ENERGY EFFICIENCY

A NEED TO GO BEYOND THE ENERGY BALANCES FOR BUILDING RELEVANT ENERGY EFFICIENCY INDICATORS:

THE IEA ENERGY EFFICIENCY TEMPLATE

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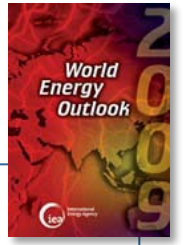
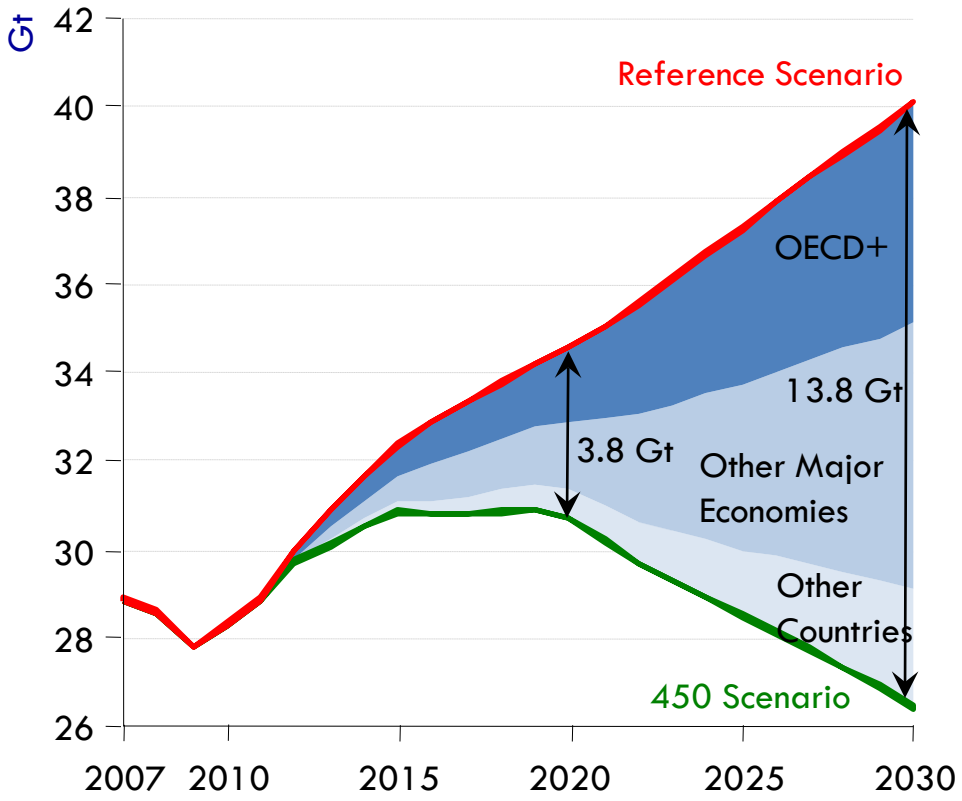
International Energy Agency

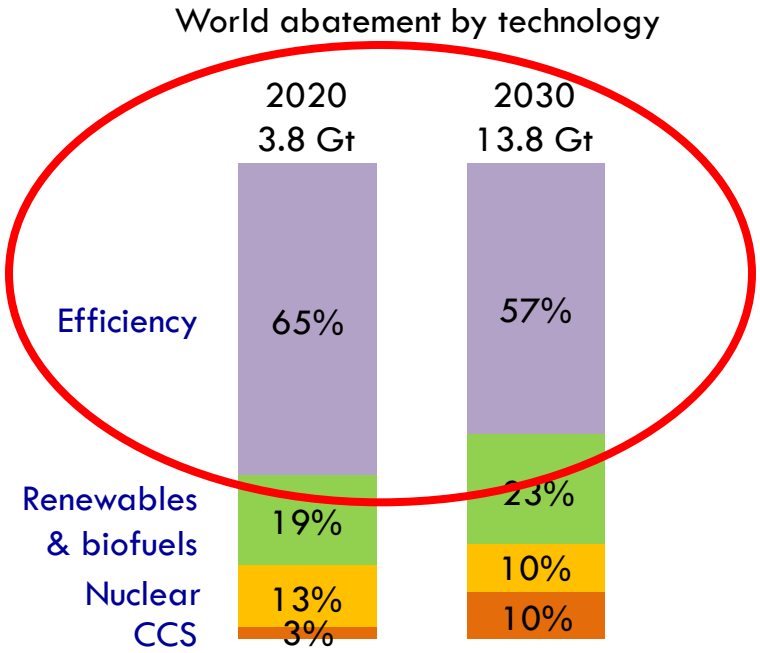
Why such a high interest in efficiency

- **Saving energy in all sectors:**
  - **Residential**
  - **Transports**
  - **Industry**
  - **Services**
  - **Electricity generation**
- **Increasing exports - reducing imports**
- **Increasing domestic (and global) energy security**
- **Strengthening RD&D**
- **Creating jobs**
- **Reducing green house gas (mainly CO_2) emissions**

EFFICIENCY'S ROLE IN CO_2 EMISSIONS ABATEMENT







➔ **More than 50% of the reduction of CO_2 emissions should come from energy efficiency**

Countries are adopting ambitious targets

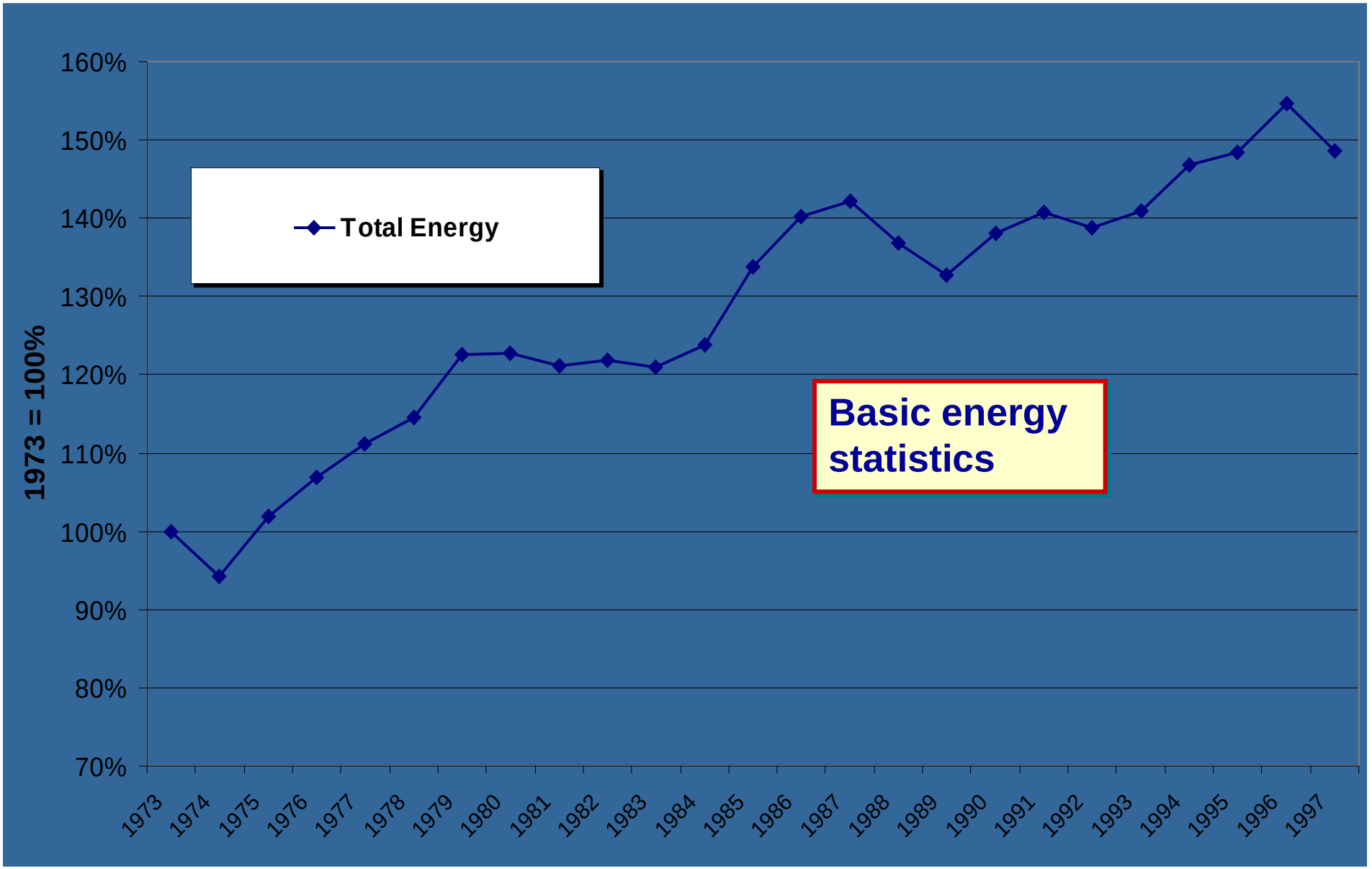
- **China** Reduce CO_2 intensity of the economy by 40-45% between 2005 and 2020
- **India** Reduce CO_2 intensity of the economy by 20% between 2005 and 2020
- **The European Union: the 20-20-20 programme by 2020**
  - Contribution of energy efficiency to reduce the energy consumption by 20%
- **Russia:** Reduce the energy intensity of GDP of the [illegible] levels.

How to verify if countries meet their targets?

Identify priorities for energy efficiency policies

Assess progresses and failures of policies

Why Go Beyond Aggregate Energy Consumption Data?



Example of Canada's Residential Sector

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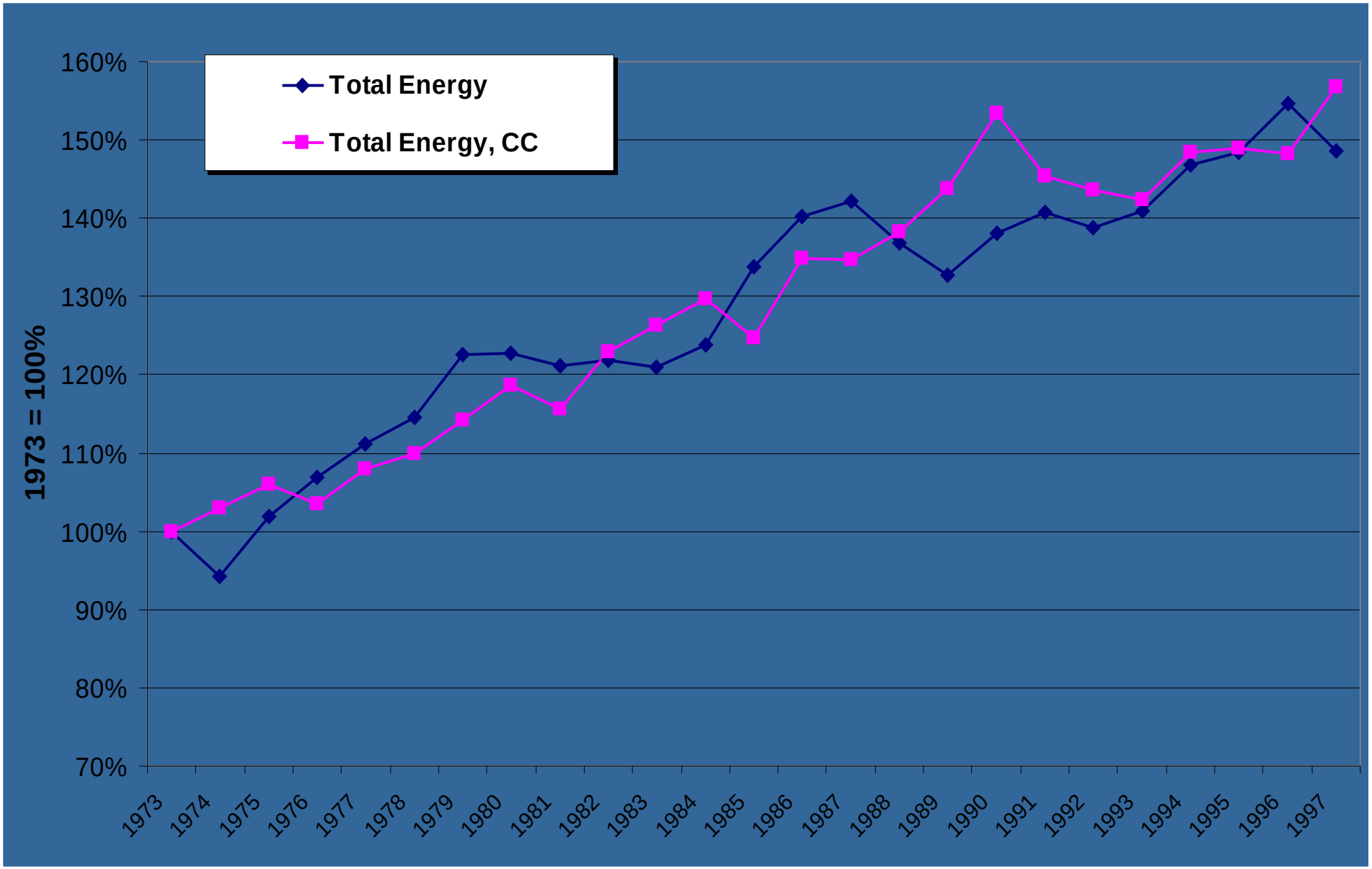

