

MONTENEGRO

Country at a glance

- Population: 0.63 million (2010) [1]
- Total area: 13,717 sq. km [2]
- Carbon emissions per capita: 3.31 metric tons (2010) [3]
- Energy consumption per capita: 20 MWh (2010) [4]
- Percentage of global carbon emissions: 0.01% (2010) [3]



Pljevlja Power Station in Montenegro

Located just outside the city of Pljevlja, this is the only coal-fired power plant of Montenegro. With a capacity of 210 MW, it produces a third of the state's total power demand. The remaining is produced from a hydroelectric power station located at Lake Piva in the city of Mratinje, accounting for almost 120 MW.

Pljevlja Power Station at Pljevlja. Permission Under CC BY-NC 3.0 License
en.wikipedia.org/wiki/File:Pljevlja_Power_Station.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		426	62	0	411	4,782	51	1,272	32	0	0
Oil fuels		0	0	140	137	1,598	17	0	0	0	0
Natural gas		0	0	0	0	0	0	0	0	0	0
Nuclear		0	0	0	0	0	0	0	0	0	0
Hydroelectric		237	34	0	237	2,750	29	2,750	68	0	0
Biofuels and waste		27	4	0	25	294	3	0	0	0	0
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	0	0	2	0	0	0	0	0
Sub total Renewables		263	38	0	262	3,045	32	2,750	68	0	0
Totals		690	100	140	810	9,426	100	4,022	100	0	0

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	60	97	0	0	0	0	0	0	60
Electricity	2	3	0	0	0	2	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	62	100	0	0	0	2	0	0	60

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

Stand on climate change

Montenegro acceded to the Kyoto Protocol on 4 June 2007 as a Non-Annex I country. The Protocol was later enforced on 2 September 2007. Having ratified the UNFCCC and Kyoto Protocol, Montenegro joined the countries that share concerns and play an active role in international efforts to identify the solutions to the problems of climate change.

National climate change programmes

So far, Montenegro does not have a specific climate change policy, but this area has been addressed through a number of adopted strategies and plans. According to the EU Progress Report of 2012, limited progress has been made in the area of the environment. With regard to horizontal legislation, the parliament amended the Law on Strategic Environmental Assessment (SEA) to ensure full transposition of the SEA Directive. Further efforts are needed to implement the Environment Impact Assessments (EIA) and SEA [5].

Being relatively new to the global environmental scene, the Ministry for Spatial Planning and Environment (MSPE) of Montenegro is the key public body for climate change issues. The Ministry makes the policies and adopts relevant regulations, while the Environmental Protection Agency, acts as an executive administrative body and plays a significant role in the implementation of policies. The Designated national Authority (DNA) for approval of CDM projects was established in 2008, within the Ministry of Spatial Planning and the Environment. The Ministry of Economy also plays an important role in the area of climate change, by creating energy policies and establishing objectives and measures to increase energy efficiency. This Ministry also has a department for energy efficiency and renewable energy sources.

The Energy policy, under the Ministry of Economy, is one landmark policy for energy development based on assumptions and requirements of EU in this field. A sustainable, secure and competitive energy supply is recognized as the basic goal. The Energy Community treaty was signed in 2005, and came into force in 2006 (Law on ratification of the energy Community between the European Community and Montenegro (official gazette of the republic of Montenegro 66/06)). The Agreement on EC is the (first) legally binding document of Montenegro towards the EU, taking into account the basic aim of energy as a branch of the economy (provision of safe, safe, reliable and quality energy supply at realistic prices, taking into account the protection of tariff customers), as well as the previously listed liabilities relating to the EU accession, reorganization of the energy sector has been implemented and planned in the future through several steps and the adoption of strategic documents in this sector as follows [6]:

- Energy Law – EL ("Official Gazette of MN", no 28/10)
- Energy Efficiency Law – EEL ("Official Gazette of MN", no 29/10)
- Law on Exploitation and Production of the Hydro-carbon ("Official Gazette of MN", no 41/10)
- Law on verification of the Treaty between the European Community and the Republic of Montenegro on Establishing the Energy Community ("Official gazette of MN", no 66/06)
- Law on verification of the Kyoto Protocol with United Nation Framework Convention on the Climate Change ("Official Gazette of MN", no 17/07)
- Ministerial Declaration on Ionian-Adriatic Gas Pipeline (25 September 2007)
- First national report of Montenegro on climate change under the United Nation Framework Convention on the Climate Change (UNFCCC) (2010)
- National strategy of sustainable development of Montenegro (2007)
- Regional development Strategy of Montenegro 2010-2014 (2010)
- Economic and fiscal programme for Montenegro 2009-2012 (2010)

- Laws and documents regulating the environment protection, spatial planning and
- development and other relevant laws,

In 2008, the EU Council adopted The EU Climate and Energy Package for Montenegro for the period 2013-2020, which precisely defines the future EU climate policy and targets to reduce GHG emissions, widely known as the 20-20-20 package:

- 20% reduction in emissions of greenhouse gases;
- 20% improvement of energy efficiency, and
- 20% share of renewable energy in the EU energy balance

The National Communication to the UNFCCC by Montenegro is the one strategic document for climate change mitigation and adaptation measures. Some sectoral approaches and policies highlighted in the national communication for emissions reductions are [7]:

Energy sector:

- Combined production of heat and electric power (CHP)
- Increasing the efficiency of industrial boilers
- Fuel replacement in industrial boilers
- Replacement of fuel for producing high-temperature heat

Household sector:

- Improve the thermal insulation of residential buildings
- Increase the share of heat pumps
- Use of small co-generation plants
- Promote the use of solar PV's
- Increase the share of LPG systems for cooking purposes
- Promote use of energy-efficient devices in households
- Replace conventional lamps by more energy-efficient LED lights

Transport sector:

- Increase energy efficiency of motor pools
- Introduction of alternative fuels as a replacement of existing fuels
- Planning and establishing a more efficient transport system

Agriculture sector:

- Encouraging of organic agriculture
- Reduce methane emissions by reducing internal fermentation
- Promoting sustainable animal waste management system practices
- Use of biomass for energy purposes

Land use change and forestry sector:

Increase stock of carbon in total plant weight
 Greater utilization of wood biomass from energy other uses

Waste management sector:

- Construction of regional sanitary landfills with recycling centers
- Reducing the volumes of waste produced as a result of introduction of the primary selection and recycling
- Reducing the volumes of organic waste in solid municipal waste

Ministries involved in climate change/energy policy making:

Ministries involved	Web links
Ministry of Agriculture and Rural Development	www.mpr.gov.me/en/ministry
Ministry of Foreign Affairs & European Integration	www.mvpei.gov.me/ministarstvo
Ministry of Sustainable Development and Tourism	www.mrt.gov.me/en/ministry
Ministry of Transport and Maritime Affairs	www.minsaob.gov.me/en/ministry
Ministry of Science	wbc-inco.net/object/organization/8185
Environment Protection Agency - Montenegro	www.epa.org.me/

Education institutes involved in climate change/energy policy making:

Education Institutes involved	Web links
Institute for Strategic Studies and Prognoses	www.isspm.org/
The Mediterranean Science Commission	www.ciesm.org/online/institutes/inst/Inst160.htm

References

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- [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] 2012 Montenegro Progress Report by European Commission. Environment and Climate Change. Available at: http://ec.europa.eu/enlargement/pdf/key_documents/2012/package/mn_rapport_2012_en.pdf
- [6] Energy Policy of Montenegro until 2030 – Government of Montenegro. Available at: <http://www.energetskafikasnost.me/uploads/file/Dokumenta/Energy%20Policy%20of%20Montenegro%20until%202030.pdf>
- [7] National Communication on Climate Change of Montenegro to UNFCCC. Sectoral approaches and GHG emissions reduction measures. Available at: <http://unfccc.int/resource/docs/natc/mnenc1.pdf> (Page 99-113).



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