

HOUSEHOLDS



2.15

Environmental Profile of Spain 2012

In Spain, between 2000 and 2011, the number of households grew by 30.64% and the population by 14.95%. On average, in 2011 there were 2.73 inhabitants per household, 12% less than in 2000, when the average household had 3.1 members. Furthermore, as can be calculated from the Survey on Family's Budgets published by the National Statistics Institute (base 2006), from 2006 to 2011 households with a single member have increased to a greater extent (24%) than those consisting of two or three members (16% and 18% respectively), while the number of households with four members has decreased by 1%. This data indicates a gradual reduction in the size of households.

This reduction, together with other factors such as higher incomes, the globalisation of the economy and technological advances, constitutes one of the main reasons for the increase in consumption experienced in recent years, according to the EEA. The Agency estimates that households with only one person consume, on average, 55% more electricity, 42% more packaging and 38% more goods per person, than those households with four persons. The agency calculates that the increase in expenditure on consumption throughout the EU-27, between 1990 and 2010, was 33%.

Therefore, there is a tight relationship between households and their environmental impact, connected to consumption patterns. The document 'The



future we want', one of the Rio+20 outcomes, recognises that the path towards a greener economy must involve the promotion of more sustainable consumption and production patterns. Furthermore, at that conference, the 10 Year Framework Programmes on Sustainable Consumption and Production (10YFP) was adopted. As a result of this and the European Strategy 2020, the European Commission published in April 2013 a paper on the creation of a common market for ecological products (green products), an initiative that aims to improve information and homogenise the calculation methodology of environmental performance standards of products and organisations, to allow citizens to choose those products and services that are more environmentally friendly.

In Spain, important steps have also been taken in this area and many households have changed their consumption habits and their use of energy and resources. Even by 2008, according to the survey on Households and Environment carried out by the National Statistics Institute, 96.9% of Spanish households had adopted at least one water saving habit, and three out of four households separated paper, glass, and plastic and metallic packages

KEY MESSAGES

- 2010 saw a continuation of the decline in gross available income of Spanish households, together with a fall in the average expenditure per household.
- In 2011 the number of households grew by 1% but average energy consumption of households fell (almost 5%).
- The average volume of water consumed by each Spanish household fell again in 2010, for the sixth consecutive year, to 141 m³/household.
- The number of passenger vehicles per household fell slightly in 2011 (0.6%) and the number of motorcycles increased by 2.3%.
- In 2010 the rate of decrease in total urban waste per household slowed, and the quantity of urban waste selectively collected per household increased.
- In 2010, the rising trend in the number of household slowed, energy consumption increased as did CO₂ emissions, at the same time as gross disposable income, water consumption and waste production all fell.

INDICATORS

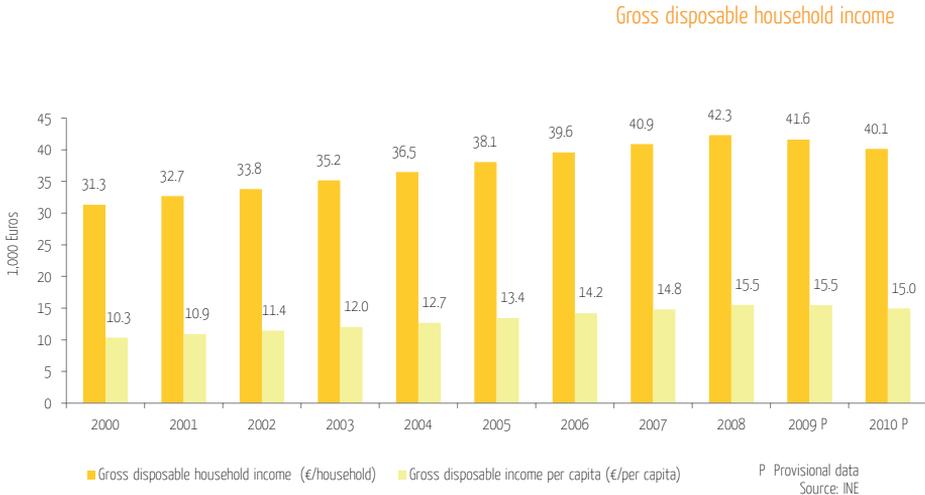
- Gross disposable household income
- Energy consumption per household
- Water consumption per household
- Number of passenger cars and motorcycle per household
- Producción de residuos urbanos por hogar
- Eficiencia ambiental en el sector doméstico



in order to dispose of these at specific collection points. Additionally, there is ever higher use of motorcycles as opposed to cars as a means of private transport for short urban and inter-urban movements, due mainly to the lower expense and fuel consumption of the former, however this has very large, positive, effects on emissions of air pollutants. It is worth highlighting MAGRAMA's initiative 'Hogares verdes' or 'Green homes', an educational programme for those families who are worried about the environmental and social impact of their daily decisions and habits.

