

The Operator's headquarters are in Mostar, and its activities and operations are regulated and supervised by FMERI and FERC.

Incentivized production from Renewable Generations and Efficient Cogeneration: The investor who is constructing a renewable generation plant or an efficient cogeneration facility and aims to obtain an incentive for this kind of electricity production in FBiH, needs to take a few additional steps in the permitting procedure to acquire the Status of Privileged Producer.

Such status is the final document (certificate) issued by the Operator that ensures the right to incentivized production to be exercised by the investor, or more specifically the investor's right to sell the total amount of produced electricity at the guaranteed price (currently valid feed-in tariff) in the defined period of time. However, before the investor reaches this final stage, it needs to acquire different statuses during the preceding process steps. Parallel to acquiring the Status of Privileged Producer, the investor also needs to register the project in the Register of Projects.

The Steps for acquiring incentives for renewable generation and efficient cogeneration as well as the sequences (stages) of the project registration in relation to the issuance of the key permits in the permitting procedure in FBiH are illustrated by Figure 8. Each process step is further explained in the text below:



Figure 8: FBiH- Steps for Acquiring Incentives and Registration Stages for RES



Steps for Acquiring Incentives:

Acquiring Potential Privileged Producer Status

After the issuance of an Energy Permit, the investor can apply for Potential Privileged Producer Status, which is issued by the Operator. The Status of Potential Privileged Producer and/or a Privileged Producer can be acquired only if the requested installed capacity of renewable generation falls within the allocated (prescribed) quota available for that specific type of power plant. The prescribed quota is the maximum level of installed capacity (power) of privileged renewable producers whose production is incentivized and is determined for each primary source of energy by the Action Plan for Renewable Energy Sources of the Federation BiH (the Action Plan).

The Law on RES requires that prescribed quotas be assigned in the order of the project's entry into the Registry of Projects. Acquiring the Status of Potential Privileged Producer is a precondition for a Pre-

contract on the Obligatory Purchase of Electricity. The Potential Privileged Producer, as defined by the Law on RES, means an investor who acquired that status based on the decision of the Operator and has the right to conclude a Pre-contract on Obligated Purchase of Electricity.

In its application, the investor will provide data on location of the facility, installed power, technical characteristics, source of primary energy for the production of electricity and the time-frame for the construction of the facility and connection to the grid. The Operator is obliged to decide on the application within 30 days from the date of its submission.

• Pre-Contract on Obligatory Purchase of Electricity

If the Operator approves the status of potential privileged producer for the investor, it signs a Precontract on the Obligatory Purchase of Electricity with the investor for purchasing produced electricity at the currently valid feed-in-tariffs.

The Pre-contract is a guarantee that the investor has the right to acquire the status of privileged producer, if a generation plant is built on time and in accordance with the relevant regulations. It contains information on the guaranteed price (feed-intariffs), duration of the pre-contract, maximum allowed time for the construction of the facility, technical data on the connection to the grid, and planned production of electricity. If the investor doesn't finish the construction of the facility and connection to the grid within the time specified in the Pre-contract, the potential privileged status is revoked and the Pre-Contract is terminated.



The Pre-contract is the key document that banks require to issue a loan for power plant construction and therefore highly important step for the investors.

• QUALIFIED PRODUCER STATUS

"Qualified Producer" is the status that must be obtained prior to the submission of the request for acquiring a Status of Privileged Producer. Namely, the Action Plan comprises two tables - Table 10. a, and Table 10. b. Table 10.b prescribes quotas for the total RES production envisioned for FBiH by 2020 (44% of total electricity production), which guarantees the obligatory purchase at currently valid Feed-in tariffs. However, Table 10.a prescribes quotas of RES production from all renewable sources. Those quotas also provide an incentive for RES generation, apart from large hydro power plant production exceeding 10 MW of installed capacity, but at a lower price than the currently valid Feed-in tariffs.

The Qualified Producer Status verifies that the producer generates electricity using waste materials or RES in an economically adequate manner, including an environmentally safe combined cycle of generation of thermal and electric power. This status is granted by Decision of FERC. In order to obtain qualified producer status, an investor must first acquire a license for generation, which is also issued by

FERC. Qualified Producer Status expires together with the license for generation. An investor has to enclose the Water Permit, the Environmental Permit and the Use Permit with its Qualified Producer Status application.

The benefits of the acquired Status of Qualified Producer are as follows:

1) Supply advantages – preference of dispatching electricity to the grid and advantage for the facilities of installed capacities less than 150 kW that can dispatch electricity without reporting their daily schedule to the Operator;

2) Right to guarantee of origin of electricity – an administrative act issued by the Operator, which proves that quantities specified in the act are produced in facilities that use RES and Cogeneration;

3) Obligatory Purchase of electricity at the reference price – a qualified producer that has not obtained the status of privileged producer or whose the status of privileged producer has expired is entitled to the obligatory purchase of electricity at the reference price, provided that its production is within the quotas assigned by the Table 10.a of the Action Plan.

The reference price is determined by the methodology defined by the Regulation on Methodology for Determination of the Reference Price of Electricity (the Regulation on Reference Price), and adopted by FERC.



• PRIVILEGED PRODUCER STATUS

After the status of Qualified Producer has been granted by FERC, an investor can submit an application for Privileged Producer Status to the Operator. No producer can get the Status of the Privileged Producer unless the status of the Qualified Producer is previously obtained from FERC.

The Status of Privileged Electricity Producer can be granted by the Operator to the investor that produces energy from the following types of generation plants:

- a) Hydro power plants with installed capacity up to 10MW
- b) Wind power plants
- c) Solar power plants with installed capacity up to and including 1MW
- d) Geothermal power plants with installed capacity up to and including 10MW
- e) Biomass power plants with installed capacity up to and including 10MW
- f) Biogas power plants with installed capacity up to and including 1MW
- g) Waste power plants with installed capacity up to and including 5MW
- h) Cogeneration power plants with installed capacity up to and including 5MW

After the approval of the Status of Privileged Producer, the Operator signs a Contract on the Obligatory Purchase of Electricity with the investor at the currently valid feed-in-tariff (guaranteed purchase price). In addition to the same supply advantages as provided to the Qualified Producer Status, the Privileged Producer Status grants an investor the right to sell the total amount of produced electricity at the guaranteed price (currently valid feed-in tariff) in the specified period of time.

The Guaranteed Obligatory Purchase Price (Feed-in-tariff) is the price paid to the Privileged Producer of electricity from RES during the contracted period. This price is determined by the methodology defined by the FERC's Regulation on Methodology for Determination of Guaranteed Obligatory Purchase Price of Electricity from Plants Using Renewable Energy Sources and Efficient Cogeneration.

The Guaranteed Obligatory Purchase Price or Feed-in-tariff equals the reference price multiplied by a tariff coefficient. A tariff coefficient is assigned to each type of RES plant and adjusted once every 18 months.

• Obligatory Purchase Contract

Based on the Obligatory Purchase Contract, a privileged producer acquires the right to sell electricity at guaranteed prices (currently valid Feed-in-tariff) during a period of 12 years. This Contract specifies a Guaranteed Obligatory Purchase Price, the duration of contract, technical aspects of the facility and data on the planned generation of electricity.



The Register of Projects: The FBiH Law on RES stipulates that all projects using energy from RES and Efficient Cogeneration must be registered in the Register of Projects (Register). The procedure of maintaining and updating the Register is defined by the Instructions on Managing and Updating the Register of RES Projects (the Instructions).

The Register is maintained by the Operator for the following project phases:

1. Projects in the testing phase Registration for the projects in the testing phase is mandatory when an investor is testing renewable energy potential at a specific location. If the testing of potential is not conducted, this registration is not required.

2. Projects under construction With the application for registration of projects in the construction stage, the investor must submit a valid Urban permit, Energy Permit and Construction Permit.

3. Built projects With the application for registration of built projects, the investor must submit the Use permit.

4. Abandoned projects must also be recorded in the Register; and with the application, the investor must submit a written decision on abandonment of the project.

For the each registration phase, the Operator issues a Decision on Entry in the Register, which contains the duration of the registration. After the project enters the next phase in the Register, the previous entry is deleted, so the project can only be registered in one phase at the time. Registration of Projects, at all stages, is a legal obligation for RES projects, including hydro, wind, biomass, solar and other power plants projects. The Register is a public document, available on the Operators website.

Step 4 - Securing Land, or the Right to Use Land: Before the construction of a generation facility begins, the investor must resolve all legal and property issues at the construction site. This means that the investor must either obtain the ownership of the land or acquire the right to use the land to construct on it.96 If the investor cannot reach an agreement with owners, the property can still be acquired through the process of expropriation.

According to the FBiH Law on Expropriation, property can be taken without the consent of the owner by competent authorities and designated to the public use. The property (real estate) can be expropriated completely or partially for the purposes defined by the Law on Expropriation and ". . . when it is determined that the use of the property for which the expropriation will be proposed will bring bigger benefits than was the case with the earlier use of the property."99 Property is expropriated either for government use or assigned to the third parties who have the obligation to dedicate it to the public use. Property can only be expropriated after the public interest for the construction has been declared by the competent authority.100 The procedure for the declaration of public interest can be initiated by



expropriation beneficiaries, and the Proposal for Expropriation must contain an expropriation analysis (geodetic and cadastral plan of the area of expropriation, information on real estate, the assessment of property value, the aim and purpose of expropriation and other data for determining the public interest).

A decision as to the public interest can be declared by the Government of FBiH, Cantonal Government or Municipal Government, depending on the location of the generation facility. According to the FBiH Law on Expropriation, if the generation facility is located (or construction is performed) across the areas of two or more cantons, the public interest for construction will be declared by the FBiH Government.

If the generation facility is located across the areas of two or more municipalities, the public interest will be declared by the Cantonal Government; and where the facility is only located in the area of one municipality, the public interest will be declared by the Municipal Government. However, in practice, the public interest for the construction of generation facilities are often designated at the FBiH level.

In addition to the FBiH Law on Expropriation, a legal basis for the determination of public interest can be found in the FBiH Law on Concessions. Namely, the procedure for granting concessions can also include

the designation of public interest. However, no law on concession (at all government levels) is clear as to whether the procedure for granting a concession includes the transfer of the "ownership right" or the "right to use the concession property" by the Concessionaire.

In February 2010, the Federation Government adopted a Decision on Determination of the Public Interest and Preparation for the Construction of Priority Electro-Energy Objects in FBiH, and declared the public interest for the construction of 6 thermal power plants, 17 hydro power plants and 6 wind power plants. It is notable that besides the FBiH Law on Expropriation, this Decision was based on the Law on the Government of the Federation BiH and the FBiH Law on Electricity.

Following the determination of public interest, an investor first attempts to reach an agreement with owners through negotiation. If not successful, then the investor is obliged to submit its Proposal for Expropriation to the respective municipal authorities, which are tasked with the implementation of expropriation.

A Decision on Expropriation is then made by the municipal authority and implemented through the payment of compensation fees to owners. If a land owner is not satisfied with the proposed compensation fees, then the owner has the right to initiate an administrative dispute before the competent court in FBiH (Cantonal Courts). Owners can only appeal the amount of fees before the court. The initiated administrative dispute postpones the enforcement of the Decision until such time the FBiH Supreme Court decision becomes final and binding.

Article 31, paragraph 2 of the FBiH Law on Expropriation provides an exception to this rule as follows:



"Exceptionally, following the proposal made by the expropriation beneficiary justifying the urgent acquisition of the possession of the property, the Government can decide to allow acquisition of the possession of the property to the beneficiary before the decision on expropriation becomes final and binding (enforceable)."

