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Country Factsheet Slovakia

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State of the Energy Union

{COM(2015) 572}
{SWD(2015) 208 à 209}
{SWD(2015) 217 à 236}
{SWD(2015) 238 à 243}

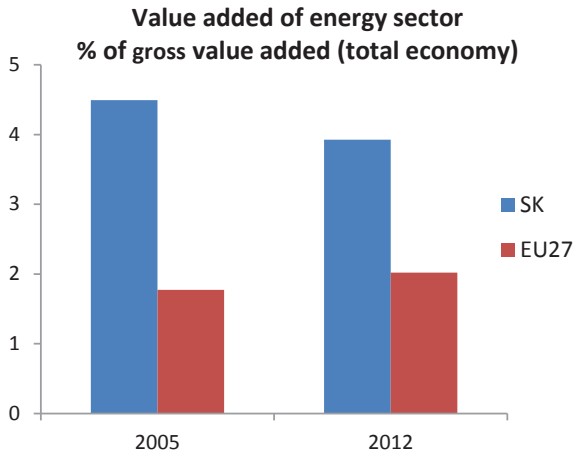
Towards an Energy Union

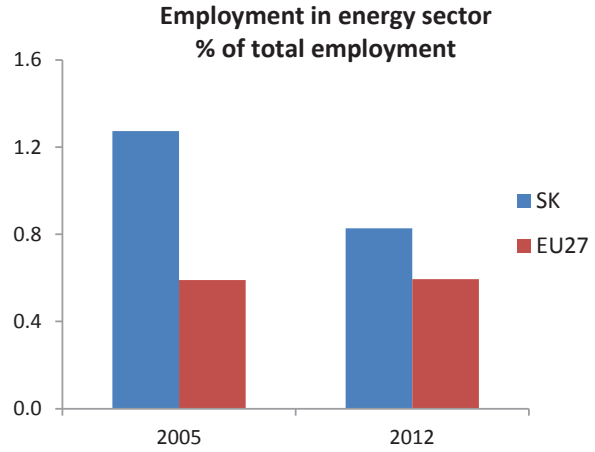
Slovakia

Macroeconomic relevance of energy

IMPORTANCE OF THE ENERGY SECTOR

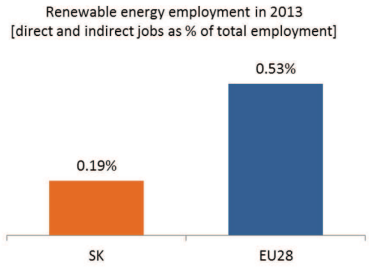
The energy sector plays an important role in the Slovak economy. Its share of gross value added is much higher than the European average, even though in the recent period the figure for Slovakia decreased while the European average increased. The share of employment in the energy sector in Slovakia is also higher than the EU average, although it considerably dropped between 2005 and 2012, whereas the EU average remained stable.





Source: EUROSTAT – National Accounts

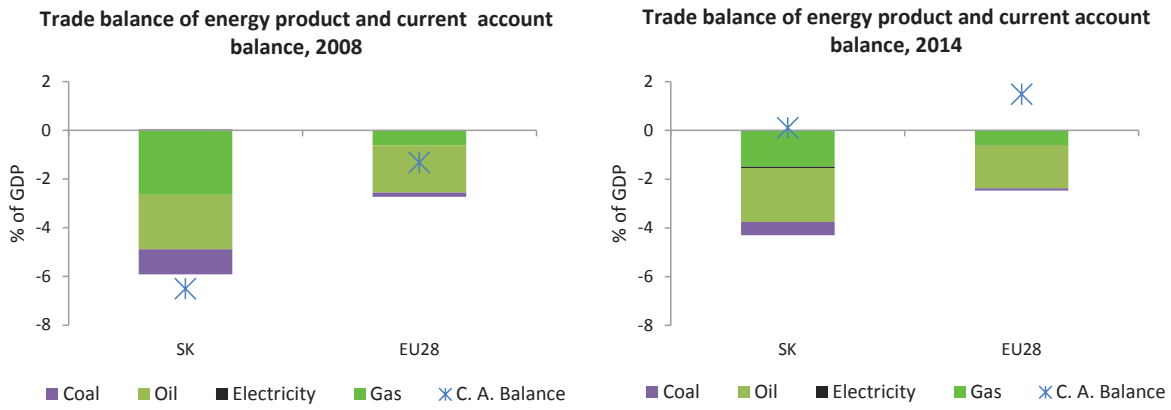
According to EurObserv'ER, in 2013, the share of direct and indirect renewable energy related employment in total employment of the economy in the Slovakia was at about 0.19%, below the EU average of 0.53%.



