RES SERBIA

RES Serbia Guidebook for Investors in **RENEWABLES IN SERBIA**

2024

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Supported by:
European Bank for Reconstruction and Development

Disclaimer:

This **RES Serbia Guidebook** was initially drafted based on applicable law and with information current as of November 3, 2023. Following final creative completion, we endeavoured to ensure the Guidebook is up to date with legislative acts (statutes) breakdown as at 30 June 2024, whilst from secondary regulations (bylaws) perspective the status effectively reaches no less than 1 January 2024 subject to limited exceptions. Namely, sub-legislative activities in the energy sector in particular have been very intensive from late 2023 to mid-2024, with highly complex details still evolving or requiring further legislative amendments for solidification, or to some extent not affecting a part of projects pipeline. In that context, final approach taken was to offer certain forward-looking structural and practical explanations on the gist of ongoing changes, rather than providing only superficial citations of new bylaws text, potentially subject to further change in near future and with relevance not yet entirely developed. Unless otherwise indicated, the Guidebook does not encompass any subsequent regulatory changes or updates.

The authors have taken due care to ensure the information presented are as accurate as possible, however the content of this guide is meant solely as a **practical resource outlining general aspects and principles of investing in wind and solar projects** and not as comprehensive study or conclusive advice for making decisions or implementing any plans. Therefore, users are advised to seek up-to-date information and specific advice from specialized professionals before taking any action.

The creators of this guide do not assume responsibility for decisions or actions taken on the basis of information provided herein or for any other use thereof beyond the intended purpose above.

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Abbreviations

Item	Description
AC	Alternating Current
AERS	Energy Agency of the Republic of Serbia
AP	Autonomous Province
CEP	2019 Clean Energy for All Europeans Package
DC	Direct Current
DSO	Distribution System Operator
EBRD	European Bank for Reconstruction and Development
EDS	DSO “Elektrodistribucija Srbije”
EIA	Environmental Impact Assessment
EMS	TSO “Elektromreža Srbije”
ESIA	Environmental and Social Impact Assessment
EU	European Union
GCA	Grid Connection Approval
HV	High Voltage
INECP	Integrated National Energy and Climate Plan
JSC	Joint Srock Company
LGU	Local Self-Government Unit
LV	Low Voltage
MV	Medium Voltage
OHL	Overhead Line
PPA	Power Purchaese Agreement
PV	Photovoltic
RED II	Renewable Energy Directive 2018/2001/EU
RES	Renewable Energy Sources
RS	Republic of Serbia
SCADA	Supervisory Control and Data Acquisition
SEEPEX	South-East Europe Power Exchange
SPV	Special Purpose Vehicle
TAC	Technical Acceptance Committed
TSO	Transmission System Operator
WTG	Wind Turbine Generator

Contents

Introduction

In the Republic of Serbia, the renewable energy industry is always undergoing modifications, enhancements, and adjustments. The creation of renewable energy projects is gaining popularity, but investors and potential project holders need a consolidated source of the information. The administrative and permit-issuing processes provide one of the larger barriers to Serbia's efforts to develop renewable energy sources. The development of renewable energy sources is complex, time-consuming, and require a lot of permits. Therefore, this publication provides answers to the most up to date information and is intended to be a practical guide with a focus on Serbian legislation, environmental protection, the procedure for issuing permits, sources of financing and incentive systems.

Given intended scale of information and tailored presentation type, it should be understood wind and solar projects are the absolute centrepiece of this Guidebook. Still, notwithstanding the concept and details exclusively devoted to wind and solar (e.g. equipment-specific clarifications in Section 1), investors in other renewable sources should be able to draw holistic guidance to certain degree from clearly general sections (e.g. Regulatory framework overview), as well as some useful information from explicit notes thereon, such as biomass. On the other hand, large-scale hydro, waste and geothermal power are probably best presented using even more specific presentation approach, different regulatory patterns included, hence interpreting this Guidebook by analogy to those technologies should in principle be avoided.

Serbia currently has four large-scale wind power plants of 373 MW total capacity connected to the transmission grid, whilst one recently completed 103 MW plant underwent trial runs as of October 2023. With another five wind projects totalling 35 MW connected to distribution grid, it adds up to a grand total of 10 wind farms and 506 MW currently online in Serbia. On the solar plants side, there are around 20 ground-mounted projects connected to distribution grid with total capacity of roughly 30 MW. Aside up-and-coming solar parks resting on private or recent government initiatives, one might say the solar energy in Serbia is currently underexploited.

Theoretical pipeline of projects as per request-list for connections to the transmission system totals 21.8 GW, out of which wind projects make 10 GW, solar power plants equal 11.6 GW (with first solar plant yet expected on Serbian high-voltage) and a hybrid wind-solar project of 0.2 GW[1]. This list is expected to reduce significantly in the near future due to ongoing changes in the connection procedures and requirements. The distribution system typically used to connect small-scale, up to 10 MW wind and solar power plants, hosts its own queue of connection requests, however the data not regularly updated and synthesized.

1 Transmission system operator list of connection requests as of November 2023 (**https://ems.rs/wp-content/uploads/2023/11/20231106-proizvodjaci-Spisak-prikljucenja.pdf**)

In April 2021, Serbia has adopted its first Law on Use of Renewable Energy sources, which was further amended and tailored in 2023. This opened the opportunities for rapid development of prosumers and further integration of large-scale renewables. With the support by EBRD, the first market premium auction process for wind (400 MW quota) and solar (50 MW quota) power projects took place from June to September 2023. Four most advanced projects totalling cca 690 MW of installed power filled the wind quota with offered portions of their capacity (three offers slightly above 70% were accepted in entirety), with best ranked bid of 64,48 €/MWh. In addition, four projects received awards totalling 25,2 MW of solar photovoltaic capacity with the winning bid of 88,65 €/MWh. It is expected that two more auctions will be held for another 600 MW of wind and 250 MW of solar projects quota during 2024 and 2025.

At the time of finalisation of this guide, four auction-successful wind projects were either about to start construction or were steadily progressing thereto, hence with another three large projects of 236 MW, varying from late development to construction start stages, the wind pipeline realistically expected online by the end of 2025 totals to at least seven projects[2] with 926 MW of newly installed capacity (counting in the currently operational plants, 1 GW mark seems reachable in near future).

Around the same time positive news have been announced in advancing digital transformation. Namely around 30 administrative services within the Ministry of Mining and Energy competence were finalized to go online in 2024 with special attention to RES procedures, which shall mark complete yet another successful technical assistance project by EBRD.

Additionally, to boost the solar energy utilisation, Serbian government has just recently in 2023 conducted tender procedures for selection of a strategic partner to deliver 1 GW of self-balancing solar plants by 2028.

In its first Draft Integrated National Energy and Climate Plan (INECP) developed in 2023, the renewable energy sources share in the gross energy consumption is targeted at 33.6% and 45.2% of share in the gross electricity generation to be achieved by 2030. This includes 1.77 GW of wind and 1.23 GW of solar utility-scaled projects. The NECP together with the Energy Sector Development Strategy is expected to be adopted in 2024.

Serbia has untapped potential in wind and photovoltaic power sources, as well as geothermal and biomass power. Efforts to progress a more stable and secure renewables integration and investment ambient have continued in recent years, with the government increasingly open to hear the industry concerns and suggestions. However, the work is not yet finished and properly addressing this potential requires further regulatory and institutional steps, such as: simplifying the permitting processes with one stop shops providing guidance as per RED II Directive (EU) 2018/2001, adopting new environmental assessments laws to transpose the amending EIA Directive 2014/52/EU (draft bills in process, expected in 2024), dealing with understaffing of certain institutions, solidifying the auctions/market premium scheme, ancillary services market and balancing, and removing further obstacles.

2 Projects “Vetrozelena”, “Pupin”, “Čibuk 2” and “Crni Vrh” (in part) have won the auctions and remaining projects referred and planned for transmission grid connection include “Kostolac”, “Kosava 2” and “Plandiste”.

Regulatory framework overview

The regulatory framework for renewable energy projects in Serbia is relatively robust and evolving, aimed at promoting their large-scale deployment, reducing the carbon footprint and ensuring a sustainable energy future.

The backbone of this legislative ecosystem, significantly reshaped in 2021 and 2023, is made of the Law on the Use of Renewable Energy Sources - focusing on facilitating and incentivizing renewables development, the Energy Law – tackling the energy sector's overall structure and power system mechanisms, and the Law on Planning and Construction - ensuring the construction permitting sensitivity to renewable energy goals (the intensity and tested effects of its many adaptations qualify it among key laws for renewables).

Complementing these primary laws are numerous pieces of second-level legislation that often play a highly significant role in the renewable energy landscape, starting from environment and nature protection, agricultural land use and water management to various other sectoral requirements.

Finally, there are noteworthy basic and structural laws of the Serbian legal system affecting the investments in renewables generally. Whilst on average it may be argued they are supportive, at least indirectly, not all of them are necessarily as progressive as the core laws above or fully accommodative on all accounts possible.

Together, these laws create a comprehensive regulation of the renewable energy sector, notwithstanding the room for some further improvements.

i) The Law on Energy (Energy Law)

The Law on Energy adopted in 2014 as amended in subsequent years is the cornerstone of Serbia's energy sector regulation, covering the fields of electricity, natural gas, oil and oil derivatives, as well as heating energy. It establishes the general objectives and manner of implementation for the energy policy and further regulates: the conditions for safe supply and delivery of energy, energy consumers protection, conditions and manner of performing the energy activities, conditions for new energy facilities construction, the status and competence of the Energy Agency of the Republic of Serbia (AERS), organisation and functioning of the energy markets, market participants' obligations and national grids ownership.

Generally, the law originated and evolved as rather reformative in the given circumstances, increasingly aligning the Serbian framework with then-current EU legislative measures, as committed under EU membership candidacy regime[3] and Energy Community contracting party status[4]. It started by partial harmonization with EU's Third Energy Package, including the Directive 2009/72/EC concerning common rules for the internal market in electricity, a process considered near completed (in its original scope) only with most

3 The Law on Confirmation of the Stabilisation and Association Agreement between the European Communities and their Member States of the one part, and the Republic of Serbia, of the other part (Official Gazette of the RS – International Contracts no. 83/2008; the "**SAA**").

4 The Law on Ratifying the Treaty on Establishing the Energy Community between the European Community, and the Republic of Albania, the Republic of Bulgaria, Bosnia and Herzegovina, the Republic of Croatia, the former Yugoslav Republic of Macedonia, the Republic of Montenegro, Romania, the Republic of Serbia and the United Nations Interim Administration Mission in Kosovo pursuant to United Nations Security Council Resolution 1244 (Official Gazette of the RS – International Contracts no. 62/2006; the "**ECT**").

recent 2023 amendments on establishing an independent Republic Commission on Energy Networks, in view of certification and complete unbundling of the electricity and natural gas transmission system operators. Outside these core market liberalization and market access measures, the Law on Energy also paved way for the Directive 2009/28/EC on the promotion of the use of energy from renewable sources (the "RED") due for transposition at the time, as well as for some of the subsequently evolved acquis communautaire on energy, such as the network connection codes Regulation (EU) 2016/631[5], Regulation (EU) 2016/1388 and Regulation (EU) 2016/1447. Finally, as of 2021 the law started transposing two out of eight legislative pieces of EU's modern 2019 Clean Energy for All Europeans Package (the "CEP"), being the recast Directive (EU) 2019/944 on common rules for the internal market for electricity and the Regulation (EU) 2019/943 on internal market for electricity. Considering yet untransposed implementation acts added to Third Energy Package in 2015-2017 and expanding CEP regulations and measures of 2019-2022, further considerable amendments to the law may be expected in future.

As of 2021 and a ground-breaking legislative effort with parallel enacting of the first separate Law on the Use of Renewable Energy Sources and amending the Law on Energy, the latter ceased to regulate the renewable energy projects and support schemes specifically however continued to emphasize the sustainability and increased share of renewable energy sources as key components of Serbia's energy policy and strategy. Furthermore, the Energy Law's structural concepts and a number of provisions of general application (concerning all power producers and all new power producing facilities development, connection and operation, etc.) continue to set the regulatory foundation for integrating the renewables into the national power system. Following is a limited review of such parts of the law most relevant for managing any investment in Serbian renewables development.

Licensing of energy activities

The law provides a framework for obtaining master authorisations for energy objects and energy activities from energy sector authorities, ensuring that all players in the market comply with regulatory standards from development to commissioning. Power plants of less than 1MW capacity are generally exempted from these authorisations under the Law on Energy, save for the mini hydro power plants which require an energy permit regardless of capacity.

The **energy permit** is a non-transferable administrative act to be issued by the Ministry of Mining and Energy in relation to all newly planned hydro power plants and all other power production facilities of 1MW or more capacity, valid for 3 years with extension and re-issuance options. Based on the statutory provisions and conditions further regulated in a relatively outdated bylaw[6], the energy permit should be applied for upon achieving certain progress in project development (supported among other by evidence that the project is embedded in spatial or urban planning documents, evidence on grid connection possibilities, technical, locational and environmental adequacy, as well as evidence on financial capacity of the domestic of foreign applicant etc.), but in any event prior to issuance of the construction permit in accordance with construction regulations. The supporting documents need to be fairly specific on project location/area, however formally the prior acquisition of land rights is not a condition and vice versa, energy permit issuance does not in itself afford any land rights to the applicant – rather the land rights are subject to review by administrative authorities in the construction permit issuance process, where the energy permit is also a (separate) prerequisite.

The Ministry is required to decide on energy permit application within 30 days, whereby a potential decision on rejection requires detailed elaboration and may be appealed to the Government of Serbia as the second-instance authority within 15 days (such second instance decision becoming final upon delivery, with binding effect subject to administrative court challenge possibility).

5 Of particular importance for renewable technologies integration - the Regulation (EU) 2016/631 establishing a network code on requirements for grid connection of generators i.e. the "RfG NC" was transposed to Serbian legal system by the Decree on Network Rules relating to Network Connection of Production Units adopted by the Government in August 2022 (Official Gazette of the RS no. 95/2022).

6 Rulebook on energy permits (Official Gazette of the RS no. 15/2015 and 44/2018 - other law).

Under special alleviation provisions, the energy objects developed under the PPP and concession legislative regime are released from obtaining the energy permit whilst additionally, in lieu of an energy permit, the Government may also authorise new energy projects by conducting a particular public tender under the Law on Energy[7].

Similar to many other energy activities, the electricity production (generation) requires a **license** that should be applied for by any Serbian legal entity or entrepreneur which owns/uses a single 1MW+ power plant, or two or more power plants which exceed 1MW in aggregate authorized capacity, all subject to conditions from the law and a dedicate bylaw[8]. This license is a mandatory administrative act marking the end of the commissioning phase of almost all renewable projects hence it is inherently preceded by construction completion and issuance of the operations permit in line with construction regulations. Detailed requirements are rather complex and involve also the verifications as to the applicant's local legal status (foreign applicants are not eligible), financial condition, clean criminal record of the directors and management, professional staff for technical operations and maintenance of the facility, as well as verifications on various technical requirements for the facility and its grid connection, the energy efficiency, fire and explosion protection and environmental requirements. Still, given that for more than a decade now the electricity production is not regulated as a service of general interest, the license also functions as a comprehensive and ultimate authorisation for legally engaging in the activity, subject to any post-license requirements from a support scheme perspective (if applicable) and continued fulfilment of the main conditions above (incompliance may be sanctioned by temporary and permanent revocation). The electricity production license is valid for 30 years, extensible upon request, but as a rule is non-transferable – aside for particular cases of subsequent merger and other corporate status changes when a resulting license amendment may apply within its original validity period.

The competence for issuing the license for electricity generation is with AERS who should decide within 30 days as of the complete application, whereby a potential decision on rejection requires detailed elaboration and may be appealed to the Ministry of Mining and Energy as the second-instance authority within 15 days (such second instance decision becoming final upon delivery, with binding effect subject to administrative court challenge possibility).

Finally, apart from the general exemption in regard to electricity generation licensing concerning the 1MW capacity threshold, the law provides special exemptions applying to facilities exclusively purposed for own-consumption needs, as well as to power storage activity as such.

Electricity producers

The law consolidates the provisions on rights and obligations of any power producer in general, including the thermal power plants and combines power-heating plants, as well as the renewable power plants – in principle regardless of whether or not they are part of any support scheme.

The general rights of the power producer relate to using the energy sources it deems most efficient in its generation facilities, selling the produced electricity and using the electricity transmission and distribution system, all subject to conditions stipulated by this law and relevant bylaws (including the rules on system operation).

7 The reference relates to the Law on Public-Private Partnership and Concessions (Official Gazette of the RS no. 88/2011, 15/2016 and 104/2016), however in practice the renewable projects permitting is not typically exercised under this special regime and pertaining procedures of the cited law, or the law regulating public procurements, are not automatically applicable as backup rules for competitive processes in the energy sector or renewables sub-sector (cf. Art. 87 of the RES Law); in other words, pure PPP or concession regimes may hold some practical relevance only in limited cases, e.g. for a specific hydro power project where large patches of publicly owned water land/water resources cannot be avoided, above regimes could be considered as an alternative for managing the usage rights allocation.

8 Rulebook on License for Carrying Out Energy Activities and Certification (Official Gazette of the RS, Nos. 87/2015, 44/2018 - other law and 83/2021).

The general obligations of a power producer involve the following categories:

1) Compliance with conditions listed in the energy licence, compliance with energy efficiency and environmental conditions from separate laws and observance of regulations and rules referring to the transmission and distribution system operation and functioning of the market, the regulations referring to protection of competition, as well as the decisions issued by competent authorities in general;
2) Maintenance of production capacities in proper condition, ensuring their constant operational readiness and safe use, as well as enabling the competent system operators to verify the compliance of technical characteristics of their facilities and operational procedures with the issued connection approval, agreed ancillary services and rules on the transmission or distribution system operation;
3) Offering the technology-specific ancillary services to the relevant grid operator and ensuring technical capability and operational readiness of the power plant for provision of such ancillary services;
4) Offering to the transmission system operator all the unused production capacities for the needs of balancing and ensuring safe system operation in accordance with technical characteristics and rules on the transmission and distribution system operation, as well as rules on electricity market functioning;
5) Concluding the compulsory agreements with relevant grid operators, such as the agreement on power plant exploitation, the agreement on grid access, the agreement on balancing mechanism participation and the agreement on ancillary services as applicable; and
6) Submitting to the relevant grid operators and to AERS the Agency the data needed for the fulfilment of prescribed obligations referring to transparency and supervision of the electricity market, as well as the regular monthly power production forecasts (to the operator of the grid to which the power plant is connected).