Article 31, paragraph 5, further prescribes that "an administrative dispute cannot be initiated against the decision of the government made under paragraph 2 of this Article."

Following the government decision under the above-cited exceptional rule, the investor can actually enter into the possession of the expropriated property before the FBiH Supreme Court decides on the final and binding amount of compensation fees. However, the FBiH Constitutional Court declared Paragraphs 2, 3 and 5 of Article 31 of the FBiH Law on Expropriation unconstitutional, or more specifically, contrary to Article 1 of the Protocol 1 to the European Convention for Human Rights (ECHR).

At the time of the writing of this report, Amendments to the FBiH Law on Expropriation were being discussed by the FBiH Parliament, including new text for Article 31.

ENTITY LEVEL AUTHORIZATION FRAMEWORK: THE REPUBLIKA SRPSKA (RS)

Step 1 - Designation of the Status of "Public (General) Interest": In formal legal terms, energy infrastructure projects in the RS can be granted the status of project of "public (general) interest," which is determined by the RS Government.

The public interest can be determined in the process of granting Concessions, if the procedure is initiated by an interested party. This procedure is prescribed by the RS Regulation on the Evaluation of the Public Interest when the procedure is initiated by an interested party (the Regulation on Evaluation of the Public Interest).

The competent RS Ministry must assess whether a public interest exists on the basis of a Feasibility Study developed for the project and a document on the Policy for Granting Concessions (the Policy Document on Concessions).

Then, the RS Commission for Concessions must approve the Ministry's assessment on the public interest and allow negotiation with the bidder. The final step includes the verification of the status of the "public interest" by the RS Government. If, however, the Concession procedure is initiated by the RS competent institution/body, then the public interest is "assumed."



The public interest can also be determined in the process of expropriation. This procedure is prescribed by the RS Law on Expropriation, which can be implemented, among other things, for the purpose of the construction or works related to energy infrastructure projects.

It is assumed that the public interest is already determined, if a separate law prescribes that the construction of specific facilities or construction works is in the public interest. The expropriation beneficiary is required to submit a Proposal for Expropriation to the RS Government, after obtaining the opinion from the Municipal Council, on whose territory the construction is planned.

Step 2 – Spatial Planning: The RS adopted the RS Spatial Plan. The RS Spatial Plan 2025 contains a map of strategic priorities, including energy infrastructure facilities.

The generation facilities from the PECI list are also included in the RS Spatial Plan: HPP Dabar, HPP Buk Bijela, HPP Foča, HPP Paunci, HPP Sutjeska, HPP Tegare, HPP Rogačica and HPP Dubravica. HPP Dubrovnik is not in the plan.

Step 3 – Permitting Procedure: The permitting procedure in the RS is more streamlined than the permitting procedure in FBiH, because of the RS centralized organizational structure, consisting only of the entity and municipal levels (without Cantons) and concentration of the competences for the issuance of required permits lies within only a few entity level ministries/institutions. In addition, the strategic framework for the implementation of energy infrastructure projects such as the RS Energy

Sector Development Strategy 2030 and the RS Spatial Plan 2025 have been adopted and are in place. However, as to the types and number of permits and consents, processes and number of process steps, the RS permitting regime is very similar to the one in FBiH, with a few distinct features.

In short, given that the spatial planning documents are rather developed in the RS, including detailed spatial planning documents, such as the zoning plan, urban plan, regulation plan, and plan of parcelization, an Urban Permit is not issued in the RS; instead, Location Conditions are issued. Further, the issuance of an Environmental Permit (if required) includes the development of a Preliminary Environment Impact Assessment (EIA) study prior to the issuance of Locations Conditions. After the Location Conditions are issued, the EIA Study is updated, provided the Preliminary EIA had determined that an EIA Study needed to be conducted. The Environmental Permit is issued in the preparatory stage for the Construction Permit. In addition, the RS Energy Regulatory Commission (RSERC) has a comprehensive mandate and plays a prominent role in the RS permitting procedure for the construction of generation facilities and other energy infrastructure projects. Its mandate includes the issuance of an Energy Permit.

Finally, the procedure for acquiring incentives for RES generation is slightly different. The scheme (mapping) of the RS permitting procedure and individual permits is illustrated by Figure 9 and explained in the text below, including steps for acquiring incentives for RES. The two most important permits in RS are: 1) the Location Conditions, and 2) the Construction Permit.



The issuance of some permits consists of multiple steps and/or the issuance of progressive administrative decisions/acts as the permitting procedure progresses, which lead to the issuance of a final permit from that category. Hence, in the case of a Water Permit, two administrative decisions/acts – the Water Guidelines and the Water Consent – are required before the Water Permit is issued at the end of the process (before the issuance of the Use Permit). All those water acts are issued by the same authority – the RS Water Management Agency/local authority – in the same permitting procedure after the collection of required information. The Water Guidelines contain the conditions and methods of use of water, and the documentation requirements; the Water Consent confirms the submission of the required documentation; and the Water Permit defines the operational conditions and disposal of waste.

In order to illustrate this process clearly, the respective permits are grouped and presented on the basis of category and/or the institution competent for their issuance (e.g., water, connection to distribution network, RES production), rather than in the exact order of their collection as illustrated by Figure 9. Each category of permit is identified by the same pattern and color in the diagram; for example, all water acts are colored in blue and illustrated by a diagonal pattern. Where a category of permits is described, for context and clarity at the beginning of that section, a process diagram containing the permitting process in such category in relation to the two main permits – the Location Conditions and Construction Permit – has been extracted from the overall diagram in Figure 9.

Some procedural steps in the RS permitting procedure are optional and depend on the legal requirements for the type and size of generation facility and/or whether the competent authority deems the procedure necessary (e.g., concession, EIA). This type of procedure is presented in Figure 9 by dotted lines. A solid line is used to identify the required procedural steps that an investor must take.



Figure 9: RS Permits and Competent Institutions





Concessions: The area of concessions in the RS is governed by the RS Law on Concessions (the RS Law). This RS Law was adopted in 2013, and replaced the previous 2002 RS Law on Concessions. Adoption of new regulations followed the adoption of the RS Law, such as the Regulation on the Procedure for Transfer of Concession Contract and Change of Ownership Structure of the Concessionaires (the Regulation on Transfer of Concession Contract), and the Regulation on Content and Maintenance of the Registry of Concession Contracts (the Concession Registry), both adopted in 2014. However, to date the Policy Document on Concessions, which was adopted in 2005, has not been updated.

The term "concession" is defined by the RS Law as "the right to perform economic activities through the use of public goods, natural resources and other goods of general interest, as well as the right to perform activities of general interest." The RS or a local community or, more specifically, the RS Government on behalf of the RS and the Municipal Assembly on behalf of the local community, perform the role of Conceding Party. In fact, the RS Government is authorized to grant concessions for all subjects prescribed by Article 6 of the RS Law other than for communal activities, which is the only exclusive competence of a local community.

A Concessionaire can be a legal entity, which needs to be registered in accordance with the RS laws and regulations. Article 6, paragraph (1), item v) of the RS Law on Concessions defines the energy facilities that are "subject to concessions" as follows: "The construction and use of energy facilities of over 250 kW of installed capacity, apart from energy facilities using biomass, biogas and solar facilities with photo-voltaic panels on facilities, irrespective of the facility's installed capacity." However, whether a concession is required for generation using biomass, biogas or solar facilities with photo-voltaic panels up to 250 kW of installed capacities (smaller generation), is not defined by the RS Law.

The RS Law differs from the previous RS Law on Concessions and the current laws on concessions on the state and FBiH level in terms of the prescribed methods for granting concessions. As explained earlier in this report, the BiH Law on Concessions and the FBiH Law on Concessions envision two methods for granting concessions: a) public tender, and b) unsolicited proposal. The RS Law, however, prescribes three separate procedures for granting concessions, each of them comprising elements of both methods - public tender and unsolicited proposal. The three different procedures are entitled as the procedure initiated by "i) a competent body/institution, ii) an interested party, or a procedure conducted through iii) a direct agreement."

Under the first type of procedure involving the initiative of a competent RS body/institution for granting a Concession, the envisioned method is a public tender. Prior to the tendering procedure, a competent body must develop a Feasibility Study or request the development of a Feasibility Study from the potential bidders through a public tender.



The second type of procedure refers to a situation when an interested party has initiated a procedure for granting a concession. An interested party cannot initiate a procedure for a concession for which a procedure has already been initiated by a competent RS body/institution. Under this second procedure, the public interest for the proposed concession must be evaluated first; and, if the public interest is determined, then the competent body is obliged to launch a public tender and invite the party that initiated the procedure to apply along with other bidders. When the bids are evaluated, the offer of the party that initiated the procedure gets a bonus of up to 10% points maximum. This second procedure has departed from the exclusivity given to the proposal of the interested party prescribed under the previous RS Law on Concessions, when the tendering procedure was not obligatory.

Finally, Article 26 of the RS Law prescribes the third type of procedure for granting concession through direct agreement in the following cases:

"a) Bids of the public companies which perform activities of public interest, when such an activity is subject to concession;

b) Implementation of the existing agreements, signed by the Government or public companies, pertaining to the implementation of concessions;

c) Extension of the concession period for granted concessions."

An important role in the concession process in the RS has been given to the RS Commission for Concessions, which is a permanent and regulatory body, tasked to perform various activities pertaining to concessions under the RS Law. The RS Commission maintains a Concession Registry, which is available on its web site.

The Concession Registry contains data of a total of concessions granted in the different sectors in the RS thus far, including generation facilities. The RS Commission for Concessions reports annually to the RS National Assembly, and its annual reports are public and include a list of all concessions granted for the reporting year.

Article 40 of the RS Law on Concessions prescribes a new security instrument for creditors, which is the possibility of transferring a concession to a third party or a financial institution (e.g., a bank), which provided financing for the Concessionaire. This mechanism can be used if the Concessionaire has not been able to meet its obligation contained in the Contact with the financial institution. The possibility for transferring a concession to a financial institution is something new prescribed by the RS Law.

The procedure for the transfer of the concession to a third party or a creditor is prescribed by the Regulation on Transfer of Concession Contract, which was passed by the RS Commission on Concessions. A Concession Contract can be concluded for a maximum of 50 years.



Concession fees are determined separately for each concession by the Concession Contract, taking into account the following parameters, among others: the type, category, quantity, and purpose of a concession, the market price of the natural resource, length of the concession contract, and risk and

anticipated profit. The RS Law prescribes that concession fees comprise two types of payments: i) a lump sum paid after the Concession Contact is concluded, and ii) fees for the use of public goods expressed in a percentage (%) of the generated annual revenue.

Water Acts: The RS Law on Water120 defines Water acts as acts that determine the right, obligation, or legal interest for a third party (i.e., a natural person or legal entity, the state/RS body, or a local community). Water acts are issued in accordance with a separate procedure prescribed by the RS Law on Water and the general provisions of the RS Law on Administrative Procedure. There are three types of Water acts that must be obtained by an energy facility for any use of water exceeding the ordinary use of water or disposal of waste water, regardless of the facility's impact on the water regime. Specifically, in the permitting procedure for the construction of an energy facility, the investor needs to acquire the following Water acts: i) Water Guidelines; ii) Water Consent; and iii) Water Permit. The stages at which these Water acts are issued in relation to the Location Conditions and the Construction Permit in the RS permitting procedures are illustrated by Figure 10.





According to Article 127 (1) of the RS Law on Water, the RS Water Agency has the authority to issue Water acts, among others, for the construction of the following facilities/activities: "hydro power plants (HPPs); all accumulations on the RS territory; disposal of technological waste water; and facilities that use five (5) liters of water or more in one second." The authorized body of a local community is competent for the issuance of Water acts that are not defined by Article 127 (1) of the RS Law on Water.