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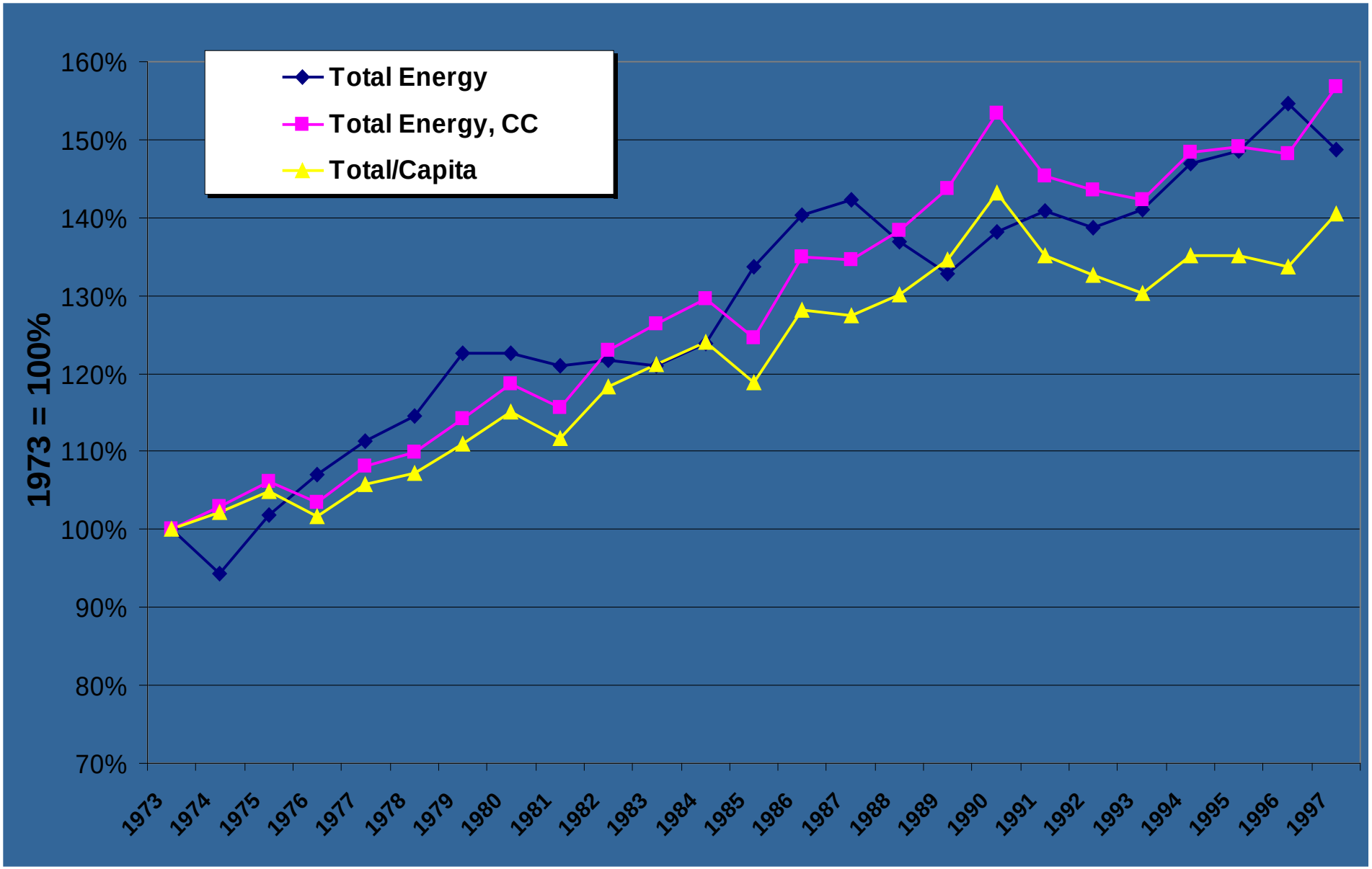

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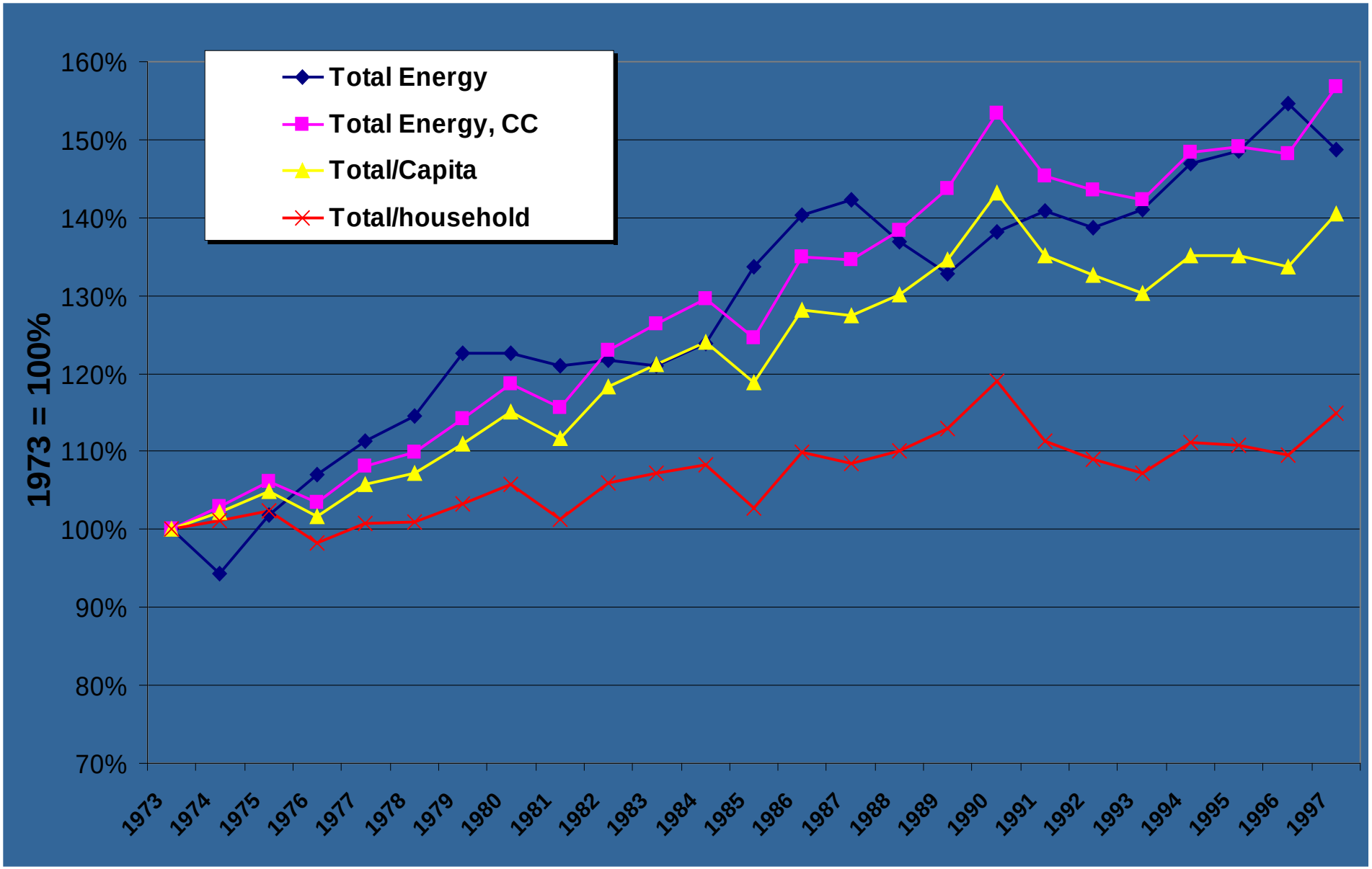

Example of Canada's Residential Sector

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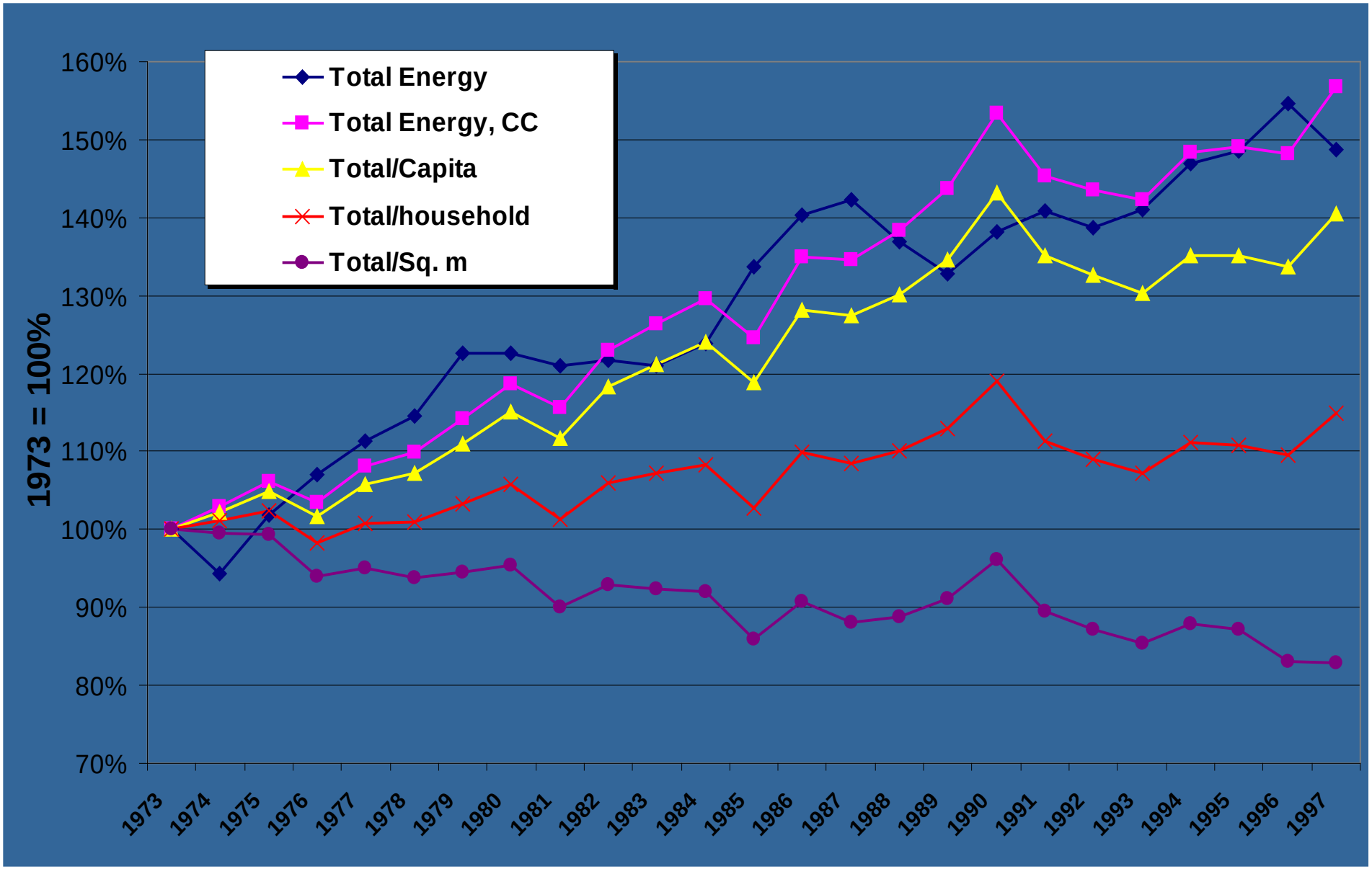

