Council of the European Union

Brussels, 19 November 2015
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ENER 388
CLIMA 127
AGRI 607
COMPET 524
TRANS 370
ENV 718
ECOFIN 891
RELEX 947
TELECOM 217
CONSOM 197

COVER NOTE

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date of receipt:	19 November 2015
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Delegations will find attached document SWD(2015) 227 final.

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Brussels, 18.11.2015
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COMMISSION STAFF WORKING DOCUMENT

Country Factsheet Hungary

Accompanying the document

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE, THE COMMITTEE OF THE REGIONS AND THE EUROPEAN INVESTMENT BANK

State of the Energy Union

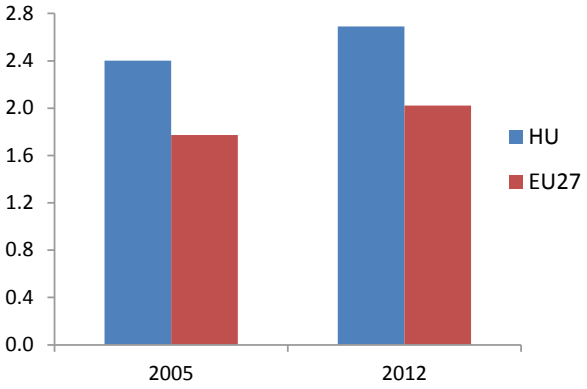
{COM(2015) 572}
{SWD(2015) 208 à 209}
{SWD(2015) 217 à 226}
{SWD(2015) 228 à 243}

Macroeconomic relevance of energy

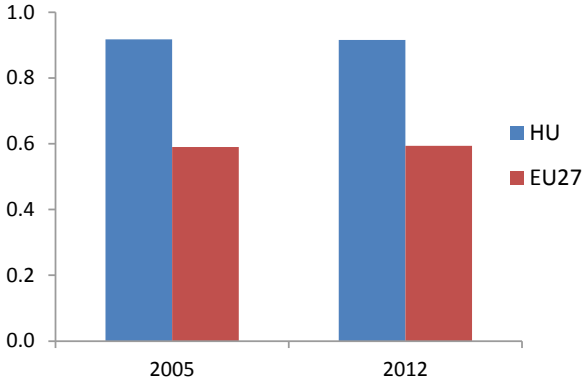
IMPORTANCE OF THE ENERGY SECTOR

The energy sector plays an important role in the Hungarian economy, where its contribution to the gross value added and to employment is much greater than the European average. Recently, the contribution of energy to gross value added increased, whereas the share of total employment in the energy sector remained quite stable between 2005 and 2012.

Value added of energy sector
% of gross value added (total economy)



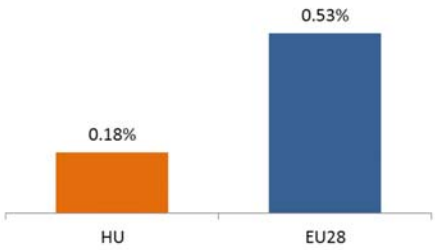
Employment in energy sector
% of total employment



Source: EUROSTAT – National Accounts

According to EurObserv'ER, in 2013, the share of direct and indirect renewable energy related employment in total employment of the economy in Hungary was at about 0.18%, below the EU average of 0.53%.

Renewable energy employment in 2013
[direct and indirect jobs as % of total employment]

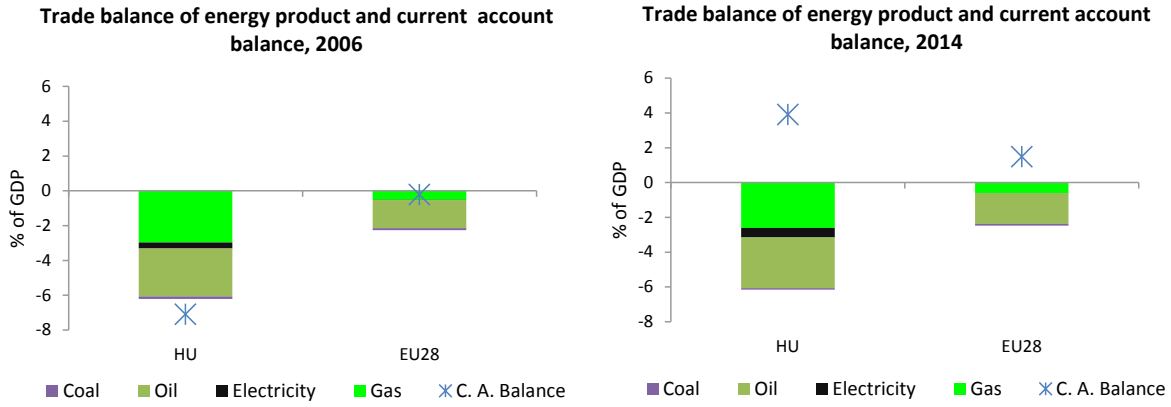


Source: European Commission, based on EurObserv'ER and EUROSTAT

TRADE BALANCE OF ENERGY PRODUCTS

Hungary is a net importer of energy products, mainly due to considerable oil and gas imports, even though the contribution from electricity import also increased between 2006 and 2014. The energy trade deficit is higher than the EU average. In 2006, the current account and the energy trade balance

were both in deficit. By contrast, in 2014 the net positions in the accounts diverged: the current account was in surplus, while the energy balance was still in deficit.