Water Guidelines: Water Guidelines determine mandatory terms and conditions to be included in the Project Documentation for the construction of new or reconstruction of an existing generation facility and for other non-construction activities, which can have an impact on the water regime on a permanent or temporary basis. Issued Water Guidelines are valid for the period of one year.

The RS administrative bodies/institutions that are authorized to grant concessions are required to obtain Water Guidelines before a Concession procedure is initiated.

Water Consent: According to Article 139 of the RS Law on Water, a Water Consent is required for the construction, reconstruction or removal of an existing energy facility, if such facility can have an impact on the quality and quantity of water, or more specifically, if water regimes can be impacted on a permanent or temporary basis.

A Water Consent determines that the Project Documentation attached to the request for Water Consent is in line with the Water Guidelines, water regulation and planning documents. The issued Water Consent is a precondition for the issuance of the Construction Permit. A Water Consent is issued in the form of a document and is valid for the period of one year, unless the works on construction have commenced within this period.

For objects and facilities that dispose of waste water or other dangerous materials, a Water Consent and Construction Permit cannot be issued unless the Project Documentation has planned the simultaneous construction of the facilities for the treatment of water waste and/or a reduction of the concentration of dangerous substances.

Water Permit: A Water Permit must be obtained for all facilities for which a Water Consent is required, including generation facilities. It verifies that all terms and conditions specified under the Water Consent are met. Further, a Water Permit determines the purpose, ways and terms for the use of water, the water regime for the disposal of waste water, and other conditions. A Water Permit is the final Water act and is a precondition for the issuance of the Use Permit for any generation facility. A Water Permit is issued for a limited period of time, a maximum of fifteen years.

Water acts are issued upon written request of investors or a competent authority, or upon the request of the administrative body competent for the issuance of the Urban Permit.

Consent of the Other Users of the Location (Public and Utility Companies): In order to apply for Location Conditions in the RS, an investor must obtain written approvals (consents) from all users operating at the specific location. According to the RS Law on Spatial Planning and Construction, with an application for Location Conditions, the investor must submit approvals of the location for the future facility from the public utility companies, and the public companies for managing public infrastructure. However, if the area of construction is already included in the existing spatial planning documentation (such as zoning



plan or a regulation plan), these approvals on location are not needed, since all aspects of the construction on the specific location are already evaluated and included in the spatial planning documents.

If required, consents and approvals need to be obtained from telecom/phone companies, gas companies, road management companies, water, sewage and other RS utility companies.

Location Conditions: The Location Conditions have the same meaning and purpose as the Urban Permit in FBiH; but since RS has developed spatial planning documents, then Location Conditions, which encompass comprehensive and detailed information on the terms and conditions for the construction at the specific location, are issued instead of Urban Permit. In essence, the Location Conditions is a technical document, which defines the terms and conditions for the planning and construction of a generation facility (or reconstruction), and is issued on the basis of the RS Law on Spatial Planning and Construction, other pertinent RS laws and regulations, and detailed spatial planning documents. The detailed (implementing) spatial planning documents, which are the basis for the issuance of the Location Conditions are as follows: zoning plan, zoning plan for the areas designated for special purpose, regulation plan, urban plan, and plan for parcelization.

If detailed spatial planning documents are not adopted for the specific area where the project is to be located, then the Location Conditions are issued on the basis of the spatial planning documents available for that location. Additionally, an expert opinion must be sought from a legal entity that is licensed for the development of spatial planning documents. Regardless of the status of the development of spatial planning documents include two compulsory documents: i) a verified excerpt from the spatial planning documents; and ii) a document specifying urban-technical conditions.

The document defining urban-technical conditions for the construction of a generation facility and the use of land includes the following information: a) the purpose of the facility; b) the size, shape and photographs of the land parcel; c) the terms for constructing the facility; d) the need for the development of a Preliminary Design; e) the terms and conditions related to the construction vis-àvis neighboring objects; f) the terms for the protection of the environment in accordance with the regulations governing the area of environment (i.e., whether the EIA is mandatory for the project and the scope of the EIA); g) the need and methods for the geo-mechanical examination of the soil; and h) other terms and conditions relevant for the facility.

The municipal administrative body competent for spatial planning is defined as the authorized body for the issuance of Location Conditions by Article 60(1) of the RS Law on Spatial Planning and Construction. Article 60(2) of the RS Law on Spatial Planning and Construction defines the exceptions to this rule. Thus, according to Article 60(2), the RS Ministry for Spatial Planning is competent for the issuance of Location Conditions for the construction of the facilities located on the territory of two or more municipalities. Furthermore, Article 60(2), items d) and e) prescribe additional competences for the RS Ministry for Spatial Planning for the issuance of Location Conditions for the of Location Conditions for the following energy infrastructure facilities: "d) energy and other objects and facilities for generation, apart from solar photovoltaic generation and



facilities that use all other types of RES up to 250 kW of installed capacity; and e) power lines of 110 kV of installed capacity and over, and power stations of 110 kV of installed capacity and over."

The competent body is required to issue Location Conditions within 15 days from the date of the submission of the completed request. It should be noted that the Location Conditions for the projects that can have significant impact on the environment can be issued by the competent authorities, provided the final document (certificate) on the EIA implementation and its scope is previously obtained.

Connection to the Distribution Grid (Network): In order to connect a generation facility to the distribution grid at low and medium voltage level in the RS, the investor must obtain a number of permits and contracts from Distribution System Operator (DSO), each at a specific stage of the construction process. In accordance to the RS Electricity Law, the DSO is in charge of the operation, control, maintenance and development of the distribution system. Currently, there are five companies licensed for the distribution of electricity in the RS, each operating in its distribution area:

1) MH "ERS" ZP "Elektro Doboj" a.d. Doboj;

2) MH ERS ZEDP "Elektro-Bijeljina" a.d. Bijeljina;

3) MH ERS ZP "Elektrokrajina" a.d. Banjaluka;

4) MH ERS ZP "Elektrodistribucija" a.d. Pale;

5) MH ERS Trebinje ZP "Elektro-Hercegovina" a.d. Trebinje.

The role and stages in connection of a generation facility to the distribution grid in relation to the Location Conditions and the Construction Permit are illustrated by the Figure 11.



Figure 11: RS - Steps for Connection and DSO documents

Location Approval: The Location Approval is an initial confirmation that the generation facility can be connected to the distribution grid at the planned location. According to the General Conditions for Delivery and Supply of Electricity (General Conditions), on the basis of the request of the authority



competent for the issuance of Location Conditions for spatial planning, the DSO is required to approve the location for the future construction of the energy facility.

Although this approval is acquired ex-officio at the request of the competent authority in charge for spatial planning and doesn't require any action by the investor, it should be noted that this is an important step, given that the Location Conditions cannot be issued without it.

Electric Power Permit: The Electric Power Permit is issued at the request of the investor, for each individual connection of the generation facility to the distribution network, prior to the issuance of the Construction Permit. The Electric Power Permit is a mandatory attachment to the request for the issuance of Construction Permit, if the energy facility is to be connected to the distribution network.

Along with the request, the investor must provide data on the owner of the facility, the type of primary source of energy, voltage levels, nominal capacity and number of generators, annual generation per month, estimated time of connection and other technical data. The DSO will make a decision on the issuance of the permit within 30 days from the date of submission of the application.

The Electric Power Permit contains the following data: details on the applicant, general data about the constructed facility, electric power and technical requirements (such as the voltage levels, installed capacity, consumption and generation data, peak capacity), conditions of facility usage, information on the obligation of contract conclusion, validity period and other conditions as defined by the DSO. The conditions set in the Electric Power Permit are binding on the network user (investor) and cannot be modified during construction without approval of the DSO. In general, the validity of the Electric Power Permit is not limited, but the investor has the obligation to conclude a Connection Contract with the DSO within two (2) years from the date of the issuance of this permit.

Connection Contract: Based on the Electric Power Permit and at the request of the investor, the DSO prepares a Connection Contract. This contract must be concluded before construction of a connection point to the distribution grid; it regulates the procedures and terms of connection, method of payment and other necessary aspects of a specific connection point. Also, it includes data on the following: contracting parties, power facility, and technical elements of the connection, payment of fee for the connection, maintenance and ownership of the connection point, and deadline for the construction. The construction of a connection point starts after the conditions specified by the Connection Contract have been fulfilled.

Contract on Access to the Network: In order to use the distribution network, after the construction of the connection point has been completed, an investor must submit a request for connection to the distribution network. Based on this request, the DSO prepares a Contract on Access to the Network, to define and regulate network usage conditions. The contract is signed between the investor and DSO, and it includes basic data on the contracting parties, the capacity approved by the Electric Power Permit, data on the measuring point, quantity and quality of electricity, and liability for the damages.



The validity of the Contract on Access to the Network is not limited.

Declaration on Connection: Having connected a power facility to the distribution network, the DSO prepares a Declaration on Connection for each metering point, which contains the final data on connection capacity, type of the connection, connection point, supply point, ID of metering point, main fuses, category of consumption, modifications made during construction and other important data. The Declaration on Connection contains "as-built" data on the connection.

Environmental Permit: An Environmental Permit defines the measures and activities for preventing or reducing emissions in the air, area, water and land, as well as prevents the accumulation of waste materials in order to protect the environment to the highest extent possible. The issuance of the environmental permit in the RS encompasses a few steps that are illustrated in Figure 12.





For any project that can have a significant impact on the environment because of its nature, size, or location, an Environmental Impact Assessment (EIA) must be developed. Energy infrastructure projects for which an EIA is mandatory are as follows: "energy industry: . . . i) thermal power plants and other combustion facilities of 50 MW and over; ii) hydro power facilities with the output of 5 MW and over for each individual facility; iv) construction of power lines of 220 kV and over, and a length of 15 km and more." As to RES generation facilities, it is within the authority of the RS Ministry for Spatial Planning, Civil Engineering, and Environment (MSPCEE) to decide whether a specific RES project needs an EIA.

The core steps for an EIA include identification, determination, analysis, and an assessment of a direct or indirect impact of the project on the environment. Pursuant to Article 61(2) of the RS Law on Protection



of Environment, the EIA is implemented through two phases: "a) the preliminary EIA procedure, and b) the EIA procedure."

A decision on whether an EIA is mandatory for the project and what the scope of the EIA should be, is determined during the preliminary EIA phase. The final decision on the preliminary EIA phase is published on the web site of the competent ministry. The investor is then obliged to submit a request for the development of the EIA Study to a licensed legal entity that is authorized for the development of EIA Study by MSPCEE within six months from the final preliminary EIA decision.

Following the development of the EIA Study, the investor is required to inform the general public and interested parties on the developed EIA Study through an announcement in one daily newspaper that is available in the local community where the construction is planned. Additionally, the investor is obliged to allow access to the EIA Study by all interested parties free of charge, and to arrange one public consultation on the EIA Study to get feedback. The next step encompasses a Review of the EIA Study by the licensed legal entity authorized by MSPCEE for conducting review of EIA Studies. The objective of this Review by the licensed legal entity is to assess the quality of the EIA from an expert point of view. The investor is required to update the EIA Study in accordance with the comments made under the Review procedure and then re-submit the updated version to the competent authority. If approved, the EIA Study is valid for two years. Within a two-year period from the date of the EIA approval, the project promoter must obtain the Construction and Environmental Permits.