Gross disposable household income

In 2010 the fall in gross disposable income of Spanish households continued, together with a fall in average household expenditure



In 2010 (according to the most recent data available), the gross disposable household income in Spain dropped by 3.6%, from 41,622 €/household in 2009 to 40,137 €/household in 2010. A similar fall, of 3.3%, affected disposable income per capita, which declined from 15,475 €/inhabitant in 2009 to 14,959 €/inhabitant in 2010. The falling trend, started in 2009, continues, with ever lower household budgets since that year. At the same time, in terms of the number of households in Spain in 2010, according to Eurostat data, there were only 96,000 new households compared to the previous year (an increase of 0.6%), while in previous years the rate of increase had always been over 2%.

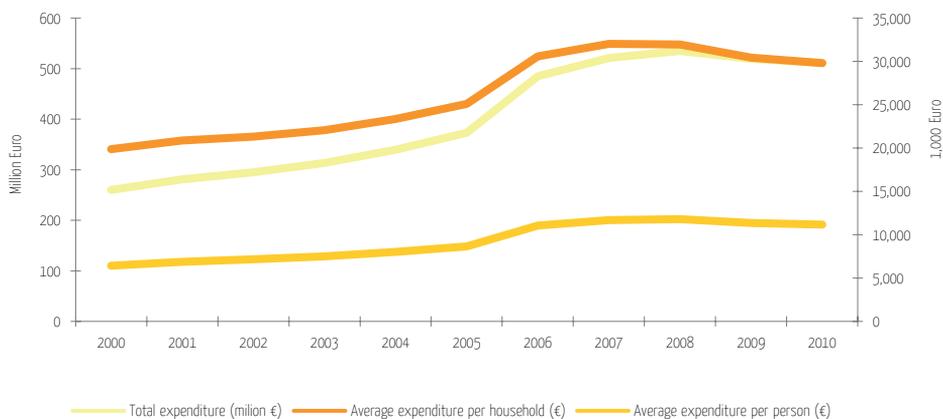
According to the National Statistics Institute's Spanish Regional Accounts, the Basque Country was the region where households had the highest disposable income per inhabitant in 2010, with 20,034 euros (33.9% more than the national average). The Basque Country is followed by Navarre (with 19,089 euros per inhabitant), Madrid (17,870 euros per inhabitant) and Catalonia (17,093 euros per inhabitant).

The decrease in the gross disposable income of Spanish households in 2010 was accompanied by a decrease in the average expenditure per household, as shown by the Household



Budget Survey of the National Statistics Institute. From 2009 to 2010, the average expenditure per household dropped 2.1% to 29,782.34 €/household. It should be highlighted that the rate of decrease was 2.7% lower than the period between 2008 and 2009 (4.8%). According to the National Statistics Institute, 30% of household budget in 2010 was devoted to housing. Just as for disposable income, expenditure levels were higher in the Basque Country, Navarre and Madrid.

Expenditure of households



Source: INE

NOTES

- In order to visually represent disposable income over the period 2000-2010 in the graph, it has been necessary to use data from the National Statistics Institute calculated using two different bases: base 2000 for the years 2000 to 2007, and base 2008 for the series 2008-2010.
- Household expenditures (total, medium and per person) are expressed at current rates.

SOURCES

- Disposable income: National Statistics Institute, 2013. Gross disposable household income. Base 2000. Series 2000-2008. Available in: INEbase/Economía/Cuentas económicas/Contabilidad Regional de España. Bases anteriores/Enfoque institucional. Cuentas de Renta de los Hogares. Base 2000/ Base1995.
- Disposable income: National Statistics Institute, 2013. Gross disposable household income. Base 2008. Series 2008-2010. Available in: INEbase/Economía/Cuentas económicas/Contabilidad Regional de España. Base 2008/Enfoque institucional. Cuentas de Renta de los Hogares.
- Household Expenditures: National Statistics Institute, 2013. Detailed definitive results. Annual/2. Total expenditures and average expenditures. Available in: INEbase/Sociedad/Nivel, calidad y condiciones de vida/Encuesta Continua de Presupuestos Familiares. Base 1997. Series 2000-2005.
- Number of households: Eurostat, 2013. Number of households per grade of urbanisation of the residence place and regions NUTS / (code: lfst_c_lfsd2hh). The number of households per Eurostat varies slightly with respect to the figure given by the National Statistics Institute in previous years. Therefore, this series differs from the one published in previous editions of the Environmental Profile in Spain.
- National Statistics Institute, 2013. INEbase. Press release of 28 December 2012. Regional Accounting of Spain, base 2008 (CRE-2008). Series 2008-2011.

