



## Country profile – Hungary

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](http://www.eea.europa.eu/themes/climate/country-profiles).

## Key climate- and energy-related data — Hungary

Key data on GHG emissions	2005	2011	2012	2013	EU 2012
Total GHG emissions (UNFCCC, Kyoto Protocol) (Mt CO <sub>2</sub> -eq.)	78.4	66.0	62.0	59.7	4 544.2
GHG per capita (t CO <sub>2</sub> -eq./cap.)	7.8	6.6	6.2	6.0	9.0
GHG per GDP (g CO <sub>2</sub> -eq./PPS in EUR)	548	393	368	348	350
Share of GHG emissions in total EU-28 emissions (%)	1.5 %	1.4 %	1.4 %	1.3 %	100.0 %
EU ETS verified emissions (Mt CO <sub>2</sub> -eq.)	26.2	22.5	21.3	19.1	1 848.6
Share of EU ETS emissions in total emissions (%)	33.4 %	34.0 %	34.3 %	32.1 %	40.7 %
ETS emissions vs allowances (free, auctioned, sold) (%)	- 13.5 %	- 10.0 %	- 35.1 %	n.a.	- 14.1 %
Share of CERs & ERUs in surrendered allowances (%)	0.0 %	9.1 %	13.8 %	n.a.	26.4 %
Non-ETS (ESD) emissions, adjusted to 2013–2020 scope (Mt CO <sub>2</sub> -eq.)	50.4	43.1	40.3	40.6	2 566.6
Key data on renewable energy	2005	2010	2011	2012	EU 2012
Share of renewable energy in gross FEC (%)			9.1 %	9.6 %	14.1 %
( ) = including all biofuels consumed in transport	(4.5 %)	(8.6 %)			
Share of renewable energy for electricity (%)	4.4 %	7.1 %	6.4 %	6.1 %	23.5 %
Share of renewable energy for heating and cooling (%)	6.0 %	11.1 %	12.3 %	13.6 %	15.6 %
Share of renewable energy for transport (%)			5.0 %	4.6 %	5.1 %
( ) = including all biofuels consumed (%)	(0.4 %)	(4.7 %)			
Key data on energy consumption	2005	2010	2011	2012	EU 2012
Primary energy consumption (Mtoe)	25.4	23.8	23.1	21.7	1 584.8
Primary energy consumption per capita (Mtoe/cap.)	2.5	2.4	2.3	2.2	3.1
Final energy consumption (Mtoe)	18.2	16.6	16.2	14.8	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 (%)	53.7 %	53.4 %	53.8 %	54.4 %	50.0 %
Energy consumption per dwelling by end use	2005	2009	2010	2011	EU 2011
Total energy consumption per dwelling (toe/dwelling)	1.59	1.45	1.49	n.a.	1.42
Space heating and cooling (toe/dwelling)	1.03	0.97	0.99	n.a.	0.96
Water heating (toe/dwelling)	0.30	0.26	0.26	n.a.	0.18
Cooking (toe/dwelling)	0.12	0.08	0.09	n.a.	0.08
Electricity (lighting, appliances) (toe/dwelling)	0.14	0.15	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)	- 4.8 %	2020 ESD target (% vs base year)	+ 10.0 %
2013 ESD emissions (% vs base year)	- 20.7 %	2020 ESD projections WEM (% vs base year)	- 16.5 %
		2020 ESD projections WAM (% vs base year)	- 21.4 %

