

SLOVENIA

Country at a glance

- Population: 2.03 million (2010) [1]
- Total area: 20,273 sq. km [2]
- Carbon emissions per capita: 7.55 metric tons (2010) [3]
- Energy consumption per capita: 41.3 MWh (2010) [4]
- Percentage of global carbon emissions: 0.05% (2010) [3]



Hydroelectric power plant in Slovenia

Slovenia is not very rich in energy resources. Coal is becoming scarce, and anyway not environmentally friendly. The greatest domestic energy reserve source is hydroelectric energy so this will be developed more in the near future.

Boštanj Hydroelectric Power Plant, photographed from Sevnica by Eleassar. Permission CC BY-SA 3.0 commons.wikimedia.org/wiki/File:Hidroelektrarna_Bo%C5%A1tanj_magnified.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	%	GWh	%
Coal, including brown coal & peat		1,160	31	283	1,424	16,555	19	5,288	33	1,674	61
Oil fuels		0	0	2,597	2,540	29,541	34	8	0	52	2
Natural gas		6	0	857	863	10,032	12	548	3	723	27
Nuclear		1,474	40	0	1,474	17,146	20	5,657	35	0	0
Hydroelectric		388	10	0	388	4,513	5	4,512	28	0	0
Biofuels and waste		642	17	29	671	7,803	9	222	1	261	10
Solar photovoltaics		1	0	0	1	13	0	13	0	0	0
Solar thermal		5	0	0	5	59	0	0	0	0	0
Tide, wave and ocean		0	0	0	0	0	0	0	0	0	0
Wind		0	0	0	0	0	0	0	0	0	0
Geothermal		28	1	0	28	329	0	0	0	13	0
Electricity (imported)		0	0	-182	0	0	0	0	0	0	0
Sub total Renewables		1,065	29	29	1,093	12,717	15	4,747	29	274	10
Totals		3,705	100	3,583	7,394	85,990	100	16,248	100	2,724	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	1,699	97	1	1,686	97	12	0	0	0
Natural gas	0	0	0	0	0	0	0	0	0
Biofuels and waste	45	3	0	45	3	0	0	0	0
Electricity	15	1	0	0	0	14	0	0	1
Sub total Renewables	45	3	0	45	3	0	0	0	0
Total	1,759	100	1	1,731	100	26	0	0	1

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

Stand on climate change

Slovenia signed the Kyoto Protocol on 21 October 1998 and ratified it on 2 August 2002. However, it was not entered into force until 16 February 2005.

National climate change programmes

European Union Emission Trading Scheme:

For the period 2008 to 2012, 94 operators of plants in Slovenia were included in the GHG emission allowance trading scheme. In 2007, the plants included in the system represented 43% of total GHG emissions.

Acts and regulations relating to the energy sector [5]:

- Energy Act, the Official Gazette of the Republic of Slovenia, Nos. 27/07 (EZ-UPB2), 70/08 (EZ-C), 22/10 (EZ-D), 37/11 (Decision of the Constitutional Court), 10/12 (EZ-E)
- Resolution on the National Energy Programme, the Official Gazette of the Republic of Slovenia, No. 57/04 (ReNep)
- Environmental Protection Act, the Official Gazette of the Republic of Slovenia, Nos. 39/06 (ZVO-1-UPB1), 28/06 (ruling of the Constitutional Court), 49/06 (ZMetD), 66/06 (ruling of the Constitutional Court), 33/07 (ZPNačrt), 57/08 (ZFO-1A), 70/08 (ZVO-1B)

Operational Programme for Limiting Greenhouse Gas Emissions:

This programme was to be in place until 2012 and included the selection of measures as well as the monitoring plan for the implementation that stipulates the preparation of an annual report with analysis of individual measures through indicators.

Environmental tax for the pollution of air with CO₂ emissions:

Introduced on 1 January 1997, this tax is paid for the consumption of fuels and incineration of combustible organic substances. The calculation is based on the sum of units of pollution of the purchased amount of fuels or units of the pollution of the burnt combustible organic substances. However, due to the implementation of the ETS system, the Decree on this tax includes an exemption from payment for operations that are included in the ETS system.

Tax policy:

To influence the prices to create a stimulating environment for a higher consumption of environmentally friendly fuels. The following legislations have been undertaken:

- A. Excise Duty Act on electric power is paid by end users in the amount of 1EUR/MWh and has been in force since 1 July 1999.

- B. For the tax on natural gas, Slovenia has achieved the transitional period until 1 May 2014.
- C. Tax on liquid fuels is determined by the government based on the harmonization of the prices of oil derivatives with the movements of crude oil prices and American dollar rate.

