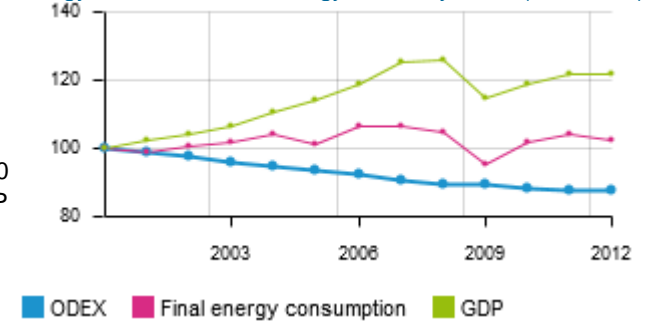


Energy Efficiency Trends

Overview

The energy efficiency index (ODEX) has declined by 13 points from 2000 to 2012. Final energy consumption is quite close to the 2000 level but GDP is 22% higher.

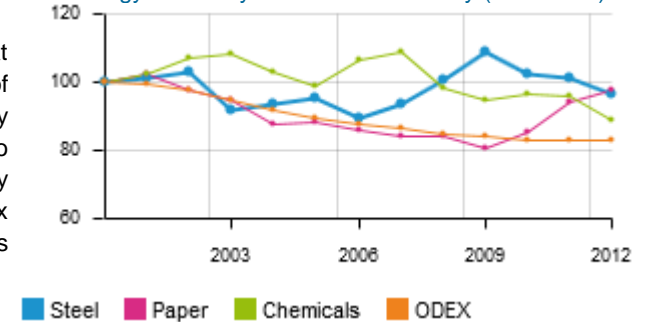
Energy cons., GDP and energy efficiency index (100=2000)



Industry

In industry, the dominating role of paper industry is shown in the fact that the energy efficiency index for the total industry has followed closely that of the paper industry. However, since 2009 the index for paper industry increased because energy consumption is not directly proportional to product output and because product portfolio has changed. Real energy efficiency improvement has happened and is reported every year but index fails to show it. In 2012, overall efficiency index of industry was 7 points better than in 2000.

Main energy efficiency indicators in industry (100=2000)

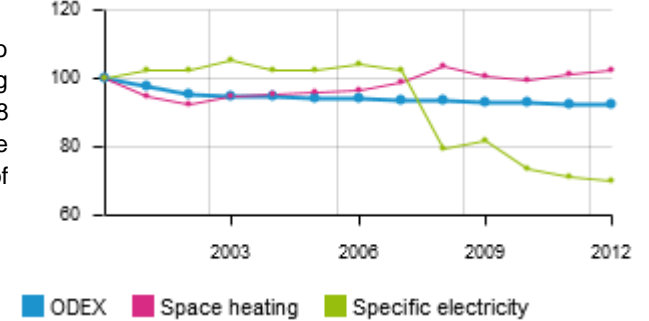


Chemicals : toe per unit of production index
Paper, steel: toe per tonne

Households

The energy efficiency index of the household sector is closely connected to the energy efficiency of space heating because of the cold and long winters. The energy efficiency index of households has decreased by 8 points from 2000 to 2012. Efficiency of electricity use has improved since 2009 (break in data series in 2007/2008) mainly driven by the impact of product policies i.e. eco-design and labelling.

Main energy efficiency indicators in households (100=2000)

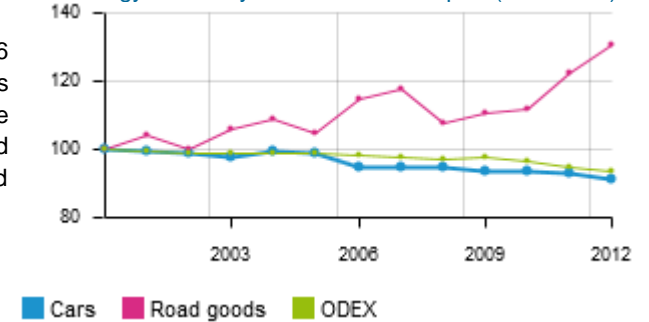


Space heating : koe per m2
Large electrical appliances: kWh per dwelling. Break in data series in 2008.

Transport

The overall energy efficiency index of transport sector has improved by 6 points from 2000 to 2012. Energy efficiency of air transport and cars has improved significantly but that of trucks and light vehicles deteriorated. The key reasons are shift from mass goods (e.g. paper) to parceled goods and increased empty runs due to difficulties in logistics during recession and because of customer needs.

Main energy efficiency indicators in transport (100=2000)



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

Energy Efficiency Policy

Institutions and energy efficiency targets:

The National Energy and Climate Strategy was updated in 2013. It lays down the roadmap for Finland to meet its targets for greenhouse gas reductions. An action plan was adopted by the Government in February 2010 to define the energy efficiency measures over the next ten years to meet the energy efficiency targets for the period 2010-2020.

The Energy Department of the Ministry of Employment and the Economy is the government body responsible for energy policy. Energy Authority started its operation at the beginning of 2014. Motiva Oy is a state-owned company that helps the government to implement its energy efficiency policies and measures.

Voluntary energy efficiency agreements and energy audits continue to be among the key policies in several sectors, including industry and municipalities.

The building regulations continue to be one of the key policies in the household and service sectors; regulations for heat consumption were last updated in 2012 and the first energy efficiency regulations for buildings undergoing renovation took force in 2013.

In the transport sector, European emission caps and emission dependent taxation have had a visible impact on energy consumption of new passenger cars. The energy efficiency agreements in the transport sector cover freight transport and logistics (2008-2016) and public transport (2008-2016).

Energy taxation aims to curb the growth of energy consumption and steer the production and use of energy towards alternatives sources with lower emissions.

Main energy efficiency policy measures and their impacts

Sector	Main objectives and measures	Impacts
Cross-sectoral	National Energy and Climate Strategy 2013	
	Action Plan on Energy Efficiency Measures 2010	Target: 37 TWh savings by 2020
	Energy taxation	
Industry	Energy efficiency agreements	8 025 GWh/a in 2010, 10 179 GWh/a in 2016, 11 562 GWh/a in 2020
	Energy audits	2 781 GWh/a in 2010, 1 659 GWh/a in 2016, 1 641 GWh/a in 2020
Buildings	Building regulations (2003, 2007, 2010, 2012), new buildings	1 923 GWh/a in 2010, 4 925 GWh/a in 2016, 7 085 GWh/a in 2020
	Building regulations, renovation	750 GWh/a in 2016, 1 750 GWh/a in 2020
Households	Eco-design	1 278 GWh/a in 2016, 4 259 GWh/a in 2020
	Energy efficiency agreement, oil-heated buildings	1 988 GWh/a in 2010, 2 297 GWh/a in 2016, 2 476 GWh/a in 2020
Transport	Emission caps on new cars	Joint impact of these two measures and information instruments: 707 GWh/a in 2012, 1 900 GWh/a in 2016, 3 600 GWh/a in 2020
	Carbon dependent car taxation	
Services	Energy efficiency agreements, municipalities, private services and real estate sector	226 GWh/a in 2010, 581 GWh/a in 2016, 726 GWh/a in 2020
	Energy audits	238 GWh/a in 2010, 243 GWh/a in 2016, 220 GWh/a in 2020