

## MOLDOVA



### Country at a glance

- Population: 3.54 million (2010) [1]
- Total area: 33,851 sq. km [2]
- Carbon emissions per capita: 1.72 metric tons (2010) [3]
- Energy consumption per capita: 8.53 MWh (2010) [4]
- Percentage of global carbon emissions: 0.02% (2010) [3]



### The Dubasari Dam in Moldova

Located near the Dniester River of Transnistria region of Moldova, the Dubasari Dam is the first hydroelectric plant of the country with an installed capacity of 48 MW. Built in 1951, this hydroelectric power plant is the country's first source of clean energy source.

The Dubasari Dam of Moldova. Permission Under CC BY-NC 1.0 License [en.wikipedia.org/wiki/File:ГЭС\\_Дубоссары\\_двойной\\_кадр.jpg](http://en.wikipedia.org/wiki/File:ГЭС_Дубоссары_двойной_кадр.jpg)

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

unit	Primary energy sourced within country		Energy imports minus exports	Primary energy used within the country <sup>(a)</sup>			Electricity Generation <sup>(b)</sup>		Heat Generation <sup>(c)</sup>	
	ktoe	%	ktoe	ktoe	GWh	%	GWh	%	GWh	%
Coal, including brown coal & peat	0	0	83	85	988	3	0	0	17	1
Oil fuels	11	11	742	774	9,003	30	29	1	187	6
Natural gas	0	0	1,526	1,527	17,759	59	3,445	97	3,087	92
Nuclear	0	0	0	0	0	0	0	0	0	0
Hydroelectric	7	7	0	7	79	0	79	2	0	0
Biofuels and waste	84	82	0	84	975	3	0	0	52	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	126	126	1,464	5	0	0	0	0
Sub total Renewables	91	89	0	91	1,054	3	79	2	52	2
<b>Totals</b>	<b>102</b>	<b>100</b>	<b>2,476</b>	<b>2,603</b>	<b>30,269</b>	<b>100</b>	<b>3,553</b>	<b>100</b>	<b>3,344</b>	<b>100</b>

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**

(in ktoe)	Total transport mix	%	Domestic aviation	Road	%	Rail	Pipeline transport	Domestic navigation	Non-specified (transport)
Oil products	332	98	0	318	100	14	0	0	0
Natural gas	2	1	0	1	0	0	1	0	0
Electricity	4	1	0	0	0	0	0	0	4
Sub total Renewables	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>338</b>	<b>100</b>	<b>0</b>	<b>319</b>	<b>100</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>4</b>

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

## Stand on climate change

The Republic of Moldova acceded to the Kyoto Protocol on 23 April 2003 as a Non-Annex I member country. The protocol was later enforced on 16 February 2005.

## National climate change programmes

The National Climate Change Adaptation Strategy or NCCAS is Moldova's chief document regarding the country's national climate change programmes, policies and plans. The primary objective of the NCCAS, which was first adopted in 2011 and later revised in November 2012, was to establish a strong enabling environment and clear direction for an effective and coherent climate change adaptation process to take place across all relevant sectors of the national economy. The Strategy further targeted three approaches to promote climate change adaptation by the Moldovan government [5]. They are:

- To improve the management and the proliferation of information on disaster risks and climate in the Republic of Moldova
- To strengthen the institutional framework to ensure effective implementation of adaptation to climate change at national, sectoral and local levels
- To develop climate resilience through risk reduction and adaptation to climate change in the priority sectors

Apart from the NCCAS, Moldova's second document regarding climate change policies and programmes is the Second National Communication under the UNFCCC. This was produced in 2009 with the help of United Nations Environment Programme (UNEP) and the Global Environment Facility (GEF). Being an economy in transition, the second national communication identifies the following sectors as important areas for climate change mitigation [6]. They are:

### Energy Sector

- Promoting abatement policies and measures in all sub-sectors of the energy sector by increasing overall efficiency and reducing energy losses
- Promote use of local fuels, secondary energy sources, renewable energy sources such as biomass and solar power
- Use of low intensity GHG emissions fossil fuels (Natural Gas than Coal)
- Comply with European standards and norms of pollution prevention
- Development of state program on liberalization of energy market for attracting foreign investment
- Maintenance of condition of gas pipeline and use of latest technology to reduce leakages and loss
- Implement detection methods and monitoring programs

