

Physical Energy Flow Accounts

2018

In 2018, the domestic energy use decreased 3.5%, while GDP increased 2.8% in volume

In 2018, the domestic energy use decreased by 3.5%, while economic activity (measured by the Gross Domestic Product - GDP) grew by 2.8% in real terms. As a result, there was a 6.1% decrease in energy intensity of the economy (relationship between domestic energy use and GDP). The energy intensity of the Household sector (relation between Household consumption of energy products and private consumption) increased 1.8%, interrupting the downward trend observed in recent years. National energy dependency decreased by 2.2 p.p., reaching 73.5%. Exports of energy flows decreased by 14.4%, after three consecutive years of growth.

In 2017 (last year with information available to the EU), Portugal was the Member State with the sixth lowest energy intensity and the fourth lowest energy use of the Household sector *per capita*.

Despite the circumstances determined by the pandemic COVID-19, Statistics Portugal calls for the best collaboration by companies, families and public entities in responding to Statistics Portugal data requests. The quality of official statistics, particularly its ability to identify the impacts of the pandemic COVID-19, crucially depends on this collaboration, which Statistics Portugal thanks in advance.

Statistics Portugal publishes the results of the Physical Energy Flows Account (PEFA), for the year 2018, also revising the retrospective series since 2014, following the update of information sources and the incorporation of the base 2016 of Portuguese National Accounts. In Statistics Portugal website, in the area of disclosure of National Accounts ([Physical Energy Flows Account](#)), tables with detailed information are available.

1. Indicators

PEFA allows the calculation of a set of key, physical, monitoring indicators, represented in Table 1.

It is noteworthy that the domestic energy use decreased by 3.5% between 2017 and 2018, but showed an increase of 4.8% between 2014 and 2018.

The extraction of natural energy inputs by the economic activities (endogenous resources), although it registered a sharp increase in 2018 (+16.1%), revealed a decrease of 2.7% between 2014 and 2018.

The use of waste for energetic purposes decreased 4.1% compared to 2017, but registered an increase of 7.1% in the five-year period.

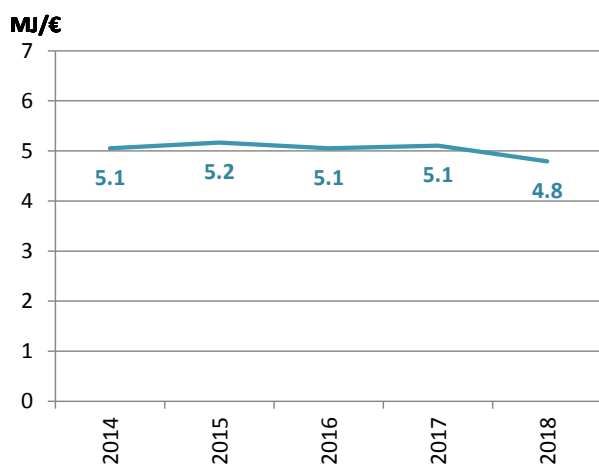
Table 1 Evolution of the key indicators of the Physical Energy Flow Account

Unit: TJ	Annual average 2014-18	2014	2015	2016	2017	2018	Change rate	
							2018 / Average 2014-18	2018/2017
Extraction of natural energy inputs	207.068	221.737	193.776	218.371	185.780	215.678	4,2%	16,1%
Domestic production of energy products	1.047.242	961.032	1.059.609	1.075.812	1.104.880	1.034.875	-1,2%	-6,3%
Intermediate consumption of energy products	1.531.444	1.398.729	1.562.391	1.541.524	1.644.820	1.509.757	-1,4%	-8,2%
Household consumption of energy products	193.726	190.113	190.146	194.981	194.909	198.482	2,5%	1,8%
Use of waste for energetic purposes	57.701	54.585	54.839	59.603	60.994	58.485	1,4%	-4,1%
Domestic energy use	946.157	907.644	944.777	942.097	985.136	951.132	0,5%	-3,5%
Domestic energy use for energy purposes	897.081	847.486	888.836	893.458	934.696	920.932	2,7%	-1,5%
Domestic energy use for non-energy purposes	49.076	60.159	55.940	48.640	50.441	30.200	-38,5%	-40,1%
Total energy input / output	2.046.324	1.918.723	2.054.678	2.072.613	2.145.536	2.040.073	-0,3%	-4,9%

PEFA also allows to combine physical energy variables with socioeconomic variables and to obtain indicators about the relationship between energy, economy and the environment. On this subject it can be highlighted for 2018:

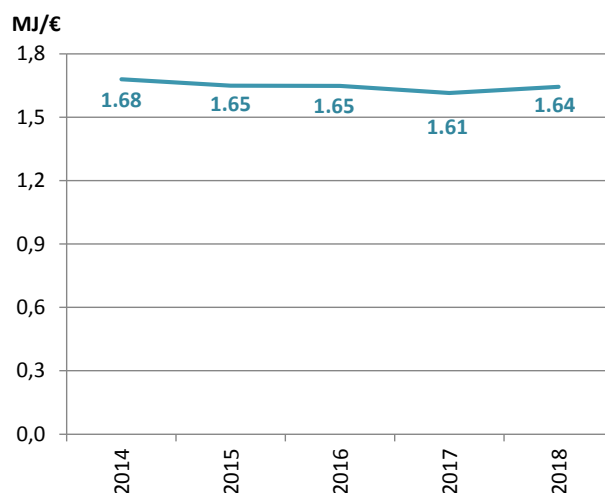
- the energy intensity of the economy (ratio between domestic energy use and GDP at constant prices) decreased by 6.1% compared to 2017, registering the lowest value for the five-year period 2014-2018;

Chart 1 - Evolution of economy energy intensity



and private consumption at constant prices) increased 1.8%, interrupting the previous downward trend;

Chart 2 - Evolution of energy intensity of the Households sector



- energy dependency (ratio between net energy imports and domestic energy use) decreased by 2.2 pp, reaching 73.5% in 2018;

- the energy intensity of the households sector (ratio between Household consumption of energy products

Chart 3 - Evolution of energy dependency

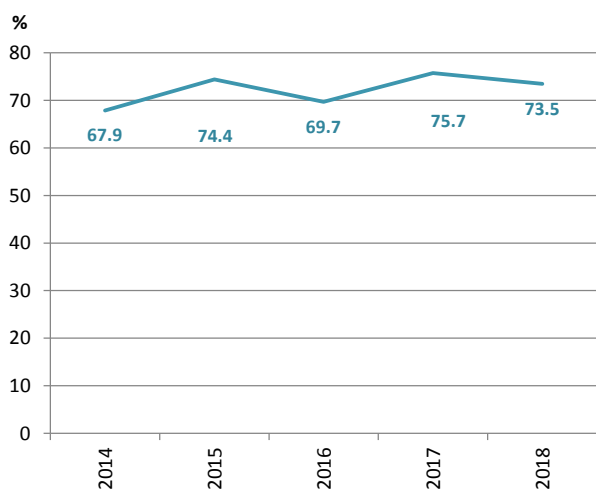
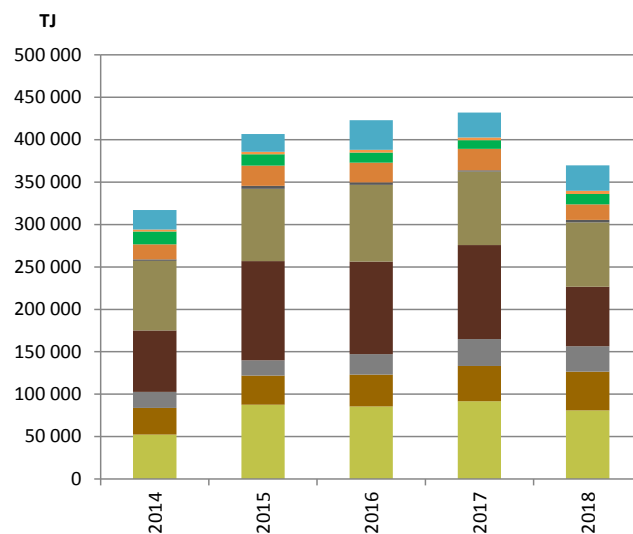


Chart 4 - Energy flow exports evolution



- Coal products
- Kerosenes and jet fuels
- Transport diesel
- Refinery gas, ethane and LPG
- Biomass
- Electrical energy
- Motor spirit
- Naphtha
- Residual fuel oil
- Other petroleum products
- Biofuels

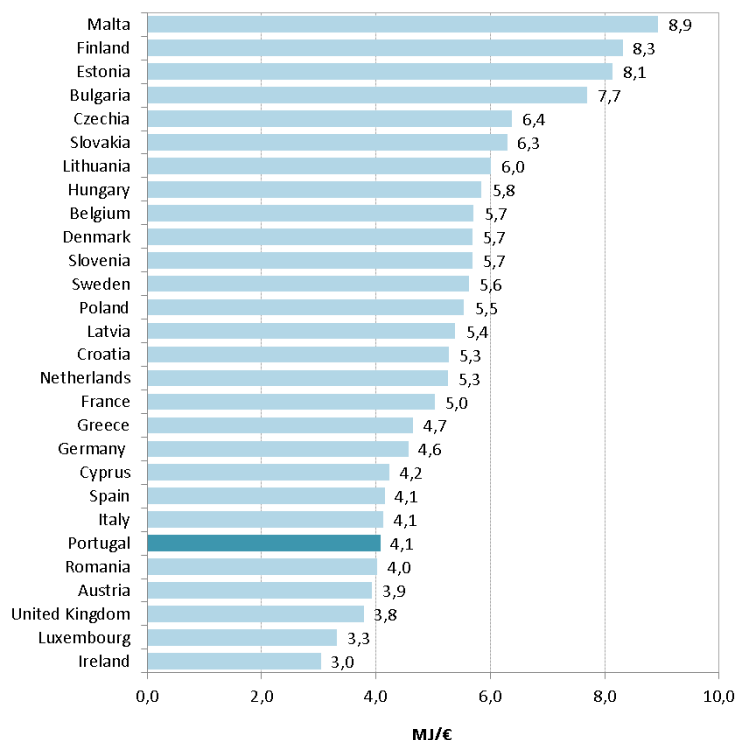
- exports of energy flows decreased by 14.4%, after three consecutive years of growth. This evolution reflects the decrease in exports of petroleum products (-16.8%), namely road diesel (-36.7%). Also noteworthy is the increase in electricity exports.

