



Country profile – Portugal

The section 'Key climate- and energy-related data' was prepared by the EEA. It includes the latest data available as of 31 July 2014

The section 'Climate and energy policy framework' was prepared by eclareon and Ecologic Institute, Germany. It includes the latest information on national policies and measures available as of 31 May 2014.

For methodological details and other country profiles, see www.eea.europa.eu/themes/climate/country-profiles.

Key climate- and energy-related data — Portugal

Key data on GHG emissions	2005	2011	2012	2013	EU 2012
Total GHG emissions (UNFCCC, Kyoto Protocol) (Mt CO ₂ -eq.)	87.7	69.3	68.8	67.0	4 544.2
GHG per capita (t CO ₂ -eq./cap.)	8.4	6.6	6.5	6.4	9.0
GHG per GDP (g CO ₂ -eq./PPS in EUR)	465	338	335	329	350
Share of GHG emissions in total EU-28 emissions (%)	1.7 %	1.5 %	1.5 %	1.5 %	100.0 %
EU ETS verified emissions (Mt CO ₂ -eq.)	36.4	25.0	25.2	24.6	1 848.6
Share of EU ETS emissions in total emissions (%)	41.5 %	36.1 %	36.7 %	36.8 %	40.7 %
ETS emissions vs allowances (free, auctioned, sold) (%)	- 1.3 %	- 24.2 %	- 23.4 %	- 19.0 %	- 14.1 %
Share of CERs & ERUs in surrendered allowances (%)	0.0 %	12.0 %	26.1 %	n.a.	26.4 %
Non-ETS (ESD) emissions, adjusted to 2013–2020 scope (Mt CO ₂ -eq.)	49.5	43.4	42.6	42.0	2 566.6
Key data on renewable energy	2005	2010	2011	2012	EU 2012
Share of renewable energy in gross FEC (%)			24.5 %	24.6 %	14.1 %
() = including all biofuels consumed in transport	(19.5 %)	(24.2 %)			
Share of renewable energy for electricity (%)	27.7 %	40.7 %	45.9 %	47.6 %	23.5 %
Share of renewable energy for heating and cooling (%)	31.8 %	33.7 %	35.0 %	33.0 %	15.6 %
Share of renewable energy for transport (%)			0.4 %	0.4 %	5.1 %
() = including all biofuels consumed (%)	(0.2 %)	(5.6 %)			
Key data on energy consumption	2005	2010	2011	2012	EU 2012
Primary energy consumption (Mtoe)	24.9	22.6	21.9	20.9	1 584.8
Primary energy consumption per capita (Mtoe/cap.)	2.4	2.1	2.1	2.0	3.1
Final energy consumption (Mtoe)	19.0	18.1	17.3	16.2	1 104.5
Final energy consumption per capita (Mtoe/cap.)	1.8	1.7	1.6	1.5	2.2
Efficiency of conventional thermal electricity and heat production (%)	47.3 %	50.6 %	49.6 %	48.2 %	50.0 %
Energy consumption per dwelling by end use	2005	2009	2010	2011	EU 2011
Total energy consumption per dwelling (toe/dwelling)	0.80	0.83	0.72	n.a.	1.42
Space heating and cooling (toe/dwelling)	0.18	0.21	0.14	n.a.	0.96
Water heating (toe/dwelling)	0.15	0.14	0.14	n.a.	0.18
Cooking (toe/dwelling)	0.34	0.33	0.29	n.a.	0.08
Electricity (lighting, appliances) (toe/dwelling)	0.13	0.14	0.15	n.a.	0.20

Progress towards GHG targets (under the Effort Sharing Decision, i.e. non-ETS emissions)

2013 ESD target (% vs base year)	- 2.8 %	2020 ESD target (% vs base year)	+ 1.0 %
2013 ESD emissions (% vs base year)	- 12.4 %	2020 ESD projections WEM (% vs base year)	- 30.7 %
		2020 ESD projections WAM (% vs base year)	n.a.

Based on approximated emission estimates for 2013, emissions covered by the Effort Sharing Decision (ESD) (i.e. in the sectors which are not covered by the EU ETS) are expected to be below the annual ESD target in 2013. Projections also indicate that 2020 ESD emissions are expected to be below the 2020 ESD target, with the current existing measures.

