



# Energy Efficiency Profile : Norway

## Energy Efficiency Trends

May 2011

### Overview

In the period 2000-2008 the energy efficiency index for the whole economy (ODEX) decreased by 15 % (8% for the EU). The sector with the greatest improvement was industry, while the household sector has improved the most when the period is extended back to 1990.

### Industry

The efficiency in the industrial sector (measured at the level of 10 branches - in terms of energy used per production index or per ton - and aggregated to the whole sector) has improved by 18 % from 2000 to 2008, while the improvement before 2000 was only 3 %. Norway had a strong growth in chemical industry in the 1990s, increasing the energy consumption more than the production index. After 2000 part of the energy intensive basic chemical industry has decreased its production, resulting in improved energy efficiency. The production index of primary metals has increased almost every year from 1994 to 2005, with a major increase from 2001 to 2005 due to new production plants. In the same period the energy consumption has increased less; resulting in an increased energy efficiency for the production of primary metals of 18 % since 2000. The pulp and paper industry shows an increase in energy efficiency from 1990 to 2000, but the efficiency has slightly decreased in the recent years.

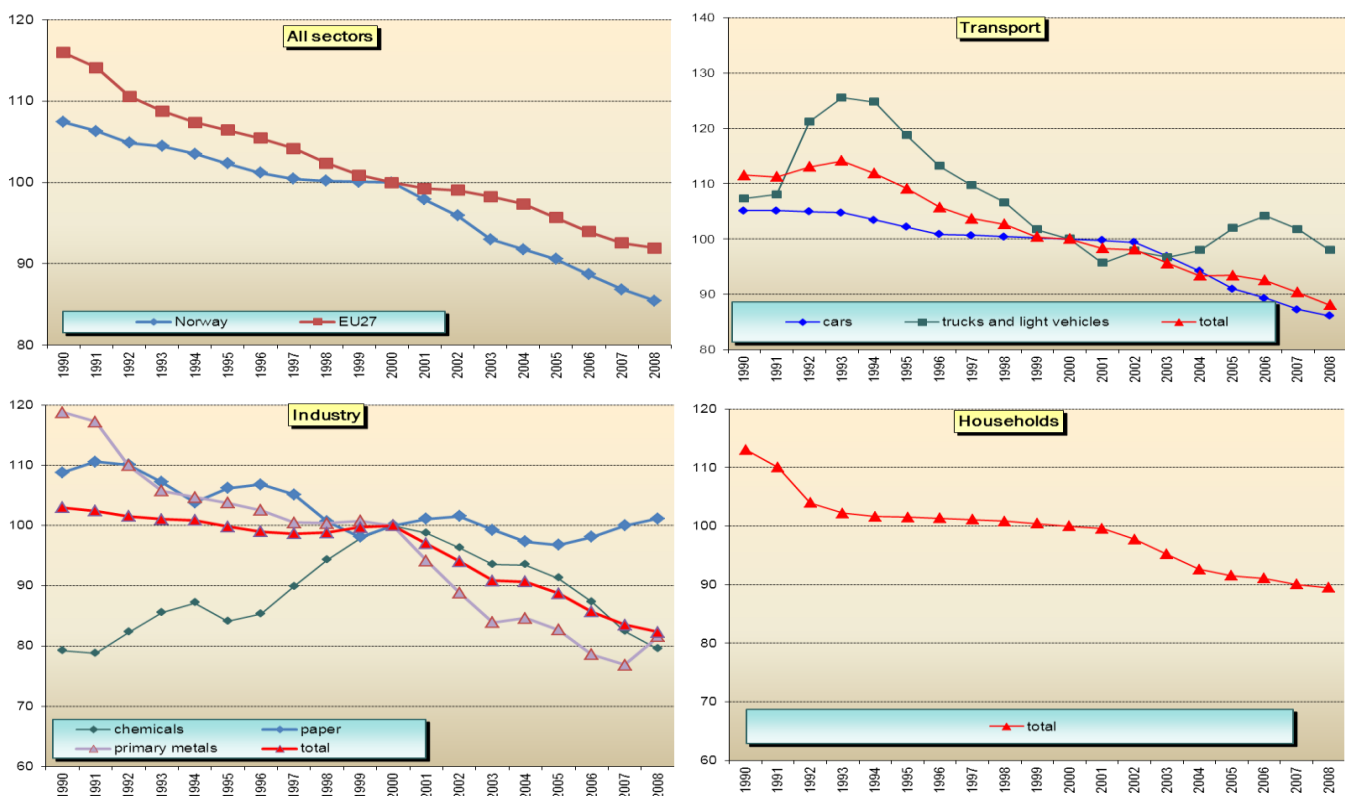
### Households

Between 2000 and 2008, the household sector as a whole improved its energy efficiency by 11 % (calculation based on energy use for space heating per m<sup>2</sup> and water heating per dwelling). On the whole, the climate corrected energy consumption of the household sector has been stabilizing since the mid 1990s. The unit consumption per square meter and corrected for climate changes, has decreased as well as the energy consumption per dwelling and per capita.

