔ TRANSPORT

Available in English, Spanish and soon in Russian!

- Why it is important to collect energy efficiency data?
- What information is available from the energy balances?
- What further data are needed to study energy efficiency?
- How to collect Energy Efficiency data?
- **Typical problems**

The EEI template - Residential

Energy consumption data: - by end-use

RESIDENTIAL				units	2013	2014	2015
Menu	Legend	Check all/none	Add remarks				
Space Heating							
	Oil & Petroleum Products		PJ	99.83	86.05	0	
	Natural Gas		PJ	951.07	819.75	0	
	Coal & Coal Products		PJ	28.89	24.90	0	
	Combust. Renewables & Waste		PJ	56.52	48.72	0	
	Heat		PJ	2.17	2.17	0	
	Electricity		PJ	90.02	77.59	0	
	Other		PJ	0	0	0	
<input checked="" type="checkbox"/>	Total		PJ	1,228.51	1,058.18	0	
	Total (climate corrected for 1990-2015)		PJ	1,107.83	1,108.15	#N/A	
Space Cooling							
	Oil & Petroleum Products		PJ	0	0	0	
	Natural Gas		PJ	0	0	0	
	Coal & Coal Products		PJ	0	0	0	
	Combust. Renewables & Waste		PJ	0	0	0	
	Heat		PJ	0	0	0	
	Electricity		PJ	0	0	0	
	Other		PJ	0	0	0	
<input checked="" type="checkbox"/>	Total		PJ	0	0	0	
	Total (climate corrected for 1990-2015)		PJ	#N/A	#N/A	#N/A	

- by appliance type

Dish Washers							
	Electricity		PJ	11.87	11.94	0	
	Other		PJ	0	0	0	
<input checked="" type="checkbox"/>	Total		PJ	11.87	11.94	0	
Clothes Washers							
	Electricity		PJ	20.63	20.82	0	
	Other		PJ	0	0	0	
<input checked="" type="checkbox"/>	Total		PJ	20.63	20.82	0	
Clothes Dryers							
	Electricity		PJ	21.25	21.50	0	
	Other		PJ	0	0	0	
<input checked="" type="checkbox"/>	Total		PJ	21.25	21.50	0	
Television/Home entertainment							
	Electricity		PJ	76.72	76.66	0	
	Other		PJ	0	0	0	
<input checked="" type="checkbox"/>	Total		PJ	76.72	76.66	0	

Activity data: - appliances stock and diffusion

RESIDENTIAL				units	2013	2014	2015
Menu	Legend	Check all/none	Add remarks				
Appliances Diffusion (number of units per occupied dwelling)							
	Refrigerators		unit/dw	0.38	0.38	0	
	Freezers		unit/dw	0.47	0.47	0	
	Refrigerator/Freezer Combinations		unit/dw	0.69	0.69	0	
	Dish Washers		unit/dw	0.38	0.39	0	
	Clothes Washers		unit/dw	0.80	0.81	0	
	Clothes Dryers		unit/dw	0.56	0.56	0	
	Television/Home entertainment		unit/dw	2.37	2.37	0	
	PC/Information & communication technology		unit/dw	1.39	1.41	0	
Appliances Stock (only within occupied dwellings)							
<input checked="" type="checkbox"/>	Refrigerators		10 ⁵	10.21	10.31	0	
<input checked="" type="checkbox"/>	Freezers		10 ⁵	12.70	12.82	0	
<input checked="" type="checkbox"/>	Refrigerator/Freezer Combinations		10 ⁵	18.77	18.96	0	
<input checked="" type="checkbox"/>	Dish Washers		10 ⁵	10.35	10.59	0	
<input checked="" type="checkbox"/>	Clothes Washers		10 ⁵	21.83	22.08	0	
<input checked="" type="checkbox"/>	Clothes Dryers		10 ⁵	15.20	15.29	0	
<input checked="" type="checkbox"/>	Television/Home entertainment		10 ⁵	64.24	65.42	0	
<input checked="" type="checkbox"/>	PC/Information & communication technology		10 ⁵	37.87	38.47	0	

- population, number of dwellings, ...