Progress towards renewable energy targets

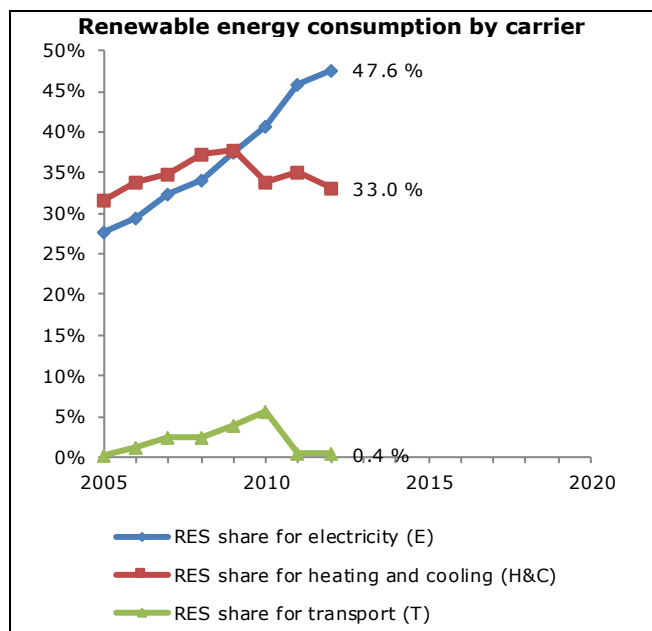
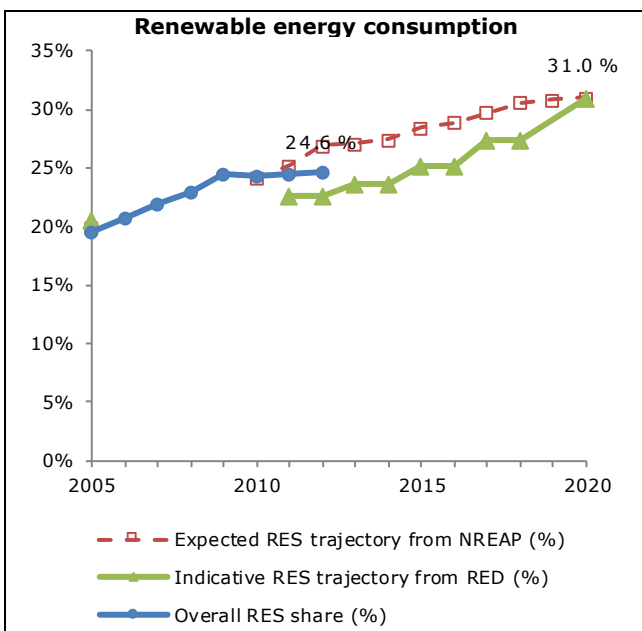
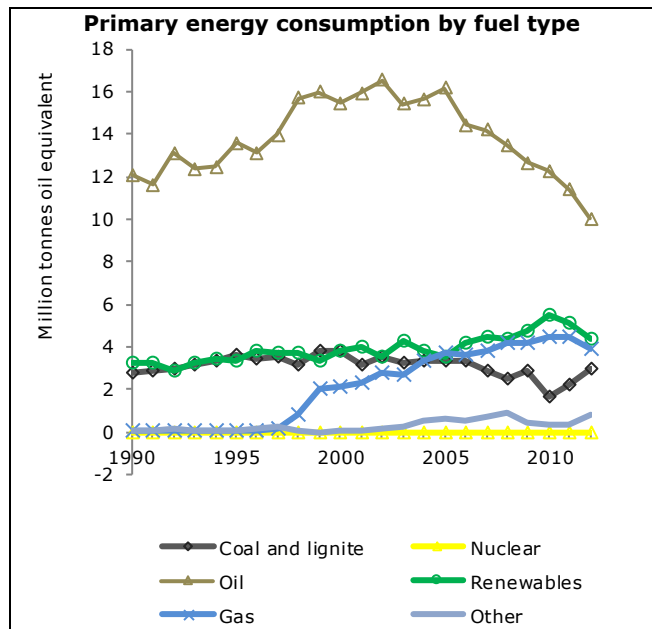
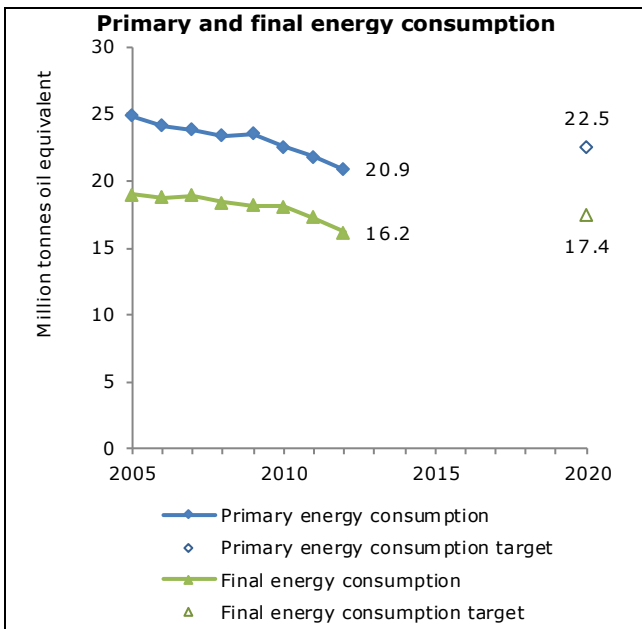
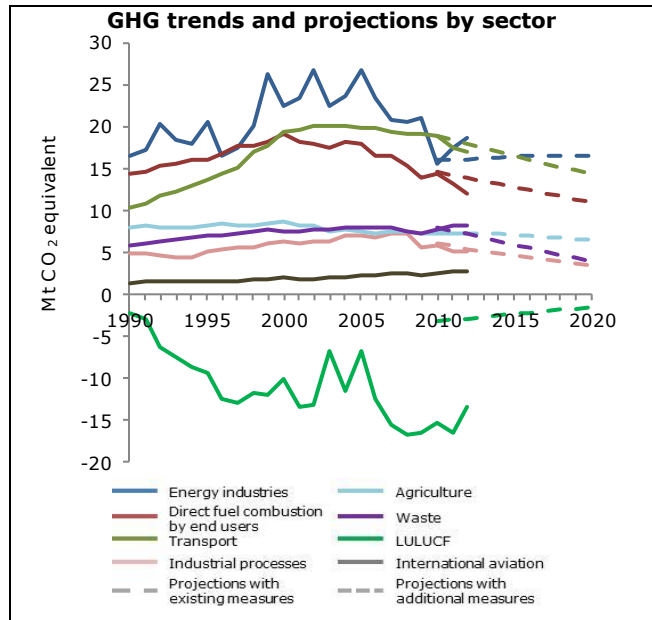