Electricity transmission and distribution systems

The Law on Energy defines power transmission and distribution system infrastructure and outlines the roles, duties and responsibilities of the respective system operators. It emphasizes their independence, adherence to transparency, non-discrimination and high operational standards, as well as their commitment to ensuring a reliable and efficient electricity supply. The competence of these operators includes the activities on drafting and passing the regulatory acts, typically in coordination with and approved by AERS - most notably the rules on operation of the transmission network[9] and the distribution network[10], grid expansions and overhaul planning, technical analysis and administrative decision-making for individual projects, maintenance of regulated records and databases and regulatory compliance monitoring.

The Serbian transmission system operator, "Elektromreža Srbije" (EMS/TSO) is responsible for managing the high-voltage transmission network, ensuring the stability and security of electricity supply across the country. The TSO's duties include maintaining and developing the transmission infrastructure, balancing electricity

9 Rules on operation of the transmission network of 2020, consent published in Official Gazette of the RS, No. 60/2020 (the "**Transmission Grid Code**" – replaced by new rules in November 2023).

10 Rules on operation of the distribution network of 2017 as amended in 2019, consents published in Official Gazette of the RS, Nos. 71/2017 and 14/2019 (the "**Distribution Grid Code**").

supply and demand, and facilitating cross-border electricity flows.

Similarly, the distribution system operator "Elektrodistribucija Srbije" (EDS/DSO), is tasked with managing the medium and low-voltage distribution networks that deliver electricity to end consumers, from households to commercial consumers. DSO responsibilities include reliable operation, maintenance, and development of the distribution network, connecting new users, and implementing measures to improve energy efficiency and ensure the quality of electricity supply.

The "closed electricity distribution system" concept and their private owners and operators are also tackled in the part of the law on electricity networks. The concept relates to a system used for electricity distribution in a geographically limited industrial zone, trade zone or a zone of common services, in some very specific cases related to security and safety of the system user's business processes and its legal association to the system owner/operator.

The law regulates the connection of new power production facilities in quite a similar fashion for both public grids, whereby in practice in most cases the procedure would be concern new renewable facilities, with 10 MW capacity as a general yardstick for network adequacy (the higher being considered as utility-scale project typically connected to transmission network and vice versa, the lower capacity projects are likely to resort to distribution network infrastructure). The legal approach to connection authorisation and development is moving towards a mix of administrative approval-based and contract-based procedure.

One of the early development steps involves making of the planned facility's connection study by the competent grid operator on the basis of an agreement with the facility investor, which further serves as a technical source document for detailed requirements and conditions to be defined by an operator. Following a series of administrative and design activities, most importantly after obtaining the construction permit for the facility, the investor may apply for the **connection approval** with the operator and also should opt between: (i) self-managing the connection infrastructure's permitting and construction on behalf of the grid operator and (ii) leaving these processes to the grid operator's own resources, in each case at the expense of the facility investor. The connection approval is an administrative act issued by the grid operator containing all final requirements for the producer's facility connection, valid for 3 years for transmission system and 2 years for distribution system, intended to match the anticipated construction timeline. In case of the transmission system operator, the application is to be decided upon 45 days as of the investor's application, which may be appealed to AERS as the second-instance authority within 15 days (such second instance decision becoming final upon delivery, with binding effect subject to administrative court challenge possibility). On the other hand, should the investor opt to manage connection development on behalf of the operator, as is usual for large investments, at least two **agreements on connection development** need to be signed between the investor and the relevant grid operator (TSO/DSO). The grid operator is compelled to physically connect the facility to the system upon construction completion, provided that the connection approval and agreement requirements have been met, that the facility and the connection are capable for permanent connection or trial runs and that the investor has concluded final agreements on the balancing responsibility, system access and facility exploitation.

Notionally, as of 2021 amendments the law differentiates between the "connection" (set of lines, equipment and devices, including metering equipment and the metering point, by which the installation of a facility is physically connected to the system, from so-called point of connection to interconnection point) and the "missing infrastructure" (non-existing part of the system required to be constructed for the purposes of particular connection), even though the former is sometimes still used a generic term for both and the same self-management option is available to the investor in both cases. These amendments also introduced the concept of approved power i.e. limitation of facility's installed power on the grid, as well as the possibility of introducing further operating restrictions, which connection approval constraints shall not apply if the facility investor undertakes to organize the construction of missing infrastructure itself.

Finally, the law regulates the right to use the transmission or distribution system for delivery or takeover of the agreed volume of power, at the agreed times and based on transparency and non-discriminatory principles, using the notion of "system access" and regulating

the agreement on system access. The competent grid operators are tasked to enable the system users i.e. the owners of all production facilities in operation to access the systems based on the law and system bylaws at prices regulated by the relevant operator and AERS. The operators may deny access to the system only in limited cases defined by the law, involving the lack of technical capacities, disturbances in the operation or overloaded system and due to endangered safety of the system operation.

For more information on Serbian transmission and distribution grid, TSO, DSO, relevant bylaws, as well as on particular connection requirements and procedure please refer to this guide's Sections 1.3 (TSO connection), 1.4 (DSO connection) and 3.2.5 (Grid).

Electricity market

Pursuant to the law, there are three types of electricity markets in Serbia in which trading takes palace:

(i) Bilateral market;

(ii) Balancing market (managed by the TSO); and

(iii) Organized market (managed by the energy entity entrusted with operation; the "Market Operator").

The bilateral electricity market is a market on which electricity is directly purchased and sold among the statutorily listed market participants, which includes electricity producers, on the basis of agreements on electricity supply. The agreement on electricity supply particularly defines the amount of electricity, the price and the period of supply.

On the balancing electricity market, the TSO purchases and sells balancing energy for the purpose of balancing and ensuring safe system operations and may extend such transactions for the same purpose on regional and single European balancing markets. Electricity market participants are required to regulate their balancing responsibility by concluding an agreement on transfer of balancing responsibility with a balancing responsible party ("BRP"), which in turn acquires the status by concluding an agreement on balancing responsibility with the TSO and by fulfilling further regulatory conditions. Currently, EPS is the sole technical capacitated balancing service provider.

The law defines the organised electricity market as an institutionally regulated relationship between supply and demand of the electricity market participants with predefined standardised products and physical delivery, on a timescale of day-ahead and intraday.

The holder of the only licence for management of organised electricity market in Serbia is "SEEPEX" a.d. Beograd ("SEEPEX"), established as a joint-stock company in joint venture between Serbian TSO and EPEX SPOT with the aim to offer these electricity products for auction trading in Serbia and in the SEE region. The day-ahead market was launched in 2016, while intraday trading was launched in July 2023. Based on recent amendments to the law, SEEPEX was also named as the nominated electricity market operator ("NEMO") in context of coupling the Serbian day-ahead and intraday electricity markets with neighbouring markets or single EU market.

Foreign companies are allowed to participate in the electricity market without a seat requirement and out of 40+ total registered trading members at SEEPEX, majority of them are foreign traders. As a rule, participants do require a valid license from AERS to participate on organized market, whereby foreign entities need to hold a wholesale supply license, while domestic ones can present either a wholesale supply license, a supply license or electricity production license. As third-party trading is permitted on SEEPEX, members also trade on behalf of smaller companies.

Electricity market is governed by the Market Rules of November 2022, which captures the balancing responsibility as well.

Special legal regimes for energy objects

The law stipulates certain provisions on special legal status of energy objects in general - which thus includes renewables production facilities and the grid infrastructure, with emphasis on development and operations.

In the context of early development, provided that the Government has established an energy project as a "project of special significance" for the Republic of Serbia and unless found in a protected area in line with

nature protection regulations, the Law on Energy encourages the determination of public interest (which is a general requirement for private land expropriation) and issuance of the location conditions even without an elaboration in the spatial and urban plans proper, as is normally the case, but grounded only in an urban design document made for the particular project. A similar alleviation is reiterated and underlined for a facility's connection to the transmission or distribution system, such that the connection infrastructure may receive location conditions based only on urban design document, without a time-consuming spatial or urban planning intervention (unless overlapping with a protected natural area). Still, it appears the Law on Planning and Construction and other regulations have not yet integrated the full scope of these recent provisions coming from the energy sector.

When it comes to electric energy facilities in exploitation, their usage and maintenance i.e. undisturbed access of the relevant energy entity is traditionally protected by provisions of this law on the right of passage across the real estate of other owners (against a damage compensation) and abstinence obligations for such owners. The 2021 amendments to the Law on Energy further expanded the provisions on protective belts/corridors for overhead and underground power lines of the transmission and distribution system, the statutory easement regime and compensation mechanics for affected landowners[11].

Implementation and compliance

The Ministry of Mining and Energy is the main governmental authority responsible for supervising the implementation of the Law on Energy and its bylaws. Further, its general regulatory competences include preparing and/or passing of a number of bylaws to the Law on Energy, adoption of the "technical regulations" (meaning technical requirements, conditions and standards for design, construction, testing, exploitation and maintenance for all energy facilities and installations), as well as drafting participation, coordination or even issuance of some of the energy policy and strategic documents with support of other stakeholders. For certain administrative and authorisations matters the Ministry acts as first-instance or second-instance (appellate) authority.

The Energy Agency of the Republic of Serbia (AERS) is an independent entity and the sole regulatory body for the field of energy established with the aim of improving and directing the development of the electricity and natural gas markets on the principles of non-discrimination and fair competition, through the creation of a stable regulatory framework, as well as for the performance of other tasks established by this law. In certain matters AERS is in charge of administrative decision-making on individual cases, whereby it also has its roles in compliance monitoring, setting tariffs, issuing implementation rules and protocols, consenting to some of the bylaws that are in principal competence of other authorities and tending the development and merger of Serbian electricity market into regional and pan-European electricity market.

ii) The Law on the Use of Renewable Energy Sources (RES Law)

The Serbian Law on Use of Renewable Energy Sources enacted in 2021 and amended in 2023, represents a significant redesign of the legal framework governing the promotion and utilization of renewables in Serbia. It aims to stimulate investment and increase the share of renewable energy in the national energy mix, also aligning with environmental protection goals and reduced greenhouse gas emissions target.

At its very start the law pledges its unequivocal support by recognizing, on a legislative level, that the use of renewable energy sources is of special importance for and in the public interest of the Republic of Serbia[12].

Generally, the partial transposition of the second Renewable Energy Directive 2018/2001/EU ("RED II") and initial harmonization with then-current EU/EC acquis on renewables were combined with some of the best industry practices and proven local experiences to create a first-of-kind separate and fairly coherent

11 Noting that some more polishing of the Law on Energy Art. 218 is recommendable to better account for historic grid connections of renewables projects currently in operation and for proper harmonization with investor-friendly provisions of the Law on Planning and Construction on future power projects' connections.

12 RES Law Article 2.

legislative frame for Serbian renewables, replacing the previous Section V of the Energy Law (2014-2018).

This 2021 welcome legislative change was long awaited considering the initial 500 MW quota for wind projects was filled on first come – first served basis as early as 2016[13], so much so that a part of the 2023 amendments had to focus on patching certain system vulnerabilities resulting from the major turn in regulatory approach.

Considering more detailed explanations in other parts of the guide, this tailored snapshot overview aims to present only the key innovations and high-level structure of introduced incentives.

Incentive Systems

The law regulates two monetary incentive systems, out of total four distinctly promoted measures, which also include balancing responsibility support and preferential access to the grid.

Market Premium

This system, introduced as a form of operational state aid, provides a supplement to the market price of electricity generated from RES. It is awarded through a competitive auction process conducted by the Ministry of Mining and Energy, ensuring transparency, public cost-effectiveness and reasonable predictability of investment returns. The market premium is paid under the market premium agreement the successful bidders enter into with the Serbian guaranteed supplier for 15 years and can be awarded for all or part of a renewable power plant's capacity. The well-known and tested regulatory concepts of Preliminary Privileged Power Producer (4P) and Privileged Power Producer (3P) round off the administrative side of the timeline from auction award to successful commissioning of the winning projects.

Further to a 2023-2025 plan adopted by the Ministry, new wind power projects (minimum 3 MW approved capacity) and solar power projects (minimum 500 KW approved capacity) undergoing development, may compete for a total 1,000 MW wind quota and 300 MW solar quota - reduced following the successful inaugural auctions in 2023, with remaining allocation schedule for wind farms 300 MW+300 MW and for solar plants 100 MW+150 MW, respectively in 2024 and 2025.

Feed-in Tariff

The law retains the feed-in tariffs for small-scale projects i.e. below 3MW wind power plants and below 500 kW for other renewable facilities, as well as for non-commercial demonstration projects.

This system provides a 15-year guaranteed pricing structure for the electricity generated from renewables, offering a long-term revenue certainty for smaller investors. As with the market premiums, the right to a feed-in tariff is awarded by the Ministry of Mining and Energy in an auction procedure based on the available quotas prescribed by the Government where similar rules apply, including the 4P status and earmarked 3P status of winning bidders (with adapted scope of rights and obligations) and the feed-in tariff agreement to be concluded with the guaranteed supplier.

Balancing Responsibility

The law specifically addresses balancing responsibilities associated with renewables. Whilst the original 2021 provisions laid out an ambitious foundation for RES balancing responsibility general incentive to be assumed by the guaranteed supplier, in reality to date it failed to materialize as intended for a number of reasons.

The winning bidders of the first wind auction in 2023 ended up regulating their balancing responsibility on a commercial basis under the market premium agreement, also with the guaranteed supplier, rather than under a regulated balancing

13 It is worth noting the competitive auctions were not entirely new when RED II was first gazetted in January 2019. Other than its early proposals and aligned drafts from 2016 to 2018 foreshadowing their use as a primary support mechanism for new RES deployments, the concept was explicitly encouraged also in the earlier EU policy documents, among other in the EU Energy Roadmap 2050 (2009) and the EU Energy Union Strategy (2014).

responsibility agreement, using a regulated balancing cost. Coupled with intraday electricity market establishment in mid-2023, what was architected as temporary support to market premium producers in first couple of years turned out to be a regime extremely short-lived and unconsummated[14].

Around the same time, the 2023 amendments to the RES Law released the guaranteed supplier entirely from any regulated obligation towards renewables producers found outside the monetary incentives system, aiming to mitigate the system stability risk and protect EPS as the guaranteed supplier. Such commercial renewables projects are now expected to individually regulate balancing responsibility on a commercial basis, under the Energy Law general provisions on balancing responsibility.

Finally, the feed-in tariff producers are notionally eligible for their variation of the balancing responsibility incentive - meaning long-term support by the guaranteed supplier for entire feed-in tariff period and their full exemption from the balancing costs, however following the 2023 amendments to RES Law this became limited to extremely small projects with approved capacity of less than 400 kW, which threshold shall be reduced to 200 kW as of 1 January 2026.

Grid Access and Priority Dispatch

Originally, the 2021 version of the RES Law mandated priority access (dispatch) for all renewable energy producers to the transmission and distribution systems with adjacent obligations of the relevant operators, regardless of their monetary incentive qualification, which may have been limited only in case of endangered stability of the grid. Notably, this simultaneously reduced the scope of application of corresponding general rules of the Energy Law, which set somewhat wider grounds for allowed curtailment, hence those would have remained fully applicable only to non-RES power producers.

Hower, same as for balancing responsibility incentive, sometime into the RES Law earliest life it was suggested that the priority access/dispatch incentive was largely abandoned under EU's new policy evolution including 2019 CEP (Clean Energy Package) and reduced only to possible allowance for up to 400 kW power plants, thereby effectively excluding e.g. any modern wind farm.

Consequently, the 2023 amendments to RES Law have limited the priority dispatch incentive to renewable power plants with less than 400 kW approved capacity (set for decrease to 200 kW starting from 1 January 2026), again regardless of whether they are using the monetary incentive system i.e. feed-in tariff or not.

Grid Connection Processes

For proper background understanding, it may be argued that Serbian renewables developers never enjoyed any explicitly dedicated and tangible regulatory advantage when it comes to grid connection. Legally the grid connections for all power producers were authorised based on the order of connection applications, whereas technically the traditional shallow connection scheme also applied to all new generation facilities, without establishing any specific financial support for renewables related to grid connection adaptations.

The 2021 RES Law and 2021 structural amendments to Energy Law did not introduce some meaningful changes to this scenery, however some of their other provisions inadvertently opened a floodgate of new renewables connection initiatives and requests since, broadly double of the 8 GW total power generation capacities existing in Serbia, mostly wind and to a lesser extent solar projects[15].

In response, 2023 amendments to RES Law introduced specific grids-protective measures that, nominally and detached from this disruptive congestion of utility-scale renewables pipeline, may seem investment-unfriendly. These included a new statutory definition of "variable renewable energy sources" obviously relating to wind and solar

14 Theoretical potential for "activation" of statutory benefits on balancing responsibility for market premium producers (as redefined in 2023) should formally cease early in 2026.

15 Unfortunately, these included a large number of premature connection applications for work-in-progress ideas and inception-level projects, many of which were under-analysed and/or clearly unsustainable, some even managed by first-time developers lacking the essential technical expertise and business and financial capacity needed to advance large renewable projects to construction.

energy[16] and further provisions addressing their grid connection processes that started in recent years[17], mindful of the challenge the TSO (EMS) is facing to ensure adequate reserves for system balancing. This new policy approach is basically two-fold:

(1) firstly, it guides the TSO to perform an analysis of transmission system adequacy, balancing reserves sufficiency and risks for power system safe operations, based on which it may defer the grid connection process for variable RES projects until adequate conditions are established (which may be accordingly mirrored by the DSO for smaller scale variable RES projects distribution grid connection requests); and

(2) secondly, alternatives are provided to developers of such new variable RES projects to avoid the application of grid connection deferral if they can demonstrate the provision of new acceptable capacities; they can, either independently or in partnership with other market participants, secure new or additional capacities for providing auxiliary services to TSO, including system secondary frequency regulation and power exchange services (such as battery storage), further elaborated in a Ministry bylaw.

Certainly, some reasonable time should be allowed for further fruition of this strategic initiative, as it does not necessarily conflict with reliable and bankable new renewables in early planning, nor with the interests of any new entrants on Serbian market who are reputable and accomplished. In the meantime, the established wind and solar projects pipeline targeting online status within next couple of years (currently under construction or well progressing towards) shall not be affected by these regulatory changes.

16 Art. 4 Para. 1 Item 7a): *„Variable renewable energy sources are primary energy sources (wind energy, Sun energy, etc.) whose energy potential depends on meteorological conditions that are difficult to forecast precisely, which may result in greater deviations between the produced electricity and the planned electricity production compared to other energy sources."*

17 The transitory provisions of the RES Law 2023 amendment have clarified that new policy extends only to variable RES connection procedures initiated after 30 April 2021, or modified after the said date as to include a change in approved capacity.