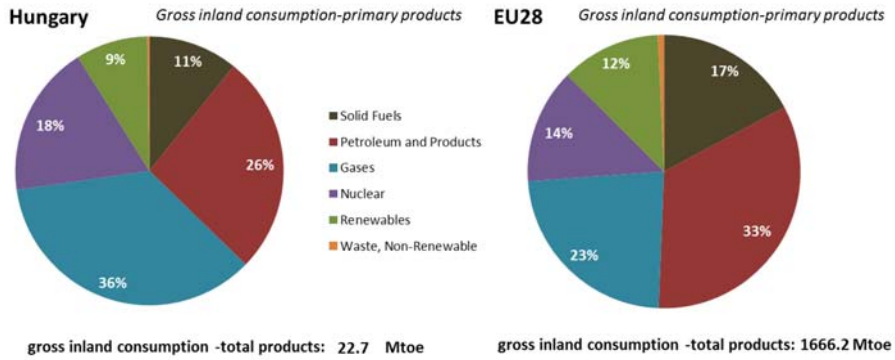
Source: EUROSTAT
Note: Current account balance for EU28 from European Commission (AMECO)

1. Energy Security, solidarity and trust

ENERGY MIX

The energy mix of Hungary is relatively similar to that of the EU-28, with the notable difference of a higher share of gases and nuclear. Compared to 1995, the share of renewable energy and nuclear increased more than the EU average (from 3% to 9% and from 14 to 18% of gross inland energy consumption respectively), while the share of gases slightly decreased (by 3 percentage points) The main decrease concerns the use of solid fuels (by 8 percentage points). The share of low carbon emission energy sources (if renewables and nuclear are put together) was slightly above the EU average.

Gross inland energy consumption in 2013

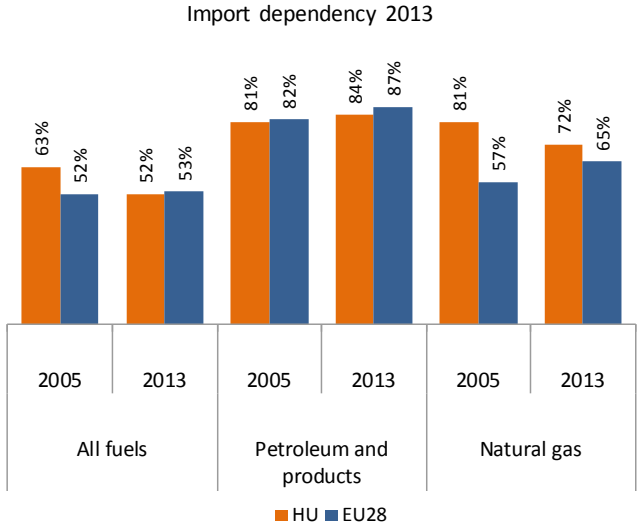


Source: European Commission, based on EUROSTAT

IMPORT DEPENDENCY

For overall fossil fuels, Hungary's import dependency is higher than the EU28 average. Import dependency for petroleum products is at the EU average, while that of gas is above, although having

decreased since 2005. Hungary imports gas almost exclusively from Russia[1]. Hungary has a significant energy trade deficit, expressed as percentage of GDP.



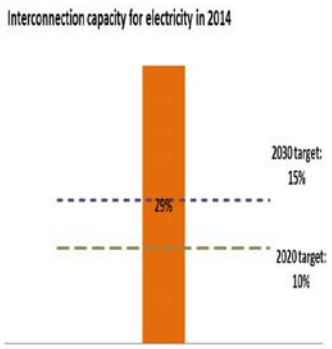
Top non-EU gas suppliers in 2013 (% in total imports)

Hungary		European Union	
country	[%]	country	[%]
Russia	95.0	Russia	39.0
Not specified	5.0	Norway	29.5
		Algeria	9.7
		Qatar	6.7

Source: European Commission, based on EUROSTAT

2. A fully-integrated internal energy market

INTERCONNECTIONS



Source: European Commission based on ENTSO-E scenario outlook and adequacy forecast 2014

Note: Reference to 2030 target is based on October 2014 European Council conclusions stating that "the Commission will also report regularly to the European Council with the objective of arriving at a 15% target by 2030"

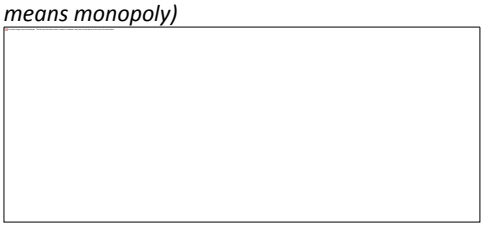
The Hungarian interconnection capacity for electricity was 29% in 2014, which is above the 2020 target. Additional interconnectors between Hungary and Slovakia would, among others, allow increased electricity imports in the mid-term.