Menu	Legend	Check all/none	Add remarks			
I. Activity & Structure Indicators						
<input checked="" type="checkbox"/>	Total Population		10 ⁵ pers	64.11	64.60	65.03
<input checked="" type="checkbox"/>	Total Employment		10 ⁵ pers	30.04	30.75	31.29
<input checked="" type="checkbox"/>	Total Dwellings		10 ⁵ dw	27.91	0	0
<input checked="" type="checkbox"/>	Occupied Dwellings		10 ⁵ dw	27.15	27.41	0
<input checked="" type="checkbox"/>	New Dwellings		10 ⁵ dw	0.14	0.14	0
<input checked="" type="checkbox"/>	Household Occupancy		pers/dw	2.36	2.36	0
<input checked="" type="checkbox"/>	Total Dwelling Area (Residential Floor Area)		10 ⁵ m ²	2,587.15	0	0
<input checked="" type="checkbox"/>	Annual Heating Degree-Days		dd°C	3,179.35	2,740.35	3,017.01
<input checked="" type="checkbox"/>	Annual Cooling Degree-Days		dd°C	0	0	0
<input checked="" type="checkbox"/>	Total Services Floor Area		10 ⁵ m ²	0	0	0
<input checked="" type="checkbox"/>	New Services Floor Area		10 ⁵ m ²	0	0	0

