

Energy Efficiency Trends

Overview

Energy efficiency of final consumers was improved by 11.0% over the period 2000-2013 with a gain of almost 1%/year. The progress was slower since 2007 because of the economic crisis: 1.1%/year in the period 2000-2007, 0.7%/year after 2007. All sectors had realized progress in energy efficiency since 2000: transport sector improved by 12.8% (1.0%/year), followed by industry with 12.2% (1.0%/year). For households was observed an slower improvement, 7.5% (0.6%/year), due to the increase in energy consumption for a better comfort.

Industry

In the period 2000-2013 the energy efficiency improved by 12.2%: the improvement has been constant over the period 2000-2011 (1.1%/year), in the last years the progress is slowing down. For all industrial branches were observed improvements in energy efficiency but with different trends: in 2000-2003 all industrial branches have had a loss of energy efficiency except chemicals and cement; in 2003-2008 were observed the greater improvements except for cement (loss in energy efficiency) and paper that has achieved better results in the period 2008-2013. In particular, chemicals has had the greatest improvement, 29.8% (2.7%/year), steel has made progress in the years 2000-2008 (2.7%/year) and loss of energy efficiency since 2008 (-0.5%/year) due to economic crisis.

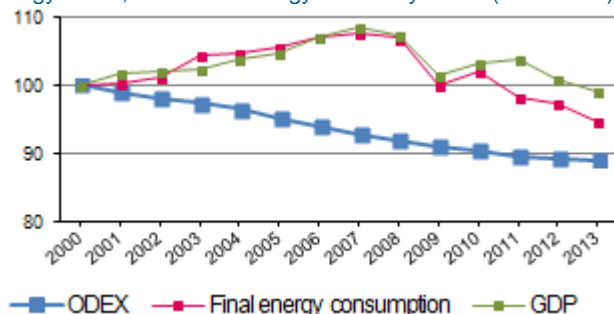
Households

Energy efficiency in households over the period 2000-2013 improved by 7.5%. The slowdown is due to an increase in energy consumption for space heating, the largest end-users with about 70% of energy consumption, and not of loss in energy efficiency: a high raise in wood consumption, especially related to the second residences, and expansion of the natural gas network. The best improvement in energy efficiency were observed for electrical appliances, 22.7% (+2.0%/year), due to a considerable decrease in energy unit consumption. Water heating and cooking improved by 19.6% and 15.5%, respectively, in the period 2000-2013.

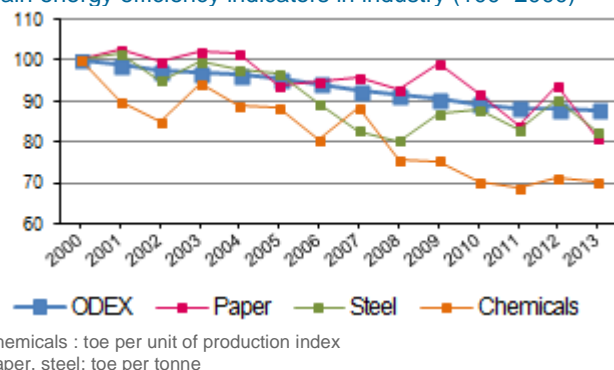
Transport

In the period 2000-2013 the progress in energy efficiency of transport sector 12.8% in the period 2000-2013. The efficiency of transport sector depends mainly on the energy efficiency of transport road because cars and trucks take up almost 90% of energy consumption: over the period 2000-2013 the energy efficiency of cars improved by 15.6% because of decrease in the energy specific consumption, while energy efficiency of trucks worsened by 59.0% due to the increase in travels but less goods transported per travel. The other transport modes have improved in energy efficiency but their impact is limited: 46.9% for water transport, 33.4% for air transport and 10.3% for rail in the period 2000-2013.

