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**RENEWABLE ENERGY IN
SOUTHEASTERN EUROPE - 2010**

JANUARY 2011

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RENEWABLE ENERGY IN SOUTHEASTERN EUROPE - 2010

Overview

In 2010 energy generated from renewable energy sources (RES) in Southeastern Europe (SEE) was produced mainly in hydro power plants (HPPs). However, the share of other RES such as wind and solar energy started to gather pace, especially in Romania and Bulgaria. The segment provides substantial opportunities for investors as many HPPs in the region are not operating and need rehabilitation, while the countries' water resources can support additional hydro capacities.

In terms of wind and solar resources the SEE region is also attractive for investors with planned investments in wind and solar facilities exceeding EUR 6.4 bln. In Romania the Spanish Iberdro plans to build the world's largest onshore wind-park by 2017.

Almost all of the HPPs in the SEE countries are operated

by the local state-owned power utilities. Their combined installed capacity was more than 19,149 MW and electricity production exceeded 53,200 GWh in 2009.

Most of the SEE countries have introduced feed-in tariffs to promote the construction of RES power plants in order to meet the aims in the EU's Renewables Directive 2009/28/EC, which envisages that 20% of the total energy consumption in the union should be covered by RES.

The SEE Renewables report presents data and analyses on the geography factors, the regulatory framework, the supply and demand, major companies and projects as well as forecasts concerning the renewables sector in each SEE country and in the region as a whole.

MAIN ECONOMIC INDICATORS OF SEE COUNTRIES IN SEPTEMBER 2010

Country	Real GDP Growth y/y (%)	Inflation (CPI), y/y, average, (%)	Industrial production (% y/y)	Jobless rate (%)	Trade Balance in EUR bln (year-to-date)
Albania	4.9	3.4	26.9*	13.5	-1.644
BiH	-3.2**	1.3	-1.2	43.2	-2.395
Bulgaria	0.2	1.4	7.7	9.5	-1.434
Croatia	0.2	1.1	3.1	16.9	-4.705
Kosovo	4.0**	N/A	N/A	37.3**	-0.166
Macedonia	1.3	1.1	-11.9	31.7	-1.079
Moldova	6.5	8.0	13.9	7.0	-1.191
Montenegro	-5.3**	0.4	55.2	19.2	-993.3
Romania	-2.5	0.7	5.0	7.3	-6.900
Serbia	2.7	5.0	2.6	19.2	-3.915
Slovenia	1.7	1.7	3.5	10.5	-715.3

*March 2010; **2009 Source: Countries' statistical offices

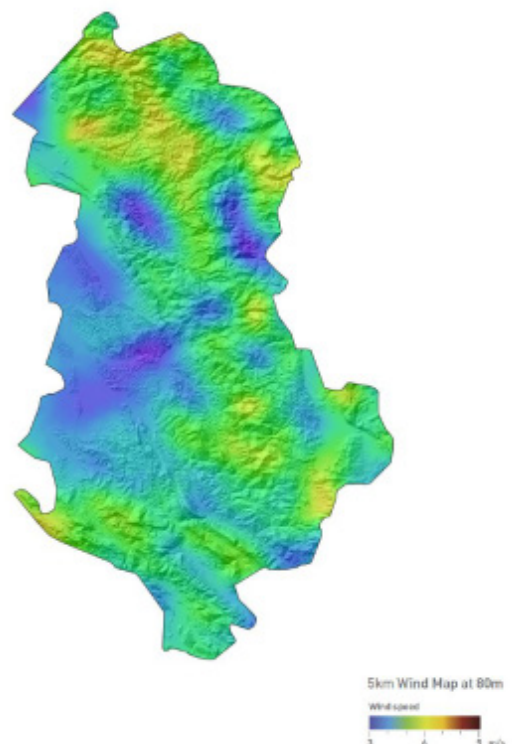
HISTORY & GEOGRAPHY

Wind resource maps of SEE countries

Source for all maps: NASA

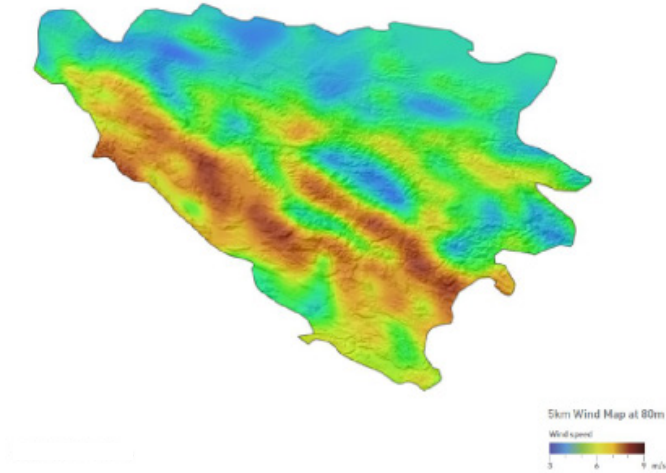
Albania

As of end-2010 there were no operational wind energy power plants in Albania. However, the country has a significant potential for production of electricity from wind farms. The most promising sites are located along the Adriatic coast, as well as the hills and ridges running from the north to the south along the coast.



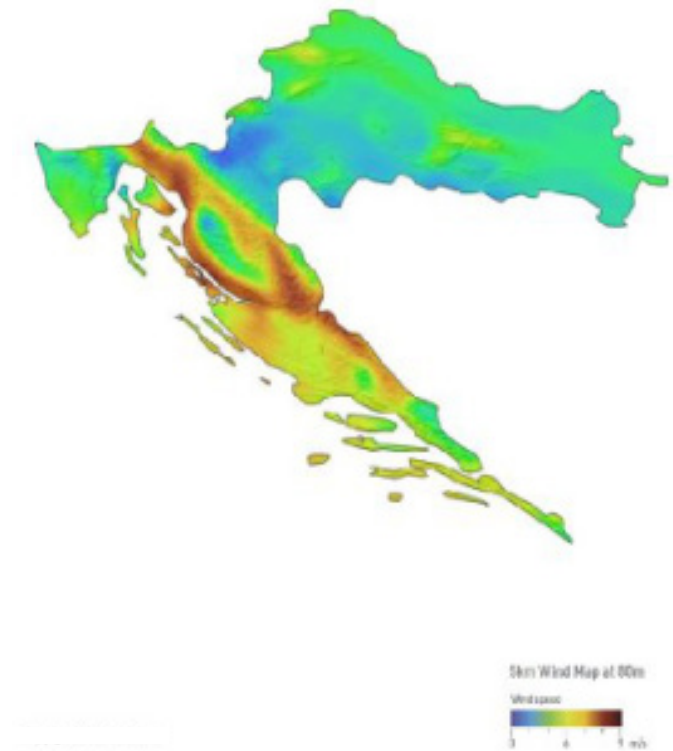
Bosnia and Herzegovina

The total potential of wind energy in BiH is estimated at 2,000 MW, of which only 900 MW are usable, according to experts. The most attractive regions for developing wind energy power plants are Bihac, northwestern BiH, Mostar, southwestern BiH, Trebinje, southern BiH, Gacko, southeastern BiH and Livno and Glamoc, located in the western part of the country.



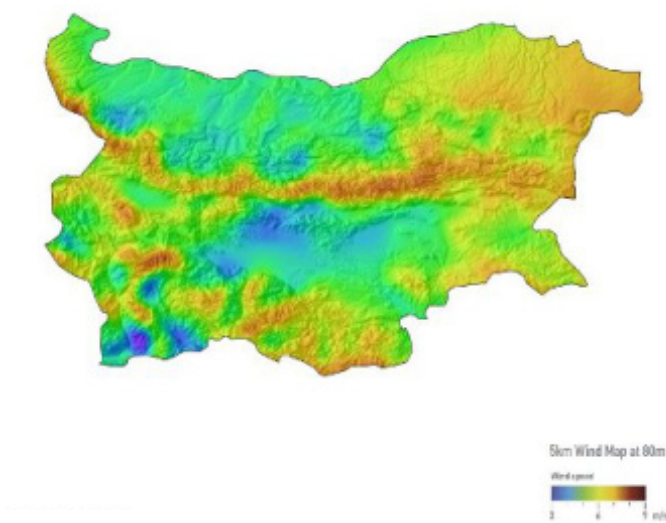
Croatia

The Croatian islands and the Adriatic coast are the regions with the greatest potential for developing wind energy installations in the country. The highest measured wind speeds stood at 7.3 m/s at 25 metres above ground level and at 8.0 m/s at 50 metres above ground level.



Bulgaria

The wind resource potential of Bulgaria is estimated at between 2,200 MW and 3,400 MW, according to a study of the Bulgarian Academy of Sciences. The study identified several regions with considerable wind resources: three areas with wind speed in excess of 7.0 metres per second (m/s), six areas with wind speeds ranging from 5.0 m/s to 7.0 m/s and eight areas with wind speeds at 4 m/s to 5 m/s. The regions with the greatest potential are the northern Black Sea coasts, the Balkan mountain range and the Rhodopes mountain range.

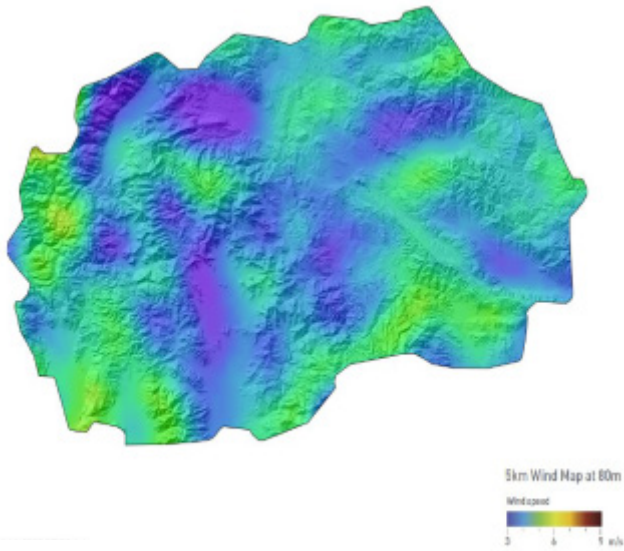


Kosovo

Kosovo has a little wind potential for the development of wind farms. The measured average wind speed in the period 2001- 2008 stood at only 1.48 m/s and the cost of electricity production from wind would be higher than that produced by coal power plants.