Example of Canada's Residential Sector

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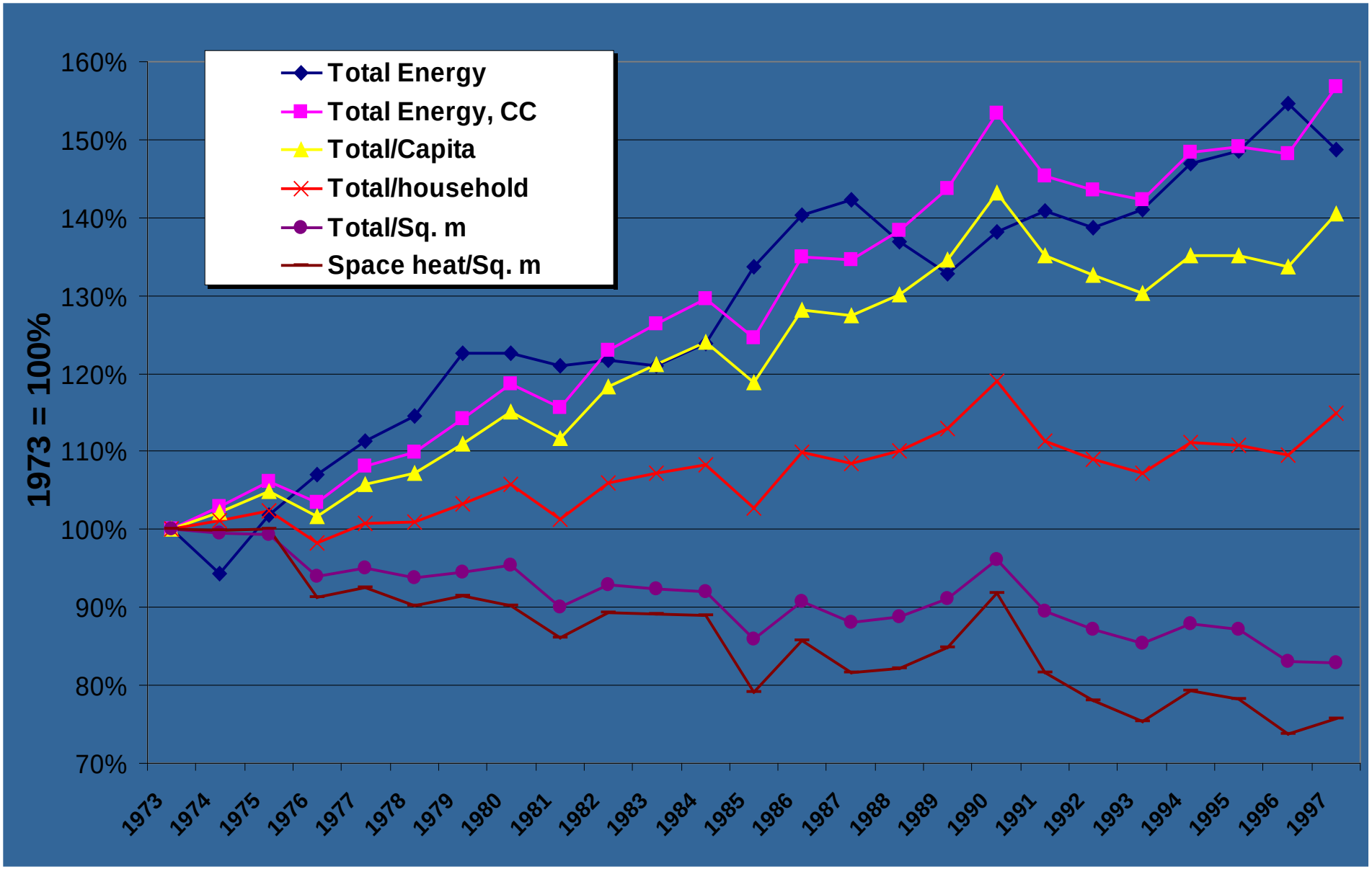
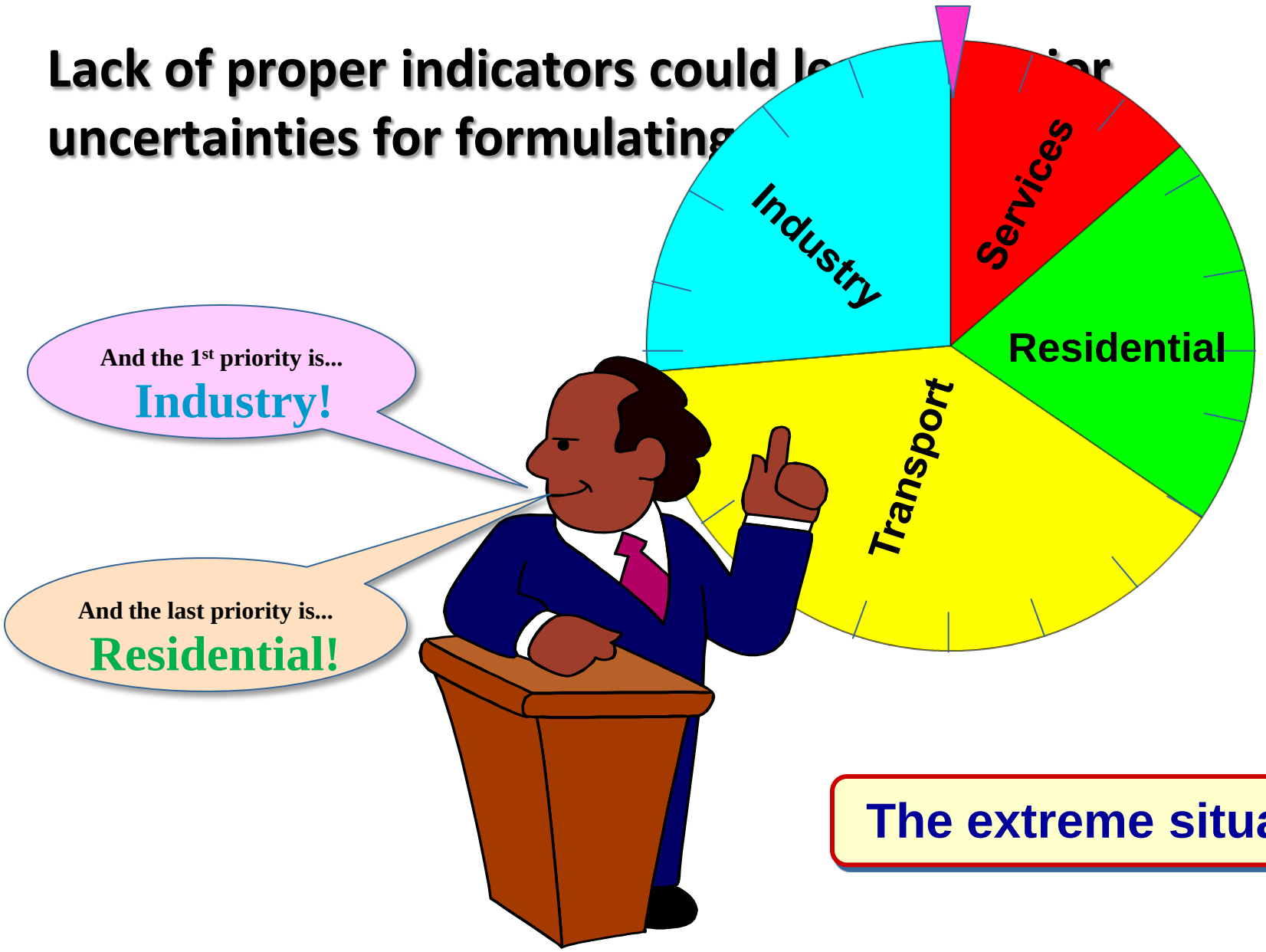


Example of Canada's Residential Sector

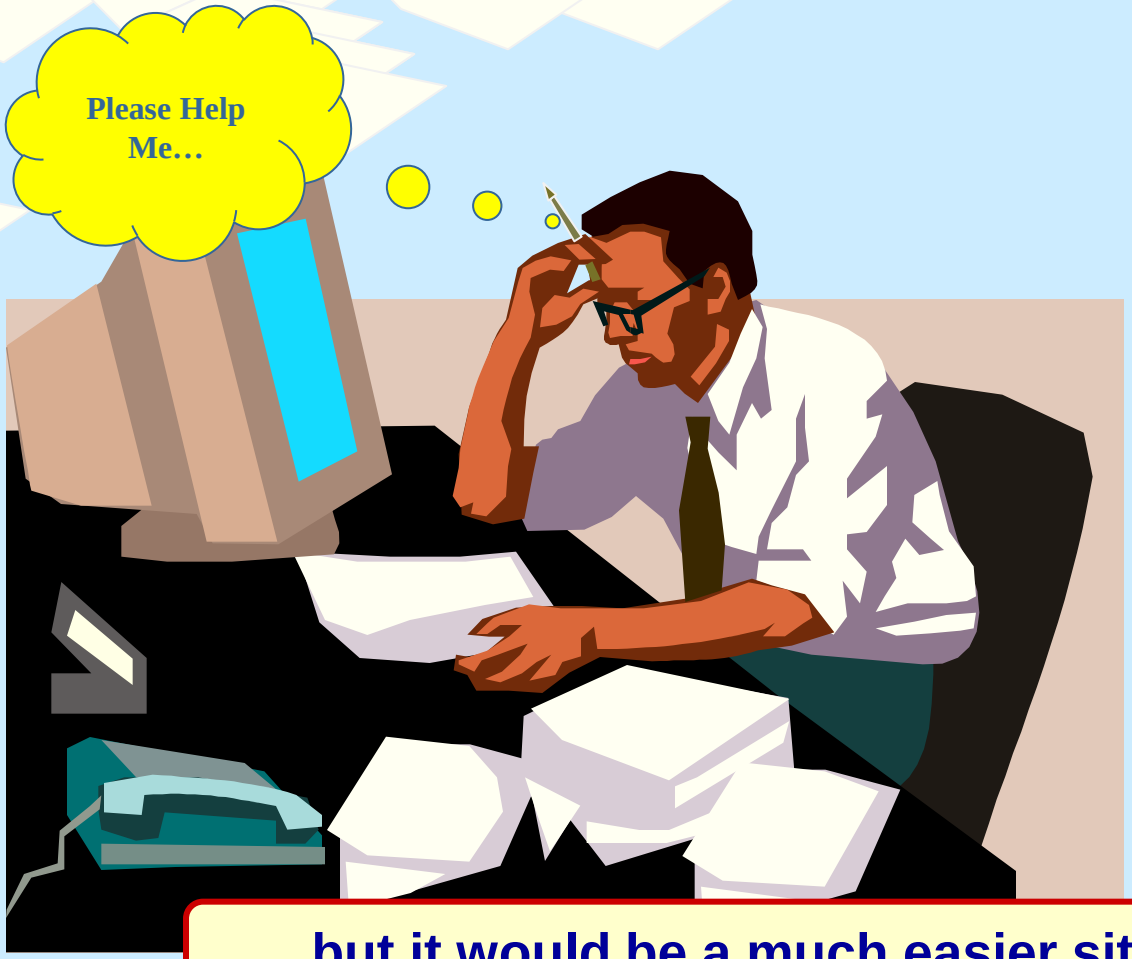
International Energy Agency

Lack of proper indicators could le ier uncertainties for formulating



The extreme situation

The other extreme would be to have too much data…



… but it would be a much easier situation!

But what is necessary?

Modelling

Census

Data quality / timeliness

Appliances

Energy data

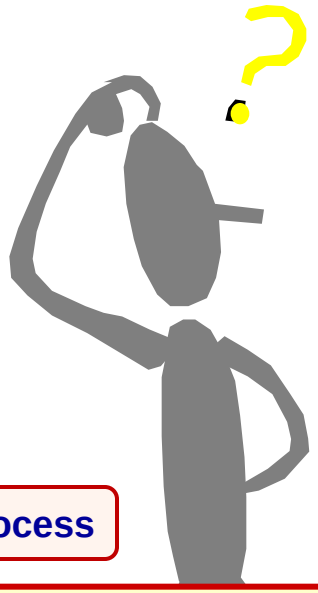
Residential

Industry

End uses

Process

ISIC: 2, 3, or 4 digits



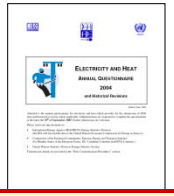
Priorities depend on many elements: climate (heating vs. cooling), structure of the economy (industry vs. services) size of the country (transport, domestic aviation), energy mix (biomass), electrification rate, GDP/capita, …

blic

Surveys

Transport

Frequency



Energy Balance

Thousand tonnes of oil equivalent / *Milliers de tonnes d'équivalent pétrole*

SUPPLY AND CONSUMPTION / *APPROVISIONNEMENT ET DEMANDE*	Coal / *Charbon*	Crude Oil / *Pétrole brut*	Petroleum Products / *Produits pétroliers*	Gas / *Gaz*	Nuclear / *Nucléaire*	Hydro / *Hydro*	Geotherm. Solar etc. / *Géotherm. solaire*	Combust. Renew. & Waste / *Comb. ren. & déchets*	Electricity / *Electricité*	Heat / *C*	Total
Production	1145355	181427	-	42621	13835	34143	-	223561	-		
Imports	14893	126817	41493	-	-	-	-	-	431		
Exports	-55279	-8067	-16722	-2484	-	-	-	-	-963		
Intl. Marine Bunkers	-	-	-7642	-	-	-	-	-	-		
Stock Changes	-17345	788	288	-	-	-	-	-	-		
TPES	**1087624**	**300965**	**17417**	**40137**	**13835**	**34143**	**-**	**223561**	**-532**		
Transfers	-	-74	88	-	-	-	-	-	-		
l Differences	7118	-1328	917	-1137	-	-	-	-	-		
Plants	-527596	-213	-15059	-2637	-13835	-34143	-	-861	214780		
	-	-	-	-	-	-	-	-	-		
	-71089	-3	-2672	-1938	-	-	-	-503	-		
	-6640	-	-144	4841	-	-	-	-	-		
efineries	-	-290405	283439	-	-	-	-	-	-		
rmation	-69485	-	-	-	-	-	-	-	-		
Plants	-	-	-	-	-	-	-	-	-		
ormation	-	-	-	-	-	-	-	-	-		
	-46624	-5037	-17434	-6549	-	-	-	-	-28398		
osses	-	-	-20	-864	-	-	-	-	-14494		
	373308	**3905**	**266532**	**31852**	**-**	**-**	**-**	**222197**	**171355**		
ECTOR	**279763**	**2509**	**35753**	**12366**	**-**	**-**	**-**	**-**	**116217**		
l	102809	-	3011	894	-	-	-	-	21882		
l Petrochemical	28095	-	5380	5589	-	-	-	-	21588		
Metals	8147							-	12639		
Minerals	85282							-	12179		
uipment	3226							-	2580		
	9117							-	13801		
uarrying	3628							-	4337		
bacco	11818							-	4123		
and Printing	8551							-	4019		
nd Wood Products	1870							-	1114		
Construction	3200							-	2012		
Textile and Leather	9378							-	8288		
Non-specified	4642							-	7656		
TRANSPORT SECTOR	**4080**							-	**1737**		
International Aviation	-							-	-		
Domestic Aviation	-							-	-	-	7566
Road	-							-	-	-	75740
Rail	4079	-	9129	-	-	-	-	-	1737	-	14944
Pipeline Transport	-	-	4627	9	-	-	-	-	-	-	4636
Domestic Navigation	1	-	9247	-	-	-	-	-	-	-	9248
Non-specified	1	-	-	-	-	-	-	-	-	-	1

No breakdown by end use:
- heating
- DHW
- lighting
- cooking
- air conditioning
- appliances

No breakdown by end use and by function of buildings (hospitals, schools, hotels, offices, restaurants, etc.)