In the case of gas, the main element that requires urgent implementation and hence was also identified as very important project in the European Energy Security Strategy is the reverse flow from Romania towards Hungary and the reverse flow from Croatia to Hungary. This project would allow future Black Sea sources to flow towards Hungary and Austria / Slovakia and would increase trade already in the short term. The reverse flow from Croatia would connect Hungary to Liquefied Natural Gas (LNG) and other western gas sources. The Hungary-Slovakia gas interconnector became operational as of 1 July 2015, giving Hungary access to competitively priced North and West European gas markets and thereby allowing the diversification of supply routes and sources.

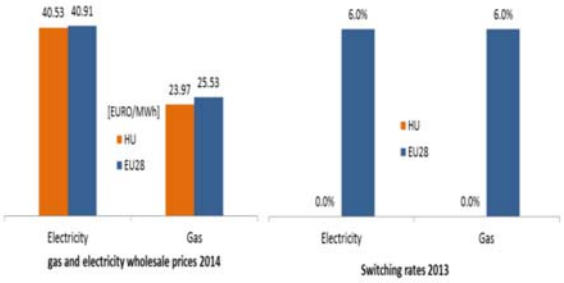
[1] Top non-EU gas suppliers table is based on EUROSTAT data. The share of imports from non-EU countries is calculated as the ratio between volumes of imports from that specific non-EU supplier and total imports (from EU and non-EU countries).

ELECTRICITY AND GAS MARKETS

Market concentration index for power generation (left) and gas supply (right) (2013) (Herfindahl index – 10000 means monopoly)



Sources: European Commission based on ESTAT, CEER and Platts Power Vision



Sources:ESTAT and European Commission Calculations

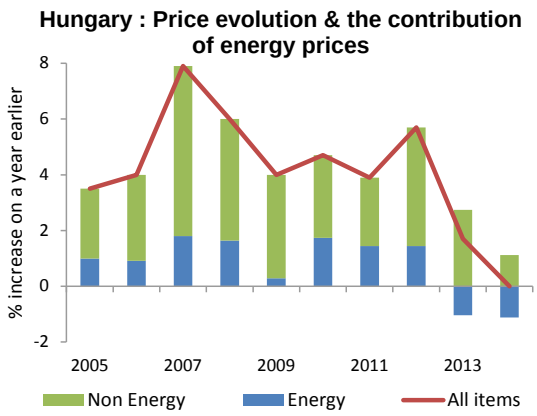
The concentration of power generation (based on installed generation capacities) in Hungary is below the EU average, while the concentration of the wholesale gas market is high, primarily owing to the dominant import supply source and to the decreasing share of indigenous production in the national consumption. Wholesale gas and electricity prices are comparable with EU average. In September 2012, the market coupling of the Czech, Slovak and Hungarian day-ahead markets was successfully launched (Romania joined in 2014).

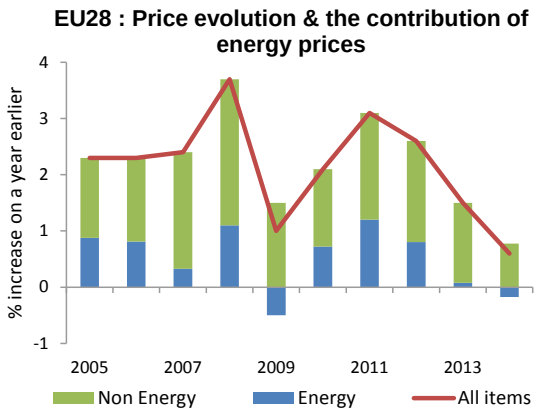
Retail market performance indicators show no signs of competition at retail level. Switching rates for electricity and gas markets are insignificant in the case of households, while for industrial consumers switching rates are higher. In 2013 and 2014 significant retail electricity and gas price cuts have been implemented by the government. As a result, by the end of 2014 electricity and gas retail prices for household consumers were down by more than 20% compared to 2012. In combination with other regulatory measures (e.g. special levies in the energy sector) and market interventions, network operators and energy suppliers suffer financial losses in the regulated utility business segment, implying that current retail electricity and gas prices are not fully cost reflective. According to an EU-wide survey[2], consumer's satisfaction with regard to the retail electricity market in Hungary is slightly below the EU average while it is lowest in the EU in the case of the gas market. Following a first economic assessment of long term costs and benefits, there is no legal framework in Hungary for a mandatory roll-out of smart metering. Instead, it has been decided to undertake a further assessment of related costs and benefits (scheduled by end 2016) based on results from ongoing pilots.