### Transport Sector

- Application of economic and fiscal measures to stimulate renewal of vehicle pools and fleet
- Rehabilitation and reconstruction of public roads and highways
- Optimize urban and inter-urban transport networks, freight and passenger traffic through means of taxis and incentives
- Promote large-scale use of electric transport and promote use of LPG and LNG as primary fuel
- Limit the effective life of vehicles by 7 to 10 years (based on private or public) and introduce mandatory technical check-up of all vehicles

### **Industrial Processes Sector**

- Maintenance of equipment and employment of modern technological processes in view of rational use of natural resources and energy
- Accounting of consumption of raw materials and energy and efficient management of production process
- Employment of efficient management systems to reduce system losses
- Introduce fugitive emissions recovery
- Improve and supplement the legal framework with European Standards and Emissions Limits
- Implement initiatives based on energy efficiency and overall emissions reductions
- Voluntary agreements with private industrial enterprises to reduce emissions
- Introduce policies that promote transfer of environment-friendly and clean technologies in industrial and innovation parks

### **Agriculture Sector**

- Gradual replacement of breeds of livestock and poultry with higher productivity breeds
- Improvement of quality of forage supply reserve by reducing specific forage consumption in livestock breeding sector
- Use of sustainable manure management systems
- Improve overall range of crops through crop rotation and selective techniques
- Improve soil fertilization techniques through use of organic matter sources to enrich nutrients
- Implement sustainable soil management practices to combat soil degradation and erosion

### **Forestry Sector**

- Expansion of areas covered by forest and other types of vegetation on account of public and private use
- Implement new phase of expansion of areas on eroded and degraded lands
- Decrease overall amount of wood mass from illegal cutting
- Introduce ecological reconstruction of forest stands
- Promote agriculture-forestry and forestry-pastoral practices by improving grasslands, planting groups of trees and delimitation of external land boundaries by planting forest belts
- Improvement of grassland capacity by increasing current capacity of constant mass per hectare
- Expansion of grasslands on account of agricultural lands affected by erosion

### **Waste Sector**

- Recovery of recyclable materials in paper waste from 20% to 30% by 2015
- Biogas recovery at domestic solid waste deposit sites
- Construction and putting into operation of a waste incinerating plant in Chisinau
- Reconstruction of waste water treatment facilities in the country
- Proper management of water supply and sewage sector based on aerobic treatment of wastewater and anaerobic treatment of sludge technologies allowing methane emissions capture

## Ministries involved in climate change/energy policy making:

Ministries involved	Web links
Ministry of Agriculture and Food Industry	<a href="http://www.maia.gov.md/">www.maia.gov.md/</a>
Ministry of Construction and Regional Development	<a href="http://www.mcdr.gov.md/">www.mcdr.gov.md/</a>
Ministry of Environment	<a href="http://www.medi.gov.md/">www.medi.gov.md/</a>
Ministry of Foreign Affairs and European Integration	<a href="http://www.mfa.gov.md/">www.mfa.gov.md/</a>
Ministry of Transport and Roads Infrastructure	<a href="http://www.mtid.gov.md/">www.mtid.gov.md/</a>
Ministry of Economy	<a href="http://www.mec.gov.md/">www.mec.gov.md/</a>

## Education institutes involved in climate change/energy policy making:

Education Institutes involved	Web links
The Regional Environmental Center of Moldova	<a href="http://www.rec.md/">www.rec.md/</a>
Academy of Sciences of the Republic of Moldova	<a href="http://www.asm.md/">www.asm.md/</a>

## 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] CO<sub>2</sub> Emissions from Fuel Combustion Statistics database 2012, "Indicators for CO<sub>2</sub> emissions." © OECD/IEA, 2012.
- [4] World Energy Statistics and Balances database 2012, "World Energy Balances." © OECD/IEA, 2012.
- [5] National Climate Change Adaptation Strategy – Republic of Moldova. Available at: <http://www.clima.md/doc.php?l=en&id=2529&idc=237>
- [6] Second National Communication to the UNFCCC – Republic of Moldova. Available at: <http://unfccc.int/resource/docs/natc/mdanc2.pdf>



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