

ROMANIA



Country at a glance

- Population: 21.48 million (2010) [1]
- Total area: 238,391 sq. km [2]
- Carbon emissions per capita: 3.52 metric tons (2010) [3]
- Energy consumption per capita: 18.9 MWh (2010) [4]
- Percentage of global carbon emissions: 0.25% (2010) [3]



Subsurface natural gas reservoir in Romania

Romania has very substantial natural gas reserves, and around 36% of its energy comes from natural gas. For regulating the supply, natural gas storage facilities are a crucial part of the supply network. This underground reservoir is one of the 8 in the country, and more storage capacity is likely to be added as natural gas usage increases.

Subsurface gas reservoir in Illenbav, Romania by Mircea Rareş Țetcu. Permission under CC BY-SA 3.0 commons.wikimedia.org/wiki/File:Gas_reservoir_illenbav.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		5,904	22	1,179	6,957	80,910	20	20,742	34	7,000	25
Oil fuels		4,186	15	4,556	8,553	99,474	24	692	1	2,514	9
Natural gas		8,616	31	1,815	10,785	125,431	31	7,262	12	17,597	64
Nuclear		3,029	11	0	3,029	35,228	9	11,623	19	0	0
Hydroelectric		1,679	6	0	1,679	19,527	5	19,523	32	0	0
Biofuels and waste		3,979	14	135	4,133	48,066	12	111	0	415	2
Solar photovoltaics		0	0	0	0	0	0	0	0	0	0
Solar thermal		0	0	0	0	1	0	0	0	0	0
Tide, wave and ocean		0	0	0	0	0	0	0	0	0	0
Wind		26	0	0	26	306	0	306	1	0	0
Geothermal		23	0	0	23	267	0	0	0	3	0
Electricity (imported)		0	0	-196	0	0	0	0	0	0	0
Sub total Renewables		5,707	21	135	5,861	68,167	17	19,940	33	419	2
Totals		27,442	100	7,490	35,186	409,210	100	60,259	100	27,530	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	4,563	95	111	4,247	97	146	0	59	0
Natural gas	10	0	0	0	0	0	10	0	0
Biofuels and waste	115	2	0	115	3	0	0	0	0
Electricity	117	2	0	0	0	76	3	0	38
Sub total Renewables	115	2	0	115	3	0	0	0	0
Total	4,805	100	111	4,363	100	221	13	59	38

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

Stand on climate change

Romania signed the Kyoto Protocol on 5 January 1999 and ratified it on 19 March 2001. However, it was not entered into force until 16 February 2005.

National climate change programmes

Under the Kyoto Protocol, Romania is obliged to reduce GHG emissions by 1.3% from 1990 levels. To achieve this reduction, the following measures were undertaken by the Romanian government:

The European Union Emission Trading Scheme:

In the first phase of the scheme, several malfunctions prevented companies from trading their EUAs appropriately. However, in the second phase (2008-2012), all malfunctions were resolved. The total amount of allowances for the second phase is 20.7% less than the national cap proposed by the local authorities.

Other projects include:

UNDP/GEF's Energy Efficiency Financing Team in Romania: This team was set up in 2003 and its mission was to persuade companies to invest in energy efficiency.

Romanian Energy Efficiency Fund: provides funding for investments projects targeting rational use of energy [5].

Green Investment Scheme Study: the revenues earned by this scheme are redirected into projects that strive to reduce greenhouse gases emissions [6].

The National Strategy for Energy Efficiency for 2004 to 2015:

The objective of this strategy is to increase energy efficiency in the different sectors: energy consumption for extraction of natural resources, heat and electricity production, and transport and distribution [7]. By the end of 2015, Romania should achieve a decrease of energy intensity of 40% compared to the levels of energy intensity in 2001. The most recent measures are for 2009 to 2012. The measures are categorized into the following sectors [8]:

Residential sector:

- Individual billing of consumers supplied by public district heating systems: This is done through the implementation of The Government Decision no. 933/2004 which requires heat and sanitary hot water metering
- The Green House programme: Traditional heating systems are replaced with systems that use renewable energy sources such as geothermal, solar and wind

Transport sector:

- Pollution tax for motor vehicles: Cars with cylinder capacity of less or equal to 2 cmc are exempted from the tax
- Promotion of biofuels or other renewable fuels for transport: according to the Government Decision No. 1844/2005 which regulates the use of renewable fuels in transport. Government Decision No. 456/2007 amends and updates Government Decision 1844/2005 [9]

Industrial sector:

- Long term agreements with industry: through these agreements, companies must adopt measures for energy saving. The measures include modernization of technological processes and equipment and efficient use of energy
- Investment projects co-financed by community funds
- Combined heat power

Tertiary sector:

- Covenant of Mayors: This is a voluntary and unilateral commitment made by the signatory municipalities to reduce CO₂ emissions by at least 20% by 2020

National Energy Strategy for the period 2007 to 2020: The measures in this strategy are also grouped into the different sectors [10]:

Industry sector:

- Energy efficiency improvement by supporting financing from Community funds
- Energy audits
- Efficient energy management

Transport sector:

- Energy consumption reduction by people
- Railway transport modernization
- Increase in quality of public transport to encourage use of public transport
- Development of rail transport within urban transport
- Establishing minimum efficiency criteria on vehicles
- Introducing standards to support efficient and less polluting vehicles
- Using biofuels (estimates of at least 10% share by 2020)

Residential sector:

- Increasing efficiency of existing thermal installations
- Applying the provisions of the Directive and European standards on new buildings
- Final consumer thermal energy metering
- Stimulation of energy service company functioning
- Increasing energy efficiency by supporting financing from Community funds

Public sector:

- Public building efficiency increase

- Efficiency increase and reduction in public lighting consumption and water supply installation consumption

Agriculture sector:

- Development of energy crops
- Utilization of biofuels for agricultural machines

Cogeneration sector:

- Energy auditing of cogeneration units
- Rehabilitations and modernizations of the existing installations for increasing efficiency and reducing environmental impact

Renewable energy sources (RES) sector:

- Increase of renewable energy sources in the production of electricity and heat
- Green certificates

Besides sectoral measures, some notable regulations regarding climate change are:

- Governmental Emergency Ordinance no. 124/2001: This Ordinance regulates the organization and operation of the Romanian Energy Efficiency Fund as approved with amendments by Law no. 287/2002 [11]
- Law no. 199/2000: Regarding efficient use of energy [12]

Ministries involved in climate change/energy policy making:

Ministries involved	Web links
Romanian Energy Regulatory Authority	www.anre.ro/
The Ministry of Economy, Commerce and Business Environment	www.minind.ro/
The Ministry of Environment and Forests	www.mmediu.ro/
The Ministry of Regional Development and Tourism	www.mdrt.ro/
The Ministry of Administration and Internal Affairs	www.mai.gov.ro/Home/index.htm

Education institutes involved in climate change/energy policy making:

Education Institutes involved	Web links
Energy Research and Modernizing Institute	www.icemenerg.ro/
National Environmental Protection Agency	www.anpm.ro/
Romanian Information Technology Initiative	www.riti-internews.ro/activities.html
National Meteorological Administration	www.meteoromania.ro/anm/?lang=ro_ro
National Institute of Hydrology and Water Management	www.inhga.ro/index.php
Danube Delta Biosphere Authority	www.ddbra.ro/

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