

ENERGY

Helgi's Pocket Guide

December 2012



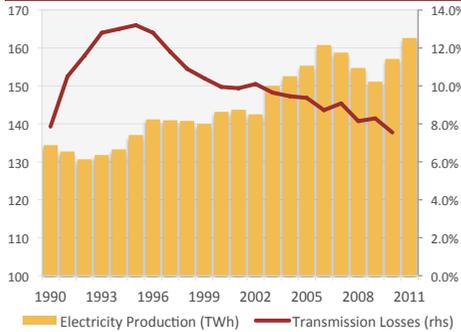
Poland

POLISH ENERGY AT A GLANCE

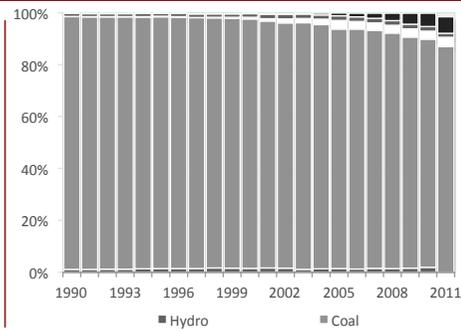
	1990	1995	2000	2005	2010
Electric Power Production (GWh)	134,415	137,042	143,174	155,359	157,089
Electric Power Consumption (GWh)	124,710	118,135	124,577	131,187	144,452
Electric Power Consumption Per Capita (kWh)	3,273	3,060	3,236	3,434	3,781
Energy Imports (As Of Energy Use)	-0.7%	0.1%	11%	15%	34%
Electricity Production From Coal Sources (As Of Total)	98%	97%	96%	92%	88%
Electricity Production From Nuclear Sources (As Of Total)	0%	0%	0%	0%	0%
Electricity Production From Hydro Sources (As % Of Total)	1.1%	1.4%	1.5%	1.4%	1.9%
Electricity Production From Natural Gas (As Of Total)	0.1%	0.2%	0.7%	3.3%	3.1%
Electricity Production From Renewables (As Of Total)	1.1%	1.4%	1.6%	2.5%	6.9%
Fossil Fuel Consumption (As Of Total)	98%	96%	96%	96%	92%
CO2 Emissions (kt)	366,773	346,814	301,691	303,521	
CO2 Emissions Per Capita (metric kg)	9,627	8,985	7,836	7,946	
Total Gas Consumption (mil cubic metres)	15,079.4	14,686	16,690	20,242	21,447



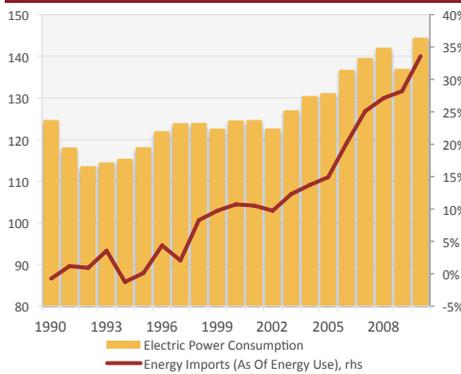
ELECTRIC POWER PRODUCTION & LOSSES



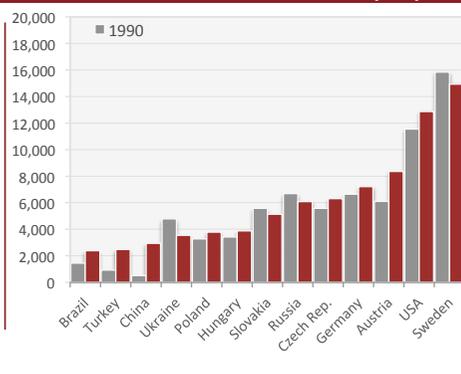
ELECTRIC POWER PRODUCTION BY SOURCE



ELECTRIC POWER CONSUMPTION



ELECTRIC POWER CONSUMPTION PER CAPITA (kWh)