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**

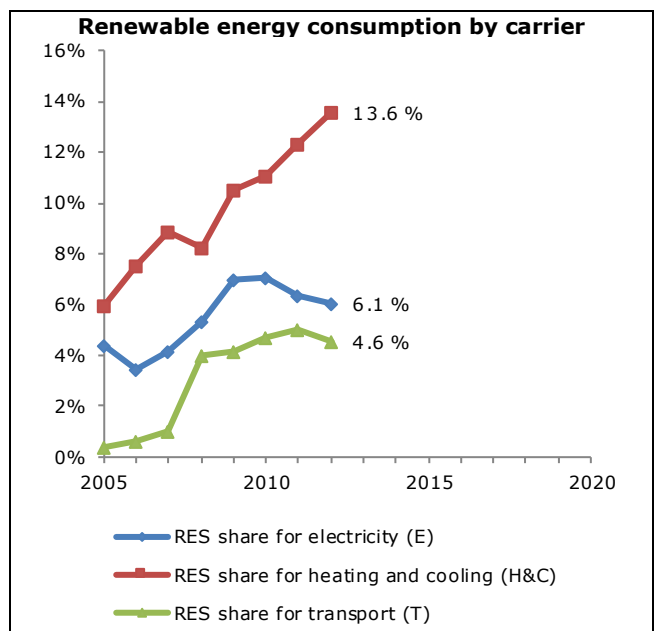
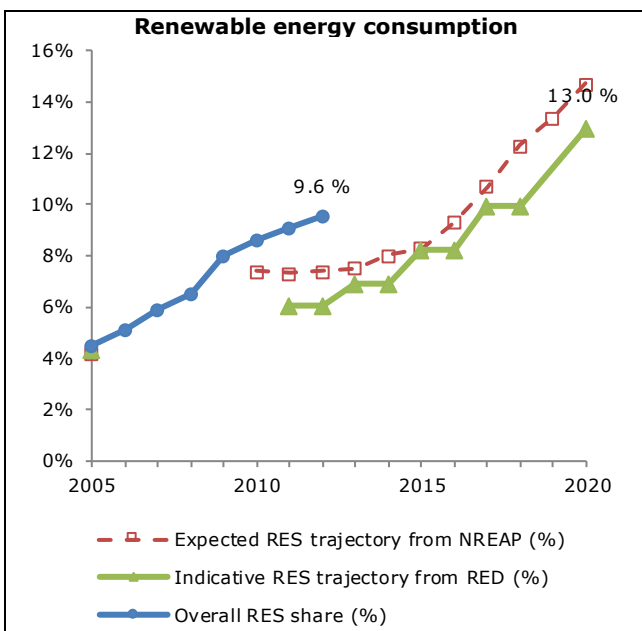
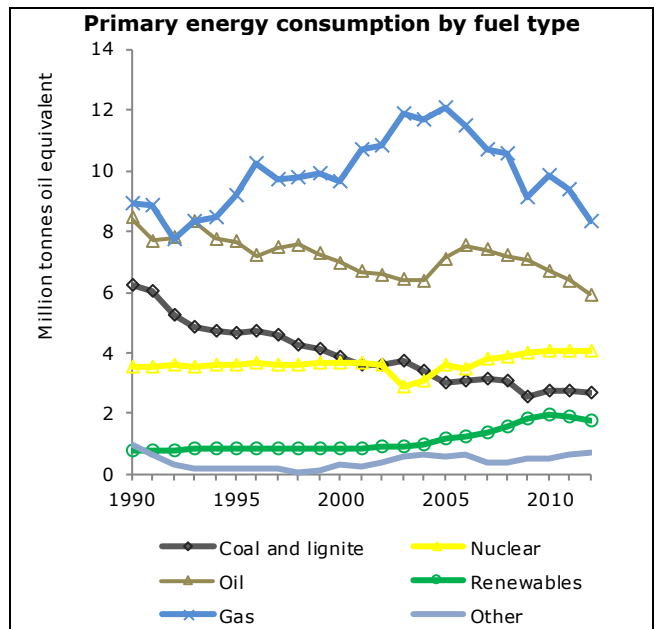
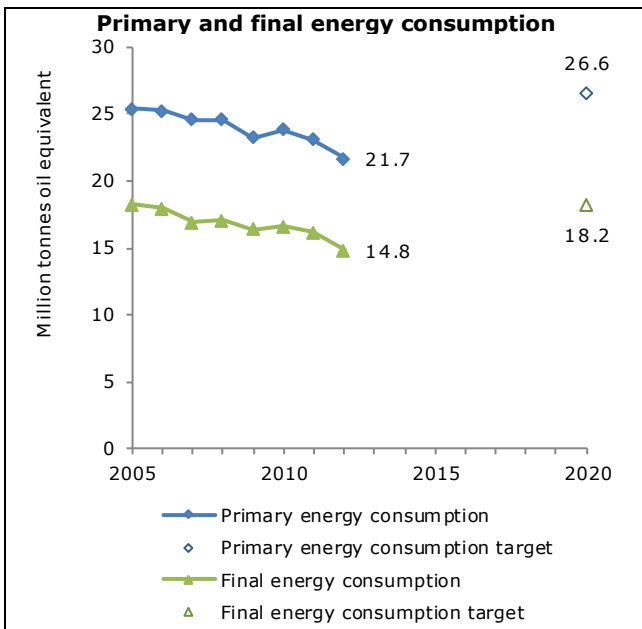
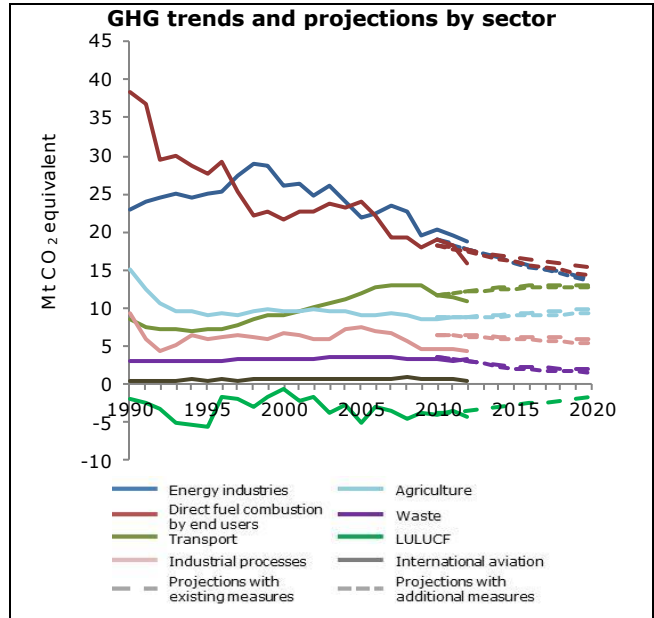
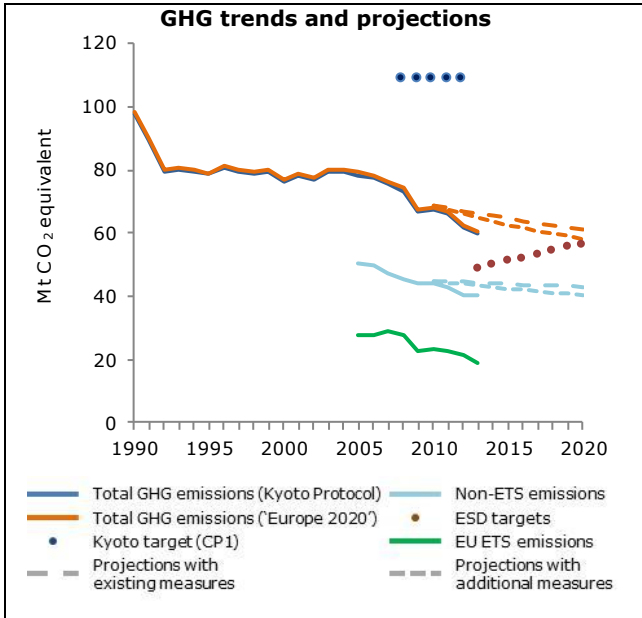
2012 RES share in gross final energy consumption (%)	9.6 %	2011–2012 indicative share from RES Directive (%)	6.0 %
2020 RES target	13.0 %	2012 expected share from NREAP (%)	7.4 %

