

# GREEN ECONOMY 2.6



The quest for a new development model is paving the way towards a green economy. This goal is shared by many international institutions, including the United Nations, the Organisation for Economic Co-operation and Development, and the European Union. Encouraging development of a green economy will be one of the main goals of the Environment for Europe conference held in Astana in September 2011. In a report on this subject, the OECD proposes a set of indicators to monitor progress towards a green economy. Achieving a green economy is also a priority in the United Nations Environment Programme (UNEP). As part of this, in March 2011 it published a report entitled *Towards a Green Economy, Pathways to Sustainable Development and Poverty Eradication*. The UNEP sets the target of investing 2% of global GDP in 10 key sectors that will facilitate the transition to a low-carbon economy: agriculture, construction, energy supply, fishing, forestry, industry, tourism, transport, waste and water.

Discussions on this theme will play a large part in the United Nations' Rio+20 Conference. It is intended to address the situation in the world's financial, energy and ecological systems in a holistic and consistent manner.



The EU is promoting development of a global 10-Year Framework of Programmes on Sustainable Consumption and Production (10YFP on SCP).

In Spain, the Government has passed the Sustainable Economy Law, which tackles various aspects of environmental sustainability (described in detail in the Background chapter). With this initiative, the Spanish Government intends to change the country's economic model and direct it towards more economically, socially and environmentally

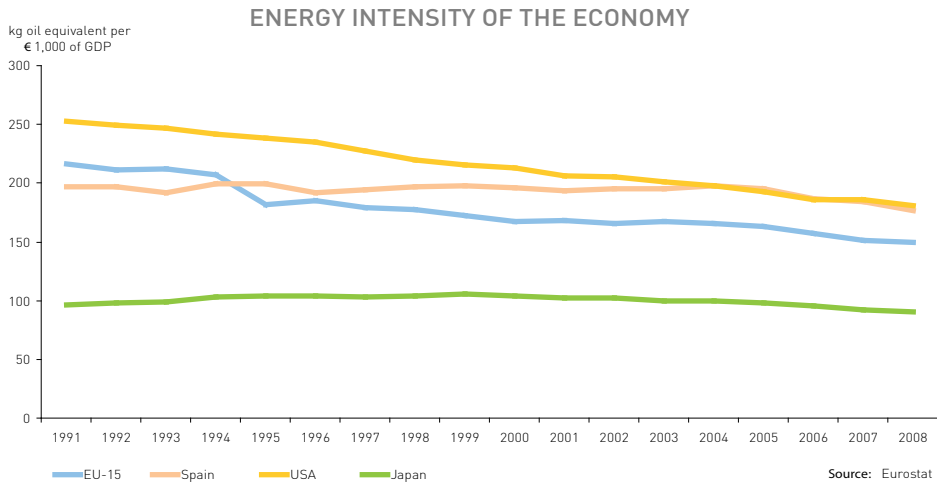
INDICATOR	GOAL	TREND
<b>Energy intensity of the economy</b>	Advance towards a low-carbon economy	Spain's energy intensity fell by 4.06% in a single year
<b>Total material requirement</b>	Achieve rational resource use	Natural resource use per inhabitant is growing
<b>Green jobs</b>	Transform jobs in companies and economic sectors to preserve or restore environmental quality	The number of green jobs in Spain now exceeds 300,000 in companies that account for 1.9% of GDP
<b>Environmental taxes</b>	Reach average EU levels in use of environmentally friendly market mechanisms	Spain's overall revenue from environmental taxes is the lowest in terms of percentage of GDP in the EU

## 2.6 GREEN ECONOMY

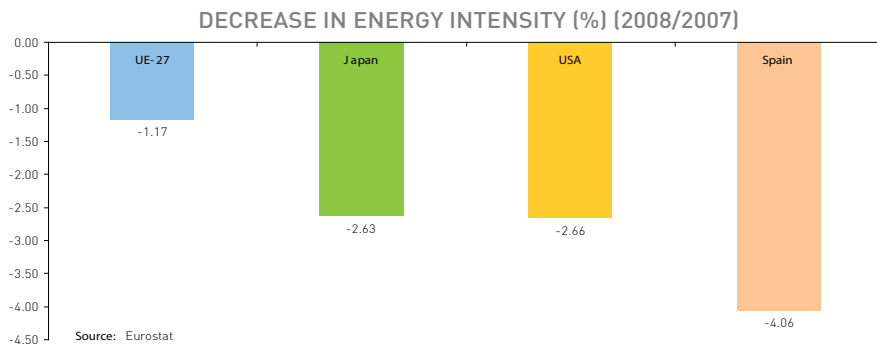
sustainable parameters. A large number of measures are aimed at fostering the green economy and green jobs, including establishing the foundations for a sustainable energy model; reducing GHG emissions to meet the EU targets for 2020; making the regulatory changes necessary to achieve sustainability in transport and mobility; and upgrading housing, all of which would contribute to improving the quality and sustainability of the urban environment.