The EEI template - Transport

Energy consumption data: - by segment and mode

TRANSPORT				units	2013	2014	2015
Menu	Legend	Check all/none	Add remarks				
<input checked="" type="checkbox"/>	Energy Use						
<input checked="" type="checkbox"/>	Cars, SUV and personal light trucks						
<input checked="" type="checkbox"/>	Motor Gasoline (including biofuels)	PJ		510.12	500.29	0	
<input checked="" type="checkbox"/>	Automotive Diesel (including biofuels)	PJ		357.97	340.81	0	
<input checked="" type="checkbox"/>	LPG (Liquefied Petroleum Gas)	PJ		1.24	1.18	0	
<input checked="" type="checkbox"/>	Natural Gas	PJ		0	0	0	
<input checked="" type="checkbox"/>	Electricity	PJ		0	0	0	
<input checked="" type="checkbox"/>	Other	PJ		0	0	0	
<input checked="" type="checkbox"/>	Total	PJ		869.35	841.98	0	
<input checked="" type="checkbox"/>	Motorcycles (2 wheelers) & 3 wheelers						
<input checked="" type="checkbox"/>	Motor Gasoline (including biofuels)	PJ		7.12	6.78	0	
<input checked="" type="checkbox"/>	LPG (Liquefied Petroleum Gas)	PJ		0	0	0	
<input checked="" type="checkbox"/>	Electricity	PJ		0	0	0	
<input checked="" type="checkbox"/>	Other	PJ		0	0	0	
<input checked="" type="checkbox"/>	Total	PJ		7.12	6.78	0	
<input checked="" type="checkbox"/>	Buses						
<input checked="" type="checkbox"/>	Motor Gasoline (including biofuels)	PJ		0	0	0	
<input checked="" type="checkbox"/>	Automotive Diesel (including biofuels)	PJ		52.94	44.35	0	
<input checked="" type="checkbox"/>	LPG (Liquefied Petroleum Gas)	PJ		0	0	0	
<input checked="" type="checkbox"/>	Natural Gas	PJ		0	0	0	
<input checked="" type="checkbox"/>	Electricity	PJ		0	0	0	
<input checked="" type="checkbox"/>	Other	PJ		0	0	0	
<input checked="" type="checkbox"/>	Total	PJ		53.59	44.35	0	
<input checked="" type="checkbox"/>	Passenger Trains						
<input checked="" type="checkbox"/>	Diesel & Light Fuel Oil	PJ		11.13	10.10	0	
<input checked="" type="checkbox"/>	Heavy Fuel Oil	PJ		0.28	0.28	0	
<input checked="" type="checkbox"/>	Natural Gas	PJ		0	0	0	
<input checked="" type="checkbox"/>	Electricity	PJ		21.24	21.64	0	
<input checked="" type="checkbox"/>	Coal & Coal Products	PJ		0	0	0	
<input checked="" type="checkbox"/>	Other	PJ		0	0	0	
<input checked="" type="checkbox"/>	Total	PJ		32.65	32.52	0	
<input checked="" type="checkbox"/>	Freight & Commercial road transport						
<input checked="" type="checkbox"/>	Motor Gasoline (including biofuels)	PJ		9.21	9.34	0	
<input checked="" type="checkbox"/>	Automotive Diesel (including biofuels)	PJ		527.96	538.37	0	
<input checked="" type="checkbox"/>	LPG (Liquefied Petroleum Gas)	PJ		0	0	0	
<input checked="" type="checkbox"/>	Natural Gas	PJ		0	0	0	
<input checked="" type="checkbox"/>	Electricity	PJ		0	0	0	
<input checked="" type="checkbox"/>	Other	PJ		0	0	0	
<input checked="" type="checkbox"/>	Total	PJ		537.17	547.71	0	
<input checked="" type="checkbox"/>	Freight trains						
<input checked="" type="checkbox"/>	Diesel & Light Fuel Oil	PJ		2.41	1.42	0	
<input checked="" type="checkbox"/>	Heavy Fuel Oil	PJ		0.13	0.12	0	
<input checked="" type="checkbox"/>	Natural Gas	PJ		0	0	0	
<input checked="" type="checkbox"/>	Electricity	PJ		16.01	9.91	0	
<input checked="" type="checkbox"/>	Coal & Coal Products	PJ		0	0	0	
<input checked="" type="checkbox"/>	Other	PJ		0	0	0	
<input checked="" type="checkbox"/>	Total	PJ		18.55	11.47	0	
<input checked="" type="checkbox"/>	Domestic freight airplanes						
<input checked="" type="checkbox"/>	Jet Fuel & Aviation Gasoline	PJ		0	0	0	
<input checked="" type="checkbox"/>	Other	PJ		0	0	0	
<input checked="" type="checkbox"/>	Total	PJ		0	0	0	
<input checked="" type="checkbox"/>	Domestic freight ships						
<input checked="" type="checkbox"/>	Motor Gasoline (including biofuels)	PJ		0	0	0	
<input checked="" type="checkbox"/>	Diesel & Light Fuel Oil	PJ		24.69	32.20	0	
<input checked="" type="checkbox"/>	Heavy Fuel Oil	PJ		0	0	0	
<input checked="" type="checkbox"/>	Natural Gas	PJ		0	0	0	
<input checked="" type="checkbox"/>	Coal & Coal Products	PJ		0	0	0	
<input checked="" type="checkbox"/>	Other	PJ		0	0	0	
<input checked="" type="checkbox"/>	Total	PJ		24.69	32.20	0	