CONTRIBUTION OF ENERGY TO CONSUMER PRICE EVOLUTION

Energy prices have contributed to inflation to a large extent until recently. From 2005 to 2012 their contribution was positive while more recently their effect on consumer prices is negative, an effect linked to the falling oil prices. This recent trend is more evident in Hungary than in the EU and can be at least partially explained by the high contribution of oil imports to the Hungarian energy trade balance. Another contributing factor is the recent round of price cuts in regulated households energy prices (-25-30% on energy prices) implemented by Hungarian authorities in 2013-2014.

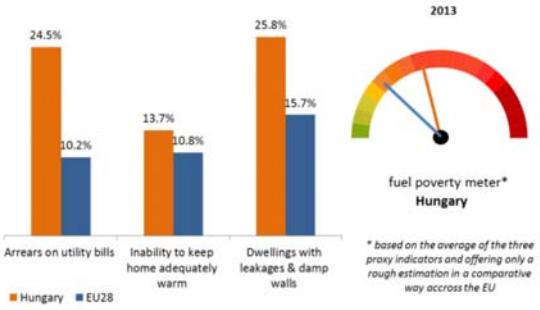
[2] 10th Consumer Markets Scoreboard (June 2014), http://ec.europa.eu/consumers/consumer_evidence/consumer_scoreboards/10_edition/index_en.htm





Source: DG ECFIN based on Eurostat

VULNERABLE CONSUMERS

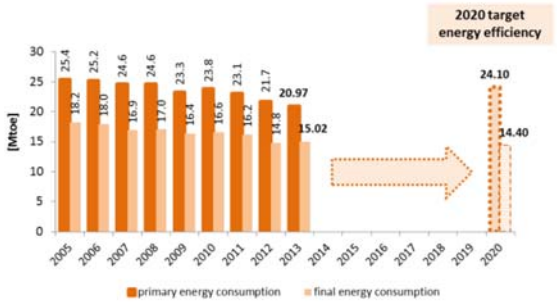


Source: European Commission, based on on EUROSTAT SILC survey

Based on a EUROSTAT survey on income and living conditions, three proxy indicators are used to assess fuel poverty. The values presented on the chart indicate that fuel poverty is a relevant issue in Hungary. Since 2008, the legislation recognises vulnerable consumers on a social and on a health-related basis. Depending on their category vulnerable consumers may benefit from deferred payment, prepayment options, individual assistance to help consumers understand their bills, etc.

3. Energy Efficiency and moderation of energy demand

ENERGY EFFICIENCY TARGET 2020 (24.1 Mtoe primary energy and 14.4 Mtoe final energy)



Source: European Commission, based on EUROSTAT and on national energy efficiency targets as declared by the MS under the Energy Efficiency Directive

Hungary's recently updated its 2020 energy efficiency target, as comparing to the previous one reported in 2014 (from target number 26.6 to 24.1 Mtoe expressed in primary energy consumption and from 18.2 to 14.4 Mtoe expressed in final energy consumption[3]), did not seem to incentivise improvements in energy efficiency, as the 2013 annual figures were already significantly lower than the 2020 target. This target was based on forecasts made before the global economic downturn at the end of the last decade, implying higher than currently foreseeable energy demand for the forthcoming years.

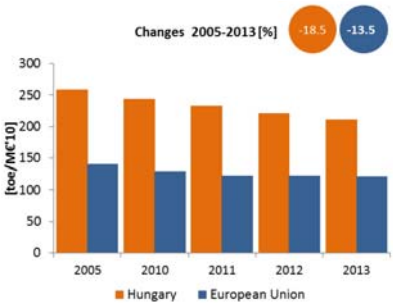
[3] It should be noted that the Hungarian national statistical definition of final energy consumption includes non-energy consumption as well. For this reason the new energy efficiency target number is defined as 693 PJ (16.6 Mtoe), mentioning 603 PJ (14.4 Mtoe) target without non-energy consumption in the new National Energy Efficiency Plan, approved as the Decision of the Government 1601/2015. (IX.8.).

The new 2020 energy efficiency target is better streamlined to the new economic environment. It is clear that the trend of primary energy consumption decoupled from the evolution of the GDP over the last decade. Yet, Hungary needs to continue its current efforts in order to meet the updated energy efficiency target, assuming that the current economic rebound continues in the next five years.
On 20 February 2015 the Hungarian Government adopted the new scenario for primary energy consumption [4]. In accordance with the new scenario, Hungary is committed to decrease primary energy consumption by 10.4% until 2020 compared to 2005.

ENERGY INTENSITY

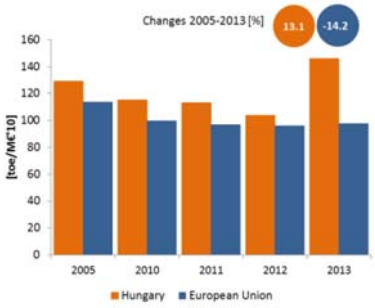
Primary energy intensity in Hungary has decreased significantly since 2005, though it remained significantly above the EU average. Although recent trends showed an improvement in energy intensity in the industrial sector, this trend was reversed in 2013.

