

Definitions and classifications of energy products



Statistical Centre of Iran

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International definition and classification

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- In order to ensure **comparability** of the energy statistics, as well as their comparability with other statistics it is importance to have:

Internationally agreed definitions of energy products and their classification.

Energy product

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- **Energy product refer to products exclusively or mainly used as a source of energy .**
- **Energy products are transfer into other kind of energy product**

Primary and secondary products

Renewable and non-renewable sources

Primary and secondary energy products

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Primary:

- **Extracted or captured directly from natural resources**
- **Physical and chemical characteristics remain unchanged**

Secondary

- **Secondary energy comes from the transformation of primary or secondary energy.**

Primary or secondary energy product

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Secondary

- Petroleum products
- Coke-oven coke
- Charcoal

Primary

- Crude oil
- Coking coal
- Fuel wood

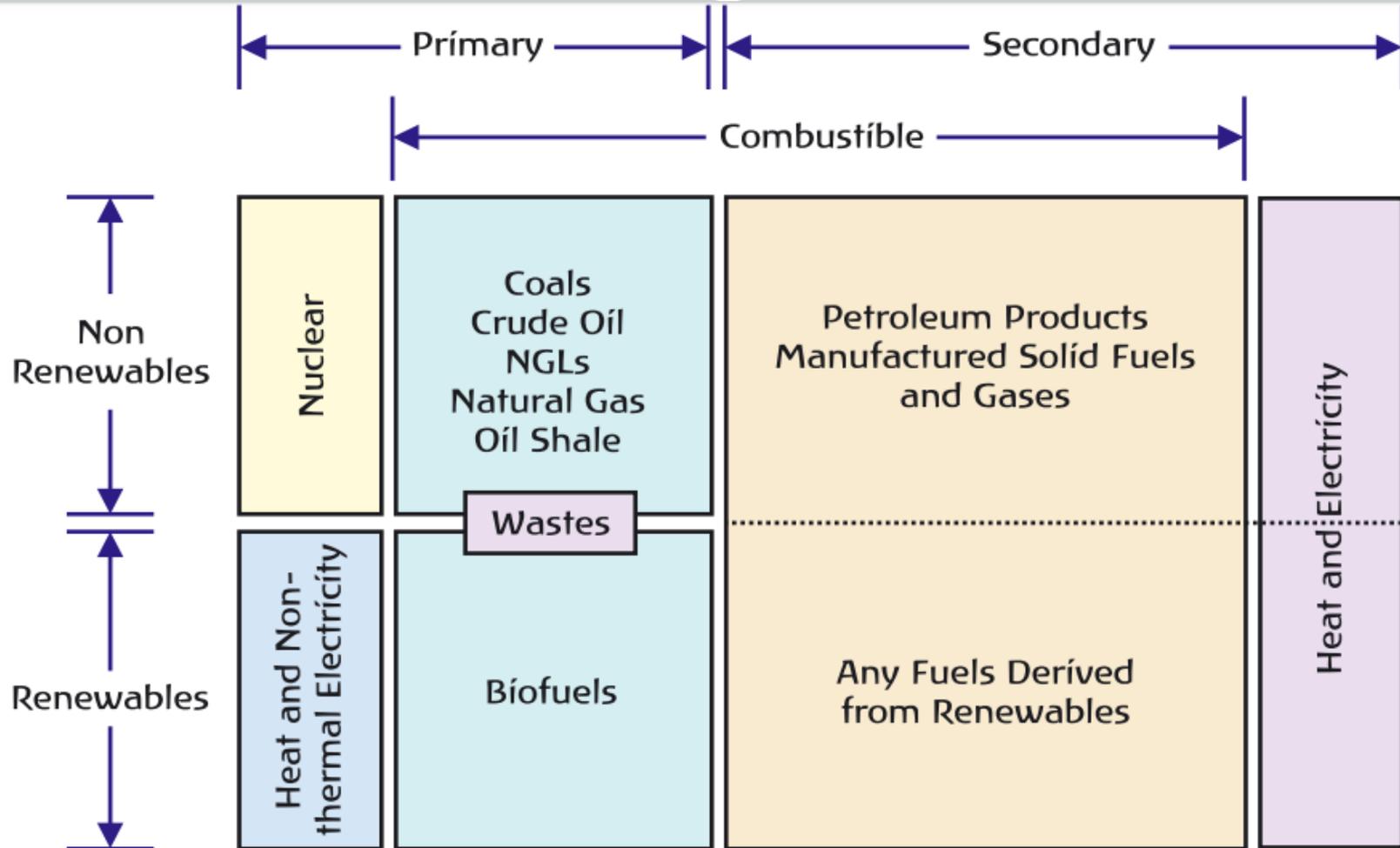
Renewable and non-renewable sources

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- **Renewable energy includes:**