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

TRADE BALANCE OF ENERGY PRODUCTS

Slovakia is a net importer of energy products. The country has been running a substantial energy trade deficit in the past decade even if it decreased from 5.9% in 2008 to 4.3% in 2014. The deficit is mainly attributable to gas and oil, even though coal also plays an important role. Meanwhile, the 6.5% deficit of the current account balance of Slovakia in 2008 has turned into a surplus of 1.2% in 2014.



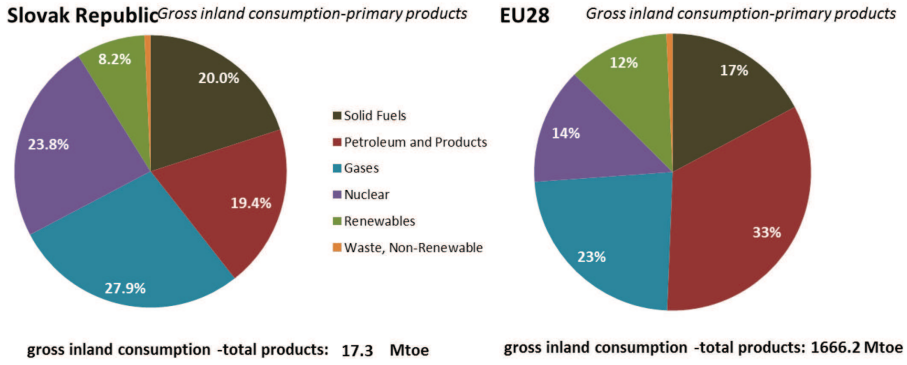
Source: EUROSTAT
Note: Current account balance for EU28 from European Commission (AMECO)

1. Energy Security, solidarity and trust

ENERGY MIX

The energy mix of Slovakia is broadly similar with the one of the EU-28, with the notable difference of higher use of nuclear and lower share of petroleum and products and gases.

Gross inland energy consumption in 2013



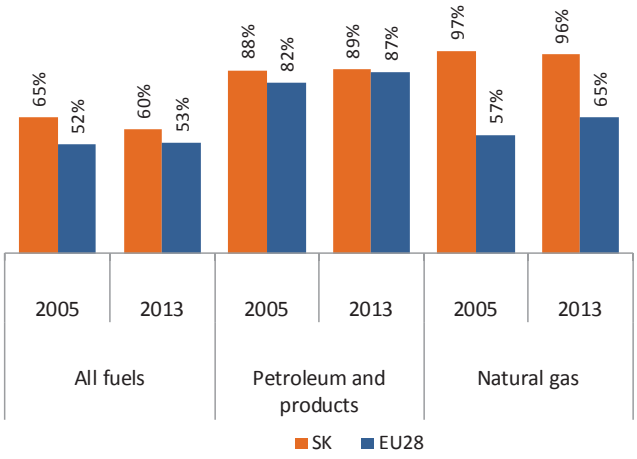
Source: European Commission, based on EUROSTAT

IMPORT DEPENDENCY

Slovakia has an import dependency above the EU average for all fossil fuels as well as separately for gas and petroleum and products. In particular, Slovakia imports almost all its gas from Russia.[1] Consequently, Slovakia experiences a significant energy trade deficit, expressed in percentage of GDP, well above EU average.

[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).

Import dependency 2013



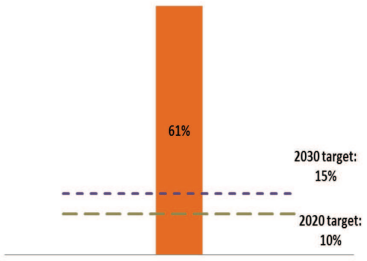
Top non-EU gas suppliers in 2013 (% in total imports)

Slovak Republic			European Union		
country		[%]	country		[%]
Russia	🔴	98.7	Russia	🔴	39.0
			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

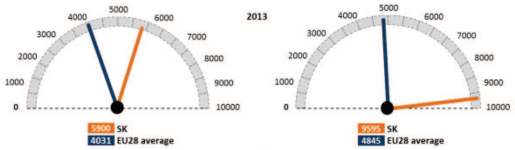
Note: Reference to 2030 target is based on October 2014 European Council conclusions stating that "the Commission will also report regularly to the European Council with the objective of arriving at a 15% target by 2030"

The interconnection capacity for electricity was 61% in 2014 for Slovakia, which is well above the 2020 and 2030 objectives. However, the country is impacted by electricity loop flows from Germany, via Poland and the Czech Republic. Significant congestions also occur on the Slovak-Hungarian border where the electricity interconnection should be improved (i.e. to be financed under Connecting Europe Facility). In addition, continuing the modernisation and upgrading of its national electricity grid as well as building power interconnections with Hungary should be priorities.

