

## CZECH REPUBLIC



### Country at a glance

- Population: 10.49 million (2010) [1]
- Total area: 78,867 sq. km [2]
- Carbon emissions per capita: 10.91 metric tons (2010) [3]
- Energy consumption per capita: 50 MWh (2010) [4]
- Percentage of global carbon emissions: 0.38% (2010) [3]



**Čekanice Solar Plant in the South Bohemian region of Czech Republic**

*This plant was built in 2009 with an installed output of around 4.5 MW. This should produce an annual amount of electricity sufficient to meet the demand of over 1000 households.*

Čekanice solar plant by ŠJů, Wikimedia Commons. Permission Under CC BY-SA 3.0 commons.wikimedia.org/wiki/File:Sol%C3%A1rn%C3%AD\_elektr%C3%A1rna\_%C4%8Cekanice\_(01).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 <sup>(a)</sup>			Electricity Generation <sup>(b)</sup>		Heat Generation <sup>(c)</sup>		
	unit	ktoe	%	ktoe	ktoe	GWh	%	GWh	%	GWh	%
Coal, including brown coal & peat		20,730	66	-2,999	18,515	215,332	41	50,161	59	25,095	70
Oil fuels		269	1	8,967	8,965	104,262	20	159	0	504	1
Natural gas		167	1	6,844	7,579	88,148	17	1,073	1	8,564	24
Nuclear		7,322	23	0	7,322	85,154	16	27,998	33	296	1
Hydroelectric		240	1	0	240	2,790	1	2,789	3	0	0
Biofuels and waste		2,772	9	-119	2,652	30,841	6	2,188	3	1,313	4
Solar photovoltaics		53	0	0	53	616	0	616	1	0	0
Solar thermal		9	0	0	9	102	0	0	0	0	0
Tide, wave and ocean		0	0	0	0	0	0	0	0	0	0
Wind		29	0	0	29	335	0	335	0	0	0
Geothermal		0	0	0	0	0	0	0	0	0	0
Electricity (imported)		0	0	-1,286	0	0	0	0	0	30	0
Sub total Renewables		3,102	10	-119	2,982	34,683	7	5,928	7	1,313	4
<b>Totals</b>		<b>31,590</b>	<b>100</b>	<b>11,407</b>	<b>45,364</b>	<b>527,579</b>	<b>100</b>	<b>85,319</b>	<b>100</b>	<b>35,802</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, 2010**

(in ktoe)	Total transport mix	%	Domestic aviation	Road	%	Rail	Pipeline transport	Domestic navigation	Non-specified (transport)
Oil products	5,428	92	30	5,300	96	94	0	4	0
Natural gas	74	1	0	9	0	0	65	0	0
Biofuels and waste	232	4	0	232	4	0	0	0	0
Electricity	189	3	0	0	0	92	3	0	94
Sub total Renewables	232	4	0	232	4	0	0	0	0
<b>Total</b>	<b>5,923</b>	<b>100</b>	<b>30</b>	<b>5,541</b>	<b>100</b>	<b>186</b>	<b>69</b>	<b>4</b>	<b>94</b>

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

## Stand on climate change

Czech Republic signed the Kyoto Protocol on 23 November 1998 and ratified it on 15 November 2001. The Protocol was entered into force on 16 February 2005.

## National climate change programmes

The Government of the Czech Republic initiated a State Environment Policy in March 2004. The policy was set from 2004 to 2010. It is a consensual framework for long-term and medium-term direction of development of environmental dimensions for sustainable development. Even though this policy was mainly targeted at protecting the environment, its fourth priority is the protection of the climatic system of the earth and prevention of long-range transport of air pollution [5].

Apart from the environmental policy, the Czech Republic collaborated with other members of the European Union for the Emissions Trading Scheme. The ETS included the volume of emissions corresponding to 60% of total greenhouse emissions with a total of 394 installations participating. In collaboration with this scheme, the Czech Republic came up with the National Allocation Plan (NAP) that allocates allowances to individual operators of installations. All together, the European Commission allocated 876,835,264 in allowances to the Czech Republic for the period 2005 to 2012 [6].

Under the Kyoto Protocol, the Czech Republic is obliged to reduce GHG emissions at 1.2% from 1990 levels. The Government of Czech Republic undertook various schemes and initiatives to reduce GHG emissions in the following ways:

<p><b>Targets –</b></p> <p><b>1. Achieving a 6% share of renewable energy sources (RES) in total consumption by 2010</b></p> <p><b>2. Achieve at least an 8% share of electricity from renewable energy sources (RES) in gross electricity consumption by 2010</b></p>	<p><b>Measures:</b></p> <ul style="list-style-type: none"> <li>• Promote investment towards use of thermal energy produced from renewable sources</li> <li>• Achieve a level of financial support from the public budget of at least 0.1% of national GDP</li> <li>• Ensure approval and subsequent implementation of the Act on Promotion of Production of Electricity from renewable sources</li> <li>• Approve and implement a conception of environmental tax reform</li> <li>• Implement the Directive on taxation of energy 96/2003/EC [7]</li> <li>• Simplify the permit-issuing procedure in construction of installations for the use of renewable energy sources</li> <li>• Create clear rules of relationships between the use of renewable energy sources and nature conservation and protection of the landscape</li> </ul>
<p><b>Targets –</b></p> <p><b>Reduction of aggregate greenhouse gas emissions and support for adaptation measures</b></p>	<p><b>Measures:</b></p> <p>Implement the National Program in the following manner:</p> <ul style="list-style-type: none"> <li>• Support and implement measures leading to a reduction in production of greenhouse gas emissions</li> </ul>

	<ul style="list-style-type: none"> <li>• Support and implement adaptation measures</li> <li>• Create a system of financial support for research in the area of potential impacts of climate change, including adaptation measures and vulnerability studies</li> <li>• Support for trading in emissions</li> </ul> <p>Implement Directive 2003/87/EC establishing a scheme for greenhouse gas emissions allowance trading within the Community [8]</p> <ul style="list-style-type: none"> <li>• Support the use of flexible mechanisms of the Kyoto Protocol</li> </ul>
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Measures based on a sectoral approach have also been undertaken by the Czech Republic:

**Energy sector [9]**

- Support greater utilization of renewable and secondary energy sources and potential savings through the Act on Support for Production of Energy from Renewable Energy Sources and in the framework of the State Program to support savings and use of renewable energy sources
- Create conditions for greater use of renewable energy sources in gross electricity consumption
- Create conditions for a gradual improvement in the fraction of renewable energy sources in domestic consumption of primary energy sources
- Support scientific and technical developments towards sustainable energy production
- Support the introduction of modern energy-production technologies with high efficiency and the lowest possible external costs and combined production of heat and electricity
- Support the use of low-carbon fuels rather than the use of solid fuels
- Support energy savings in heating and cooling buildings, development of energy audits and certification of heating systems, improved insulation of buildings and lighting systems, including support for the construction of low-energy buildings

**Transport sector [10]**

- Reduce consumption of non-renewable energy sources in the transport sector
- Support the use of alternative fuels (especially in urban mass transport), including construction of the distribution network, so that they contribute at least 20% in 2020
- Reduce and gradually exclude substances depleting the ozone layer of the Earth in air-conditioned vehicles
- Increase energy efficiency by updating the Programme for replacement of vehicle fleet of public administration, reducing road tax tariffs for environment-friendly vehicles such as hybrids and implementing emissions limits for newly manufactured vehicles

In 2009, the Czech Republic submitted a Fifth National Communication to the UNFCCC. The following government legislation measures are included in the plan [11]:

- Act No. 695/2004 Coll: Establishing a scheme for greenhouse gas emission allowances within the communities
- Act No. 86/2002 Coll: It sets the basic framework for use of biofuels and establishes targets for decreasing greenhouse emissions
- Act No. 406/2000 Coll: This Act stipulates proceedings for economical use of natural resources and efficient use of energy. Also, it stipulates rights and obligations of natural and legal persons in the management of energy
- Act No. 180/2005 Coll: This Act regulates the method of promoting the production of electricity from renewable energy sources

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

Ministries involved	Web links
Ministry of Environment	<a href="http://www.mzp.cz/en/climate_policy">www.mzp.cz/en/climate_policy</a>
Ministry of Agriculture	<a href="http://eagri.cz/public/web/en/mze/">eagri.cz/public/web/en/mze/</a>
Ministry of Education, Youth and Sports	<a href="http://www.msmt.cz/index.php?lang=2">www.msmt.cz/index.php?lang=2</a>
Ministry of Foreign Affairs	<a href="http://www.mzv.cz/jnp/en/index.html">www.mzv.cz/jnp/en/index.html</a>
Ministry of Industry and Trade	<a href="http://www.mpo.cz/default_en.html">www.mpo.cz/default_en.html</a>
Ministry for Regional Development	<a href="http://www.mmr.cz/en/Homepage">www.mmr.cz/en/Homepage</a>
Ministry of Transport	<a href="http://www.mdcr.cz/en/HomePage.htm">www.mdcr.cz/en/HomePage.htm</a>
National Institute of Public Health	<a href="http://www.szu.cz/">www.szu.cz/</a>

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

Education Institutes involved	Web links
Technology Centre of the Academy of Sciences of the Czech Republic	<a href="http://www.tc.cz/cs">www.tc.cz/cs</a>
Czech Hydro-meteorological Institute	<a href="http://old.chmi.cz/indexe.html">old.chmi.cz/indexe.html</a>
Masaryk University Brno	<a href="http://www.muni.cz/">www.muni.cz/</a>
T.G. Marasyk Water Research Institute	<a href="http://www.vuv.cz/index.eng.php">www.vuv.cz/index.eng.php</a>

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