Energy sector:

Objectives –	Policies/measures –
Increase in energy efficiency of power and heat generation in large combustion plants	<ul style="list-style-type: none"> • Replace the majority of large power generating units with modern and environmentally-acceptable units with substantially higher efficiency • Increase the range of power production in CHP's with high efficiency, and carry out, where necessary, a partial change of fuel – primarily the partial transition to natural gas and higher consumption of wood biomass during co-incineration
Promotion of electricity production from renewable energy sources (RES)	<ul style="list-style-type: none"> • New scheme for electrical energy generated from renewable energy sources such as use of wood biomass in combustion plants. The amount of support depends on the extent that the renewable energy sources are utilized sustainably and if the produced heat is used in a beneficial manner
Promotion of combined heat and power generation	<ul style="list-style-type: none"> • Financial assistance for current business operations with appropriate tax and price policies. It is also encouraged by the Eco fund through loans with favorable interest rates for investments in that area
Promotion of efficient energy use in industry	<ul style="list-style-type: none"> • Direct financial incentives for the amount of 10% of investment funds for the energy efficient technologies • Public funds for the amount of 15 Million EUR for the period 2009-2012 are also allocated for this purpose with exemption from environmental tax
Promotion of use of renewable energy sources (RES) as a heat source	<ul style="list-style-type: none"> • Restoration of heating systems (installation of wood biomass fired boilers), installation of solar heating systems, installation of heat pumps and preparation of sanitary warm water as well as installation of systems for combined heat and power generation • Incentives in technological innovation areas - wood biomass district heating systems, group and micro district heating systems, modern boilers and systems for CHP generation based on wood biomass in industry; systems for heat and power generation on biogases and heat and power generation from geothermal energy
Promotion of energy efficiency in the public sector	<ul style="list-style-type: none"> • Energy efficient restoration and sustainable construction of buildings (22 million EUR in the period 2009-2012) • Energy efficient heating and ventilation systems (22 million EUR in the period 2009-2012) • Efficient use of electrical energy (10.5 million EUR in the period 2009-2012).
Promotion of energy efficiency in household and service sector	<ul style="list-style-type: none"> • Adoption of new Rules on Efficient Energy Use in Buildings (PURES), OG RS, no 93/2008. The Rules shall enter into force on 1 July 2010 • Rules on Energy Certificates in 2009 was drafted • Direct promotion of investments in energy efficient restoration and sustainable construction of buildings as well as energy efficient heating systems • Act Amending Energy Act from 2008: owners of individual parts of multi-dwelling buildings must by 1 October 2011 provide the measurement of actual heat consumption. After this date, the lump-sum accounting of consumption shall cease to exist [6]

Transport sector:

<u>Objectives –</u>	<u>Policies/measures -</u>
Reduction of emissions of passenger motor vehicles	<ul style="list-style-type: none"> • Legislation was adopted in December 2008: average emissions of new vehicles after 2015 shall not be allowed to exceed 130 g of CO₂/km, while an additional reduction of emissions by 10 g CO₂/km will be achieved by the improvement of tires and the use of biofuels • Suppliers of personal vehicles must provide data on fuel consumption and emissions of vehicles at the point of sale and in the promotional leaflet
Promotion of consumption of biofuels	<ul style="list-style-type: none"> • Exemption of entire excise duty for motor fuels in purified form • Maximum 5% exemption in the case of standardized fuels with content of biofuels • Target shares for biofuels in the total energy of motor fuels placed on the market for fuel distributors for motor vehicles • Decree on the Promotion of the Use of Biofuels and other Renewable Fuels for Propulsion of Motor Vehicles for 2008 to 2012 [7]
Promotion of use of public transport	<ul style="list-style-type: none"> • Project Integrated public passenger transport- to integrate various types of public transport • Financial incentives and stimulating subsidization of public passenger transport • Financial instruments for restriction of access of personal vehicles into city centers (selective parking fee, dense tolls, vignettes)

Industrial processes sector:

<u>Objectives –</u>	<u>Policies/measures –</u>
Gases from air-conditioning	Directive 2006/40/EC [8] of European Parliament and amending Council Directive 70/156/EEC [9] transferred to Slovenian legal order by technical specification 161: Regulating area of emissions from air-conditioning systems in personal vehicles and cargo vehicles to a total mass of 3.5t

Ministries involved in climate change/energy policy making:

Ministries involved	Web links
Ministry of Environmental and Spatial Planning	www.arhiv.mop.gov.si/nc/en/
Ministry of Finance	www.mf.gov.si/en/
Ministry of Infrastructure and Spatial Planning	www.mzip.gov.si/en/
Ministry of Agriculture and Environment	www.mko.gov.si/en/

Education institutes involved in climate change/energy policy making:

Education Institutes involved	Web links
Energy Agency	www.agen-rs.si/en/
Slovenian Environment Agency	www.arso.gov.si/en/about%20the%20agency/
Jozef Stefan Institute	www.ijs.si/ijsw/JSI
University of Nova Gorica	www.ung.si/en/
University of Ljubljana	www.uni-lj.si/en/about_university_of_ljubljana.aspx
ERICo Institute	www.erico.si/en/
Institute of Microeconomic Analysis and Development	www.umar.gov.si/en

References

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- [3] CO₂ Emissions from Fuel Combustion Statistics database 2012, "Indicators for CO₂ emissions." © OECD/IEA, 2012.
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- [5] Acts and Regulations relating to the Energy sector – Government of Slovenia. Available at: http://www.agen-rs.si/en/informacija.asp?id_meta_type=34&id_informacija=779
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- [9] EU Law Directory – Country Profile. Republic of Slovenia. Available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31970L0156:EN:NOT>