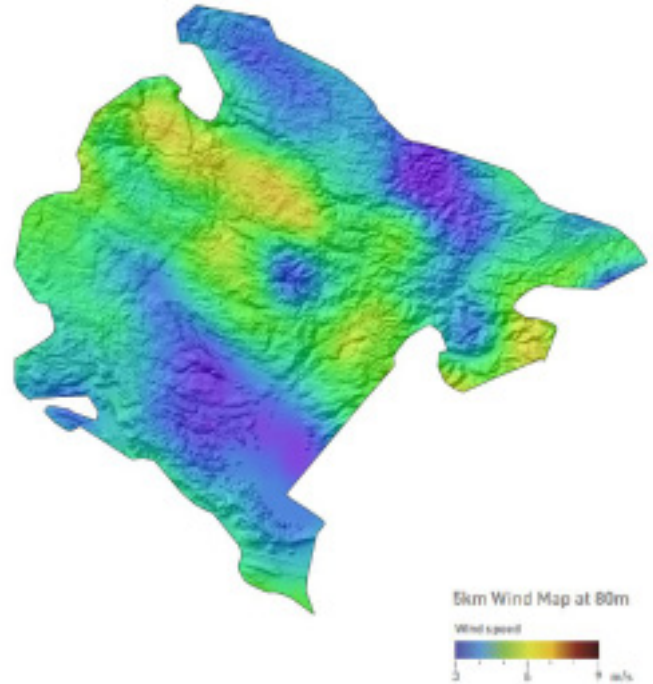
Macedonia

A total of 15 locations with wind speed potential for construction of wind power plants with foreseen installed capacity of between 25 MW and 33 MW were identified in the Preliminary Atlas of the Winds in Republic of Macedonia. In some of the mountainous regions of the country the wind speed could exceed 7.0 m/s, according to the estimations.



Montenegro

The regions with potential for development of wind power plants are the Mozur mountain near the Adriatic coast and Krnovo, central Montenegro.

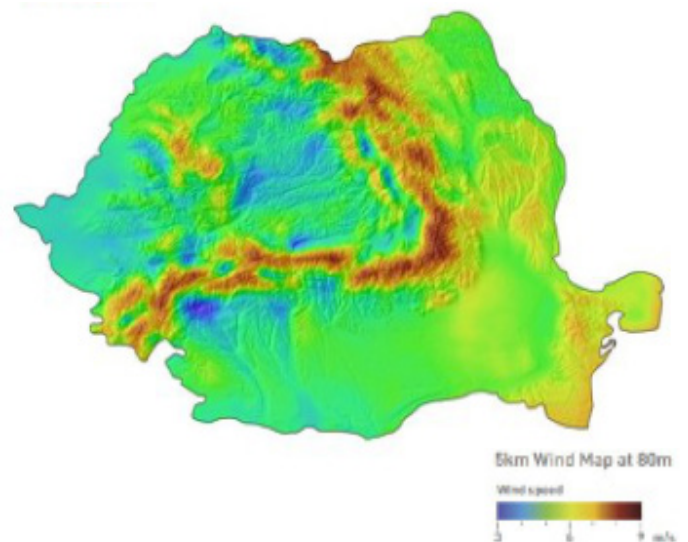
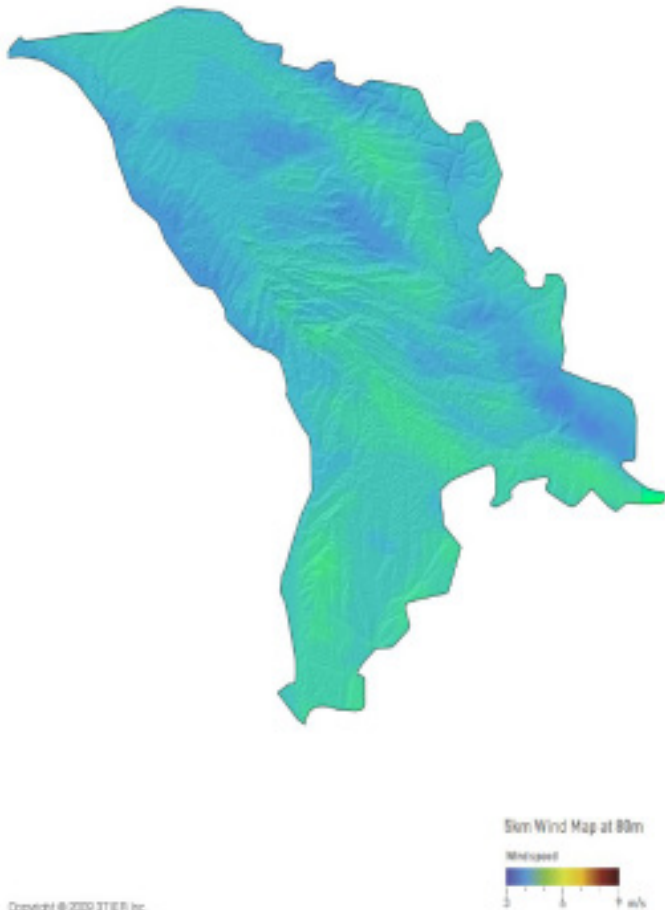


Moldova

The development of wind power plants in Moldova is limited due to the low wind speeds, the average ranging from 3.0 m/s to 4.0 m/s. However, in some places the wind speeds reach 5.0 m/s to 7.0 m/s and can support wind turbines but the potential investment will return in more than eight years. Moldova plans to build a 400 KW transmission line to transfer the wind power generated in the eastern part of the country and to connect its electricity grid to that of Romania.

Romania

The major planned or developed projects for wind farms in Romania are located in Constanta and Tulcea counties on the Black Sea coast and in Vaslui county, eastern Romania.



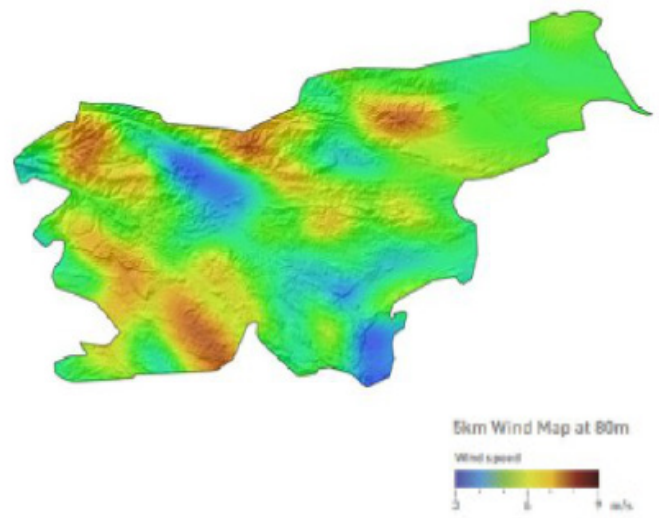
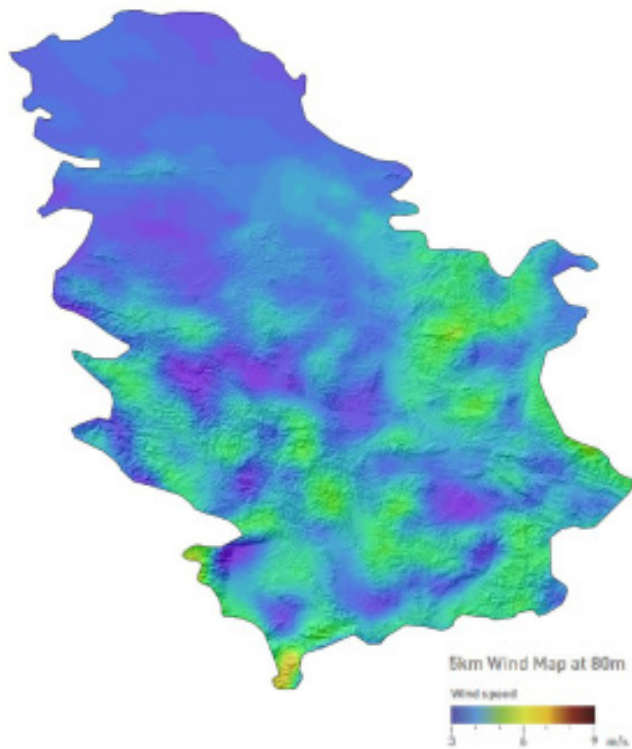
Serbia

Serbia's wind power gross energy potential is estimated at 1,300 MW. The most perspective locations for development of wind power plants are Midzjur mountain, on the border with Bulgaria, Suva Planina, a mountain range in southern

Serbia, Vrsac Mountains, northeastern Serbia, Deli Jovan and Tupiznica mountains, eastern Serbia, Krepoljin, Juhor and Jastrebac mountains, central Serbia.

Slovenia

The wind energy potential of Slovenia is estimated at 600 MW in a total of 12 locations throughout the country.



SOLAR RESOURCE MAPS OF SEE COUNTRIES

Source for all maps: NASA

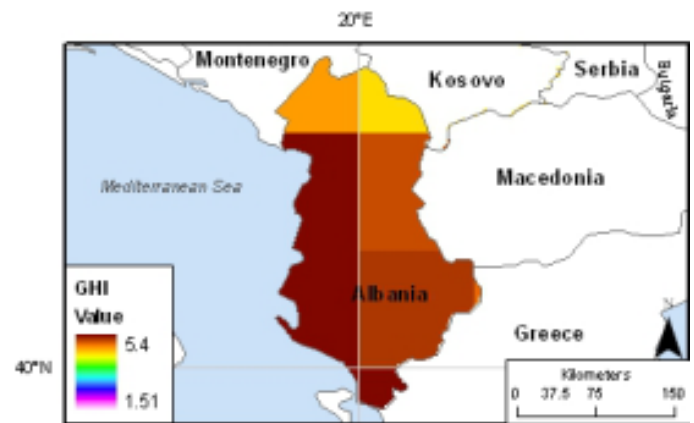
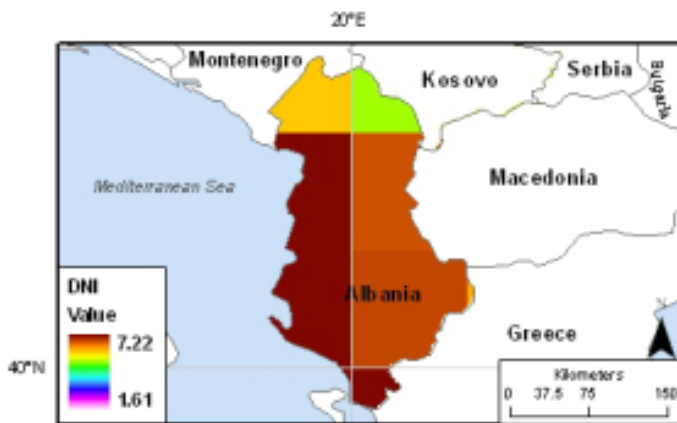
Direct Normal Irradiation (DNI)* values

*DNI is the amount of solar radiation received per unit area by a surface that is always held perpendicular (or normal) to the rays that come in a straight line from the direction of the sun at its current position in the sky.

Global Horizontal Irradiation (GHI)* values

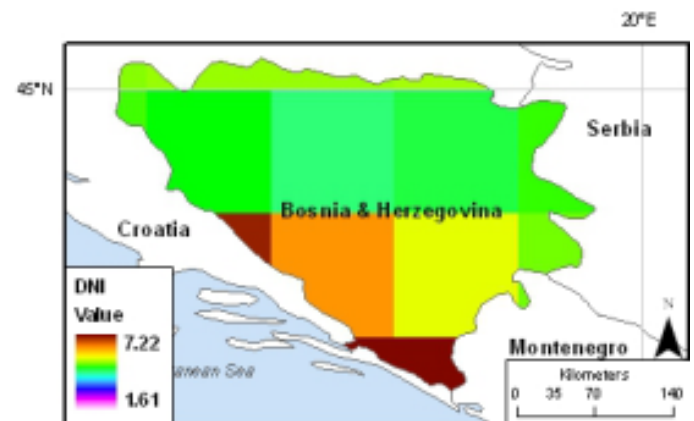
*GHI is the sum of direct, diffuse, and ground-reflected radiation on horizontal plane. Editor's note: While solar thermal power plants can only use direct irradiance for power generation, photovoltaic systems can convert the diffuse irradiance as well.