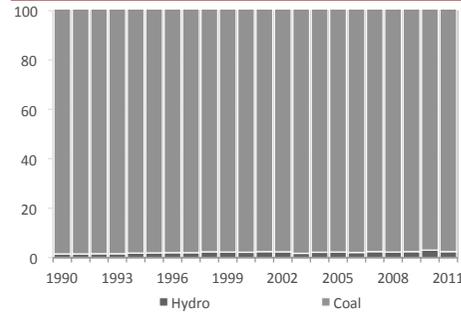


Source: World Bank, National Statistical Office, United Nations, OECD, EIA, Helgi Analytics calculation

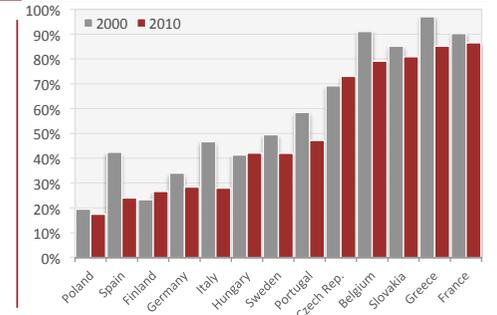


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ELECTRICITY POWER PRODUCTION (TWh)

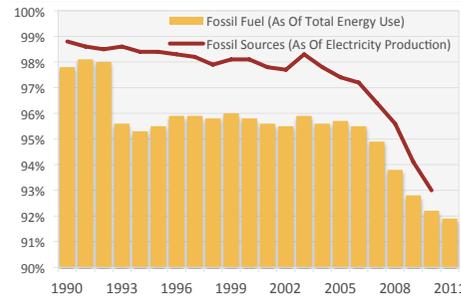


MARKET SHARE OF THE LARGEST ELECTRICITY PRODUCER

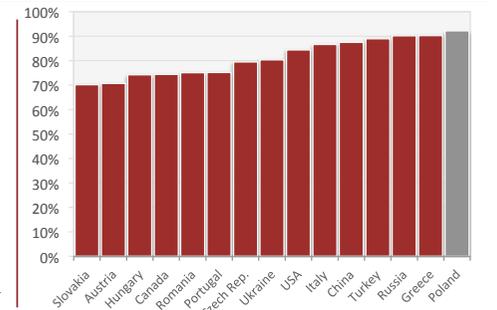


Poland's energy is dominated by coal. The country is the ninth largest hard coal producer in the world and the second largest consumer of coal in Europe, behind Germany. No wonder that the vast majority of electricity generation in Poland is coal-based, though diversification towards natural gas and other energy sources is becoming a strategic priority. Polska Grupa Energetyczna (i.e. the Polish Energy Group) is a state-owned power company and the largest power-producing company in Poland.

FOSSIL FUELS (As Of Production & Consumption)

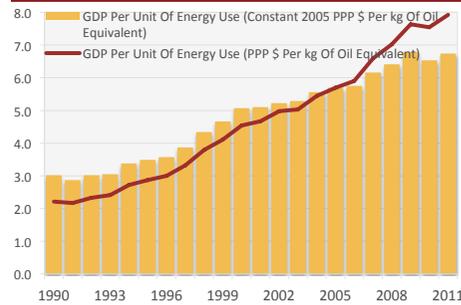


FOSSIL FUELS (As Of Total Energy Use), 2010

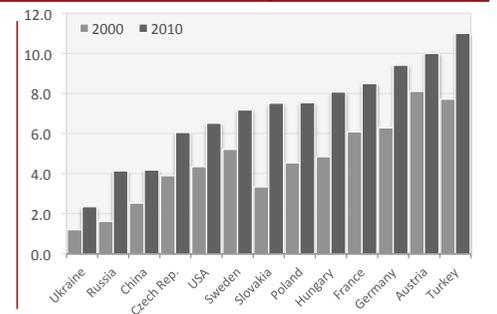


Fossil sources, and coal in particular, still dominate Polish electricity production; its share has only dropped by 9% to around 88% in the last 20 years. When the whole energy picture is taken into consideration, the Polish economy still remains very heavily dependent on fossil sources, with more than 92% of energy consumption coming from very very old animals and plants.