# Energy intensity of the economy

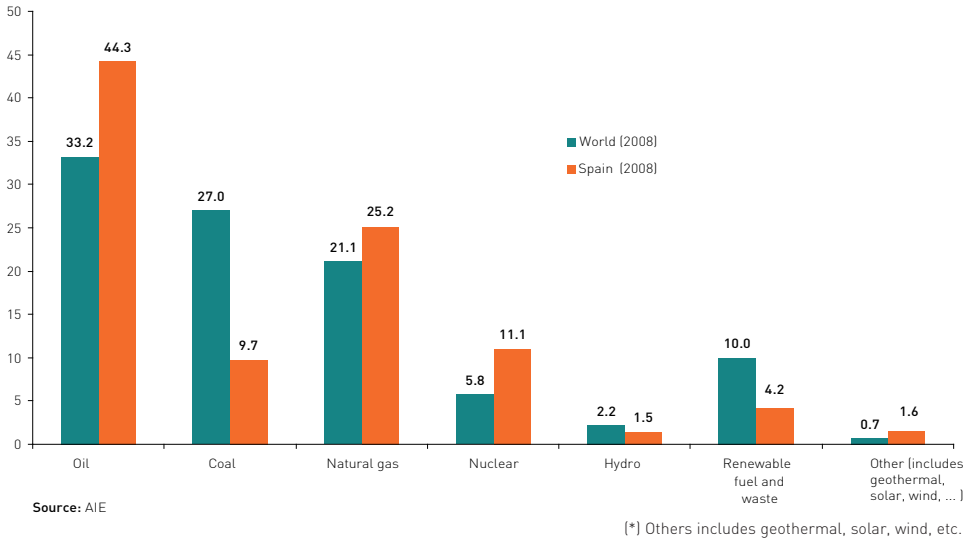
Energy intensity of the economy in Spain is currently decreasing faster than in the rest of the developed countries



In developed countries, there has been a general downward trend in energy intensity for two decades. In other words, these countries have been looking for ways to achieve the same outcome, but using less energy. Issues such as the pollution caused by fossil fuels, their uncertain supply and unpredictable price rises are all factors contributing to the energy crisis. In addition, the risk of climate change has become one of the major factors driving the quest for greater energy efficiency. In Spain, after clear divergence from the European trend over 1993–2004 (when the amount of energy used per unit of GDP grew), the country's energy intensity decreased to such an extent that in 2008 it fell much more year-on-year than in Japan, the US and the EU-27 (as a recent variation and not the series is being considered, the figure for the entire EU-27 has been taken).



PRIMARY ENERGY SUPPLY BY SOURCE (%) (2008)



According to the 2008 data provided by the International Energy Agency on total primary energy sources, Spain’s energy model differs from the worldwide one. Spain has a greater dependency on oil (44.3% as opposed to 33.2%); uses less coal than the global average (9.7% as opposed to 27%); consumes more natural gas (25.2% as opposed to 21.1%); utilises a higher proportion of nuclear energy (11.1% as opposed to 5.8%); employs a lower proportion of hydroelectric power (1.5% as opposed to 2.2%); and uses fewer renewable fuels and less waste as energy sources (4.2% as opposed to 10% globally).

