

ABSTRACT OUT OF MORE THAN 100 AVAILABLE PROJECTS

BIOMASS and BIOGAS PROJECT

*Power plant and heating plant on biogas
 District heating Cogeneration*

- Federation of BiH The quotas of electricity produced from biomass power plants that will be stimulated in the period 2016-2020 are determined by Entity and National Action Plans in amounts of 4.6 MW .
- Bosnia and Herzegovina is one of the richest countries in Europe, according to the coverage and forests diversity in relation to the total area .(Forest covers 53% of the country territory or 2,7 million ha)
 - Annual wood waste is estimated at 1.7 million m3



1	Power plant and heating plant on biogas	Electricity 1MW	Heat 1MW	Investment 3,8 Mio EUR
2	Power plant and heating plant on biogas	Capacity 0,037 MW	***	Investment 220.000 EUR
3	Power plant and heating plant on biogas	Capacity 0,150 MW	***	Investment 2 Mio EUR
4	District heating Cogeneration Plant	Capacity 15 MW	***	Investment 10 Mio EUR
5	District heating Cogeneration Plant	Capacity 15 MW	Electricity 1MW and Heat 4.1 MW	Investment: 7,7 Mio EUR
6	District heating Cogeneration Plant Electricity	Capacity 15 MW	1,25 MW and Heat 6 MW	Investment: 9 Mio EUR
7	District heating Cogeneration Plant Capacity	Capacity 15 MW	Electricity 1 MW and Heat 5 MW	Investment: 8 Mio EUR

According to the National Statistical Office in BiH exists 473 340 livestock units.

- Potential biogas production on a daily basis from cattle production is about 312 900 m3 in the RS and 315 906 m3 in the Federation of BiH, which means that in BiH daily production can be about 628 806 m3 of Biogas.
- As a developing country BiH will be in a position to use the CDM, with adequate strategic approach to investing in the right projects with the ultimate result in the reduction of greenhouse gas emissions. Based on these data come to be a daily production about 1.5 GWh of electric and about 2 GWh of thermal energy at the level of BiH. Or RS this quantity would amount to 720.9 MW of electricity and about 1 GW of thermal energy.

*** DETAILED INFORMATION WILL BE AVAILBLE AT RENEXPO@ BiH, Sarjevo

Large Hydro Power BIH PROJECT

According to the plan, Bosnia and Herzegovina should construct small, medium and large hydropower plants with 694 MW of installed capacity. Therefore, in 2020, hydropower plants would be generating 7699 GWh of electric power per year.



Why invest in Bosnia and Herzegovina Energy sector?

Energy sector is one of the most powerful in BiH, with huge potentials and opportunities for further development and investment

- Natural resources and attractive investment location
- Surpluses of produced electricity
- Electricity production exceeds local market needs
- Electricity export of ~6000 GWh ranked BiH at 1st place in the region
- Favourable Feed-in-tariffs
- Favourable & Safe Environment for investment
- Competitively priced & qualified human capital
- The constant increase of energy demands in the region (World Bank research)

1	Type: Run-of-river, plant inside dam	Capacity: 13 MW / 68 GWh	Investment: 35 Mio EUR
2	Type: Run-of-river, plant inside dam	Capacity: 60 MW / 247 GWh	Investment: 138 Mio EUR
3	Type: Run-of-river, plant inside dam	Capacity: 12 MW / 57 GWh	Investment: 33 Mio EUR
4	Type: Run-of-river	Capacity: 160 MW / 270.6 GWh	Investment: 120 Mio EUR
5	Type: Run-of-river	Capacity: 60 MW / 247 GWh	Investment: 100 Mio EUR
6	Type: Run-of-river	Capacity: 33 MW / 130 GWh	Investment: 50 Mio EUR

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GLANCE INTO THE PROJECTS FOR INVESTOR MEETINGS

Small Hydro Power BIH PROJECT

- B & H has significant hydro energy potential; estimation on 6000 MW of power and 21000 GWh of production
- SHPP have potential of about 1000 MW and 4000 GWh
- First water measurement stations in operation in 1878 (after annexing by A-H monarchy)
- Until today about 60 SHPP with 100 MW and 400 GWh in operation



