

SLOVAKIA

Country at a glance

- Population: 5.46 million (2010) [1]
- Total area: 49,035 sq. km [2]
- Carbon emissions per capita: 6.41 metric tons (2010) [3]
- Energy consumption per capita: 37.9 MWh (2010) [4]
- Percentage of global carbon emissions: 0.12% (2010) [3]



IAEA routine inspection of nuclear fuel assemblies in Slovakia

Nuclear power is a major energy source in Slovakia. It has four nuclear power stations generating half of its electricity and two more are under construction. Government commitment to the future of nuclear energy is strong.

IAEA Safeguard inspector scanning fuel assemblies in Mochovce nuclear power plant in Slovakia.

By Dean Calma from IAEA Website. Permission Under commons.wikimedia.org/wiki/File:IAEAinspector.jpg

Table 1 Breakdown of energy use, electricity and heat generation, 2010

	Primary energy sourced within country		Energy imports minus exports	Primary energy used within the country ^(a)			Electricity Generation ^(b)		Heat Generation ^(c)		
	unit	ktoe		%	ktoe	ktoe	GWh	%	GWh	%	
Coal, including brown coal & peat		613	10	2,952	3,897	45,325	22	4,080	15	3,270	24
Oil fuels		210	3	3,335	3,542	41,198	20	600	2	1,772	13
Natural gas		88	1	5,001	5,005	58,208	28	2,206	8	6,506	48
Nuclear		3,858	62	0	3,858	44,866	22	14,574	53	694	5
Hydroelectric		452	7	0	452	5,256	3	5,255	19	0	0
Biofuels and waste		971	16	-13	959	11,154	5	686	3	1,194	9
Solar photovoltaics		1	0	0	1	17	0	17	0	0	0
Solar thermal		0	0	0	0	1	0	0	0	0	0
Tide, wave and ocean		0	0	0	0	0	0	0	0	0	0
Wind		1	0	0	1	6	0	6	0	0	0
Geothermal		8	0	0	8	97	0	0	0	39	0
Electricity (imported)		0	0	90	90	1,041	1	0	0	0	0
Sub total Renewables		1,433	23	-13	1,421	16,530	8	5,964	22	1,233	9
Totals		6,203	100	11,364	17,813	207,168	100	27,424	100	13,475	100

Source: Based on World Energy Statistics and Balances Database 2012, "World Energy Balances." © OECD/IEA, 2012.

Notes:

Standard conversion used is 1 ktoe = 11.63 GWh

(a) Sum of energy sourced within country, energy imports minus exports, international marine and aviation bunkers and stock change flows.

(b) Includes all electricity generation, including any exported.

(c) Does not include electrical heating. Includes waste heat recovery from electricity generation plants.

Table 2 Breakdown of transport fuel use, 2010

(in ktoe)	Total transport mix	%	Domestic aviation	Road	%	Rail	Pipeline transport	Domestic navigation	Non-specified (transport)
Oil products	1,968	76	0	1,966	92	0	0	0	2
Natural gas	396	15	0	0	0	0	387	0	10
Biofuels and waste	164	6	0	164	8	0	0	0	0
Electricity	46	2	0	0	0	40	0	0	6
Sub total Renewables	164	6	0	164	8	0	0	0	0
Total	2,575	100	0	2,131	100	40	387	0	18

Source: Based on World Energy Statistics and Balances Database 2012, "World Energy Balances." © OECD/IEA, 2012.

Stand on climate change

The Republic of Slovakia signed the Kyoto Protocol on 26 February 1999 and ratified it on 31 May 2002. However, it was not entered into force until 16 February 2005.

National climate change programmes

Under the Kyoto Protocol, Slovakia is obliged to reduce GHG emissions by 0.4% from 1990 levels. The Slovak government has undertaken the following climate change programmes:

The European Union Emission Trading Scheme:

The European Commission approved a cap for the annual allocations for phase 2 of the scheme is 30.9%. A total of 180 installations are now at the start of phase 2.

The Climate and Energy Package:

This package was officially approved in 2009 and will serve as a complex framework for compliance with the ambitious goals of the European Union by 2020 [5].