SOURCES

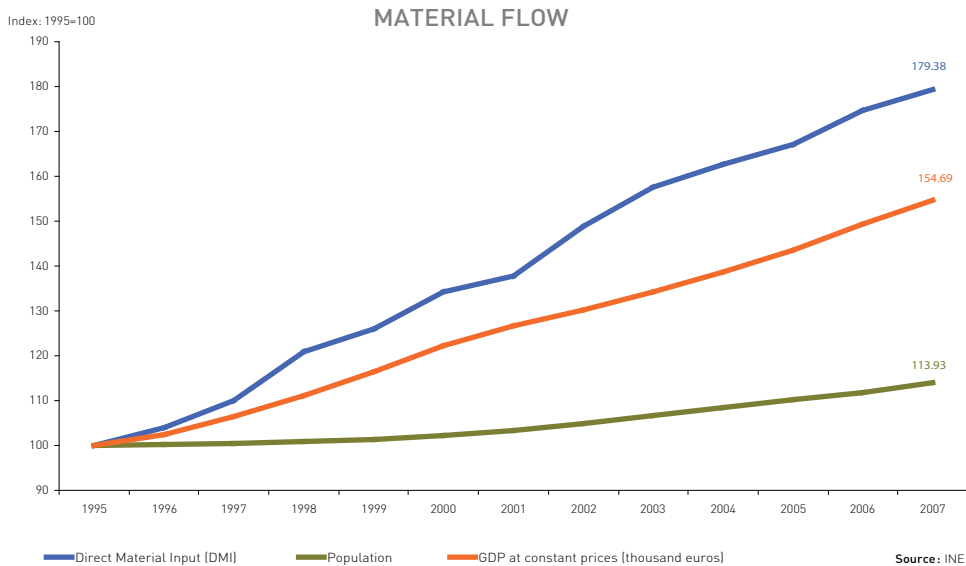
- International Energy Agency. *Key world energy statistics, 2010*.
- IEUROSTAT, 2011. Website: Eurostat/Statistics/Statistics by theme/Energy/Database/Main indicators
- IMITyC, 2010. *La Energía en España 2009*

FURTHER INFORMATION

- [www.iea.org](http://www.iea.org)
- [www.marm.es](http://www.marm.es)
- [www.mityc.es](http://www.mityc.es)
- <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home>

# Total material requirement

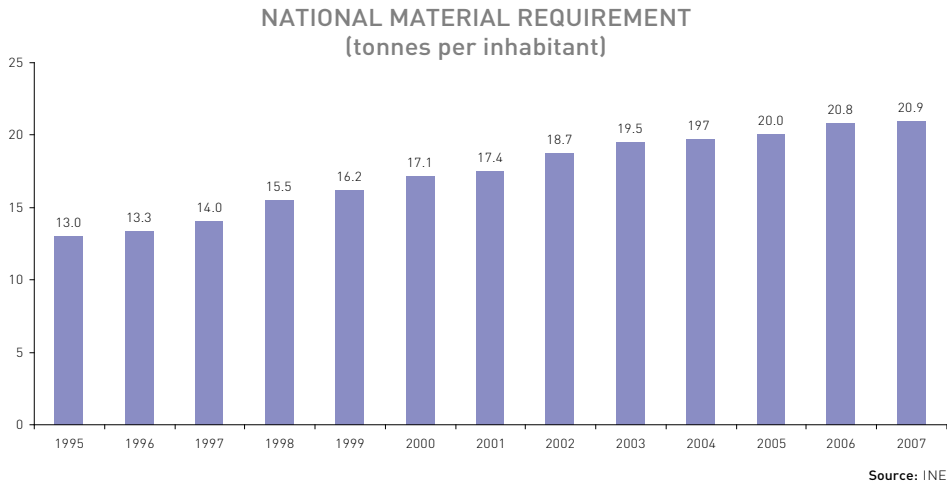
## Spain's material consumption increased



Efficient management of natural resources is vital for sustainable development. Extraction, use, and disposal of materials, as well as national and international trade in them, not only have an impact on the economy; they also have repercussions on the environment. International institutions (i.e., the UN, OECD and EU) are working to develop indicators that will allow them to monitor the extent to which economic growth is being decoupled from pressure on the environment and natural resources. Internationally, the System of Environmental-Economic Accounts shows the statistical interrelationships between the environment and the economy. The material flow accounts are consistent with national economic accounts, both of which are based on similar accounting concepts and standards.

Direct material input is the sum of all materials extracted from domestic sources (biomass, metallic minerals, non-metallic minerals and fossil fuels) plus imports. All of these materials enter the economic system from the national and international natural environment. A country's Total Material Requirement is calculated by subtracting exports from these resources to provide the total quantity of materials used directly in the local economy. This indicator reflects the processes of extraction, consumption, transformation and final disposal of raw materials, chemicals and products used in economic activity.