Guarantees of Origin

The law introduces a new framework for guarantees of origin, providing a transparent mechanism to track and verify the origin of electricity generated from renewable sources. Guarantees of origin can serve as a valuable tool for Serbian exporters to demonstrate their use of renewable energy and potentially reduce their obligations under the EU decarbonisation mechanisms.

A guarantee of origin is an electronic document issued by the TSO at the request of a renewable energy producer, certifying that a specific amount of electricity (1 MWh) has been produced from renewable sources. This document allows customers who purchase guarantees of origin to claim that the electricity they are using comes from renewable sources, even if they are not directly purchasing electricity from a renewable energy producer.

The law establishes specific rules for the issuance, transfer, and termination of guarantees of origin, ensuring transparency and preventing double-counting. Guarantees can be transferred independently of the electricity to which they relate, enabling a robust market for trading these instruments. It also incorporates provisions for the international recognition of guarantees of origin, with guarantees issued in other countries being recognized in Serbia under conditions of reciprocity or if the TSO is a member of a European Association of Issuing Bodies for guarantees of origin.

Environmental Considerations and the Role of Hydropower

The law demonstrates a clear recognition of the environmental impact of renewables development.

Among other more general provisions in this regard, the law specifically introduces a decommissioning obligation for renewable energy power plants, requiring privileged power producers (both under the market premium scheme and feed-in tariff scheme) to implement proper dismantling and disposal of facilities at the end of their operational life. This obligation aims to minimize environmental impacts and ensure responsible end-of-life management of decommissioned renewables infrastructure,

involving financial security and procedures to be detailed in subsidiary regulation.

The law explicitly prohibits the construction of hydropower plants in protected areas, addressing concerns regarding the adverse effects of small hydropower plants. However, it does a limited possibility for Government approval of hydropower projects in protected areas under specific conditions.

Strategic Partnerships

The law provides for public tender procedures to establish strategic partnerships for investment in RES projects. These partnerships can be utilized when the current incentive systems are insufficient to meet the national targets for RES development. Notably, these partnerships are explicitly exempt from the laws governing public-private partnerships and public procurement.

Prosumer Framework

The law recognizes the growing importance of prosumers - consumers who also produce energy, for the first time in Serbia. It establishes a legal framework for end-users to generate electricity from renewables for their own consumption, with the ability to sell surplus energy to the grid and priority access to the system. The installed capacity for prosumer facilities was limited by 2023 amendments to a maximum of 150 kW (for non-household prosumers) in view of EU and Energy Community standards and the aspect of Serbian power system operations safety.

RES Communities

The Law introduces Renewable Energy Communities ("RES Communities") as a new legal entity, established as an association based on the open and voluntary participation of its members. These communities, designed to promote the use of RES to meet the energy needs of its members, have the right to produce, consume, store, and sell renewable energy. The Law mandates that members of the community must reside or have their registered offices in the vicinity of the renewable energy power plant owned or developed by the community.

iii) The Law on Planning and Construction

The Law on Planning and Construction (2009 as amended and supplemented) plays a crucial role in supporting renewable energy projects in Serbia. Ever since the first and second round of its major amendments, dating back to 2011 and 2014 respectively, renewables received special attention in form of dedicated provisions and otherwise by accounting for their development at the forefront of generally innovative solutions it brought over the years. The latest 2023 amendments continue in the same direction, although further regulatory fine-tuning may be needed for some of the latest advancements to fully apply to renewables[18].

The key aspects for renewable energy projects:

Spatial and urban planning

Sustainable development and better use of renewable energy sources are among the primary principles for spatial planning and use. Documents of spatial and urban planning in Serbia are divided between three main levels: (i) national (national spatial plan and spatial plans for special purpose areas), (ii) regional (regional spatial plans) and (iii) local i.e. municipal and city level (municipal spatial plans, all types of urban plans such as the plan of detailed regulation), with mandated hierarchical consistency between the planning documents. Whilst official initiation, public consultations during drafting stages and adoption - by the Government, Parliament or regional and local assemblies, are strictly formal processes involving a strategic discretion of the competent authorities, in practice

18 Most recent Amendments to the Law on Planning and Construction (Official Gazette of the RS No. 62/2023), among other, reshaped notions such as "projects of significance" and "projects of special significance" for the Republic of Serbia, in view of certain public fees exemptions and fast-tracking their permitting, however it remains to be seen to which extent the renewables will qualify (e.g. whether the agricultural land repurposing fee exemption will be limited to public sector investors only) and which specific permitting benefits will be promoted in practice.

the initiatives by private investors are often well noted and addressed.

Out of few instruments available for further implementation of spatial and urban plans, the urban design projects may be important in certain cases as a combination of planning and technical document, drafting of which may be organized by private investors where applicable. They are confirmed by local administrative authorities and as necessary, approved by the state or provincial authorities for urbanism, in a process that includes a public presentation (in cases involving the public interest, notification to owners of captured and immediate neighbouring land is mandatory).

There are also few specific provisions devoted to renewables and energy facilities (e.g. allowing biomass projects development to be based on urban design projects where a planning document of higher order is not directly applicable and contemplating a sub-type of special purpose area plans for energy objects and infrastructure).

Permitting procedures

The law outlines the general procedures for obtaining all necessary permits and authorisations for any new construction and subsequent refurbishment, which extend to renewable energy projects and to required additions to grid connection infrastructure, with location conditions→ construction permit → operations permit as the most common type of permitting. Few investor-friendly special regimes and exceptions also apply, that are directly or indirectly relatable to renewable power plant equipment and ancillary facilities (e.g. as a bylaw further regulates the replacement of WTG blades is among the list of works that do not require any permit). The particular division between permit issuing authorities is based on installed capacity and connection voltage level, such that provincial and state authorities are competent for 10MW+ projects and 110kV+ connection infrastructure within their territory (province of Vojvodina and inner Serbia respectively) and other structures are handled by local (municipal) construction authorities.

Obtaining the energy permit in line with energy regulations is regulated as a special prerequisite for issuance of the construction permit, accordingly applying to construction permit amendment for increase of the power plant's installed capacity or change of area, in which case formal change of underlying energy permit becomes a prerequisite (otherwise the energy permit may be deemed consummated by a valid construction permit). The law stipulates relatively straightforward provisions for voluntary change of construction permit holder, eligible up to the point of application for the operations permit, however asset transactions with renewable projects fully permitted or undergoing construction remain largely underutilized.

The notion of "financier" with a relatively wide application potential was introduced by one of the law amendments, originally created to facilitate a better practical interface for renewables grid connection between the grid operators and power plant developers.

Land use and special land rights

The law primarily deals with use of construction land and normally requires land ownership for permitting. Given the construction land qualification (whether already registered as such in land records or not) ultimately rests on planning documents newly adopted or continuing their validity under this law, in principle it is not possible to apply for permitting acts before the land is designated for construction from planning perspective. On the other hand, the spatial and urban planning for private objects, as well as the location conditions early into permitting (and also the energy permit itself), have no direct bearing whatsoever on the land rights i.e. do not afford any particular property rights to the developer. If not settled beforehand which is the usual strategy, as a rule the developers may acquire land ownership even after the location conditions, but before applying for the construction permit. In other words, a construction permit issued in the general regime should consume the developer's land ownership right it obtained as prerequisite.

At the same time the law also recognized some industry specifics with renewables projects, resulting among other in the law's own definitions of a "wind power plant" and "solar park" below,

encouraging the use of agricultural and forest land for energy objects (subject to payment of a public fee, similarly to standard construction land requalification) and tackling various preexisting legislative burdens and hurdles in that scope, referencing and even establishing additional types of land rights acceptable for energy objects permitting (other than ownership) to be acquired by the developer from private or public rightsholders at a certain point in time, further introducing certain statutory easements and obligations of neighbouring land holders during construction and similar exceptions and additions to general regime.

> *„Wind power plant is an electric energy facility for production of power using wind energy, which necessarily consists of one or more wind generators connected by a network of electrical and telecommunication cables and objects in the function of wind power plant." (Article 2 Para 1 Item 4) of the Law on Planning and Construction).*

> *"Solar park is a spatial unit - a complex consisting of one or more cadastral plots, i.e. buildings, on which solar panels are placed on land or on buildings, in accordance with the regulations based on which the energy permit was issued, with accompanying objects and infrastructure in their function." (Article 2 Para 1 Item 72) of the Law on Planning and Construction).*

Technical documentation (designs)

The law regulates directly and further also through bylaws the scope and content of technical documentation for construction to be drafted typically during the development phase, thus ensuring that renewable energy projects comply with planning, technical, construction and environmental standards and requirements.

Construction and pre-operation technical inspection

Process of construction, expert supervision and authorities' inspection during construction, as well as technical inspection upon completion and trial work and/or final operations permit is regulated mostly on a general level. Coupled with energy regulations processes and requirements verification these provisions are paramount for successful start of commercial operations of any renewables project.

iv) Broader legislative framework

In addition to the laws that are primarily guiding Serbian renewables development, there are numerous other relevant pieces of legislation. These range from most general to strictly sectoral, with varying degrees of importance - from a wide second-level impact to more peripheral or indirect influence. For a comprehensive understanding of the regulatory framework for green energy projects and investments in Serbia, the following is a summary review of other laws that are essential either in investors' past and present practices or for supplementing the theoretical background against which more central regulations are implemented.

Out of the general regulatory requirements for renewables projects the environment comes first. The overarching legislative frame is found in the **Law on Environmental Protection** (Official Gazette of the RS, Nos. 135/2004, 36/2009, 36/2009 – other law, 72/2009 - other law, 43/2011 – CC decision, 14/2016, 76/2018, 95/2018 - other law and 95/2018 - other law), which in principle supports the expanded use of renewable energy sources and establishes the basic environmental standards and guidelines, paving way for a number of more specifically oriented laws – illustratively, from strategic impact assessments accompanying a number of planning documents, through waste management, air protection and integrated pollution prevention and control (noting IPPC permit is not required for renewable energy projects), down to noise and vibration protection regulations.

Most notably, the **Law on Environmental Impact Assessment (EIA Law)** ensures that potential adverse environmental impacts of, among other, certain major renewable facilities and their installations (as further

elaborated in other parts of this Guidebook), are thoroughly evaluated and mitigated before proceeding to final approvals and construction. Undergoing a comprehensive environmental impact assessment requires several rounds of public participation in the process, promoting transparency and accountability. The **Law on Nature Protection** (Official Gazette of the RS Nos. 36/2009, 88/2010, 91/2010 - correction, 14/2016, 95/2018 – other law and 71/2021), complementary to the EIA Law, concretely deals with conservation of natural habitats and biodiversity, including by setting out the contents of different regimes for protected areas (whereby depending on particular area study and applicable level of protection, the construction of wind and solar power plants may be entirely restricted or to certain extent limited) and special provisions on sustainable development of wind power plants and overhead lines to protect birds and bats important habitats and migratory routes. Upcoming establishment of Natura 2000 is expected to increase the share of all such protected areas in overall Serbian territory, from a currently negligible single-digit percentage roughly up to 20-30%.

Further elaboration on environmental requirements and processes is provided in other relevant portions of this guide, in particular the section 3.2.6. (Environment and Society).

Likely the widest sub-group would involve a variety of sectoral and other laws addressing rather specific aspects of development and construction, with application dependent upon existing spatial circumstances on a particular project site or applying more as technical requirements and standards to extent relevant for the planned facility's technology specifics or scale specifics. To name several examples, which by no means is suggested to be an exhaustive list and should be verified by experts in each case:

- **Law on Agricultural Land** (Official Gazette of the RS Nos. 62/2006, 65/2008 - other law, 41/2009, 112/2015, 80/2017 and 95/2018 – other law): It governs planning, protection, management and use of agricultural land as a good of common interest, as well as other points relevant for its ownership and leasing the state-owned land.

As an exception to general prohibition on using premium and standard quality arable land for purposes other than farming (fields, gardens, orchards, vineyards and meadows, classes I-V), the law facilitates repurposing/redesignation directly based on public interest, i.e. based on adopted spatial and urban planning documents allowing the alternative use, regardless of the type of ownership existing at the time of adoption. This is of practical relevance for wind projects and particularly solar energy projects often requiring large tracts of land, ensuring they are not subject to post-planning individual assessments or approvals by the agricultural land management authorities, whether discretional or not (e.g. invoking agricultural productivity, food security etc.). After the spatial or urban planning milestone is complete, the actual change of purpose thus remains subject only to securing the property rights on land and payment of a public fee, even if the agricultural land is privately owned[19].

Whilst significant restrictions for owning agricultural land by foreign citizens and foreign legal entities are still maintained, they do not apply to companies registered in Serbia, even if the company is foreign owned. The law further regulates the public sale and lease of state-owned agricultural land, with competitive participation eligibility and/or pre-emptive lease and priority rights reserved for registered farmers, subject to further requirements and limitations. In other words, the law does not contemplate outright purchase or leasing of public agricultural land for non-farming purposes, but rather leaves as exception a possible award of "usage right" to individuals and entities against a cash consideration for other categories of production, including "windmills" in example. Interestingly, it took 12 years to draft and adopt the first version of the pertaining bylaw in 2021 required to put this statutory provision to operation, remaining largely underutilized to date due to

19 According to the Law on Fees for the Use of Public Goods (Official Gazette of the RS Nos. 95/2018, 49/2019 and 92/2023) the fee for agricultural land repurposing is determined by local i.e. municipal and city authorities based on average pricing of comparable land. The repurposing fee of 50% over such value can be formally processed only after the land is acquired by the developer and designated for construction by the relevant planning document. The fee needs to be paid before the issuance of the construction permit for the facility concerned (more precisely, due date is with 15 days as of repurposing fee administrative resolution delivery).

deficiencies in commercial and procedural approach[20]. In principle, transactions with private agricultural land are governed solely by general regulations[21], mindful that prior to redesignation the land remains subject to this primary statute's administrative-type provisions, such as the continued agricultural use obligation and restrictions in fragmentation of agricultural land plots (minimum plot surfaces from the law being 0.5 hectares and 1 hectare respectively, depending on whether the area was subject to land consolidation reform or not).

- **Law on Waters** (Official Gazette of the RS Nos. 30/2010, 93/2012, 101/2016, 95/2018 and 95/2018 – other law): It regulates the legal status of waters and integrated management of waters, water facilities and water land, covering all the surface water and groundwater on the territory of Serbia including thermal and mineral waters, except for groundwater from which useful mineral raw materials and geothermal energy can be extracted. For hydro power plants it should be considered among primary pieces of legislation, whereas for other renewable energy projects and their installations, such as 10MW+ wind and solar plants, this law may be highly relevant depending on extent and type of their potential impact on water resources (if the power plant needs to use surface water or groundwater in operations or to discharge wastewater or other materials into surface water or public sewage, if overhead lines are crossing water infrastructure, etc.).

  If applicable, the law traditionally mandates the issuance of "water conditions" by the water management and protection authorities containing technical and other requirements at the level of the planning document preparation and/or location conditions issuance by the construction authorities, usually as part of the integrated construction permitting procedure. Still, over the years the Law on Waters has been amended to accommodate development efficiency and alleviate the burdens of a water permitting regime parallel to and conditioning the general construction permitting under the Law on Planning and Construction that existed up to mid-2010s. Hence, the second-in-line water administrative act called "water consent" (verifying compliance of construction design with water conditions in an elaborate manner[22]) is not a formal condition for construction permit issuance, whilst the final document called "water permit" (which, if required, provides up to 15 years' final authorisation for industrial use of water resources or release of wastewater and other potentially contaminating substances) is not a condition for the issuance of an operations permit for the power plant by the construction authorities. That way, the wind and solar projects developers for illustration, may deal with latter two water acts as subsequent steps and separately with first-line authorities under the water regulations[23] (outside of the integrated construction permitting procedure), allowing them to focus on main permitting efforts within construction and energy regulations perspectives.

- **Law on Roads** (Official Gazette of the RS Nos. 41/2018, 95/2018 – other law and 92/2023 – other law): The law regulates the legal status, categorization, management, financing, construction, reconstruction and maintenance of public roads in Serbia, as well as extraordinary transport using heavy-duty vehicles. Several important aspects in which this law may affect a renewable project include construction transportation, temporary and permanent public roads enhancement (curves, widenings, road connections, etc.), placement of cables within public roads infrastructure and crossing of overhead lines with existing or planned public roads. Given the renewables projects sites are usually located in rural areas, somewhat removed from nearest settlements, the developers are likely

20 The current, second version is the Regulation on the conditions, mode and procedure for granting state-owned agricultural land for use for non-agricultural purposes (Official Gazette of the RS, No. 99/2022). Two most widely noted remarks concern: (i) the starting annual usage fee for renewables that takes 5-time average of overall public land rent for farming in Serbia, which is inconsistent (availability for renewables is limited to low quality public land) and bit costly, especially for some solar energy projects, and (ii) the award should be made by public auction, without exceptions and without regard to initiating developer's project progress and preexisting spending on broader location (there are no regulatory mechanisms to remove unfair competitors or other disruptive persons from such auctions, e.g. high amount bid bond or similar).

21 Pursuant to the Law on Real Estate Conveyance (Official Gazette of the RS Nos. 93/2014, 121/2014 and 6/2015 – other law), sale of privately owned agricultural land is subject to statutory pre-emptive rights of neighbouring agricultural land owners, preceded by general real estate pre-emptive rights of co-owners, if any (which would include the sale of aliquot share of co-owned agricultural land by a single co-owner).

22 Additionally, under the Law on Waters the water permit issuing authority should be provided with a limited-time summary review of construction design compliance in an intra-authority communication interface, immediately upon construction permit issuance.

23 One of the prerequisites for a water permit may involve lengthy verification and classification process and further regular monitoring of groundwater reserves done under a related legislation, the Law on Mining and Geological Explorations (Official Gazette of the RS Nos. 101/2015, 95/2018 – other law and 40/2021).

to encounter the "uncategorized roads", which are local e.g. dirt roads, also part of public domain and managed on municipal level, similar to municipal public roads proper.

- **Law on Fire Protection** (Official Gazette of the RS Nos. 111/2009, 20/2015, 87/2018 and 87/2018 – other law): This law provides a comprehensive legal frame aimed at preventing and mitigating fire hazards by ensuring compliance with fire safety requirements and standards. It is one of the most important sectoral laws relevant throughout a renewable energy project lifecycle. During development, both the planning documents and permitting designs processes require opinions and consents of central and district fire protection authorities (including e.g. on fire detection and suppression systems, fire-resistant materials, adequate access requirements for fire-fighting vehicles and equipment, etc.). The competence in this sense is divided based on installed capacity, such that all renewable projects of 10MW or more capacity are classified as most complex "special objects", found within the competence of Ministry of Interior central office in Belgrade. Following construction, the technical inspection for all 10MW+ renewable projects, as well as all biogas and biomass facilities (regardless of capacity), requires direct participation of the competent authorities' administrative officers. During operations, most renewable power plants are subject to regular safety audits of fire protection equipment and installations, whereby the operators are likely to qualify for categories of high fire outbreak risk, further requiring elaborate fire protection plans subject to consent of the competent Ministry[24].