According to the RS Regulation on Facilities That Can Be Constructed and Become Operational Only if an Environmental Permit Is Issued (the RS Regulation on Environmental Permit), the MSPCEE is authorized for the issuance of the Environmental Permits for all projects for which the EIA is mandatory. In addition, the RS Regulation on Environmental Permit prescribes discretionary authority to the MSPCEE to evaluate whether a certain project requires an EIA or not. Thus, in accordance with the RS Regulation on Environmental Permit, the MSPCEE is authorized to decide whether the EIA is required on a case-by-case basis as well as in cases of smaller projects, which are beyond the legally prescribed thresholds.

Furthermore, the RS Regulation on Environmental Permit specifically prescribes the authority for MSPCEE to issue the Environmental Permit for energy infrastructure projects, among others, falling under the category of the "energy industry," such as: thermal energy facilities of 10 MW of installed capacities and over; facilities for energy transmission via power lines of 220 kV and 110 kV and less than 15 meters length.134 For t energy infrastructure projects beyond the above-prescribed thresholds (smaller facilities), the environmental permit is issued by the local administrative body competent for the environment protection.

Permit for Construction of Power Facilities with Installed Capacity Exceeding 1MW

(Energy Permit): According to the RS Law on Electricity, one of the permits required in the RS electric energy sector is the Permit for Construction of Power Facilities with Installed Capacity Exceeding 1MW,



issued by RSERC. The criteria, contents and proceedings for the issuance of this permit are given in the RS Rulebook on Licenses.

Before the construction or major reconstruction of an existing facility begins, the investor must obtain a Permit for Construction of Power Facilities with Installed Capacity Exceeding 1MW from RSERC. This permit is issued prior to the Construction Permit, although this order is not explicitly defined by the RS Law on Electricity. However, the RS Rulebook on Licenses clearly states that neither construction nor reconstruction of a generation facility can begin before a Permit for Construction of Power Facilities with Installed Capacity Exceeding 1MW is issued.136 Thus, to get a Construction Permit from the competent authority, the investor first must obtain a Permit for Construction of Power Facilities with Installed Capacity Exceeding 1MW.

With the request for the issuance of a Permit for Construction of Power Facilities with Installed Capacity Exceeding 1MW, the investor must enclose a significant number of other documents and major permits, including a: Feasibility Study, Environmental Impact Assessment Study, Environmental Permit, Water Permit, Electric Power Permit (Transco BiH) and/or Connection Conditions (DSO), Location Conditions and Concession Contract (if required).

After a detailed review by RSERC of the documents,138 the Permit for Construction of Power Facilities with Installed Capacity Exceeding 1MW is issued as a Decision, which confirms that the facility was planned and designed adequately regarding its impact on the power system, design of the installations, energy efficiency and the environment. The Decision is issued within 60 days following the date of submission of the completed application to RSERC, and the Permit for Construction of Power Facilities with Installed Capacity Exceeding 1MW is valid to a maximum of six years.

According to the Law on Electricity, RSERC is authorized to issue a Permit for Construction of Power Facilities with Installed Capacity Exceeding 1MW only for the generation facilities that exceed the installed capacity of 1MW. The issue of competence for the issuance of a permit for construction of power facilities with installed capacity of less than 1MW in the RS is not legally defined.

Construction Permit: The Construction Permit allows the construction of generation facilities at a planned location. The investor is required to develop a Main Project Design before the submission of its request for the Construction Permit. The Main Project Design needs to ensure harmonization of the construction with all spatial planning documents through meeting required terms and conditions defined by previously issued Location Conditions.

Along with the request for the issuance of the Construction Permit, the documents that the investor must enclose include: the Location Conditions; proof that property issues have been resolved; the Concession Contract (if required); three copies of the Main Project Design; the Report on the Review of the Technical Documentation (Project Documentation); and the Environmental Permit (if required).



A Construction Permit is issued by MSPCEE in accordance with Article 60(2) of the RS Law on Spatial Planning and Construction or a municipal authority competent for spatial planning, on whose territory the construction is planned.

The Construction Permit may be issued for the entire facility or a part of a facility which comprises a technical, technological, and/or a functional unit. The construction must begin within a period of three years following the final date of the issuance of a Construction Permit.

Use Permit: A newly constructed energy facility cannot become operational before a Use Permit is acquired from the competent authority. Prior to the issuance of a Use Permit, a Technical Inspection of a generation facility must be performed. The Technical Inspection encompasses inspection of the completed works and their compliance with the Construction Permit and technical documentation that were the basis for the construction. The Technical Inspection ensures compliance of the works with the technical regulations and standards pertaining to the specific types of works, including materials, installations and equipment. A Technical Inspection must be performed within 15 days following the date of the submission of the request.

Based on the opinion of the Committee that performs the Technical Review, the competent authority can issue a permit for a testing period, allowing the temporary use of the facility during the testing period for the energy facilities. The permit for a testing period can be issued only if the Technical Review has confirmed that the facility has been constructed in accordance with the Construction Permit, and that the operation of the facility will not endanger the life, health, environment and the neighboring buildings. The testing phase can last up to a maximum of one year; and in the case of particularly complex technological process, the testing phase can be extended for one additional year.

The investor must submit its request for an Use Permit to the competent authority that has issued the Construction Permit, once the works on the facility have been completed.

License for Generation for Facilities with Installed Capacity Exceeding 1MW: After construction is completed and the Use Permit for the facility is issued, the investor must obtain a License from RSERC in order to perform activities on electricity market. The procedure for the issuance of a License and its conditions and content are defined by the RS Rulebook on Licenses.

The investor that plans to perform an activity in electricity market has the obligation to submit an application for a License for that specific activity (generation, distribution, supply or trade). Accordingly, RSERC is authorized for the issuance of the following licenses in the electricity sector:

a) License for Generation of Electricity for Hydro Power Plants, Thermal Power Plants, Thermal Power Plants with Integrated Mines and Other Power Plants with Capacity Exceeding 1MW (License for Generation)



b) License for Distribution of Electricity, for the Purposes of Delivery of Electricity at MiddleVoltage and Low-Voltage Network to the Customers

c) License for Supply of the Tariff Customers d) License for Electricity Trade and Supply on the Territory of BiH

In order to produce electricity in the power plant, the investor must obtain a License for Generation. With the application, the investor must enclose the following: information on the power facility and technical parameters, proof of meeting the requirements regarding the establishment of the system of quality control and the system of environmental protection control in the power facility, proof of the nature of the primary source of energy, Water Permit, Environmental Permit, Concession Contract, Connection Contract (DSO or Transco BiH) and Use Permit.

The decision on the issuance of the License is made within 60 days following the date of the submission of the completed application to RSERC. The License is valid for a period of 30 years maximum.

System of Incentives for Production and Purchase of Electricity from RES and Efficient Cogeneration: The system of incentives for the production of electricity from RES and efficient cogeneration in the RS was established by the RS Law on Renewable Energy Sources and Efficient Co-generation (RS Law on RES).

According to the RS Law on RES, in addition to the price of electricity, all end users are obliged to pay a surcharge for electricity production from RES and efficient cogeneration.141 The terms, conditions, and procedure for exercising the right to incentives are defined by the Rulebook on Incentives for Generation of Electricity from Renewable Sources and in Efficient Co-Generation (Rulebook on Incentives).

In the RS, eligible RES producers are entitled to different benefits. For example, the DSO is required to inform the RES producer of whether it is feasible to connect to the system and the possibilities of connection, and the precise timeframe for the connection at the DSO's expense. The RES producer is also entitled to priority dispatching of electricity according to the daily schedule. Finally, the RES producer is entitled to obligatory purchase of electricity at currently valid Feed-in tariffs, and the Right to a Premium143 in the case of self-consumption or the sale of electricity in the RS market.

The RS Action Plan for Renewable Energy Sources (the RS Action Plan) defines the total quotas for incentives as well as the quantities of incentives for each specific technology. The amounts of the Feed-in tariff and the Premium Price that is paid to the producers are determined by an RSERC decision, which must be approved by the RS Government. The prices are evaluated at least once a year.

Incentives are given to the producers for the following types of facilities, provided that they do not exceed the total quantities of incentives determined by the RS Action Plan:

a) Hydro power plants with installed capacity up to 10MW



b) Wind power plants with installed capacity up to 10MW

c) Solar photovoltaic power plant with installed capacity up to 1MW

d) Geothermal power plants with installed capacity up to 10MW

e) Biomass power plant with installed capacity up to 10MW f) Biogas power plant with installed capacity up to 1MW g) Cogeneration power plants with installed capacity up to 30MWe.

The incentives are allocated following the order of submission of the applications to RSERC, until the total quotas set by the Action Plan are filled.

It should be noted that the incentives cannot be given to the producers that installed used equipment during the construction of the facility. Basic components for the production of electricity, such as generators, photovoltaic panels, boilers, or turbines have to be new for the producer to be eligible for incentives.

The Operator: The RS Law on RES prescribes the role of the Operator of the Incentive System (Operator) as a non-profit organization (legal person) with public authorities. However, the Operator has never been established, and the activities of the Operator are currently performed by the RS power utility company (EPRS). The tasks of the Operator under the RS Law on RES include the administrative, financial and other operational activities for the system of incentives for the production from RES and efficient cogeneration. The work of the Operator is supervised by the RS Ministry of Industry, Energy and Mining (MIER) and RSERC.

The competences of the Operator146 include keeping records of the total amount of electricity produced from RES and efficient cogeneration, signing Contracts on the RES Incentives, and balancing responsibility.

Exercising the Right to Incentive: The Steps for acquiring incentives for renewable generation and efficient cogeneration as well as the sequences (stages) of the project registration in relation to the issuance of the key permits in the permitting procedure in the RS are illustrated by Figure 11. Each process step is further explained in the text below.



Figure 11: The RS - Steps for Acquiring Incentives and Registration Stages for RES



Steps for Acquiring Incentives:

The investor that plans construction of an RES and/or efficient cogeneration facility, needs to take the following steps in order to become eligible to the incentivized electricity production:

• Preliminary Right to Incentive

The Preliminary Right to Incentive enables the investor to sign a Pre-contract on Obligatory Purchase of Electricity with the Operator. It is acquired through an RSERC Decision for the following types of the incentives:

a) right to obligatory purchase of electricity at currently valid feed-in tariffs (guaranteed price), or b) right to premium (for self-consumption or sale in the electricity market).

The following documents need to be enclosed with the request: a Feasibility Study, document certifying entry into the Register of Projects, Construction Permit and evidence that the construction of the facility has begun.



The Decision on the Preliminary Right to Incentive includes data on the generation facility, the type of incentive, planned production of electricity and amount of incentives, and the validity period. The Decision, however, does not contain the price at which the electricity will be purchased (feed-in tariff or premium), since the price is determined by the Contract on Obligatory Purchase of Electricity at a later stage, and after the construction has been completed.

• Pre-Contract on Incentive

The Pre-Contract is signed between the investor and the Operator, based on a Decision on Preliminary Right to Incentive in order for the investor to reserve the available amounts of incentives in the system. The investor has the obligation to submit a request for signing the Pre-Contract within 15 days, following the date of issuance of the Decision on Preliminary Right to Incentive.

• Certificate for the Generation Facility

To acquire the Right to Mandatory Purchase of Electricity at currently valid feed-in tariffs (the guaranteed prices) or the Right to Premium, the investor must first acquire a Certificate for the Generation Facility (the Certificate). The Certificate is a document issued by RSERC that proves that the generation facility produces electricity using waste material or RES, economically and in an environmentally friendly manner. The criteria and the procedure for the issuance of the Certificate are defined by the RS Regulation on the Issuance of Certificates for the Generation Facility which Generates Electricity Using RES or in Efficient Cogeneration.

