



INSTITUTO NACIONAL DE ESTATÍSTICA  
STATISTICS PORTUGAL

press release

# DIÍSTAQUE

November 2, 2021

ENERGY CONSUMPTION IN HOUSEHOLDS  
2020

**ELECTRICITY MAINTAINED ITS WEIGHT AS THE MAIN SOURCE OF ENERGY CONSUMED IN HOUSEHOLDS (43%), BUT IT SIGNIFICANTLY INCREASED IN TERMS OF EXPENDITURE: €751 BY HOUSEHOLD IN 2020, COMPARED TO €523 IN 2010**

According to the final results of the Survey on Energy Consumption in Households (ICESD 2020), total energy consumption in households was 5,098 ktoe (kilotonnes of oil equivalent) in 2020, with energy consumption in vehicles used for individual transport of households' residents representing 43.8% of the total (50.6% in 2010). The global energy consumption by household was 1.194 toe, including consumption in vehicles (1.501 toe in 2010). The total expenditure on energy by household was EUR 1,900, including expenditure in vehicles (EUR 1,843 in 2010).

Electricity remained the main source of energy consumed on households (43.1%; 42.6% in 2010). The expenditure with electricity accounted for more than half (69.9%; 62.2% in 2010) of the total spent on energy in households, corresponding to an average annual expenditure of EUR 751 by household (EUR 523 in 2010).

Biomass consumption increased and remained the second main energy source (27,2%). Natural gas consumption increased its importance in 2020 (11.5%; 9.0% in 2010).

Heating oil recorded an average expenditure of EUR 437/year (EUR 765 in 2010), the highest after Electricity, despite the consumption having decreased by around 58%.

The use of energy for Cooking continued to have the greatest weight (34.6%; 39.1% in 2010) compared to other final use in households, being the Electricity the main energy source for this final use.

There was a transition to low energy light lamps (LED), which in 2020 were used in 80% of households (3.2% in 2010).



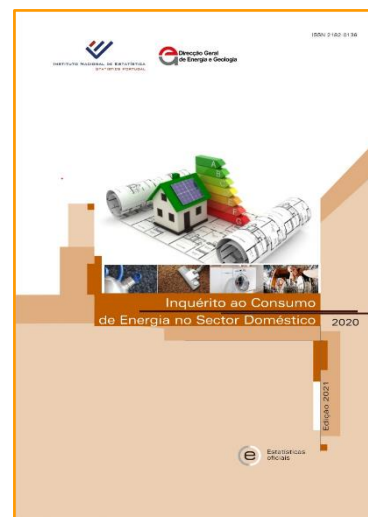
INSTITUTO NACIONAL DE ESTATÍSTICA  
STATISTICS PORTUGAL

press release

# DIÍSTAQUE

With this press release, Statistics Portugal disseminates the publication [“Survey on energy consumption in households 2020”](#) containing the definitive data on Survey on energy consumption in households.

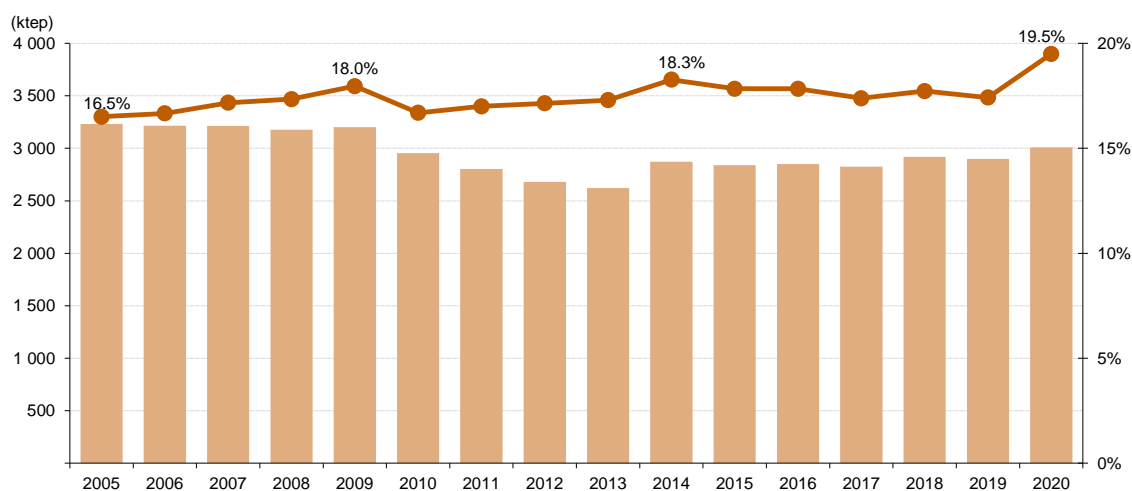
The ICESD 2020 had as main objective the updated knowledge of energy consumption in households in Portugal and resulted from the collaboration between Statistics Portugal (INE) and the Directorate General for Energy and Geology (DGEG), entity that financed the project.