- **Law on Air Traffic** (Official Gazette of the RS Nos. 73/2010, 57/2011, 93/2012, 45/2015, 66/2015, 83/2018, 9/2020 and 62/2023): Several provisions of the law establish the competence of Serbian Civil Aviation Directorate to authorize placement of objects, installations and equipment that may pose an obstacle to air traffic safety or interfere with air traffic radio equipment (e.g. radars) by emitting or reflecting radio-waves. No construction or placement of potential obstacles inside or outside airport area is allowed without the consent of Civil Aviation Directorate and proper marking that may be required, e.g. installing flashing lights on WTGs concerned.

Within a broadest set of systemic laws in Serbia, headed by long-standing 1980 Law on Basics of Property Relations (providing general regulation of property rights, including over real estate) and 1978 Law on Obligations (regulating contracts and torts, including contracts on sale, lease, construction, services etc.), the legislation on cadastres, being the official legal and technical records on land, objects and other spatial and infrastructural data, stands out as one of the most deeply adapted in the last decade.

- The **Law on State Survey and Cadastre** (Official Gazette of the RS, Nos. 72/2009, 18/2010, 65/2013, 15/2015 – CC decision, 96/2015, 47/2017 – auth.interp., 113/2017 – other law, 27/2018 - other law, 41/2018 - other law, 9/2020 - other law and 92/2023) entrusts the institutional competence to Republic Geodetic Authority and its sectors and units, notably the "Real Estate Cadastre" local offices and "Cabling Cadastre" regional offices (also referred to as Lines Cadastre or informally Utilities Cadastre) - latter of which is due to be replaced by "Infrastructure Cadastre" by 1 July 2025. It also sets some of the basic principles and rules on registering recordable real property units and real property rights thereon, which include various encumbrances and mortgages in particular. The principles and procedures for registrations are specifically captured and further detailed by the more contemporary **Law on Registration Procedure with the Real Estate Cadastre and Cabling Cadastre** (Official Gazette of the RS, Nos. 41/2018, 95/2018, 31/2019, 15/2020 and 92/2023)[25], with final list of principles involving registration effects, officiality, publicity, reliability, time order of applications, legality and full identifiability. In a nutshell, to enhance what was already a near iron-clad system of land and other real property rights registration, burdened however by a huge backlog of private registration applications and other difficulties, the reform had to strike a challenging balance between procedural automatization and simplification on one hand side, and on the other hand, the legal quality in deciding on

24 The fire hazard categorization practice with operational wind farms in Serbia i.e. their operators has not been entirely uniform - there are examples of comparable facilities/operators falling in either 1st category or 2nd category, however the special obligations regime is essentially the same.

25 Last amendment in late 2023 changed the title of the law to „*Law on Registration Procedure with the Real Estate Cadastre and Infrastructure Cadastre*").

substance, at times inherently conflicting the above. Whilst the approach taken does not fully escape some criticism (e.g. introducing a closed catalogue of recordable types of remarks on real property when the remainder of legal system would suggest more flexibility etc.), the results of digitalisation and other reforms in all fairness are already tangible – the expected realistic time for registration being up to 30 days as of formalizing the real estate document with public notary, which just until several years ago was practically unimaginable.

Further legislative building blocks for the system of property rights in Serbia are the **Law on Public Property** (Official Gazette of the RS Nos. 72/2011, 88/2013, 105/2014, 104/2016 – other law, 108/2016, 113/2017, 95/2018 and 153/2020) and the **Law on Expropriation** (Official Gazette of the RS Nos. 53/95, Federal CC decision in" Official Journal of the FRY" no. 16/2001, 20/2009, 55/2013 – CC decision and 106/2016 – auth. interpretation). The former establishes the principles of public competitive process and market pricing for acquisition of ownership, lease or other rights from public holders of real property, with limited exceptions for direct i.e. bilateral contracting, further regulated through bylaws, leaving certain discretion to the authorities (e.g. "if in the specific case it [alienation from public ownership] represents the only possible solution" based on extensive elaboration). Coupled with special laws regimes applicable to publicly owned construction, agricultural and other types of land, as well as occasional pre-WWII property restitution concerns, it is no surprise that private developers of renewables have not yet widely exercised a meaningful volume of land rights acquisition from public authorities, especially not by direct transactions.

The general expropriation legislation in Serbia is even more restrictive in that, unlike some other European jurisdictions, the expropriation purpose is tightly linked to authentic public needs (e.g. education, healthcare, sports etc.) and the status of authorised initiators i.e. beneficiaries of expropriation is strictly limited to public authorities and commercial entities they own entirely or in major part. In theory, grid operators could qualify for expropriation of land necessary for grid expansions, even if the initial benefit would ultimately relate to connecting a single private renewable energy project, however in practice to date there were no public reports of such cases, and the grid connection land was mostly acquired by private developers in renewables directly from private landowners for the benefit of the grid operators.

On a related note, the **Law on Investments** (Official Gazette of the RS Nos. 89/2015 and 95/2018) guarantees that an investment cannot be subject to arbitrary expropriation, either directly or indirectly through expropriation equivalent measures, save for real property expropriation under the general regime limited to public interest, implemented in a non-discriminatory manner and against an adequate compensation, for immovables value and consequent decrease in value of business (which for sake of completeness does not prejudice further investor-protective i.e. expropriation-restrictive provisions of the Law on Energy). Other aspects of this law include the principle of freedom of investments in accordance with applicable laws, protection of acquired rights, extension of national treatment to foreign investors, entitlement to repatriation of business profits, share sale price and other types or proceeds (subject only to payment of regular tax and duties) and the general regime for investment-attracting incentives and support by the government.

Under the **Mortgage Law** (Official Gazette of the RS Nos. 115/2005, 60/2015, 63/2015 and 83/2015) it is possible to establish mortgages over land, over existing i.e. registered objects and "objects undergoing construction" based on a valid permit authorising such construction, which is a Serbian-specific notion that became instrumental in construction finance over the years. It closely resembles an outright mortgaging of the construction permit concerned as a final and enforceable administrative act. On the side of establishing and perfecting security interests beyond immovables, the **Law on Pledge of Movable Property and Rights Registered in the Pledge Register** (Official Gazette of the RS, Nos. 57/2003, 61/2005, 64/2006 – rev., 99/2011 – other laws and 31/2019) represents a fairly modern piece of legislation enabling efficient registration of pledges over shares (i.e. equity ownership interests), receivables under contracts generally, insurance policies and bank guarantees, movable assets, bank account balances etc. with the dedicate Register of Pledge Rights maintained by Serbian Business Registers Agency (BRA).

Concerning any local corporate setup, most typically in form of a limited liability company (LLCs), the

Serbian **Companies Law** (Official Gazette of the RS, Nos. 36/2011, 99/2011, 83/2014 – other law, 5/2015, 44/2018, 95/2018 and 109/2021) is a noteworthy mention. As a legislative act consolidating all types of companies one could say it is among more developed ones in this part of Europe and certainly the pertaining Register of Commercial Entities (within the BRA system of registers), among other publishing comprehensive legal data on LLCs, has been the subject of gradual but steady improvements ever since it started work in 2005. Payments from a Serbian company to its direct shareholders are generally subject to Companies Law profitability test, even if the shareholders are also Serbian. The concept is that the company should not pay to its shareholders more than the amount of profit it has reported, but this is present in most of Europe. Other than general competition protection i.e. anti-trust regulations in Serbia which are considered in line with EU rules and standards in the field of merger controls[26], there are no specific restrictions or requirements for foreign private investors i.e. entities and individuals to own shares in Serbian private sector companies engaged in renewables development and electricity generation.

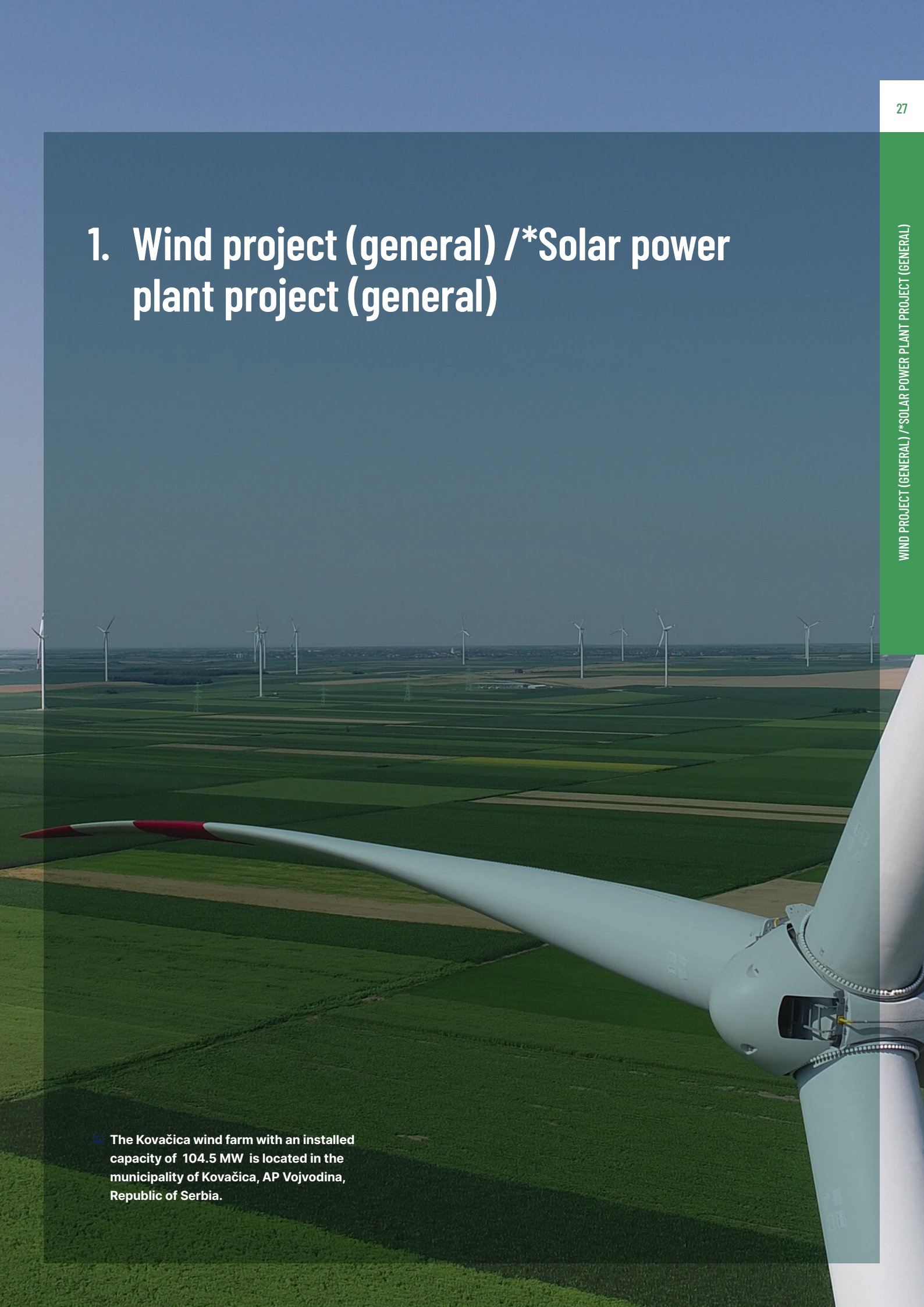
Finally, when it comes to cross-border financing aspects of renewable energy projects, the **Law on Foreign Exchange Operations** (Official Gazette of the RS Nos. 62/2006, 31/2011, 119/2012, 139/2014 and 30/2018) with accompanying bylaws would be the first regulatory checkpoint. This law covers foreign credit transactions i.e. financial loans between residents and non-residents and a system of their compulsory individual registration with National Bank of Serbia (NBS), as well as – using private law terminology – transfers of rights and obligations and assignments of receivables under respective contracts. Progressive tendencies around Serbian forex regulations have been rather slow and limited over the past decade or two, thus foreign investors and in particular the financiers of renewables development and construction should be mindful of this administrative layer they might not have experienced in some other jurisdictions[27].

For more information on general tax regime in Serbia and some of its salient features related to renewables please refer to this guide's **8. Serbia Tax Overview**.

26 Law on Protection of Competition (Official Gazette of the RS Nos. 51/2009 and 95/2013).

27 The NBS bylaws under the Law on Foreign Exchange Operations still keep an archaic requirement of regular quarterly reporting on all foreign direct investments in Serbia i.e. on direct equity participation by foreign shareholders in any Serbian company, even for the status-quo quarters when there were no equity-related changes or payments. The purpose of reporting is fitted for and relates solely to macroeconomic planning and statistics, whereby the foreign investors have long ago voiced their concerns requiring either the total abolishment of this requirement or serious relaxations in NBS implementation policy.

1. Wind project (general) /*Solar power plant project (general)



The Kovačica wind farm with an installed capacity of 104.5 MW is located in the municipality of Kovačica, AP Vojvodina, Republic of Serbia.

A Wind Project is a complex renewable energy facility designed to harness wind energy and convert it into electricity. It typically consists of multiple wind turbines strategically located in areas with high wind potential. Each wind turbine is equipped with rotor blades that capture wind energy, a generator to convert rotational energy into electricity, and a tower to support the turbine components. The individual turbines are interconnected through an internal electrical network of underground cables on site, allowing for efficient power flow. Additionally, all utility scale wind projects include a substation to collect and transform the electricity generated before it is injected to transmission grid.

On the other hand, a Solar Power Plant Project focuses on harnessing sunlight to generate electricity. It comprises multiple photovoltaic (PV) modules or solar panels that convert sunlight directly into electrical energy through a semiconductor material. These panels are installed on racks or mounts, often arranged in arrays to maximize sun exposure. Solar projects also incorporate inverters, which convert the DC electricity produced by the panels into AC electricity suitable for grid integration. Moreover, if connected to transmission grid they include a substation for voltage transformation. From a technical perspective, solar power plants are characterized by their reliance on solar panels, inverters, mounting systems, and the necessary electrical infrastructure to ensure seamless power transmission.

1.1 Wind farm/PV module

1.1.1 WTG

The general arrangement (layout) of a wind farm includes numerous wind turbine generators (WTGs), each specified by characteristics like maximum tip and hub heights, rotor diameter, and rated power, with proper performance and safety standards spacing between them. Since first integration of wind plants in Serbia starting mid-2010s, when 2 MW+ class and up to 150-170m tip-high WTGs were being used, with considerable technology advancements some of today's pipeline normally relies on 6 MW+ rated power and 230-250m total height. The wind turbine generator voltage is normally classified as low and is further stepped up to medium voltage by an internal generator transformer, so it can connect directly to the cable network on the wind plant site.

1.1.2 Cable network of a wind farm

To ensure effective power collection the WTGs are interconnected through internal circuits of medium voltage (MV) cables, usually operating within the range of up to 35kV. As a rule, these cables then converge at the wind farm's central transformer substation for connection to the existing transmission grid, where the voltage is elevated from medium to high (400kV/220kV/110kV) using dual step-up transformers. MV cables are strategically and carefully placed in cable trenches throughout the site to ensure protection and minimise the risk of damage. This internal network's reliability and efficiency are essential for delivering renewable energy to the broader electrical grid. Normally, the MV cable network on site is permitted together with the wind turbines it connects, sometimes grouped in strings of 5-10 units (electrical circuits).

1.1.3 PV Module

The most common solar PV installations have solar PV modules mounted with fixed-tilt (fixed-angle) or on a single-axis tracking system. These modules are organised into strings, with string inverters managing the DC side of the system. On the AC side, the inverters are connected to either low-voltage (LV) or medium-voltage (MV) substations, depending on the specific project. The voltage levels, which can range from LV (0.4 kV to 0.8 kV) to MV (20 kV to 35 kV), are chosen as part of the design phase to meet local regulations and efficiency needs. When MV voltage is selected, it might include the laying of MV cables in trenches across the site and between primary PV areas to optimise energy distribution. Please note that this configuration is not universal and can vary depending on project requirements.

1.1.4 Cable network of a solar power plant

The internal cable network within the PV plant, typically operating at medium voltage on the AC side, plays a fundamental role in efficiently transmitting electricity generated by the individual solar PV modules. These cables are strategically routed to minimise risks of damage and ensure protection during energy transfer from the DC side, where the PV modules are connected in strings, to the central inverter or transformer station. The reliability and efficiency of this network are

critical factors in ensuring the smooth conversion and delivery of renewable energy to the grid.

1.2 Substation

With all solar plants and almost all wind plants a substation is required to step-up the power collected from generating units via internal cable network to relevant voltage level of the public grid, transmission (high voltage) or distribution (medium voltage), to which the plant is connected. For a typical wind project, such substation portion of the site, usually fenced, is consisted of one or more central (main) transformers[28] placed outdoor, where the voltage is raised from medium to high (e.g. 35/400 kV, 33/220 kV, 33/110 kV) and a closed control building/centre hosting the SCADA and medium voltage convergence components (busbars, disconnectors, circuit breakers, current transformer etc.), as well as other supporting infrastructure. The substation is then linked to publicly-owned side of the connection i.e. a switching station (switchyard) operating at a single voltage level and making further connection to the broader grid, often through new overhead transmission lines (OHL).

Exceptionally, for small wind farms outputting power to distribution grid (MV→MV), the substation transformers are not necessary and central point of connection generally consists of the control centre on power producer's side and the distribution grid operator-owned switchyard, which operates at medium voltage level only without any transformation.

The substation's precise location is determined during project planning to ensure effective and reliable integration of generated electricity into the grid. These internal substations in Serbia are owned by the project company and are permitted alongside the plant's generating units and interconnecting cables, but separately from the existing grid's extension i.e. the dedicated switchyard and OHL as applicable - which are in turn owned by respective grid operator by the force of law once constructed. This is also a delineation point at which responsibility for operation and maintenance of the electrical system passes from the power producer to the electricity grid operator.

1.3 TSO connection

As elaborated for public grids, the connection between the renewable energy installations and the broader transmission system is made through privately designed and constructed, producer-owned transformer substation which is further linked to a high-voltage switchyard, followed by high-voltage transmission line and pre-existing grid segments, all owned by the transmission system operator, "Elektromreža Srbije" (EMS).

