

BOSNIA & HERZEGOVINA



Country at a glance

- Population: 3.76 million (2010) [1]
- Total area: 51,197 sq. km [2]
- Carbon emissions per capita: 5.30 metric tons (2010) [3]
- Energy consumption per capita: 19.8 MWh (2010) [4]
- Percentage of global carbon emissions: 0.07% (2010) [3]



Kakanj Thermal Power Plant in Bosnia & Herzegovina

The Kakanj thermal power plant is Bosnia and Herzegovina's largest coal-fired plant with an installed capacity of 450 MW. Located in the region of Zenica-Doboj, the plant produces around 2.3 billion KWh of electricity per year.

The Kakanj Power Plant in Bosnia & Herzegovina. Permission Under CC BY-SA 3.0 en.wikipedia.org/wiki/File:Termoelektrana_Kakanj.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	GWh	%	GWh	%	GWh	%
Coal, including brown coal & peat		3,501	80	436	4,026	46,824	59	8,996	53	858	51
Oil fuels		0	0	1,686	1,681	19,553	25	48	0	323	19
Natural gas		0	0	199	199	2,320	3	54	0	446	27
Nuclear		0	0	0	0	0	0	0	0	0	0
Hydroelectric		690	16	0	690	8,027	10	8,026	47	0	0
Biofuels and waste		183	4	0	183	2,126	3	0	0	40	2
Solar photovoltaics		0	0	0	0	0	0	0	0	0	0
Solar thermal		0	0	0	0	0	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		0	0	0	0	0	0	0	0	0	0
Electricity (imported)		0	0	-329	0	0	0	0	0	0	0
Sub total Renewables		873	20	0	873	10,153	13	8,026	47	40	2
Totals		4,374	100	1,992	6,780	78,851	100	17,124	100	1,667	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	1,115	99	0	1,115	100	0	0	0	0
Natural gas	0	0	0	0	0	0	0	0	0
Biofuels and waste	0	0	0	0	0	0	0	0	0
Electricity	12	1	0	0	0	12	0	0	0
Sub total	0	0	0	0	0	0	0	0	0
Renewables	0	0	0	0	0	0	0	0	0
Total	1,126	100	0	1,115	100	12	0	0	0

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

Stand on climate change

Bosnia and Herzegovina acceded to the Kyoto Protocol on 16 April 2007. The protocol was later enforced on 15 July 2007. Under the Kyoto Protocol, Bosnia and Herzegovina is a non-Annex I member country.

National climate change programmes

The Republic of Bosnia and Herzegovina became a party to the UNFCCC in December 2000. Before joining the UNFCCC, the country's National Environmental Action Plan (NEAP), was adopted in 2003 with the help of the World Bank, was the only legal instrument in dealing with climate change related issues [5]. After joining the UNFCCC and their subsequent accession to the Kyoto Protocol in 2007, Bosnia and Herzegovina drafted their first National Communication to the UNFCCC in 2008. The Republic of Bosnia and Herzegovina identified the following areas as priority areas for tackling climate change impacts:

- Industry
- Energy
- Transport
- Agriculture
- Forestry
- Waste management
- Water management
- Health and Education

Besides the priority areas for dealing with climate change mitigation and adaptation measures, the Ministry of Environment and Tourism, the Ministry of Physical Planning, Civil Engineering and Ecology and the Department of Communal Works are responsible for all environment and climate related legislation and policies in Bosnia and Herzegovina. Some of the notable legislation and policies are [6]:

- Law on Environment Protection
- Law on Air Protection
- Law on Nature Protection
- Law on Waste, and
- Law on Environment Funds

Apart from the above legislation, the following committees working for climate change mitigation are:

- National Focal Point of Bosnia and Herzegovina to the UNFCCC (the Ministry of Physical Planning, Civil Engineering and Ecology of RS)
- The Bosnia and Herzegovina Committee for Climate Change and Sub-Committee for Climate Changes;
- The Global Environmental Facility (GEF) Political and Operational Focal Point, and
- The Administrative Committee for Sustainable Development

The following table further summarizes the sectoral mitigation measures undertaken by the Bosnia and Herzegovina's government to combat climate change impacts [6]:

Sector	Description
Energy Sector	<ul style="list-style-type: none"> • Action plan for promotion of RES (Renewable energy resources) in power production • Provision for energy audits for power production and industrial facilities • Energy efficiency monitoring at each power production facility • Reduction of methane emissions from underground mining • Increase of energy efficiency in power plants • Use of natural gas in combined cycles for power and heat production • Install wind-power capacity of 400 to 600 MW by 2015 • Install small-scale hydropower projects with 200 MW baseline capacity • Use of geothermal energy and biomass for electricity production • Biogas production and utilization from agricultural activities
Building Sector	<ul style="list-style-type: none"> • Adoption of new regulations in building efficiency in line with EU standards • Energy efficiency in public sector buildings: pilot projects phase by phase • Promotion of low-energy consuming passive buildings • Promotion of use of Res (Renewable energy sources) such as solar in buildings • Promotion of education and awareness for users
Waste Management Sector	<ul style="list-style-type: none"> • Install flame-fare and flue-gas systems on regional landfills • Electricity generation from methane gas
Industry Sector	<ul style="list-style-type: none"> • Co-incineration of municipal waste in rotary cement kilns • Biogas production from the organic waste • Incineration or gasification of waste from leather and food industry
Transport Sector	<ul style="list-style-type: none"> • Enhance road transport infrastructure to reduce fuel consumption, faster traffic flow • Removal of 5% of old motor vehicles annually in next 20 years • Investments in the railway infrastructure to make trains a choice for public transport
Agriculture Sector	<ul style="list-style-type: none"> • Reduction of methane emissions by introducing new livestock breeding and feeding practices • Proper application of mineral fertilisers • Use of organic fertilizers
Forestry Sector	<ul style="list-style-type: none"> • Maintenance and increase of forest area through afforestation and rehabilitation of bare lands • Maintenance and increase of stand-level carbon density of land • Increase carbon sinks through forest conservation through protection policies and measures • Increase off-site carbon stocks in wood products and increase use of biomass • Enhance sustainable forest management practices through community involvement and awareness campaigns

Ministries involved in climate change/energy policy making:

Ministries involved	Web links
The Federal Ministry of the Interior	www.fmup.gov.ba/bs/
Ministry of Environment and Tourism	www.fmoit.gov.ba/
The Federal Ministry of Agriculture, Water Management and Forestry	www.fmpvs.gov.ba/
Ministry of Education and Service	www.fmon.gov.ba/

Education institutes involved in climate change/energy policy making:

Education Institutes involved	Web links
Hydro-Engineering Institute of Sarajevo	www.heis.com.ba/
Institute of Protection, Ecology and Informatics	www.institutzei.net/
CETEOR Sarajevo	www.ceteor.ba/bs

References

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- [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] National Environmental Action Plan (NEAP) – Federal Republic of Bosnia and Herzegovina. Available at: <http://www.global-issues-rtd.info/programmes/138.html>
- [6] First National Communication to the UNFCCC. Federal Republic of Bosnia and Herzegovina. Sectoral measures and Institutional Framework. Available at: <http://unfccc.int/resource/docs/natc/bihnc1.pdf> (Page 13 and 23)



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