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

OTHER SECTORS	**67380**	**238**	**61076**	**12071**	**-**	**-**	**-**	**222197**	**53401**	**14230**	**188090**
Residential	**46162**	**-**	**17598**	**8895**	**-**	**-**	**-**	**222197**	**24293**	**12356**	**156840**
Comm. & Pub. Services	**5190**	**-**	**22302**	**3177**	**-**	**-**	**-**	**-**	**10040**	**867**	**11931**
Agriculture/Forestry	**12155**	**-**	**21175**	**-**	**-**	**-**	**-**	**-**	**7536**	**18**	**14286**
Fishing	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Non-specified	**3872**	**238**	**-**	**-**	**-**	**-**	**-**	**-**	**11532**	**988**	**5033**

What indicators can be built from the annual questionnaires

Figure 1. TPES* in 1973

Figure 4. Breakdown of Sectorial Final Consumption by Source in 1973 and 2004

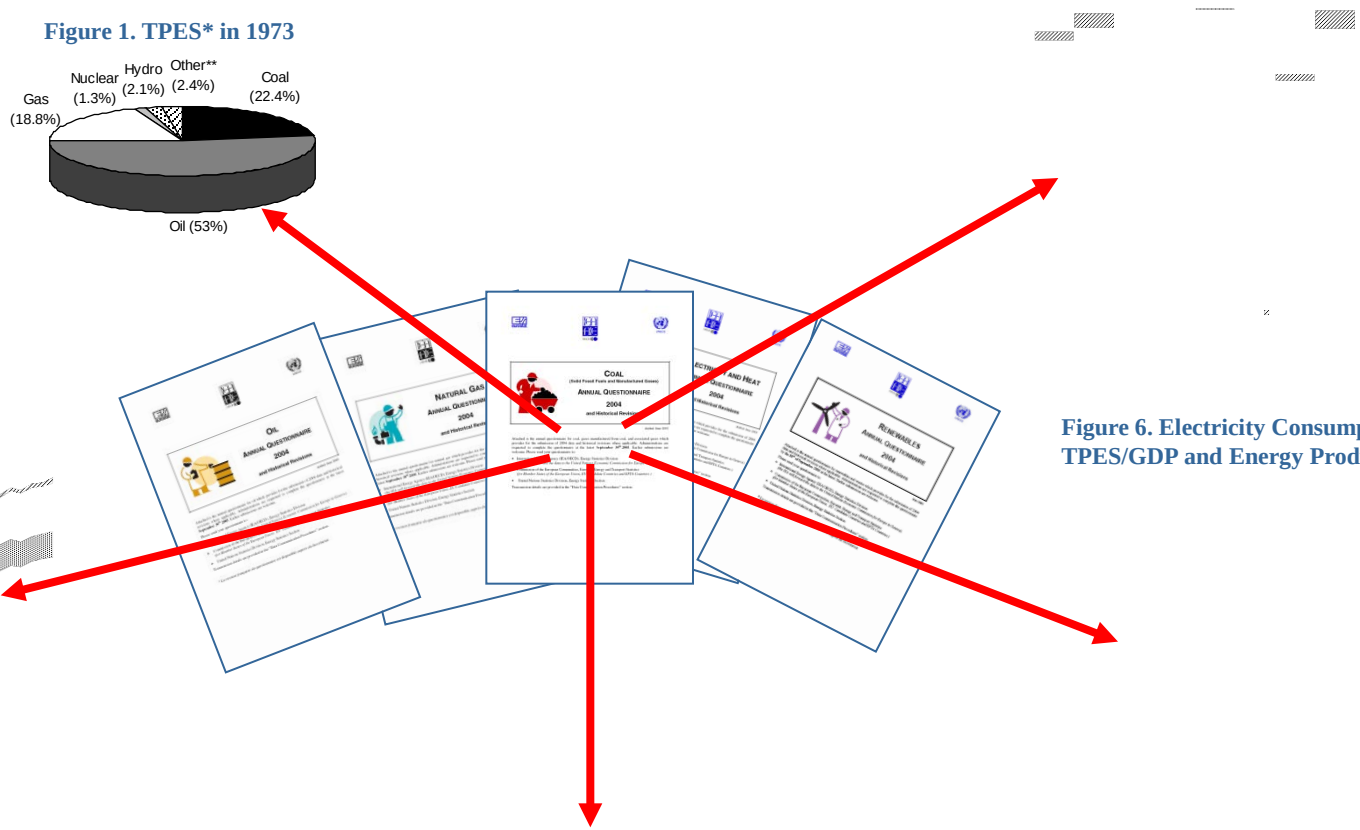
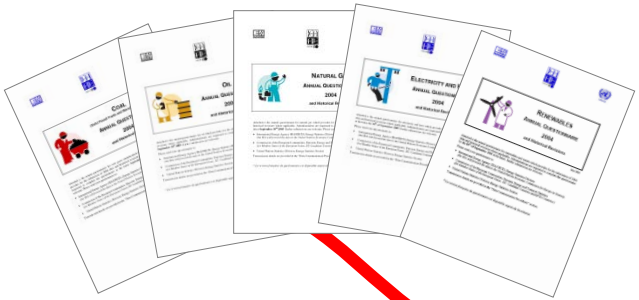


Figure 5. Electricity Generation by Fuel

Figure 6. Electricity Consumption/GDP, TPES/GDP and Energy Production/TPES

Energy Production/TPES	0.7265	0.7190	0.7297	0.7195	0.7050	0.7007
Net Oil Imports/GDP (toe per thousand 2000 US$)	0.0481	0.0474	0.0476	0.0461	0.0474	0.0478
TPES/GDP (toe per thousand 2000 US$)	0.2108	0.2074	0.2043	0.2033	0.2014	0.1989
TPES/GDP (toe per thousand 2000 US$ PPP)	0.1993	0.1956	0.1926	0.1912	0.1893	0.1868
TPES/Population (toe per capita)	4.6513	4.7071	4.6524	4.6582	4.6706	4.7322
Oil Supply/GDP (toe per thousand 2000 US$)	0.0874	0.0844	0.0838	0.0826	0.0822	0.0809
Oil Supply/Population (toe per capita)	1.9284	1.9157	1.9091	1.8925	1.9073	1.9259
Elect. Cons./GDP (kWh per 2000 US$)	0.3525	0.3525	0.3463	0.3488	0.3482	0.3447
Elect. Cons./Population (kWh per capita)	7 777	8 001	7 888	7 992	8 076	8 204
Industry Cons.**/Industrial Production (2000=100)	101.50	100.00	99.44	100.25	98.49	97.59
Industry Oil Cons.**/Industrial Production (2000=100)	105.30	100.00	103.41	103.66	103.19	103.74

What data for what indicators



Aggregated Indicators

TPES/GDP

TPES/Production

Electricity Cons./Population

CO2/GDP PPP

Efficiency Elec. Prod.

Disaggregated Indicators

Cons./ton cement

Heating Cons./sqm/DD

Litre/100km (stock)

Process Efficiency

Dry process

Condensing boiler

Litre/100km (vintage)

The focus will be mainly limited to the data needed to build the disaggregated indicators

No answer to the following questions from the annual questionnaires

- How much energy is consumed to produce a ton of cement, steel, etc?
- How much energy is used for heating/cooling a square metre of floor in residential?
- What is the average consumption of gasoline per passenger-km in a car?
- What is the consumption of electricity in street lighting?

The lack of detailed data on energy consumption was one of the starting points for the indicators programme

International Energy Agency

Excel

Energy Efficiency Indicators Template

COUNTRY DATA SECTION (to be reviewed and updated)		web links
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 co	
DATA COVERAGE	Generates a grap	
SINGLE INDICATOR GRAPHS	To generate a grap	
MULTIPLE INDICATORS GRAPHS	To generate a graph comparing trends from multiple indicators	>>
CONSISTENCY CHECKS	To run the integrated consistency checks	>>

Menu driven

If you have any questions or need assistance with this questionnair
visit the dedicated website http://indicators.iea.org
username: indicators
password: efficiency
or write to energyindicators@iea.org

Click on the START button to begin w

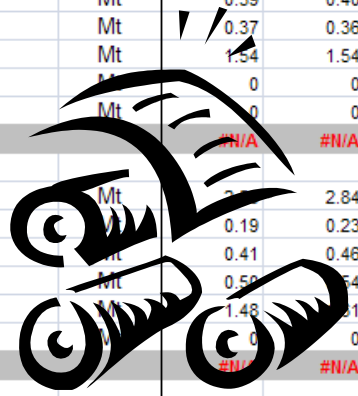
START

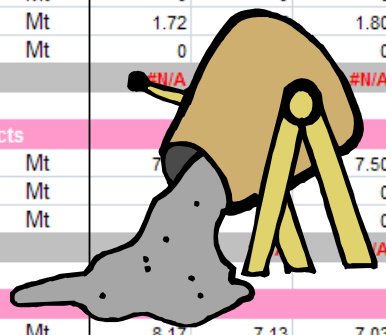
MAIN MENU | MACRO ECONOMIC DATA | COMMODITIES | INDUSTRY | SERVICES | RESIDENTIAL | TRANSPORT | ELECTRICITY GENERATION | BASIC INDICATORS

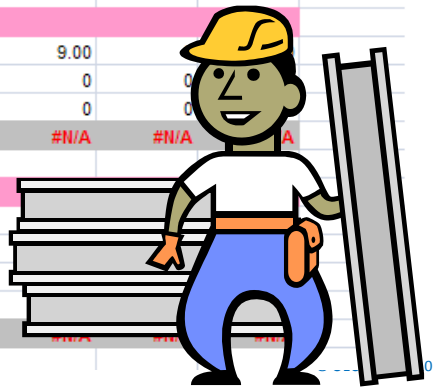
PRODUCTION OF COMMODITIES

COMMODITIES

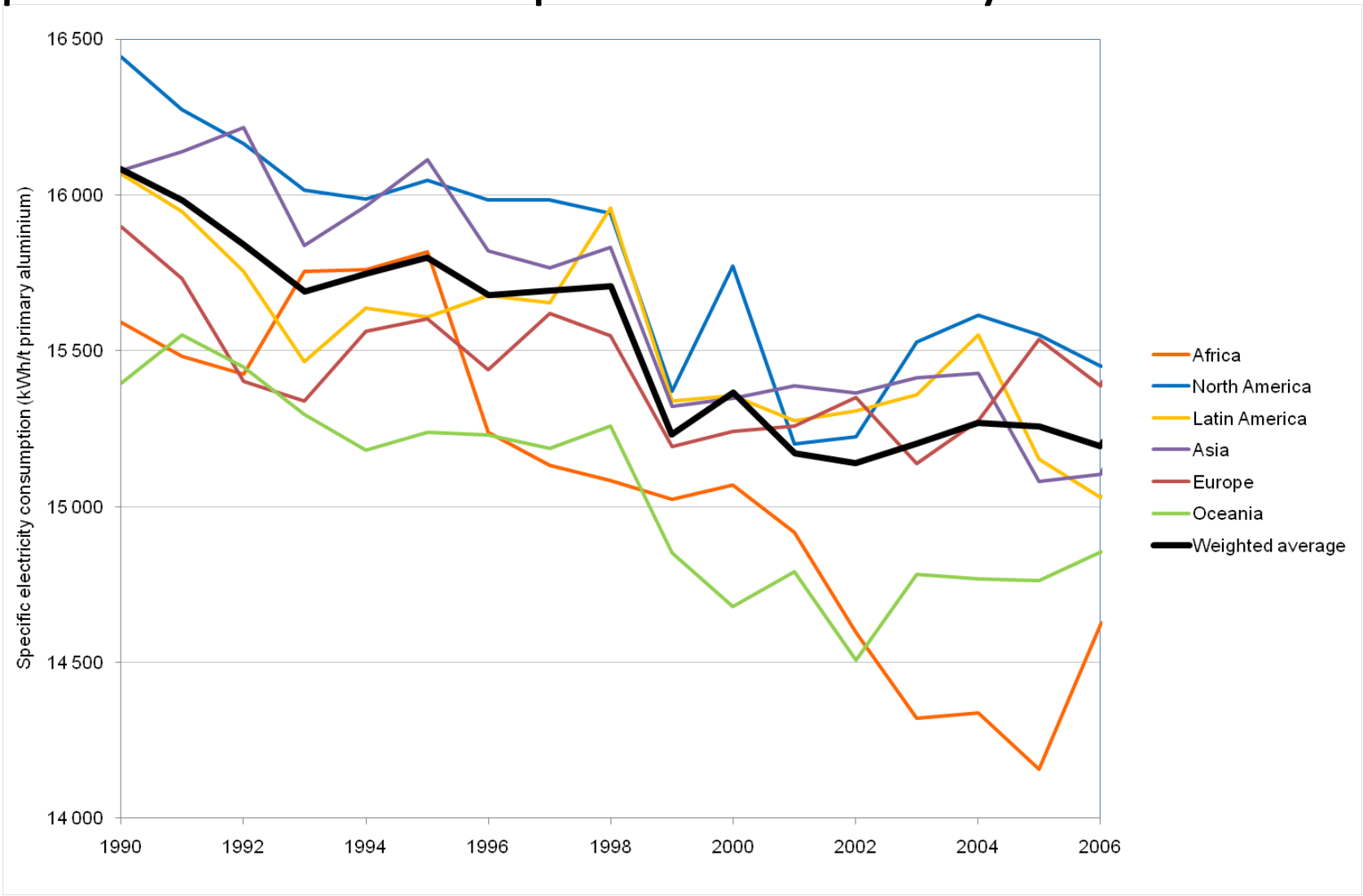
	A			N	O	P	Q	R	S	T	U	V	W
1				1999	2000	2001	2002	2003	2004	2005	2006	2007	
2	Menu	Legend	Ch										
3		Production of commodities b	vision										
4	21	21: Manufacture of paper and paper products											
5	☑	Pulp	Mt	0.88	1.03	1.21	1.39	1.17	1.11	1.16	1.15	0	
6	☑	Chemical pulp	Mt	0.39	0.40	0.41	0.61	0.63	0.64	0.67	0.69	0	
7	☑	Mechanical pulp	Mt	0.37	0.36	0.54	0.54	0.45	0.38	0.39	0.37	0	
8	☑	Recovered Paper	Mt	1.54	1.54	1.63	1.63	1.92	2.18	2.41	3.02	0	
9	☑	Inked	M	0	0	0	0	0	0	0	0	0	
10	☑	De-inked	Mt	0	0	0	0	0	0	0	0	0	
11		structural impact - index		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	
12													
13	☑	Paper and paperboard	Mt		2.84	2.67	2.65	3.09	3.10	3.24	3.89	0	
14	☑	Household + Sanitary Paper	M	0.19	0.23	0.20					0.22	0	
15	☑	Newsprint	M	0.41	0.46	0.47					0.42	0	
16	☑	Printing + Writing Paper	Mt	0.59	0.54	0.55					0.66	0	
17	☑	Wrapping + Packaging Paper + Paperboard	M	1.48	1.61	1.43					2.59	0	
18	☑	Other	M	0	0	0.02					0.01	0	
19		structural impact - index		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	
20													
21	24	24: Manufacture of chemicals and chemical products											
22	☑	Ethylene	Mt	48.42	53.80	53.80					62.31	0	
23	☑	Propylene	Mt	14.53	15.68	16.31					18.31	0	
24	☑	BTX	Mt	0	0	0					0	0	
25	☑	Ammonia (NH3)	Mt	1.72		1.80					1.93	0	
26	☑	Butadiene	Mt	0		0					0	0	
27		structural impact - index		#N/A		#N/A					#N/A	#N/A	
28													
29	26	26: Manufacture of other non-metallic mineral products											
30	☑	Cement	Mt	7		7.50	7.55	8.00	8.00	9.00			
31	☑	Clinker	Mt			0	0	0	0	0	0		
32	☑	Cement production	Mt			0	0	0	0	0	0		
33		structural impact - index					#N/A	#N/A	#N/A	#N/A	#N/A		
34													
35	27	27: Manufacture of basic metals											
36	☑	Crude Steel	Mt	8.17	7.13	7.03	7.53	7.54	7.41				
37	☑	Basic Oxygen Furnace production	Mt	0	0	0	0	0	0				
38	☑	Electric Arc Furnace production	Mt	0	0	0	0	0	0				
39	☑	Direct Reduced Iron	Mt	0	0	0	0	0	0				
40		structural impact - index		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A				
41													