Activity data: - segment and mode

TRANSPORT				units	2013	2014	2015
Menu	Legend	Check all/none	Add remarks				
<input checked="" type="checkbox"/>	Activity & Structure indicators						
<input checked="" type="checkbox"/>	Passenger transport [passenger-kilometres]						
<input checked="" type="checkbox"/>	Cars, SUV and personal light trucks	10 ³ pass-km		627.47	654.23	0	
<input checked="" type="checkbox"/>	- gasoline (spark ignition) engine	10 ³ pass-km		0	0	0	
<input checked="" type="checkbox"/>	- diesel (compression ignition) engine	10 ³ pass-km		0	0	0	
<input checked="" type="checkbox"/>	Motorcycles (2 wheelers) & 3 wheelers	10 ³ pass-km		4.91	4.44	0	
<input checked="" type="checkbox"/>	Buses	10 ³ pass-km		40.40	39.60	0	
<input checked="" type="checkbox"/>	Passenger Trains	10 ³ pass-km		72.97	75.40	0	
<input checked="" type="checkbox"/>	Domestic passenger airplanes	10 ³ pass-km		5.45	5.49	0	
<input checked="" type="checkbox"/>	Domestic passenger ships	10 ³ pass-km		0	0	0	
<input checked="" type="checkbox"/>	Total Passenger Transport	10³ pass-km		763.50	782.36	0	
<input checked="" type="checkbox"/>	Freight transport [tonne-kilometres]						
<input checked="" type="checkbox"/>	Freight & Commercial road transport	10 ³ tonne-km		151.42	152.55	0	
<input checked="" type="checkbox"/>	- gasoline (spark ignition) engine	10 ³ tonne-km		0	0	0	
<input checked="" type="checkbox"/>	- diesel (compression ignition) engine	10 ³ tonne-km		0	0	0	
<input checked="" type="checkbox"/>	Freight trains	10 ³ tonne-km		23.00	22.00	0	
<input checked="" type="checkbox"/>	Domestic freight airplanes	10 ³ tonne-km		0	0	0	
<input checked="" type="checkbox"/>	Domestic freight ships	10 ³ tonne-km		25.00	27.00	0	
<input checked="" type="checkbox"/>	Total Freight Transport	10³ tonne-km		203.42	202.55	0	
<input checked="" type="checkbox"/>	Freight transport [tonnes]						
<input checked="" type="checkbox"/>	Freight & Commercial road transport	10 ³ tonnes		0	0	0	
<input checked="" type="checkbox"/>	- gasoline (spark ignition) engine	10 ³ tonnes		0	0	0	
<input checked="" type="checkbox"/>	- diesel (compression ignition) engine	10 ³ tonnes		0	0	0	
<input checked="" type="checkbox"/>	Freight trains	10 ³ tonnes		0	0	0	
<input checked="" type="checkbox"/>	Domestic freight airplanes	10 ³ tonnes		0	0	0	
<input checked="" type="checkbox"/>	Domestic freight ships	10 ³ tonnes		0	0	0	
<input checked="" type="checkbox"/>	Vehicle kilometres						
<input checked="" type="checkbox"/>	Cars, SUV and personal light trucks	10 ³ vkm		284.23	287.05	0	
<input checked="" type="checkbox"/>	- gasoline (spark ignition) engine	10 ³ vkm		0	0	0	
<input checked="" type="checkbox"/>	- diesel (compression ignition) engine	10 ³ vkm		0	0	0	
<input checked="" type="checkbox"/>	Motorcycles (2 wheelers) & 3 wheelers	10 ³ vkm		4.38	4.51	0	
<input checked="" type="checkbox"/>	Buses	10 ³ vkm		2.84	2.38	0	
<input checked="" type="checkbox"/>	Passenger Trains	10 ³ vkm		0	0	0	
<input checked="" type="checkbox"/>	Domestic passenger airplanes	10 ³ vkm		0	0	0	
<input checked="" type="checkbox"/>	Domestic passenger ships	10 ³ vkm		0	0	0	
<input checked="" type="checkbox"/>	Freight & Commercial road transport	10 ³ vkm		92.81	94.88	0	
<input checked="" type="checkbox"/>	- gasoline (spark ignition) engine	10 ³ vkm		0	0	0	
<input checked="" type="checkbox"/>	- diesel (compression ignition) engine	10 ³ vkm		0	0	0	
<input checked="" type="checkbox"/>	Freight trains	10 ³ vkm		0	0	0	
<input checked="" type="checkbox"/>	Domestic freight airplanes	10 ³ vkm		0	0	0	
<input checked="" type="checkbox"/>	Domestic freight ships	10 ³ vkm		0	0	0	
<input checked="" type="checkbox"/>	Vehicle stocks [number of vehicles in use]						
<input checked="" type="checkbox"/>	Cars, SUV and personal light trucks	10 ⁴		29.14	29.61	0	
<input checked="" type="checkbox"/>	- gasoline (spark ignition) engine	10 ⁴		18.17	18.62	0	
<input checked="" type="checkbox"/>	- diesel (compression ignition) engine	10 ⁴		10.96	10.73	0	
<input checked="" type="checkbox"/>	Motorcycles (2 wheelers) & 3 wheelers	10 ⁴		1.22	1.22	0	
<input checked="" type="checkbox"/>	Buses	10 ⁴		0.16	0.16	0	
<input checked="" type="checkbox"/>	Passenger Trains	10 ⁴		0	0	0	
<input checked="" type="checkbox"/>	Domestic passenger airplanes	10 ⁴		0	0	0	
<input checked="" type="checkbox"/>	Domestic passenger ships	10 ⁴		0	0	0	
<input checked="" type="checkbox"/>	Freight & Commercial road transport	10 ⁴		3.82	3.95	0	
<input checked="" type="checkbox"/>	- gasoline (spark ignition) engine	10 ⁴		0.14	0.14	0	
<input checked="" type="checkbox"/>	- diesel (compression ignition) engine	10 ⁴		3.67	3.80	0	
<input checked="" type="checkbox"/>	Freight trains	10 ⁴		0	0	0	
<input checked="" type="checkbox"/>	Domestic freight airplanes	10 ⁴		0	0	0	
<input checked="" type="checkbox"/>	Domestic freight ships	10 ⁴		0	0	0	