Primary energy intensity of the economy



Source: European Commission based on EUROSTAT

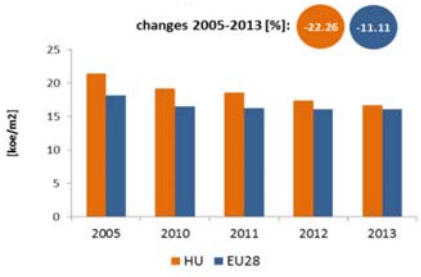
Final energy intensity in industry



Source: European Commission based on EUROSTAT and European Commission/AMECO

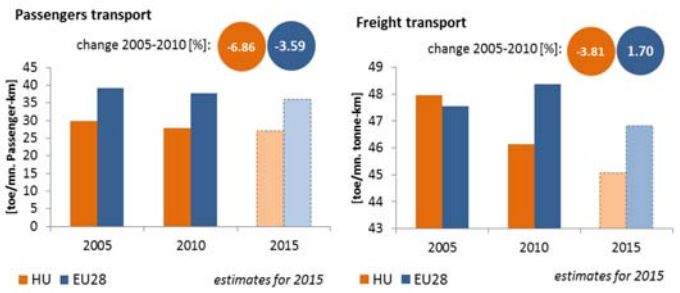
Final energy consumption in households in Hungary is still slightly above the EU average, though it showed rapid decrease since 2005. The specific energy intensity of passengers cars and freight transport decreased slightly between 2005 and 2010 and it is well below the EU average.

Final energy consumption per m2 in residential sector, climate corrected



Source: European Commission based on Odyssee database

Specific energy intensity for passenger cars and freight transport[5]

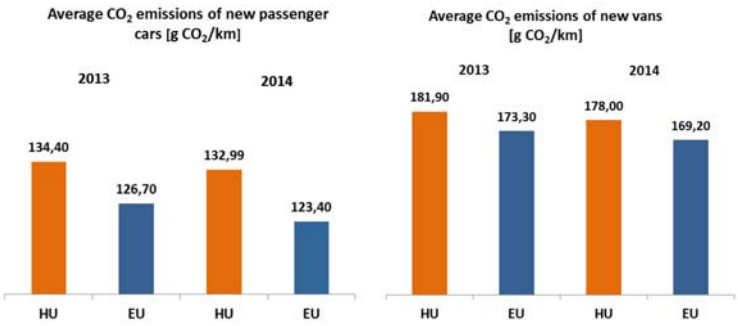


Source: PRIMES model background data and estimations based on EU Commission and EU MS inputs

[4] The new National Energy Efficiency Action Plan has been adopted by the Hungarian government and communicated to the European Commission in September 2015.

[5] Statistics on energy demand for passengers and freight transport are not available and model estimates have been used instead. These issues should be borne in mind when comparing energy intensity in freight or passenger transport between Member States, which should be regarded as merely indicative.

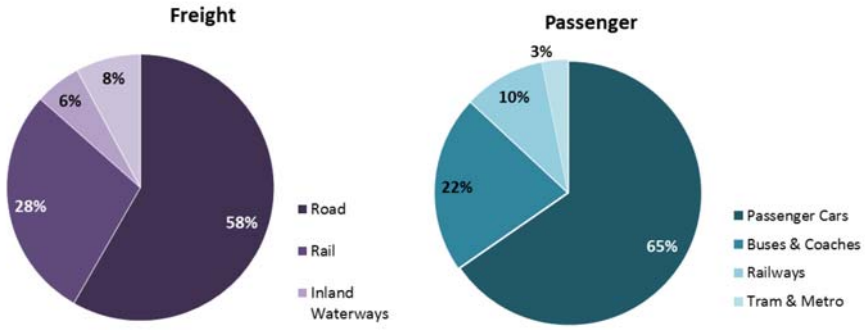
EU legislation sets mandatory CO2 emission reduction targets for new cars and vans. By 2021, the fleet average to be achieved by all new cars is 95 grams of CO2 per kilometre. For new vans, the fleet average is set at 147 g/km by 2020.



Source: European Environmental Agency. 2014 values are provisional. 2013 EU average refers to EU-27.

Regarding transport performance, in EU-28 the inland freight modal shares are 71% by road, 17% by rail, 7% by inland waterways and 5% by pipelines. The respective inland passenger modal shares are 82% by private car, 9% by buses and coaches, 7% by railways and 2% by tram and metro. Compared to the rest of Europe, Hungary reports the highest share of buses and coaches use, and in general the highest share in public passenger transport use.