 - solar (photovoltaic and thermal),
 - hydroelectric,
 - geothermal,
 - wave action,
 - wind
 - Biomass.
- **Non-renewable include:**
 - Crude oil, Natural gas, Coal

Different types of energy

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Final consumption

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- The final consumption of fuels covers their use for heat-raising and for non-energy purposes.

Final energy consumption

- Final energy consumption covers deliveries of commodities to consumers for activities that are not fuel conversion or transformation activities.
- The energy commodities are considered consumed and not transformed into others.

Non-energy fuel

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- A number of fuels may be used for non-energy purposes. These are:
 - As **raw materials** for the manufacture of non-fuel products. like fuels as raw material in refining and petrochemical industries.
 - For their **physical properties**. Lubricants and greases are used in engines for their “slippery” qualities.
 - For their **solvent properties**. White spirit and other industrial spirits are used as diluents in paint manufacture and for industrial cleaning purposes.

Some international classifications:

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Standard International Energy Product Classification (SIEC)

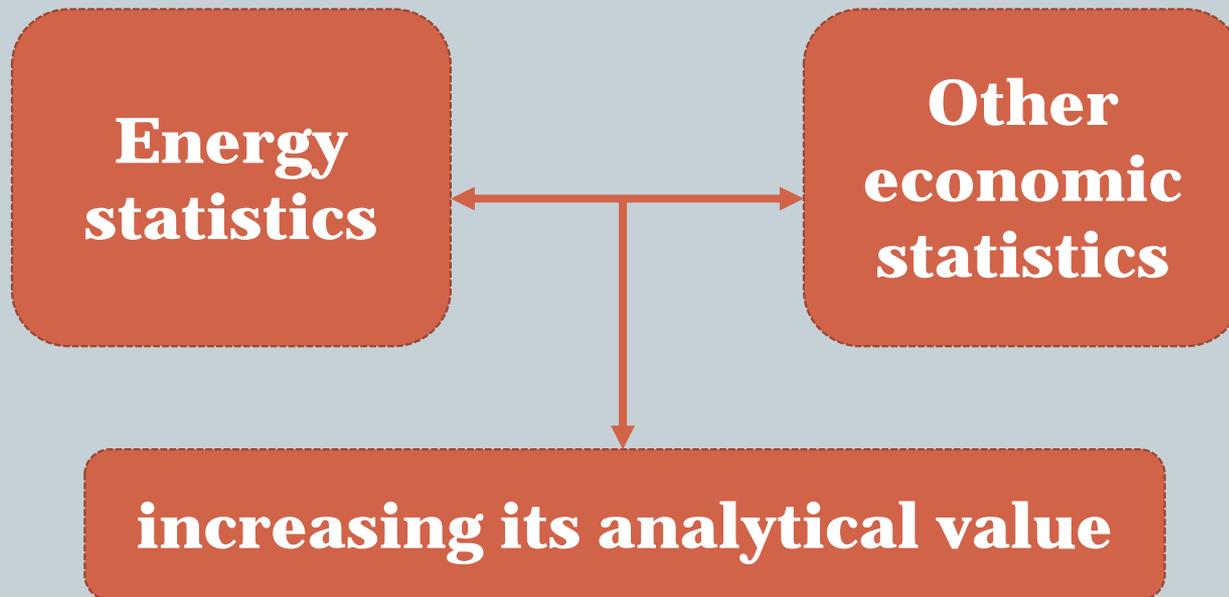
Harmonized Commodity Description and Coding System (HS)