ENERGY EFFICIENCY



GDP PER UNIT OF ENERGY USE (PPP\$ Per kg Of Oil Equivalent)



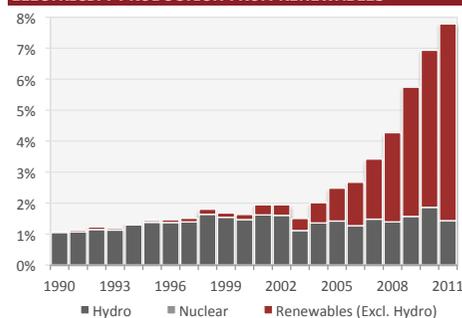
Energy efficiency has been increasing, though energy consumption still remains relatively high in Poland. Energy efficiency is one of the six main objectives of the Energy Policy until 2030 adopted in 2009. It aims at reducing the country's energy intensity to the EU-15 average and to achieve "zero-energy" economic growth by 2030, i.e. raising the GDP without increasing energy consumption.

Source: World Bank, National Statistical Office, United Nations, OECD, EIA, Helgi Analytics calculation

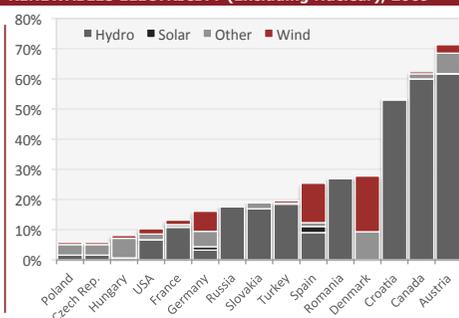


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ELECTRICITY PRODUCTION FROM RENEWABLES

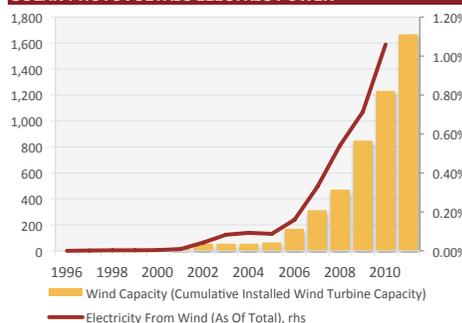


RENEWABLES ELECTRICITY (Excluding Nuclear), 2009

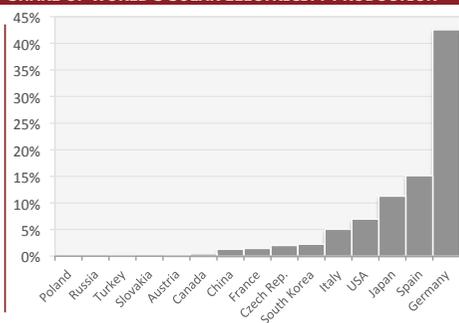


Poland is clearly a laggard in terms of renewable energy sources within EU countries. Only 5% of electricity was produced from renewable sources in 2010. As Poland has no nuclear power, the main renewable sources of energy are hydro power and wind power. The Polish government have announced that they are aiming to produce 13% of energy from renewable resources by the year 2015, and 16.8% by the year 2019.

SOLAR PHOTOVOLTAIC ELECTRIC POWER

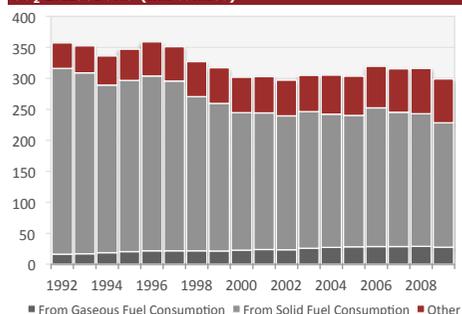


SHARE OF WORLD'S SOLAR ELECTRICITY PRODUCTION

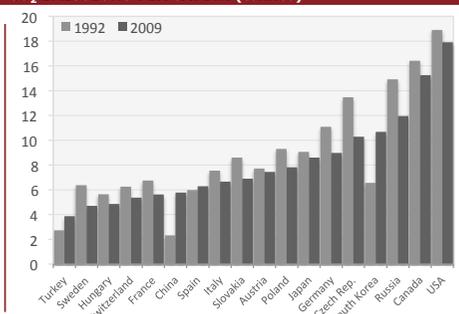


Wind power is a minor source of electricity in Poland. As of the end of 2011, the total installed capacity was 1,616 MW, which provided 2,745 GWh – almost 2% of the electricity produced in the country. Poland has also entered into photovoltaic energy. At the end of 2010, the total surface area of the solar collectors that had been installed in Poland amounted to 459,123 sqm.