## Energy Balance

According to data from the “Energy Balances sheets” produced by DGEG, energy consumption in the domestic sector in Portugal, excluding fuel consumption from vehicles used by household members, presented, in 2020, 19.5% of final energy consumption, revealing an annual rate change of 0.2% between 2010 and 2020.

**Figure 1. Evolution of consumption on domestic sector (ktoe) and weight (%) of domestic sector consumption in final energy consumption, 2005-2020**



Source: DGEG – Energy Balances sheets



# DIÍSTAQUE

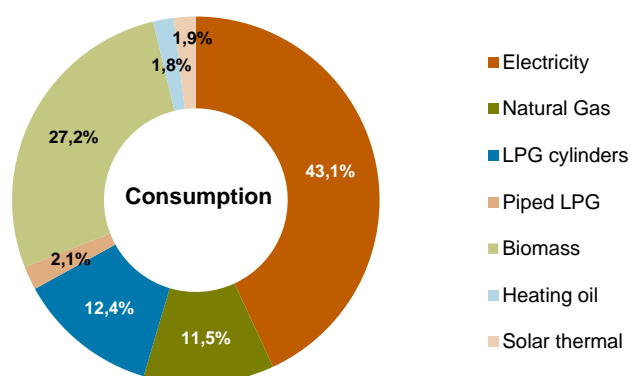
The final results of the Survey on Energy Consumption in Households carried out in 2020 (ICESD 2020) allowed an update of information and energy consumption habits in households compared to the last edition of the survey held in 2010.

## Energy consumption in households

Total energy consumption was 5,098 ktoe in 2020, with energy consumption in vehicles used for individual transport of households residents representing 43.8% of the total (50.6% in 2010). The global energy consumption by household was 1.194 toe, including consumption in vehicles (1.501 toe in 2010).

In terms of consumption, Electricity remains the main source of energy consumed on households (43.1%; 42.6% in 2010), followed by Biomass, which represented 27.2% (24.2% in 2010<sup>1</sup>) of the total. Natural gas consumption accounted for 11.5% (9.0% in 2010).

Figure 2. Consumption distribution (tep) in households by energy source - Portugal, 2020



Source: INE/DGEG/ADENE - Survey on energy consumption in households (2020)