2. Comparisons with the European Union (EU)

The energy intensity indicators are related to the productive structure, income and climatic factors of each country.

In 2017 (last year with information available for the EU), Portugal was the Member State (MS) with the sixth lowest energy intensity¹. This relative position is explained, among other factors, by the lower weight of the manufacturing industry and the energy branch in the national economy compared to other Member States.

Chart 5 - **International comparisons of energy intensity in 2017**

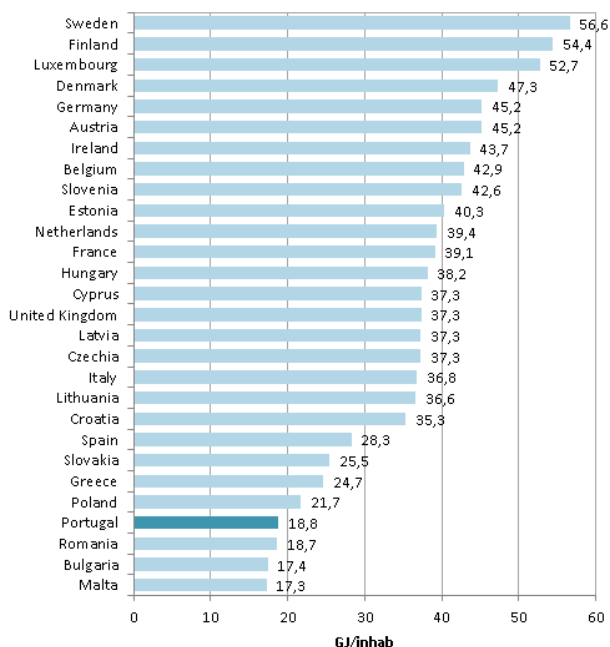


Source: *Physical energy flow accounts totals bridging to energy balances totals - pilot project data* [env_ac_pefa05], Eurostat (last update 03.03.2020); Eurostat for GDP in purchasing power parities (ppp) [*Purchasing power parities (PPPs), price level indices and real expenditures for ESA 2010 aggregates* (prc_ppp_ind), (last update 18.06.2020)].

In the same year, Portugal recorded the fourth lowest energy use of the Household sector *per capita*.

¹ For the purpose of international comparability, energy intensity corresponds to the relationship between domestic energy use and GDP in purchasing power parities (ppp).
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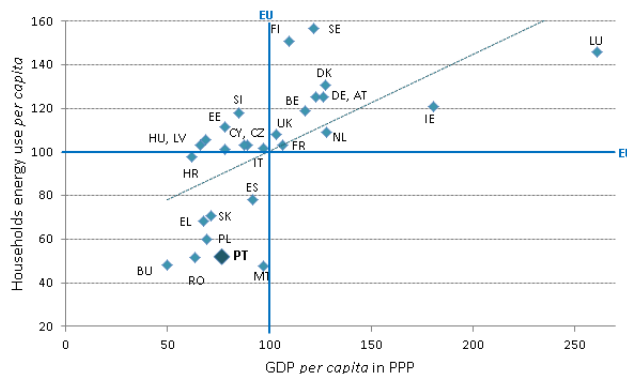
Chart 6 - International comparisons energy use by the Household sector *per capita* in 2017



Source: Key indicators of physical energy flow accounts by NACE Rev. 2 activity [env_ac_pefa04]; Household domestic energy use (residence principle), Eurostat (latest update 03.03.2020); Population and employment [namq_10_pe]; Eurostat database for population (latest update 19.10.2020).

observe that the countries with the lowest income are also those that register the lowest energy use by the Household sector (Bulgaria and Romania). Portugal and Malta, despite having higher levels of income, also have a small energy use by the Household sector, reflecting the role of the climatic factor in energy consumption.

Chart 7 - Ratio of GDP *per capita* in ppp to energy use by the household sector *per capita* in EU countries in 2017 (EU = 100)



Source: Physical energy flow accounts, Eurostat (latest update 03.03.2020); Eurostat for GDP in purchasing power parities (ppp); Purchasing power adjusted GDP per capita [sdg_10_10], Eurostat (last update 18.06.2020).

Comparing energy use by the Household sector *per capita* with GDP *per capita* in ppp, it is possible to