### Transport

The energy efficiency index of the transportation sector has improved by 12 % from 2000 to 2008. This development is partly caused by efficiency improvements in the car park as a consequence of the penetration of new, more efficient cars (measured by a specific consumption in l/km) and the dominating role of cars within the transport sector. Unit consumption of trucks and light duty vehicles decreased from 1993 to 2003 and has slightly increased after that, with a positive trend in recent years. Air transport is the third most important transport mode and there has been a large decrease in the energy use per passenger travelling by air.

Energy efficiency index (base 100=2000)\*



\* All indicators measured as a three-year moving average.  
Source ODYSSEE  
For more information : <http://www.odyssee-indicators.org/>

## Energy Efficiency Policy measures

### Institutions and programmes

The alteration to a more environmental friendly production and use of energy in Norway is managed by **Enova SF**. Enova is a public enterprise for promoting energy savings, new renewables and environmentally friendly natural gas solutions; it is fully owned by the Government of Norway, represented by the Ministry of Petroleum and Energy. Enova's main mission is to contribute to environmentally sound and rational use and production of energy, relying on financial instruments and incentives to stimulate market actors and mechanisms to achieve national energy policy goals. Alteration of energy use and production is financed through the Energy Fund. The income of the energy fund comes from a levy of 1 øre/kWh to the distribution tariffs and from allocation from the state budget. By the end of 2010 grants to active projects funded by the Energy Fund added up to 874 M€.

### Industry

Enova is working to boost the competitiveness of Norwegian industry through environmentally friendly and efficient energy use. Companies that have projects with total potential energy results of more than 0.1 GWh can apply for investment support. Projects that can be supported are energy-efficient solutions or processes, measures for energy recovery or use of waste heat conversion to renewable energy sources. The grant has to be a triggering factor.

The companies have to report energy consumption and production figures to Enova at least five years after the project is finished. As a part of the program, Enova gathers energy consumption and production figures in a database. The companies have to once a year report their figures on a web-based reporting scheme. Enova calculates specific energy consumption for different industry sectors and presents the anonymous data on web. These benchmarking figures may be used to compare the company with other similar companies or with their own historical figures (see <http://www.enova.no/industrinettverk/>).

### Households, Services

Enova has a helpline, giving energy savings advice free of charge or distributing information material etc. There is also a special information program for children from 9 to 12 years old, with books, website, networks, competitions etc. Enova SF has developed a programme called "Regnmakerne" that is approaching children and youths to become more aware of energy use and its environmental impacts.

Private and public building owners can apply for grants for additional costs in planning, implementation and/or investments in energy efficient buildings. The grant level is normally 0.2-0.50 NOK/kWh (0.02-0.06 €/kWh) saved or produced energy. The Housing Bank administers various loan and grant schemes for residential energy efficiency measures.

Heat production from biomass, waste heat and heat pumps may be supported in order to make the projects profitable. There are also support schemes for biomass processing, heat distribution and for other renewable energy sources.

### Transport

The government considers cost-efficiency to be essential in regulating the environmental impact of transport. The duties on petrol and diesel, as well as the registration tax on vehicles, are high. Road pricing is also in use in order to finance road infrastructure and/or to reduce traffic in cities. Transnova was established in 2009 and is operating as a trial funding programme supporting projects making a fast contribution to the adoption of new and more environmentally friendly technologies or practices.

### Energy prices and taxes

The electricity tax in Norway has been very low in a European perspective (14 €/MWh in 2011) while mobile energy use is heavily taxed. The CO<sub>2</sub> tax is currently the most important instrument to reduce emissions of greenhouse gases. From 1 January 2005 a Norwegian emission trading system was adopted.

## Selected Energy Efficiency Measures

Sectors	Title of Measure	Since	Energy saved
Industry, buildings	Energy fund	2001	15.5TWh
Households	Grants for electricity savings in households	2006	
Households	"Regnmakerne"	2003	
Industry	Energy consumption - Industry	2003	4.4 TWh
Buildings	Grants for energy savings in buildings	2002	2.8 TWh
Transport	Transnova	2009	

Source MURE

For more information : <http://www.isisrome.com/mure/>