The EEI template - Industry

Energy consumption data (by major ISIC sub-sectors, classes and products):

INDUSTRY				units	2010	2011	2012	2013	2014	2015	sources
Menu	Legend	Check all/none	Add remarks								
Total Energy Use				PJ	0	0	0	0	0	0	
24: Manufacture of basic metals											
Oil & Petroleum Products				PJ	0.32	0.16	0.08	0.17	0.29	0	
Natural Gas				PJ	27.93	28.31	23.47	24.69	25.34	0	
Coal & Coal Products				PJ	135.93	124.22	129.33	166.41	165.21	0	
Combust. Renewables & Waste				PJ	0	0	0	0	0	0	
Heat				PJ	0	0	0	0	0	0	
Electricity				PJ	39.12	39.88	31.69	31.23	31.48	0	
Other				PJ	0	0	0	0	0	0	
Total Energy Use				PJ	203.29	187.57	184.47	221.59	222.32	0	
Class 2410+2431: Manufacture + Casting of iron and steel											
Oil & Petroleum Products				PJ	0.32	0.16	0.08	0.17	0.29	0	IEA Energy Balances
Natural Gas				PJ	21.91	20.35	17.25	15.47	13.99	0	IEA Energy Balances
Coal & Coal Products				PJ	135.29	120.63	126.79	164.82	164.63	0	IEA Energy Balances
Combust. Renewables & Waste				PJ	0	0	0	0	0	0	
Heat				PJ	0	0	0	0	0	0	
Electricity				PJ	14.90	14.70	13.43	15.20	15.22	0	IEA Energy Balances
Other				PJ	0	0	0	0	0	0	
Total Energy Use				PJ	172.43	155.92	159.71	195.73	199.13	0	
Class 2420+2432: Manufacture + Casting of precious and non-ferrous metals											
Oil & Petroleum Products				PJ	0	0	0	0	0	0	IEA Energy Balances
Natural Gas				PJ	6.01	5.98	6.12	6.23	6.35	0	IEA Energy Balances
Coal & Coal Products				PJ	0.63	0.59	0.54	0.59	0.59	0	IEA Energy Balances
Combust. Renewables & Waste				PJ	0	0	0	0	0	0	
Heat				PJ	0	0	0	0	0	0	
Electricity				PJ	24.22	25.10	18.10	15.95	16.28	0	IEA Energy Balances
Other				PJ	0	0	0	0	0	0	
Total Energy Use				PJ	30.86	31.65	24.76	22.76	23.20	0	
Of which aluminium											
Oil & Petroleum Products				PJ	0	0	0	0	0	0	
Natural Gas				PJ	0	0	0	0	0	0	
Coal & Coal Products				PJ	0	0	0	0	0	0	
Combust. Renewables & Waste				PJ	0	0	0	0	0	0	
Heat				PJ	0	0	0	0	0	0	
Electricity				PJ	0	0	0	0	0	0	
Other				PJ	0	0	0	0	0	0	
Total Energy Use				PJ	0	0	0	0	0	0	