The average share of renewable sources in gross final energy consumption for 2011–2012 was 9.3% (1.5 Mtoe), which is higher than the indicative RED target for 2011–2012 (6.0%). At the same time, the share of renewables in 2012 (9.6 %) is higher than the expected 2012 NREAP target (7.4 %). Over the period 2005–2012 the observed average annual growth rate in renewable energy consumption amounted to 8.3%. In order to reach its 2020 NREAP target, Hungary needs an average annual growth rate of 8.8% in the run-up to 2020. In absolute terms, this is equivalent to 2.3 times its cumulative effort so far.

**Progress towards energy efficiency targets**

Primary energy consumption:		Final energy consumption:	
2005–2012 average annual change	- 2.3 %	2005–2012 average annual change	- 2.9 %
2012–2020 average annual change to target	+ 2.6 %	2012–2020 average annual change to target	+ 2.6 %

Primary and final energy consumption decreased significantly over the period 2005–2012, particularly between 2011 and 2012. Alongside the effects of the economic crisis, efficiency improvements also contributed to this trend, for example through reduced distribution losses. Hungary has a positive target in primary energy and a reduction target in final energy consumption, compared to 2005 respectively. It can therefore focus on limiting its energy consumption as the economy picks up again. Particular attention could be necessary to improve efficiency in energy conversion to produce electricity, including by autoproducers.