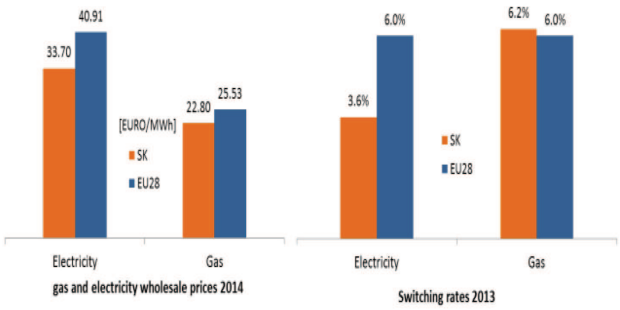
Slovakia should facilitate greater regional integration and strengthen interconnections with neighbouring countries in gas networks. Important infrastructure projects to help diversify import sources of gas include the new gas interconnector between Poland and Slovakia, one of the priority projects of the European Energy Security Strategy (EESS), or the recently proposed Eastring.

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

Concentration on gas and electricity generation markets is high. The largest gas supplier still holds a market share of almost 61% of gas supply to all final customers in Slovakia and it imports gas based on mainly a

long-term contract with Gazprom. Slovakia could continue its efforts to diversify gas imports in order to foster security of supply and to address the concentration on the wholesale market. New interconnectors will help to diversify gas supply across the Visegrad group countries.

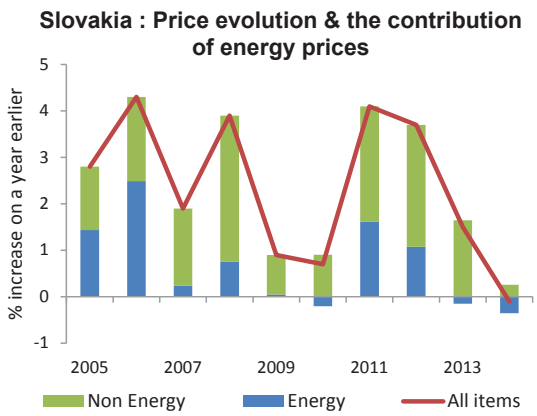
Wholesale electricity and gas prices in Slovakia are below the EU average, although the prices for medium-sized businesses are comparatively high. In September 2012, the market coupling of the Czech, Slovak and Hungarian day-ahead electricity markets was successfully launched (Romania joined in 2014).

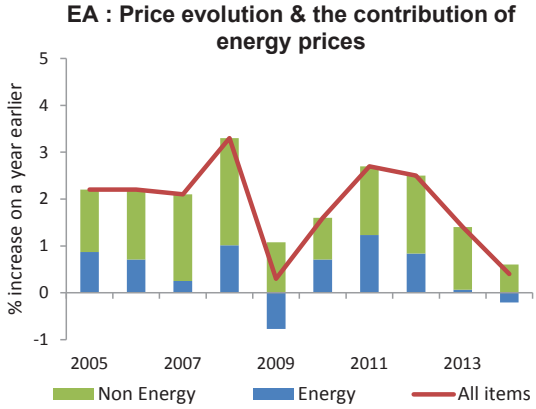
The switching rates for electricity and especially for gas consumers (the latter slightly above the EU average) indicate a potential for a dynamic and competitive market in Slovakia. Overall assessment of the retail electricity and gas markets is above the EU average[2]. Retail prices in Slovakia are still regulated through "price caps" for all households and small industrial users. The regulatory cycle in Slovakia is 5 years, the elaboration phase of which includes a consultation process including all market participants which represents an additional step to enhance the transparency and predictability of the regulatory framework. The regulatory framework should include measures to further increase the competitiveness of the Slovak energy sector. Retail prices are below the EU average for electricity (all consumers) and for household gas consumers.

Smart meters will be rolled-out on a selective basis for the largest supply points of low voltage electricity (23% of all forecast Low Voltage supply points by 2020).

