ODYSSEE-MURE

Energy Efficiency Country Profile: Portugal

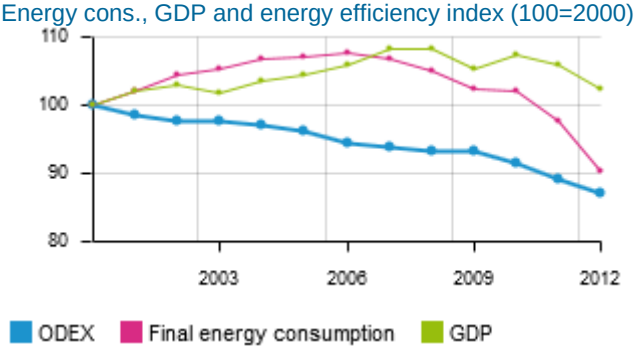
February 2015

Energy Efficiency Trends

Overview

Throughout the last 12 years (2000-2012) an annual average gain of 1%/year in the overall energy efficiency was observed in Portugal, like presented in the of energy efficiency ratio (ODEX). The reason for this improvement comes simultaneously from the three sectors with major energy consumption share, around 82% of total national final energy consumption. These sectors, residential, manufacturing and transport, had a significant improvement in energy efficiency of about 2.7%/year for residential and in the manufacturing industry and transport by 0.9%/year each.

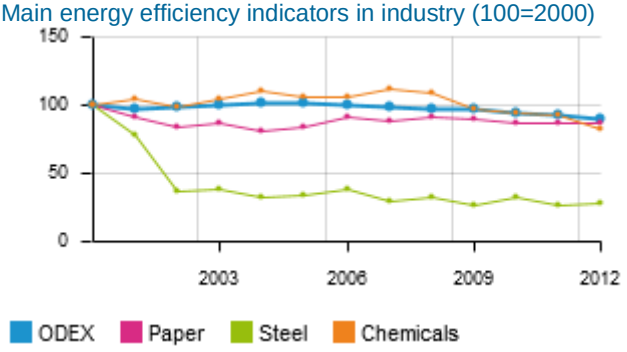
Energy cons., GDP and energy efficiency index (100=2000)



Industry

Looking for broader period, 1990 -2012, energy efficiency in manufacturing reaches a value of 15% for the whole period, most visible from 1995. Taking up the review period (2000-2012) one of the sectors where energy efficiency was emphasized most, was the steel which reached an annual energy efficiency of 5.6%/year, passing from a unit consumption of 0.23 toe/t in 2001 to 0.11 toe/t in 2002, stabilizing after this period due to the diminish coke consumption. Other important sectors were chemicals and paper industry. However, the first one had noticed a negative trend in its efficiency between 2004 and 2008. In the case of the paper industry an energy efficiency of 1%/year in the studied period was achieved with a unit consumption of 0.63 toe/t in 2012.

Main energy efficiency indicators in industry (100=2000)

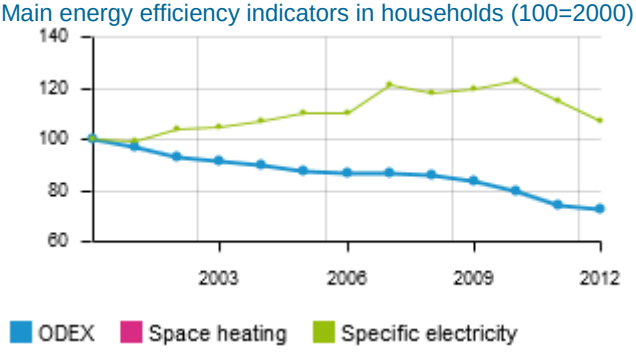


Chemicals : toe per unit of production index
Paper, steel: toe per tonne

Households

This sector, which represents about 17% of energy consumption in the country, noted one of the largest developments in energy efficiency, about 33% (ODEX) among 2000-2012. This positive development results in continuous natural gas consumption, introduced in the country in 1996, and the use of LPG for heating water and acclimatization as the improvement in housing regarding better building solutions (thermal insulation and double glazing). In 2006 was held the transposition of EU Directive 2002/91/EC, generating some impact by establishing more tighten requirements as well as the use of solar thermal energy in new buildings. However, regarding the use of electricity, a reverse trend is visible from 2006, through the purchase of large electrical appliances, minimized by the economic crisis which has its reflection from 2010.