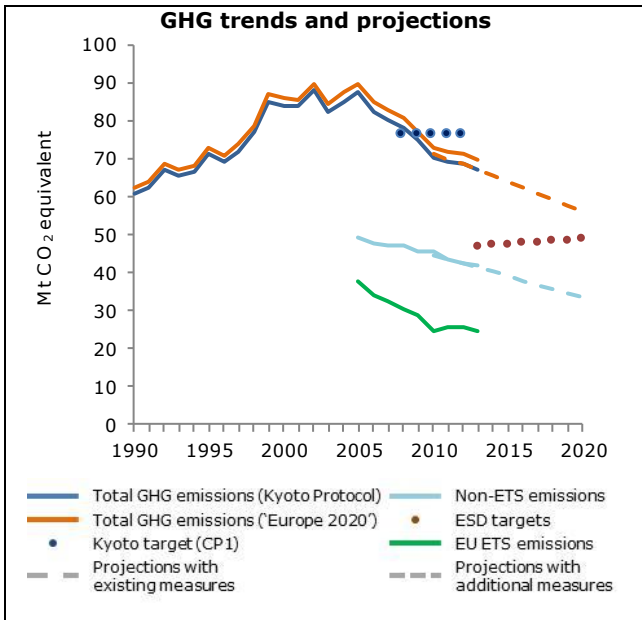
2012 RES share in gross final energy consumption (%)	24.6 %	2011–2012 indicative share from RES Directive (%)	22.6 %
2020 RES target	31.0 %	2012 expected share from NREAP (%)	26.9 %