• The Right to Incentive

After the issuance of the Certificate, the investor can apply for the following incentives: the Obligatory Purchase of Electricity at currently valid Feed-in tariffs or Premium, and Obligatory Purchase of Electricity based on the Net-metering Principle. The application is submitted to RSERC together with the Document on Entry into the Register of Projects, Certificate, Use Permit, Connection Contract (DSO) or Approval of Connection (Transco BiH), and other evidence as prescribed by Article 21 of the Regulation on Incentives. RSERC decides on the application within 30 days, following the date of submission of the completed application. The Decision contains data on the producer, the approved type of incentives, the planned production of electricity, the incentivized amounts, and the validity period.

The Right to Obligatory Purchase of Electricity at currently valid Feed-in Tariffs and the Right to a Premium are granted for a period of 15 years.



• Obligatory Purchase Contract

Finally, a Contract on Obligatory Purchase of Electricity is entered into by the investor and Operator. The type of the Contract depends on the approved type of the incentive:

a) Contract on Obligatory Purchase of Electricity at currently valid Feed-in Tariffs for RES facilities;
b) Contract on Obligatory Purchase of Electricity at currently valid Feed-in Tariff for the Efficient Cogeneration Facilities; or
c) Premium Contract.

The Contract includes data on the contracting parties, the planned electricity generation and possible deviations, the Feed-in Tariff or Premium Amount, data on metering point, and balancing responsibility like.

The Register of Projects: According to Article 39 of the RS Law on RES, a natural or legal person (investor) that constructs a generation plant has the obligation to register the project in the Register of Projects, maintained by MIER, within 30 days from the issuance of Construction Permit or conclusion of the Contract on Concession. The Register of Projects contains all RES and efficient cogeneration projects in the RS, which is used to monitor the goals set by the RS Action Plan regarding the participation of RES in the final (gross) consumption of electricity.

The form, contents and procedure of keeping the Register of Projects are defined by the RS Instructions on Managing and Updating the Register of RES and Efficient Cogeneration Projects (Instructions). The Register of Projects is divided into the following sections: 1. Projects under construction; 2. Built projects; and 3. Abandoned projects.

The project can only be registered in one section of the Registry of Projects at a time; and for each registration, MIEM issues a written confirmation. Although the registration is mandatory for all RES projects, it does not provide the priority in allocation of incentives, since incentives are granted on the basis of submission of the completed application to RSERC.

Step 4 - Securing Land, or the Right to Use Land: If the investor cannot obtain the ownership of the land through negotiation with owners or acquire the right to use the land or construct on it, then the property can be expropriated for the purpose of the construction of the facilities that are of a "general interest," including energy facilities.

According to the RS Law on Expropriation, the expropriation beneficiaries are the RS and local selfgovernance units (municipalities), "if not otherwise prescribed by the Law."151 The expropriated property is transferred to the investor for the purpose of construction of the facility in accordance with the terms and conditions defined by the Contract.



In order for the expropriation to begin, the public interest for the construction has to be declared by the RS Government. A proposal for the declaration of the public interest is submitted by the expropriation beneficiaries to the RS Government, together with an Elaboration on Expropriation, which contains data on the area of expropriation (geodetic and cadastral plan), data on the property and its owners, purpose of the expropriation and the estimated value of the property. After obtaining an opinion on expropriation from the municipality, the RS Government adopts a decision on expropriation.

Articles 18(5), 33(1) and 48 of the RS Law on Expropriation were rendered unconstitutional by the Decisions of the RS Constitutional Court.

They contained the following provisions: (i) Article 18(5) prevented the owners to appeal the Decision on Expropriation in an administrative dispute; (ii) Article 33(1) enabled the entry into the possession of the expropriated property before the payment of the expropriation fees; and (iii) Article 48 prescribed that the public interest was already established in the case the expropriation property was included in the existing regulation plans. The RS Constitutional Court found that these provisions violated property rights and were contrary to the RS Constitution and the European Convention for Human Rights (ECHR). Consequently, the RS Law on Expropriation was amended to repeal those Articles in 2015.



A MAP OF SOLAR POWER PLANTS IN BIH





CONSTRUCTED POWER PLANTS WHICH ELECTRIC ENERGY PRODUCE FROM RENEWABLE ENERGY SOURCES - Electric Power System EP HZHB, November 2017

PRIVILEGED PRODUCERS

NO.	NAME OF THE LICENSEER	NAME OF THE SOLAR	INSTALLED POWER
		POWER PLANTS	(kW)
1.	NSSN LTD MOSTAR	SP VRELO Radobolje	8
2.	IN SOLAR LTD ČAPLJINA	SP In Solar Trebižat	10
3.	G.M.C. BIH LTD ORAŠJE	SP G.M.C. BIH	36
4.	ESCO ECO ENERGIJA LTD LIVNO	SP Gradska toplana	78
		Livno	
5.	SOLIK LTD PROZOR	SP Prozor	135
6.	SOLARMAX LTD MOSTAR	SP Stolac 1	150
7.	MK GROUP LTD	SP MK Hodovo 1	150
8.	GP TOMING LTD GRUDE	SP Krenica 1	150
9.	GP TOMING LTD GRUDE	SP Hodovo 1	150
10.	HE ENERGY LTD STOLAC	SP HE Energy 1	149
11.	VELIKO SUNCE LTD STOLAC	SP Veliko sunce	150
12.	ENERGOSOL LTD STOLAC	SP Pješavac 1	150
13.	SOR SOL-VES POSUŠJE	SP Batin	23
14.	ANNY-COMERCE LTD PROZOR – RAMA	SP Sunčani Lug	20
15.	GP TOMING LTD GRUDE	SP Krenica 2	150
16.	GP TOMING LTD GRUDE	SP Krenica 3	150
17.	GP TOMING LTD GRUDE	SP Hodovo 2	150
18.	GP TOMING LTD GRUDE	SP Hodovo 3	150
19.	GP TOMING LTD GRUDE	SP Hodovo 4	150
20.	GP TOMING LTD GRUDE	SP Hodovo 5	150
21.	GP TOMING LTD GRUDE	SP Hodovo 6	150
22.	GP TOMING LTD GRUDE	SP Hodovo 7	150
23.	GP TOMING LTD GRUDE	SP Hodovo 8	150
24.	GP TOMING LTD GRUDE	SP Hodovo 9	150
25.	GP TOMING LTD GRUDE	SP Hodovo 10	150
26.	GP TOMING LTD GRUDE	SP Hodovo 11	150
27.	GP TOMING LTD GRUDE	SP Hodovo 12	150
28.	GP TOMING LTD GRUDE	SP Hodovo 13	150
29.	GP TOMING LTD GRUDE	SP Hodovo 14	150
30.	ENERGETIC ELEKTRONIC LTD ČITLUK	SP Energetic electronic	150
31.	IGI SOLAR LTD ČITLUK	SP Blizanci 1	150
32.	ELPRO LIVNO	SP Suhača	22



33.	PRAHA LTD ŽEPČE	SP Praha 1-150	150
34.	ECO – KW KISELJAK	SP Elur 1	150
35.	OBRT SE PROSLAP PROZOR – RAMA	SP Proslapsko sunce	22
36.	FNE PAŽIN LTD STOLAC	SP Pažin	133
37.	SOLAR ENERGY LTD ČAPLJINA	SP Čapljina	918
38.	MAC ECO OIL LTD SARAJEVO	SP Mac Eco Oil	149
39.	BINGO LTD EXPORT – IMPORT TUZLA	SP Bingo Solar 05	998
40.	OBRT SE PROSOLAR PROZOR – RAMA	SP Prosolar	135
41.	FNE TG-GRANIT LTD PROZOR – RAMA	SP Poljana	135
42.	FNE JAKLIĆI B&B LTD PROZOR – RAMA	SP Rama	22
	TOTAL		6742

QUALIFIED PRODUCERS

No.	NAME OF THE LICENSEER	NAME OF THE SP	POWER (kW)		
1	"ŠOKĆEVIĆ" doo Orašje	SE "Bazeni"	72		
2	"SP ĆOŠKOVIĆ"doo Domaljevac	SE "Domaljevac"	30		
3	"VELOVO KUĆIŠTE	SE "Vila Anit"	10		
4	"LADANUŠIĆ Rakitno- Posušje	SE "Ladanušić"	10		
5	SE "Bičakčić 3 ELDIN"	SE "Bičakčić 3 ELDIN"	10		
6	"MAXIMA IST" doo Mostar	SE "STOLAC-A"	150		
7	Pliva d.o.o. Jajce	SE PLIVA	150		
8	"SUNCE" Raštani	SE Raštani	10		
9	"ŠAKOTA" doo Čitluk	SE Šakota	23		
10	FNE "ŠOLA" doo Tomislavgrad	SE Šola 1	22		
11	FNE "GRANITEX" doo Čapljina	SE Graniteks	22		
		UKUPNO	508		



SOLAR POWER PLANTS – TEST MODE

NC).	NAME OF THE LICENSEER	NAME OF THE SOLAR POWER PLANTS	INSTALLED POWER	
1	"Ć	ANDRO" Prozor-Rama	SE Zelenika 1	22	
2	FS	E " BLJESAK" Čitluk	FNE Bljesak	22	
3	"Č Mo	ULE PROMET"doo ostar	SE Čule promet	150	
4	SE	"BARE" Prozor-Rama	SE Bare	23	
5	SE	"SOLAR-RAMA"	SE Solar-Rama	135	
6	SF	E "INTERQUALITY" ozor - Rama	SE Interquality	22	
7	FSE " MIRNA - LUKA" Dretelj Čapljina		SE Mirna - Luka	22	
8	F	SE "BROTIS" Čitluk	SE "BROTIS"	22	
	10		UKUPNO	418	



CONSTRUCTED POWER PLANTS WHICH ELECTRIC ENERGY PRODUCE FROM RENEWABLE ENERGY SOURCES - Electric Power System BIH, November 2017

PRIVILEGED PRODUCERS

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1	"BIOTECH" d.o.o. Busovača	SE Biotech	10
2	"Elektro test" d.o.o. Sarajevo	SE Gornja Jošanica	10
3	"SICON SAS" d.o.o. Tuzla	SE Sicon 1	10
4	"SV Energija" d.o.o. Tešanj	SE Lepenica	10
5	"BIČAKČIĆ" d.o.o. Sarajevo	SE Bičakčić 1	10
6	"SUBAŠIĆ d.o.o. Tešanj	SE Subašić	10
7	"IVEX" d.o.o. Usora	SE Ivex	25
8	"EKO ENERGIJA" d.o.o. Kalesija	SE Sportska hala Kalesija	120
9	"Energy trade" d.o.o. Usora	SE Energy 1	150
10	"Remedia" d.o.o. Tuzla	SE Ahimbašići 1	22
11	"SOLIS" d.o.o. Lukavac	SE Solis 01	136
12	"Bratstvo" d.d. Gornji Vakuf-	SE Tele-com 1	138
13	"GROHS H&G" d.o.o.Sarajevo	SE Pretis 1	150
14	"ESPRO" d.o.o. Donji Vakuf	SE Espro 1	60
15	"EMY" d.o.o. Zenica	SE Emy 30 Kw Žepče	30
16	"EMY" d.o.o. Zenica	SE Emy-2 -Doboj Jug	30
17	"Eko-San" d.o.o. Sarajevo	SE O.Ś. Meša Selimović	23
18	"BINGO" d.o.o. Tuzla	SE Bingo Solar 2	144
19	"BAHEN GRADNJA"d.o.o. Sarajevo	SE Bujaci	150
20	"EKO-SAN" d.o.o. Sarajevo	SE Bijela Ploča	8
21	"NINO-HA" d.o.o. Doboj Jug	SE Konak	30
22	"mSE Vedo 1" vl. Kantardžić Elvedin	SE Vedo 1	11
23	"POLJOTRG" PP Visoko	SE Poljotrg	23
24	"MAHIR" doo Visoko	SE Mahir	23
25	"GOLD ENERGY" doo Gradačac	SE Gold energy-150	150
26	"VRTOVI HEĆO" vI.Zaim Hećo	SE Košćan 1	10
27	"ENERGONOVA" d.o.o. Sarajevo	SE "Merkur"	115
28	"ENERGONOVA" doo Sarajevo	SE "Klas centar Mostar"	102
29	"ENERGONOVA" doo Sarajevo	SE "Zlatka Vuković"	105
30	"ENERGY" doo Kakanj	SE "ENERGY"	150
31	"GSL AUTOCENTAR"Gornji Vahuf	SE GSL	23
32	"SE BAZA" doo Tuzla	SE Baza	17
33	"ENERXIA" doo Bugojno	SE Enerxia	135
34	"COMEX" d.o.o.Tešanj	SE RADUŠA "	23
	1	UKUPNO	2 161