The Serbian transmission grid is made of high voltage 400 kV, 220 kV and 110 kV infrastructure, such as overhead lines totalling 9.996 km in length (dominantly 110 kV lines, with cca 1,800 km of remaining voltage lines each[29]), cables, transformer substations and switching substations, whereby exceptionally 110/x kV substations connecting the transmission to distribution system are in most part included in the distribution grid. During a utility-scale renewables (10 MW+) planning phase, one of the first things to look would be the map of existing electricity transmission grid in the broader project area, identifying connection opportunities, as well any challenges involved, such as distance, topography along the possible corridors for OHL, etc.

""Although EMS may develop the transmission grid expansions and adaptations required for renewables' connections on its own against costs compensation from the project company, the most present scenario in practice is somewhat more complex. The project company often opts to act as a managing and financing party for connection development from inception to take over, based on a sequence of regulated grid agreements to be signed with EMS. That proved as a tested path to ensure there are no mismatches in completion schedules of the wind/solar power plant on one side, and its grid connection on the other. Therefore, the producer is the one who normally builds and installs the equipment for high-voltage connection per EMS requirements and standards, which after the construction phase transition into the ownership and operational responsibility of EMS as the grid operator.

28 With larger scale wind farms of more than 40 MW capacity, it is customary to install at least two or more main transformers.

29 EMS long term planning points to gradual replacement of 220 kV overhead lines where feasible and their adaption to 400 kV or 110 kV voltage.

1.3.1 Switchyard

The switchyard consists of various outdoor high-voltage components and closed control building as necessary, including switches, circuit breakers, and transformers, which are essential for the effective and secure management of electrical power. The switchyard's primary functions consist of voltage regulation, grid synchronization, and the facilitation of electricity distribution to end-users. Positioned strategically within the renewable energy setup, the switchyard, with its advanced equipment, serves as a crucial link that connects clean energy generation to the wider electrical grid, ensuring the dependable transmission of renewable power.

1.3.2 Overhead line

The project-dedicated overhead line serves as a vital part of the transmission system. This system comprises high-voltage conductors, supported by towers or poles, that efficiently transport electricity from these renewable energy sources to the broader electrical grid. These overhead lines, strategically positioned, enable the cost-effective and reliable transmission of electricity over extended distances, making them a practical choice for renewable energy projects. Just like with the internal cable lines, these overhead lines are carefully designed to ensure safety, reliability, and power quality, thereby allowing the clean energy generated by wind turbines and solar panels to seamlessly reach its intended destinations and contribute to our sustainable energy needs.

1.4 DSO connection

The relation between renewable energy projects and public distribution grid can in a number of cases be two-fold. On one hand, solar and wind power plants of up to 10 MW are generally eligible for connection to distribution grid to output their generated power, subject to existing condition in the area and enhancement requirements and standards. On the other hand, any wind plant or a solar plant, even large-scale ones connected to transmission grid, sometimes consumes certain amount of power from external sources provided through so called own-consumption connection to distribution system.

The Serbian distribution system operator (DSO) is "Elektrodistribucija Srbije" (EDS), mostly operating through its branches in charge for five defined national distribution areas (regions). The dominant voltage levels on the distribution grid are 35 kV, 20 kV, 10 kV and low-voltage 0.4 kV, encompassing cca 170,000 km of lines and cables (of which about 11,000 km relates to 20 kV network and 35,000 km to 10 kV network[30]) and roughly 38,000 transformer substations, with 110/35 kV most common at mid voltage.

In cases where solar power plants, or in rare instances wind farms, are connected to the distribution grid to export power, the plant's internal transformer substation (not necessarily relevant for wind) and distribution grid's dedicate switching substation shall be configured to voltage levels below 35 kV to link to the DSO's preferred voltage. The electricity generated solar panels is efficiently transmitted to a transformer station (or directly to the switching station in case of small-scale wind turbines) operating at the specified distribution voltage, facilitated by an internal cable network. Following this, the transformer station connects to the switching station aligned with the chosen voltage level, enabling seamless connection between these renewable energy installations and the distribution system. Post-construction, both the distribution substation and other infrastructure expansions required for the connection, fall under the purview of the DSO"", with connection construction and operation liability matrixes between the producer and DSO similar to those between the producer and TSO (as would be the case if the generated electricity was to be injected to the transmission system).

All wind and many solar plants usually import a modest amount of electricity to operate their auxiliary systems and support their own internal functions (security lightning, heating of certain components etc.), which especially applies to construction and commissioning activities, as well as maintenance. Typically, these needs are managed by utilising the consumption side of the electricity distribution system, by establishing a metered connection and concluding an electricity supply agreement similar to other industry consumers, supplemented as necessary by battery storage (several hours backup) and large-tank diesel generators (up

30 It should be noted in certain distribution areas of the Serbian territory EDS is endeavouring to unify voltage levels by replacing 35 kV lines with 10 kV lines.

to few days backup), e.g. for independently operating the substation in case of emergency. The development and construction of this own-consumption connection, normally financed by the producer on behalf of the DSO, is a sub-process in itself (albeit minor and under a less burdensome permitting regime) and should be taken into account in the earlier stages of project planning as broader enhancements, such as new cables or lines, may sometimes be required.

Important to note, with utility-scale wind or solar power plant whose primary connection is with the transmission system, the TSO's side of transmission connection also requires an own-consumption infrastructure, thus developers are required to secure one or two independent connections to withdraw the electricity from distribution system for TSO's consumption purposes. In principle, when dealing with the DSO in this scope, the project company continues to act on behalf of and in coordination with the TSO. Once constructed, the own-consumption connection infrastructure (e.g. standardized pole-mounted 20/0.4 kV transformer units, lines or cables used to link the project to pre-existing local distribution system segments, etc.), becomes the ownership of the DSO.

1.5 Access roads

Both for wind farms and solar power plants, the development of internal roads and as necessary public access roads is essential. These roads serve multiple functions, including facilitating the installation and maintenance of renewable energy infrastructure. Internal roads, within the project site, are constructed for the ease of equipment transport, operation and maintenance. They are designed with considerations for the specific energy source, such as wind turbines for wind farms or solar panels for solar power plants.

Public access roads provide a connection from the nearest public road to the renewable energy site. These roads allow for the safe and efficient movement of personnel, equipment, and materials. These road systems are integral to ensuring that the energy project operates smoothly and that maintenance and servicing tasks can be carried out effectively. They are also essential for transportation during the construction phase, as well as for future maintenance requirements. In Serbia a large wind project sites tend to capture some existing public roads, most often local, which are then reconstructed or enhanced in parallel with project construction in coordination with municipal authorities and under a less burdensome permitting regime.

1.6 Telecommunication

The telecommunication infrastructure for solar and wind farms primarily differs in communication medium and data requirements. Wind farms typically use fiber optic cables to handle real-time data from dynamic wind turbines, requiring advanced systems for monitoring and control. Solar power plants may also use fiber optics but with less complex data needs, given the more predictable energy output from solar panels. Additionally, the equipment integration in wind farms is often more intricate due to the variable nature of wind power, while solar farms have a more stable energy generation, influencing their communication infrastructure.

For the development of wind farm projects, it is imperative to establish a robust telecommunication infrastructure. This includes the installation of fiber optic cables to interlink WTGs and Supervisory Control and Data Acquisition (SCADA) systems. These fiber optic connections are pivotal for efficient communication and power management within the wind farm. Additionally, it is advisable to collaborate closely with the WTG manufacturer to ensure seamless integration of their supplied WTGs and SCADA systems into the broader telecommunication network. This meticulous approach is essential for real-time monitoring, control, and data acquisition, optimizing the performance and reliability of the wind farm throughout its operational lifespan.

1.7 Met Mast

In wind energy development a meteorological mast, commonly referred to as a met mast, are tall structures equipped with instruments to measure wind speed and direction at various heights above the ground. This data is essential for assessing the wind resource and optimal turbine placement in wind farms. By collecting comprehensive wind data over time, developers can make informed decisions about turbine selection and layout design.

For solar power projects, met masts are utilised to measure solar radiation, temperature, humidity, and

meteorological factors. This information is critical for evaluating the solar resource potential at a specific location. It helps in optimising the placement and orientation of solar panels, assessing energy generation potential, and refining the design of solar plants for peak efficiency.

It is worth mentioning that in Serbia an initial met mast, as may be necessary in earliest stages of the project for wind input assessment, is permitted independently and ahead of the wind plant permitting, under a dedicated regime of a temporary permit valid for three years (with extension possibility). On the other hand, installing a permanent met mast for monitoring the operational plant's wind resource is also possible but needs to be permitted as a general high-altitude object (statutory yardstick is 50m+) under regular construction and operations regime and requirements.

1.8 Water well/Water tank

Water wells or water tanks might be used in specific circumstances for certain needs in construction, operation and maintenance of these projects (concrete mixing, equipment cooling, site maintenance, etc.), sometimes even considered as shared infrastructure for the needs of grid connection components owned by grid operators. Notably, one of the advantages of renewable energy technologies like wind and solar is their relatively low water consumption compared to conventional power plants such as coal, natural gas, or nuclear.

If a particular project requires drilling of a water well to access groundwater, water well approval tends be relatively complex. Whether it is permitted jointly or separately from the main project, it remains subject to additional and special regulatory regimes and activities which should be taken into consideration (water regulations, mining and geological exploration, etc.). Hence it is advisable to identify this kind of project site requirement as early as possible into project development.

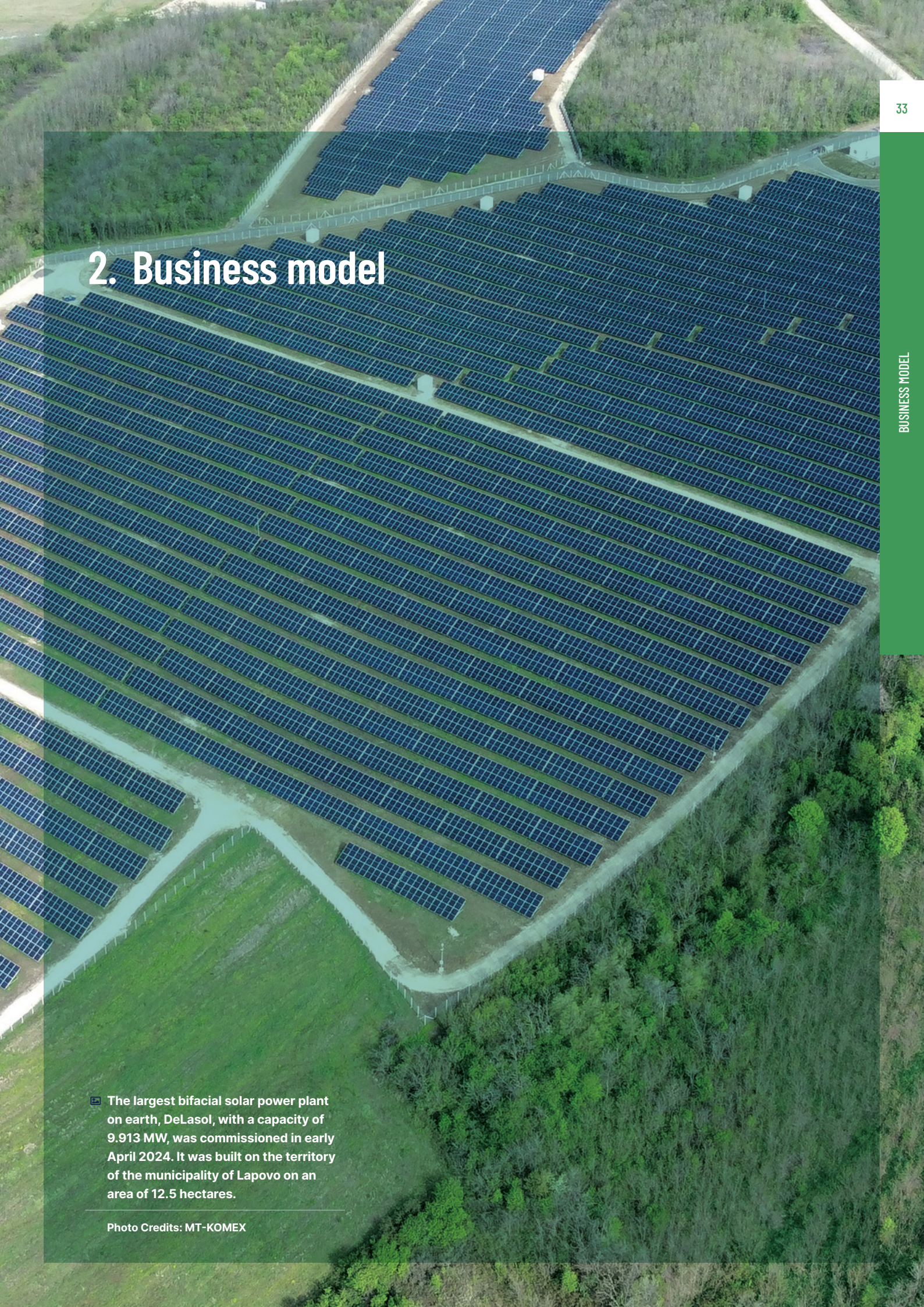
1.9 Temporary curves

Among other temporary facilities on a project site, such as open storages, auxiliary platforms, etc., temporary road curves used during the transport and construction phase stand out as rather important. Facilitating road transportation of construction machinery, generation units and other major equipment and materials to the project site– essentially requires a set of specialized vehicles fit to bear heavy loads, whether oversized or overweight. These heavy-duty trucks, which are oversized themselves (from traffic management perspective this is considered as extraordinary transport involving police assistance), have excessive turning curves with minimum radius of 40 meters or more, which the rural roads most often do not support. Therefore, temporary turning curves at site area entry, site area roads intersections and entrances to generator units-designated land plots, as well as temporary road widenings along the route for bypassing, need to be built in early construction phase. They are normally covered by temporary construction permits granted for a specified duration to accommodate the construction process. Any permanent turning curves and enhancements at major intersections on site (e.g. for firefighting trucks, specialized maintenance services vehicles, etc,), are designed and permitted separately from the temporary curves.

1.10 Transportation route

A transportation route is planned by conducting site assessments, identifying potential challenges, and designing roads or pathways to accommodate the transportation of equipment and materials efficiently and safely. This planning process considers factors like accessibility, terrain, road improvements, environmental impact, and coordination with local authorities to ensure smooth logistics for renewable energy projects. The developer, turbine supplier, and transport operator work together to plan and execute this process, where a detailed transport study is conducted before any transport takes place and necessary transportation authorisations for such heavy load are acquired. In remote project sites and in difficult topographies, it is especially critical for large WTG blades and other oversized components. Without a well-planned route, project delays and increased costs may occur due to transportation issues in challenging terrains, making it a vital component in remote renewable energy project success. It should be highlighted that the final transport route for construction is determined only in the phase following the final selection of the manufacturer and the specific equipment model, especially for wind farms.

2. Business model



The largest bifacial solar power plant on earth, DeLasol, with a capacity of 9.913 MW, was commissioned in early April 2024. It was built on the territory of the municipality of Lapovo on an area of 12.5 hectares.

Photo Credits: MT-KOMEX

Globally, there is a variety of business models in renewable energy sector used by project developers and sponsors, with even the most traditional ones, such as Independent Power Producer (IPP) model, escaping strict definitions and dynamically adapting to everchanging investment climate and business environment (e.g. one of the modern tendencies is the shift from asset-based to service-based spectrum). These models vary based on many factors, including ownership structure, financing mechanisms and operational arrangements and final choice of a business model plays a critical role in funding options availability, with a range of possibilities of its own. With the global shift towards decarbonization and the significant financial commitment needed to support it, understanding how these projects source funding, evaluate their worth, assess risks, and establish the structures involved is essential

In Serbian renewables, there are no established practices for say Build-Operate-Transfer (BOT) or concessionary-type wind projects, leasing-based projects, community-owned projects, fully merchant projects and similar arrangements, with first utility-owned wind project yet expected online by 2025. In fact, large-scale projects this far mostly relied on incentives scheme, with feed-in tariff utilised by few on first come-first served basis no longer available and the ongoing form of support being market premium awarded by auctions. The first wind project based on a long-term commercial PPA, and outside government support was closed only in 2022, with corporate PPA-based projects and their bankability yet to be seen. The successful stakeholders' range was, and still is, mostly in-between pure developers (looking to sell prior to construction) and IPP-like sponsors, who engage in development completion, construction and operation in form of dedicate project companies. All this has set the scene for project financing as one of the best-suited funding options that allows for isolation of project risks and revenues, with corporate finance yet to be seen.

On the side of noteworthy solar initiatives, based on the Law on the Use of Renewable Energy Sources as amended in 2023 and secondary regulations, the Serbian government has just recently conducted a public tender for selecting a strategic partner to develop at least five self-balancing solar plants with minimum installed capacity totalling 1 MW and battery storage system of at least 200 MW. The selection has been announced at the time of finalising this guide, whereby the strategic partner is expected to recommend suitable locations spread in the country, design, develop, build, and maintain the large solar projects for two years as of commissioning (expected in 2028), before transferring ownership to Serbian power utility (EPS) on a turnkey basis. The strategic partner is also expected to arrange funding from international financial institutions or reputable export credit agencies with at least 18 years tenor. Detailed action plans for this ambitious initiative are yet to be solidified and despite the lack of successfully tested public-private arrangements in the industry this far, from national renewable targets perspective it is certainly welcome.

At the time of creating this guidebook, practically all successfully completed utility-scale projects in Serbia have been developed utilising project finance structures, although theoretically, corporate financing in certain forms is also possible. The most likely candidates for corporate finance in future would be the projects developed by the utility or large energy corporations, whereby corporate PPA-based projects may align with corporate finance options as well. Thus our focus below is to outline the main features of both major options for funding wind and solar and risk matrix around them.

2.1 Project finance

Project finance for renewable energy is the most commonly used method that unites stakeholders and resources required for capital-intensive projects in the energy sector, such as wind farms and large solar plants. Project financing involves raising capital to construct and operate renewable energy projects on project-specific basis, utilizing both secured long-term debt as the dominant component and equity financing. The project's assets, revenue streams and insurances serve as collateral for loans, creating a non-recourse financing structure where project sponsors are typically not personally liable for debt repayment in case the project underperforms. A Special Purpose Vehicle (SPV or the project company) is another fundamental requirement of project finance, established to manage the project, allowing better risk management and ensuring limited liability for the project sponsor. In project finance, the debt is repaid from the future cash flows generated solely by the SPV-borrower, and lenders

normally do not have recourse to the sponsor's other assets. This structure is most often employed in renewable energy projects, helping to isolate project risk and financing from the sponsor's broader obligations.

From broader perspective this is sometimes also referred to as limited recourse finance, among other as the lender's security net for loans made directly to the SPV may involve sponsor's ownership interest in the project SPV (or special purpose holding company one level above the SPV, if applicable). In practice, a number of cases also gets to include also specifically tailored parent guarantees for certain risks and other credit support or capital contribution obligations of the sponsor related to construction completion.