Analysis of the changes occurring over the 13 years from 1995 to 2007 reveals that while Spain's population grew by 13.93%, its GDP increased by 54.69% and its Direct Material Input shot up by 79.38%. Meanwhile, Spain's Total Material Requirement per inhabitant rose from 12.98 tonnes per inhabitant in 1995 to 20.94 tonnes per inhabitant in 2007, an increase of 61.3%.



Material flows take into account nationally sourced materials, including fossil fuels, minerals (metallic and non-metallic minerals and construction materials) and biomass. They also consider materials originating from national sources, but which become non-used resources, such as crop biomass and the by-products of mining and land excavation.

**NOTES**

- The INE has modified the Material Flow Accounts to adapt them to the Regulation of the European Parliament and of the Council on European Environmental Economic Accounts. Although material flow accounts are closely related to economic accounts, they cannot provide homogeneous aggregates, as materials may change in form and composition at each stage of production and consumption.
- GDP at constant prices is based on chain-linked volumes. The INE still classes the most recent data, from 2007, as provisional.

**SOURCES**

- INE. Material flow accounts. INEbase. Environment: Environmental accounts.

**FURTHER INFORMATION**

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

# Green jobs

## Spain could now have over 300,000 green jobs

There is still no worldwide agreement on the definition of green jobs. The International Labour Organization (ILO) defines them as jobs that reduce the environmental impact of companies and economic sectors to sustainable levels, which help to reduce greenhouse gas emissions, minimise waste and pollution, re-establish ecosystem services and guarantee biodiversity protection. According to the ILO, green jobs can be created in every sector and company. Potential direct jobs exist in sectors that produce green goods and services, while indirect and induced jobs exist in their supply chains when energy and raw material savings are invested in other more labour-intensive goods and services.

ILO forecasts predict that by 2020 the global market for green products and services is likely to have grown to \$2.74 billion, practically double the current figure. Energy efficiency enhancements account for half of this market, while sustainable transport, water supply and health service and waste management make up the rest. The ILO believes that green jobs will be found predominantly in energy supply; renewable energy sources; energy efficiency, especially in buildings and construction; transport; and basic industries, agriculture and forestry. The number of green jobs is particularly expected to grow in alternative energy, especially wind and solar power. The ILO estimates that energy-generating biomass production, electricity and other industries could create 12 million jobs worldwide.

### CORE GREEN JOBS. SPAIN 2010

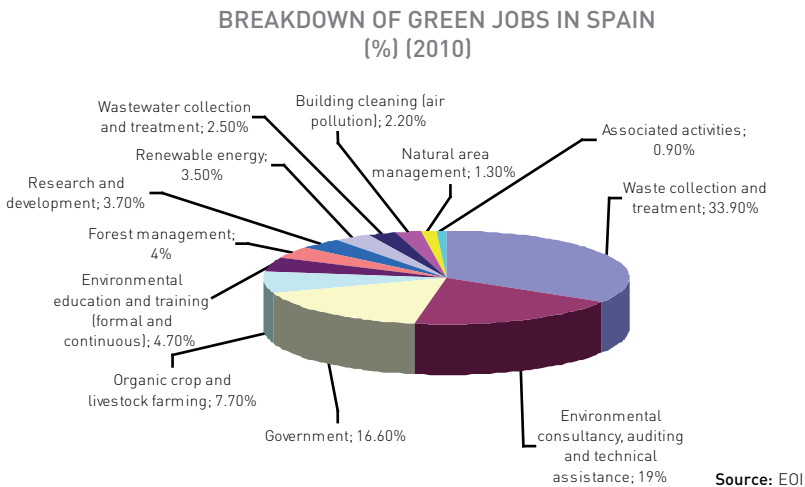
	No of employees	% of total
Waste collection and treatment	108,335	33.9
Environmental consultancy, auditing and technical assistance	60,887	19.0
Public administration	53,072	16.6
Organic crop and livestock farming	24,485	7.7
Environmental education and training (formal and continuing)	15,175	4.7
Forest management	12,715	4.0
Research and development	11,975	3.7
Renewable energy	11,327	3.5
Wastewater collection and treatment	7,931	2.5
Building cleaning (air pollution)	6,907	2.2
Natural area management	4,301	1.3
Related activities	2,832	0.9
<b>TOTAL</b>	<b>319,942</b>	<b>100.0</b>

Source: EOI from data provided by SABI (Encuesta Industrial, DIRCE and Encuesta de Servicios)



The report *Green Jobs: Empleos Verdes en España 2010* by Spain's EOI presents the results of a study based on economic sources and a proprietary survey. It uses the definition of the green economy provided by Eurostat, separating the various activities as follows:

- Core or characteristic activities: services principally intended to protect the environment.
- Connected or related activities: economic activities principally intended to produce non-environmental goods and services, but which are closely tied to the environment, either because they use environmental inputs or because they provide intermediate goods and services consumed by the main environmental activities.