 UKUPNO
 2.161

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QUALIFIED PRODUCERS

Red broj	Naziv nosioca Licence	Naziv postrojenja - Solarne elektrane	Instalisana snaga
1	"BEA " d.o.o. Tešanj	SE BE 23-1	23
2	"GRAND 99" d.o.o Travnik	SE Grand 99	30
3	"OPES" d.o.o. Sarajevo	SE Dragovići 1	30
4	"ELCOM" Đưđevik, Živinice	SE Đurđevik	20
5	"FNE SM BRKA" Tešanj	FNE SM Brka	10
6	"ORKAN 1" Živinice	SE Orkan 1	15
7	"ŠNELKOM" doo Ilidža	SE Šnelkom	10
8	"MAZOLJICE" Mostar	SE Mazoljice	10
9	"SE ELEKTRONIK" Tešanj	SE Dolina	13
10	"SE UMEL- DAL EKOVODMONTAŽA" dog Tuzia	SE Umel-dalekovod	23
11	"SE BINGO " doo Tuzla	SE Bingo solar 01	144
12	"SE SARKOP" doo Srebrenik	SE Sarkop	150
13	"SE HERCEG" doo Srebrenik	SE HERCEG	150
14	"SAMI PROMET" doo Visoko	SE Sami promet 1	30
15	"SJAJ" d.o.o. Maglaj	SE Sjaj Maglaj	23
16	"ALIM" doo Visoko	SE Alim	30
17	"HENKOPROM" doo Žepče	SE Henko HE. 1-150	122
18	"GNJEČE 1" Klokotnica	SE Gnječe 1	23
19	"ELWORK" doo Tuzia	SE Elwork 1	30
20	"ASCOM"doo Tešanj	SE Askom 1	10
21	"PETROL - P" doo Bihać	SE Petrol - P1	15
22	"PETROL - P" doo Bihać	SE Petrol - P 2	10
23	"SAMELAY" doo Tešanj	SE Samelaj 1	23
24	HO SVJETLOST Doboj Istok	SE Gaj 1	20
25	"FAVORIT BH" doo Bihać	SE Favorit BH	20
26	" SLAVINOVIĆI I" Tuzla	SE Slavinovići 1	6
27	"SE SOLAR 1-2" Hadžići	SE Solar 1	133
28	"PERO" doo zenica	SE Pero 1	119
29	"IVEX" doo Usora	SE lvex 2	127
		UKUPNO	1.369



SOLAR POWER PLANTS – TEST MODE

Red broj	Naziv nosioca Licence	Naziv postrojenja - Solarne elektrane	Instalisana snaga
1	"CONRA" doo Tešanj	SE FNE CO-23	22
2	MSF-TRADE doo Doboj Istok	SE Duje	23
3	"INTER" doo Tešanj	SE Inter IN 23-1	20
4	"KALIM-PROFIL" doo Tešanj	SE Kalim K23-1	22
5	"PAPE" vl. Mirsad Bašić	SE Pape	22
		UKUPNO	109

Constructed power plants generating electricity from renewable sources List by the status of producers

	PRIVILE	GED CERS	QUALI	FIED JCERS		ERS IN TEST	TOTAL	
	No of plants	(kW)	No of plants	TOTAL (kW)	No of plants	TOTAL (kW)	No of plants	TOTAL (kW)
HIDRO ENERGY	43	35.694	7	12.485	1	500	51	48.679
JP EP BiH	38	31.769	7	12.485	1	500	46	44.754
JP EP HZHB	5	3.925	0	0	0	0	5	3.925
SOLAR ENERGY	76	8.903	40	1.877	13	527	129	11.307
JP EP BiH	34	2.161	29	1.369	5	109	68	3.639
JP EP HZHB	42	6.742	11	508	8	418	61	7.668
BIOMASS	0	0	0	0	0	0	0	0
JP EP BiH	0	0	0	0	0	0	0	0
JP EP HZHB	0	0	0	0	0	0	0	0
WIND ENERGY	0	0	1	300	0	0	1	300
JP EP BiH	0	0	1	300	0	0	1	300
JP EP HZHB	0	0	0	0	0	0	0	0
TOTAL	119	44.597	48	14.662	14	1.027	181	60.286



PROJECTS SUMMARY BY CANTONS

A/ PROJECTS IN THE TEST MODE

PLANTS	UN-SAN	POSAV.	TUZLAN		ZE-DO	BO-POD.	SR-BOS.	HNK	ZAP-HER.	SARAJEV.	KAN. 10	TOTAL	
HIDRO	1	0	0	2		4	0	5	0	0	1	0	12
WIND	-	1	0	0		0	0	3	5	2	0	10	21
BIOMASS	1	0	0	0		0	0	0	0	0	0	0	0
SOLAR		2	0	2		8	1	7	5	0	1	1	27
OTHER		0 -	0"	0		0	0	0	0	0	0	0	0
KOGEN.		0	0	0		0	0	0	0	0	0	0	0
TOTAL		3	0	4	1	2	1	15	10	2	2	11	61

B/ PROJECTS IN THE CONSTRUCTION PHASE

PLANTS	UN-SAN	POSAV.		TUZLAN.	ZE-DO	BO-POD.	SR-BOS.	HNK		ZAP-HER.	SARAJEV.	KAN. 10	TOTAL	TOTAL POWER (MW)
HIDRO		0	0	2	2 4		L .	8	19	()	0 0	37	49.2318
WIND		0	0	(0 0	(0	8	(0	0 10	18	644.723
BIOMASS		0	0	() 1	()	1	0	(0	0 3	5	123.722
SOLAR		12	1	19	24	1 3	2	23	81		4 1	8 2	186	782.19508
OTHERS		0	0		0 0	· (0	0	•	o r	o* c	0	0
KOGEN.		0	0		0 0	· (0	0	- (o *	0 0	0	0
TOTAL		12	1	21	1 29	1 6	5	32	108		4 1	8 15	246	1599.87188

C/ CONSTRUCTED

PANTSS	UN-SAN		POSAV.	TUZLAN.	ZE-DO	BO-POD.	SR-BOS.		HNK	ZAP-HER.	SARAJEV.	1	KAN. 10	TOTAL	TOTAL POWER (MW)
HIDRO		0	0	0) 7	7 4	L	30	9	1 13	2	0	0	52	49 2253
WIND		0	0	0) 1	1 ()	0	0		0	0	0	1	0.3
BIOMASS		0	C	C) () ()	0	0		D	0	0	C	0
SOLAR		4	3	19	24	1 2	2	7	51		5	8	3	126	11.20963
OTHERS		0	0	· .) * C) [*] (0	0		D M	1	0	1	0,432000
KOGEN.	*	0	0	C	0 0	0 (N	0	0		D	0	0	· 0	0
TOTAL		4	3	19	32	2 6	1	37	60		7	9	3	180	61.16693



AVAILABLE SOLAR POWER PLANT FOR SALE IN SOLAR PARK HODOVO - STOLAC

Locations of this solar power plants are in the business-economic zone of Hodovo, which is as such determined by the Regulatory Plan of the Economic-Business Zone in Hodovo, Municipality of Stolac.

After the purchase of land in public tenders, the following are made for all the locations listed below:

- Geodetic survey performed,
- Parcelization where it was necessary,
- Payment of taxes and transfer of ownership from the Municipality to each individual,
- Scramble in the grunts and getting ZK extracts,
- Preparation of Preliminary Designs and Obtaining a Urban License,
- Main projects for construction permit developed by "ELEKTRO TEST" doo Sarajevo,
- Revision of project documentation by PROVING doo Sarajevo,
- elaborated work safety and fire protection works,

- elaborates on the protection against the reflection of solar cells of the photovoltaic power plant on adjacent surfaces,

- After submitting the complete documentation - from the Ministry of Economy of the FBIH, a Decision on compliance of project documentation with the FBiH Law on Electric Power Inspection and other regulations,

- All projects have received the PEES (Pre-Power Consent) with a connection in the Special Zone.

- We are currently awaiting the issuance of the ED (Energy Permit) by the Federal Ministry of Energy, Mining and Industry, which is the condition for the issuance of a building permit after which it can be accessed by the works, because everything is paid properly.

- Companies subject to SE are registered because it is required by law, all companies are intentionally registered with the main activity of production and distribution of electricity from renewable sources - green energy.



"FIO" LTD ADDRESS: UI.Zagrebačka 53/2, Sarajevo k.č. 1/144 (stari broj: 991/140) K.O. Pješivac SE "FIO" – Hodovo – POWER 149 kW No. of urban permit : 07-02-25-274/15 od 10.04.2015

2. "PRVI KRUG" LTD

ADDRESS: Ul.Milana Preloga 23 Sarajevo k.č. 1/145 (stari broj: 991/141) K.O. Pješivac SE "ĐOZIĆ" – Hodovo – power 149 kW No. of urban permit: 07-02-25-276/15 od 10.04.2015.

3. "VIRTUS SOLIS" LTD

ADDRESS : Tržni centar-pasaž-1 sprat lamela 36 A Tuzla k.č. 1/123 (stari broj: 991/119) K.O. Pješivac **SE "Green Power 1"** – Hodovo – POWER **149 kW** No. of urban permit: 07-02-25-278/15 od 10.04.2015.

4. "VIRTUS SOLIS" LTD

ADDRESS Tržni centar-pasaž-1 sprat lamela 36 A Tuzla k.č. 1/143 (stari broj: 991/139) K.O. Pješivac **SE "Green Power 2"** – Hodovo – snage **149 kW** No. of urban permit: 07-02-25-275/15 od 10.04.2015. godine

5. "VIRTUS SOLIS" LTD

ADDRESS :Tržni centar-pasaž-1 sprat lamela 36 A Tuzla k.č. 1/124 (stari broj: 991/120) K.O. Pješivac **SE "SOLARIS"** – Hodovo – snage **149 kW** No. of urban permit: 07-02-25-279/15 od 10.04.2015. godine



6. "BL-COMMERCE" LTD ADDRESS: Ul.Himzije Bjelavca br.148. Sarajevo k.č. 1/122 (stari broj: 991/139) K.O. Pješivac SE "BREGAVA" – Hodovo – snage 149 kW No. of urban permit : 07-02-25-277/15 od 10.04.2015. godine

7. "PRVI KRUG" d.o.o.