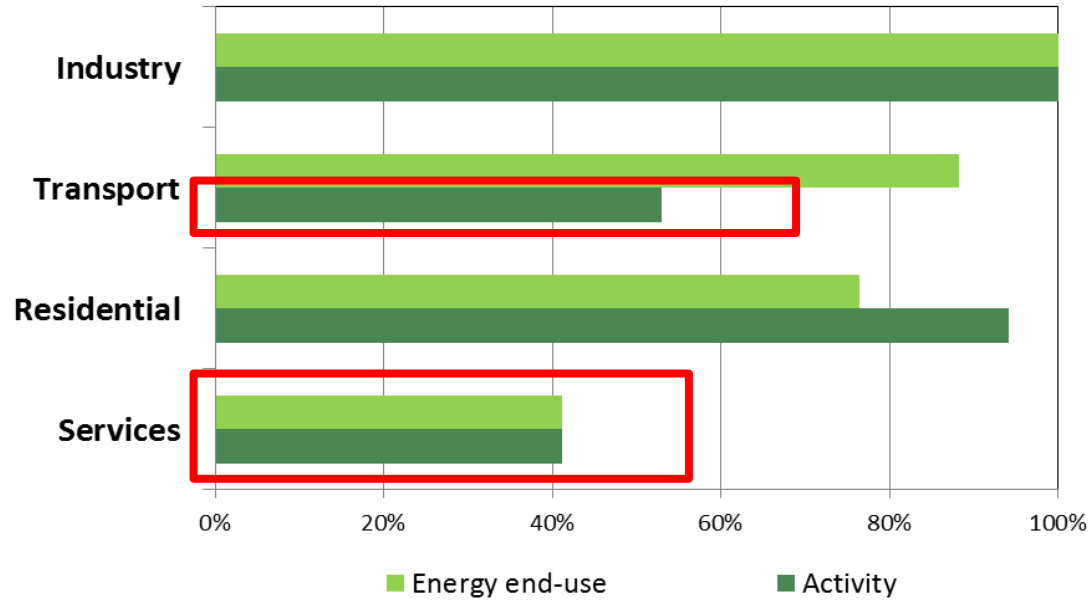
Activity data:

- physical production
 - value added
- (by major ISIC sub-sectors)

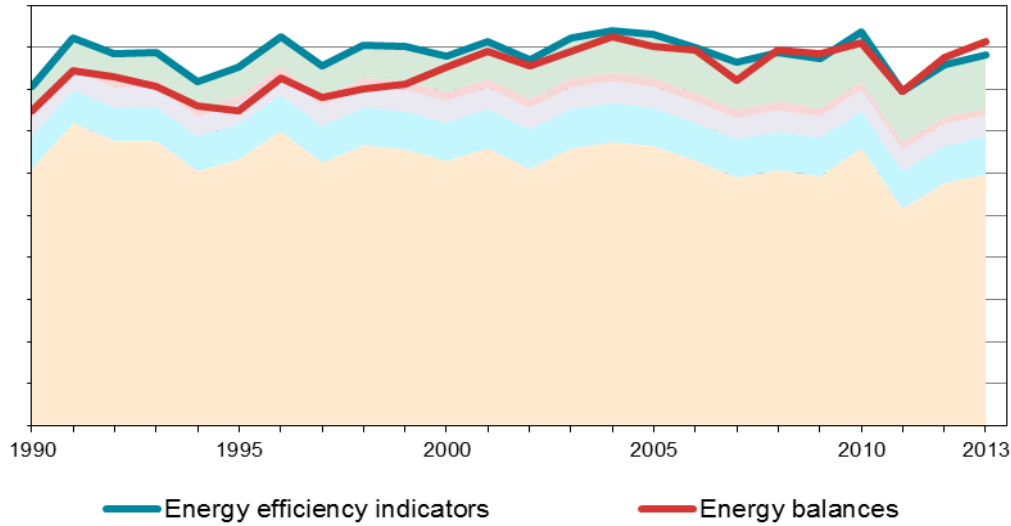
COMMODITIES				units	2010	2011	2012	2013	2014	2015	sources
Menu	Legend	Check all/none	Add remarks								
23: Manufacture of other non-metallic mineral products											
Cement											
Clinker production				Mt	6.60	7.10	6.56	6.71	7.20	0	
Cement production				Mt	7.88	8.53	8.50	8.20	8.96	0	USGS Minerals Yearbook
24: Manufacture of basic metals											
Crude Steel				Mt	9.71	9.48	9.56	11.86	12.12	0	worldsteel
Basic Oxygen Furnace production				Mt	7.32	6.95	7.53	9.92	10.17	0	worldsteel
Electric Arc Furnace production				Mt	2.40	2.53	2.05	1.94	1.96	0	worldsteel
Direct Reduced Iron				Mt	0	0	0	0	0	0	
Bauxite				Mt	0	0	0	0	0	0	
Alumina refining				Mt	0	0	0	0	0	0	USGS Minerals Yearbook
Aluminium				Mt	0	0	0	0	0	0	
Primary production				Mt	0.19	0.21	0.06	0.04	0.04	0	USGS Minerals Yearbook
Recycled production				Mt	0	0	0	0	0	0	