Energy Efficiency Action Plan:

Prepared each third year, 2007 was the first year. The plan covers topics such as measures to meet the energy saving targets in Slovakia, means to attain energy efficiency, financial and legal frameworks to attain the nation indicative energy saving, analysis of the measures adopted and proposals for new measures. The most recent plan was made for the period 2011 to 2013. The measures are categorized into the following sectors [6]:

Buildings:

- Improvement of thermal properties of buildings
- Construction of low energy building and passive building
- Hydraulic balancing of heating systems

Transport:

- Promotion on use of alternative fuels in public transport
- Improvement to public transport's infrastructure and integrated transport systems to increase its attractiveness
- Support for non-motorized modes of transport

Industry:

- Increased energy efficiency in industrial production

Development of Energy Efficiency Conception, one of the priorities in the Energy policy:

The energy policy was approved in January 2006 and the Conception's main objective is to attain gradual reduction of energy intensity to the level of the European Union while establishing an environment providing incentives for energy efficient behavior and support towards sustainable energy solutions.

Energy Security Conception:

The targets of this Conception are 1) safe, effective and reliable supply of all kinds of energy in required the quantity and quality 2) Reduce the share of gross domestic consumption of energy in gross domestic product to reduce energy intensity, and 3) secure total electricity production that will cover the demand effectively. This Conception has been in force since 2007.

Conception of Higher Use of Biofuels in Transportation in the Slovakia:

This Conception provides reference values for biofuels for the period of 2006 to 2010. It is estimated that by 31 December 2010, the value for biofuels calculated from energy content of total quantity of gasoline and diesel oil will be 5.75%. The Conception also presents amendments for policies that are aimed at further development programmes on biofuels:

- Amended Regulation of the Slovak Government Order no. 246/2006 Coll [7].
- Amended Ordinance of the Ministry of Economy of the Slovak Republic no. 608/2006 Coll.
- Amended of Act 92/2004 Coll.

Biomass Utilization Action Plan for 2008 to 2013:

Due to the need for biomass utilization and its potential, the Government adopted the task to develop this plan by its Resolution no. 383/2007 within the Strategy for Further Utilization of the Renewable Energy Resources [8].

Strategy for further utilization of Renewable Energy Resources in Slovak Republic:

Targets for 2010 to 2015 and measures to be implemented are presented in this document and will help contribute to the increase in renewable energy resources in the total energy consumption from its current level of 4%. The target is to increase the share to 7% by 2015.

Governmental Programme for Thermal Insulation of Buildings:

This programme was approved by Government Resolution no. 379 on 29 May 2009. It defines the conditions for thermal insulation that leads to the decrease in energy intensity of residential buildings. Also, Act 607/2003 Coll. on the state Fund for Housing Development has been amended resulting in state subsidy for apartment houses or family house with certificates issued before 1989.

Regulations affecting emission of greenhouse gases indirectly:

- Act 24/2006 Coll. on the environmental impact assessment and on changing and amending some acts as amended by Act 275/2007 Coll. and Act 454/2007 Coll.
- Regulation of the Ministry of Environment of the Slovak Republic no. 133/2006 Coll. on requirements for the reduction of volatile organic compounds emitted from the use of organic solvents in regulated products, as amended by Regulation 30/2009 Coll.
- Regulation of the Ministry of Environment of the Slovak Republic no. 131/2006 Coll. providing national emission ceilings and total quantity of allowances for pollutants, as amended by Regulation 203/2008 Coll.

Regulations by sectoral approach –

Energy and transport sector:

- Act 656/2004 Coll. on energy and on changes of certain acts as amended by later regulations and Act 657/2004 Coll. on thermal energy as amended by later regulations [9]
- Act 725/2004 Coll. on the conditions for motor vehicles operation and traffic on roads and Regulation of the Slovak Government no. 584/2004 Coll. on measures to reduce emissions from combustion engines installed in non-road machines [10]
- Regulation of the Slovak Government no. 367/2006 Coll. on technical requirements relating to measures to be taken against air pollution by gases from positive-ignition engines of motor vehicles pursuant to Council Directive 70/220/EEC [11]
- Regulation of the Slovak Government no. 368/2006 Coll. on technical requirements relating to the measures to be taken against the emission of pollutants from diesel engines for use in vehicles pursuant Council Directive 72/306/EEC and Council Directive 88/77/EEC [12]
- Directive 2001/77/EC of the European Parliament and of the Council on electricity production from renewable energy resources in the internal electricity market [13]
- Act 476/2008 on hydraulic balancing of heating and hot water system, insulation of hot water systems and energy audits
- Act 555/2005 on energy performance certification of buildings [14]
- Act 17/2007 on periodic inspections of boilers, air-conditioning systems and heating systems
- Act 309/2009 Coll. on the support for renewable energy resources and a highly effective combined production of energy
- Regulation no. 578/2006 Coll. stipulates emission control of mobile polluting sources