CONTRIBUTION OF ENERGY TO CONSUMER PRICE EVOLUTION

Energy prices have contributed to consumer price inflation up until recently. However, energy prices started to decelerate in 2012, hence contributing to the overall decreasing consumer price inflation, a situation which was even more pronounced in 2013. This trend is observed in both Slovakia and the rest of the Euro area even though the levels are higher in Slovakia than for the aggregated region.

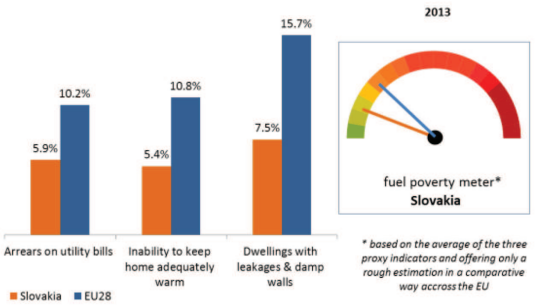




Source: DG ECFIN based on Eurostat

VULNERABLE CONSUMERS

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

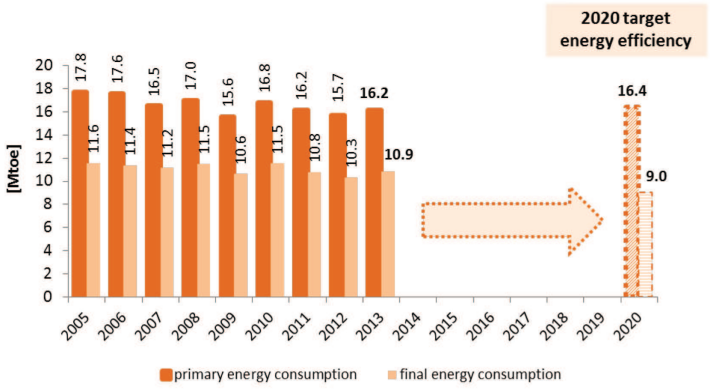


Source: European Commission, based on on EUROSTAT SILC survey

According to the EUROSTAT survey on social and living conditions, the three proxy indicators related to fuel poverty indicate that the problem is not so stringent in Slovakia, being in a better situation than the EU average. The definition of vulnerable consumers protected by regulated prices is covering all households as well as small industrial users. Slovakia elaborated a strategy for dealing with energy poverty and is currently in the process of transposing this strategy into the Slovak legislation.

3. Energy Efficiency and moderation of energy demand

ENERGY EFFICIENCY TARGET 2020
(16.4 Mtoe primary energy and 9 Mtoe final energy)



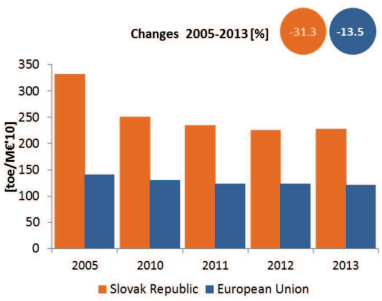
Source: European Commission, based on EUROSTAT and on national energy efficiency targets as declared by the MS under the Energy Efficiency Directive

Slovakia's 2020 energy efficiency target is 16.38 Mtoe expressed in primary energy consumption (9.02 Mtoe expressed in final energy consumption). In Slovakia, primary and final energy consumption have been decreasing in 2005-2013 at a rate which is very close to the EU average. However, this trend reversed in 2013, and improvements in Slovakia have slowed down. The country should continue its efforts regarding energy efficiency to ensure the 2020 target can be reached even if the economy continues to grow.

ENERGY INTENSITY

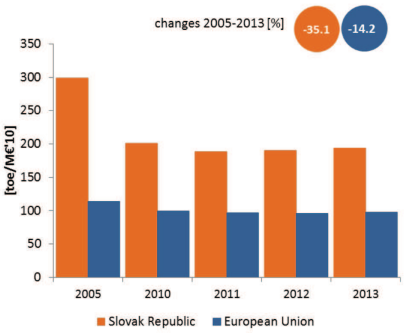
Primary energy intensity in Slovakia has decreased at a fast pace (by 31.3% between 2005 and 2013), although in absolute terms it remains almost twice the EU average. A high energy intensity reduction is also recorded in the industrial sector, i.e. by 35% between 2005 and 2013 and significantly more than the average energy intensity reduction in the EU28.