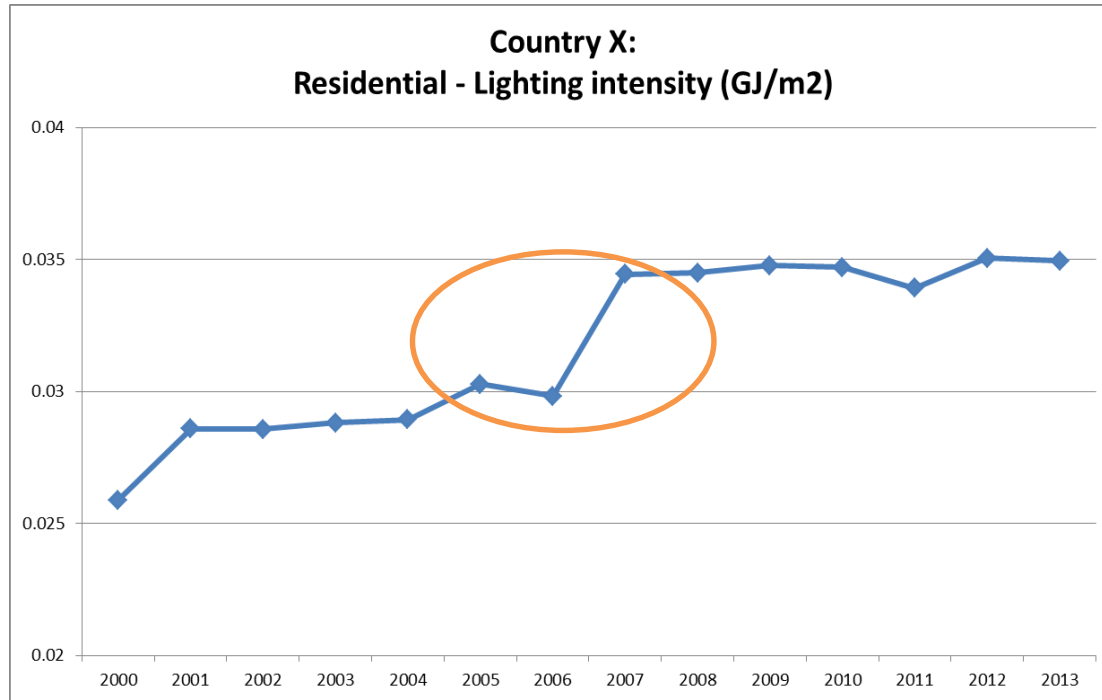
MACRO ECONOMIC DATA				units	2010	2011	2012	2013	2014	2015	sources	comments
Menu	Legend	Check all/none	Add remarks									
IV. Value added in USD PPP 2016 \$ (at the price levels and PPPs of 2010)												
ISIC Rev 4 Division												
01-03: Agriculture, forestry and fishing					14.96	16.80	15.39	15.49	17.65	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	
05-09: Mining and quarrying					44.00	37.72	33.82	32.70	32.90	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	
10-32: Manufacturing					196.40	200.33	197.60	195.03	205.52	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	
10-12: Manufacture of food products, beverages, tobacco products					32.62	34.78	33.88	33.31	34.70	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	
13-15: Manufacture of textiles, wearing apparel, leather and related products					6.66	6.75	6.52	6.23	6.07	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	
16: Manufacture of wood and of products of wood and cork, except furniture, manufacture of					3.30	2.99	2.75	2.78	2.99	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	
17: Manufacture of paper and paper products					5.28	4.93	4.90	4.96	5.10	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	
18: Printing and reproduction of recorded media					7.07	6.83	6.24	6.54	6.30	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	
17-18: Paper & Printing					12.33	11.76	11.22	11.56	11.43	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	
19: Manufacture of coke and refined petroleum products					6.44	6.52	5.87	5.75	5.24	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	
20-21: Manufacture of chemicals and chemical products & basic pharmaceutical pro					33.34	31.42	30.01	29.39	28.85	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	
22: Manufacture of rubber and plastics products					10.27	10.19	10.35	9.95	11.17	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	
23: Manufacture of other non-metallic mineral products					6.27	6.33	5.45	5.41	6.21	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	
24: Manufacture of basic metals					4.22	4.58	4.70	4.67	4.58	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	
Class 2410+2431: Manufacture + Casting of iron and steel					0	0	0	0	0	0		
Class 2420+2432: Manufacture + Casting of precious and non-ferrous metals					0	0	0	0	0	0		
25-28: Manufacture of fabricated metal products, machinery and equipment					48.34	49.70	51.15	48.24	49.46	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	
29-30: Manufacture of motor vehicles, trailers, other transport equipment					22.18	24.43	25.51	27.46	28.44	0	OECD Annual National Accounts, Table6A (1990-1994: IEA estimates)	