Albania



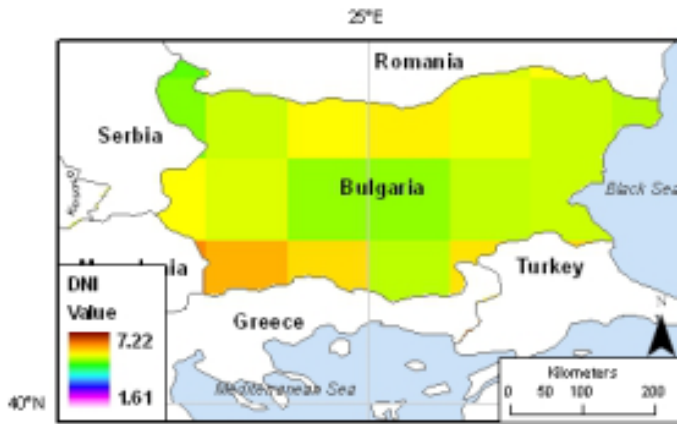
Albania is located in the sub-tropical zone as well as in the Mediterranean climatic zone. In general, the country has a hot, dry summer and a relatively short and mild winter. As the maps show, the country has outstanding solar potential throughout the country and particularly in its coastal region.

Bosnia and Herzegovina



Two climatic regions are identified in the country. The coastal part of the country belongs to the Mediterranean climate zone, while the northern regions have climate similar to countries in Central Europe. The solar potential of the southern region is estimated at 1,900 Terawatt hours (TWh).

Bulgaria



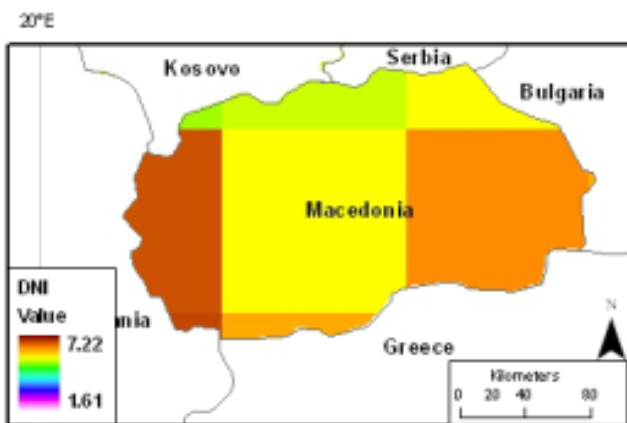
Bulgaria has unusually variable and complex climate having in mind its small area. As the map shows the country has relatively good solar potential throughout its territory with its southern part being the most suitable for construction of solar power plants.

Croatia



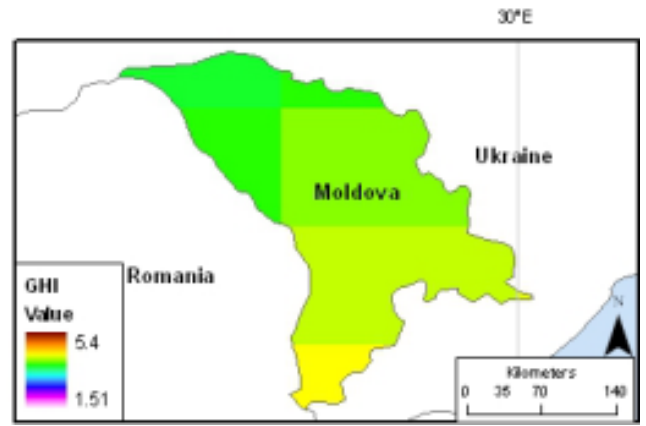
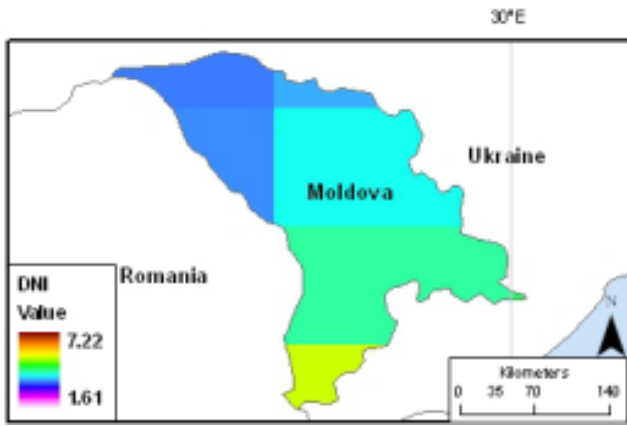
The country's islands and coastal areas have a Mediterranean climate while inland areas have temperate continental climate with hot summers with low overall humidity levels but frequent rain showers and cold snowy winters. The coastal region shows the highest potential for the use of solar energy for heating and electricity production.

Macedonia



The western part of Macedonia offers considerable potential for the development of solar power projects. The rest of the country has also good solar irradiation values. According to estimations, Macedonia has the potential to produce 10 GWh of solar energy annually.

Moldova



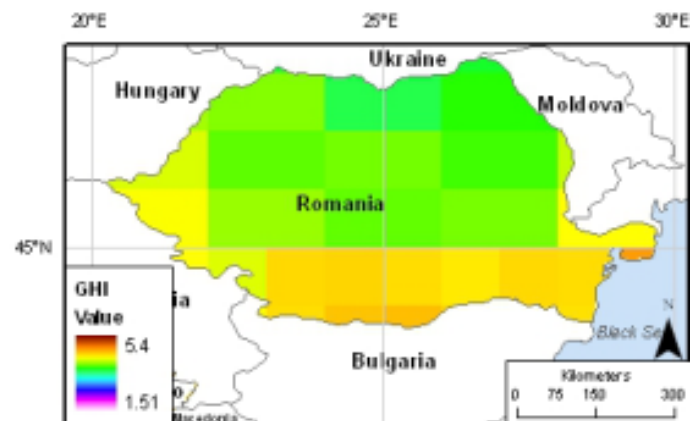
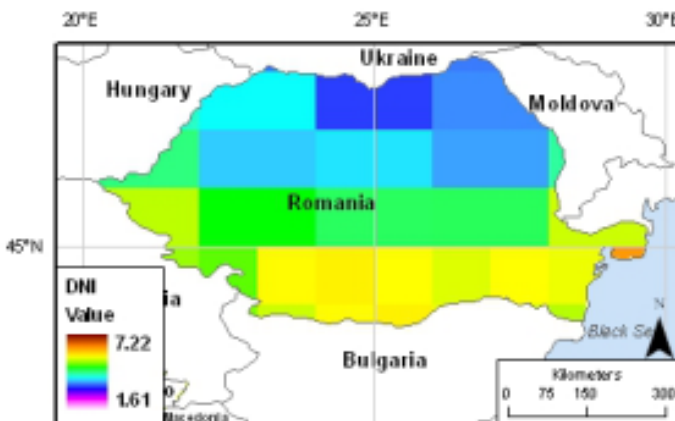
The greatest potential for solar installations in Moldova is in the most southern part of the country. However, even in this region the DNI and GHI values are not significant.

Montenegro



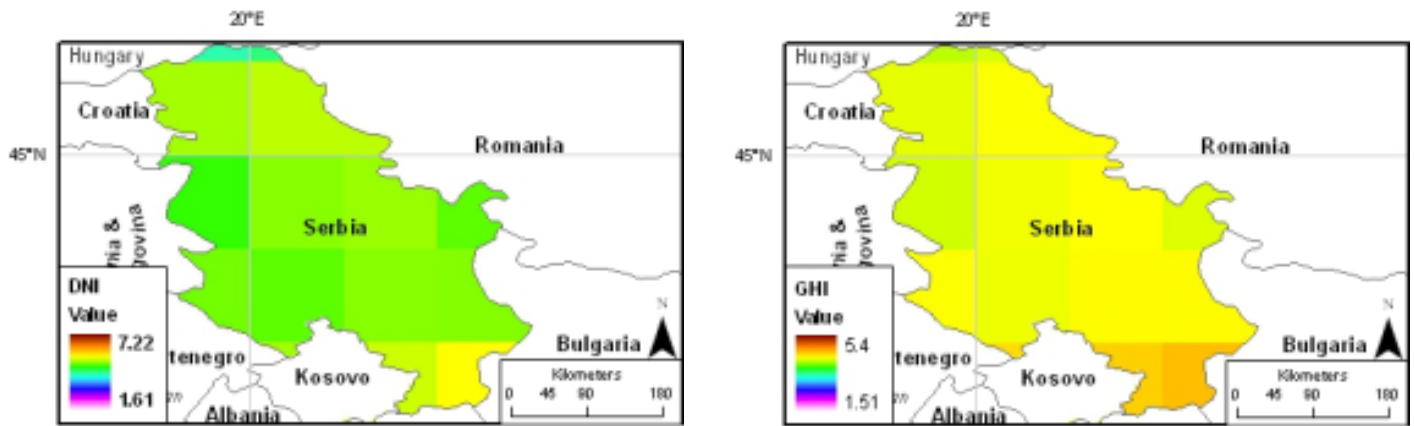
Montenegro has one of the highest solar irradiation levels in Europe. In the most favorable regions the actual irradiation values during the year account for about 50% of the total possible yearly irradiation.

Romania



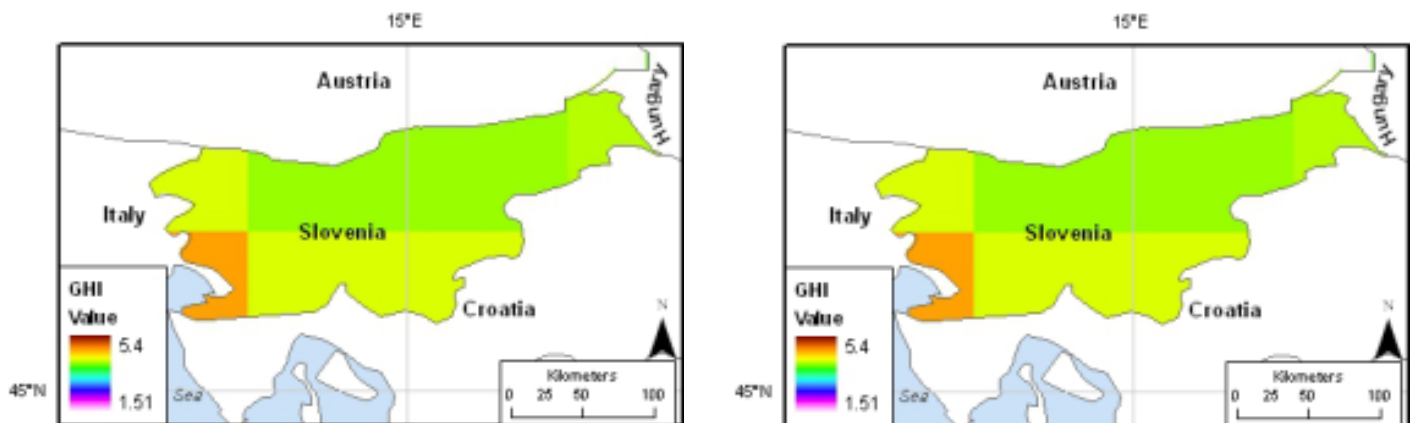
The solar potential throughout the whole Romanian territory is moderate. The country's highest solar potential is registered in the southern region and in some coastal areas.