The average share of renewable sources in gross final energy consumption for 2011–2012 was 24.6% (4.2 Mtoe), which is higher than the indicative RED target for 2011–2012 (22.6%). At the same time, the share of renewables in 2012 (24.6 %) is lower than the expected 2012 NREAP target (26.9 %). Over the period 2005–2012 the observed average annual growth rate in renewable energy consumption amounted to 1.0%. In order to reach its 2020 NREAP target, Portugal needs an average annual growth rate of 5.1% in the run-up to 2020. In absolute terms, this is equivalent to 7.3 times its cumulative effort so far.

Progress towards energy efficiency targets

Primary energy consumption:		Final energy consumption:	
2005–2012 average annual change	- 2.5 %	2005–2012 average annual change	- 2.3 %
2012–2020 average annual change to target	+ 0.9 %	2012–2020 average annual change to target	+ 0.9 %

Between 2005 and 2012, primary and final energy consumption decreased at faster paces than is necessary to meet the 2020 targets. Despite the important role played by the economic crisis in this result, energy efficiency policies also contributed to these decreases. For example, the measures addressing for the building sector contributed to the reductions in energy consumption in the recent years. Portugal can focus on stabilising its energy consumption. Reducing distribution losses (which increased by 9.3 % between 2005 and 2012) and improving conversion efficiency (consumption of solid fuels increased by 77 % since 2010) could contribute to further reducing primary energy consumption.



Climate and energy policy framework

Challenges and opportunities

Portugal's economic situation remains a challenge also for climate and energy-related matters. With regard to progress in implementing climate and energy policies, Portugal has experienced some delays. The review of the National Programme for Climate Change (PNAC) for the period 2013–2020 is still being developed. Changes to the renewable energy source's (RES) regulatory framework have destabilised the investment environment. The renewable energy and energy efficiency sectors still entail potential opportunities. Studies found that a low-carbon pathway could create a large number of additional green jobs. Portugal's National Energy Strategy for 2020 (ENE 2020), for example, which promotes RES and energy efficiency among other things, could create more than 120 000 additional jobs (OECD, 2012) while measures set out in Portugal's National Action Plan for Renewable Energy (PNAER) 2020 could lead to approximately 70 000 additional jobs (RCM 20/2013).

The Portuguese transport sector continues to be a challenging issue given that the sector is the single largest contributor to greenhouse gas (GHG) emissions in the country. While some attempts have been made to tackle emissions and progress has been made in some respects, Portugal has so far not implemented a comprehensive strategy addressing the issue. Higher taxes on fuels could tackle transport GHG emissions and at the same time help to shift taxation from labour to consumption.

Climate and energy strategies

Portugal has a number of major climate and energy strategies in place, such as the National Low Carbon Roadmap 2050 (APA, 2012), the PNAC, which still needs to be reviewed, and the Sectoral Low Carbon Plans. Portugal's main focus is on developing a low-carbon economy, increasing energy efficiency, liberalising energy markets to make them more competitive, improving the quality of public transport, reducing the dependence on fossil fuels by diversifying primary energy sources and meeting its GHG reduction targets (Governo de Portugal, 2011). Furthermore, Portugal has implemented the ENE 2020, which aims to increase electricity from RES.

Renewable energy

In Portugal, renewables play an important role, in particular in the electricity sector. Due to the increased renewable energy capacity, Portugal yielded savings amounting to approximately EUR 846 million through a EUR 806 million saving on imports of fossil fuels (natural gas and coal) and a EUR 40 million saving in CO₂ emission allowances. Portugal's PNAER 2020 has been reviewed in 2013. One focus of the revision was to create additional jobs. The main support measure for renewable electricity has been a feed-in tariff (FIT). The system is, however, under review and might be changed to a market regime. Since 2013, there is also an alternative remuneration regime for wind farms. In addition, Portugal has programmes aiming at replacing the use of coal through biomass combustion in thermal power plants and aiming to improve the capacity of wind farms to reduce GHG emissions. Renewable heating is indirectly supported through the micro generation regime as electricity producers have to install 2 m² of solar thermal panels in order to receive the FIT.

Energy networks

The export of renewable electricity to countries outside the Iberian market is vital for the country. Therefore, Portugal is planning to increase the interconnection capacity with Spain by installing two lines (400 kV each) by 2016; however, the challenge remains the limited interconnection capacity between Spain and France.

Energy efficiency

The energy intensity of the economy is slightly below the EU average in Portugal. The ENE 2020 addresses, inter alia, the promotion of energy efficiency. Government policies proposed in the Portuguese National Climate Change Programme — such as MAe1 (Energy efficiency improvement in the electricity generation sector), Mae2 (Energy efficiency improvement in the energy supply systems, considering electricity generation from cogeneration) and Mae3 (Improvement in energy efficiency from the electricity demand side) — aim to improve energy efficiency.