Primary energy intensity of the economy



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

Final energy intensity in industry

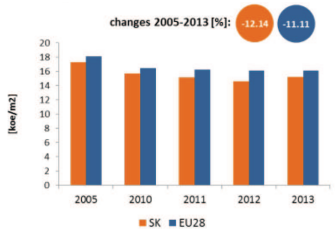


Source: European Commission based on EUROSTAT and European Commission/AMECO

Specific energy consumption by households (per m2 of floor area, climate corrected) decrease by about 12% in Slovakia between 2005 and 2013, more than the EU average (i.e. 11.1%). The specific energy intensity of

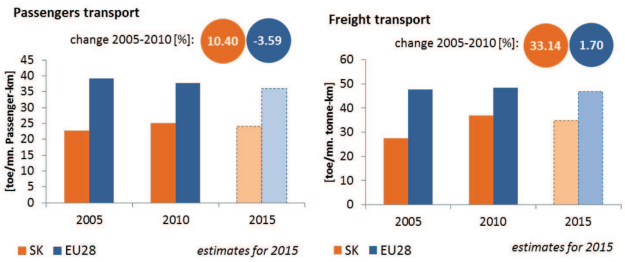
car transport of passengers increased by about 10% between 2005 and 2010 (while at the EU average decreased by 3.6%), which reflects a less efficient usage of cars, i.e. higher stock, fewer passengers per car or similar. Moreover, the specific energy intensity for freight transport increased consistently between 2005 and 2010 by about 33%, more than the EU average of 1.7% (i.e. from the same unit of energy fewer tons of goods are transported and/or on shorter distances).

Final energy consumption per m2 in residential sector, climate corrected



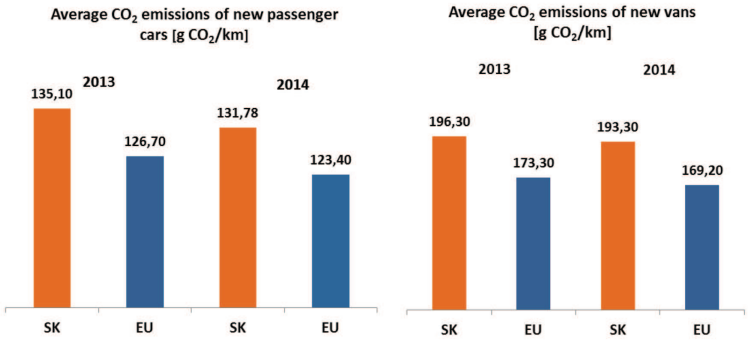
Source: European Commission based on Odyssee database

Specific energy intensity for passenger cars and freight transport[3]



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

EU legislation sets mandatory CO_2 emission reduction targets for new cars and vans. By 2021, the fleet average to be achieved by all new cars is 95 grams of CO_2 per kilometre. For new vans, the fleet average is set at 147 g/km by 2020.

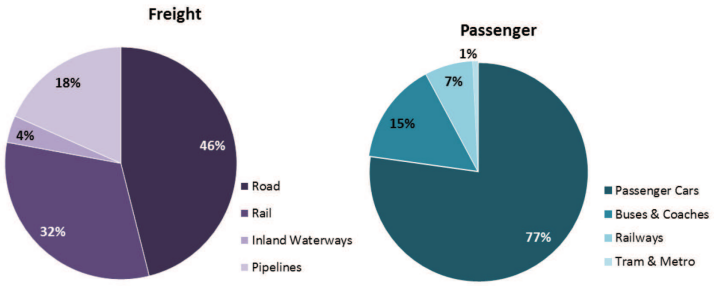


Source: European Environmental Agency. 2014 values are provisional. 2013 EU average refers to EU-27.

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 European average, in Slovakia there is a higher use of bus passenger transport and rail freight transport.

Modal share Slovakia

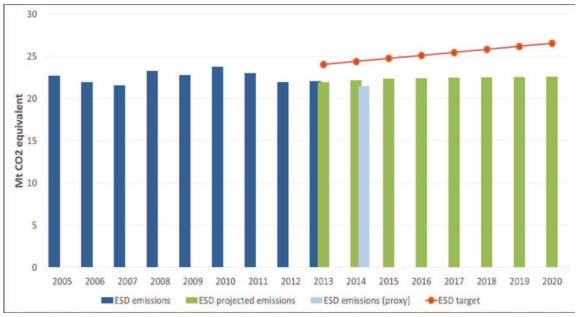
[3] Statistics on energy demand for passengers and freight transport are not available and model estimates have been used instead. These issues should be borne in mind when comparing energy intensity in freight or passenger transport between Member States, which should be regarded as merely indicative.



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 (+13% 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

Slovakia has decreased its emissions by around 9% between 2005 and 2014 approximated data.