CO₂ EMISSIONS (mil tonnes)



CO₂ EMISSIONS PER CAPITA (tonnes)



Poland generates the vast majority of its energy from coal, so no wonder it has the third highest CO2 emissions in the EU. It is therefore one of eight EU countries that are heavily reliant on fossil fuel that have applied for exemptions from buying carbon permits after 2013.

Source: World Bank, National Statistical Office, United Nations, OECD, EIA, Helgi Analytics calculation



POPULATION		2003	2004	2005	2006	2007	2008	2009	2010	2011
Population	mil	38.2	38.2	38.2	38.1	38.1	38.1	38.2	38.2	38.2
Population (As % Of World Population)	%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%
Persons Per Household	persons	2.86	2.85	2.85	2.84	2.83	2.83	2.83	2.83	2.81
Share Of Population (0–14 Years Of Age)	%	18%	17%	17%	16%	16%	15%	15%	15%	15%
Share Of Population (15–64 Years Of Age)	%	70%	70%	70%	71%	71%	71%	72%	72%	72%
Share Of Population (65+ Years Of Age)	%	13%	13%	13%	13%	13%	13%	14%	14%	14%
Median Age	years	36.1	36.3	36.6	36.9	37.2	37.4	37.7	38.0	38.3
Old Age Dependency Ratio	%	19%	19%	19%	19%	19%	19%	19%	19%	19%
Youth Dependency Ratio	%	25%	24%	23%	23%	22%	21%	21%	21%	21%
Life Expectancy, both sexes	years	74.6	74.8	75.0	75.1	75.2	75.5	75.7	76.2	
Life Expectancy At 65, both sexes	years	16.2	16.5	16.7	17.0	17.0	17.2	17.3	17.6	
Total Fertility Rate	children	1.22	1.23	1.24	1.27	1.31	1.39	1.40	1.38	
Urban Population As Of Total	%	62%	62%	61%	61%	61%	61%	61%	61%	61%