Serbia



The average annual solar irradiation in Serbia is estimated at 1,400 KWh per sq or by nearly 40% higher than the average in Europe. Moreover, the lowest measured values of solar radiation in Serbia are comparable to the highest values in the leading countries in solar utilization such as Germany and Austria. The southern part of Serbia, including Nis, Kursumlija and Vranje, shows the highest solar potential.

Slovenia



In general, the country has no significant potential for development of large solar power plants. As the maps show, Slovenia's southwestern region has the highest solar power potential in the country.

MAJOR RIVERS BY COUNTRY IN SEE

Country	River	River length (km)	Runoff (cu m/second)
Albania	Buna	44	672
	Drin	160	352
	Vjosa	192	204
	Mati	115	103
	Semani	85	96
	Shkumbini	181	62
	Ishem	74	21
	Erzeni	109	18
Bulgaria	Danube	472	6,100
	Maritsa	322	107
	Struma	290	76
	Arda	241	72
	Iskar	368	54
Kosovo	White Drin	156	56
	Ibri	42	33
	Sitnica	90	10
	Lepenci	60	9.0
	Morava e Binces	60	6.0
Montenegro	Moraca	112	152
	Tara	110	64
	Piva	82	34
	Cehotina	100	22
Serbia	Danube	450	4,000
	Sava	206	1,564
	Tisa	160	794
	Drina	220	371
	Great Morava	185	232
	Ibar	272	60

Country	River	River length (km)	Runoff (cu m/second)
BiH	Sava	311	1,513
	Drina	345	371
	Neretva	208	233
	Una	207	202
	Bosna	271	174
	Vrbas	235	102
	Sana	140	90
	Trebisnjica	99	24
	Croatia	Danube	188
Drava		323	556
Sava		562	255
Cetina		105	105
Krka		73	50
Gacka		61	16
Macedonia	Vardar	300	174
	Black Drim	45	116
Romania	Strumica	81	9.0
	Danube	1,020	6,500
	Siret	470	240
	Olt	615	174
	Mures	695	155
	Somes	345	120
	Prut	695	110
	Jiu	331	94
	Arges	350	73
	Ialomita	417	40
Slovenia	Drava	144	300
	Sava	221	255
	Soca	95	140

Source: KPMG - Central and Eastern European Hydro Power Outlook

REGULATORY FRAMEWORK

Albania

The main regulatory acts concerning the renewable energy in Albania:

- Law on Power Sector (No. 9072, dated May 22, 2003) regulates activities in the power sector and outlines the rights and obligations of parties involved in the sector. The law also defines:
 - » the Energy Regulatory Entity (ERE) as the regulator of the energy sector;
 - » regional trade in electricity;
 - » feed-in tariffs;
 - » licensing requirements.
- Regulation on the procedures for certification of electricity generated from renewable energy
- Concession contracts for the construction and operation of new electricity generation installations are regulated by the Rules for the Evaluation and Award of Concessions.
- Regulatory framework set by the European Energy Community, to which Albania is a Contracting Party.

Bosnia and Herzegovina

As Bosnia and Herzegovina consists of two separate entities – Bosnia's Serb Republic (Republika Srpska) and the Federation of Bosnia and Herzegovina, and the self-governing administrative unit Brcko District, there are different legal frameworks applicable in each of these entities. However, many legal matters are regulated at national level and apply throughout the country. The main energy regulations are: On national level:

- Law on Transmission, Regulator and System Operator;
- Law on Establishing a Company for Electricity Transmission;
- Law on Establishing an Independent System Operator for Transmission in BiH;
- Market Rules;
- Grid Code;
- Electricity Action Plan (2006);
- Indicative Plan on Development of Generation from 2009 until 2018;
- Rulebook on Access;
- Regulatory framework set by the European Energy Community, to which BiH is a Contracting Party;

Federation of Bosnia and Herzegovina:

- Law on Electricity;
- Law on Application of Tariff System for Electricity;
- General Conditions for Distribution of Electricity;
- Rulebook on Licensing.

Bosnia's Serb Republic:

- Law on Electricity in Republika Srpska;
- General Conditions for Electricity Delivery and Supply;
- Rulebook on Licensing;
- Resolution on Tariff System for Electricity Sale;

Brcko District:

- Law on Electricity in Brcko District.

Bulgaria

Main acts and regulations:

- The Energy Act and its sub-laws and regulations form the general legal framework of the energy sector in the country;
- The Renewables Act implements the EU directives 2001/77/EC and 2003/30/EC and defines the specifications in the production of electricity from renewable and alternative energy sources and biofuels. The Act also provides for the security of investments and the bankability of projects to build power plants using renewable RES;
- Regulation No. 14 of June 15, 2005 introduces special rules for assessing the existing and potential capacity of electricity plants using renewable energy sources. The Regulation also sets special requirements regarding the design of water and photovoltaic power plants.
- Regulation No. 16 of January 22, 2008 defines procedures for forecasting and assessing potential renewable energy resources.
- Licensing Regulation;
- Regulation No. 6 of June 9, 2006 describes the procedures for connecting a RES-Electricity plant to the electricity grid.
- Pricing Regulation – defines the methodology for setting prices of electricity.
- RES Certification Regulation and Cogeneration Certification Regulation establish the procedures for issuing certificates of origin from the two types of sources.

Croatia

Main acts and regulations:

- The Energy Act regulates licensing and general regulatory issues in the energy sector.
- The Electricity Market Act sets general rules governing electricity market activities, such as generation, transmission, distribution and supply of electricity, and organisation of the electricity market.
- Ministerial Ordinance on Use of Renewable Energy Sources and Cogeneration regulates projects involving the construction of renewable energy sources and cogeneration facilities.
- Ministerial Ordinance on Granting the Status of an Eligible Electricity Producer regulates the requirements for qualifying as an eligible electricity producer generating both heat and power and using waste or renewable en-

ergy sources to generate electricity in a profitable and environmentally friendly way.

- The Government Tariff System for Electricity Generation from Renewable Energy Sources and Cogeneration regulates the right of eligible producers to a feed-in electricity price paid by the Croatian market operator.
- The Governmental Regulation on the Minimum Share of Electricity Produced from RES and Cogeneration provided that 5.8% of total electricity consumption should come from RES and 2.0% from cogeneration by the end of 2010.
- Regulatory framework set by the European Energy Community, to which Croatia is a Contracting Party.

Kosovo

Main laws and regulations:

- Law No. 2004/8 (the Energy Act) defines general principles for developing energy strategy and energy programmes in Kosovo. The law also aims to promote the use of RES.
- The Energy Regulator Office (ERO) is empowered to issue certificates of origin of electricity generated from renewable energy resources.
- Law No. 2004/10 (the Electricity Act) provides that the transmission network operator KOSTT Sh.a. shall give priority to power plants using renewable energy resources when dispatching electricity capacities.
- On February 2, 2006 ERO adopted a Rule on licensing activities in Kosovo.
- Regulatory framework set by the European Energy Community, to which Kosovo is a Contracting Party.

Macedonia

Main Acts and regulations:

- The Energy Act obliges the Government to adopt a strategy for the use of RES and a schedule for its accomplishment. The local municipalities and the capital Skopje are entitled to develop their own policies for using energy from RES in line with the state strategy.
- RES Licensing Ordinance regulates the licensing of energy production from RES.
- RES Ordinance regulates facilities using RES for electricity production and aims to:
 - » increase the use of RES in the country;
 - » create substitutes for the use of fossil fuels;
 - » encourage entrepreneurship in the sector;
 - » encourage new technologies;
 - » ensure sustainable supply of electricity whilst protecting the environment.
- The Government has adopted ordinances for feed-in tariffs for the purchase or sale of electricity produced:
 - » in small hydro power plants;
 - » by wind turbines;
 - » in energy facilities using biogas;
 - » by photovoltaic systems.
- RES Guarantees of Origin Ordinance;
- Preferential Producers of electricity from RES Ordinance;
- Decision on the installed power of the facility for achieving the status of eligible producer of electricity from RES;
- Regulatory framework set by the European Energy Com-

munity, to which Macedonia is a Contracting Party.

Moldova

Main laws and regulations:

- Renewable Energy Law (2007);
- Energy Efficiency Law (2010);
- Law on Electricity (2009);
- Law on Energy (1998);
- Law on Regulating Entrepreneurial Activity Through Licensing (2001)

Montenegro

Main laws and regulations:

- Energy Law;
- Regulation on technical requirements for connection of small hydro power plants to the electricity grid;
- Instructions on establishing the methodology for calculating the purchase price for electricity from small hydro-power plants;
- Rules on electricity supply;
- Interim Grid Code;
- Interim Distribution Code
- Regulatory framework set by the European Energy Community, to which Montenegro is a Contracting Party.

Romania

- Law No. 220/2008 aims at promoting electricity generation from RES. The Law sets a target for gross domestic consumption of electricity from RES at the following rates: 33% in 2010; 35% in 2011 and 38% in 2020;
- Government Decision No. 443/2003 on the promotion of electricity produced from RES implements the EU's Renewables Directive into Romanian legislation;
- Government Decision No. 1892/2004 on establishing a system to promote electricity generating from RES.
- Government Decision No. 1429/2004 provides the legislative framework for issuance and registration of guarantees of origin of electricity produced from RES;
- The National Energy Strategy 2007-2020 has the follow-

LEADING COMPANIES

Major Foreign Companies operating in Southeastern Europe

CEZ Group (The Czech Republic):

In January 2011 Czech power utility CEZ set up a wholly-owned subsidiary in the Netherlands, named CEZ Bulgarian Investments BV, which will be engaged in purchasing power from renewable sources in Bulgaria.

ing objectives:

- » promotion of electricity production from RES;
 - » implementation of clean technologies (low-carbon technologies);
 - » establishment of a system to promote the trading of white certificates (documents certifying that a certain reduction of energy consumption has been attained)
- Energy Law No. 13/2007 sets the general framework for production of electricity and thermal energy in cogeneration facilities.

Serbia

- The Energy Law is the framework governing the production of electricity and thermal energy, as well as the oil and gas sectors;
- The Energy Strategy of the Republic of Serbia outlines objectives to be met until 2015;
- The Energy Strategy Programme defines the particular steps that should be taken for the fulfillment of the Energy Strategy in the period 2007-2012;
- Privileged Producers Decree – sets the conditions and the criteria for their assessment regarding the obtaining the status of privileged producer of electrical energy;
- Incentives Decree for the production of electricity from RES and cogeneration.
- Regulatory framework set by the European Energy Community, to which Serbia is a Contracting Party.

Slovenia

The Energy Act, which regulates the energy sector in Slovenia, transposes several European Commission Directives into the local legal system, including Directive 2001/177 on the promotion of electricity produced from RES in the internal electricity market.