Central Product Classification (CPC)

Linkage between classifications

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- The correspondences between these classifications facilitate the integration of:



Purpose and scope of the SIEC

SIEC is designed to:

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Facilitate and standardize the compilation and processing of energy data by providing a uniform coding system;

Ensure international comparability of disseminated national data;

Facilitate linking of data on stocks and flows of energy products.

- SIEC aims to cover all products necessary to provide a comprehensive picture of:

Production

Transformation

Consumption

of energy throughout an economy.

The scope of SIEC consists of the following:

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(a) *Fuels* that are produced/generated by an economic unit (including households), and are used or might be used as sources of energy; and

(b) *electricity* that is generated by an economic unit (including households) and *heat* that is generated and sold to third parties by an economic unit.

Classification criteria of SIEC

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- SIEC provides **10 sections** for different fuels, electricity and heat.
- The 8 fuel categories represent broad fuel types distinguished by their origin and characteristics:
covering coal, peat and peat products,
oil shale/oil sands, natural gas,
oil, biofuels,
waste, nuclear fuels
and other fuels.

Example of coding SIEC

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Table 3.1: Standard International Energy Product Classification (SIEC)

SIEC Headings			Correspondences	
Section / Division / Group	Class		CPC Ver.2	HS 2007
0		Coal		
01		Hard coal		
011	0110	Anthracite	11010*	2701.11
012		Bituminous coal		
	0121	Coking coal	11010*	2701.19
	0129	Other bituminous coal	11010*	2701.12
02		Brown coal		
021	0210	Sub-bituminous coal	11030*	2702.10*
022	0220	Lignite	11030*	2702.10*
03		Coal products		
031		Coal coke		
	0311	Coke oven coke	33100*	2704*
	0312	Gas coke	33100*	2704*
	0313	Coke breeze	33100*	2704*
	0314	Semi cokes	33100*	2704*
032	0320	Patent fuel	11020	2701.20
033	0330	Brown coal briquettes (BKB)	11040	2702.20
034	0340	Coal tar	33200*	2706
035	0350	Coke oven gas	17200*	2705*
036	0360	Gas works gas (and other manufactured gases for distribution)	17200*	2705*
037		Recovered gases		

Example of coding SIEC

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1		Peat and peat products		
11		Peat		
111	1110	Sod peat	11050*	2703*
112	1120	Milled peat	11050*	2703*
12		Peat products		
121	1210	Peat briquettes	11050*	2703*
129	1290	Other peat products	11050*, 33100*, 33200*, 33500*	2703*, 2704*, 2706*, 2712.90*
2		Oil shale / oil sands		
20		Oil shale / oil sands		
200	2000	Oil shale / oil sands	12030	2714.10
3		Natural gas		
30		Natural gas		
300	3000	Natural gas	12020	2711.11, .21
4		Oil		
41		Conventional crude oil		
410	4100	Conventional crude oil	12010*	2709*
42		Natural gas liquids (NGL)		
420	4200	Natural gas liquids (NGL)	33420*	2711.14, .19*, .29*

Recourses

- **UNSD, 2016, International Recommendations for Energy Statistics,**
<https://unstats.un.org/UNSD/energy/ires/default.htm>
- **OECD, 2014, International Energy Agency, Energy Efficiency Indicators: Fundamentals on Statistics**
- **UNSD, 2013, Framework for the Development of Environment Statistics,**
<https://unstats.un.org/unsd/envstats/fdes.cshtml>