## Energy expenditure in households

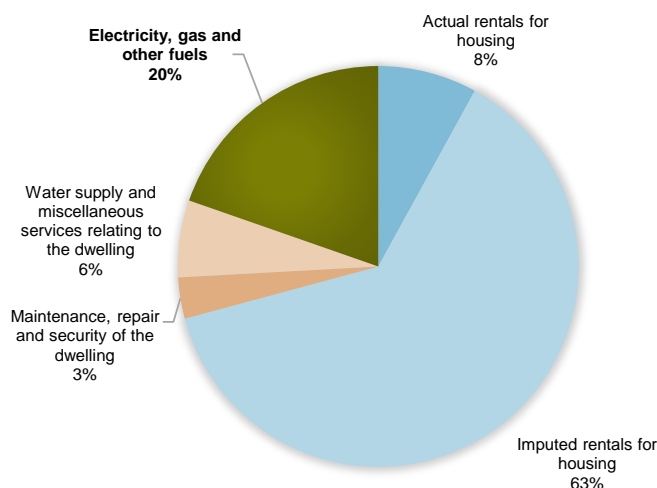
It is important to point out that an important part of expenditure in households is associated with energy consumption. The results of the Household Budget Survey (IDEF 2015/2016), carried out every five years by Statistics Portugal, showed that, in the average total annual expenditure by household in 2015/2016, the largest portion was for expenditure on "Housing, water, electricity, gas and other fuels". Considering this category, expenditure on "Electricity, gas and other fuels" represented the largest share of expenditure (20%), after rentals for housing.

<sup>1</sup> The weight in 2010 includes only Firewood.



# DIÍSTAQUE

Figure 3. Distribution of total annual average expenditure by household (€) according to COICOP (Housing, water, electricity, gas and other fuels) - Portugal, 2015/2016

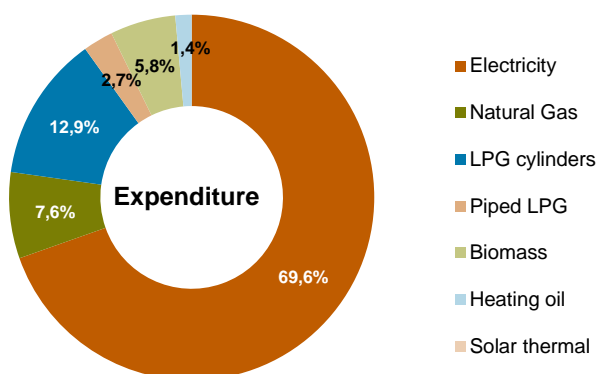


Source: INE, Household Budget Survey 2015/2016

According to final results of ICESD, global expenditure approached EUR 8,112 million, including the expenditure with transport fuel. On average, the total expenditure on energy by household was EUR 1,900, including expenditure in vehicles (EUR 1,843 in 2010).

Electricity expenditure accounted for more than half (69.9%; 62.2% in 2010) of the total spent on energy by household, corresponding to an average annual expenditure of EUR 751 by household (EUR 523 in 2010).

Figure 4. Expenditure distribution (€) in households by energy source - Portugal, 2020



Source: INE/DGEG/ADENE - Survey on energy consumption in households (2020)



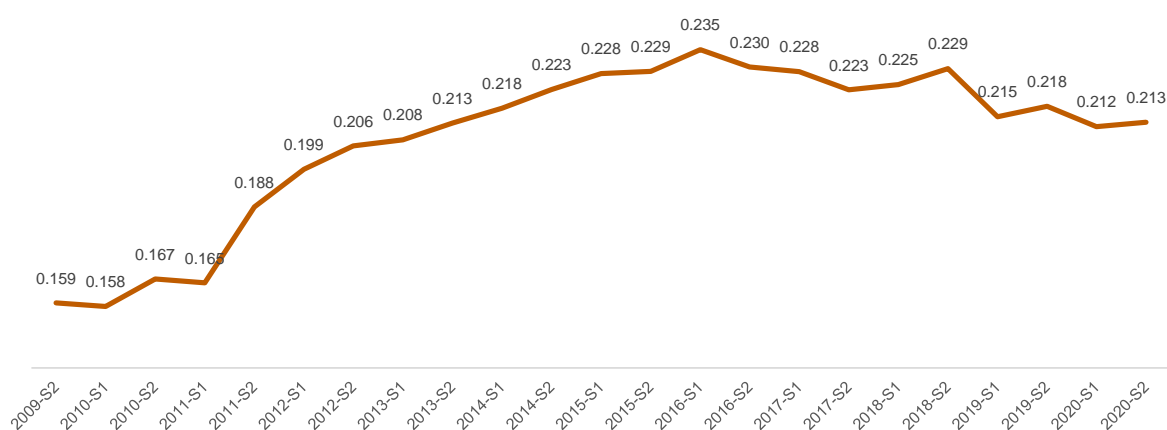
INSTITUTO NACIONAL DE ESTATÍSTICA  
STATISTICS PORTUGAL