Main energy efficiency indicators in households (100=2000)



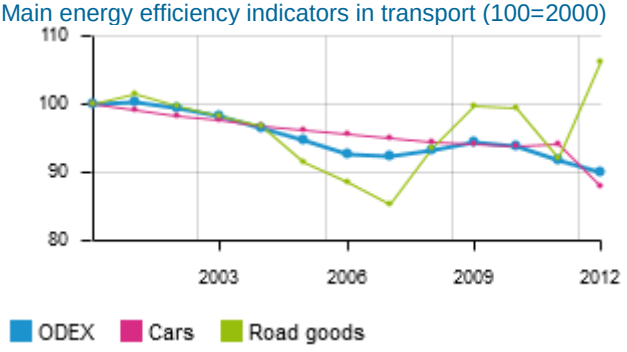
Space heating : koe per m2
Large electrical appliances: kWh per dwelling

Transport

The efficiency of transport sector improved by 10,4% between 2000-2012. However, it appears that the tendency of efficiency (ODEX) is influenced by the traffic of goods which does not follow a linear trend by the impact of the amount of tonne-km, clearly visible in the years 2004-2008.

With respect to cars between 2000-2011 there is a constant tendency to increase energy efficiency of about 0.5%/year, with a reducing of unit consumption from 7,9l/100km in 2000 to 7.4 l/100km in 2011.

Main energy efficiency indicators in transport (100=2000)



Cars: litres per 100 km
Road traffic of goods (trucks): koe per tonne-km

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Energy Efficiency Policy

Institutional and energy efficiency targets:

In 2013 the National Action Plan for Energy Efficiency (PNAEE) for 2013-2016 was approved by the Council of Ministers of 28 February, in accordance to the principles of Directive 2006/32/EC. This review took into account the 2020 horizon perspective, according to the directive 2012/27/EU. This document includes a wide range of programs and measures across all sectors, and it is considered essential for Portugal to achieve the goals set out in the Directive 2006/32/EC.

As a result of the economic crisis, which had significantly altered the previewed national primary energy consumption, nowadays it is considered that the previous estimated goals were achieved with a consumption of 23.8 Mtoe. The new objective considered in the recast of NEEAP settles a more ambitious target requiring an additional effort in reducing primary energy consumption (between 1.2 and 1.7 Mtoe) up to 22,5 Mtoe.

In public administration and in addition to the Energy Efficiency Program in Public Administration (ECO.AP), other goals were settled in NEEAP through purchasing more efficient vehicles in the transport fleet as well as a more efficiency public street lighting with particular emphasis on the installation of flow regulators, phase-out of mercury vapor lamps and traffic control systems (LED technology in traffic lights). The cumulative energy savings in 2013 was about 24.7 ktoe.

Since 2008 the main instrument for improving energy efficiency in industry is the Management System of Intensive Consumption of Energy (SGCIE). It applies for all companies and facilities (also named "Operators") which have an annual consumption over 500 toe/year, imposing binding energy audits, with a 6-year periodicity, in energy-intensive facilities with consumption above 1000 toe/year, and the 8-year periodicity for energy audits to facilities with energy consumption between 500 and 1 000 toe/year. By the end of December 2014 862 Energy Saving Plans were approved.

The decree-law 118/2013 that transposes the recast the directive 2010/31/EU, entered in force in December 2013, revising the previous Energy Certification of Buildings. This revision imposes more ambitious requirements to either thermal envelop and technical systems (heating/cooling/DWH/lighting/elevators) setting the bases for achieving nearly of near-zero buildings.

In relation to the transport sector the cumulative savings in 2013 were of 284.5 ktoe resulting from the implementation of programs aimed to encouraging the renewal of road vehicles and as well as it's efficient use; urban mobility by use of incentive and public transport and the energy efficiency in transport system incorporating the Management Regulations of Energy Consumption (RGCE). The RGCE is directed to the dedicated transport fleet operators and to companies of transport fleets with consumption above a reference value.

Main energy efficiency policy measures and their impacts

Sector	Main objectives and measures	Impacts (final energy consumption (2013), [toe])
Cross-sectoral	➢ National Energy Strategy 2020 (ENE 2020)	-
Industry	➢ Intensive Energy Consumption Management System (SGCIE)	223.609 (Including retroactive impacts from RGCE)
Buildings	➢ Energy labelling Buildings (2013) ➢ Building code REH 2013	67.719
Transport	➢ Regulation for Energy Management in the Transport Sector. ➢ Sustainable mobility promotion and good practices adoption	25.832 98.817
Public services	➢ Energy Efficiency Program in Public Administration (ECO.AP)	18.927
Tertiary	➢ Energy labelling Buildings (2013) ➢ Building code REH 2013	35.122