Slovenia has also adopted regulations for setting tariffs that encourage the production of electricity from cogeneration and renewable sources. In 2008 the Slovenian Government adopted a national energy efficiency plan for the period 2008-2016.

In Bulgaria CEZ has been operating since November 2004, when it acquired 67% of the electricity distribution companies serving the capital Sofia and Pleven, northern Bulgaria.

Also in January 2011 CEZ acquired via its Romanian unit a 100% stake in TMK Hydroenergy Power, which operates a hydropower system in western Romania with a total installed capacity of 18 MW.

CEZ already operates nearly 300 MW of installed wind power capacity in Romania. The figure will rise to 600 MW after it completes its wind farm project in Dobrogea county, south-eastern Romania.

Both CEZ moves are in line with its officially announced poli-

cy to focus on core business in countries with existing operations and develop its renewable generation.

Enel Green Power SpA (Italy):

Enel Green Power, the renewables unit of the Italian power giant Enel SpA, is active in both Romania and Bulgaria.

In July 2010 Enel Green Power signed an agreement with Romanian company Elcomex Eol to take part in the development of a 272 MW wind park in southeastern Romania, a project worth more than EUR 400 mln. The Italian company is already working on a 174 MW wind farm project in Dobrogea county.

In May 2010 Enel Green Power put into operation a 21 MW wind farm in Bulgaria, doubling its wind power capacity in the country to 42 MW. The Shabla wind farm, located on the northern Black Sea coast, has the capacity to generate more than 54.6 million KWh of electricity annually, enough to power 19,000 households and avoid some 45,000 tonnes of carbon dioxide (CO₂) emissions per year.

In October 2009, the Italian company launched the 21 MW wind farm Kamen Bryag, in Kavarna, also on the Bulgarian Black Sea coast. The company acquired the Shabla and Kamen Bryag projects in 2008 under a deal with Global Wind Power Bulgaria, a subsidiary of Danish Global Wind Power.

Iberdrola Renovables SAU (Spain):

Iberdrola Renovables SAU, the renewables unit of Spanish power utility Iberdrola SA, plans to start the construction of a 1,500 MW wind farm in Romania in 2011.

The project envisaged the construction of 50 wind farms in the region of Dobrogea, southeastern Romania, between 2011 and 2017. The average cost to buy and install wind turbines was estimated at EUR 1.7 mln per megawatt as of September 2010 and using those figures Iberdrola's Dobrogea project is expected to cost more than EUR 2.5 bln, according to the company.

Iberdrola also plans to build a separate 80 MW wind farm in Romania until mid- 2011.

AES Corporation (USA):

AES Solar Energy, a joint venture of US power company AES Corp. and equity firm Riverstone Holdings LLC, plans to invest EUR 306 mln in the construction of 80 MW solar power plant near Silistra, northeastern Bulgaria. The project will be implemented at two phases by the end of 2012, with 64 MW of capacity to be put into operation under phase one.

In 2009 AES Corp. launched a flagship 156 MW wind farm near Balgarevo and Poruchik Chunchevo, close to the northern Bulgarian Black Sea coast.

MAJOR HYDROELECTRIC PRODUCERS IN SEE IN 2009

Country	Company	Ownership	Installed capacity (MW)	Production (GWh)
Albania	KESH Sh.a.	State - 100%	1,684	7,694
BiH	Elektroprivreda BiH d.d.	State - 90%; Other - 10%	N/A	1,693
	JP Elektroprivreda HZ HB d.d.	State - 90%; Other - 10%	792	1,940
	Elektroprivreda RS AD	State - N/A	1,269	N/A
	NEK EAD	State - 100%	2,616	2,991
Croatia	HEP Proizvodnja d.o.o.	State - 100%	1,794	6,767
Macedonia	Elektrani na Makedonija AD (ELEM)	State - 100%	502	1,098
Montenegro	Elektroprivreda Crne Gore AD	State - 55%	658	398.1*
		A2A SpA (Italy) - 43.7%		
		Other - 1.3%		
Romania	SC Hidroelectrica SA	State - 100%	6,423	15,513
Serbia	JP Elektroprivreda Srbije	State - 100%	2,835	11,093
Slovenia	Dravske Elektrarne Maribor d.o.o.	State - 100%	577	4,013

*in January 2010

Source: Companies' websites

EMPLOYMENT

NUMBER OF EMPLOYEES IN ELECTRICITY, GAS AND WATER PRODUCTION AND SUPPLY INDUSTRY IN SEE

Country	Period	Number	% of the total employed persons
BiH	October 2010	23,397	3.43
Bulgaria	September 2010	32,578	1.48
Croatia	November 2010	16,575	1.45
Macedonia	Q3 2010	14,523	2.24
Montenegro	Q3 2010	5,600	2.64
Romania	October 2010	72,100	1.73

Country	Period	Number	% of the total employed persons
Serbia	October 2010	32,987	1.38
Slovenia	October 2010	7,975	0.95

Source: Countries' statistical offices

SUPPLY/MARKET

In 2009 the net total installed hydro capacities in SEE reached 17,969 MW, compared to 17,780 MW in 2008 and 17,550 MW, according to data of the European Network of Transmission System Operators for Electricity (ENTSOE).

In 2010 Romania ranked seventh among the EU countries in terms of annual growth in installed wind capacities.

Bulgaria, Croatia and Romania were the only SEE countries with installed wind capacities as of 2009. Bulgaria had 360 MW of net installed wind power capacity, Croatia – 70 MW and Romania was third with 14 MW.

Romania added 448 MW to its wind power capacity, which reached 462 MW, according to the European Wind Energy Association. However, only 1.6% of Romania's electricity comes from wind farms, compared to Denmark, whose wind power capacities provide 24% of the total energy production.

According to ENTSO-E data, in SEE only in Bulgaria there were installed solar power capacity in 2009. The country had only 1.0 MW of installed solar capacity in 2009 but that figure jumped to 9.0 MW at end-2010.

In 2010 Bulgaria and Croatia were the only countries in SEE to report electricity production by wind power plants, according to ENTSO-E data.

Bulgaria's wind power facilities generated 331 GWh of electricity in 2010, while in Croatia 104 GWh of electricity came from wind farms and another 16 GWh from other RES in January-October 2010.

INSTALLED CAPACITY IN MW OF HPPS IN SOME SEE COUNTRIES IN 2009

Country	HPP of which:	Small HPP
BiH	2,064	N/A
Bulgaria	2,993	118
Croatia	2,086	379
Montenegro	694	8.92
Macedonia	503	48.5
Romania	5,904	2,341
Serbia	2,846	1,874
Slovenia	879	155

Source: European Network of Transmission System Operators for Electricity (ENTSO-E)

ELECTRICITY GENERATION BY HPPS IN SOME SEE COUNTRIES IN 2010

Country	GWh	Share in Total Electricity Generation
BiH	7,870	50.60%
Bulgaria	5,431	13.72%
Croatia*	6,071	61.64%
Macedonia	2,316	35.10%
Montenegro**	2,053	76.78%
Romania	20,174	39.91%
Serbia	11,225	30.40%
Slovenia*	2,921	28.17%

*Jan-Oct 2010; **2009

Source: ENTSO-E

SHARE IN % OF ELECTRICITY FROM RES IN TOTAL ELECTRICITY PRODUCTION IN SOME SEE COUNTRIES

Country	2010	2009	2008	2007	2006	2005
BiH	50.60	42.56	34.43	33.96	44.01	47.60
Bulgaria	14.56	10.07	7.90	6.41	10.24	10.54
Croatia	62.77*	56.78	46.66	39.77	53.70	55.35
Macedonia	35.10	19.88	15.03	17.36	24.74	22.87
Montenegro	N/A	76.78	57.08	62.88	N/A	N/A
Romania	39.91	29.19	28.10	27.71	31.32	36.33
Serbia	30.40	26.98	25.43	25.52	N/A	N/A
Slovenia	28.17*	29.61	24.49	21.56	23.77	22.72

*Jan-Oct 2010

Source: ENTSO-E

Albania

According to the Albanian National Agency for Natural Resources, there were seven large HPPs and 43 small HPPs operating in the country as of end-2010. All of Albania's biggest hydro power plants - the 250 MW Vau i Dejes, the 600 MW Komani and the 500 MW Fierza - are located on the Drin river. The fourth plant on the Drin - the 48 MW Ashta should be built by 2012 by Austria's energy company Verbund which will invest EUR 160 mln in its construction.

Albania's electricity production rose 52.1% on the year to 4,554 GWh through June 2010, equivalent to 96.2% of domestic consumption over the same period, according to the Albanian Institute of Statistics. The output of the country's hydroelectric units increased 52% on the year to 4,466 GWh, which was 98% of Albania's total electricity production through June 2010. Privatelyrun HPP produced 87 GWh of electricity over the review period, up 53.9% on the year.

Electricity production from Albania's hydropower plants topped 7,694 GWh in 2010, the highest-ever production level reached in the country, according to local state-run power utility KESH Sh.a.

In 2009, thanks to abundant snow and rainfall, Albania made its first ever electricity exports, selling a total of 797 GWh of electricity mainly to Greece through June 2010.

Bosnia and Herzegovna

Electricity generated by HPPs accounted for 51% of the total generated electricity in the country in 2010, according to data of ENTSO-E.

BiH has fast-flowing mountain streams and powerful rivers, which provide considerable potential for hydroelectricity production.

The country's hydropower potential is estimated at 23,400 GWh. The Drina, Neretva and Trebisnjica rivers offer the greatest potential for development of HPPs. The country's hydro resources have the capacity to support 356 large and small HPPs, according to the Bosnian Ministry of Energy.

Bulgaria

In 2010 Bulgaria generated 5,762 GWh of renewable power, up some 17% year-on-year, which accounted for 14.6% of the country's gross power production, ENTSO-E data showed. Hydropower plants contributed 94.3% of the total.

The country's power grid operator NEK and the electricity distributors have received requests for connecting to the grid 112 wind farms with an installed capacity of 8,950 MW and of 33 solar parks with an installed capacity of 1,898 MW.

As of January 2010 a total of 12,000 MW of solar and wind capacities have received environmental approval by the Bulgarian authorities.

Croatia

A total of 25 HPPs operated in Croatia in 2010. All of the plants are managed by HEP Proizvodnja d.o.o., a subsidiary of the country's national electricity company Hrvatska Elektroprivreda d.d. The country's four major hydroelectric plants – Varazdin, Senj, Velebit and Zakucac are located along the Adriatic coastline and near the border with Slovenia.

The hydroelectricity production grew by 56.9% on the year, while wind power plants produced twofold more electricity than in November 2009.

HPPs and wind power plants generated a total of 773 GWh of electricity, or 64.4% of the total net generated electricity in the country in November 2010.

Macedonia

Macedonian power producer Elektrani na Makedonija (ELEM) announced that its seven HPPs generated 1,964 million kWh by mid-November 2010, or 69% above the plan for the whole year. The company exceeded its output plan mainly thanks to favourable hydrological conditions and good technical state of the plants, according to ELEM. The company's hydropower plant Globocica, on the river of Crn Drim in western Macedonia, was expected to have a recordhigh electricity output of 270 GWh in 2010, 48% up from a year earlier.

Globocica posted a record-high output of 252 GWh by November 17, 2010 which is 39% above the plan for the whole year. Globocica produced 182.1 GWh in 2009, 39% above plan.

