

BELARUS

Country at a glance

- Population: 9.59 million (2010) [1]
- Total area: 207,600 sq. km [2]
- Carbon emissions per capita: 6.81 metric tons (2010) [3]
- Energy consumption per capita: 33.6 MWh (2010) [4]
- Percentage of global carbon emissions: 0.22% (2010) [3]



The Lukoml Thermal Power Station in Belarus. Permission Under CC BY-SA 3.0 en.wikipedia.org/wiki/File:Lukoml_power_station_20090919_02.jpg

Natural Gas-fired Electricity in Belarus

The Lukoml Thermal Power Plant, located in the region of Novolukoml, Belarus is one of the earliest power plants of the country to produce electricity. Commissioned in the 1970's with only 300 MW, the plant's installed capacity as of 2010 stood at 2640 MW.

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		571	14	-57	563	6,553	2	28	0	1,145	1
Oil fuels		1,708	41	5,308	7,057	82,074	25	713	2	2,651	3
Natural gas		177	4	17,903	18,145	211,028	66	33,899	97	68,346	88
Nuclear		0	0	0	0	0	0	0	0	0	0
Hydroelectric		4	0	0	4	45	0	45	0	0	0
Biofuels and waste		1,684	41	0	1,684	19,589	6	209	1	5,141	7
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	1	0	1	0	0	0
Geothermal		0	0	0	0	0	0	0	0	0	0
Electricity (imported)		0	0	232	232	2,700	1	0	0	0	0
Sub total Renewables		1,688	41	0	1,688	19,635	6	255	1	5,141	7
Totals		4,145	100	23,386	27,686	321,991	100	34,895	100	77,284	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)
Coal and coal	10	0	0	0	0	9	0	0	0
Oil products	3,316	88	0	3,135	99	181	0	0	0
Natural gas	305	8	0	12	0	0	293	0	0
Biofuels and waste	11	0	0	11	0	0	0	0	0
Electricity	147	4	0	0	0	62	59	0	26
Sub total									
Renewables	11	0	0	11	0	0	0	0	0
Total	3,789	100	0	3,158	100	253	352	0	26

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

Stand on climate change

The Republic of Belarus acceded to the Kyoto Protocol on 26 August 2005 as an Annex I member country. It was later enforced on 24 November 2005.

National climate change programmes

The Republic of Belarus published its first National Communication to the UNFCCC in 2003 highlighting several areas such as industry, agriculture, forestry, waste management, energy and so on for climate change adaptation and mitigation measures. As this being the first communication, the report also included greenhouse gas (GHG) inventories and national circumstances.

In 2009, Belarus published their fifth National Communication to the UNFCCC with detailed plans, policies and measures for climate change adaptation and mitigation. Some notable legislation and programmes are [5]:

- Strategy for cutting emissions and increasing greenhouse gases absorption by sinks on the territory of the Republic of Belarus for 2007 – 2012 in 2006
- State programme for innovation and development in the Republic of Belarus for 2007 – 2010 in 2007
- National programme for mitigation of climate change consequences for 2008 – 2012 in 2008 [6]
- Law of the Republic of Belarus on Protection of Atmospheric Air in 2008
- The Provision on the procedure of submission, review and monitoring of projects on voluntary reduction of greenhouse gases emissions in 2009
- The Law of the Republic of Belarus on Protection of Climate in 2009
- Presidential Decree No. 205 of 30 April 2007 on the adoption of amendments to Annex B to Kyoto Protocol to the United Nations Organization Framework Convention on Climate Change
- Resolution No. 4 of Ministry of Natural Resources and Environmental Protection of the Republic of Belarus of 22 January 2007 on approval of the instructions on the procedure of formation and maintenance of the National Registry of carbon units of the Republic of Belarus

Some of the sectoral policies and measures highlighted in the National Communication are:

Sector –	Polices and measures –
Energy Sector	<ul style="list-style-type: none"> • The Directive No. 3 - Economy and Thrift as Main Factors of Economic Security of the State in 2007 • The concept of energy security of the Republic of Belarus in 2007 • The Law of the Republic of Belarus on the Use of Nuclear Energy in 2008 • The Draft Law of Belarus on Alternative and Renewable Sources of Energy
Industry Sector	<ul style="list-style-type: none"> • The Programme of Technical Re-equipment and Modernization of Foundry, Thermal, Galvanic and Other Energy-consuming productions for 2007-2010 in 2007 • Regulations on State Supervision in the Field of Industrial Security in 2008
Transport Sector	<ul style="list-style-type: none"> • A range of measures on exploitation of cars, equipped with a compression ignition engines, on the territory of the Republic of Belarus in line with requirements of the UNECE Regulations under number 49 (04) B1 (Euro-4) and number 49 (04) B2

	<p>(Euro-5) / Revision 3, concerning the emissions of pollutants, on the territory of the Republic of Belarus in 2006</p> <ul style="list-style-type: none"> • The Air Code of the Republic of Belarus in 2006 • The State Programme for Development of Civil Aviation of the Republic of Belarus in 2006-2010 in 2006 • The Programme of Development of the Automobile Industry of the Republic of Belarus in 2007-2010 in 2007 • The State Programme for the Production of Biodiesel in the Republic of Belarus for 2007-2010 in 2007 • The State Programme for Construction of Urban Electric Transport in Towns and Cities in 2009 to 2013 years in 2009
Land use, change of land use and forestry sector	<ul style="list-style-type: none"> • The State Programme on Conservation and Use of Reclaimed Land, 2006-2010 in 2005 • The Programme of Development of Forests for 2007-2011 in 2006 • The Regulation on aviation protection of forests in 2006 • The Provision for procedure of forest monitoring and use of its data under the National Environmental Monitoring System in the Republic of Belarus in 2007 • The Project of Re-naturalization and sustainable management of peat marshes to prevent land degradation, climate changes and the conservation of globally significant biological diversity, sustainable use, restoration and protection of degraded peat lands in 2008 • The Law of the Republic of Belarus on Land Reclamation in 2008

Besides the above sectoral policies and measures, the Government of the Republic of Belarus has also adopted various strategies for harnessing renewable energy sources. They are [7]:

- **Wood fuel**
Primarily from selection and other felling types, wood fuel and wood waste amounts to around more than 1 million tons equivalent fuel to power electric power plants.
- **Water resources**
Water courses in Belarus have a potential capacity of 850 MW, of which only 520 MW is available. Through the development of small-scale hydro projects, the government plans to add in the remaining 250 MW to the national grid
- **Wind energy**
With over 1800 possible sites for wind power plants across the country and a theoretical output of about 1600 MW, the wind energy sector has strong potential for investment from both the private and public sector to provide clean energy
- **Biogas**
Biogas plants extracting biogas from livestock waste are still in the testing phase along with feasibility studies in comparison to other types of fuel. Biogas-fuelled plants also can produce of about 1.1 MW of energy
- **Solar energy**
The government plans to install about 5000 solar panels on different residential areas based on the studies carried out by the Weather Service to optimize location-based use of solar energy
- **Waste heat energy sources**
Municipal waste, phyto-mass and crop residues all possess strong potential for producing renewable energy. Small-scale plants using waste heat will typically benefit small farms and communities which the government plans to install in phases

Ministries involved in climate change/energy policy making:

Ministries involved	Web links
Ministry of Foreign Affairs	www.mfa.gov.by/en
Ministry of Agriculture and Food	www.mshp.minsk.by/
Ministry of Energy	www.minenergo.gov.by/
Ministry of Forestry	www.mlh.by/en/forestry/resources.html
Ministry of Information	www.mininform.gov.by/
Ministry of Natural Resources and Environmental Protection	minpriroda.by/ru/

Education institutes involved in climate change/energy policy making:

Education Institutes involved	Web links
National Academy of Sciences of Belarus	nasb.gov.by/
Independent Institute of Socio-economic and Political Studies of Belarus	www.iiseps.org/eindex.htm

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] The Fifth National Communication to the UNFCCC – Republic of Belarus. Legislations and Frameworks. Available at: http://unfccc.int/resource/docs/natc/blr_nc5_en.pdf (Page 81)
- [6] National Programme of Measures to mitigate the consequences of climate change – Belarus. Available at: <http://www.global-issues-rtd.info/programmes/316.html>
- [7] Renewable energy in Belarus – Government of Belarus. Available at: http://www.pl.boell.org/downloads/renewable_energy_in_belarus.pdf