Green jobs form part of the transformation proposed for economies, enterprises and labour markets and their creation is expected to contribute towards achieving a sustainable low-carbon economy. Although they do not coincide completely, the figures published in the EOI's report are similar to those stated in the report on green jobs in a sustainable economy, *Empleo verde en una economía sostenible*, produced by the OSE and the FB in 2010 (the number of people employed in activities traditionally associated with the environment is estimated at approximately 531,000, equivalent to 2.6% of the working population).

This report by the EOI shows that the value of the goods and services provided by the enterprises that make up the core of the green economy stands at €37.6 billion per year, and that their Gross Value Added at market prices totals around €20 billion per year, approximately 1.9% of GDP.

#### NOTES

- The above-mentioned EOI report on green jobs is based on a survey that uses the Eurostat classification of activities (*Environmental Goods and Services Sector. A Data Collection Handbook*). The renewable energy and energy efficiency subsector includes all activities designed to minimise fossil fuel consumption by producing energy from renewable sources, as well as all those designed to save energy (activities 3515, 3518 and 3519 in the CNAE 2009). Within the categories included in what the report considers the core of the green economy, 1,051 companies (with 22,349 employees) working in the fields of renewable energy and energy efficiency were listed under the Industry heading.

#### SOURCES

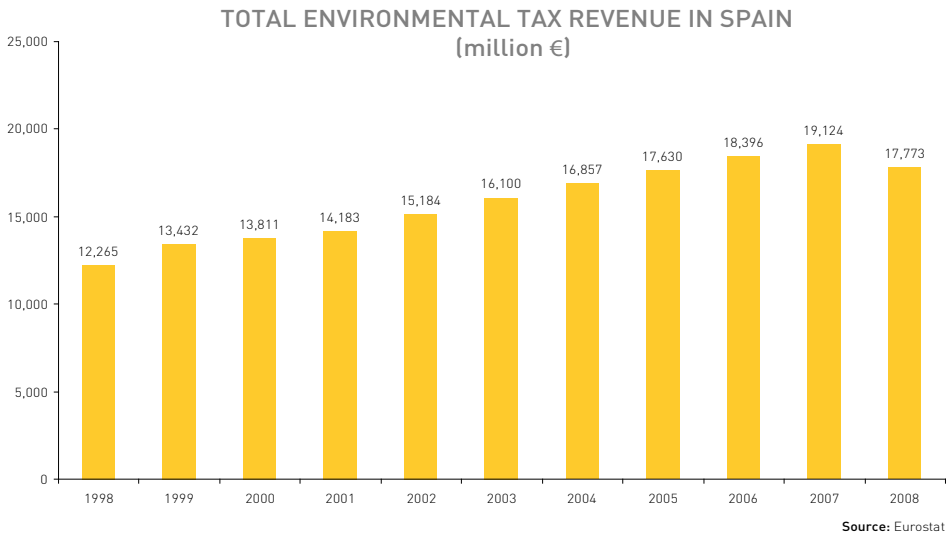
- <http://www.unep.org/greeneconomy/GreenJobs/>
- International Labour Organization, Green Jobs
- EOI. *Green Jobs. Empleo verde en España 2010*
- Spanish Observatory for Sustainability, 2010. *Empleo verde en una economía sostenible*

#### FURTHER INFORMATION

- [www.unep.org](http://www.unep.org)
- [www.marm.es](http://www.marm.es)
- [www.ilo.org/global/topics/green-jobs](http://www.ilo.org/global/topics/green-jobs)
- [www.sostenibilidad-es.org/](http://www.sostenibilidad-es.org/)

## Environmental taxes

The percentage of Spain's GDP allocated to investment and development is increasing rapidly, particularly in the public sector