press release

# DIÍSTAQUE

Between 2010 and 2020, electricity consumption remained almost unchanged, but was accompanied by an increase of near 56% in expenditure, related with this energy source. This increase is related with the evolution of the cost of electricity: comparing the average price of electricity<sup>2</sup> (€/kWh) between the two editions of the ICESD (2010 and 2020) there is an increase of near 35% in the average price per kWh (EUR 0.159/kWh to EUR 0.215/kWh<sup>3</sup>).

**Figure 5. Evolution of electricity prices (€/kWh) for household consumers (all taxes and levies included) - Portugal, semesterly - 2009-2020**



Source: DGEG, Weighted average prices of electricity for household consumers in Portugal - bi-annual data (from 2007 onwards); Data extracted on 27/10/2021.

Note: Prices for DC consumption band.

Heating oil had the second highest average expenditure per accommodation (EUR 437/year; EUR 765/year in 2010). Despite the consumption of heating oil in the domestic sector between 2010 and 2020 having decreased by around 58%, the decrease in expenditure on this source of energy recorded a smaller decrease (around -37%). According to data from DGEG, the average annual price of heating oil increased by around 48%<sup>4</sup> between 2010 and 2020.

<sup>2</sup> All taxes and levies included

<sup>3</sup> Considering the average prices for the 2<sup>nd</sup> semester of 2009 and the 1<sup>st</sup> semester of 2010, and the average prices for the 2<sup>nd</sup> semester of 2019 and the 1<sup>st</sup> semester of 2020, respectively.

<sup>4</sup> Considering the average between 2009 and 2010 prices and the average of 2019 and 2020 prices, respectively.

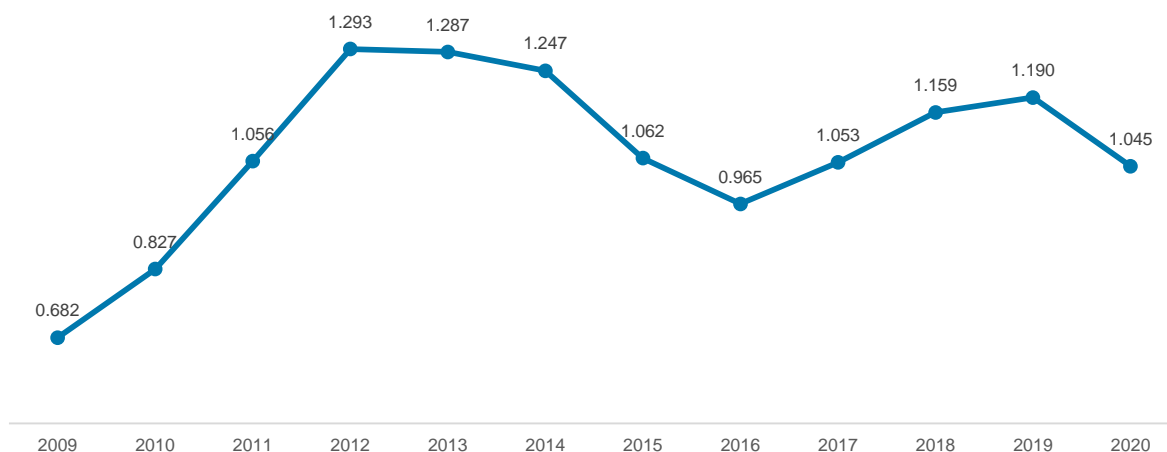


INSTITUTO NACIONAL DE ESTATÍSTICA  
STATISTICS PORTUGAL

press release

# DIÍSTAQUE

Figure 6. Evolution of average annual public sale price of heating oil (€/l), in Continental Portugal (all taxes and levies included), 2009-2020