MORE INFORMATION

- <http://www.ine.es/>
- <http://ec.europa.eu/eurostat>

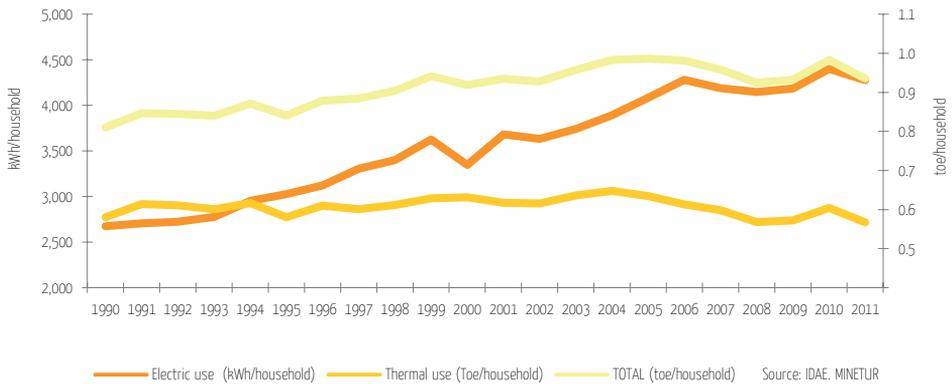




Energy consumption per household

In 2011 the number of households grew by 1% but household energy consumption fell (by almost 5%)

Energy intensity of households



After a general increase in energy consumption by Spanish households in 2010, in 2011 there was a drop in energy consumption both for heating and hot water, and electric uses.

In 2011, the 17.34 million Spanish households, according to Eurostat's figures, consumed a total of 16.22 million tonnes of oil equivalent (toe) to meet their energy needs, 4% less than in 2010. It is estimated, according to the IDAE, that each household consumed 4.84% less energy than in the previous year, falling from 0.983 to 0.935 toe/household, which breaks down as 4,277 kWh/household for electricity and 0.568 toe/household for heating and hot water. From 2010 to 2011, the consumption of electricity fell 2.79%, while the decrease for heating and hot water was 0.568%.

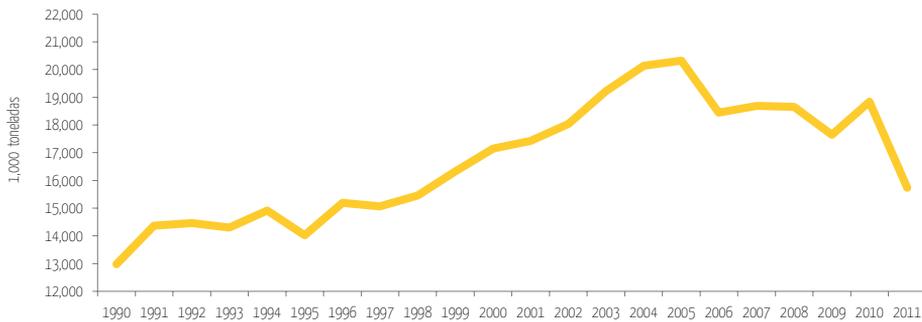
Comparing consumption levels in 2011 with those for 2000, the overall energy consumption by households has grown by 33% while the number of households has grown by 30.6%. A correlation can be observed between the growth in the number of households and household energy demand. As the final report of the "Analysis of energy consumption of the residential sector in Spain" (IDAE, July 2011), makes clear, the increase in the number of households, bringing with it household appliances and comfort level, the rise in purchasing power and the improvement of households' quality of life, all mean that in re-

cent years energy consumption has increased and it is foreseen that this growth trend will continue in the future. In fact, the report stresses the importance of the residential sector in terms of its energy demand both at national and European level. With respect to the breakdown of the residential sector's energy consumption it can be seen that households in 2011 consumed almost 28% more electric energy than in 2000, while for heating and hot water the consumption in this period decreased by 10.1%.

At European level, Spain in 2011 was sixth in terms of the final energy demand by the residential sector, making up 5.95% of the overall EU figure (272,740 ktoe).