ELEM generated 5,886 GWh of electricity in 2009, 5.0% above plan. Its hydro plants produced over 1,097 GWh of electricity in 2009, beating the plan by 37%.

Montenegro

In 2010 Montenegro's total installed electricity generation capacities stood at 868 MW, of which 658 MW belonged to HPPs. Almost two-thirds of Montenegro's electricity output is generated by two big hydro power stations, Perucica and Piva, and one-third is contributed by the country's sole thermal power plant TE Pljevlja. The country also has several small hydropower plants with a combined installed capacity of 8.92 MW and an output of some 21.4 GWh.

Montenegro imports over a third of its annual power consumption, which exceeds 4.0 billion kWh.

Romania

According to a recent report by Austria's Erste Bank, Romania's wind power potential is considered the highest in South-eastern Europe, but the country had only 14 MW of wind power installed at the end of 2009. However, this figure was expected to grow nearly forty-fold in 2010 alone to 553.1 MW and to reach 3,600 MW in 2015, according to forecasts from the Romanian Association for Wind Energy (RWEA) and Enel Green Energy.

In 2010 Romania's HPPs produced 20,174 GWh of electricity, up 29.8% year-on-year. The electricity produced by HPPs accounted for 35.9% of the total generated electricity in the country, compared to 29.2% in 2009.

Serbia

The combined installed capacity of Serbia's power plants stood at 8,359 MW in 2009.

The country's combined installed capacity includes 5,171 MW of coal-fired plants, 353 MW of gas-fired plants and 2,835 MW of HPPs, according to figures from the local power monopoly Elektroprivreda Srbije (EPS). The company produced 35,039 GWh of electricity in 2009, of which 25,028 GWh in thermal power plants and 10,011 GWh in HPPs.

Slovenia

In the period 2007-2009 the average share of HPPs in the total electricity generated in the country stood at 26%. The major source of hydroelectric power in the country is the Drava river, which has a technical potential to generate 2,896 GWh of electricity and 97.8% of this potential is being utilized. The second largest technical potential of 2,794 GWh has the Sava river with the utilized potential of 18%. The rest of the Slovenian rivers have a total potential of 3,455 GWh with about 22% of it being utilized.

DEMAND

SHARE IN % OF ELECTRICITY FROM RES IN TOTAL ELECTRICITY CONSUMPTION IN SOME SEE COUNTRIES

Country	2009	2008	2007
BiH	65.49	48.35	N/A
Bulgaria	N/A	9.60	9.07
Romania	32.28	32.23	31.24

Country	2009	2008	2007
Serbia	8.52	7.55	N/A
Slovenia	37.00	29.00	22.00

Source: Countries' statistical offices

ELECTRICITY CONSUMPTION IN SOME SEE COUNTRIES IN 2010 IN MWH

Month	BiH	Croatia	Kosovo*	Macedonia	Montenegro*	Romania	Slovenia
January	1,095,140	1,685,798	637,690	776,781	N/A	4,862,220	1,067,007
February	1,000,261	1,534,546	558,135	696,763	N/A	4,297,929	926,230
March	995,097	1,564,220	554,200	685,977	351,105	4,767,242	1,035,826
April	939,065	1,333,612	451,895	553,968	301,882	3,936,336	890,655
May	912,202	1,322,181	404,890	550,785	282,473	4,048,813	943,732
June	894,255	1,320,455	378,106	531,869	287,113	4,016,644	927,433
July	950,433	1,537,302	385,170	575,402	N/A	4,286,905	981,222
August	964,092	1,150,803	408,065	598,143	N/A	3,916,804	910,687
September	933,036	1,289,847	377,545	550,141	N/A	3,849,581	948,364
October	1,053,749	1,426,598	475,210	687,982	N/A	4,205,539	1,009,939
November	1,022,767	1,450,365	489,175	719,241	N/A	4,349,693	991,759
December	1,078,162	1,702,794	562,540	883,539	N/A	4,361,364	1,063,935

*Approximate figures

Source: SeeNews Electricity Newsletter

SHARE OF INDUSTRY SECTORS IN TOTAL ELECTRICITY CONSUMPTION (%)

Sector	BiH	Bulgaria	Macedonia	Serbia	Slovenia
Industry	32.05	31.70	25.01	26.57	43.48
Construction	1.05	1.03	N/A	0.67	N/A*
Transport	1.04	30.14	25.61	29.34	1.32
Agriculture	0.71	1.99	1.10	1.66	N/A
Households	47.97	35.56	32.13	30.18	27.49
Other	17.19	10.21	14.12	11.59	26.58

*included in Industry

Source: Countries' statistical offices

FEED-IN TARIFFS IN ALBANIA

Type of generation plant	No. of Decision	Validity Period	Approved Tariff
Existing HPP up to 10 MW	102/2010	Jan 1, 2011 - Dec 31, 2011	7.57 ALL/KWh
New HPP up to 15 MW	101/2010	Jan 1, 2011 - Dec 31, 2011	6.89 ALL/KWh

Source: Albania's Energy Regulatory Entity

AVERAGE FEED-IN TARIFFS IN BOSNIA AND HERZEGOVINA

RES Type	EUR/MWh
Hydropower	63
Windpower	77
Biomass	83
Solar	420

Source: State Electricity Regulatory Commission

CROATIA'S FEED-IN TARIFFS INTRODUCED IN 2007

Technology	(HRK/kWh)
Solar Energy:	
- up to 10 kW	3.40
- 10 kW to 30 kW	3.00
- more than 30 kW	2.10
Hydropower	0.69
Wind power	0.64
Biomass power:	
- Wood chips from forests, biomass from farms	1.20
- Residues from the wood processing industries	0.95
Geothermal power	1.26
Biogas energy	1.20
Liquid bio fuels	0.36
Landfill gases and water treatment plants	0.36
Other renewable sources (waves, tides, etc.)	0.60
Hydropower (up to 10 MW)	
- Hydro power up to 5,000 MWh/year	0.69
- Hydro power from 5,000 MWh to 15,000 MWh/year	0.55
- Hydro power more than 15,000 MWh/year	0.42
Wind power	0.65
Biomass:	
- Wood chips from forests, biomass from farms	1.04
- Residues from the wood processing industries	0.83
Geothermal power	1.26
Biogas	1.04
Liquid bio fuels	0.36
Landfill gases and water treatment plants	0.36
Other renewable sources (waves, tides, etc.)	0.50

Source: Croatian Energy Market Operator

CROATIAN TARIFFS FOR COMBINED HEAT AND POWER GENERATORS

Technology	High Tariff	Low Tariff
Micro CHP: up to 50 kW	0.61	0.32
Small CHP: 50 kW to 1 MW	0.51	0.26
Medium sized CHP: 1-35 MW	0.44	0.22
Large CHP: more than 35 MW	0.30	0.15

Source: Croatian Energy Market Operator

FEED-IN TARIFFS IN MACEDONIA

RES power plant type	Decision date	Power plant installed capacity	EUR/kWh
Photovoltaic	July 27, 2010	up to 50 kW	0.300
		51 kW - 1,000 kW	0.260
Biogas/Biomass	Feb 2, 2010	up to 500 kW	0.150
		501 kW - 2,000 kW	0.130

RES power plant type	Decision date	Power plant installed capacity	EUR/kWh
Small HPP	Feb 9, 2007	Annual production of electricity (MWh)	
		up to 1,020	0.120
		up to 2,040	0.080
		2,040 - 4,200	0.060
		4,200 - 8,400	0.050
		More than 8,400	0.045
Wind	May 16, 2007	All wind power plants	0.089

Source: Energy Regulatory Commission of Macedonia

FEED-IN TARIFFS IN SERBIA

RES power plant type	Installed capacity	EUR/kWh
HPP	up to 0.5 MW	0.097
	0.5 - 2.0 MW	0.103 - 0.001 per capacity installed
	2.0 - 10 MW	0.785
Wind	All	0.950
Solar	All	0.230

Source: Energy Agency of the Republic of Serbia

FEED-IN TARIFFS IN SEE EU MEMBER STATES AS OF APRIL 2010 (IN EUR/KWH)

Country	Windpower 'On-shore'	Wind power 'Off-shore'	Solar photovoltaic	Biomass	Hydro
Bulgaria	0.07 - 0.09	0.07 - 0.09	0.34 - 0.38	0.08 - 0.10	0.045
Slovenia	0.087 - 0.094	0.087 - 0.095	0.267 - 0.414	0.074 - 0.224	0.077 - 0.105

Source: Europe's Energy Portal

Romania uses green certificates system instead of feed-in tariffs. The green certificates are a tradable commodity proving that a quantity of electricity is generated using RES. In Romania the green certificates are traded on the Central-

ized Green Certificates Market (CGCM), run by the Romanian power market operator OPCOM. A total of 248,787 green certificates were traded in 2010 on the CGCM, up 75.6% on the year, OPCOM data showed.

INVESTMENTS

MAJOR RES PROJECTS IN SEE AS OF JANUARY 2011

Country/Location	Company	Capacity (MW)	Value (EUR mln)	Type	Operational From	Stage
ALBANIA						
Drin river	EVN AG (Austria), Verbund AG (Austria)	48	166	Hydro Plant	2012	Under construction
N/A	Ayen Enerji AS (Turkey), AS Energy Shpk (Albania)	87.7 (combined)	Not disclosed	Hydro Plant	N/A	Draft project
BOSNIA AND HERZEGOVINA						
Cehotina river	Reservoir Capital Corp (Canada)	17.75 (combined)	-	Hydro Plant		Granting of building permit
Podvezje plateau, southern BiH	Elektroprivreda BiH d.d.	46 (combined)	Not disclosed	Wind Farm	2011/12	Project funding
Zenica, central BiH	Elektroprivreda BiH d.d.	13.3	Not disclosed	Hydro Plant	N/A	Feasibility study
BULGARIA						
Yambol, eastern Bulgaria	Toshiba Corp, Tokyo Electric Power, Itochu Corp, Innovation Network Corp (all Japanese)	250	893	Solar Park	2011-2016	Draft project
Shumen, northeastern Bulgaria	Innovative Wind Concepts GmbH (Germany)	40	72.6	Wind Farm	2013	Draft project