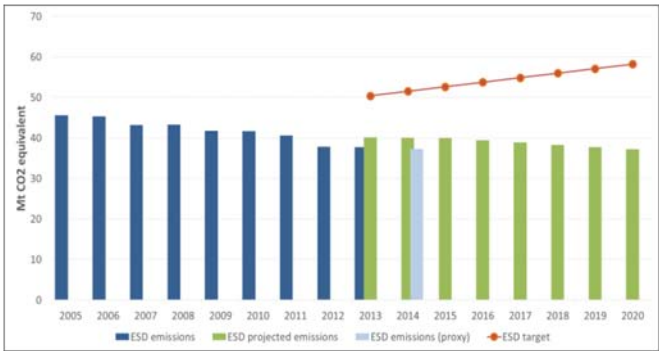
Modal share Hungary



Source: Eurostat and EU transport in figures 2015. Data refers to 2013. Modal shares based on tonne-kilometres for freight sector and passenger-kilometres for passenger sector, freight data based on activity within country territory. Estimates are made when data is missing.

4. Decarbonisation of the economy

NON-ETS GHG EMISSION REDUCTION TARGET 2020 (+10% by 2020 as compared to 2005 in the non-ETS sector)



Source: European Commission based on EEA. Based on preliminary inventory data.

ESD (Effort Sharing Decision) emissions are the emissions from sectors not covered by the EU ETS.

In 2014 emissions were lower by 30% compared to 2005 (based on 2014 approximate data).
According to the latest projections, Hungary is on track to reach its greenhouse gas emission reduction target for 2020, with approximately a 40% margin as compared to 2005.

Non-ETS Emissions (vs. 2005)	Projections/proxy	target
Projections with existing measures 2020	-30%	+10%
Proxy 2014	-30%	-3%

RENEWABLE ENERGY SHARE TARGET 2020 (13%)

Source: European Commission based on EUROSTAT

With a renewable energy share of 9.8% in 2013, Hungary is currently on track to reach its 13% target in 2020. In comparison to its National Renewable Action Plan (NREAP), Hungary is in line with its indicative trajectory for renewable heating and cooling and transport sectors. However, the share of renewable electricity is below the value envisaged by NREAP. Therefore additional efforts need to be made to ensure that the 2020 target is met.

GREENHOUSE GAS EMISSION INDICATORS

- Greenhouse gas emissions per capita in Hungary are about 30% below the EU average. At the same time, due to the low GDP in Hungary, the carbon intensity of the economy is nearly 75% higher than the EU average.
- In 2014 revenues from the auctioning of ETS allowances amounted to EUR 56.5 million.

Largest Sectors of GHG Emissions in 2012 (*)	Hungary	EU Average
Energy/power industry	30%	33%
Transport	18%	20%
Industry	14%	19%
Agriculture (incl. forestry & fishery)	15%	12%
Residential & Commercial	18%	13%
Waste & others	5%	3%

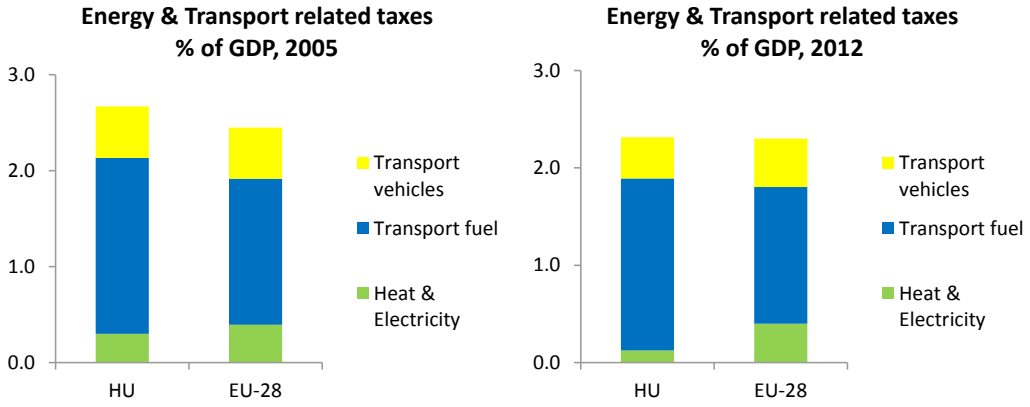
(*)Sectoral breakdown for 2013 data not available

GHG Emissions	Hungary	EU
EU ETS auctioning revenues in 2014(EUR millions)	56.5	3205
Share of ETS emissions in 2013	34%	42%
GHG emissions/capita in 2013 (tCO_2equivalent)	5.7	8.5
Carbon intensity of economy in 2013 (tCO_2equivalent/EUR millions)	570	328

Source: European Commission based on EEA

ENERGY & TRANSPORT TAXATION

The share of energy-related and transport-related taxes compared to GDP is broadly in line with the EU-average. The main share of the tax burden can be linked to transport fuels, followed by the share of taxes on transport vehicles. Tax burden on heat and electricity was of comparable magnitude with the EU average in 2005, however, by 2012 it decreased significantly and became lower than the EU average.