Household energy consumption is linked to their GHG emissions, specifically CO₂, which is generated by residential combustion plants (subgroup SNAP 02 02). In 2011, these emissions fell by 16.43% with respect to the previous year, with a total of 15.74 million tonnes. This was 21.3% higher than in 1990. In relative terms to the number of households, the CO₂ emitted per Spanish household in 2011 was 0.91 tonnes of CO₂/household.

CO₂ emissions from the residential sector (kt CO₂)



Source: MAGRAMA



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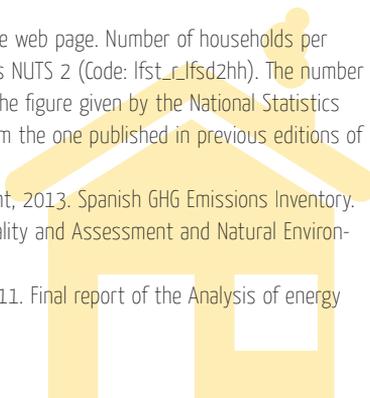
- The energy consumption data includes the final consumption of renewable energies for heating and hot water (biomass and solar).
- At the Kyoto summit, Spain set a target of reducing greenhouse gases by 15% in 2012 with regard to 1990 levels.

SOURCES

- Energy intensity of households: data provided by the Department of General Coordination of the Institute for Diversification and Energy Saving, IDAE. MINETUR, 2013.
- Final energy consumption by the residential sector: EUROSTAT, 2013. Information from the web page. Available in: Estadísticas/Estadísticas por temas/Medio Ambiente y Energía/Energía/Base de datos/Estadísticas de energía-Cantidades (tsdpc320).
- Number of households: Eurostat, 2013. Information from the web page. Number of households per degree of urbanisation of the place of residence and regions NUTS 2 (Code: lfst_r_lfsd2hh). The number of households per Eurostat varies slightly with respect to the figure given by the National Statistics Institute in previous years. Therefore, this series differs from the one published in previous editions of the Environmental Profile in Spain.
- CO2 emissions: Ministry of Agriculture, Food and Environment, 2013. Spanish GHG Emissions Inventory. Years 1990-2011. Directorate-General on Environmental Quality and Assessment and Natural Environment.
- Institute for Diversification and Energy Saving, IDAE. July 2011. Final report of the Analysis of energy consumption in the residential sector in Spain

MORE INFORMATION

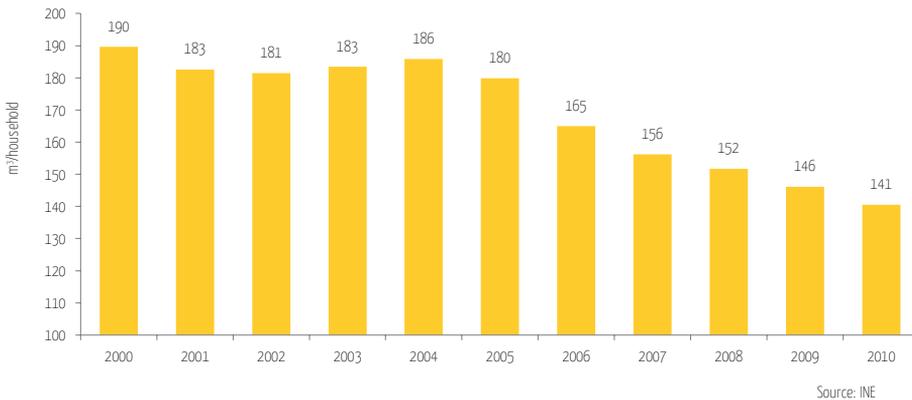
- <http://www.idae.es>
- <http://www.minetur.gob.es>
- <http://epp.eurostat.ec.europa.eu>



Water consumption per household

The average volume of water distributed to every Spanish household fell again in 2010, for the sixth consecutive year, to 141 m³/household

Water volume distributed to households



Spanish households consumed a total of 2,413 hm³ of water in 2010, a reduction of 3.25% on the previous year (2,494 hm³). This quantity, according to the National Statistics Institute, was 71% of the total water registered and distributed to users; the remainder was distributed among the economic sectors (20%, excluding irrigated agriculture), municipal consumption and others (9%).

It should be pointed out that from the year 2000 to 2010 the overall water consumption by Spanish households decreased by 2.8% while the number of households during that period grew by 31.2%. Nevertheless, it must also be pointed out that in 2010 water losses (both real losses and apparent losses) in the distribution network were estimated at 1,187 hm³, 26% of the total water supplied to these networks (4,581 hm³). This percentage is similar to the previous year.