Country/Location	Company	Capacity (MW)	Value (EUR mln)	Type	Operational From	Stage
Silistra, northeastern Bulgaria	AES Solar Energy (USA), Riverstone Holdings LLC (USA)	80	306	Solar Plant	-	Project approval
Golyantsi, northern Bulgaria	V.Power (USA)	80	Not disclosed	Wind Plant	H2 2012	Draft project
Plovdiv, southern Bulgaria	EVN AG (Austria)	N/A	50	Cogeneration Plant	Works starting in September 2010	Project initiation
Radomir, southwestern Bulgaria	Radomir Metal Industries AD (Bulgaria)	50	120	Solar Plant	Works starting in end-2010	Draft project
Varna, northeastern Bulgaria	Dalkia Varna EAD (Bulgaria)	Not disclosed	Not disclosed	Biomass Plant	2011-2012	Unit installation
Ihtiman, western Bulgaria	SunService EOOD (Bulgaria)	-	5.0	Solar Plant	-	Unit installation
Ravna Gora, northeastern Bulgaria	Interservice Uzunovi AD (Bulgaria)	5.0	12	Solar Plant	H1 2011	Under construction
Mihalkovo, southern Bulgaria	Alpine Bau GmbH (Austria)	80	379	Hydro Plant	end-2010	Project completion
Kardam, northeastern Bulgaria	Stream Invest Holding AG (Switzerland)	12.6	23	Wind Farm	December 2010	Launch
Iskar river	Novi Energii OOD (Bulgaria)	2.99 + 3.35	14	Small Hydro Plant	May and November 2011	Draft project
Samovodene/Zlataritsa, northern Bulgaria	NEOptions Inc. (USA), the Bulgarian Development Collaborative, SDN (South Korea)	45	150	Solar Plant	-	Under construction
Iskar river	VETS Svoge OOD (Bulgaria)	24 (combined)	115	Small Hydro Plant	2014	Under construction
CROATIA						
Bjelovar, northern Croatia	GEOn d.o.o. (Croatia)	4.71	28	Geothermal Plant	2012	Granting of building permit
Jasenovac, southern Croatia	RES Invest Holding GmbH (Austria)	23	29	Biomass Plant	2012	Project initiation
Dubrovnik, southern Croatia	Hrvatska Elektroprivreda d.d. (Croatia)	68	130-150	Hydro Plant	2016	Building permit granted
Adriatic coast	Amnis Energija d.o.o. (Croatia), Green Source (Austria)	7.0	22 (combined)	Solar Plant	2011/12	Draft project
MACEDONIA						
Crna Reka river	RWE AG (Germany)	550	700	Hydro Plant	-	Project Withdrawal
Debar, western Macedonia	European Bank for Reconstruction and Development (EBRD)	70	60	Hydro Plant	2016	Draft project
Struga, Ohrid lake	Proakva (Macedonia), Feroinvest DOO (Macedonia)	3.0 (combined)	7.3	Small Hydro Plant	December 2010	Launch
Vardar river	China Development Bank (CDB)	-	1,000	Hydro Plant	-	Draft project
eastern Macedonia	Samsung Heavy Industries (South Korea), Korea South-East Power Co. Ltd (South Korea), Inval SA (Spain)	100 (combined)	150	Wind Farm	N/A	Draft project
N/A	PCC DEG Renewables GmbH (Germany)	4.0	Not disclosed	Small Hydro Plant	H1 2011	Authorisation granted
MONTENEGRO						
Prekobrdje, northern Montenegro	Potencijal DOO (Montenegro), Gaudal (Norway)	Not disclosed	Not disclosed	Small Hydro Plant	Works starting 2011	Draft project
Mozura, close to the Adriatic coast	Celebic DOO (Montenegro), Fersa Energias Renovables SA (Spain)	46	65	Wind Plant	-	Project approval
Krnovo, central Montenegro	Ivicom Consulting GmbH (Austria), Mitsubishi Heavy Industries Ltd (Japan)	50	70-90	Wind Plant	-	Project approved
Kolasin, northern Montenegro	Kol Energy DOO (Montenegro)	0.62	1.2	Small Hydro Plant	-	Authorisation granted

Country/Location	Company	Capacity (MW)	Value (EUR mln)	Type	Operational From	Stage
Murinska river, Trepacka river	Elektrotehna-Radius Consortium (Montenegro)	10.7 (combined)	13.3 (combined)	Small Hydro Plant	-	Authorisation granted
ROMANIA						
Auseu and Borod, northwestern Romania	Alerion Clean Power SpA (Italy)	64.8	85	Wind Plant	-	Authorisation granted
Bicaz, northeastern Romania	SC Hidroelectrica SA (Romania), EBRD	210	110	Hydro Plant	-	Project funding
N/A	CEZ Group (the Czech Republic)	4x25	45	Small Hydro Plant	-	Draft project
Dobrogea, southeastern Romania	Enel SpA, Elcomex Eol SA (Romania)	272	400	Wind Plant	-	Draft project
Moldova, Dobrogea, Banat, Transilvania	PNE Wind AG (Germany)	366	622	Wind Plant	end-2011	Draft project
Muntenia, Moldova, Transilvania	InterAgro SA (Romania)	81 (combined)	72	Cogeneration Plant	-	Draft project
Turnu Magurele, on the Danube river	InterAgro SA (Romania)	21	20	Cogeneration Plant	Q1 2011	Draft project
Siret river	Hidroelectrica SA (Romania)	-	18	Wind Farm	2011	Draft project
Dobrogea, southeastern Romania	Iberdrola SA (Spain)	1,500 (combined)	2,500	Wind Park	2016-2017	Under construction
Vaslui, northeastern Romania	E.ON Regenerabile SRL (Romania)	100 (combined)	180-200	Wind Park	-	Under construction
southeastern Romania	Enel Green Power SpA (Italy)	34 (combined)	-	Wind Farm	December 2010	Launch
Fantanele, southeastern Romania	European Investment Bank (EIB), CEZ Group	347.5	Not disclosed	Wind Farm	N/A	Project funding
N/A	Iberdrola SA (Spain)	80	Not disclosed	Wind Farm	end-2011	Draft project
Tulcea, southeastern Romania	Enel Green Power SpA (Italy)	30	Not disclosed	Wind Farm	January 2011	Launch
SERBIA						
Boljevac, eastern Serbia	Bondcom Green Energy (Italy)	200	350	Wind Plant	2014	Draft project
Kraljevo, south central Serbia	JP EPS (Serbia), SECI Energia SpA (Italy)	103	285	Hydro Plant	-	Draft project
N/A	Serbia's Ministry of Mining and Energy	100	250	Solar Plant	-	Draft project
Djerdap, eastern Serbia	RWE AG (Germany)	2,400	6,000	Hydro Plant	2012-2013	Draft project
Zvornik, Drina river	JP EPS (Serbia)	96	90	Hydro Plant	2012	Capacity Upgrade
Drina river	JP EPS (Serbia), EPR RS (BiH)	300 (combined)	819	Hydro Plant	-	Draft project
Velika Biljanica, southern Serbia	Globus Auto DOO (Serbia), Municipality of Leskovac	1.0	3.5	Solar Plant	-	Project initiation
Kikinda, northern Serbia	China Huadian Corporation (China)	30	75-105	Solar Plant	-	Draft project

Source: SeeNews Electricity Newsletter

FORECASTED INVESTMENTS IN RES IN ROMANIA FOR THE PERIOD 2011-2015

RES Type	Capacity	EUR bln
Solar - thermal	16 ktoe	0.093
Solar - electric	9.5 MW	0.048
Wind	280 MW	0.280
Hydro (less than 10 MW)	120 MW	0.120
Biomass - thermal	3488 ktoe	0.200
Biomass - electric	379.5 MW	0.400
Geothermal	23.9 koe	0.012
Total	789 MW	1.153

ktoe - kilotonne of oil equivalent

Source: National Renewable Energy Action Plan

FORECASTS

The share of RES in the energy balances of the SEE countries will continue to rise in the period 2011-2020 due to:

- Considerable investments in hydro, solar and wind power plants;
- EU's Renewables Directive (2009/28/EC), which envisages that the share of energy from renewable sources in EU will reach 20% by 2020 and a share of renewable energy specifically in the transport sector will be 10%;
- The RES provide the SEE countries an opportunity to reduce their energy dependence from Russia.
- Many HPPs in SEE are not operating and need rehabilitation, while the countries' water resources can support additional hydro capacities.

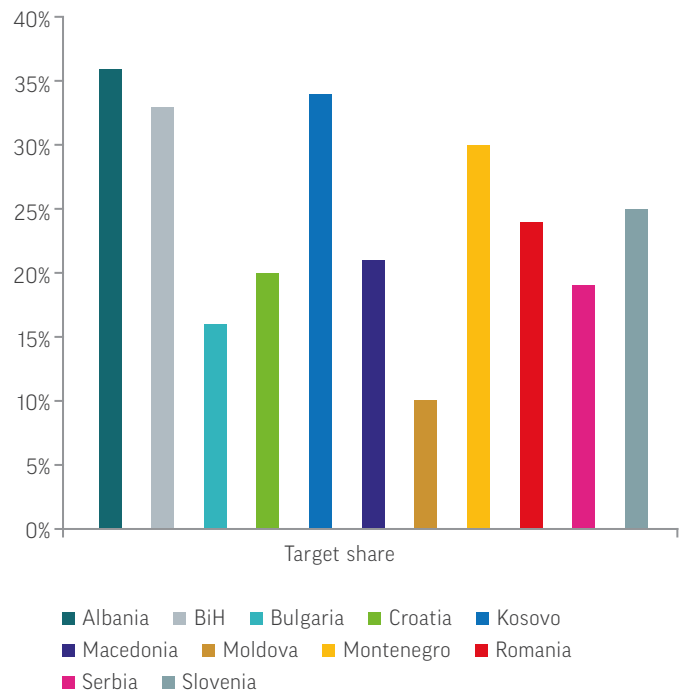
Despite the attractiveness of the region for investments in renewable energy power plants, the development of such projects faces some difficulties. In February 2011 the Bulgarian Government announced it was preparing a law to cap the amount of renewable energy added to the national grid each year. The law aims to cool down a surge in renewable projects which threatens to overwhelm the national electricity grid. The Government incentives to support electricity generation from RES have led to a jump in projects totalling more than 12,000 MW, which is well above the country's grid capacity. According to Bulgaria's Ministry of Energy, the country can add up to 2,000 MW of new solar, wind and hydro power capacities by 2020 without putting at risk the security of power supply and keeping prices at affordable levels.

In Romania, the green certificates system is hampering investment into solar power plants, according to the renewable energy competence centre at Romania's UniCredit Leasing. The spot market for green certificates is not a bankable basis for non-recourse deals because of the volatility of the prices, according to the company.

The lack of long-term guarantees for solar prices in Romania will also reduce investments in solar power capacities, UniCredit Leasing announced. The country's energy regulator ANRE has set the prices for green certificates at between EUR 27 and EUR 57 per green certificate. However, even the highest price of EUR 57 is insufficient to support the construction of new photovoltaic plants that could compete with the fossil fuel powered plants, according to UniCredit Leasing.

Slow administrative procedures and ageing electricity infrastructure are among the other barriers that could impede the development of renewable projects in the SEE region.

RES SHARE IN GROSS FINAL ENERGY CONSUMPTION IN 2020 IN SEE



In 2010 the Government of Bosnia's Serb Republic approved an energy strategy for the Republic that envisages considerable investments in renewable resources.

In 2009 The Federation of Bosnia and Herzegovina approved a strategic plan for its energy sector with focus on RES.

The planned investments in renewable energy development range from EUR 153.39 mln under a slow GDP growth scenario to EUR 869.2 mln under fast GDP growth, according to the strategy, which runs through 2030.

The Government of Bosnia's Serb Republic expects that electricity from RES would account for between 2.5% and 9.7% of the total generated electricity in the Republic in 2030. Small HPPs and wind power facilities are expected to contribute 193 GWh to 517 GWh of electricity. Under the most optimistic forecast, small HPPs, wind, biomass and solar power plants will generate 1.09 TWh of renewable power by 2030.