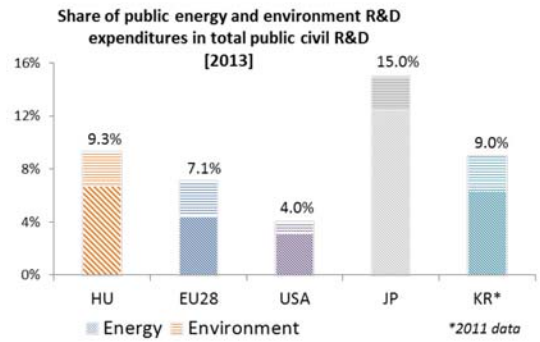


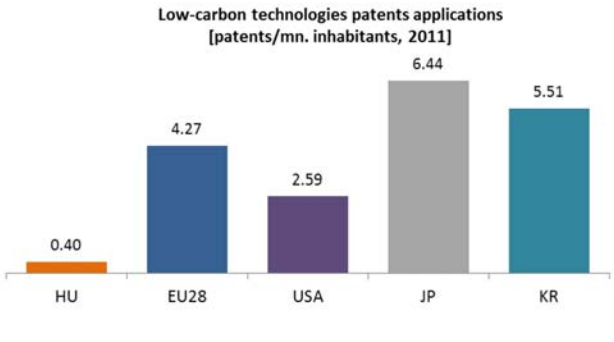
Source: Eurostat

5. Research, innovation and competitiveness

RESEARCH AND INNOVATION

Hungary is above the EU average, the US and South Korea in terms of the share of public support allocated to research and innovation in the field of energy and environment. In terms of intensity of low-carbon technology patents, Hungary is lagging behind the EU average and the main worldwide partners. Hungary faces new challenges in managing its energy transition and therefore is active in the field of research in nuclear technologies.





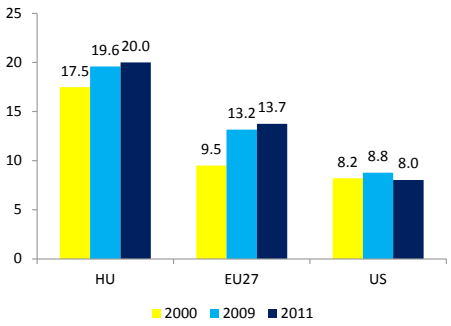
Source: European Commission based on EUROSTAT

COMPETITIVENESS

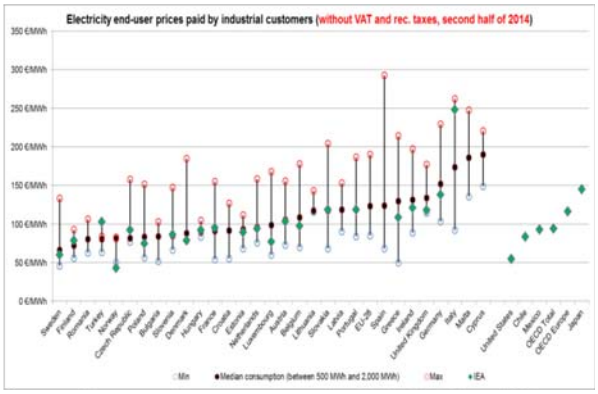
The real unit energy costs[6] for the manufacturing sector have remained higher in Hungary than in the EU or in the US. This reflects that the energy intensity[7] of Hungary's manufacturing sector is higher than in the EU and in line with the US, while real energy prices have increased in Hungary over the past ten years. Thus, energy prices are higher than both the EU average and in the US.

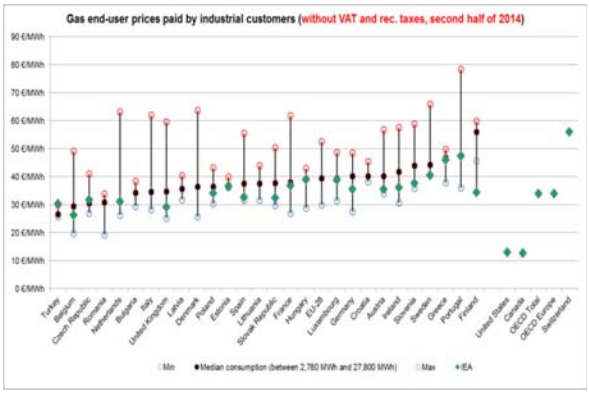
More specifically, electricity prices paid by industrial customers are in line with OECD average, while for gas, they are slightly above.

Real unit energy costs (% of value added)



Source: European Commission





Source: European Commission based on EUROSTAT and IEA

6. Post-2020 Energy and Climate policy Strategy

COMPREHENSIVE MEDIUM TO LONG-TERM STRATEGY (post-2020) FOR CLIMATE AND ENERGY

- Hungary has set a general strategy for energy and climate for the period post-2020, although mostly without specific targets for 2030.
- The energy-related medium-term objectives are outlined in the 2030 National Energy Strategy, adopted by the Parliament in 2011, which covers the key issues of energy savings and energy

6 This indicator measures the amount of money spent on energy sources needed to obtain one unit of value added.

7 The energy intensity presented here is derived from Use Tables of WIOD, see "Energy Economic Developments in Europe SWD(2014)19".

efficiency, renewable energy, nuclear energy, and integration of the Hungarian energy market. A biennial review of the Strategy is foreseen.