Regarding average consumption, each Spanish household used 141 m³ of water in 2010, 3.8% less than in 2009. The fall in the average consumption of water per household, which started in 2005, thus continues with 2010 values being 26% lower than 2000 values.

At autonomous community level, the regions with the lowest consumption per household were the Basque Country (112 m³/household), the Balearic Islands and La Rioja (114 m³/household). These regions also registered the lowest consumptions per inhabitant per day.



The average water consumption per inhabitant per day also fell when compared with the previous year. In 2009, the average consumption was 149 l/inhabitant per day, while in 2010 the consumption fell by 5 l per inhabitant per day, a 3.36% decrease.

Volume of water distributed to households
(l/inhabitants-day)

1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
146	153	159	165	168	165	164	167	171	166	160	157	154	149	144

Source: INE

As to the unit cost of water in Spain, this increased in 2010 by 6.3% with respect to the previous year, with a cost of 1.51 euros per cubic metre. This cost includes the distribution unit costs estimated by the National Statistics Institute as being 0.92 €/m³ and sanitation costs of 0.59 €/m³. The highest water unit costs registered in 2010 were in the regions of the Balearic Islands (2.69 €/m³), Murcia (2.17 €/m³) and the Canary Islands (1.90 €/m³). At the same time, the lowest values were registered in La Rioja (0.91 €/m³), Castile-Leon (0.98 €/m³) and Galicia (1.01 €/m³).

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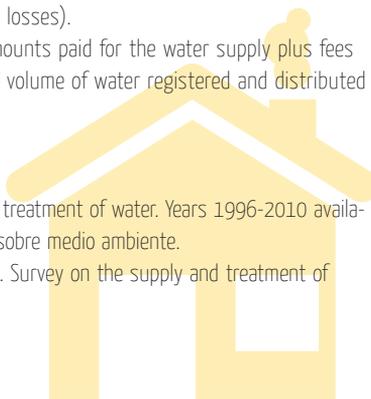
- 'Water lost in the distribution networks' is the estimated difference between the water supplied to those networks and measured consumptions. It includes leakages (real losses), as well as fraud, measurement errors and non-measured consumption (apparent losses).
- The unit cost of water is calculated by dividing the total amounts paid for the water supply plus fees for sewage, purification and water treatment levies and the volume of water registered and distributed to the users.

SOURCES

- National Statistics Institute, 2013. Survey on the supply and treatment of water. Years 1996-2010 available in: INEbase/Entorno físico y medio ambiente/Estadísticas sobre medio ambiente.
- National Statistics Institute, 2013. Press note of 5 July 2012. Survey on the supply and treatment of water.

MORE INFORMATION

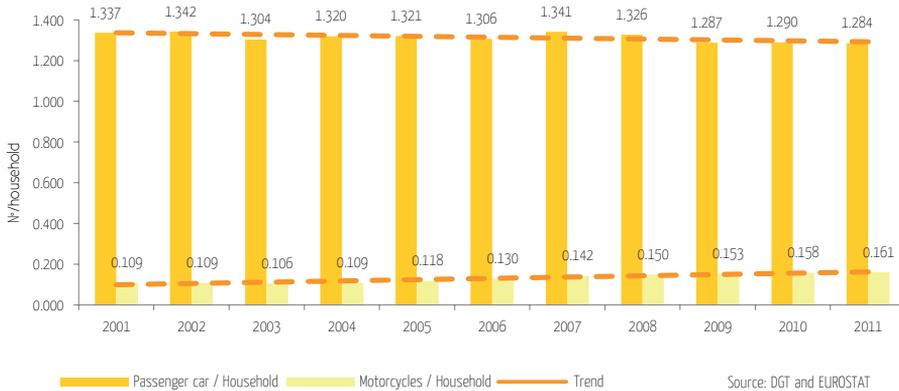
- <http://www.ine.es>



Number of passenger cars and motorcycles per household

The number of passenger cars per household in 2011 slightly decreased (0.6%) while the number of motorcycles grew 2.3%