ENERGY PRODUCTION & USE		2003	2004	2005	2006	2007	2008	2009	2010	2011
Electric Power Production	GWh	150,009	152,550	155,359	160,764	158,761	154,710	151,121	157,089	162,608
Electric Power Production Per Capita	kWh	3,927	3,993	4,067	4,220	4,167	4,061	3,956	4,112	4,257
Electric Power Consumption	GWh	127,010	130,435	131,187	136,735	139,584	142,047	136,996	144,452	
Electric Power Consumption Per Capita	kWh	3,325	3,415	3,434	3,589	3,664	3,728	3,586	3,781	
Electric Power Distribution & Transmission Losses	GWh	14,460	14,431	14,563	14,021	14,416	12,589	12,533	11,851	
Electric Power Losses (As Of Output)	%	9.6%	9.5%	9.4%	8.7%	9.1%	8.1%	8.3%	7.5%	
Market Share Of The Largest Electricity Generator	%	19%	19%	19%	17%	17%	19%	18%	17%	
Household Electric Power Consumption	GWh									
Electricity Consumption Per Household	kWh									
Energy Production (kt Of Oil Equivalent)	kt	79,855	78,824	78,649	77,633	72,512	71,358	67,524	67,391	69,225
Energy Use (kt Of Oil Equivalent)	kt	91,105	91,371	92,377	97,241	96,824	97,892	93,987	101,454	102,623
Energy Imports (As Of Energy Use)	%	12%	14%	15%	20%	25%	27%	28%	34%	33%
Energy Use (kg Of Oil Equivalent Per Capita)	kg	189	180	176	174	162	156	147	153	148
Energy Use Per USD 1,000 Of GDP (2005 PPP)	kg	189	180	176	174	162	156	147	153	148
Fossil Fuel Consumption (As Of Total)	%	96%	96%	96%	96%	95%	94%	93%	92%	92%
CO ₂ Emissions	kt	304,856	304,988	303,521	319,410	315,201	316,059	298,905		
CO ₂ Emissions Per Capita	kg	7,981	7,984	7,946	8,383	8,273	8,296	7,825		
CO ₂ Emissions (kg Per PPP USD Of GDP)	kg	0.67	0.61	0.58	0.56	0.49	0.46	0.42		
CO ₂ Emissions From Electricity And Heat Production	mil tonnes	173	171	169	175	172	167	159	165	
CO ₂ Emissions From Gaseous Fuel Consumption	kt	25,790	27,209	28,020	28,339	28,346	28,735	27,491		
CO ₂ From Gaseous Fuel Consumption (As Of Total)	%	8.5%	8.9%	9.2%	8.9%	9.0%	9.1%	9.2%		
CO ₂ Emissions From Solid Fuel Consumption	kt	220,310	214,787	212,154	223,977	216,995	214,134	200,534		
CO ₂ From Solid Fuel Consumption (As Of Total)	%	72%	70%	70%	70%	69%	68%	67%		
CO ₂ Emissions From Manufacturing & Construction	mil tonnes	42.2	43.3	39.1	38.9	41.1	37.1	32.5	34.2	
CO ₂ Emissions From Transport	mil tonnes	28.3	32.0	34.4	38.1	42.1	44.0	44.5	46.8	
CO ₂ Emissions (As Of Total Worldwide Emissions)	%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Total Gas Consumption (cubic metres)	bil	18,256	19,326	20,242	20,287	20,153	20,356	19,761	21,447	21,415
Gas Consumption Per Capita (cubic metres)	'000	478	506	530	532	529	534	517	561	561

ENERGY DEPENDANCE & ALTERNATIVES		2003	2004	2005	2006	2007	2008	2009	2010	2011
Energy Dependence (Hard Coal & Derivatives)	%	-34%	-37%	-31%	-28%	-20%	-8.7%	-6.9%		
Energy Dependence (Petroleum Products)	%	98%	96%	97%	100%	104%	96%	98%		
Energy Dependence (Natural Gas)	%	67%	68%	70%	72%	67%	73%	68%		
Comb. Renewables & Waste (Of Oil Equivalent)	metric tons	4,486	4,602	4,742	5,101	5,110	5,855	6,655	7,594	8,295
Comb. Renewables & Waste (As Of Total Energy)	%	4.9%	5.0%	5.1%	5.3%	5.3%	6.0%	7.1%	7.5%	8.1%
Renewable Internal FreshWater Withdrawal Per Cap.	cubic metres					1,406				1,403
Biofuels Production (Barrels)	'000/day	569	114	2,194	2,898	1,930	5,606	7,900	8,455	7,756
Biofuels Production (As Of Worldwide Production)	%	0.2%	0.0%	0.6%	0.6%	0.3%	0.6%	0.8%	0.7%	0.7%
Biofuels Production (Tonnes Of Oil Equivalent)	'000 tonnes	28	5.7	109	144	96	279	393	421	386
Electricity Production (As Of Worldwide Production)	%	0.9%	0.9%	0.9%	0.8%	0.8%	0.8%	0.8%	0.7%	
Solar Capacity (Cum. Installed Photovoltaic Power)	MW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solar Capacity (As Of Worldwide Total)	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Wind Capacity (Cum. Installed Wind Capacity)	MW	55	55	65	170	313	472	849	1,231	1,667
Wind Capacity (As Of Worldwide Total)	%	0.1%	0.1%	0.1%	0.2%	0.3%	0.4%	0.5%	0.6%	0.7%
Geothermal Capacity (Cum. Installed Capacity)	MW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Geothermal Capacity (As Of Worldwide Total)	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: World Bank, National Statistical Office, United Nations, OECD, EIA, Helgi Analytics calculation. For more details, description and explanation of particular indicators, please, visit www.helgilibrary.com