ADDRESS UI.Milana Preloga 23 Sarajevo k.č. 1/173 (stari broj: 991/170) K.O. Pješivac SE "PRVI KRUG 1" – Hodovo – snage 149 kW No. of urban permit: 07-02-25-261/17 od 06.04.2017. godine

8. "PRVI KRUG" LTD

ADDRESS: Ul.Milana Preloga 23 Sarajevo k.č. 1/174 (stari broj: 991/171) K.O. Pješivac **SE "PRVI KRUG 2"** – Hodovo – snage **149 kW** No. of urban permit: 07-02-25-263/17 od 06.04.2017. godine

9. "PRVI KRUG" LTD

ADDRESS: Ul.Milana Preloga 23 Sarajevo k.č. 1/172 (stari broj: 991/169) K.O. Pješivac **SE "DISCOVERY"** – Hodovo – snage **149 kW** No. of urban permit: 07-02-25-262/17 od 06.04.2017. godine

10. "SOLAR CIRCLE" LTD

ADDRESS:UI.Milana Preloga 23 Sarajevo k.č. 1/108 (stari broj: 991/104) K.O. Pješivac **SE "SOLAR CIRCLE 1"** – Hodovo – snage **149 kW** No. of urban permit: 07-02-25-257/17 od 06.04.2017. godine



11. "SOLAR CIRCLE" LTD

ADDRESS: UI.Milana Preloga 23 Sarajevo k.č. 1/169 (stari broj: 991/166) K.O. Pješivac **SE "SOLAR CIRCLE 2"** – Hodovo – snage **149 kW** No. of urban permit: 07-02-25-258/17 od 06.04.2017. godine

12. "SOLAR CIRCLE" LTD

ADDRESS: UI.Milana Preloga 23 Sarajevo k.č. 1/170 (stari broj: 991/1674) K.O. Pješivac **SE "SOLAR CIRCLE 3"** – Hodovo – snage **149 kW** No. of urban permit: 07-02-25-259/17 od 06.04.2017.

13. "SOLAR CIRCLE" LTD

ADDRESS : Ul.Milana Preloga 23 Sarajevo k.č. 1/171 (stari broj: 991/1684) K.O. Pješivac SE "SOLAR CIRCLE 4" – Hodovo – snage 76 kW No. of urban permit: 07-02-25-260/17 od 06.04.2017.

14. "SOLAR CIRCLE" LTD

ADDRESS :UI.Milana Preloga 23 Sarajevo k.č. 1/103 (stari broj: 991/99) K.O. Pješivac **SE "ŠUMAPROJEKT"** – Hodovo – snage **149 kW** No. of urban permit: 07-02-25-555/13 od 24.07.2013. Građ.dozvola broj : 07-02-25-178/14 od 31.03.2014.

15. "SOLAR CIRCLE" LTD

ADDRESS : UI.Milana Preloga 23 Sarajevo k.č. 1/104 (stari broj: 991/100) K.O. Pješivac **SE "NAPOLEON ROTT"** – Hodovo – snage **149 kW** No. of urban permit:: 07-02-25-554/13 od 24.07.2013. godine Građ.dozvola broj : 07-02-25-177/14 od 31.03.2014.godine



16. "SOLAR CIRCLE" LTD

ADDRESS : Ul.Milana Preloga 23 Sarajevo k.č. 1/107 (stari broj: 991/103) K.O. Pješivac **SE "ELEKTRO TEST"** – Hodovo – snage **149 kW** No. of urban permit: 07-02-25-558/13 od 24.07.2013. godine Građ.dozvola broj : 07-02-25-176/14 od 31.03.2014.godine

TOTAL POWER OF ABOVE SOLAR POWEER PLANT IS 2311 Kwp.



MAP OF THE SUN POWER PLANT HODOVO

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INVESTMENT PROJECT



ROOFTOP PHOTOVOLTAIC POWER STATION "SPRECA 1", KALESIJA

Location	Spreca Farm, Kalesija
Туре	Solar energy
Installed net electric power	149,25 kWp
Electricity generation annually	174,41 MWh
Total investment cost	189 959 EUR
Civil Works	35 078 EUR
Equipment	134 913 EUR
Other costs	19 968 EUR
Approvals status	Urban approval/ location conditions - obtained Energy permit - request submitted
Investment & Technical documentation status	Feasibility study (Economic and financial analysis) – completed
Project description	The power plant, with installed power of 149.25 kWp, will be connected to the electricity grid and all produced energy will be sold at a purchase price of electricity from plants that use renewable energy sources. There is the possibility of installing larger capacity on the land around the farm.



WIND POWER PLANTS IN THE BOSNIA AND HERZEGOVINA

Sarajevo, 2020



Polimac Company LTD

Bosna & Hercegovina

2020

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GENERAL INFORMATION

Energy has a major impact on the growth and development of the economy of each country, primarily through technological development and the increasing competitiveness of the economy. Energy is a generator of development in the technological, economic, scientific and educational terms.

The energy supply is essential for the sustainability of economic development of the countries of the Western Balkans, especially due to the fact that it is a large number of relatively small economies.

From the perspective of the European Union, SEE region has been identified as a major transit region for gas, oil and electricity. World Bank research shows that the lack of energy and energy demands throughout the region will be dramatically increased in the near future.

Energy sector is one of the most powerful in B&H, with long tradition, huge potentials and opportunities for further development and investment.

According to the latest data, B & H is at first place in the region concerning the export of electricity. The export of electricity in 2014 was 5,997 GWh.

In the last three years, BiH was ranked as 24th in the world in the export of electricity, while Germany occupied first place.

In the last few years a significant growth of foreign investment in Bosnia and Herzegovina

Energy sector, has recorded. Foreign investors have recognized the potential of this sector in B&H, and also the B&H Public Companies producing electricity, invest substantial means in order to this sector enable sustainable development and growth.

WHY INVEST IN ENERGY SECTOR OF B&H?

- Energy Community Membership
- Favorable Feed-in-tariffs for RES power plant
- Low operating costs and competitively priced
 Qualified human capital
- Energy Reserves and Potentials

2006 B&H ratified the Treaty Establishing the Energy Community, which provides the creation of the biggest internal market in the world for electricity and gas, signed between European Union on one side, and eight Contracting Parties: Albania, Bosnia and Herzegovina, Kosovo, Macedonia, Moldova, Montenegro, Serbia and Ukraine.

Seventeen countries have the status of Participants and directly participate in the work of the Energy Community bodies: Austria, Bulgaria, Czech Republic, Croatia, Cyprus, Finland, France, Germany, Greece, Hungary, Italy, the Netherlands, Poland, Romania, Slovakia, Slovenia and the United Kingdom.



Armenia, Georgia, Norway and Turkey have observer status in the Energy Community bodies.

The main goals of the Energy Community are:

- Creation of a stable and single regulatory framework and market space
- Providing of reliable energy supply
- Attracting investments in the electricity and gas sectors.
- Implementation of energy efficiency
- Utilization of renewable sources.

ENERGY RESERVES AND POTENTIALS

Bosnia and Herzegovina is endeavored with significant and diverse indigenous natural energy re-sources that are still untouched or only partly exploited, such as:

• The main energy resource of B&H is coal (brown coal and lignite), with estimated reserves of 6 billion tons (average annual coal consumption for electricity production is about 8 million tons)

• The hydropower potential is 6000 MW which locates B&H on the eight place in Europe and currently installed capacity of 2 054 MW represents 36% of total hydro potential ,

• According to the extensive researches, there is significant wind energy potential which is estimated at 2000 MW

• Raw material resources for the bio-mass energy are extremely favorable, including approximately 1.5 million m3 of forest / wood industry residues (all wood waste, sawdust, chips, and chipped technical wood), etc. • Potential for exploitation of geo-thermal and solar energy are available too, but have not been sufficiently explored and exploited

• Preliminary research surveys of oil and gas, had indicated the presence of promising deposits on a number of sites in B&H (off-balance sheet reserves are estimated at about 50 million tons of oil.

B&H energy sector encompasses the following main subsectors:

- Coal
- Electric power
- Oil & Natural gas

POWER GENERATION

Electricity is predominantly produced in hydro and thermal power plants. Currently, the production facilities, with total installed capacities of 4000 MW, exceed the domestic demand, and the electricity is exported.

Gross electricity production in Bosnia and Herzegovina was 1328 GWh in August 2017, and it decreased by 5.4% compared to August 2016. In total gross electricity production hydro power plants participated with the share of 22.5% and thermal power plants with 77.5%

NEW POWER GENERATION PROJECTS DEVELOPMENT

Intending to harness the substantial and diversified energy resource base in B&H, all relevant stakeholders in B&H are adopted development and investment programs for construction of new generation plants, entirely respecting recommendation from EU Directive 2003/54.



Significant investments in new power system facilities and expansion of power generation capacities are foreseen by these programs, in order to meet growing electricity supply deficit within regional and larger European markets. Investment programs encompass a number of the development projects, based on coal, hydro and renewable energy sources, including both expansion of existing and construction of new power generation capacities.



WIND POWER PLANTS IN B&H



Measurement results for sites in Herzegovina in the period of 2004-2005 give wind speed in the range of 7 to 9 m/s. The application of extrapolation models and the use of long-term scaled data sets on these locations result in expected average annual wind speed in the range of 6 to 8 m/s 50m a.g.l. However, model data can be more reliably used for regional wind resource assessment and for the wind climate comparison of different regions of B&H. Thus, the southern part of B&H can be considered as the most perspective for wind power plant development. The world wind atlas shows very similar results of the wind speed in the region of Herzegovina.





Average annual wind speed 50 m a.g.l. for the period 1997-2006 as a result of global weather model

The construction of big wind parks that would give a significant contribution to the existing power resources have been the talk of the town for years.

According to CIN records, 34 wind power plants were planned to be built in B&H.

In 2013, started with work a small wind power plant - Moštre I – of the installed power of 30 kW. The construction was financed by a

private company "Susa Commerce", with a power of 350 kilowatts, costing about half a million KM.

This wind farm (VE "Moštre 1") is located in the village of Zimča, in the municipality of Visoko, and the estimated annual production of electricity is approximately 1,080 GWh.

The produced electricity will be delivered to the distribution system of JP "Elektroprivreda BiH" d.d. -Sarajevo. Otherwise, wind farm (Suša Commerce) is the first wind farm in the Federation of BiH.





The Power Utility under control of Bosnian Croats EP HZHB announced the start of its 50,6 megawatt wind power plant on the Mesihovina near Tomislavgrad at the end of 2017.



The wind farm (VE) Mesihovina is located in the central part of the municipality of Tomislavgrad. It will have 22 wind turbines of the type SWT-2.3-108 of the total installed capacity of 50.6 MW and an annual production of about 165 GWh.

The funds required for this project were secured by the donation of the German Government in the amount of 1,000,000 Euros, the KfW loan in the amount of 71,000,000 Euros and the own funds of the EP EP HZHB needed for completion of the project. The total investment value of the VE Mesihovina project is around 81. Mil. Euro.

EPBiH announced that it was starting the construction of a 48 megawatt wind power plant on the Podveležje near Mostar. It secured favorable loans for these projects from the German Development Bank (KfW) with state guarantees. A 126.8 million KM loan for Podveležje at the end of 2013, but the procedure for securing a favorable loan took two years.

In recent years and especially in his year, in the media it can be find many posts about announcements about new potential wind power.