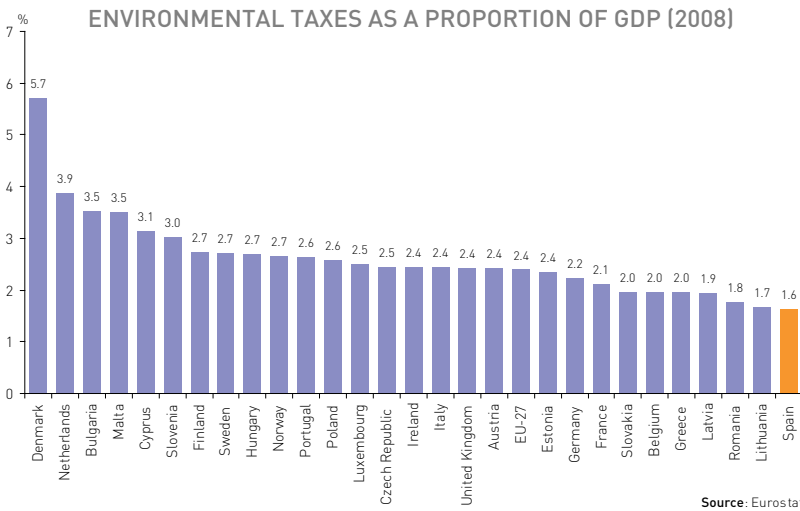


In the European Union, environmental taxes have proven an effective way of persuading consumers to buy and use more environmentally friendly products, resulting in changes in some patterns of behaviour. In 2007, taxes on energy accounted for 72% of the environmental taxes in place in the EU, those on transport made up 24% of the total, and the remainder were on pollution and resource use. The way these taxes are applied and regarded is not uniform across the EU, so simply comparing them may obscure significant differences.

As part of the Eurostat methodology, adopted by the INE in Spain, environmental taxes include those on energy, transport, pollution and resources, but do not include VAT, as this tax is applied to all products. Energy taxes include those on energy products used for transport (petrol and diesel) and for other purposes (heating oil, natural gas, coal and electricity). Transport taxes mainly refer to those related to vehicle ownership and use and include taxes on other methods of transport, such as aeroplanes. These could be one-off taxes, such as those applied to imports or equipment sales, or taxes applied at regular intervals, such as the annual road tax. Pollution taxes include those related to atmospheric emissions (except CO<sub>2</sub> taxes), water, waste management and noise. Resource taxes cover those on extraction and use of natural resources (gas and oil, as well as shooting and fishing licences).

The increase in revenue from environmental taxation (when applicable) is a variable that should be interpreted with caution. For example, rises could be due to the introduction of new taxes, tax increases or growth in the activity taxed (i.e., a rise in pollutant discharges).

Examining the percentage that environmental taxes contribute to GDP shows that Spain is ranked last among the EU countries at only 1.6%.



In Spain, environmental taxes doubled in value over 1995–2008. They then decreased slightly in 2008 before returning to a level similar to 2005.

In 2008, energy taxes represented 79.9% of the total, while transport taxes accounted for around 19.2% and pollution taxes made up the remainder (under 1%). Of the environmental taxes in place in Spain, the household sector represents 50%, while the services sector accounts for around 32%.

### NOTES

- Under the harmonised statistical framework developed in 1997 by Eurostat, the European Commission, the Organisation for Economic Co-operation and Development and the International Energy Agency, environmental taxes are defined as those applied to a physical unit (or similar) of a material that has a proven and specific negative impact on the environment. These include taxes on energy and transport, but exclude value added tax. The taxes in question are mandatory payments collected by the Government and the benefits to the taxable person are not directly linked to the payment.
- Spain's main environmental taxes are as follows:
  - Energy taxes: hydrocarbon tax, electricity tax, tax on retail sales of certain hydrocarbons, special tax on oil-based fuel (Canary Islands);
  - Transport taxes: special tax on certain means of transport, motor vehicle tax;
  - Pollution taxes: state duty on waste discharge, regional taxes on pollution, waste dumping and waste discharge into the sea.

### SOURCES

- Eurostat

### FURTHER INFORMATION

- [www.ine.es](http://www.ine.es)
- [epp.eurostat.ec.europa.eu/portal/](http://epp.eurostat.ec.europa.eu/portal/)