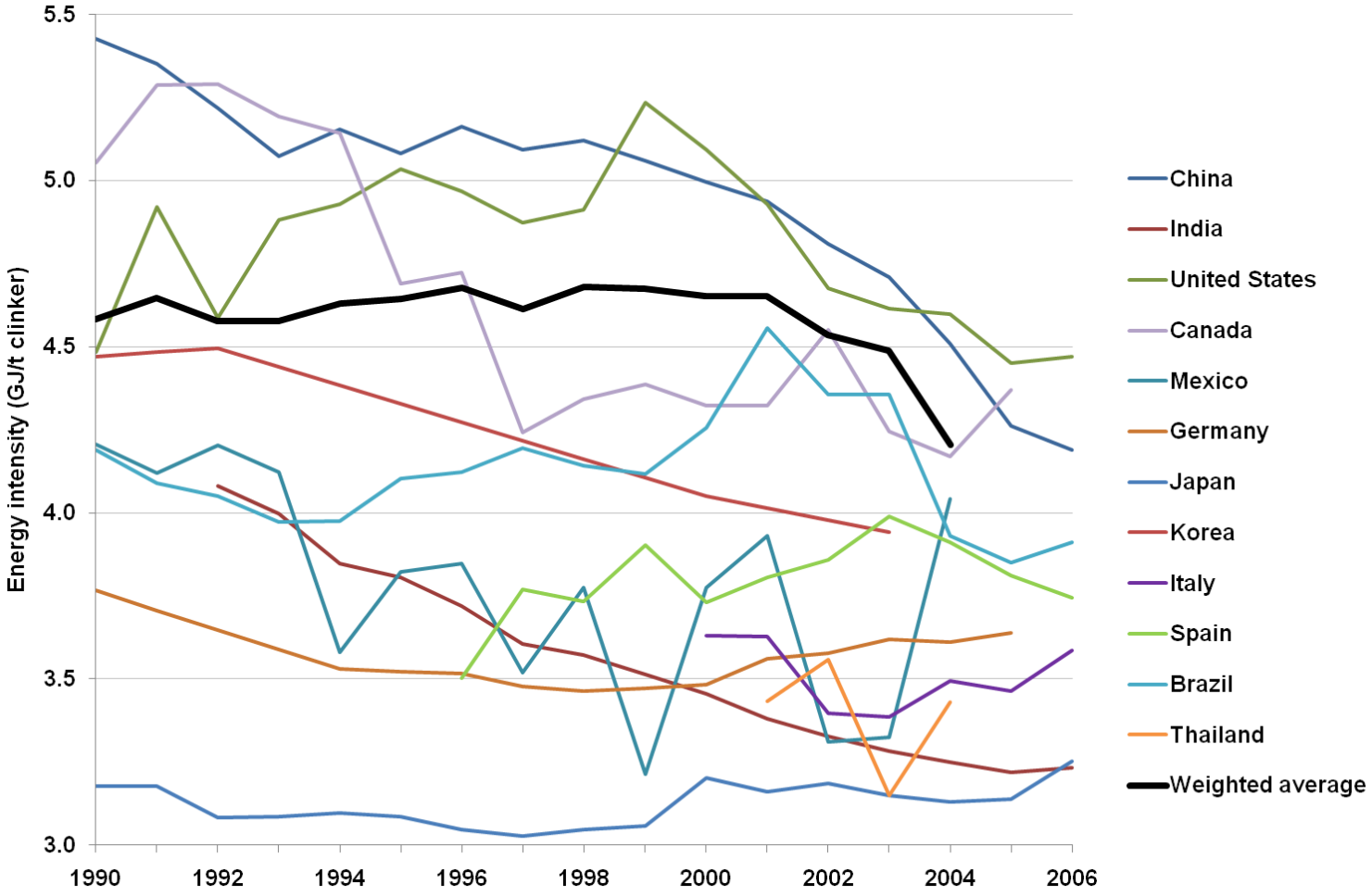




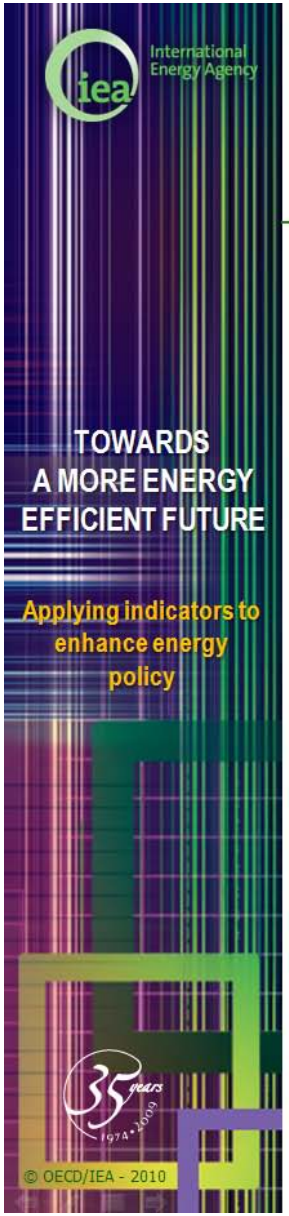
Regional Specific Power Consumption in Aluminium Smelting
Reported Electrical Power Used per Metric Ton of Primary Aluminium Produced



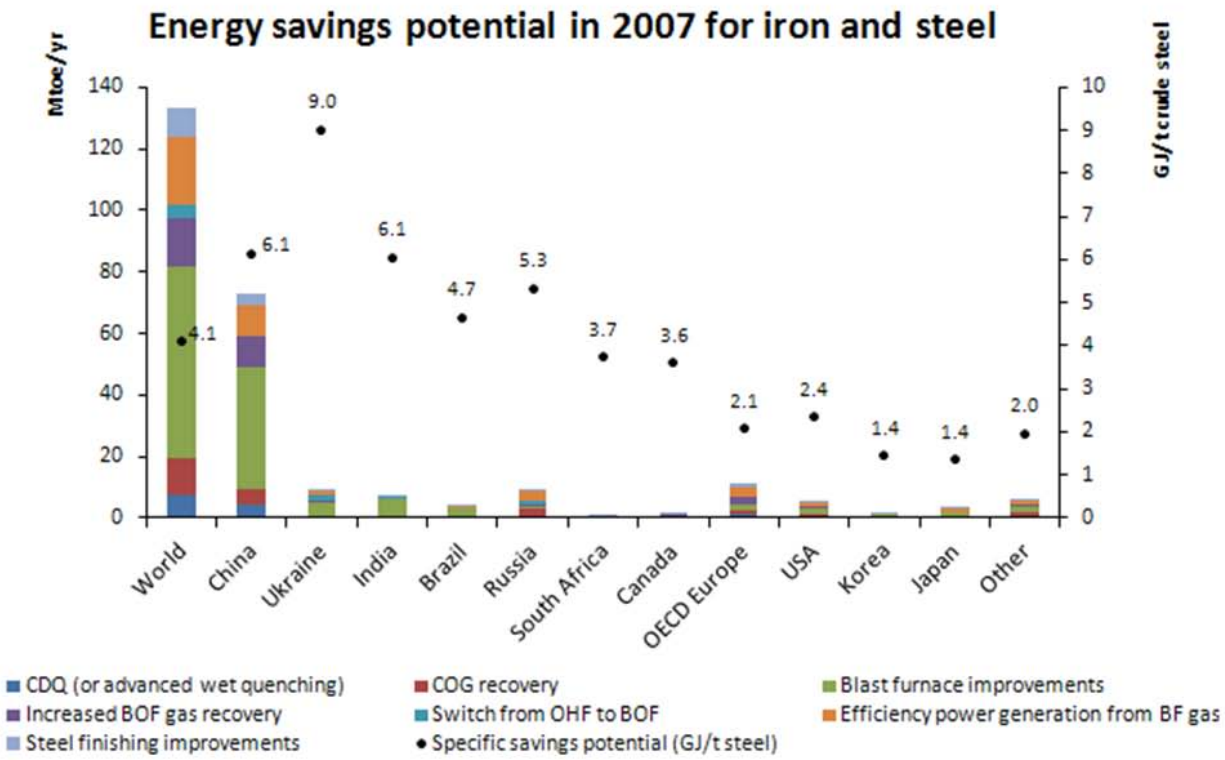
Thermal Energy Requirement per tonne of Clinker by Country including Alternate Fuels



Data can be used to estimate potential savings



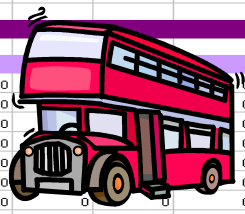
Potential for reducing energy consumption

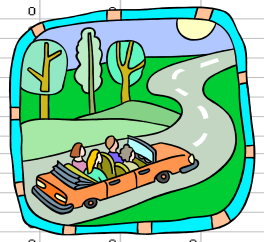


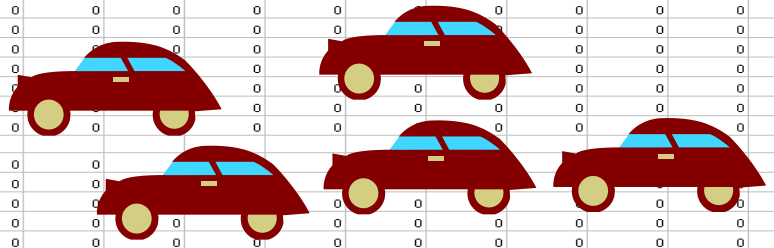
Despite the significant reduction in energy intensity in recent years, there is still large energy savings potentials in manufacturing sectors

TRANSPORT

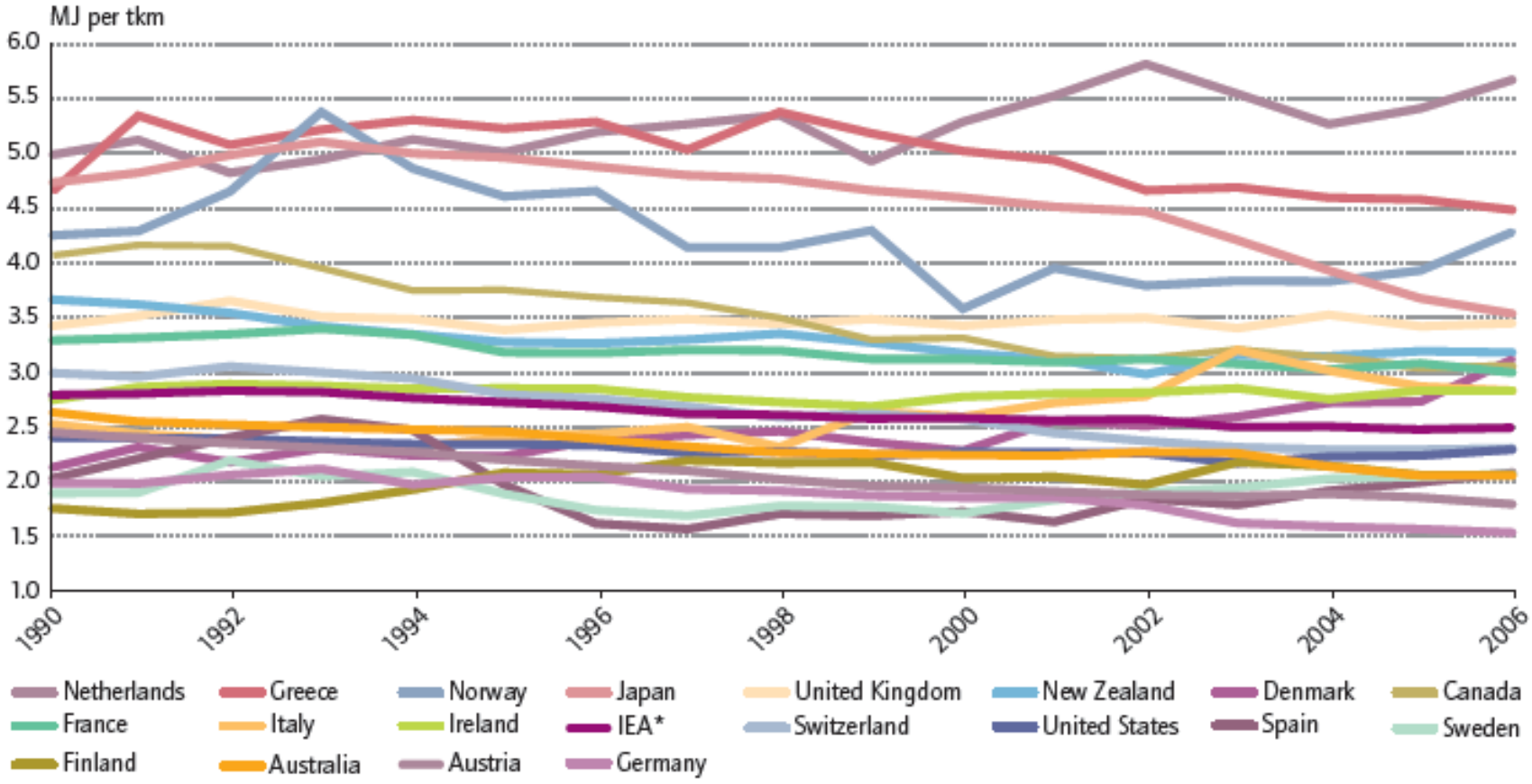
	units	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Passenger transport [passenger-kilometres]																		
Cars, SUV and personal light trucks	10^9 pass-km	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- gasoline (spark ignition) engine	10^9 pass-km	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- diesel (compression ignition) engine	10^9 pass-km	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motorcycles (2 wheelers) & 3 wheelers	10^9 pass-km	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	10^9 pass-km	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Trains	10^9 pass-km	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic passenger airplanes	10^9 pass-km	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic passenger ships	10^9 pass-km	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Freight transport [tonne-kilometres]																		
Freight & Commercial road transport	10^9 tonne-km	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- gasoline (spark ignition) engine	10^9 tonne-km	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- diesel (compression ignition) engine	10^9 tonne-km	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Freight trains	10^9 tonne-km	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic freight airplanes	10^9 tonne-km	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic freight ships	10^9 tonne-km	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Freight transport [tonnes]																		
Freight & Commercial road transport	10 tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- gasoline (spark ignition) engine	10 tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- diesel (compression ignition) engine	10 tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Freight trains	10 tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic freight airplanes	10 tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic freight ships	10 tonnes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle kilometres																		
Cars, SUV and personal light trucks	10^9 vkm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- gasoline (spark ignition) engine	10^9 vkm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- diesel (compression ignition) engine	10^9 vkm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motorcycles (2 wheelers) & 3 wheelers	10^9 vkm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	10^9 vkm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Trains	10^9 vkm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic passenger airplanes	10^9 vkm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic passenger ships	10^9 vkm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Freight & Commercial road transport	10^9 vkm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- gasoline (spark ignition) engine	10^9 vkm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- diesel (compression ignition) engine	10^9 vkm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Freight trains	10^9 vkm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic freight airplanes	10^9 vkm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic freight ships	10^9 vkm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle stocks (number of vehicles in use)																		
Cars, SUV and personal light trucks	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- gasoline (spark ignition) engine	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- diesel (compression ignition) engine	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motorcycles (2 wheelers) & 3 wheelers	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passenger Trains	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic passenger airplanes	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic passenger ships	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Freight & Commercial road transport	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- gasoline (spark ignition) engine	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- diesel (compression ignition) engine	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Freight trains	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic freight airplanes	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Domestic freight ships	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0