ELECTRICITY PRODUCTION BY SOURCE		2003	2004	2005	2006	2007	2008	2009	2010	2011
Electricity From Coal Sources	GWh	142,592	143,494	143,336	148,731	145,789	140,491	134,696	138,267	141,397
Electricity From Coal Sources Per Capita	kWh	3,733	3,756	3,752	3,904	3,826	3,687	3,526	3,620	3,701
Electricity From Coal Sources (As Of Total)	%	95%	94%	92%	93%	92%	91%	89%	88%	87%
Electricity From Nuclear Sources	GWh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity From Nuclear Sources Per Capita	kWh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity From Nuclear Sources (As Of Total)	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Electricity From Hydro Sources	GWh	1,671	2,082	2,201	2,042	2,352	2,152	2,375	2,920	2,331
Electricity From Hydro Sources Per Capita	kWh	44	55	58	54	62	56	62	76	61
Electricity From Hydro Sources (As Of Total)	%	1.1%	1.4%	1.4%	1.3%	1.5%	1.4%	1.6%	1.9%	1.4%
Electricity From Natural Gas Sources	GWh	2,425	3,144	5,181	4,597	4,517	4,679	4,787	4,798	5,811
Electricity From Natural Gas Sources Per Capita	kWh	63	82	136	121	119	123	125	126	152
Electricity From Natural Gas Sources (As Of Total)	%	1.6%	2.1%	3.3%	2.9%	2.9%	3.0%	3.2%	3.1%	3.6%
Electricity From Oil Sources	GWh	2,456	2,507	2,757	2,909	2,794	2,726	2,723	2,892	2,472
Electricity From Oil Sources Per Capita	kWh	64	66	72	76	73	72	71	76	65
Electricity From Oil Sources (As Of Total)	%	1.6%	1.6%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.5%
Electricity From Oil, Gas & Coal Sources	GWh	147,459	149,194	151,320	156,263	153,046	147,903	142,205	146,093	
Electricity From Oil, Gas & Coal Per Capita	kWh	3,860	3,906	3,961	4,101	4,017	3,882	3,723	3,824	
Electricity From Oil, Gas & Coal (As Of Total)	%	98%	98%	97%	97%	96%	96%	94%	93%	
Electricity From Renewable Sources	GWh	2,250	3,075	3,847	4,291	5,429	6,606	8,679	10,888	12,657
Electricity From Renewable Sources Per Capita	kWh	59	80	101	113	142	173	227	285	331
Electricity From Renewables (As Of Total)	%	1.5%	2.0%	2.5%	2.7%	3.4%	4.3%	5.7%	6.9%	7.8%
Electricity From Renewables (Excl. Hydro)	GWh	579	993	1,646	2,249	3,077	4,454	6,304	7,968	10,326
Electricity From Renewables (Excl. Hydro) Per Capita	kWh	15	26	43	59	81	117	165	209	270
Electricity From Renewables Excl. Hydro	%	0.4%	0.7%	1.1%	1.4%	1.9%	2.9%	4.2%	5.1%	6.4%
Electricity From Solar Photovoltaic	GWh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7
Electricity From Solar Photovoltaic Per Capita	kWh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity From Solar Photovoltaic (As Of Total)	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Electricity From Wind Power	GWh	124	142	135	256	522	837	1,077	1,664	
Electricity From Wind Power Per Capita	kWh	3.2	3.7	3.5	6.7	14	22	28	44	
Electricity From Wind Power (As Of Total)	%	0.1%	0.1%	0.1%	0.2%	0.3%	0.5%	0.7%	1.1%	