Project finance involves many parties and stakeholders who integrally work together to structure the funding solution, details of which differ from project to project, most notably:

- **Project sponsor (shareholder)/developer:** The entity or entities responsible for fully developing the project. Sponsors often invest equity capital and are involved in project management or even provide services to the project in development, construction or operating activities.

- **Lenders/financiers:** Banks, financial institutions, or private investors providing long-term debt financing for the project, which sometimes appoint power plant facility agents and security agents. The financing parties assess the project's financial viability and risk profile before providing funding.

- **Equity investors:** Investors who may be called to provide equity capital for the project alongside the sponsors and may have direct or indirect ownership interests in the SPV and/or veto rights with respect to major decisions. These may include private equity firms or institutional investors.

- **Off-taker/power purchaser:** The entity purchasing the electricity generated by the renewable energy project under a power purchase agreement (PPA). This could be a utility company or a corporate entity.

- **Contractors and suppliers:** Companies responsible for designing, engineering, constructing, and supplying equipment for the project. This may include EPC (Engineering, Procurement, and Construction) contractors, equipment manufacturers, and service providers.

- **Government entities:** Governmental authorities and regulatory bodies play a significant role by providing permits, licenses, possible incentives, and regulating the industry.

- **Insurance Providers:** Insurance companies that offer various types of insurance coverage to mitigate risks associated with the project, such as construction risks, operational risks, and natural disasters.

- **Expert advisors:** Law firms, technical, financial and other advisory firms provide legal, tax, financial, technical and other advisory services throughout the project development and financing.

Another major feature of project finance is the concept of risk sharing between project parties. The risks that could affect the project's cash flow and assets are carefully assessed and allocated to the parties in the structure that are best positioned to understand, manage, and mitigate each particular risk, instead of leaving a bulk of risks on the project company. If not entirely passable to another party, the stakeholders may look at external options and mechanisms, such as taking out additional insurance. One of the obvious examples would be an optionality to tailor a specific fixed-price EPC contract with a renown and creditworthy contractor, using performance guarantees and liquidated damages to ensure timely completion, adherence to quality standards, and the achievement of projected financial returns.

» *Choosing the right business model for your renewable energy project in Serbia involves a careful evaluation of several factors, and project finance is normally the most suitable option for utility-scale (10MW and higher) renewable projects in Serbia, which goes hand in hand with a government incentive scheme where available.*

2.2 Capital finance

Capital or corporate finance is the process of acquiring funding to establish, operate, and maintain renewable energy projects through equity and debt that is primarily secured at the developer or sponsor level and backed by their balance sheets (whereas in project finance the focus in on the project company level and its revenue streams, with recourse to sponsors quite limited to none). This finance is vital for the initial capital expenditure, which includes procuring equipment, constructing infrastructure, and ongoing operational expenses. The choice of financing structure depends on factors such as the project's financial requirements, risk profile, and the preferences of project sponsors and investors. Sources of corporate finance often encompass sponsor equity, loans, bonds, and investment from various stakeholders, with the aim of ensuring the project's feasibility and successful operation.

The simplest example of corporate finance would be having a utility, or an energy corporate, establish 100% owned subsidiary, with funding in form of capital contributions and/or shareholder loans, without other investors or lenders involved. In another example, a capacitated investor may consider constructing the project on its balance sheet or arrange bridge finance for construction, thus avoiding the challenges of striking long term PPAs ahead of construction for traditional bankability, and instead reaping the benefits of a more flexible structure (including post-construction sell down or refinancing gains).

Alternatively, collaborative approaches like joint Ventures and partnerships involve pooling resources and expertise with local developers, investors, or utility companies. Development costs, risks, and operational responsibilities are shared, and revenue distribution is defined in the partnership agreement. Green certificates and incentives can be harnessed by developing projects that generate green certificates or guarantees of origin alongside electricity, with revenue derived from both electricity sales and certificate sales (noting in Serbia projects using market premium support are not qualified for guarantees of origin). These corporate finance models offer various avenues for funding and development, each with its unique benefits and considerations.

2.3 Risks Overview

In project and capital finance of wind or solar projects, a number of common risks can impact the success and profitability. Some of the most prevalent risks include:

- **Resource Risk:** Wind and solar power generation are dependent on the availability and consistency of wind or sunlight, where variations in weather patterns and seasonal fluctuations can affect energy production levels and revenue forecasts and cash flows.

- **Technology/Operational Risk:** Risks associated with the reliability, performance, and obsolescence of wind turbines or solar panels technology , including equipment failures, manufacturing defects, and performance degradation over time, can impact project operation and maintenance costs, as well as energy output. Challenges such as downtime, curtailment and other grid integration issues are also counted towards this category.

- **Construction Risk:** Challenges related to the construction phase, such as delays, cost overruns, and quality issues. Construction risks can arise from factors like unfavourable weather conditions, supply chain disruptions, or labour shortages, as well as site-specific situations (soil condition, chance archaeological finds, etc.), possibly affecting construction timelines and budget.

- **Legal/Regulatory and Policy Risks:** Changes in government policies, regulations, support or incentives schemes can significantly impact the economics of any renewable project. Uncertainty surrounding future regulatory frameworks and compliance requirements, as well as unforeseen liabilities, can affect project viability and financial attractiveness.

- **Financing Risk:** Involves challenges in securing debt or equity financing for the project, fluctuations in interest rates, currency risk (for international project finance), credit availability, liquidity risk, refinancing risk, covenant compliance, and investor sentiment. All these can impact project financing, debt service, and investor returns.

- **Market and Offtake Risks:** Fluctuations and volatility in energy prices, supply-demand dynamics, and market competition pressures can affect the revenue streams and profitability of wind and solar projects. The risks associated with securing long-term PPAs or other revenue contracts for the sale of generated electricity include contract renegotiation, termination clauses and disputes, as well as and market access restrictions.

- **Environmental and Permitting Risk:** Delays or complications arising from environmental impact assessments (habitat disturbance, wildlife impacts etc.), zoning conflicts, land rights disputes and permitting bottlenecks can hinder project development, social acceptance, construction schedule and investor reputation.

- **Counterparty Risk:** Risks associated with the creditworthiness and performance of project counterparties, such as off-takers, suppliers, contractors, and service providers. Some overlap with other risk categories inherent, but merits to underline that default or non-performance by key project counterparties can have significant financial implications for the project.

- **Force Majeure and Natural Disaster Risk:** Unforeseen events such as natural disasters, extreme weather events, or geopolitical disruptions can disrupt project operations, as well as construction, damage infrastructure, and cause financial losses.

Addressing and mitigating these risks through thorough due diligence, risk management strategies, contractual protections, insurance coverage, and contingency planning are essential for the successful execution and operation.

3. Development

The Development phase encompasses the entire process from the initial concept to the point where the project is ready to be constructed and financed. It begins with the pre-development stage, which involves site selection, market analyses, feasibility studies, and technical assessments. Following this, the project advances to the "ready to build" phase when zoning and permitting for all portions of the project are secured, contracts for equipment and construction are tendered, and financial structures are finalized. The Development phase concludes with the financial closing, where funding is secured, often through equity and debt financing, and disbursed. This broader phase is characterized by meticulous planning, technical assessments, legal and regulatory compliance, and the establishment of the necessary financial framework to ensure the successful implementation of the renewable energy project.

3.1 Pre-development phase

The Pre-development phase sets the foundation for the subsequent phases of project development. It is characterized by intensive research, engagement with stakeholders, and the establishment of a solid project plan. The framework for institutional interactions at this stage is quite underdeveloped, so the efforts rest on private initiative, resourcefulness and efficiency of the project developer in researching, analysing and making all relevant preparations for a fully blown development.- Successful completion of this phase is one of the essentials for ensuring a smooth flow of next development steps. This phase can be structured as follows:

- **Site Selection and Assessment:** Thorough assessments are conducted to identify potential project sites. Factors like resource availability, environmental impact, accessibility, and technical feasibility are evaluated.

- **Preparations for Environmental Impact Assessment (EIA):** If applicable, a comprehensive EIA will need to be consolidated in next phase to assess the project's potential impact on the environment and submitted for authorities' approval usually towards the end of broader development. This involves evaluating effects on wildlife, vegetation, and local ecosystems and in this Pre-development sub-phase early consultations with environmental experts are usually held and preliminary information is obtained for better visibility on future EIA scoping and monitoring activities required.

- **Initial Review of Legal and Regulatory Compliance:** During this phase, land rights, permitting requirements, and compliance with local and national regulations are thoroughly examined. This ensures that all legal aspects are addressed for seamless project development early on. Sometimes certain agreements of preliminary nature are concluded with some of the landowners even before the Development phase official start.

- **First Engagement with Stakeholders:** Building relationships with local communities, state authorities, and other relevant stakeholders is vital, as it helps in garnering support and addressing any concerns early in the process. Although not regulated and not required in Serbia, a number of early entrants in wind and solar market have established a good practice of concluding cooperation and support agreements with host municipalities.

- **Grid Connection Planning:** Planning for grid connection and any overhead line corridors is essential for ensuring reliable integration of the project to national electrical grid. At this phase connection options and alternatives are first analysed high-level by engaged experts, to be followed by detailed checks for available capacity, potential conflicts and other processes with grid operators as soon as practicable, thus the lines between Pre-development and Development phase are sometimes blurred from this perspective.

- **Preliminary Feasibility Study:** This study provides an initial evaluation of the project's technical, economic, environmental, and legal aspects. It serves as a basis for determining the project's viability, however for private investment projects and with properly developed planning (zoning) documents the Preliminary Feasibility Study is not required.

- **Formal Project Initiation:** This marks the official commencement of the project's development process. It involves the identification of the renewable energy source, project location, and the initiation of preliminary assessments.

3.1.1 Market analyses

Market analysis is an initial component of the pre-development phase in renewable energy projects. It involves a comprehensive assessment of the energy market dynamics and conditions relevant to the specific technology being considered. This analysis aims to provide critical insights into the demand, pricing trends, and regulatory framework within the target market. Additionally, it evaluates factors such as competition, potential off-take agreements, and government incentives that can significantly impact the project's financial viability and long-term success. By conducting a thorough market analysis, developers gain a clear understanding of the market's readiness for the proposed renewable energy project, enabling them to make informed decisions and tailor their strategies to maximize project success.

3.1.2 Site selection

The site selection process allows investors to exercise discretion and obtain initial location information by examining planning documentation. Investors use this insight to confirm if the current planning documentation includes provisions for constructing an energy facility in the desired location within the Local Self-Government Unit (LGU). Typically, this process does not require a separate application or issuance of additional documents. It is worth noting that construction on privately owned agricultural land and forested land does not require an approval from the Ministry of Agriculture, Forestry and Water Management, however in any event may be subject to payment of land repurposing fees. A good market practice in this regard is that in case of sizeable land plots which host individual WTGs the land purpose does not get formally registered as construction land, to enable continuation of pre-existing (e.g. farming) use of the land that is not strictly necessary for the project. In some cases, the Ministry or Provincial Secretariat component for planning (depending on part of Serbia concerned), or even the LGU authority (for projects up to 10 MW capacity), may provide a document called Information on the Location with data on possibilities and limitations of construction on one or multiple land parcels based on existing spatial and urban planning documents. This may be especially important to be (re-)issued at the appropriate time for obtaining of the decision on scope and content of the Environmental Impact Assessment Study.

3.1.2.1 SITE CONSTRAINTS

The site constraints include mapping all constraints and evaluating alternatives, with the aim of identifying site alternatives with the least impact on the environment and society.

In Serbia, land ownership registration system functions fairly well for its entire territory, whilst the involuntary means of land acquisition, including expropriation, are in principle not available to private wind and solar investors. Thus the topics such as restrictions on access to property and natural resources, physical or economic displacement, resettlement and similar are not normally triggered with this kind of projects. Still some caution is advised in terms of broader acceptability of the project and its site should be at least couple of kilometres removed from the nearest residential settlements.

In terms of biodiversity protection, the laws on environment protection and nature protection require addressing the conditions and measures for environment and nature protection both in the processes of creating spatial and urban planning documents by other governmental and local authorities, as well as by investors during project permitting and development, most integrally in the process of Environmental Impact Assessment. Therefore, to extent possible and discoverable at this stage the project viability from point of view of nature/environment protection should be assessed, and possibly applicable conditions, prohibitions, restrictions and protective measures should be taken into account.

Finally, an indispensable step in early detection of site development possibilities and constraints is research and analysis of existing spatial and urban planning documents covering the area, as well as other available public sources. Usually, pre-existing planning documents network for any prospective area in Serbia is not upfront elaborated to accommodate a large-scale wind or solar project, thus a new planning document and possibly adaptation of some existing one is most likely required, as further elaborated in 3.2.2. In this phase the public authority (state/provincial/municipal) competent for the territory and type and scale of intended project may be able to issue Information on the Location where some of the data are consolidated in

regard to specified land parcels, but in this context, it should be viewed less as a definitive and comprehensive and more as a guiding and indicative source of information on the land use (that will likely to need to be adapted anyway).

3.1.2.2 WIND AND ENERGY YIELD ASSESSMENT /*SOLAR RESOURCE AND ENERGY YIELD ASSESSMENT

In the site selection process for wind energy projects, a thorough wind resource assessment is paramount. This assessment involves detailed measurements and analyses of wind patterns at the potential project site. By installing meteorological masts equipped with anemometers and wind vanes in this early phase of development, developers collect critical data on wind speeds, directions, and variability over an extended period. This information is then used to create a wind resource map, enabling a precise estimation of the energy that can be harnessed from the wind at various heights above ground. Additionally, advanced wind modelling techniques are employed to simulate the wind flow across the site, providing a comprehensive understanding of the wind resource's spatial distribution. This thorough assessment forms the foundation for accurate energy yield projections, allowing developers to make informed decisions about the viability of the site for wind energy generation.

In the case of solar energy projects, the site selection process necessitates a solar resource and energy yield assessment. Solar assessments focus on evaluating the local solar irradiance, which represents the amount of sunlight available at the location. By analysing historical solar irradiance data and considering factors like shading, tilt angles, and tracking systems, developers can estimate the energy generation potential of a solar plant. Accurate assessments are crucial for determining the project's financial feasibility and energy output, ensuring that the chosen site receives sufficient sunlight to meet the energy production requirements of the solar installation.

The key factors include wind yield assessment, where banks typically require at least one to two ye'rs of wind measurements for a more accurate energy yield assessment that reduces production risks. These measurements usually start during the project's origination phase and continue through preparation phases. Some projects also extend measurements into the construction and operation phases to enhance generation planning.

3.1.2.3 LAYOUT

When evaluating potential sites for a renewable energy project, further key documents come into play for detailed ownership and layout checks. Together with the Information on Location mentioned above, a Copy of the Ground Plot Plan and Real Estate Sheet, represent vital resources in this phase, each serving a distinct purpose in the site selection process. These documents help assess the suitability and availability of a chosen location for energy facility construction, land access and acquisition potential.

A Copy of the Ground Plot Plan, serves as an important document for verifying land plots position and boundaries, as well as proximity to any registered industrial facilities, residential objects and other above-ground infrastructure in the area. As a rule, any land plot that is intended to be used for construction should have an immediate access to a public road, which is also verifiable from this document.

On the other hand, a Real Estate Sheet is an excerpt derived from the official land registry, in Serbia called "Real Estate Cadastre", which in case of underground infrastructure translates to its sub-unit called "Cabling Cadastre" and "Cabling Sheet". The Real Estate Sheet is a document that in principle provides definitive proof of current land ownership, and is also relied upon by permitting and other authorities in later stages when the investors is required to evidence that appropriate land rights have been acquired, latest by the Construction Permit issuing process. Notably in recent years, investors can access and download the document conveniently from the online cadastre registry database at the Republic Geodetic Authority that may by authenticated by professional users.

Additionally, the Information on the Location document holds significance in this phase, especially to identify the pre-existing planning (zoning) documents and their rules and requirements. Its primary purpose is to gather information about construction possibilities and limitations for a selected land plot or group of land plots. Notably, a site found in rural outskirts should already be covered high-level by spatial planning document that captures the entire territory of the LGU and some guidance on intended land use, possible restrictions

and/or conflicts with other industries projects and public infrastructure can sometimes be discerned early on..

3.1.3 Prefeasibility study

Preliminary Feasibility Study with the General Project, refers to the initial phase of technical documentation creation, aiming to assess a project's feasibility. This step is mandatory only for large-scale projects in specific situations. The Preliminary Feasibility Study includes a general project, which might be developed independently without the need for a separate Preliminary Feasibility Study. Based on the outcomes of these preparatory activities, a Preliminary Feasibility Study and a full Feasibility Study are generated. In cases where the Site Conditions can be established through planning documents, there is no requirement for a Preliminary Feasibility Study with the general project (as is more typical case in practice).

Preliminary activities involve tasks like research, study preparation, data collection for analysing and developing engineering, geological, geotechnical, geodetic, hydrological, meteorological, urban development, technical, technological, economic, energy-related, seismic, water management, and transport-related factors. This data also considers conditions related to fire safety and environmental protection, among other factors relevant to the construction and operation of a specific structure.

3.2 Ready to Build phase

Once the project has all necessary planning permissions, approvals, permits, and licenses, it becomes a "ready to build" project.

3.2.1 Land acquisition campaign

Developing a strategic land procurement approach for renewable energy projects is crucial for success. This involves a methodical strategy to secure suitable land, including steps like site assessment, stakeholder engagement, legal research, negotiations, impact assessments, agreements, mitigation measures, and legal compliance.

In the context of land acquisition for wind farms or solar plants, it is imperative to gain the support of landowners in identified suitable locations. The success of your project heavily relies on their endorsement. If your endeavour primarily involves community-owned initiatives, it is essential to promptly establish lease or sale agreements with the landowners to ensure a solid foundation for the project's development. Early engagement and securing these agreements are pivotal steps in fostering cooperation and enabling the efficient progression of your renewable energy project.

The most common legally acceptable rights the project company should obtain on the project land are:

1) ownership (title),
2) leasehold (typically long-term lease contracts for the life cycle of the project, except for segments which are normally temporary and contracted for shorter periods, e.g. temporary curves) and/or
3) easement rights (with duration and contents tailored akin to leasehold).

In Serbia land expropriation is not generally available for private investments, hence the land campaign normally requires voluntary transactions with the landowners. Also, the publicly owned land is not yet widely available for renewable projects due to various factors, but there are signs of regulatory improvements in recent years[31]. For time being private investors do not generally rely on public stakeholders to provide main bulks of project land from the governmental portfolio, but rather enter piecemeal negotiations with private owners. The Law on Planning and Construction also stipulates some ancillary, investor-friendly accommodations that have worked relatively well in practice thus far[32]. A similar regime applies for the land required for grid connection construction, whereby the private investor is required to donate acquired land rights to the Republic of Serbia, with relevant grid operator as authorised user.