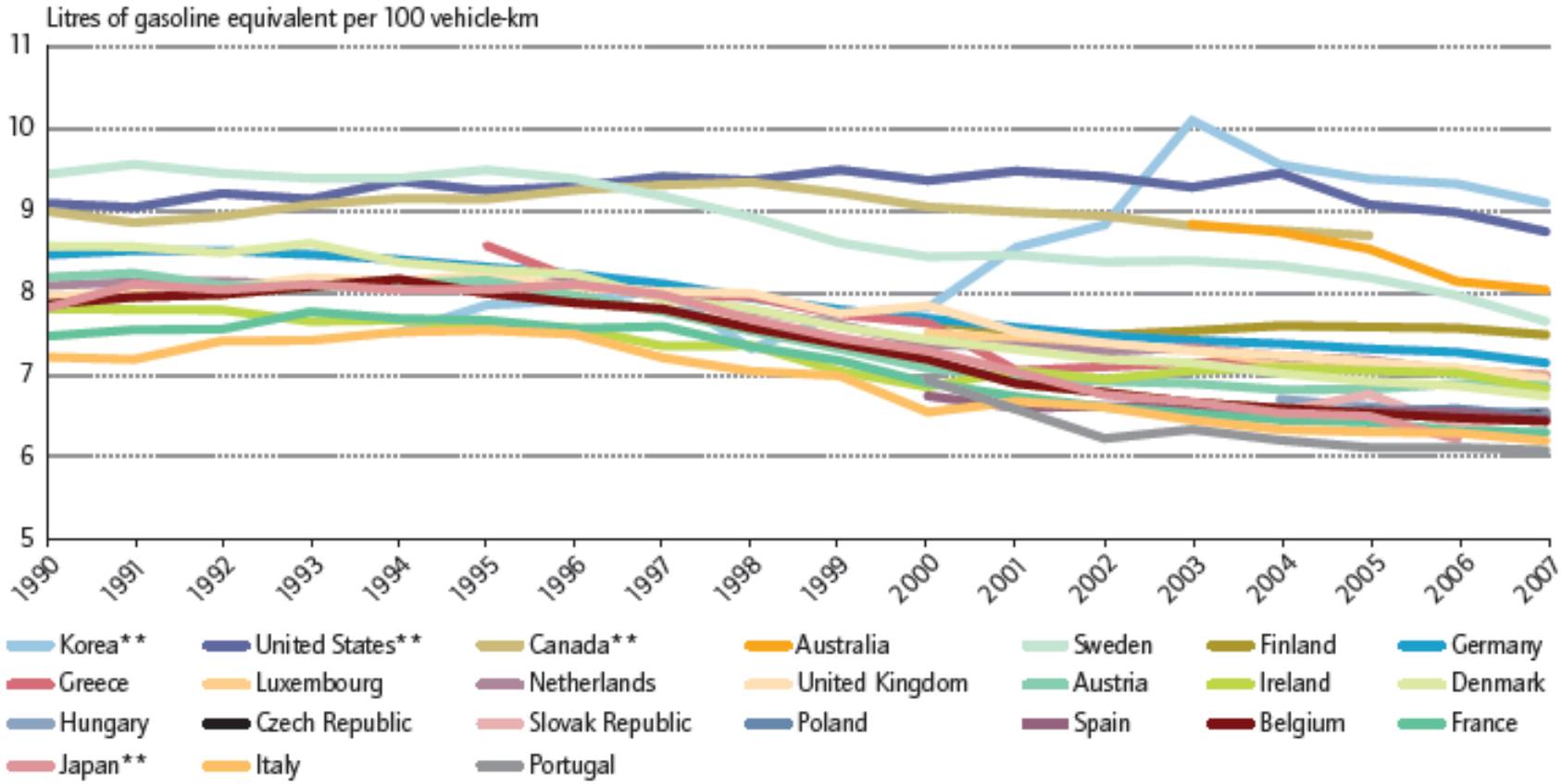


Truck Freight Energy Intensity



** IEA average is limited to countries shown in graph.*

Trends in new car fuel intensity



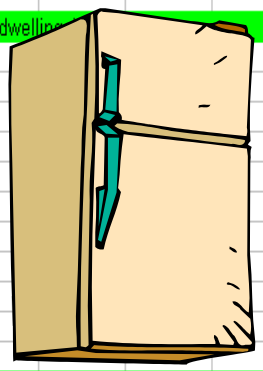
** IEA average is limited to countries shown in graph.*

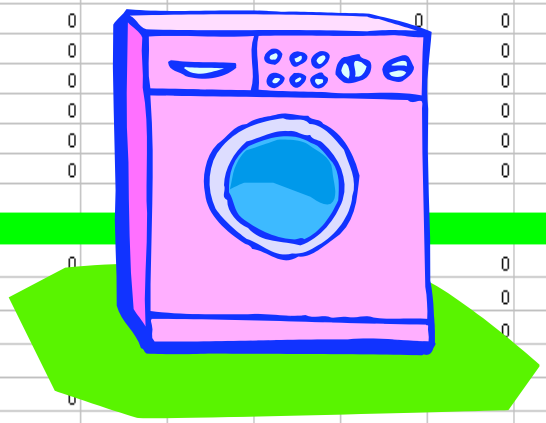
*** Data for Canada, Japan, Korea and the United States are not directly comparable with the other countries.*

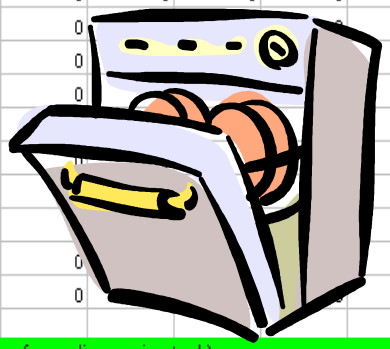
Diffusion, stocks and average consumption of selected appliances

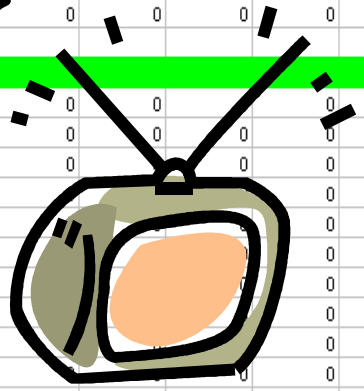
RESIDENTIAL

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Appliances Diffusion (as a percentage of occupied dwellings)																		
Refrigerators	%				0	0	0	0	0	0	0	0	0	0	0	0	0	0
Freezers	%				0	0	0	0	0	0	0	0	0	0	0	0	0	0
Refrigerator/Freezer Combinations	%				0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dish Washers	%				0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clothes Washers	%				0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clothes Dryers	%				0	0	0	0	0	0	0	0	0	0	0	0	0	0
Room Air Conditioners	%				0	0	0	0	0	0	0	0	0	0	0	0	0	0
Central Air Conditioners	%				0	0	0	0	0	0	0	0	0	0	0	0	0	0
Television	%				0	0	0	0	0	0	0	0	0	0	0	0	0	0
PC	%				0	0	0	0	0	0	0	0	0	0	0	0	0	0
Appliances Stock (only within occupied dwellings)																		
Refrigerators	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Freezers	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Refrigerator/Freezer Combinations	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dish Washers	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clothes Washers	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clothes Dryers	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Room Air Conditioners	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Central Air Conditioners	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Television	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PC	10^6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Appliances, unit energy consumption per year (average for appliances in stock)																		
Refrigerators	kWh/unit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Freezers	kWh/unit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Refrigerator/Freezer Combinations	kWh/unit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dish Washers	kWh/unit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clothes Washers	kWh/unit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clothes Dryers	kWh/unit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Room Air Conditioners	kWh/unit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Central Air Conditioners	kWh/unit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Television	kWh/unit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PC	kWh/unit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy Use (total final energy use - net calorific values)																		