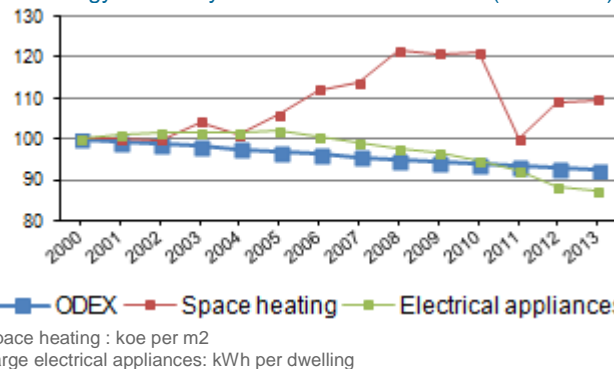
Energy cons., GDP and energy efficiency index (100=2000)



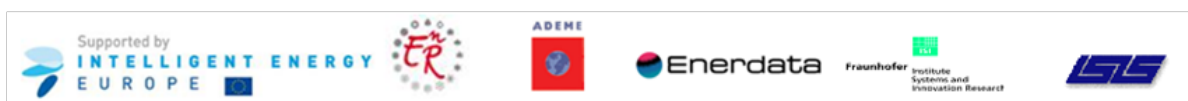
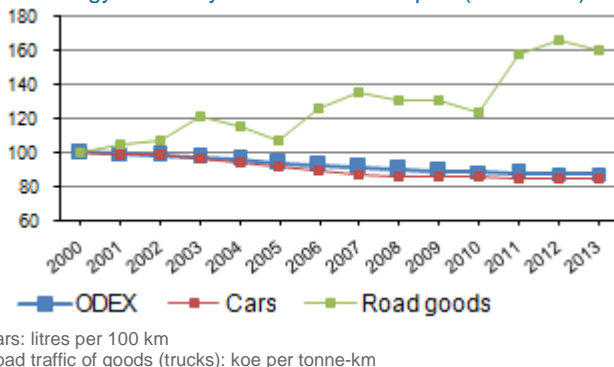
Main energy efficiency indicators in industry (100=2000)



Main energy efficiency indicators in households (100=2000)



Main energy efficiency indicators in transport (100=2000)



Energy Efficiency Policy

Institutional and energy efficiency targets:

The 3rd National Energy Efficiency Action Plan, submitted in 2014, sets the final end-use energy savings target of 15.5 Mtoe for 2020. As set in NEEAP 2014, achieved energy savings up to 2013 have been equal to more than 3.2 Mtoe/year, equivalent to 20.7% of the 2020 objective. In order to reach the targets over the period 2014-2020, Italy intends to rely on the White Certificate obligation scheme, and two additional energy efficiency schemes: the tax deductions and the "Thermal Account" (Heating & Cooling Support Scheme). With respect to White Certificates, the analysis of a sample of ex-post calculation projects showed a cost-effectiveness equal to 0.017 €/kWh, seven times lower than the tax deductions average.

According to Article 4 of Directive 2012/27/EU, is currently under public consultation a long-term strategy for mobilising investments in the renovation of national stock of residential and commercial buildings, both public and private: it was estimated a potential national energy savings achievable by energy efficiency improvement actions in the residential and non-residential sectors equal

to 3.71 Mtoe/year at 2020. To achieve this objective, it would be needed to upgrade more than 170 million m² of floor area per year. Concerning the services sector, the overall final energy saving can be quantified in 1.5 Mtoe/year, considering a yearly renovated floor area equal to 16 million m².

In 2013 the Ministry of Infrastructure and Transport set up a "National infrastructure plan for installing electric vehicles charging points" to ensure the uniform spread of electric charging points across the national territory: 90,000 recharging points accessible to the public by 2016, 110,000 by 2018 and 130,000 by 2020. In accordance with Directive 2010/40/EU. In 2014 the National Intelligent Transport System (ITS) Action Plan was adopted that identifies the national priorities till 2017: optimal use of road, traffic and travel data, continuity of ITS traffic and freight management services, ITS applications for road safety and transport security and linking the vehicle with the transport infrastructure.

Main energy efficiency policy measures and their impacts

Sector	Main objectives and measures	Impacts
Cross-sectoral	White Certificate Scheme: obligation imposed on electricity and gas distributors having more than 50,000 end users, to generate each year a certain amount of energy savings .	ex-post calculation projects showed a cost-effectiveness equal to 0.017 €/kWh.
Industry	energy audit: promotion of specific energy efficiency intervention with a payback period minor than four years.	
Buildings	Tax deduction: reductions of personal and corporate income tax granted for actions improving the energy efficiency of existing buildings new standards required by the EPBD for buildings and by the Ecodesign Directive for space heating and cooling	
Transport	promotion of sustainable transport systems: new railways on ordinary lines, 45 km by 2016 and 140 km by 2020, and on high-speed/high-capacity network, 57 km by 2016 and 500 km by 2020	
Public services	Thermal Account: incentive scheme to PA to implement energy efficiency improvement actions in buildings and technical installations.	