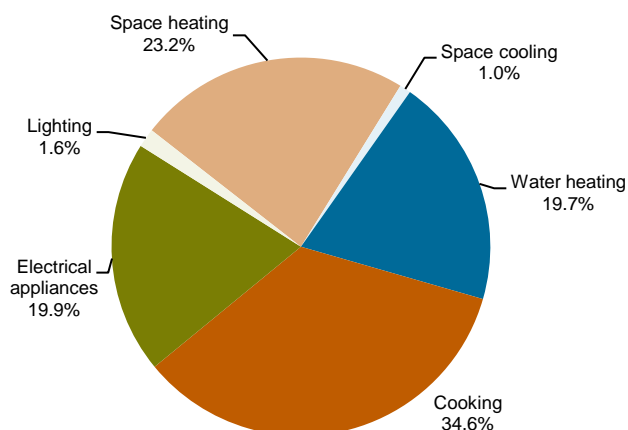
Source: DGEG - Average annual public sale price of Liquid and Gas Fuels in Continental Portugal (all taxes and levies included);

Data extracted on 27/10/2021.

## Energy consumption by use

The use of energy for Cooking continued to have the greatest weight (34.6%; 39.1% in 2010) compared to other final use in households, being the Electricity the main energy source for this final use.

Figure 7. Distribution of energy consumption in households by use - Portugal, 2020



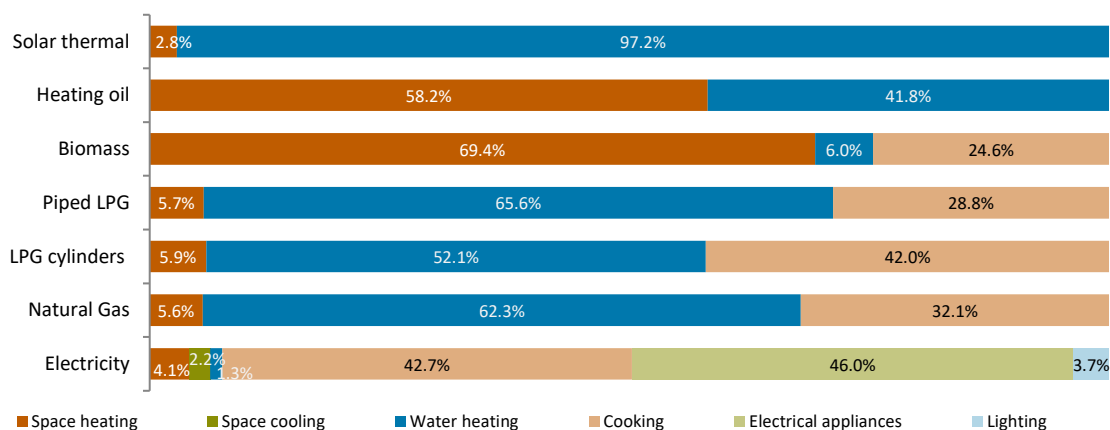
Source: INE/DGEG/ADENE - Survey on energy consumption in households (2020)



# DIÍSTAQUE

Considering the final use of Electricity, consumption in Electrical Appliances and Cooking were the highest, having been responsible for, respectively, 46.0% and 42.7% of total electricity consumption in 2020.

Figure 8. Distribution of energy consumption in households by energy source and use - Portugal, 2020



Source: INE/DGEG/ADENE - Survey on energy consumption in households (2020)

## Equipment and lighting

In terms of equipment, the highlight was the Electric Heater, which continued to be the most used equipment for space heating (64.8%), with an average of 1.6 units per household. In water heating, the water heater stood out (67.3% of the households).

Regarding electrical appliances, the Washing Machine, the Iron, the Microwave and the Vacuum Cleaner were identified in more than 80% of Portuguese households. Television dominated in terms of its use in the domestic sector, having been used in almost all conventional dwellings of usual residence in 2020 (99.2%).

In lighting, LED lamps were predominant in Portuguese households (about 80%; 3,2% in 2010).