According to its 2015 projections, Slovakia is on track to overachieve its 2020 target, with a 17% margin between the projected emission and its target, as compared to 2005.

Non-ETS Emissions (vs. 2005)	Projections/proxy	target
MS Projections with existing measures 2020	-4%	+13%
Proxy 2014	-9%	+4%

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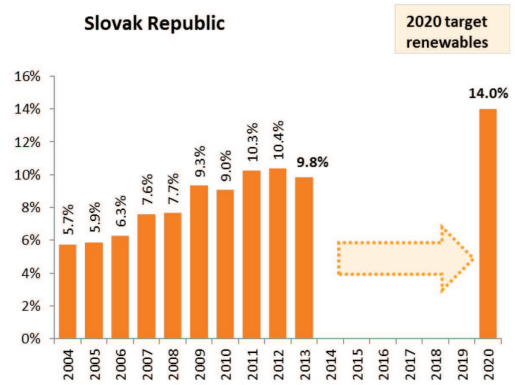
The car tax system and the level of fuel taxation, which is close to the EU average, contribute to limit the increase of greenhouse gas emissions in the transport sector.

RENEWABLE ENERGY SHARE TARGET 2020 (14%)



Source: European Commission based on EUROSTAT

With a 9.8% share of renewable energy in gross final consumption in 2013, Slovakia is above its 2013/2014 indicative trajectory of 9% towards its 2020 target. However, progress has stalled over the past few years.

In 2013, Slovakia met its indicative target for renewable transport and nearly met its indicative target for renewable electricity. Nevertheless Slovakia did not meet the indicative target for renewable heating and cooling, which should be addressed by its new Energy policy, agreed in November 2014, focussing especially on the heating sector.

In order to reach the 2020 renewable energy target, additional effort and a more stable regulatory framework for renewables support seem needed.

GREENHOUSE GAS EMISSION INDICATORS

- Slovakia is a very carbon-intensive economy.
- In Slovakia the share of emissions from the industrial sector was higher than the EU average in 2012, in particular due to the lower share in the power sector (higher use of nuclear).
- In 2013, the revenues from the auctioning of ETS allowances amounted to EUR 61.7 million. In 2014 these revenues amounted to EUR 57.6 million. The funds will be reinvested in projects aiming to reduce the greenhouse gas emissions and to increase energy efficiency, and also used for compensating the sectors exposed to a significant risk of carbon leakage.

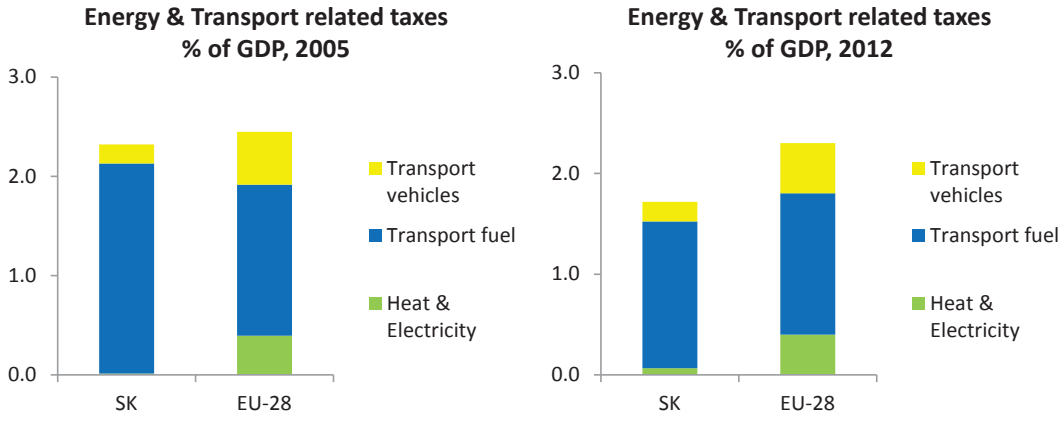
Largest Sectors of GHG Emissions in 2012 (*)	Slovakia	EU Average
Energy/power industry	25%	33%
Transport	15%	20%
Industry	36%	19%
Agriculture (incl. forestry & fishery)	8%	12%
Residential & Commercial	9%	13%
Waste & others	7%	3%

GHG Emissions	Slovakia	EU
EU ETS auctioning revenues in 2014 (EUR millions)	57.6	3205
Share of EU ETS emissions in 2013	50%	42%
GHG emissions/capita in 2013 (tCO_2equivalent)	8.1	8.9
Carbon intensity of economy in 2013 (tCO_2equivalent/EUR millions)	617	346

Source: European Commission based on EEA
(*)Sectoral breakdown for 2013 data not available.