## Climate and energy policy framework

### Challenges and opportunities

The energy intensity of Hungary's economy is well above the EU average, in particular due to the rising energy intensity of households. From 2005 to 2011 the increase in household energy intensity was the highest in the EU. Despite an extensive number of subsidy programmes aimed at improving energy efficiency in buildings, the number of renovations remains low because funds are often available only at short notice for short periods of time, limiting investment stability. For example, a programme offering grants to energy efficiency measures in multi-storey dwellings was stopped after only one day due to the enormous demand for this subsidy programme (Ministry of National Development, 2013c). Considering the significant potential for energy savings in the residential sector, pursuing a more substantial policy in this area is a significant opportunity for Hungary to reduce energy imports, and create jobs through increased investment in building renovations and other energy efficiency improvements. Average emissions for newly registered cars were the 4th highest in the EU in 2011, and emissions in the transport sector have risen nearly 37 % between 1990 and 2011. Incentivising the purchasing of efficient vehicles, more efficient driving and shifting to public transport, for example through increasing environmental taxation in the transport sector and making public transport more attractive, would lower transport energy consumption and related greenhouse gas (GHG) emissions as well as air pollution.

### Climate and energy strategies

A National Climate Change Strategy 2008–2025 was adopted in 2008 and a draft revision finalised in 2013 is open for public consultation until November 2014. The Strategy focuses on the expected effects of climate change on Hungary and elaborates on mitigation and adaptation measures, including a GHG emission reduction target of 16–25 % by 2025 (compared to 1991 levels). The Strategy includes the Hungarian Decarbonisation Schedule examining key sectors for reducing Hungary's carbon dioxide (CO<sub>2</sub>) emissions. Furthermore, the Strategy encompasses an Awareness Raising Action Plan aiming to raise public support for energy efficiency measures and the use of renewable energy sources (RES). A National Energy Strategy was adopted in 2011 and aims at security of supply, increasing competitiveness and sustainability. Hungary aims to reduce primary energy consumption to 1 150 PJ/year, limit growth in electricity consumption to 1.5 % per annum, and achieve a share of 20 % renewables in primary energy consumption by 2030. In addition, the New Széchenyi Plan, an economic development programme implemented in 2011, provides financial support for the strategic goals. Moreover, it serves as an overall framework policy for all other strategies related to energy, transport and energy efficiency.

### Renewable energy

Renewables are growing rapidly as a share of both final energy consumption and electricity. Electricity from renewables is mainly supported through a feed-in tariff (FIT). All renewable technologies above 50 kW are eligible. The current FIT (§ 11 (3) Act No LXXXVI of 2007) started operation on 1 January 2008. Biomass currently accounts for the largest share, ahead of wind and solar. A unique aspect of Hungary's FIT is that the tariffs vary by time of day and day of the week depending on demand; they are higher during peak hours. This system should help to make generators sensitive to electricity demand, providing a market incentive to optimise power generation. Reforms to the FIT were announced in 2011; however, there have been no reforms of the FIT system to this date. A net-metering system applies for household-sized renewables up to an installed capacity of 50 kW. Additional support is provided through restrictions on electricity imports to the benefit of renewables. Subsidies are in place for pilot projects, renewables in buildings of ecclesiastic legal entities and solar installations on public buildings; however, financial support is frequently stopped at short notice and funds are often quickly exhausted.

A subsidy for renewable heat is provided for pilot projects. Additional certification programmes for renewable installations and infrastructure were provided, including within the Framework of the Environmental and Energy Operational Programme. However, current funds are exhausted since the beginning of 2013. A call for additional funding from the European Environment Agency (EEA) and Norway grants financial mechanism to replace existing district heating installations with geothermal energy was also available for several months in early 2014. Moreover, Decree No 7/2006 (V.24.) makes a recommendation to consider the use of RES in newly built buildings and buildings undergoing renovation or extensions.

### Energy efficiency

Energy **taxation** is rather low with the level of excise duties being below the EU average. Prices for electricity, gas and district heating are regulated by the state, a practice against which the European Commission has announced legal action. The Hungarian government has pursued a policy of reducing various charges and levies, making energy prices more affordable to reduce energy poverty. Prices for electricity, natural gas and district heating were reduced by more than 20 % in 2013, and additional price reductions were announced in January 2014.

A FIT for electricity from **combined heat and power** stations was halted in August 2011.

In **industry**, large consumers must report their energy consumption, and a voluntary agreement with industry to implement energy audits is planned (EEW, 2013).