INSTITUTO NACIONAL DE ESTATÍSTICA  
STATISTICS PORTUGAL

press release

# DIÍSTAQUE

In the last decade, the following changes in the energy consumption habits of the Portuguese stand out:

- The average energy consumption by household decreased, despite an increase in global average expenditure;
- The preponderance of electricity as the main source of energy consumed in households continues to increase, however less intensely than in the periods before 2010;
- Electricity expenditure corresponds to almost 70% of energy expenditure in household;
- The share of energy consumption in vehicles in households decreased compared to 2010;
- Biomass consumption increased and remained the second main energy source;
- Natural gas consumption increased its importance in 2020 (11.5%; 9.0% in 2010), following the expansion of the distribution network on the Continente;
- Solar thermal energy consumption almost tripled, despite its small weight in the total;
- Diesel oil continued to be the main fuel used in vehicles, and Gasoline reduced its weight;
- There was a transition to low energy light lamps (LED), which in 2020 were used in 80% of households (3.2% in 2010);
- There was a significant improvement in CO<sub>2</sub> emissions, from 628 kg CO<sub>2</sub>/household in 2010 to 475 kg CO<sub>2</sub>/household in 2020, as a result of lower consumption of fossil fuels.



# DIISTAQUE

## METHODOLOGICAL NOTES

1. Reference periods: information collected in the Survey on Energy Consumption in Household corresponded to the period from October 2019 to September 2020;
2. The sample defined for this survey is representative of the classic dwellings of usual residence on national territory and it was selected from a sampling base extracted from the National Housing Register (which is based on data from the 2011 Census). A sample of 11,350 dwellings was used to conduct this survey. A total of 5,201 interviews were succeeded (45.8%), of which 5,081 were considered valid (44.8%);
3. Electricity and Natural gas consumptions were based on 3 different sources (meter readings/consumptions based on the identification of the CPE/NIF and/or CUI/NIF, information contained in the respective invoices or the monthly expenditure);
4. Piped LPG consumption was based on monthly expenditure (or the amount in m<sup>3</sup> consumed monthly);
5. LPG Cylinders consumption was based on the number of cylinders consumed per year and their respective capacities;
6. Biomass consumption (including Firewood, Pellets, Briquettes and Coal) was based on the quantities purchased (or expenditure) during the reference period; the portion referring to Biomass from other source was based on a study carried out by DGEG based on information from ICESD (evolution in the use of this energy source) and on information from ICNF regarding the amount of firewood available to be collected.
7. Heating oil consumption was based on the quantities purchased (or expenditure) in the reference period.
8. Solar thermal energy consumption was based on m<sup>2</sup> of installed panels.
9. Diesel oil, Gasoline and Mixture (vehicles) consumption were based on monthly expenditure or liters filled per month.
10. On the other hand, consumptions by type of use were based on the equipment that used each type of energy in the different domestic uses.

## ACRONYMS AND DESIGNATIONS

ADENE	Portuguese Energy Agency
CPE	Delivery Point Code
CUI	Universal Installation Conde
DGEG	Directorate General for Energy And Geology
ICESD	Survey on Energy Consumption In Households



INSTITUTO NACIONAL DE ESTATÍSTICA  
STATISTICS PORTUGAL

press release

# DIISTAQUE

ICNF	Institute for The Conservation of Nature and Forests
INE	Statistics Portugal
GPL	Liquefied Petroleum Gas
LED	Light Emission Diode
NIF	Tax Identification Number

## UNITS

€	Euro
%	Percentage
kg	Kilograms
kWh	Kilowatt-hour
ktoe	Kilotonnes of oil equivalent
l	Liters
m <sup>2</sup>	Square meter
m <sup>3</sup>	Cubic meter
No.	Number
toe	Tonnes of oil equivalent
t	Tonnes

## AVAILABILITY OF INFORMATION

The main statistical indicators with the final results of the ICESD, in the "Industry and Energy" theme, are available on Statistics Portugal Portal on the date of this release.