Number of passenger cars and motorcycles per household

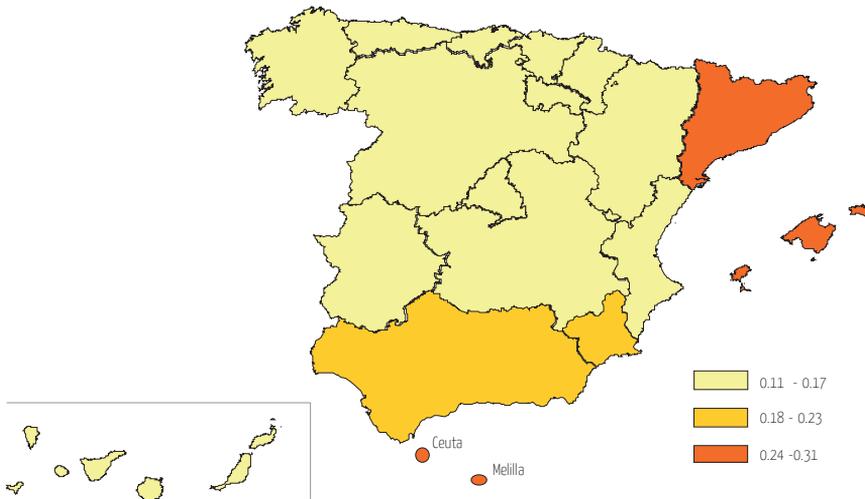


According to the Directorate General of Traffic's General Statistical Yearbook 2011, in that year Spain's vehicle fleet (included mopeds) grew 0.37% with respect to 2010, with 33,082,931 vehicles as of 31 December 2011. Of these, 67.34% were passenger cars and 15.2% were two wheeled vehicles (mopeds and motorcycles). The largest percentage increase in type of vehicle was experienced by motorcycles, with a growth of 3.34%.

If the period 2001-2011 is analysed, the overall vehicle fleet increased by 28%, more than seven million units, of which 23% were passenger cars and 53% motorcycles and mopeds. Specifically, of the types of vehicles in the national vehicle fleet motorcycles have experienced the greatest increase since 2001, with a rise of 87% and a total number of motorcycles of 2,798,043.

Looking in detail at the graph, the amount of passenger cars per household in 2011 fell by 0.4% compared to 2010, from 1.290 to 1.284 passenger cars per household. Although the actual number of passenger cars grew by 0.6% to 22,277,244 units, the number of households increased to a higher extent (1%), leading to a decrease in the ratio.

Number of motorcycles per household. 2011



Source: DGT and EUROSTAT.

NOTES

- Vehicle is understood to mean self-propelled vehicle, meaning trailers and semi-trailers are not included.
- In 2011 902,465 vehicles were taken off the road, of which 69.7% were passenger cars (628,952), a lower number than in previous years.
- The number of passenger cars using petrol continues to decrease in favour of those using diesel. The number of passenger cars with a diesel engine grew by 2.6%.
- The Spanish city that has seen the greatest growth in the number of motorcycles is Madrid; nevertheless, Barcelona is the city with most motorcycles, and is second in Europe, after Rome.
- Spanish cities are adopting changes for motorcycles, which are being given special treatment, with the creation of preferential lanes, advanced stop zones at junctions and parking areas, they do not pay for on-street parking and the taxes are lower.

SOURCES

- Number of households: Eurostat, 2013. Number of households by degree of urbanisation of place of residence and regions NUTS 2 (Code: lfst_r_lfsd2hh). The number of households per Eurostat varies slightly with respect to the figure given by the National Statistics Institute in previous years. Therefore, this series differs from the one published in previous editions of the Environmental Profile in Spain.
- Number of passenger cars and motorcycles: Directorate General of Traffic, 2013. General Statistical Yearbook. 2011. Available in: DGT/Seguridad Vial/Estadística e Indicadores/Publicaciones/Anuario Estadístico General.
- Directorate General of Traffic, 2011. Magazine Tráfico, seguridad vial. Number 208.

MORE INFORMATION

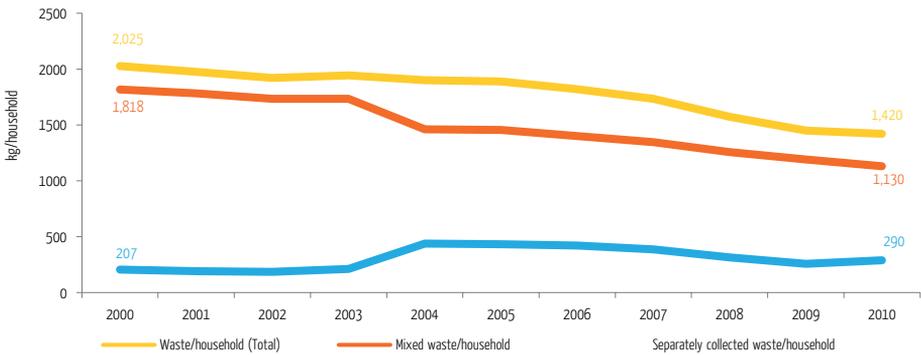
- <http://www.ine.es>.
- <http://www.dgt.es>