Hungary has a long-term National Strategy for Energy Efficiency in **Buildings** since 2014 that provides the conceptual framework for upgrading Hungarian buildings to be more energy efficient, and for constructing new energy-efficient buildings. According to the Ministry of Rural Development, energy efficiency improvements are advisable for approximately 2 million buildings. Hungary has minimum energy performance standards for new and modernised buildings and performance certification has been introduced. In recent years, Hungary has set up numerous subsidy programmes aimed at improving the energy efficiency of buildings, mainly financed from EU funds, revenues made by selling surplus Kyoto Protocol assigned amount units, and grants under the financial mechanism of the EEA and Norway. Support is provided for energy efficiency measures in traditionally built homes, multi-storey residential buildings, public sector buildings and businesses. However, these subsidy programmes are usually available at short notice and only for a short period.

### Transport

Hungary is developing a National Transport Strategy that sets long-term goals for the years 2020, 2030 and 2050 with

an action plan for 2014–2020. Measures incentivising the purchasing of efficient cars include a registration tax based on EURO emission standards as well as engine capacity; however, it is depreciated for second-hand cars. The ownership tax for passenger and company cars depends on the engine capacity and the number of years since the production year (ACEA, 2012). Tax rates for both petrol and diesel are below the EU average, but both are taxed at almost the same rate (European Commission, 2013). However, Hungary also introduced an e-toll system in 2013 (Governmental Decree No 209/2013) that applies to heavy vehicles of more than 3.5 t. The Ministry of National Development expects to generate HUF 150 billion (approximately EUR 508 million) annually with the new system compared to the former road tariff system (Ministry of National Development, 2013b). Biofuels and hydrogen are promoted through a biofuel quota of 4.9 % for both petrol and diesel, as well as a reimbursement of excise duties on biofuels in the case of vehicles used in the mining industry and in water management not driving in public traffic. Modal-shift and increased railway use is promoted through modernisation of trains, railway stations and infrastructure, as well as reduced railway prices on regional train connections. Moreover, timetables and routes for intercity buses are being optimised. Financial support is provided to purchase new public transport buses with engines using compressed natural gas.

### Agriculture

GHG-related actions of the New Hungary Rural Development Strategic Plan (2007–2013) are the increase of energy crop production (+ 4 %) and a reduction of energy intensity of agriculture (– 2.5 TJ/billion HUF). Farmers are required to use practices that limit nitrogen fertiliser use to 50 kg/ha and reduce the loss of soil carbon per hectare to 2 tonnes per hectare and year. The New Nitrate Action Programme identifies nitrate-sensitive areas and provides general rules of protection. Old manure management systems with deep open lagoons are also being replaced and manure transport at biogas plants improved. The National Action Plan for Developing Organic Farming 2014–2020 aims at bringing in line the intensification of Hungarian agriculture and increasing Hungarian livestock. This includes also an increase of organic farming as well as of the use of organic products in canteens to 30 % until 2020.

### Waste

Waste management policy is based on the 2012 Act on Waste. The main goals are the reduction of landfilling and increasing reuse and recycling. Hungary sets fees on landfilling according to different sources of waste. Moreover, a campaign has been launched to reduce municipal landfilling from 70 % today to 10 % in 2020. To support incineration, electricity providers are required to purchase power generated from waste at subsidised prices. An environmental tax on environment-damaging products, calculated on the basis of product weight and differentiated by product, applies to persons or legal entities that introduce or process the listed product. The Ministry of Rural Development claims that the number of small plastic bags decreased from more than 300 million to less than 200 million from 2012 to 2013 as a result of this tax. Additionally, legislation is currently being developed to introduce a refund system for packaging waste; in 2015, the introduction of improved waste separation measures aimed at increasing recycling and incineration rates, as well as compulsory door-to-door separate household waste collection, is foreseen.

### Land use, land-use change and forestry

The National Forest Programme 2006–2015 sets the objective of at least maintaining the current area covered by forests. It also encourages the use of wood as an environmentally friendly raw material, while managing forests sustainably. The National Agri-Environmental Programme also aims to increase the territorial proportion of semi-natural forest management through afforestation and reforestation measures. In 2013, HUF 700 million (approximately EUR 2.3 million) of financial support was assigned to forest owners in Natura 2000 sites, on which forestry use is restricted, depending on the forest's natural value, the forest species and the trees' ages.

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