1	Type: Run-of derivation-pressure plants	Capacity: 26 MW / 103 GWh	Investment: 50 Mio EUR
2	Type: Run-of-river	Capacity: 3.74 MW /12.22 GWh	Investment: 9,4 Mio EUR
3	Type: Derivation-Run-of-river	Capacity: 3.25 MW / 12.00 GWh	Investment: 8,4 Mio EUR
4	Type: Derivation-Run-of-river	Capacity: 4.85 MW/ 18.40 GWh	Investment: 13,3 Mio EUR
5	Type: Derivation-Run-of-river	Capacity: 4.99 MW/ 21.81 GWh	Investment: 13,7 Mio EUR
6	Type: Derivation-Run-of-river	Capacity: 2,95 MW/ 12,75 GWh	Investment: 7,9 Mio EUR
7	Type: Run-of-river	Capacity: 5,00 MW/ 12,10 GWh	Investment: 12,3 Mio EUR
8	Type: Run-of-river	Capacity: 5,00 MW/ 12,10 GWh	Investment: 12,3 Mio EUR
9	Type: Run-of-river	Capacity: 2,09 MW/ 5,7 GWh	Investment: 4,8 Mio EUR

Small hydropower plants (SHPP) - Private Companies seeking for a strategic partner BiH

Power(Mw)	Production(Gwh)	Investment Million €	Project Status
5,6	29,2	15,14	Concession Agreement signed Environmental permit obtained
4,56	19	9,3	Concession Agreement signed Environmental permit obtained
1,9	6,92	3,8	Concession Agreement signed
0,418	1,89	0,75	Ready for construction
2.47	12,1	4	Obtaining urban permits in progress
0,619	2,98	1,5	Obtaining urban permits in progress
9,99	53,3	17	Concession Agreement signed
0,9	4,6	2	Concession Agreement signed
0,498	1,8	0,82	Concession Agreement signed.Preliminary design& Environmental impact assessments - made.
0,98	5,844	3,2	Concession Agreement signed, Urban permit obtained
0,6	2,4	2,85	Concession agreement signed & Feasibility study done
0,92	4,43	3,9	Concessions agreement signed, Feasibility and Environmental studies finished



RENEXPO[®] BIH

24th - 25th October 2018
Hotel Hills, Sarajevo

GLANCE INTO THE PROJECTS FOR INVESTOR MEETINGS

WIND Power BIH PROJECT

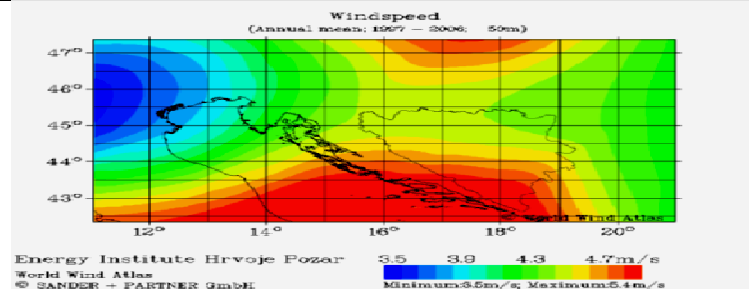
Power generation using **wind energy** has a significant role in the overall production of electric power from RES in Bosnia and Herzegovina.
The planned trajectory foresees construction of wind farms for power generation in the planned period 2016 -2020 with installed capacity of 330 MW, which would ensure annual production of electric power in amount of 775 GWh.



1	Wind PP Capacity 55MW		Electricity Production 150 GWh	Ready for implementation	Investment: 77 Mio Euro
2	Wind PP Capacity 48MW		Electricity Production 120 GWh	Ready for implementation	Investment: 72 Mio Euro
3	Wind PP Capacity 48MW		Electricity Production 126 GWh	Ready for implementation	Investment: 65 Mio Euro
4	Wind PP Capacity 48MW		Electricity Production 126 GWh	Ready for implementation	Investment: 65 Mio Euro

Wind Power BiH: Private Companies seeking for strategic partner for:

1	Wind PP Capacity 130+46MW		- Electricity Production 500 GWh	Construction Permit	Investment: 280 Mio Euro
2	Wind PP Capacity 54MW		Electricity Production 150 GWh	Ready for implementation	Investment: 83 Mio Euro
3	Wind PP Capacity 42MW		Electricity Production 120 GWh	Preliminary design & Urban permit	Investment: 66 Mio Euro
4	Wind PP Capacity 42MW		Electricity Production 120 GWh	Preliminary design & Urban permit	Investment: 66 Mio Euro
5	Wind PP Capacity 51MW		Electricity Production 115 GWh	Building Permit Energy Consent	Investment: 77 Mio Euro



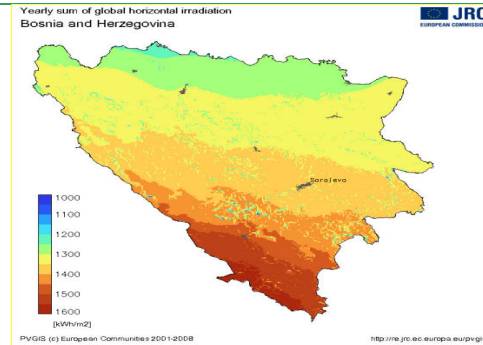
The world wind atlas and results of last 15 years wind speed measurement in Herzegovina region shown that the southern part of BiH is the most perspective for wind power plant development.

The estimated wind power potential at 18 selected locations is 1030-1180 MW with electricity production of 2.4 TWh/year.

Average utilization factor of 30% represents the top level of productivity, even in European terms.

Potential of BiH PV Power Plants

BiH resources of solar radiation energy is above the European average with very favorable seasonal schedule, and possibility for its effective and long-term use. Solar irradiation vary from 1240 kWh/m² in the north to 1,600 kWh/m² in the south with 270 sunny days a year
Potential locations are identified in the region of Herzegovina and Western Bosnia, with around 10 500 ha of available surfaces.
Potential installed capacity for PV PP is 4010 MW that is 10% more than the total installed capacity in the existing power plants in Bosnia and Herzegovina.
Capacity of transmission network for integration of PV power plant in 2020, amounts 565MW.



Small solar power plants (SSPP) - Private Companies seeking for a strategic partner:

1	SOLAR PP CAPACITY - 1,8 MW	ELECTRICITY PRODUCTION (MWh) 12X250
2	SOLAR PP CAPACITY - 1,8 MW	ELECTRICITY PRODUCTION (MWh) 12X250
3	SOLAR PP CAPACITY - 5+5MW	ELECTRICITY PRODUCTION (MWh) 17000
4	SOLAR PP CAPACITY - 2 MW	ELECTRICITY PRODUCTION (MWh) 3300
5	SOLAR PP CAPACITY - 5MW	ELECTRICITY PRODUCTION (MWh) 7000
6	SOLAR PP CAPACITY - 1,5MW	ELECTRICITY PRODUCTION (MWh) 2500
7	SOLAR PP CAPACITY - 0,240MW	ELECTRICITY PRODUCTION (MWh) 300
8	SOLAR PP CAPACITY - 1MW	ELECTRICITY PRODUCTION (MWh) 1325
9	SOLAR PP CAPACITY - 4,976 MW	ELECTRICITY PRODUCTION (MWh) 7130
10	SOLAR PP CAPACITY - 0,33 MW	ELECTRICITY PRODUCTION (MWh) 550

PV Power Plants Incentives System
BiH Entities and National Action Plans determined 20 MW as total quotas of electricity produced in PV power plants that will be stimulated in the period 2014-2020 of which
12 MW for Federation BiH
8 MW for Republic of Srpska .



WATER SUPPLY, WASTEWATER MANAGEMENT AND WASTE MANAGEMENT PROJECT



1	WATER SUPPLY AND WASTEWATER MANAGEMENT SYSTEMS CONSTRUCTION BiH	Water well hydro geological research completed. Results pending.	General Wastewater Treatment Plan completed. project would be prioritized as development/environment protection	Investment: 43.000.000 EUR
2	Waste Management Regional waste management centre SRB	PPP	quantity of the submitted municipal solid waste annually 82.742 t	Investment: between 10.000000 and 100.000000 EUR
3	PLANT FOR SELECTIVE SOLID WASTE COLLECTION BiH Regional sanitary landfill	Technical – technological solutions for selective solid waste collection plant.	Purchasing of work machines	Investment: 1.800.000 KM - (approx. 920 325.38 EUR)