Industry sector:

- Regulation of the Slovak Government no. 655/2007 on technical conditions to reduce emissions from air conditioning systems in motor vehicles
- Act 286/2009 Coll. on fluorinated greenhouse gas emissions and on the change and amendment of certain acts

Ministries involved in climate change/energy policy making:

Ministries involved	Web links
Ministry of Environment of the Slovak Republic	www.minzp.sk/
Ministry of Economy of the Slovak Republic	www.economy.gov.sk/
Ministry of Construction and Regional Development of the Slovak Republic	www.build.gov.sk/mvrrsr/index.php
Ministry of Transport, Post and Telecommunications	www.telecom.gov.sk/index/index.php
Ministry of Finance	www.finance.gov.sk/

Education institutes involved in climate change/energy policy making:

Education Institutes involved	Web links
Slovak Academy of Science	www.sav.sk/?lang=en
Slovak Research and Development Agency	www.apvv.sk/agentura?lang=en
Slovak Hydrometeorological Institute	www.shmu.sk/sk/?page=1
National Forest Centre in Zvolen	www.nlcsk.sk/
Slovak University of Agriculture in Nitra	cms.uniag.sk/univerzita
Soil Science and Conservation Research Institute in Bratislava	www.vupop.sk/

References

- [1] "World Population Prospects: The 2010 Revision." Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat.
- [2] "CIA - The World Factbook." Available at:
<https://www.cia.gov/library/publications/the-world-factbook/geos/th.html>. [Accessed: 12-Mar-2013].
- [3] CO₂ Emissions from Fuel Combustion Statistics database 2012, "Indicators for CO₂ emissions." © OECD/IEA, 2012.
- [4] World Energy Statistics and Balances database 2012, "World Energy Balances." © OECD/IEA, 2012.
- [5] Citizen's Summary - EU Climate and Energy Package. January 2013. Available at:
http://ec.europa.eu/clima/policies/package/docs/climate_package_en.pdf
- [6] Energy Efficiency Action Plan for 2011 – 2013. Government of Slovakia. Available at:
<http://www.buildup.eu/system/files/content/SK%20-%20Energy%20Efficiency%20Action%20Plan%20EN.pdf>
- [7] Country R&D Programme and Biofuels Policy – Slovakia. Available at:
http://www.lowcarbonoptions.net/resources/Policy-&-Measures/Policies-and-Measures--Slovakia/SK_Biofuels_in_Slovakia.pdf
- [8] National Action Plan of Biomass Utilization – Slovakia. Available at:
http://www.4biomass.eu/document/news/Slovak_National_Biomass_Action_Plan.pdf
- [9] Collection of Laws on Energy amendments – Slovakia. Available at:
<http://www.erranet.org/index.php?name=OE-eLibrary&file=download&id=5644&keret=N&showheader=N>
- [10] Amendment on Vehicle Operations and Road Traffic Laws – Slovakia. Available at:
http://www.google.com.sg/url?sa=t&rct=j&q=act%20%20725%2F2004%20%20coll.%20&source=web&cd=1&cad=rja&ved=0CDAQFjAA&url=http%3A%2F%2Fwww.telecom.gov.sk%2Findex%2Fopen_file.php%3Ffile%3Ddoprava%2Fcesta%2Fsdu%2FA04_725_June_2009.pdf&ei=ZV7qUJDMBMTIAXynYGoAg&usq=AFQjCNft8pgrzoEMMWOSYAnYVif7KSA0tA&bvm=bv.1355534169,d.dGI
- [11] EU Directory of Laws – Slovakia. Available at:
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31970L0220:EN:NOT>
- [12] EC Directive on emissions of pollutants from diesel engine vehicles. Available at:
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31972L0306:EN:HTML>
- [13] Promotion of electricity produced from RES for internal market. EC 2001/77 Directive. Available at:
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2001L0077:20070101:EN:PDF>
- [14] Energy Performance of Buildings – EU Member State – Slovakia. Available at:
<http://www.eea.europa.eu/themes/climate/pam/details?id=2124>