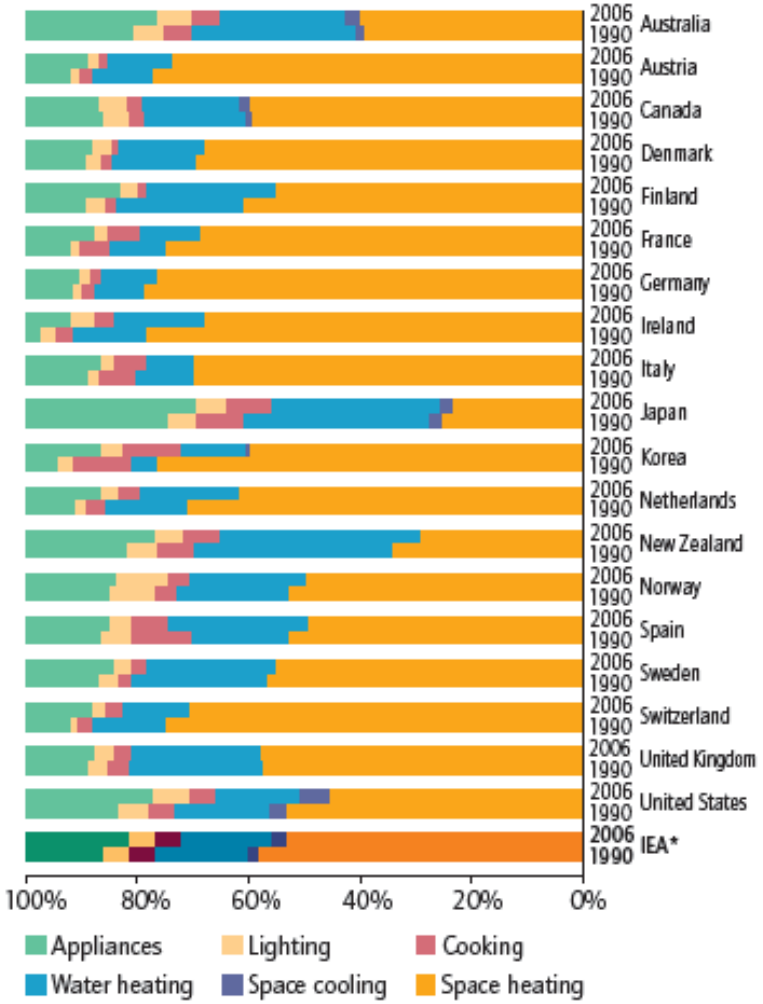




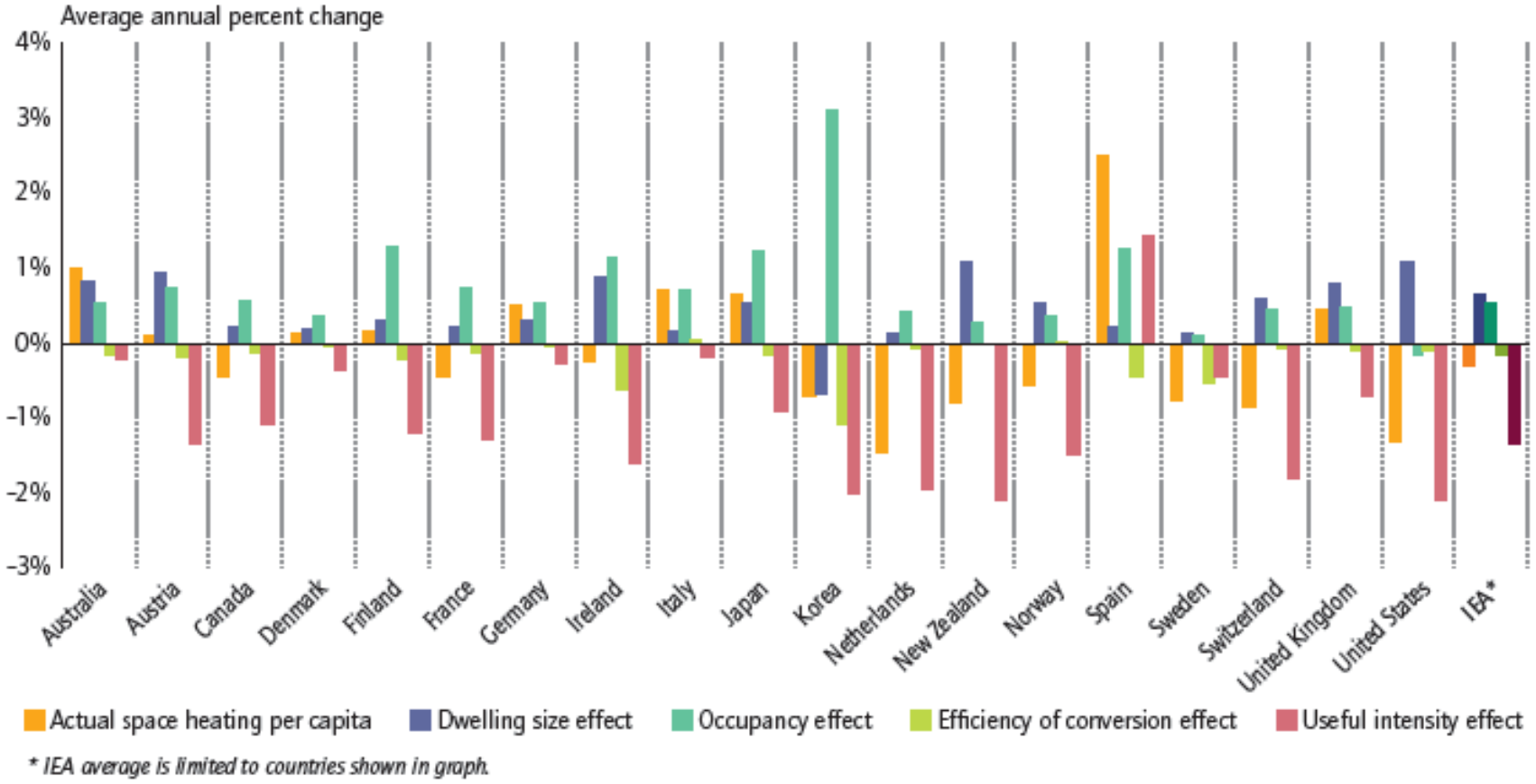




Household energy use by end use



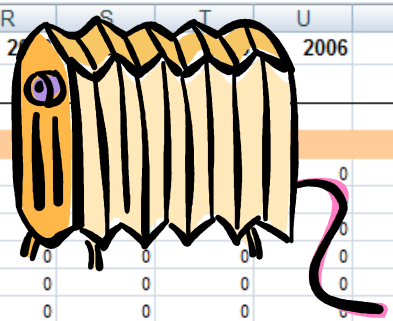
Decomposition of changes in space heating per capita, 1990-2006

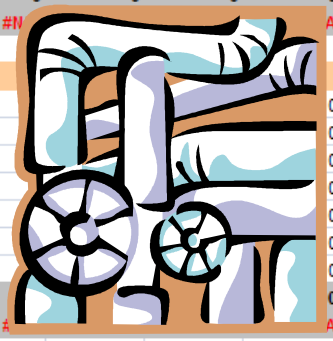


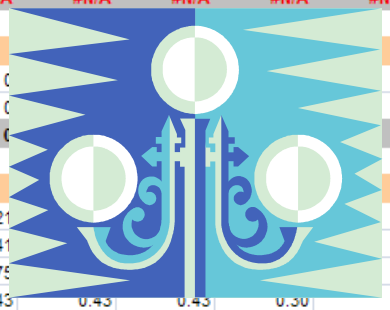
** IEA average is limited to countries shown in graph.*

SERVICES

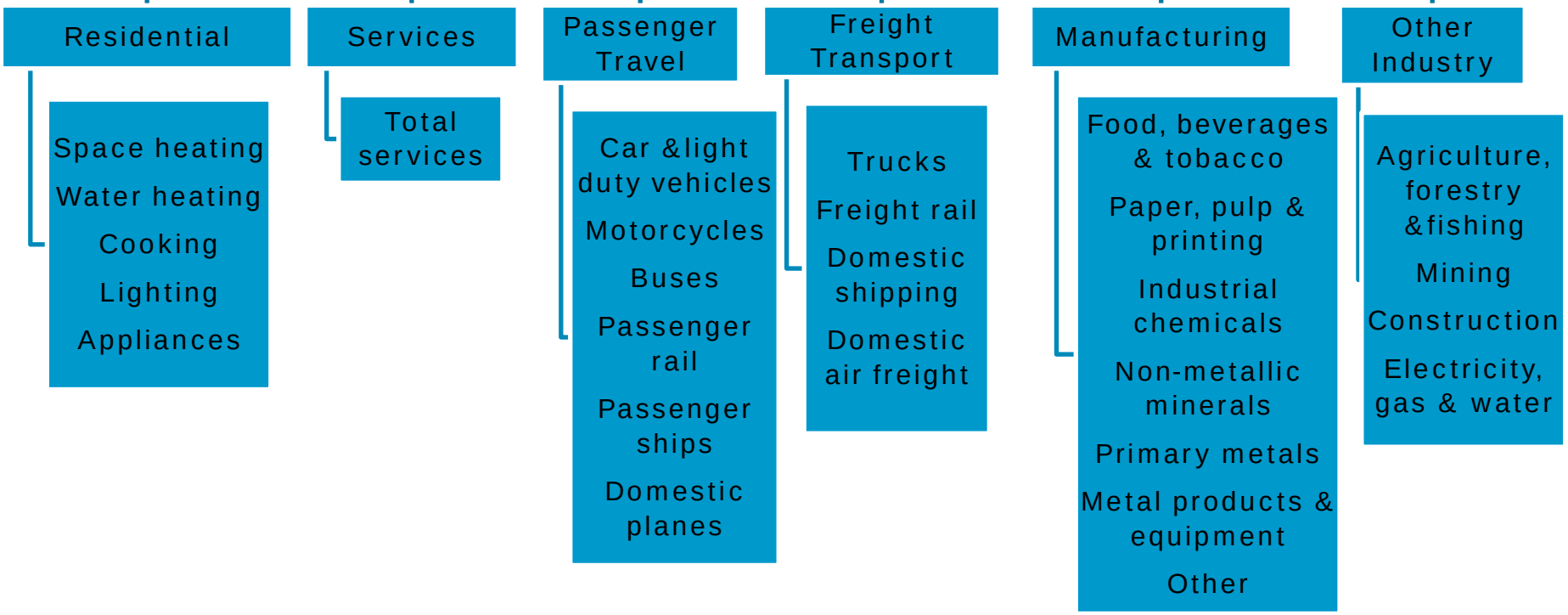
	A			N	O	P	Q	R	S	T	U	V	W
1				1999	2000	2001	2002	2			2006	2007	
2	Menu	Legend	Check all/none										
18													
19		**Space Heating**											
20		Oil & Petroleum Products	PJ	0	0	0	0				0	0	
21		Natural Gas	PJ	0	0	0	0					0	
22		Coal & Coal Products	PJ	0	0	0	0				0	0	
23		Combus. Renewables & Waste	PJ	0	0	0	0	0	0	0	0	0	
24		Heat	PJ	0	0	0	0	0	0	0	0	0	
25		Electricity	PJ	0	0	0	0	0	0	0		0	
26		Other	PJ	0	0	0	0	0	0	0	0	0	
27	☑	**Total**	**PJ**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
28		Total (climate corrected for 1990-2007)	PJ	#N			A	#N/A	#N/A	#N/A	#N/A	#N/A	
29													
30		**Space Cooling**											
31		Oil & Petroleum Products	PJ				0	0	0	0	0	0	
32		Natural Gas	PJ				0	0	0	0	0	0	
33		Coal & Coal Products	PJ				0	0	0	0	0	0	
34		Combus. Renewables & Waste	PJ				0	0	0	0	0	0	
35		Heat	PJ				0	0	0	0	0	0	
36		Electricity	PJ				0	0	0	0	0	0	
37		Other	PJ				0	0	0	0	0	0	
38	☑	**Total**	**PJ**				**0**	**0**	**0**	**0**	**0**	**0**	
39		Total (climate corrected for 1990-2007)	PJ				A	#N/A	#N/A	#N/A	#N/A	#N/A	
40													
41		**Lighting**											
42		Electricity	PJ	0	0	0	0	0				0	
43		Other	PJ	0	0	0	0	0				0	
44	☑	**Total**	**PJ**	**0**	**0**	**0**	**0**	**0**				**0**	
45													
46		**Other Building Energy Use in Services Sector**											
47		Oil & Petroleum Products	PJ	19.33	19.40	18.23	19.48	19.21				0	
48		Natural Gas	PJ	44.22	44.76	38.61	39.15	39.41				0	
49		Coal & Coal Products	PJ	1.92	2.85	3.82	3.70	3.75				0	
50		Combus. Renewables & Waste	PJ	0.42	0.42	0.42	0.42	0.43	0.43	0.43	0.30	0	
51		Heat	PJ	0	0	0	0	0	0	0	0	0	
52		Electricity	PJ	139.42	144.19	159.93	166.55	166.41	165.98	168.11	168.10	0	
53		Other	PJ	0	0	0	0	0	0	0	0	0	
54	☑	**Total**	**PJ**	**205.31**	**211.62**	**221.01**	**229.30**	**229.22**	**230.21**	**233.45**	**239.00**	**0**	
55													