Currently there are many macro and micro locations for wind power plant construction that are evaluated as advantageous for wind power plant construction which is presented in the table from below:

No.	Location	Name	Power (MW)	Owner
1.	LIVNO	Borova Glava	52	Elektroprivreda HZHB
2.		Orlovača	42.9	HB Wind LLC, Livno
3.		Debelo Brdo	54	Koncig LLC Posušje
4.		Mučevača	63	Balkan Energy Wind LLC Livno
5.		Široka Draga	51	Imres smartgreenenergy Livno, & Enprode Istanbul
6.	TOMSLAVGRAD	Baljci	48	Tomislavgrad - Kuprec LLC Tomislavgrad
7.		Ivovik	84	Ivovik LLC Sarajevo
8.		Gradina	70	Vran-Dukić LLC Tommislavgrad
9.		Slovinj	130	EP BIH; EPHZHB; EP RS
10.	GLAMOČ	Dževa	46	EP BIH; EPHZHB; EP RS
11.		Škadimovac	110	WBL City Project Banja Luka
12.	KUPRES	Kamen-Dent	48	Kamen-Dent Mostar
13.	BOSANSKO GRAHOVO	Derala	87	G&G Energija LLC Bihać
14.	nocučir	Relaks	30	Relaks LLC Vinjani Posušje
15.	PUSUSJE	Poklečani	72	EPHZHB
16.	NEVECIMIE	Grebak	49.5	Grebak, Germany
17.	NEVESINJE	Trusina	51	Eol prvi LLC Nevesinje
18.		Podveležje	48	EPHZHB
19.	MOSTAR	Velika Vlajna	32	EPHZHB
20.		Pločno	34	Energy 3
21.	HADŽIĆI, SARAJEVO	Ivan Sedlo - Hadžići	25.2	Suzlon Wind Energy BiH
22.	νι αξιά	Galicia	2 x 50	TLG LTD Travnik
23.	VLASIC	Vlašić	48	EP BiH
24.	TREBINJE	Hrgud		Elektroprivreda RS



According to NOSBiH, 10 concession contracts for wind power plants construction in the FBiH have been issued. Some firms concluded the contracts with the cantonal governments as far back as 2008, yet have not started building.

Herceg Bosna Canton granted the most concessions. In FB&iH firms must complete a complicated procedure and collect permits and approvals from at least 13 municipal, cantonal and the FBiH agencies to put up wind power stations.

The situation in the RS is somewhat different, once when is signed a concession agreement with the RS government, it was easier to collect the permits.

It is almost impossible to make projections about how much energy will come from a wind power station. That means that regulatory bodies must insure there are steady reserves of backup electricity. The number and power of wind power plants is also limited by the capacity of transmission lines in BiH. Most of the proposed projects are located in West Herzegovina, but the transmission network is not developed enough to meet the needs of wind power plants.

For this reason, the DERK stipulated two years ago that the transmission cap for wind power plants until 2019 will be 350 megawatts. The two entities agreed that the FBiH gets 230 and the RS 120 megawatts of that. Then the entity ministries for energy, industry and mining made a list of the future wind power plants to be connected to the grid.



OVERVIEW OF THE MOST INTERESTING PLANNED WIND POWER PLANTS:

LIVNO:

AA	WIND FARM BOROVA GLAVA, Livno
Location	Borovaglava, Livno
Туре	Wind farm
Installed net electric power	26× 2 MW = 52 MW
Electricity generation	149.62 GWhannually
Total investment cost	78 million EUR
Civil Works	2.28 million EUR
Equipment	68.56 million EUR
Roads	2.25 million EUR
Other costs	4.91 million EUR
Investment & Technical documentation status	 Project Analysis & Review - Use of Wind Power for Electricity Generation in BiH completed / Feasibility Study Geotechnical Study Waste management plan ESI Assessment 110Kv Substation design completed





WIND FARM ORLOVAČA

And the second	
Location	Livno, Municipality of Livno
Туре	Wind farm
Installed net electric power	13 x 3.3 MW = 42.9 MW
Electricity generation	Gross production (no losses), GWh 99.06 Gross production (no losses), GWh 99.06 Net long term annual energy yield (P50), GWh 86.33
Total investment cost	65 million EUR
Civil Works	2 million EUR
Equipment	55 million EUR
Roads	5 million EUR
Other costs	3 million EUR
Investments schedule	July - December 2016 - Contracting of credit line or other forms of wind farm project financing July - December 2016 - Agreement concluding between potential partner and HB Wind April 2017 - Wind farm construction start
Approvals status	March-April - Valid registration of wind farm concession in land register March-April - Obtaining Energy approval for connection (Federal Ministry of Energy, Mining and Industry) and consent of the Government of Bosnia and Herzegovina for the wind farm May-June 2016 -Obtaining building permits



MOSTAR

	WIND FARM PLOČNO, Mostar
Location	City of Mostar
Туре	Wind farm
Installed net electric power	34MW
Total investment cost	Total investment in the project Pločno: 44.2 million EUR IRR = 11.1%
Investment & Technical documentation status	 Researches and analyses finished Issuing of permissions & approvals underway Preliminary economic analysis done Preliminary grid connection solution done Final design making under way Initial contacts with turbine manufacturers made Searching for strategic partner





WIND FARM VELIKA VLAJNA, Mostar

	and the second
Location	VelikaVlajna, Mostar
Туре	Wind farm
Installed net electric power	2 X 16 MW = 32 MW
Electricity generation	89.36 GWhannually
Total investment cost	52.72 million EUR
Civil Works	1.42 million EUR
Equipment	44.80 million EUR
Roads	2.00 million EUR
Other costs	4.6 million EUR
Investment & Technical documentation status	 Project Analysis & Review - Use of Wind Power for Electricity Generation in BiH completed / Feasibility Study Geotechnical Study Waste management plan ESI Assessment 110Kv Substation design completed



GLAMOČ:

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Location	Glamoc, the north western part of BiH, 20 km from Glamoc town		
Туре	Wind farm		
Installed net electric power 110 MW			
Electricity generation	340.000 MWh annually		
Total investment cost	154 million EUR		
Equipment	121.20 million EUR		
Investment & Technical documentation status	The procedure of measuring the wind speed is done in the period from November 2012 to November 2014. Based on this data Naval institute in Zagreb, Croatia, has made development of the design and preliminary design wind farm Skadimovac. This projects so far has the following permits: - The concession agreement with Government of Hercegbosnian County - Permission for the environment at the Ministry of Tourism and Environment of the Federation of Bosnia and Herzegovina - Sign of the Agency for RES - Preliminary water approval by the Agency for Water Area of the Adriatic Sea - The principle approval for connection to the grid Transmission company - Urban planning permit and construction permit is in the process of obtaining		



CIRCUTOR DE LA CONTRACTA DE LA		
	WIND PARKS SLOVINJ & DŽEVA, GLAMOČ	
Location	Municipality Glamoč, Herceg Bosna Canton Bosnia and Herzegovina	
Туре	Wind farm	
Installed net electric power	Wind park Slovinj 130 MW; Wind park Dževa 46 MW	
Total investment cost	263.000.000,00 EUR	
Approvals status	Location Permit Construction permit - in the issuing procedure	
Investment & Technical documentation status	Cooperation with Public Companies for production and distribution of electricity: EP BiH; EP HZHB; EP RS	
Project schedule	Implementation period: 10 years Project payback period: 12 years	



POSUŠJE:

	WIND FARM POKLEČANI, Posušje
Location	ZHT/ Posusje
Туре	Wind farm
Installed net electric power	2 X 36 MW = 72 MW
Electricity generation	258,595 GWh annually
Total investment cost	108 million EUR
Civil Works	2.91 million EUR
Equipment	94.93 million EUR
Roads	3.11 million EUR
Other costs	7.05 million EUR
Investment & Technical documentation status	- Site prospection, maps - Two years measuring cycle at 10 m pole completed - Preliminary financial analysis





WIND FARMRELAKS, Posušje

Location	Oštrac, Vučipolje, Municipality of Posušje
Туре	Wind farm
Installed net electric power	30 MW (10 x 3 MW)
Electricity generation	99,338 GWh annualy
Total investment cost	38,766,146.00 EUR
Civil Works	523,107.00 EUR
Equipment	29,850,000.00 EUR
Roads	251,500.00 EUR
Other costs	8,141,539.00 EUR
Approvals status	 -Project is approved in the ISO (Independent System Operator in Bosnia and Herzegovina) indicative plan production from renewable energy sources - Obtained Concessions Contract with the Government of the West- Herzegovina Canton - Realized all the property and legal relations in the area which includes wind farm "RELAKS"
Investment & Technical documentation status	 Initiatedproceduresfor obtainingenvironmental permits Prefeasibility study completed
Project schedule	Project developmentstarted fromearly 2009. After the decisionto buildthe projectit was necessary to obtainallapprovalsand permits and this process will probablybe extended to theend of 2013. The plannedstart of construction phase is March 2014 in order that "RELAXWindfarm" could begin its operations in early 2015.



BOSANSKO GRAHOVO:



Location	Bosansko Grahovo		
Туре	Preliminary choice of turbines; Vestas V 112 - 3.0 MW, 119 m hh.		
Installed net electric power	87 MW; 29 WTG's á 3 MW (the choice of turbines is not conclusive)		
Electricity generation Ey	 - 289,400 MWh Park AEP P50 including a park efficiency of 95.2 %. - 257.956 MWh AEP/ 8,895 MWh per turbine AEP Net P50 - 34 % Capacity factor Net P50. - 2,965 Full load hours Net P50. 		
Total investment cost	Scenario 1: 29 Vestas turbines - Total project costs of EUR 109 million Scenario 2: 29 China turbines - Total project costs of EUR 78.9 million		
Civil Works	5 479 000 EUR		
Equipment	64 235 000 EUR	Y	
Other costs, project rights	1 500 000 EUR		
Approvals status	Decision on wind park development from municipality parliament Decision on including wind park Derala in to municipality urban plan Municipality parliament decision for wind measurement Urban permit for wind measurement Project registration at Renewable Energy Project Official Register at FBiH Ministry of Energy, Mining & Industry	 Contract on land rent and control Decision to start wind park concession process by Canton. Concession contract signed; concession rights fully obtained for period on 30+15=45 years Decision for wind park construction from municipality parliament. NOS Indicative plan registry 	
Investment & Technical documentation status	 Micrositing and wind measurement campaign, done by Garrad Hassan Micrositing and Production Estimate, done by Global Wind Power Wind Power Plant Assessment Report Derale done by Vestas Wind power and production estimates done by Goldwind Feasibility Study, different financial scenarios, done internally 		
Project schedule	 Urban permit with environmental license: 3 months. Energy licence: 5 months Preliminary PPA: 7 months Preliminary grid connection license: 8 months. Final PPA, construction and grid licences: 12 months. 		

WIND FARM "DERALA 87 MW", BOSANSKO GRAHOVO



VLAŠIĆ:

	WIND PARK GALICA, VLAŠÍC	
Location	Central Bosnia, Mountain Vlašić, Travnik Municipality	
Туре	Wind Farm	
Installed net electric power	2x50 MW	
Electricity generation	253230	
Total investment cost 156 000 000 EUR		
Civil Works	4 560 000 EUR	
Equipment 137 120 000 EUR		
Roads	4 500 000 EUR	
Other costs	9 820 000 EUR	
Approvals status	In progress	
Investment & Technical documentation status	 Project Analysis and Review – Use of Wind Power for Electricity generation in BiH completed Feasability study Geotechnical study ESI Assessement 110 KW Substation design completed Greed connection approval Ecological approval 	
Project schedule	Final phase of documentation for construction	



	WIND FARM VLAŠIĆ
Location	Central Bosnia, Mountain Vlašić
Туре	Wind Farm
Installed net electric power	48 MW
Electricity generation	98 GWH – annual power generation
Total investment cost	64.6 million EUR
Project schedule	2015 - 2017
Project proposed by	Public Enterprise Elektroprivreda BiH d.d. Sarajevo



Every year NOSBiH (Independent System Operator in BiH) does a 10-year projection of electricity production and publishes a list of energy projects under construction.

The latest research and analysis about the Power Network Analysis for Wind Power Integration and Market Rules Advice of Bosnia and Herzegovina, for the EBRD and ISO B&H are made in 2011.