- The 2008 National Climate Change Strategy covers the period until 2025 and includes conditional GHG reduction targets, which will be set based on targets established at EU level. An update of the Strategy (2nd National Climate Change Strategy) has been drafted, taking into account the evolution of the EU 2030 framework, though it still has to be finalized and adopted by the Parliament. The Hungarian Low Carbon Development Strategy and a National Adaptation Strategy are also planned to be part of the Strategy update, along with the Hungarian *Decarbonisation Schedule* analysing the scenario of reducing GHG emission by 40% until 2030 and by 80-95% until 2050.

NATIONAL TARGETS, especially for 2030

Objectives, 2030-2050	Targets	Comments
GHG reduction	Yes (only for **2025**)	Conditional target for 2025 → 16% to 25% reduction compared to 1990 level in case of a 20% EU 2020 target; 27% to 34% reduction compared to 1990 level in case of 30% EU 2020 target
Renewable energy	Yes (indicative)	Indicative forecast for 2030 → share of renewables in primary energy use expected to reach 20% by 2030
Energy Efficiency / savings	No	The *Energy Strategy* does not include a specific 2030 target. However, it has the purpose of reducing by 30% heating energy requirements of buildings by 2030. The energy consumption by 2030 should not be higher than before the economic crisis.

7. Regional cooperation

Hungary participates in the Central East South Europe Gas Connectivity (CESEC) High Level Group, operational since the beginning of 2015. The objective of this group is to establish and implement a regional priority infrastructure roadmap in order to improve interconnections and security of gas supplies.

Hungary is one of the coordinators of the energy related actions in the "EU Strategy for the Danube Region", which groups fourteen countries (both EU member states and non-member states). The primary aim of this cooperation process is to coordinate energy policies in the involved countries. The strategy is implemented by mobilising and aligning existing funds to its objectives, where it is appropriate and in line with overall frameworks. The specific actions cover energy infrastructure development, for example, "The Danube Region Gas Market Model"; the "Danube Region Gas Storage Analysis" or the "Danube Region Smart Grid Concept". Other actions cover renewables, for example the "Danube Region Geothermal Concept" and the "Danube Region Biomass Action Plan" or other actions, such energy efficiency.

Hungary actively participates in the cooperation of the Visegrad 4 Group (CZ, HU, PL and SK) in the field of energy policy. V4 aims at regional integration of the energy markets in particular for the gas and electricity sectors and with the Allegro project in the nuclear sector. The Allegro project is aimed at demonstrating the operability and technological feasibility of gas-cooled fast reactors.

The Czech, Slovak and Hungarian day-ahead electricity wholesale markets have been coupled since September 2012 which Romania joined in November 2014. The price convergence between these countries reached 76% after the launch of the market coupling. The Central Allocation Office

manages the allocation of longer term capacity rights in the whole Central-East region, and with the exception of the borders of CZ, SK, HU and RO it manages the day-ahead capacity allocation on all other Central-East borders.

8. Cohesion policy contribution

The EU Cohesion policy provides for important investment possibilities to implement energy policy objectives in Hungary which will be complemented by national public and private co-financing, aiming at optimal leverage. It also ensures integrated territorial solutions to challenges by supporting capacity building, technical assistance and territorial cooperation, including the macro-regional strategy for the Danube Region in which Hungary takes part.

Energy efficiency: Over 2014-2020, EU Cohesion Policy will invest some EUR 1 245 million in energy efficiency improvements in public and residential buildings and in SMEs, as well as in district heating in Hungary. A further estimated EUR 2 439 million will be invested in supporting the move towards an energy-efficient, decarbonised transport sector. These investments are expected to contribute to around 76 000 households with improved energy consumption classification and a decrease of around 67 251 000 kWh per year of decreased primary energy consumption of public buildings, as well as to around 470 km of reconstructed or upgraded railway lines, 130 km of new or improved tram and metro lines and 50 km of new or improved inland waterways.

Decarbonisation: Overall, the EU Cohesion Policy investments in Hungary over 2014-2020 are expected to contribute to an estimated annual decrease of GHG of around 2 964 000 tonnes of CO2eq. Over 2014-2020, EU Cohesion Policy will invest some EUR 876 million in renewable energy in Hungary. These investments are expected to contribute to around 1 980 MW of additional capacity of renewable energy production.

Research, Innovation and Competitiveness: Over 2014-2020, EU Cohesion Policy will invest significantly in R&I and in SME competitiveness in Hungary. This will be based on the national strategy for smart specialisation. For Hungary, the Strategy includes a focus on clean and renewable energies and on advanced technologies in the vehicle and other machine industries. At this stage, the allocations foreseen for investments in R&I and adoption of low-carbon technologies in Hungary are not specified, but should become available in line with the evolving content of the smart specialisation strategy.