Completeness



Consistency





Breaks in end-use or activity data cause problems for analyzing efficiency trends
E.g. Change in methodology

As end-use data are vital, cooperation activities could cover:

- Sharing good practices
- Developing an international energy efficiency data collection system
- Delivering targeted trainings
- Promote use of data in policy making
- ... Others ...

Administrative sources

- before starting new data collection

Surveys

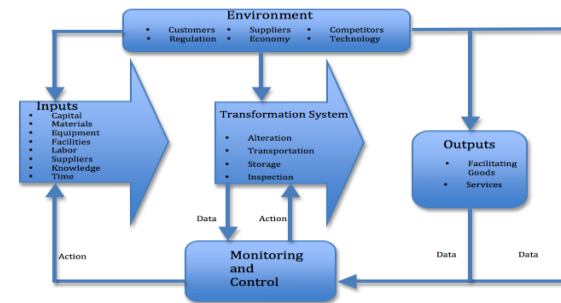
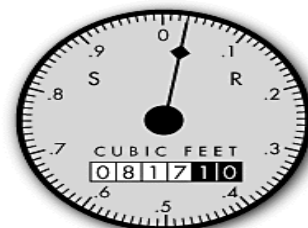
- representative sample
- possibly expanding existing surveys

Metering and measuring

- costly but very effective for monitoring specific equipment efficiency

Modelling

- complementary to surveys or stand alone



The screenshot shows the top section of the IEA website. On the left is the IEA logo with the tagline 'Working together to ensure reliable, affordable and clean energy'. On the right, there are language options for Russian and Chinese, a search bar, and social media icons for RSS, Twitter, Facebook, LinkedIn, and YouTube. Below this is a navigation menu with links for HOME, ABOUT US, TOPICS, COUNTRIES, NEWSROOM & EVENTS, PUBLICATIONS, and STATISTICS. The breadcrumb trail reads 'International Energy Agency > EE Indicators Manual'. The main heading of the page is 'Energy Efficiency Indicators Statistics: Country Practices Database', displayed in green text on a dark background over a globe graphic.

A platform to share expertise worldwide:
practices are available in a searchable database.

Share your practice!

<https://www.iea.org/eeindicatorsmanual/>

- Netherlands
- New Zealand
- Norway
- Portugal
- Romania