Urban waste production per household

In 2010, the decline in total urban waste production per household slowed, while the proportion of waste separately collected per household increased

Production of urban waste per household (kg per household)



Source: INE

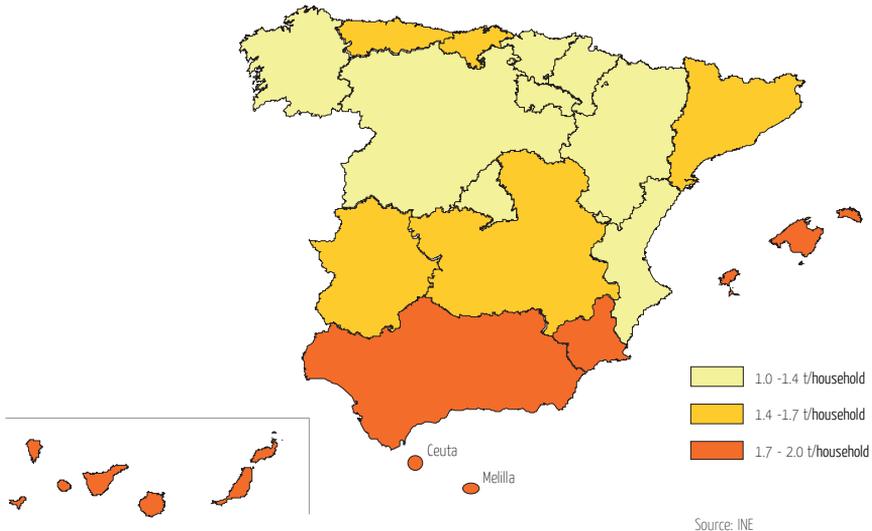
In terms of the decline in the national average amount of urban waste produced per household, the year 2010 was characterised by this fall being less pronounced than that seen in 2009. Specifically, the figures show a fall in the production of waste per household of 2.12%, from 1,451 kg/household to 1,420 kg/household, 30% below year 2000 levels. The same indicator for 2009, though, saw a fall of 7.7% in the urban waste generated per household compared to 2008.

The production of mixed waste fell by 5.2% (the same as for 2009), with a total of 1,132 kg of mixed waste/household. Separately collected waste per household saw a significant increase of 12.2% compared to the previous year, the first rise for these wastes since 2006. The fact that total waste per household fell, while separately collected waste increased, points to an increase in the separate collection rate, from 18% in 2009 to 20% in 2010, which is a positive trend.

Looking at the autonomous communities, nine had values of total waste generated per household below the average. Among them, La Rioja, Madrid and Aragon head the list of communities with the lowest values regarding generation of waste per household (1,100, 1,150 y 1,187 kg/household, respectively).

In absolute terms, the total quantity of urban waste generated in Spain in 2010 was 24.4 million tonnes, 1.5% less than the previous year. Approximately, 80% of this amount was mixed waste, and 20% were separately collected waste. The greatest quantities of waste from separate collection were for paper and cardboard with 1,467,000 t. The lowest figures were for batteries and accumulators (3,100 kg).

Production of urban waste per household. 2010





NOTES

- The urban waste data excludes the treatment of common sludges and mineral wastes.
- Mixed wastes: are defined as wastes and household goods generated by private households, retail shops, offices and services, or during cleaning of outdoor public spaces. These wastes are not separated at source.
- Wastes collected separately: are the result of the separate collection of organic materials, fermentable and recycled materials, as well as any other separate collection system that allows the separation of recoverable materials contained in wastes. They do not include recovered waste in sorting and classification plants.
- For the cities of Ceuta and Melilla, in 2008, 2009 and 2010, the National Statistics Institute does not publish the values of the waste collected due to statistical confidentiality reasons.

SOURCES

- Wastes: National Statistics Institute, 2013. Survey on collection and treatment of urban waste. 1998-2010.
- Households: National Statistics Institute, 2013. INEbase. Continuous survey on familiar budgets. Base 1997. Series 2000-2005
- Households: National Statistics Institute, 2013. INEbase. Survey on familiar budgets. Base 2006. Series 2006-2010.
- National Statistics Institute, 2013. INEbase. Press note of 1 August 2012. Survey on collection and treatment of urban waste. Year 2010.