ENERGY & TRANSPORT TAXATION

Transport related taxes as a share of GDP are much higher than energy related taxes, even though the latter slightly increased between 2005 and 2012. Compared to the EU average, in Slovakia the share of transport fuel taxes is higher than EU average, whereas the share on transport vehicles is lower. In total, the sum of the shares of transport and energy related taxes is similar to the EU average in 2005, but it then decreased in 2012 to a level lower than the EU average. This is mainly due to a decrease in the share of transport fuel related taxes.

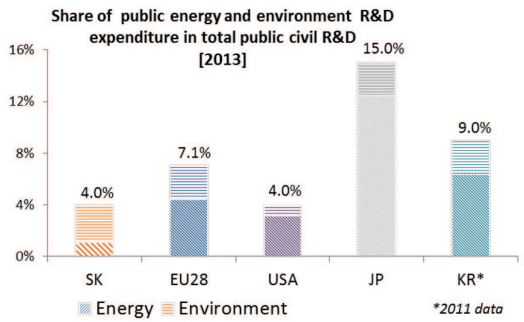


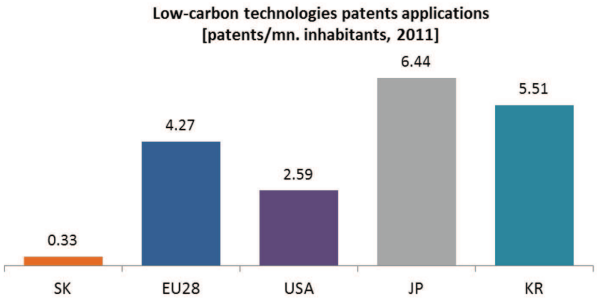
Source: Eurostat

5. Research, innovation and competitiveness

RESEARCH AND INNOVATION

Slovakia lags behind EU average in terms of public support share allocated to research and innovation in the field of energy and environment. Overall, the EU fairs well when compared to the US but does not perform as well as Japan and South Korea. In terms of patents intensity of low-carbon technologies, Slovakia is much behind the EU average and main worldwide partners.





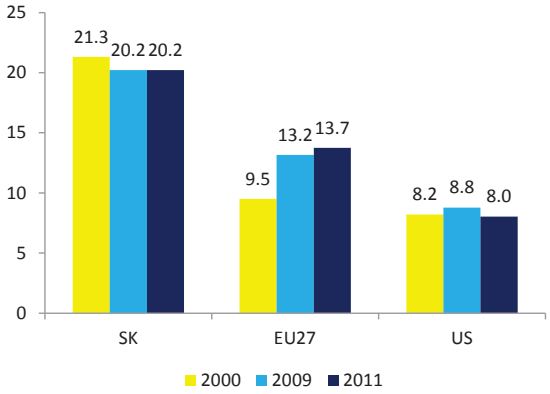
Source: European Commission based on EUROSTAT

COMPETITIVENESS

The real unit energy costs [4] in Slovakia decreased from 2000 having an opposite evolution than the EU average. However, it remains higher than the EU average and the US. This is mostly due to high energy intensity[5] of the manufacturing sector and its high share as part of the GDP.

Slovakia has gas prices paid by industrial customers at the EU average while significantly above US and Canadian prices. Retail electricity prices for industrial consumers are at the OECD Europe average but the highest in the region and higher than US and other non-EU OECD trading partners except Japan.

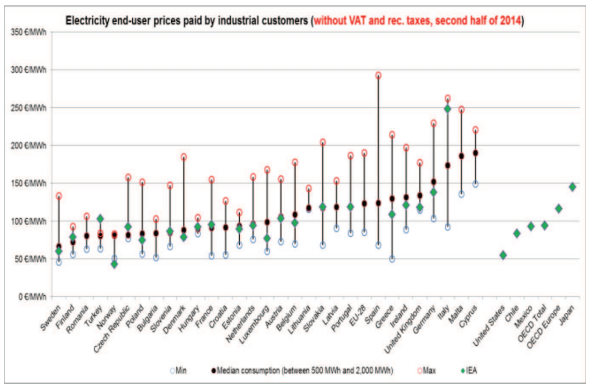
Real unit energy costs (% of value added)