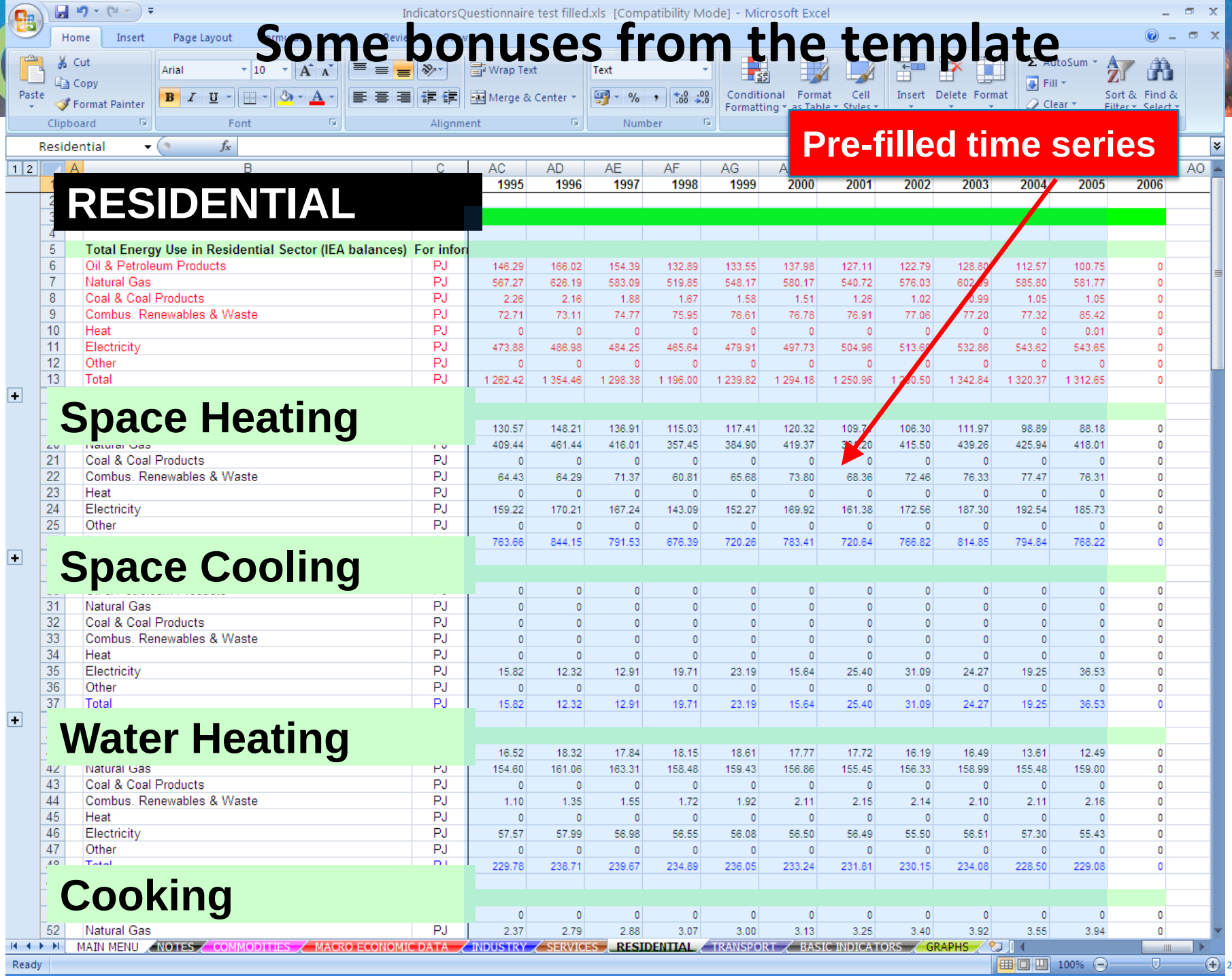




End-Use Coverage

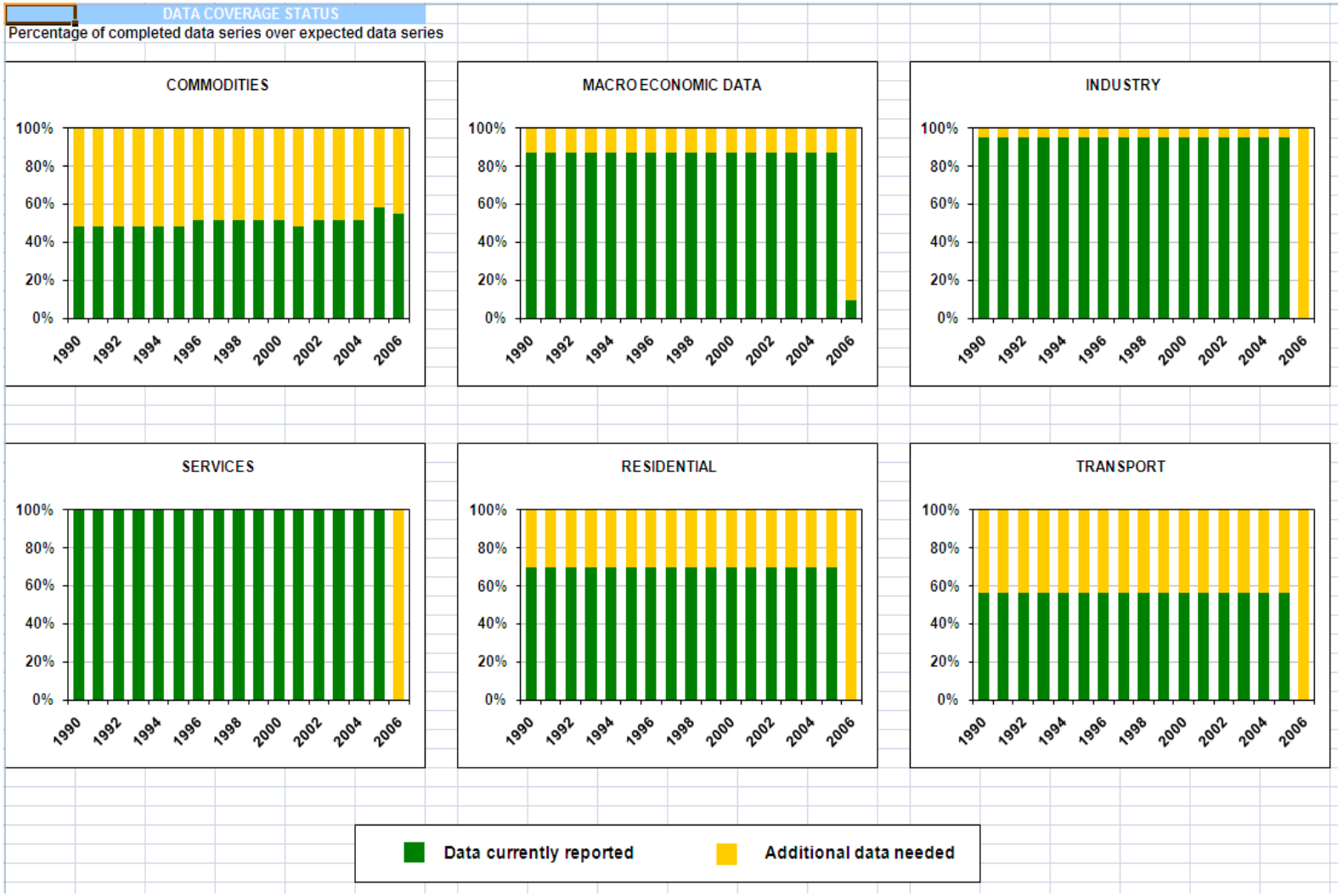


Some bonuses from the template

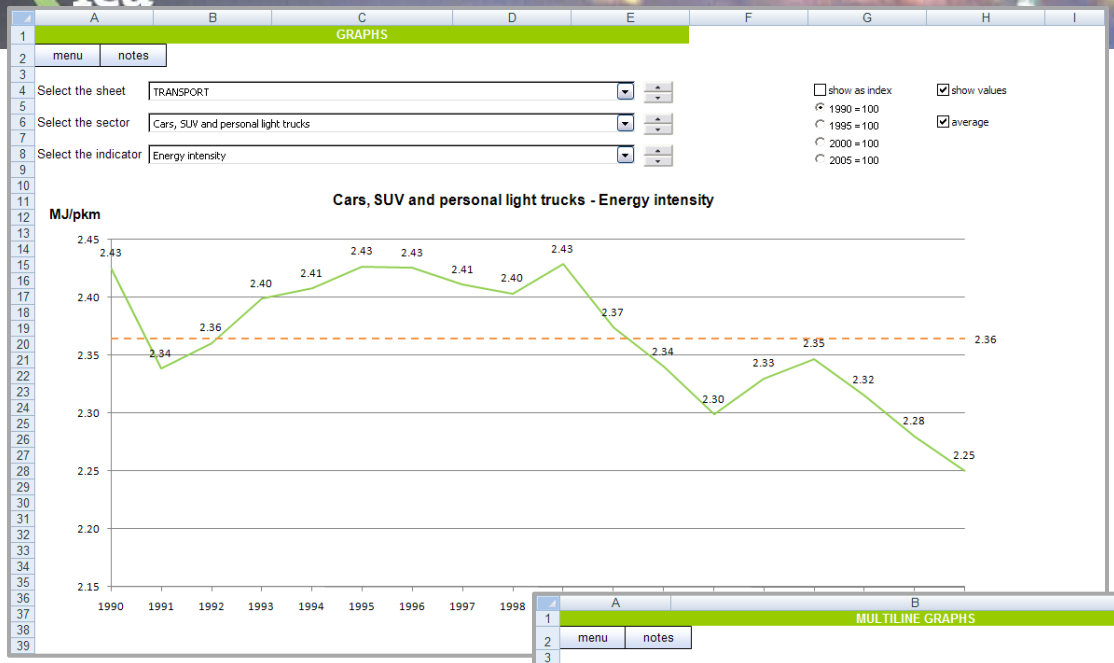


Some bonuses from the template

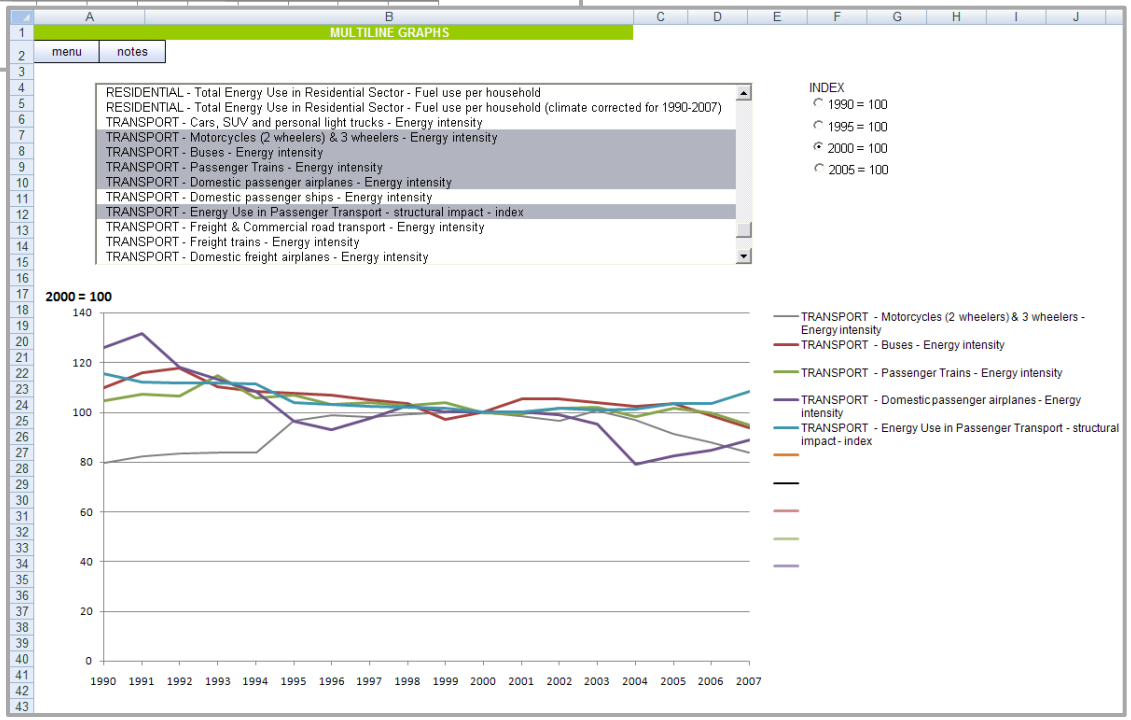
A report on the coverage status is automatically updated when new data are entered.



Some bonuses from the template

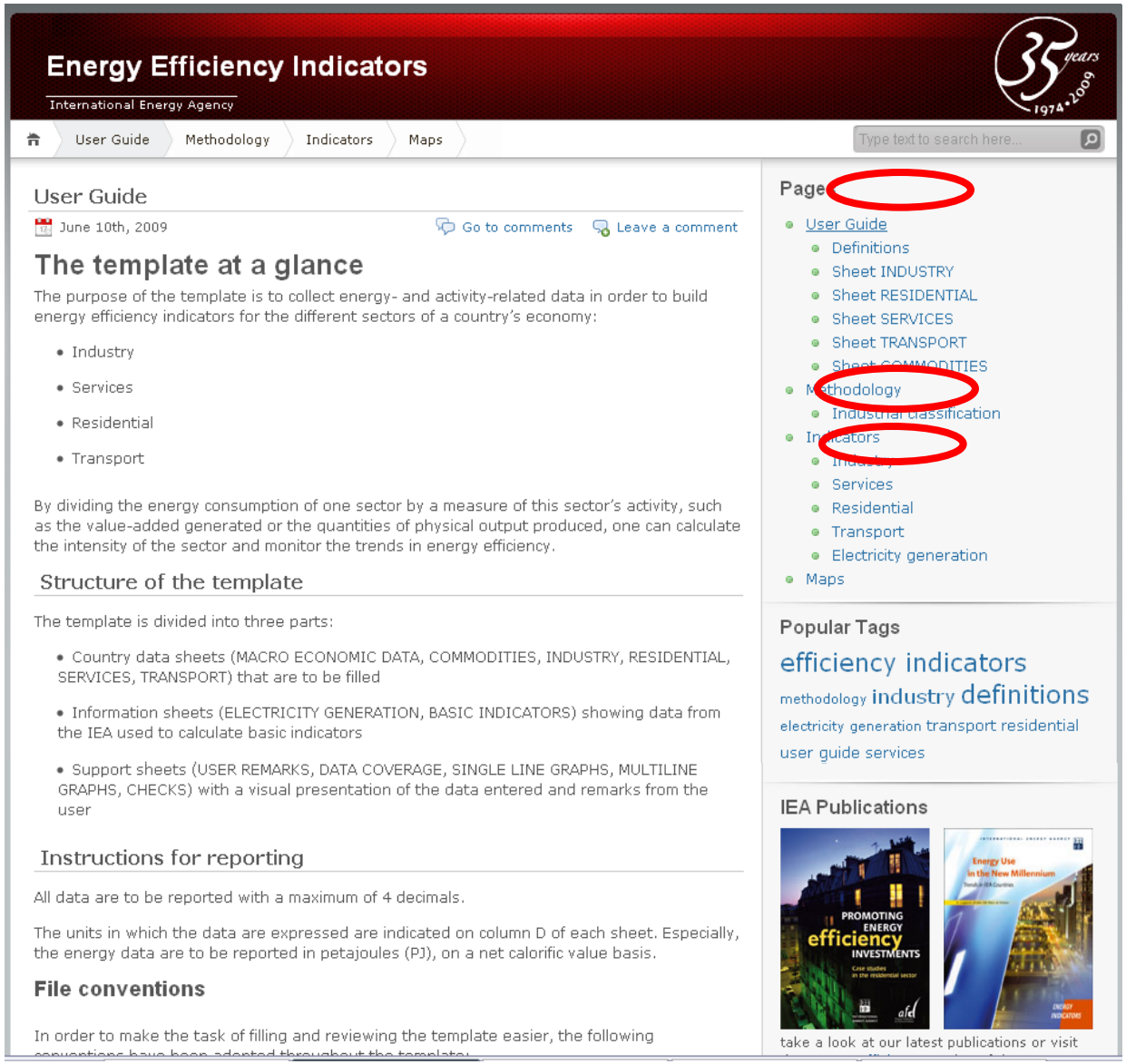


Various options offered for plotting indicators



Including possibility of comparing indicators

An electronic manual has been developed



Energy Efficiency Indicators

International Energy Agency

35 years 1974-2009

User Guide | Methodology | Indicators | Maps

Type text to search here...

User Guide

June 10th, 2009 — Go to comments — Leave a comment

The template at a glance

The purpose of the template is to collect energy- and activity-related data in order to build energy efficiency indicators for the different sectors of a country's economy:

- Industry
- Services
- Residential
- Transport

By dividing the energy consumption of one sector by a measure of this sector's activity, such as the value-added generated or the quantities of physical output produced, one can calculate the intensity of the sector and monitor the trends in energy efficiency.

Structure of the template

The template is divided into three parts:

- Country data sheets (MACRO ECONOMIC DATA, COMMODITIES, INDUSTRY, RESIDENTIAL, SERVICES, TRANSPORT) that are to be filled
- Information sheets (ELECTRICITY GENERATION, BASIC INDICATORS) showing data from the IEA used to calculate basic indicators
- Support sheets (USER REMARKS, DATA COVERAGE, SINGLE LINE GRAPHS, MULTILINE GRAPHS, CHECKS) with a visual presentation of the data entered and remarks from the user

Instructions for reporting

All data are to be reported with a maximum of 4 decimals.

The units in which the data are expressed are indicated on column D of each sheet. Especially, the energy data are to be reported in petajoules (PJ), on a net calorific value basis.

File conventions

In order to make the task of filling and reviewing the template easier, the following

Pages

- User Guide
  - Definitions
  - Sheet INDUSTRY
  - Sheet RESIDENTIAL
  - Sheet SERVICES
  - Sheet TRANSPORT
  - Sheet COMMODITIES
- Methodology
  - Industrial classification
- Indicators
  - Industry
  - Services
  - Residential
  - Transport
  - Electricity generation
- Maps

Popular Tags

efficiency indicators methodology industry definitions electricity generation transport residential user guide services

IEA Publications

take a look at our latest publications or visit

A fast growing interest

- Data for 22 IEA countries, up from only 11
- Reduced lag in data availability
- Significant country involvement
- Strong co-operation with ODYSSEE
- Key IEA activity – many reports
- Significant political support at highest levels
- Official commitment by IEA Ministers to report data

What's next

- Update with 2008 data
- Preparation for a Manual on Energy Statistics for Energy Efficiency Indicators
- Workshop planned for November 2010
- A new publication in 3rd Quarter 2011
- Strengthening cooperation with many key partners: ODYSSEE, APEC, etc.

Some useful websites on energy efficiency

- IEA Statistics - www.iea.org/stats/index.asp
- Energy Efficiency Indicators - www.iea.org/subjectqueries/keyresult.asp?KEYWORD_ID=4122
- Energy Efficiency Home Page - www.iea.org/efficiency/index.asp

Thank you