In January 2010 the Energy Ministry of Bosnia's Muslim-Croat Federation (The Federation of Bosnia and Herzegovina) announced its plans to launch energy deals worth EUR 5.11 bln with strategic partners by 2018. The plan includes investment in a series of HPPs, six wind parks and overhauls and construction of new coal-fired plant units aimed to meet future demand and European Union environmental standards.

The strategy projects the installation of a total of 568 MW of wind power capacity in the country from 2010 to 2015.

In January 2011 Bulgaria's Ministry of Economy, Energy and Tourism presented for public discussion the final draft of Bulgaria's Energy Strategy to 2020.

According to the Bulgarian Ministry of Finance, the country's energy sector will need to absorb EUR 15 bln of investment up in order to meet its clean energy targets and upgrade existing sources.

The strategy outlines five priorities: energy security, increased share of the renewable energy sources in the country's energy mix, improvement of energy efficiency, creation

of an independently regulated and competitive energy market and protection of consumers' interests.

In a policy-driven scenario presented in the draft Energy Strategy, the country is predicted to outstrip the EU target and increase the share of renewable energy in its gross energy consumption to 18.8% at the end of the decade.

RES CAPACITIES AND GENERATION IN ELECTRICITY SECTOR IN BULGARIA

Year		Hydroenergy	Solar PV	Wind energy	Biomass/Biogas	Total of which:	Cogeneration
2011	MW	2,190	16	370	10	2,586	10
	GWh	3,340	20	629	56	4,044	56
2012	MW	2,220	20	451	22	2,739	22
	GWh	3,441	46	734	122	4,355	122
2013	MW	2,240	83	631	36	2,990	36
	GWh	3,472	104	1,009	199	4,784	199
2014	MW	2,260	181	820	102	3,362	102
	GWh	3,503	260	1,340	559	5,662	559
2015	MW	2,280	220	984	109	3,593	92
	GWh	3,534	263	1,672	656	6,126	733
2016	MW	2,300	233	1,033	209	3,775	102
	GWh	3,565	292	1,756	1,150	6,762	814
2017	MW	2,450	248	1,085	146	3,928	109
	GWh	3,798	372	1,952	800	6,922	872
2018	MW	2,480	265	1,139	144	4,028	115
	GWh	3,844	397	2,050	793	7,084	919
2019	MW	2,515	283	1,196	149	4,142	128
	GWh	3,898	424	2,152	817	7,292	1,023
2020	MW	2,549	303	1,256	158	4,266	142
	GWh	3,951	454	2,260	871	7,537	1,140

Source: National Renewable Energy Action Plan (NREAP)

RES IN HEATING AND COOLING SECTOR IN BULGARIA (KTOE)

RES type	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Geothermal energy	2.0	2.4	2.4	3.0	3.0	6.0	6.0	7.0	8.0	9.0
Solar energy	6.4	6.7	7.5	8.5	10.9	14.3	16.8	18.3	19	21
Biomass	756	790	823	888	929	963	980	1,003	1,038	1,073
Total	765	799	833	900	943	983	1,003	1,028	1,065	1,103

Source: NREAP

RES IN TRANSPORT SECTOR IN BULGARIA (KTOE)

RES type	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bioethanol	0.0	2.0	5.0	12	15	15	25	25	35	42
Biodiesel	51	65	76	88	100	112	124	115	121	130
Renewable electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	4.0	5.0
Total	51	67	81	100	115	127	150	167	183	205

Source: NREAP

In 2009 Croatia's Ministry of Economy approved an energy strategy, which gives RES a leading role in the development of the country's energy sector.

The strategy includes revamping existing legislation to allow for the installation of 140 MW of biomass plants fueled with lumber residue by 2020, which would be expanded to 420 MW by 2030. The strategy also forecasts the installation of

1.2 GW of wind capacity by 2020 and 2.0 GW by 2030.

The strategy consists of three possible scenarios and projects that the country will produce 20% of electricity from renewable sources by 2020.

Under the strategy, small HPP's installed capacity is expected to reach 100 MW by 2020, while solar photovoltaics (PV)

should generate 45 MW and geothermal 20 MW. Three geothermal plants should be launched in the period 2010-2020 to meet the target. Croatia's solar PV capacity per capita is targeted at 11.71 W by 2020 and 45 W by 2030.

Macedonia plans 21% of its national power consumption is covered by RES by 2020, according to new national strategy for renewable energy generation approved by the Government in 2010.

The required investment in the renewable energy sector, into small and large hydro, solar, biomass and wind plants, amounts to EUR 1.6 bln, according to estimations of the country's Ministry of Economy.

Of the total, EUR 790 mln should be invested in the construction of large hydroelectric plants and EUR 70 mln in overhauling existing large HPP. Most of these investments will be entrusted to national power generator ELEM.

The remaining EUR 660 mln are earmarked for investments in other renewables, including EUR 200 mln for small HPP with a total installed capacity of 100 MW.

Geothermal power plants are expected to absorb EUR 60 mln, while on wind parks will be spent EUR 230 mln. The wind power plants will have a combined installed capacity of 150 MW and should be built by 2020.

Macedonia also plans to invest more than EUR 140 mln in solar PV capacities and EUR 30 mln in biomass and biogas plants. Private investors are expected to contribute EUR 80 mln of the total for the development of these projects.

SHARE OF RENEWABLE ENERGY IN MACEDONIA'S FINAL ENERGY CONSUMPTION UNDER VARIOUS SCENARIOS BY 2020 IN GWH

Electricity from RES	Scenarios			
	S1	S2	S3	S4
HPPs	2,539	3,039	2,679	3,482
- Large HPPs	2,300	2,710	2,350	3,000
- Small HPPs	300	360	350	400
Wind plants	180	270	270	360
Solar PV	14	14	14	42
Biomass	25	25	25	50
Biogas	20	20	20	30
Heat from RES	3,100	3,200	3,240	3,350
Biomass	2,640	2,740	2,740	2,740
Solar energy	60	60	60	90
Geothermal energy	400	400	440	520
Biofuels	560	655	560	655
Final Energy Consumption	32,873	32,873	30,825	30,825
Share of renewables	18.9%	21.0%	21.0%	24.3%

S1 - Low renewables scenario; S2 - Average scenario; S3 - Average scenario with energy efficiency; S4 - High renewables scenario.

Source: Macedonia's Ministry of Economy

Romania's National Renewable Energy Action Plan (NREAP), approved in 2010 envisages renewable energy production of more than 7.0 million tonnes of oil equivalent (mtoe) by 2020, enough to cover 24% of the country's total domestic consumption.

ELECTRICITY GENERATION FORECAST IN ROMANIA (TWH)

	2011	2012	2015	2020
Total electricity production	72.2	74.5	89.5	100
Production of hydroelectric and other renewables	22.3	23	26	32.5
RES share of total domestic consumption	32.90%	33.10%	34.90%	38.20%
Wind plants	180	270	270	360

Source: NREAP

SHARE OF ENERGY PRODUCED FROM RENEWABLE SOURCES IN ROMANIA IN %

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Heating and cooling	17.51	18.15	17.63	17.00	17.07	17.27	18.07	18.86	20.44	22.05
Electricity	30.83	33.84	36.66	40.04	41.86	42.84	42.57	42.63	42.7	42.62
Transport	6.37	6.90	7.32	7.72	8.11	8.43	8.80	9.23	9.69	10.00
Total energy	18.00	19.04	19.35	19.66	20.13	20.59	21.21	21.83	22.92	24.00

Source: NREAP

RES CAPACITIES AND GENERATION IN ELECTRICITY SECTOR IN SLOVENIA

Year		Hydro energy	- less than 1.0 MW	- from 1.0 MW to 10 MW	- more than 10 MW	Solar PV	Wind energy	Biomass/Biogas	Total of which	Cogeneration
2011	MW	1,071	118	37	916	17	2.0	59	1,149	59
	GWh	4,198	262	192	3,744	17	4.0	344	4,563	344
2012	MW	1,071	118	37	916	22	2.0	67	1,162	67
	GWh	4,198	262	192	3,744	22	4.0	415	4,639	415
2013	MW	1,136	120	37	979	27	8.0	74	1,245	74
	GWh	4,413	268	194	3,952	27	14	457	4,912	457
2014	MW	1,140	120	41	979	32	8.0	78	1,258	78
	GWh	4,431	269	210	3,952	32	14	482	4,959	482
2015	MW	1,193	120	52	1,021	37	60	83	1,373	83
	GWh	4,559	270	247	4,042	37	109	623	5,328	623

Year		Hydro energy	- less than 1.0 MW	- from 1.0 MW to 10 MW	- more than 10 MW	Solar PV	Wind energy	Biomass/Biogas	Total of which	Cogeneration
2016	MW	1,227	120	52	1,055	49	60	85	1,420	85
	GWh	4,662	270	247	4,145	49	109	637	5,456	637
2017	MW	1,232	120	57	1,055	63	60	93	1,448	93
	GWh	4,685	270	270	4,145	63	109	659	5,516	659
2018	MW	1,318	120	57	1,141	82	60	95	1,555	95
	GWh	5,003	270	270	4,463	82	109	672	5,865	672
2019	MW	1,318	120	57	1,141	107	106	95	1,626	95
	GWh	5,003	270	270	4,463	107	191	675	5,975	675
2020	MW	1,354	120	57	1,176	139	106	96	1,693	96
	GWh	5,121	270	270	4,581	139	191	676	6,126	676

Source: NREAP

RES IN HEATING AND COOLING SECTOR IN SLOVENIA (KTOE)

RES Type	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Geothermal energy	18	18	19	19	19	19	20	20	20	20
Solar energy	6	7	8	9	10	12	15	17	19	21
Biomass	431	447	463	479	495	501	507	513	519	526
Renewable energy from heat pumps	14	20	26	31	37	41	46	50	54	58
Total	469	492	515	538	561	574	587	600	612	625

Source: NREAP

RES IN TRANSPORT SECTOR IN SLOVENIA (KTOE)

RES Type	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bioethanol	4.1	4.6	5.3	6.4	7.6	9.2	11.1	13.2	15.7	18.5
Biodiesel	38.8	43.3	50.2	59.6	71.6	86.3	103.8	124.2	147.4	173.7
Renewable electricity	6.0	6.2	6.5	6.7	7.0	7.5	8.2	9.0	9.7	10.5
Total	48.9	54.1	62.1	72.7	86.2	103.1	123.1	146.3	172.8	202.7

Source: NREAP

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2nd Annual Renewable Energy Finance & Infrastructure Summit (REFIS)	24-25 February 2011	Vienna, Austria	Jacob Fleming
5th Renewable Energy Finance Forum - Central and Eastern Europe	01-02 March 2011	InterContinental Warszawa, Warsaw, Poland	Euromoney
Global Energy Advisory Energy Leaders Forum	01-02 March 2011	London, the UK	Global Energy Advisory Energy Leaders Forum
7th Southeast European Congress on Energy Efficiency and Renewable Energy	13-15 April 2011	Inter Expo Center, Sofia, Bulgaria	Via Expo
19th European Biomass Conference and Exhibition	06-10 June 2011	International Congress Center Berlin, Berlin, Germany	ETA-Florence

Source: SeeNews Electricity Newsletter

Newspapers, Trade Journals & On-line Information Sources

On-line Information Sources

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