MORE INFORMATION

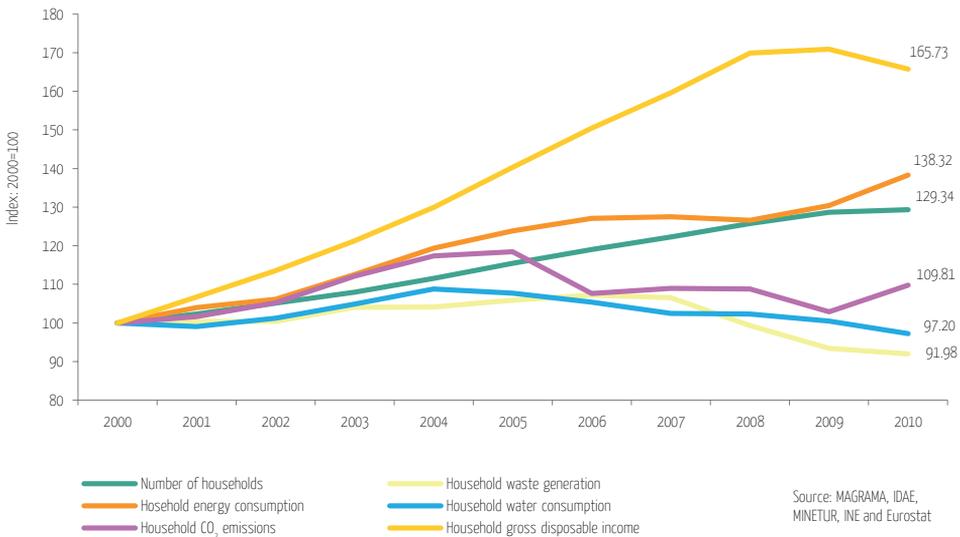
- <http://www.ine.es>



Household Eco-efficiency

In 2010, the growth trend in the number of households slowed; energy consumption and CO₂ emissions increased, while at the same time gross disposable income, water consumption and waste production fell

Environmental efficiency in the residential sector



From the point of view of the eco-efficiency of the residential sector, it is observed that the number of households continued to grow during the period 2000-2010, although in the most recent years the rate of the increase was lower. From the year 2000, the number of households grew in an almost linear manner up to 2009-2010, at which point the rate of growth relaxed, with only 96,000 new households added (0.56%), to take the total to 17,172,000.

Meanwhile, in 2010, the growth trend in gross disposable income per Spanish household reversed. From 2000, gross disposable income grew considerably and, in just 8 years, this economic indicator had reached almost 70% over and above the reference year value (2000). In 2009 growth was positive but very modest (just 0.57% with respect to 2008), and during 2010, when the effects of the crisis began to have a significant impact on hou-



seholds, overall disposable income fell to 689,226 million euros, 3% less than the previous year, to be 65.73 percentage points above year 2000 levels.

The falling trend in the generation of waste slowed. With respect to the year 2006, when household waste production reached its maximum (28,418,545 t), by 2011 the figure had fallen by 14.2%, with a total production of urban waste from households of 24,380,023 t (8.02% less than in the year 2000).

As occurred with waste, water consumption continued to fall in 2010, with a more marked decline than in 2009, to 97% of year 2000 consumption values.

Although the number of households increased, it can be seen that both waste production and water consumption follow a decreasing trend, which is good and indicates an improvement in the environmental awareness of households and in environmental policies, the minimisation and management of waste, as well as in the efficient use of resources. The economic crisis, of course, is another reason, as a lower household disposable income leads to a decrease in consumption.

Finally, energy consumption in Spain in the residential sector has increased due, mainly, to the rise in electricity consumption due to more household appliances. Nevertheless, in 2010 the increase in the demand was higher than in previous years, which could be related, as was pointed out in the report Energy in Spain 2011, to the fact that in 2010 there was a generalised fall in temperature with, consequently, a higher demand for heating, and increased consumption for heating. In 2010 the energy consumption by households was 38.32% above the values of 2000.

For emissions, due to the higher demand of energy for heating and hot water, the CO₂ released in 2010 by residential combustion plants increased by 6.7% with respect to the year 2009. This bucks the declining trend in emissions started in 2005, with the figure being 9.81% above that registered in the year 2000.

NOTES

- For the purpose of calculating the indicator, the annual variation rate of each of the component indicators was used, with 2000 being established as the base year and the indicator's values being based on 100.

SOURCES

- Number of households: Eurostat, 2013. Number of households per grade of urbanisation of the place of residence and regions NUTS 2 (Code: lfst_c_lfsd2hh).
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MORE INFORMATION

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