31 Regulation on the conditions, mode and procedure for granting state-owned agricultural land for use for non-agricultural purposes (Official Gazette of RS, No. 99/2022) [20]

32 E.g. passage rights with neighbouring land during construction, where farmers' claims for possible damages are settled through project's grievance mechanisms or by the court.

3.2.2 Zoning

A utility-scale project usually requires at least one detailed planning document to be enacted by the relevant authorities to serve as basis for issuance of project permits, in order to be designed and permitted in line with the Law on Planning and Construction, as well as to facilitate the land re-purposing where applicable. The most common concept of securing a more detailed planning document would be to liaise with the municipality involved and have the local plan of detailed regulation covering the project site adopted by municipal assembly. Other approaches are possible depending on circumstances, such as coordinating the Government adoption of a spatial plan for special purpose area in a drafting effort led by the Ministry in charge for planning, however such alternative has not been largely tested by private investors in renewables thus far. Either of these solutions would require a relevant Environmental Impact Assessment (EIA) to be produced and joined with the planning document. In practice, the planning document activities usually go hand in hand with the land acquisition campaign. By diligently addressing zoning considerations, developers can move forward with project-specific permitting confident that the project complies with all relevant land-use regulations and is positioned for successful implementation.

3.2.3 Geotech

Geotechnical aspect includes systematic study and analysis of the Earth's subsurface and soil conditions to assess their impact on the design, construction, and long-term stability of wind farms or solar plants. Geotechnical investigations involve examining the physical properties, composition, and behaviour of soils, rocks, and groundwater at a project site.

Geotechnical studies involve soil sampling, laboratory testing, and geophysical investigations to provide a comprehensive understanding of the subsurface conditions. The data collected from these studies inform the project's engineering design, foundation selection, construction techniques, and long-term maintenance plans, ensuring the successful and safe development of renewable energy projects.

The exploratory drillings on the site during development need to be in line with separate mining and geological explorations law, which regulates among other, conditions and manner of execution of geological explorations of mineral and other geological resources, researching of geological environment, as well as geological explorations for the purpose of spatial and urban planning, designing, construction of structures and remediation of the site.

3.2.4 Permitting and design

The design, permitting and construction of a wind farm or solar plant are regulated by the Law on Planning and Construction [1] and a number of related bylaws[33]. The key notions in these processes are obtaining a *construction permit* and preparing *technical documentation* based on which the actual construction process is eligible to start. This documentation serves to establish the structure's concept, requirements, construction method, and maintenance specifications. It is in turn based on **location conditions**, a comprehensive set of prerequisites and data necessary for developing preliminary-, construction permit-, and works performance designs. The location conditions relate to specific land parcels earmarked for construction, typically applied for once the zoning sub-phase is complete so they are issued based on the new planning document (or adaptation of an existing one), matched against the concept design the applicant is required to submit, as well as any sectoral designing and/or connection requirements to be officially obtained in the location conditions issuance process[34].

33 Rulebook on special type of buildings and special type of works for which it is not necessary to obtain an act of the competent authority, as well as the type of buildings that are built, or the type of works that are performed, based on the decision on approval for the execution of works, as well as the scope, content and control of technical documentation attached to the request and the procedure carried out by the competent authority (Official Gazette of RS, No. 87/2023) [22]

34 Exceptionally, the conditions for connection of a power generating facility to transmission and distribution grid are obtained by the investor itself in accordance with energy regulations, outside of the integrated procedure performed under general construction regulations umbrella.

The procedure for developing a wind or solar project until "ready to build" stage normally involves three main steps from the perspective of the Law on Planning and Construction, both for the power plant facility itself (processes fully organised by the investor) and required infrastructure such as grid connection (investor-managed in coordination with and on behalf of relevant grid operator), presented below:

1) obtaining the location conditions based on a valid planning document, which for a major part involves ex officio interaction of the issuing authority with various stakeholders and utilities, as a rule valid for two years as of issuance;

2) acceptance of the preliminary design by the state or provincial revision committee;

3) obtaining the construction permit (based on location conditions, revision committee report, evidence of land title and construction permit design with its technical control reports), in principle valid for construction start for three years as of becoming final and enforceable.

The primary competence for renewable energy sources facilities of 10 MW or more capacity, as well as for 110 kV or more power lines and substations within inner Serbia lie with the Ministry of Construction, whereas for the territory of Autonomous Province (AP) of Vojvodina the provincial secretariats act under delegated authority. Still, for certain auxiliary parts of a project not captured by the main construction permit, the competence of local municipalities may also apply under the same or a more flexible permitting document such as approval of works decision (e.g. local access roads, low-voltage cabling and self-consumption connection, telecommunications, etc.).

Construction permits as administrative acts issued by the Ministry of Construction or provincial authorities at first instance are automatically final (non-appealable) at issuance, however may be challenged before the Administrative Court, whereas the decisions issues by local municipalities in first instance are appealable with the Ministry of Construction.

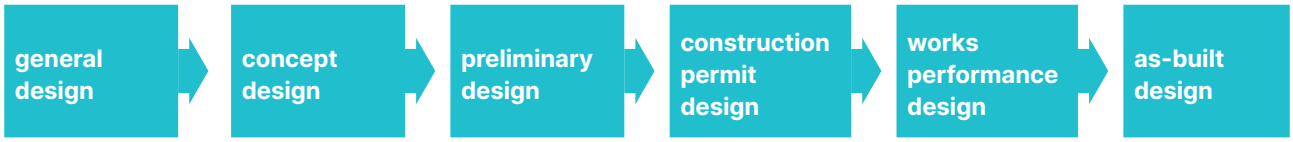
Procedurally, the basic concept of the Law on Planning and Construction is so-called "integrated procedure", introduced a decade ago to consolidate previously scattered and poorly connected workstreams, whereby most of the communication with the permits issuing authority should be made via e-portal, the Central Register of Integrated Procedures and issuing authority is in turn supposed to deal with various sectoral conditions and approvals on behalf of the investor. This integrated procedure applies to the issuance and modification of location conditions, issuance of construction permits and changes to construction permit decisions (re-permitting), among other related actions. Public authorities, including government bodies, autonomous province bodies, local self-government units, special organizations, and other entities with public authority, are required to expedite this procedure. Within very tight timeframes, they must issue pertinent prerequisites (such as communal infrastructure connection requirements) and other documents that contain essential elements for the integrated procedure. These documents are then transmitted directly to the relevant authorities responsible for issuing the integrated procedure documents.

Also in 2014, the Law on Planning and Construction had introduced then-new concept of a "financier" to allow the private investor's direct involvement in permitting and construction management for missing public infrastructure of large-scale projects. This applies against a background whereby the permits for infrastructure are normally issued in the name of infrastructure/grid owner, without any formal role of the facility investor. Thus, the idea behind "financier" concept is to allow an investor, subject to providing finance, to become involved and even manage large scope of infrastructure development activities normally reserved for the utilities, except to acquire the ownership over such new infrastructure once constructed. For example, this allows the investor to enforce faster permitting of grid connections on behalf of TSO and manage their construction in coordination with the TSO more efficiently. Such concept was for years prior unthinkable in practice, which was one of the main hurdles contributing to delay of largest wind projects (one was construction ready already in 2013 but ultimately got to commissioning only in 2019).

Other than construction regulations supported by planning documents rules and energy regulations, additional sectoral laws may affect wind and solar plants various stages of designing and permitting, as well as construction and operation. In general, most conventional parts of the regulatory framework involve

environmental and nature protection regulations, health and safety, fire-protection, water regulations, mining and geological explorations regulations, cultural heritage regulations (archaeological survey), aviation lightning and radars, etc. Depending on given circumstances, further special regulations may apply for some project conditions and also require addressing further relevant authorities on case-by-case basis. For example, if unrelated infrastructure is pre-existing or is planned at the wind and solar power plant site (such as gas pipelines, major roads, railway, etc.).

The technical documentation involved in permitting processes includes several key components: the general design, concept design, preliminary design (if applicable), construction permit design, works performance design, and the as-built design.



The **concept design** is a critical component of this process, serving the dual purpose of obtaining location requirements and contributing to the urban development design, facilitating urban architectural development.

The requirement for a **preliminary design** hinges on whether the construction permit falls under the purview of the relevant ministry or the autonomous province's authority (which is the case for 10 MW+ renewables), and is subject to technical review. This preliminary design outlines various aspects like the structure's intended use, position, shape, capacity, and technical features.

A **design for the construction permit** is necessary to secure the construction permit. It is a set of mutually aligned designs which define the position and capacity of the facility/object on site, its functionality from technological and other perspectives, choice of construction system and sizing of main structural elements, selection and requirements for construction materials, installations and equipment in line with location conditions and important features of the preliminary design (if it was applicable).

The **design for performance of works**, is crafted to guide and facilitate the actual construction process. It comprises a coordinated set of designs that specify the structural, technical, technology and operational attributes of the facility, encompassing equipment and installations. Additionally, it outlines the technical and organizational strategies for construction, the facility's total investment value, and the maintenance conditions.

The **as-built design** is created after construction, primarily for obtaining operational permits and managing ongoing maintenance. It is essentially the design for performance of works with any construction-related amendments. If no deviations occurred during construction, the investor, supervisor, and contractor certify that the as-built state matches the original design on the construction permit. The as-built design usually does not undergo technical review, except when needed for structure legalization.

The preparation of **technical documentation** for construction involves companies, legal entities, or entrepreneurs registered in the Serbian Business Registries Agency. Design service providers and construction work contractors need to hold a relevant corporate license under jurisdiction of the Ministry of Construction and provincial authorities to be engaged by the project investor for wind and solar projects with capacities higher than 10MW, i.e. their design in case of design firms or execution of works in case of contractors. The licensing of such entities requires relevant references and sufficient number of employed engineers with personal licences. The issuance of personal licenses to designers or contractors is also within the jurisdiction of the Ministry of Construction.

Technical control involves the review and verification of the design for the construction permit, ensuring compliance with regulations. The responsible entity for this control must meet legal requirements, and the investor selects the overseeing individual. However, a responsible designer who prepared the design or works for the investor's company may not conduct this

control. The examination covers numerous aspects, including compliance with location requirements, legal regulations, technical norms, and environmental and safety considerations.

Technical review is conducted for general designs, preliminary designs, preliminary feasibility and feasibility studies (where these are applicable) for renewable energy plants requiring permits from the construction ministry or an autonomous province. The review commission, appointed by the relevant authority, provides a report with recommended measures for the design for the performance of works.

The **construction permit** application can be submitted, permitting sequence-wise, once the technical control of the construction permit design is successfully completed and a positive verification report is obtained. The investor must provide the required documentation with application for the construction permit and pay the relevant administrative fee, as specified in the law and Rulebook on the Integrated Procedure. The documents required for wind and solar projects involve the construction permit design itself and its technical control report, evidence on land rights, authorities' approval the EIA study (if its conducting was required), energy permit for the power plant and missing infrastructure contracts of the investor with relevant public stakeholders or their confirmations. The law provides for possibility to change the construction permit both due to change of main technical aspects of the project and/or due to change of the investor (land rights holder) until construction completion phase, however the latter is still regarded as relatively complex and rarely used. Instead, majority of project acquisitions during development are done as share-deals provided the project permits and rights holder is a dedicate-SPV with short operating history.

An **energy permit** is required for any wind or solar plant greater than 1 MW and is issued by the Ministry of Mining and Energy at relatively advanced stage of project development, essentially based on location conditions, approved preliminary design of the plant and opinion on plant connection by the relevant grid operator. The energy permit does not establish specific exclusivity over a project, but basically determines that the project is broadly in line with national strategies and regulations. It is issued for a period of 3 years with extension option (subject to sufficient progress of development) and it is non-transferable. Issuance of the energy permit requires a security deposit in the amount of 0.5% of the project's investment value, which is returned upon issuance of the construction permit, or evidence on development expenses made up to that point in the same minimum value.

All in all, the permitting procedure timeframes for this type of facilities in Serbia are viewed as increasingly positive and progressed, compared to 2010s and before. The investors and key stakeholders have articulated over time their concerns around administrative barriers for permitting and construction which have been and are being increasingly addressed by the Serbian authorities providing for a better investment climate in renewable.

3.2.5 Grid[35]

The process of grid connection to the transmission system of the Republic of Serbia is governed by the following set of regulations:

- The Law on Energy [2]
- The Law on Planning and Construction [1]
- The Law on the Use of Renewable Energy Sources [3]
- Decree on conditions of delivery and supply of electricity [4]
- The Rulebook on energy permits [5]
- The Transmission Grid Code [6]
- The Methodology for calculating on setting costs of connection to electricity transmission and distribution systems [7]
- Rules on establishing the costs for connection to the electricity transmission system [8]
- Procedure for connecting facilities to the transmission system [9]

35 *Important note: At the time of finalizing this guidebook Serbian regulations on power grids and interconnection of new generation facilities from renewables were undergoing extensive changes and in these particular matters, readers are strongly advised to check up to date details with specialized service providers. While we have endeavoured to include some of the latest information, a.o. based on indications provided in 2023 Amendments to Law on Energy, further subsidiary regulations are expected to fully regulate a "new regime" for new projects, while the "old regime" continues limited application to projects that were sufficiently progressed by 2021 but are not yet constructed.*

- Instructions for connecting facilities to the transmission system [10]

As further described in sections 1.3 and 1.4, EMS is the transmission system operator (TSO) responsible for high voltage grid (400 kV, 220 kV and most of 110 kV infrastructure), transmission of electricity, system operation and ancillary services, while EDS is the distribution system operator (DSO) managing the distribution grid infrastructure. The Serbian Energy Regulatory Agency (AERS) is typically the second-instance authority for TSO's and DSO's individual decisions on connections, whereas when AERS is deciding in first instance over certain matters (such as the energy license), the Ministry of Energy acts as second-instance authority.

The developers of new power generation facilities need to undergo a full procedure for grid connection, meaning a complex combination of processes with deliverables in form of regulated adhesion agreements, administrative documents (e.g. grid connection approval) and technical documents (e.g. connection study) that secure the right to connect to the grid and further safe and reliable access of the power plant.

Most notably, the developers are required to conclude a milestoned set of agreements with the system operator:

(i) Agreement on the Development of Facility Connection Study: This initial contract involves an assessment of the connection's feasibility.

(ii) Agreement on Development of Planning and Technical Documentation (now captured by new name "Agreement on Connection"): This contract encompasses the creation of the technical documents required for connection and the acquisition of necessary permits (as well as some of the connection conditions verification under the forthcoming regime).

(iii) Agreement on Monitoring the Connection Construction (loosely mirrored in a new "Agreement on Constructing the Missing Infrastructure", concluded if the developer opts to manage the construction itself): This contract involves management of the connection's construction phase.

Connection study details the options for connecting to the relevant grid, the technical requirements, design tasks, quality of electricity, dynamic transition process analysis and compliance with relevant grid code. Upon completing the connection study under the first agreement, the grid operator should be issuing the so-called "opinion on connection conditions and possibilities", as noted an important document which sets the basis for future connection and is also one of the prerequisites when applying for the energy permit with the Ministry of Energy. Once the agreement concerning connection study is completed the developer is shortly expected to continue with further agreements.

The essence of remainder two agreements with the grid operator is that the developer is expected to deal with resolving connection land rights (as necessary) and grid connection design and permitting (usually a switchyard at the site and overhead line to nearest part of existing grid) on behalf of and in coordination with grid operator. The developer also may, at its request, manage the connection construction and deal directly with third parties in the role of "financier", as mentioned above. In these cases, the developer is expected to directly finance development and construction of the new infrastructure that will become part of the grid. The newly conceptualized "Agreement on Connection" as of 2023 is in principle meant to capture and replace both of these agreements for newly planned facilities[36], with "opinion on connection conditions and possibilities" seemingly moved slightly forward in time, after concluding this agreement..

Further to above and following the issuance of the construction permit for the power plant, the Grid Connection Approval (GCA) is to be issued by the competent grid operator. The GCA is valid as per assumed timeline for construction i.e. for 3 years for connections to transmission system and 2 years for connections to distribution system, but its validity may be extended.

The GCA should be granted if the equipment and installations of the facility are determined to be in accordance with relevant technical rules, regulations and grid operator standards. The GCA specifically determines a.o. the connection point, technical conditions

36 As noted, the updated information on ongoing changes to connection bylaws should be checked in detail, however one of major changes is about securing and maintaining a bank guarantee for performance in the value of EUR 25,000 per MW of the power plant at the time of concluding the new Agreement on Connection.

for connection, place and manner of measuring electricity, deadline for establishing connection and, at least in theory, the cost of connection. In practice, since the actual final costs of connection construction are not known at late development stage, this far the authorities tended to apply a workaround and issue a partial GCA, leaving the final costs to be determined subsequently in a supplementary GCA (following completion of the connection when costs can be evidenced).

Compliance with these steps above ensures a smooth procedure for development progress and later actual connection (energization) of the power plant. Each of these documents guides the connection process, ensuring alignment with the power system and technical criteria.

Usually, as soon as the (partial) GCA is issued, the final stage of development is set to occur by applying for the connections' construction permit. The high-voltage infrastructure construction permit is issued jointly in the name of TSO and the Republic of Serbia, likely with the developer named as "financier", if it had requested such authorisation from TSO.

3.2.6 Environment and Society

The "Environment and Society" phase is a comprehensive stage that addresses considerations associated with the development and operation of such projects. This phase reflects the commitment of project developers and stakeholders to ensure that renewable energy installations are not only environmentally sustainable but also beneficial to local communities and society at large.

In accordance with the Law on Environmental impact assessment [11], the Government of Serbia defines the list of projects for which the EIA is compulsory (List I), as well as the list of projects for which EIA may be requested by the authorities depending on their assessment (List II). These lists are given in the corresponding Regulation in determining the list of projects for which the impact assessments is obligatory and list of projects for which the environmental impact assessment can be required [12]. Wind farms with more than 10 MW capacity, as well as most other power plants between 1 MW and 50 MW (that would by category include solar projects), are found in List II, whereby all power plants with capacities higher than 50MW are found in List I and thus mandated to develop an EIA study. Power lines rated 220 kV or more and with more than 15km in length are found in List I, while other high-voltage power lines are found in List II. A project developer, when EIA is regulated as compulsory or is requested by the authorities, cannot be issued with a construction permit by construction authorities before approval of the EIA study is issued by environmental authorities[37].