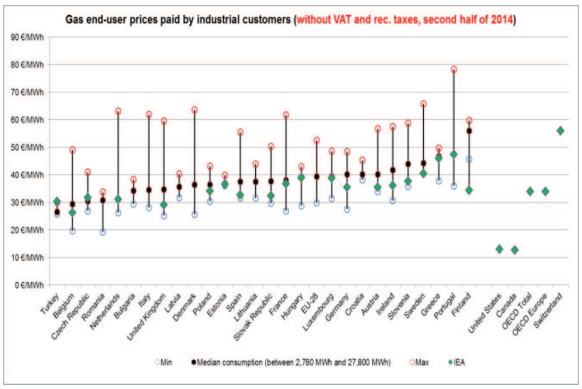


Source: European Commission

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

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





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

- Slovakia has not yet established a comprehensive medium to long-term strategy for climate and energy covering the post-2020 period.
- In November 2014, the government of Slovakia approved a new Energy Policy, which sets the objectives and priorities of the energy sector until 2035, with an outlook to 2050. The main objective of the Energy Policy is to ensure the reliability and stability of energy supply through diversification of gas and oil transport routes and further development of nuclear capacities, to improve energy efficiency and to help Slovakia meeting the 2020 energy targets. No specific targets for 2030 have been set, but forecasts are included.
- Slovakia is preparing a national Low-carbon Development Strategy.

NATIONAL TARGETS, especially for 2030

Objective, 2030-2050	Targets	Comments
GHG reduction	No	
Renewable energy	No	Share of 24% in final energy consumption under the 2030 scenario.
Energy efficiency / savings	No	

7. Regional cooperation

Regional cooperation on infrastructure development is necessary to optimise the identification of regional infrastructure priorities and to coordinate cross-border investments. Slovakia is a member of 3 Regional Groups which have been established under the TEN-E Regulation: North-South electricity interconnections in Central Eastern and South Eastern Europe; North-South gas interconnections in Central Eastern and South Eastern Europe; and Southern Gas Corridor.

Slovakia is also a member of the High Level Group on Central East South Europe Connectivity (CESEC) together with Austria, Bulgaria, Croatia, Greece, Hungary, Italy, Romania and Slovenia. The objective of the High Level Group is to establish a regional priority infrastructure roadmap and advance its implementation in order to develop missing infrastructure and improve security of gas supplies.

The Czech, Slovak and Hungarian day-ahead electricity wholesale markets have been coupled since September 2012 (Romania joined in 2014). The price convergence between these countries reached 76% after the launch of the market coupling. Cross-border capacity allocation for power transmission for German, Polish and Austrian takes place through Central Allocation Office GmbH. Capacity allocation with the Czech Republic is based on long-term nominations.

Slovakia is involved in cooperation with Visegrad Group countries (CZ, HU, PL and SK) in the field of energy policy, including gas market integration as well as research activities in the field of nuclear power (Gen IV reactors).

8. Cohesion policy contribution

The EU Cohesion policy provides for important investment possibilities to implement energy policy objectives in Slovakia 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 Danube Region macro-regional strategy in which Slovakia takes part.

Energy efficiency: Over 2014-2020, EU Cohesion Policy will invest some EUR 884 million in energy efficiency improvements in public and residential buildings and in enterprises, as well as in high-efficiency cogeneration and district heating in Slovakia. A further estimated EUR 1 600 million will be invested in supporting the move towards an energy-efficient, decarbonised transport sector. These investments are expected to contribute to around 38 000 households with improved energy consumption classification and a decrease of around 399 000 000 kWh per year of primary energy consumption of public buildings, as well as to around 110 km of reconstructed or upgraded railway lines and 30 km of new or improved tram and metro lines.

Decarbonisation: Overall, the EU Cohesion Policy investments in Slovakia over 2014-2020 are expected to contribute to an estimated annual decrease of GHG of around 770 000 tonnes of CO2eq. Over 2014-2020, EU Cohesion Policy will invest some EUR 169 million in renewable energy in Slovakia. These investments are expected to contribute to around 620 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 Slovakia. This will be based on the national strategy for smart specialisation. For Slovakia, the Strategy[6] includes a focus on sustainable energy and automotive and mechanical engineering. At this stage, at least EUR 8 million is foreseen for investments in R&I and adoption of low-carbon technologies in Slovakia, but this might increase further in line with the evolving content of the smart specialisation strategy.

[6] *"Through Knowledge towards Prosperity – Research & Innovation Strategy for Smart Specialisation of the Slovak Republic", adopted by the SK Government on 13 November 2013.*