MACROECONOMIC ROUND-UP		2003	2004	2005	2006	2007	2008	2009	2010	2011
GDP	USD bil	216.8	252.8	303.9	341.7	425.3	529.4	430.9	469.8	514.5
GDP Growth	%	3.9%	5.3%	3.6%	6.2%	6.8%	5.1%	1.6%	3.9%	4.4%
GDP Per Capita	USD	5,675	6,620	7,963	8,958	11,157	13,886	11,294	12,303	13,463
Industrial Production Growth	%	8.8%	12.7%	3.7%	12.0%	9.3%	2.7%	-3.8%	11.1%	6.9%
Retail Sales Growth	%									
Government Budget Balance (As % Of GDP)	%	-6.3%	-5.7%	-4.1%	-3.6%	-1.9%	-3.7%	-7.4%	-7.9%	-5.1%
Public Debt (As % Of GDP)	%	47%	46%	47%	48%	45%	47%	51%	55%	56%
Unemployment Rate	%	19.6%	19.0%	17.7%	13.8%	9.6%	7.1%	8.2%	9.6%	10.0%
Gross Average Monthly Wage	USD	635	693	791	839	986	1,239	1,000	1,070	1,145
Foreign Debt (As % Of GDP)	%	49%	51%	44%	50%	55%	46%	65%	66%	
Imports (As % Of GDP)	%	36%	40%	38%	42%	44%	44%	39%	44%	
Exports (As % Of GDP)	%	33%	38%	37%	40%	41%	40%	39%	42%	
Current Account Balance (As % Of GDP)	%	-2.5%	-5.2%	-2.4%	-3.9%	-6.2%	-6.6%	-4.0%	-4.7%	-4.3%
Foreign Exchange Reserves (Including Gold)	USD bil	34.0	36.8	42.6	48.5	65.7	62.2	79.5	93.5	97.7
Foreign Exchange Reserves (As % Of Imports)	%	44%	37%	37%	34%	35%	27%	47%	46%	
Foreign Direct Investments	USD bil	4.6	12.7	11.1	21.5	25.6	15.0	14.4	17.1	15.3
Foreign Direct Investments (As % Of GDP)	%	2.1%	5.0%	3.6%	6.3%	6.0%	2.8%	3.3%	3.6%	3.0%
Foreign Direct Investments (As % Of CA Deficit)	%	84%	96%	153%	164%	96%	43%	84%	78%	69%
Workers' Remittances, Received (As % Of GDP)	%	1.1%	1.9%	2.1%	2.5%	2.5%	2.0%	1.9%	1.6%	1.5%
Portfolio Investments (As % Of GDP)	%	1.1%	3.7%	4.1%	-0.9%	-1.5%	-0.4%	3.4%	5.4%	3.3%
Development Assistance (As % Of GDP)	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

INFLATION, FOREX & INTEREST RATES		2003	2004	2005	2006	2007	2008	2009	2010	2011
Inflation, CPI (Average)	%	0.8%	3.6%	2.1%	1.1%	2.4%	4.3%	3.5%	2.5%	4.3%
Long-Term Interest Rate (10-Year Gov. Bond Yield)	%	5.8%	6.9%	5.2%	5.2%	5.5%	6.1%	6.1%	5.8%	
Short-Term Interbank Interest Rate (3-Month)	%	5.7%	6.2%	5.2%	4.2%	4.8%	6.3%	4.3%	3.9%	4.6%
Interest Spread To USD, 10-Year Gov. Bond	%	1.8%	2.6%	0.9%	0.4%	0.9%	2.4%	2.9%	2.6%	-2.8%
Interest Spread To USD, 3M IBOR	%	4.5%	4.7%	1.7%	-1.0%	-0.5%	3.1%	3.4%	3.4%	4.2%
FX Rate To USD (Average)	per USD	3.89	3.65	3.24	3.10	2.76	2.41	3.12	3.02	2.96
FX Rate To EUR (Average)	per EUR	4.40	4.53	4.02	3.90	3.78	3.51	4.33	3.99	4.12

Source: World Bank, National Statistical Office, National Central Bank, United Nations, OECD, EIA, Helgi Analytics calculation. For more details, description and explanation of particular indicators, please, visit www.helgilibrary.com



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ABOUT HELGI ANALYTICS

Helgi Analytics is a consulting company based in the Czech Republic. The company mainly provides consultancy in the area of financial services and real estate and focuses primarily on the region of Central and Eastern Europe.

Helgi Analytics also runs a web application called Helgi Library, which is a database/library offering data and analyses on more than 95% of the world's economy and population. The Library aims to bring interesting statistical data and analyses to a wide audience under affordable conditions. If you wish to get more details, please visit www.helgilibrary.com or contact us at info@helgianalytics.com.

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