Energy **taxation** is relatively low in comparison to other EU countries. Portugal had removed its reduced VAT rate on electricity and natural gas as part of its Economic Adjustment Programme in 2011, increasing it from 6 % to 23 % (normal rate). However, Bill 525/XII/3a and Bill 542/XII/3a propose a return to the reduced 6 % VAT rate for electricity. The bills are under discussion in the Assembly of the Republic. However, the government published on 30 April 2014 its Fiscal Strategy Document (Documento de Estratégia Orçamental (DEO)) for the period 2014–2018 and an increase of 0.25 % in the normal VAT rate was proposed.

Portugal is aiming to increase the share of electricity generation from **cogeneration**. Investment subsidies and specific tariffs for cogeneration have been implemented by Decree-Law 23/2010.

Energy-intensive **industries** are subject to the Energy Intensive Consumption Management System, which obliges them to reduce energy consumption. Financial support is provided by the Portuguese Energy Efficiency Fund (Fundo de Eficiência Energética (FEE)), which launched new calls to encourage energy efficiency among others in the industry sector in early 2014. The call 'Encouraging the Promotion of Energy Efficiency 2014' addresses measures in industry aiming at the installation of insulation systems, conduction of energy audits and implementation of consumption management equipment.

In the **building sector**, relevant instruments to increase energy efficiency are the Regulation for the Characteristics of the Thermal Behaviour of Buildings, which regulates energy use and efficiency requirements for new residential and small office buildings, and the Regulation on Heating, Cooling and Air Conditioning, which sets out minimum energy performance requirements. It is expected that the regulations will increase the energy efficiency of buildings by 40 % by 2020. Financial support is provided by the Efficient Building 2012 programme.

Transport

The transport sector is the greatest sectoral contributor to emissions mainly due to an increased number of private cars and road freight transport. Incentives for efficient driving and the purchasing of efficient cars include a registration tax and ownership taxes that are based on engine volume and CO₂ emissions. The State Budget for 2014 increased the Single Circulation Tax. The taxes now range from EUR 57.76 for vehicles with CO₂ emissions up to 120 g/km to EUR 321.99 for vehicles with CO₂ emissions with more than 250 g/km. Portugal has distance-based road

tolls that are, however, currently rather low compared to other EU Member States. Diesel and petrol are taxed at around EU average (European Commission, 2013) and a gradual tax harmonisation is foreseen for diesel fuel. Within the Auto Oil Programme, voluntary agreements have been concluded with the car manufacturing associations to reduce the carbon intensity of light passenger vehicles (EEA, 2013). Portugal had an end-of-life vehicle disposal incentive programme that ended in 2010 and an incentive for the demolition of old cars for acquiring an electric car that was cancelled in 2011. The Council of Ministers agreed in April 2014 to amend the legal framework of electric mobility to liberalise the public network of charging stations, introduce competition in the sector and facilitate the integration of charging points in private areas to further promote the use of electric vehicles. The government might also introduce tax benefits when buying an electric vehicle. Renewables in transport are promoted through tax exemptions for small producers of biofuels.

Portugal is also investing in the expansion and new building of metro networks in Lisbon and Porto and promoting the use of public transport, aiming to replace 5 % of conventional transport through public transport.

Agriculture

Emissions from the agricultural sector have decreased in Portugal since 1990 mainly due to reduced livestock and a generally decreasing agricultural activity. The main climate-related measures are the promotion of carbon sequestration in agricultural soil and the promotion of treatment and energy recovery of livestock waste (UNFCCC, 2012). Furthermore, agriculture is addressed by the national energy efficiency plan, which funds programmes also in the agricultural sector.

Waste

In March 2014, the Portuguese Environment Agency released a draft version of the Strategic Plan for Urban Solid Waste (PERSU 2020). The Plan needs to be discussed with the involved entities and will subsequently be open for public approval. The Plan's focus is to review the Plan for the Prevention of Urban Waste (Plano de Prevenção dos Resíduos Urbanos (PPRU)), achieve a target of 70 % of recycling of packaging waste by 2020, reduce the amount of biodegradable municipal waste sent to landfills and increase the annual per capita recycling rate. Furthermore, Portugal has implemented the Directive on packaging and packaging waste (2004/12/CE) with the Decree-Law 366-A/97.

Land use, land-use change and forestry

Portugal has adopted a Programme for the Sustainable Development of Portuguese Forests (adopted by RCM 27/99) to reduce GHG emissions. The Programme entails incentives for new tree plantations and provides financial support. In addition, Portugal intends to promote the forests' carbon sink capacity by improving forest management in general (EEA, 2013).

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