The EIA process incorporates the background conditions of various authorities and ultimately mandates the development, in-construction and operations stage limitations, measures and activities of environment protection that need to be undertaken. Large portion of inputs on the EIA are provided under the prior conditions issued by respective authorities and when it comes to construction-specific requirements, they are relatively understandable depending on the area concerned. For illustration, the Institute for Nature Protection of Serbia may require limitations in night work during sensitive seasons for the fauna and/or for parts of the work site close to nesting areas. Once the EIA scoping (if applicable[38]) is determined, following various surveys, drafting itself and public consultation, the EIA Study needs to be approved.

The processes are primarily handled by the Ministry of Environment or competent provincial secretariat (depending on whether the project is situated in inner Serbia or Vojvodina province) and involves at least a year of monitoring and at least four rounds of public notifications with respect to applications made and decisions issued. EIA Study approval decision is final i.e. non-appealable upon issuance, however, may be challenged under an administrative litigation process with the court.

If the construction is not started within 2 years as of the EIA Study approval or there are some deviations from the original design during construction, the investor is required to apply for a decision on complete renewal or update of the EIA Study. Sometimes the

37 Until a recent change in 2023 the EIA Study approval requirement was for years kept postponed to subsequent phase - start the construction, which was potentially doing more harm than good overall, as the environmental conditions and measures were not properly connected with the construction permit itself.

38 A few years now the initial step of the environmental process i.e. EIA necessity information is included in construction permitting's integral procedure and limited intra-authority interface but understanding that environmental matters are not fit for short time frames and require more direct management by the developer with line authorities, the upcoming legislative changes should bring the necessary improvements.

relevant authority assessment and decision may also be that EIA Study renewal or update is not necessary, e.g. if it was only about a late construction start and no meaningful changes in design.

For wind projects seeking development banks financing, it is essential to conduct a one-year Birds and Bats Study and develop an Environmental and Social Impact Assessment (ESIA) more or less in parallel with the local EIA study, done by engaged environmental specialists and according to international financial institutions (IFI) standards and requirements. The ESIA report resulting from those surveys and likely conforming to best practices and more stringent standards than regulated locally (in fact embracing both sets into one), would lay out impact assessment conclusions, as well as management and mitigation measures, each of these both during construction and during operations. The principle of continuous and permanent monitoring is present, meaning e.g. the surveys of birds and bats may need to be extended in-construction, but also for a certain period post-construction. When considering financing through commercial banks, requirements may vary from one bank to another, however it is not unusual for commercial banks to require some extent of adherence to IFI standards.

The societal dimension of this phase focuses on engaging with local communities and stakeholders to ensure their concerns and expectations are addressed. Community outreach, public consultations, and information campaigns are common tools used to build trust and foster a positive relationship between the project and the community. Moreover, renewable energy projects often aim to create socioeconomic benefits, such as local job opportunities, infrastructure development, and partnerships with local organizations. Ensuring social acceptance and support is essential for the successful implementation and long-term sustainability of renewable energy initiatives.

3.2.7 Tendering (WTG, BoP and PV)

Tendering process for Wind Turbine Generators (WTG) and Balance of Plant (BoP) components involves developers solicit bids or proposals from various suppliers and contractors to procure the required equipment and services. WTGs are essential components responsible for capturing wind energy, while BoP encompasses various auxiliary systems and structures needed for the wind farm's operation. For solar plants tendering process for solar panels and related equipment is a crucial step. The equipment may include inverters, mounting structures, tracking systems, and other components needed to optimize energy generation and system reliability.

The tendering process typically involves developers issuing Requests for Proposals or tenders to potential suppliers and contractors. These documents outline project requirements, technical specifications, and evaluation criteria. Suppliers and contractors then submit their bids, which are evaluated based on factors such as cost, quality, experience, and adherence to project timelines. Once the evaluation is complete, the developer selects the winning bids, enters into contracts around the time of advanced financing preparations (although limited notices to proceed i.e. down-payments are sometimes backed solely by sponsor equity months before the financial closing is set to take place), and procures the necessary components and services for the construction phase.

3.3 Financial closing phase

The finance closing phase for a wind or solar plant project is the crucial stage when all financial arrangements, agreements, and transactions are completed to secure the necessary funding for the project's development and operation. This phase marks the culmination of the project financing process and paves the way for project execution. Key activities during the finance closing phase include finalizing debt and equity financing structure, securing or amending necessary permits and approvals, and formalizing contracts, agreements, and off-take arrangements (generically called "project documents"). Once this phase is successfully concluded in around 8 to 10 months, the project can proceed to the construction and operational stages. The financial closing itself is usually considered to have taken place once all the conditions precedent for first utilisation of the lenders' construction loan are achieved.

When navigating the finance closing phase for wind farm and solar plant projects, regardless of the RES technology involved, two critical aspects must be addressed: land rights and environmental impacts. Securing land rights, including grid connection corridors, is vital for future bankability and can be achieved through purchase, long-term leases, or rights of easement. Ensuring these rights are free from encumbrances is often a financing requirement, as they may serve as collateral for non-recourse loans. Additionally, a full Environmental and Social Impact Assessment (ESIA) as per IFI standards may be necessary, and this becomes crucial for financing, ensuring comprehensive adherence to both Serbian environmental regulations and international standards.

3.3.1 Feasibility study

Feasibility study serves as a comprehensive assessment to determine the viability and potential success of the proposed venture. This study involves a thorough examination of various factors, including technical, economic, environmental, and legal aspects associated with the project. Merits to note, the Serbian regulations-defined feasibility study is not required for private investments i.e. it is required only in case of projects financed by state budget beneficiaries, when it needs to be developed alongside the preliminary design.

In the technical domain, the feasibility study evaluates the technical requirements and specifications of the renewable energy plant. This involves an in-depth analysis of the chosen technology, its compatibility with the intended location, and the feasibility of its implementation. Moreover, it assesses the project's capacity, performance expectations, and potential challenges that may arise during the construction and operational phases.

On an economic front, the study delves into the financial aspects of the project. It entails a detailed cost-benefit analysis, considering expenses related to construction, operation, maintenance, and potential revenue generation. Additionally, the feasibility study evaluates the projected return on investment, considering factors like energy market dynamics, government incentives, and potential revenue streams.

Environmental considerations are equally crucial in the feasibility study. This involves an assessment of the project's impact on the surrounding environment, including wildlife, vegetation, and local ecosystems. Additionally, it identifies any potential environmental regulations or permits that need to be obtained for project implementation.

Lastly, from a legal perspective, the feasibility study examines land rights, permitting requirements, and compliance with local and national regulations. It ensures that all legal aspects are thoroughly addressed to prevent any future complications or delays in the project's development.

3.3.2 Bankable Off-take agreement

In the mature phases of a Renewable Energy Source (RES) project, typically following the acquisition of the main construction permit(s), the project becomes eligible for negotiating various financing options, making it "bankable" or "ready for finance". One of the key components in securing debt financing for a bankable RES project is the Off-take Agreement. This agreement is crucial for providing lenders with confidence in the project's revenue stream and repayment capability. The Off-take Agreement, typically a long-term contract, guarantees the purchase of the energy generated by the wind farm or solar plant.

The bankable Off-take Agreement outlines the terms under which a utility, energy purchaser, or other entity agrees to buy the project's electricity at a predetermined price or rate. This long-term commitment ensures a stable income stream for the project, making it an attractive investment for lenders. It is designed to mitigate the financial risks associated with wind and solar projects. Lenders can assess the strength of these agreements to determine the project's ability to meet its financial obligations. A well-structured and secure Off-take Agreement is crucial to securing debt financing, allowing RES projects to move forward.

Following the adoption of the Law on the Use of Renewable Energy Sources in Serbia in 2021, market premiums have been introduced for wind farms and utility-scaled solar plants. This means that developers will participate in auctions, each specific to their respective technology, to secure contracts of difference for

a 15-year period. These agreements provide revenue certainty and facilitate the process of obtaining debt financing for renewable energy projects, ensuring stability and attractiveness for investors and developers in the sector. Additionally, the balancing responsibility obligation and conditions for acquiring the status of the privileged producer are regulated with two additional regulations: a) Regulation on balance responsibility transfer and the model contract on balance responsibility transfer [13] and b) Regulation on market premium and feed-in tariff [14]. It is noteworthy that commercial Power Purchase Agreements (PPAs) are also becoming a viable option in the country, offering an alternative means of securing financial support i.e. revenue certainty and complementing the market premium system.

3.3.3 Financial structure

The financial structure for a wind or solar plant project refers to the arrangement and composition of funding sources, capital, and financial instruments used to support the development, construction, and operation of the generation facility (as discussed in Section Business model). The financial structure is designed to ensure that the project is adequately funded and financially optimized and sustainable. Some key components of the financial structure are presented below.

Equity financing represents the project's capital, or a portion thereof provided by equity. Project developers or sponsors may use their own equity or seek external investors to fund the project. These investors then normally become equity stakeholders in the project company and share its risks and rewards. Equity financing provides flexibility and may not require immediate repayment, but it means that the investors have an ownership stake, entitling them to a share of the project's profits in form of dividends. Due to dependence on project performance and profitability, equity finance carries higher risk but also offers potential for higher returns.

Debt financing, on the other hand, involves borrowing capital to fund the wind or solar project. This borrowed money must be repaid with regular interest payments over time. Lenders, such as banks, financial institutions, usually provide the debt financing. While project developer or sponsor may sometimes guarantee for debt repayment, most typically the debt providers will lower their risk by having priority claims on project's assets and cash flows – thus lower potential returns are involved compared to equity. Debt financing is mostly necessary in construction phase when the project's capital needs are highest but may also be used during development[39] (for purposes including e.g. upfront deposits or cash-backed bank guarantees to government authorities), as well as in operations in form of refinancing, to pursue borrowing terms more advantageous than the existing loan.

Financial Instruments: In addition to equity and debt financing as the most common, wind and solar projects may utilize other financial instruments or arrangements to support their financing needs throughout project lifecycle. These may include green bonds, carbon credits and offsets, grants, subsidies, or other forms of financial support provided by government agencies or other stakeholders.

Capital Structure: The capital structure of a project refers to the proportion of equity and debt financing used to fund the project's capital requirements, depending among other on investor preferences, financing costs, and regulatory requirements. Balancing the mix of equity and debt financing in the capital structure, called debt-to-equity ratio – a textbook example in project finance being 70% debt and 30% equity – is essential to optimize the project's financial performance, minimize financing costs, and manage risk effectively.

> *Therefore, equity and debt finance refer to distinct sources of capital with different characteristics, whereby in practice a combination of equity and debt financing is most often used to optimize the project-specific capital structure and meet funding needs in construction phase.*

For instance, all project finance solutions involve both debt and equity, with the former possibly split to multiple sources or classes of lenders with varying terms, interest rates and repayment schedules (senior lenders, mezzanine lenders, export credit institutions and development banks, hedging providers for interest and

39 While there is no established market for development-phase loans, sometimes third parties interested in acquiring or funding the project in later phases may extend such financing.

currency swaps etc.). Also, rather than by standard equity capital contributions, lenders sometimes allow for the base equity to be provided in form of subordinated shareholder/sponsor loans, which are counted towards equity in debt-to-equity ratio.

3.3.4 Due diligence

The due diligence process involves a comprehensive examination of various aspects, ranging from legal and environmental considerations to financial and technical aspects. This phase is often the lengthiest, involving independent assessments by independent professional experts approved by the lender. Timing is usually coordinated to align financing with the project's construction start.

First, legal due diligence entails a thorough review of land rights, contracts, permits, and regulatory compliance. This includes ensuring that land ownership and rights are clear and free from encumbrances, as they often serve as collateral for project financing. Additionally, contracts with suppliers, contractors, and off-take agreements must be carefully reviewed to identify any potential risks or disputes. Environmental due diligence focuses on assessing the environmental impact and compliance with regulations. This entails evaluating the results of Environmental Impact Assessments (EIAs), which are often necessary for financing purposes, as well as examining any environmental permits and clearances. Technical due diligence involves analysing the project's technical feasibility, design, and construction plans to ensure that it aligns with industry best practices and standards.

Finally, financial due diligence scrutinises the project's financial models, budgets, tax, and cost estimates to identify potential discrepancies and assess the project's economic viability.

3.3.5 Loan agreement

The next crucial step in the Finance Closing phase is the negotiation and execution of a loan agreement, i.e. the facility agreement as commonly referred to in project finance sector. This legally binding contract outlines the terms and conditions of the loan provided by the financing institution. It specifies the loan amount, interest rates, repayment schedule, covenants, and any collateral requirements. The loan agreement is a critical document that governs the financial relationship between the project developer and the lender. It provides a clear framework for the disbursement of funds and the repayment process, ensuring transparency and accountability throughout the project's financing period. Additionally, the agreement normally includes provisions for events of default and remedies available to the lender in such cases and is supported by a set of side agreements and arrangements collectively called "finance documents" (security agreements, direct agreements with key counterparties, accounts agreements, possible interest hedging arrangements etc.). Careful review and negotiation of the loan agreement are essential to secure favourable financing terms and ensure the project's financial stability throughout its lifecycle.

4. Construction

The Kovačica wind farm with an installed capacity of 104.5 MW is located in the municipality of Kovačica, AP Vojvodina, Republic of Serbia.

The construction phase refers to the period during which the physical installation and assembly of the renewable energy infrastructure take place. This phase follows the "Ready to Build" phase, where all necessary preparations, permits, and planning have been completed. During the construction phase, various activities such as site preparation, foundation construction, equipment installation (e.g., wind turbines or solar panels), electrical and grid connections, and other construction-related tasks are carried out. It is a milestone stage in the project lifecycle, as it represents the transition from planning to actual implementation, leading toward the eventual operation and generation of renewable energy.

4.1 Preparation of construction

Formal construction activities in the Republic of Serbia commence only after obtaining the **construction permit**. These activities are carried out in accordance with the conditions and regulations outlined in the Law on Planning and Construction, with strict adherence to the guidelines set forth in the Rulebook on energy permits [5]. As the actual construction is about to start based on final and binding construction permits the project company is required to submit to permitting authorities the start of works notification(s), securing the "contractor" position(s) and supervisory body during construction works, whereby, either in parallel or towards finish of works, the project company should appoint a Technical Acceptance Committed (TAC) for technical inspection and acceptance. The start of works notifications also requires adequate third-party liability insurance (to be secured by the investor or the contractor) and evidence on payment of applicable fees.

4.2 Construction process

The Law on Planning and Construction operates with the "contractor" concept, which needs to be engaged by the "investor" (employer) and has various administratively mandated roles and duties related to construction and the site. For illustration, this refers to: direct-to-authority applications of foundations completion and mechanical completion, making all relevant documents available at the site, managing the site in general as well as safety of structures, persons and traffic on the site, monitoring works compliance with technical documentation (designs) based on which the permits were issued, securing evidence on quality and testing of works and materials, keeping construction logbook and other records, handling suspension of works etc. Some other notable roles of the contractor would be the handling of various state and local inspections during construction, especially towards the end of works, in preparations for issuance of the operations permit.

» *The process of construction begins with the selection of a chief contractor or a registered company that holds the necessary permits, employs licensed professionals, and complies with the Law on Planning and Construction. The investor, either independently or in collaboration with the contractor, prepares the construction site, defines necessary regulations, levels the ground, and marks the construction area. An official notice board is set up, displaying key details about the facility, investor, project designer, construction permit number, contractor, work start date, and project completion deadline. Official supervision is provided, and the contractor is granted access to the property.*

Prior to commencing construction, the contractor signs the design for performance of works, designates the responsible on-site contractor through an official decision, and supplies the necessary Construction Contract and project documentation. The Construction Contract may include the contractor's obligation to ensure the final inspection of equipment, certificates, attestations, and confirmation of energy characteristics by certified organizations or authorities. Furthermore, preventive measures for workplace health and safety are established in line with the Law on Safety and Health at Work.

4.3 Testing and commissioning

Testing may begin in various regimes: test run, trial run, or permanent run, each with specific conditions. If any non-compliances with the rules of operation of the transmission system are identified, they must be addressed within a stipulated timeframe. The costs associated with the Protocol for Trial Run are determined during the agreement stage and are to be borne by the producer.

» *Upon achieving permanent operation status and fulfilling all mutual obligations during the connection process, the transmission system operator and the electricity producer jointly close the project. It is essential to strictly follow the approved procedures and contracts to ensure a seamless connection to the transmission system. Any unauthorised connections or operations are strictly prohibited.*

From the perspective of Law on Planning and Construction, the most essential document for obtaining the operations permit is the positive TAC report, confirming that the facility has been completed in accordance with the construction permit and technical designs and standards applicable, confirming fitness for permanent use and issuance of the operations permit. Other documents required include e.g. as-built design or supervisor confirmation the works performance design was entirely adhered to, land surveyor reports, construction waste management documents and similar. Obtaining of the operations permit for a wind farm is typically subject to prior obtaining of the operations permit for the wind farm's grid connection infrastructure, which accordingly applies also to obtaining operations permits for any other initially missing infrastructure. Upon the issuance of the connection's operations permit, the TSO becomes the owner of its high-voltage part by force of law and at that stage the final agreement on facility exploitation is to be concluded with the TSO and supplementary GCA should be issued. Upon issuance of the operations permit the wind or solar facility is entered and registered under project company's ownership with official real property records, currently meaning Real Estate Cadastre (e.g. for substation control building) and Cabling Cadastre (e.g. for internal MV cables network on site connecting the WTGs).

Pursuant to Energy Law, the TSO is obliged to connect the facility to the transmission system if: (i) the conditions from the GCA are fulfilled; (ii) trial run has been approved by TAC (for provisional connections) or operations permits have been obtained for the facility and for the connection (for permanent connections); (iii) electricity supply agreement has been concluded; (iv) balancing responsibility and system access have been determined for the delivery point; and (v) facility exploitation agreement has been concluded.

The trial runs and energization can be done in phases, depending on technical conditions, which is supported by temporary connection approvals issued by the TSO (upon TAC approval of trial run) and grid access agreement concluded with the TSO.

5. Operation

5.1 License

A License for Conducting Energy Activity is an official confirmation of an energy entity's compliance with specific criteria outlined in the Law on Energy [2] and the Rulebook on License for carrying out energy activities and certification [15]. To be eligible, the entity must possess one or more power plants with a combined capacity of 1 MW or more. **Licenses for electricity generation** are issued by the Energy Agency of the Republic of Serbia for a period of 30 years, with extension possibility.

The application process involves the submission of various documents, including an **operations permit**, a report from an authorised inspector confirming compliance with technical regulations related to energy efficiency, fire and explosion safety, and environmental protection, evidence on proper staffing of the applicant entity with operations and maintenance engineers, and other documents demonstrating financial compliance, clean criminal record of the management, company liquidity and tax payment. It is important to note that energy licenses are non-transferable but can be amended e.g. in case of corporate status changes (mergers, division and separation of a company). Moreover, energy entities have the option to engage the services of another licensed party through a contract, allowing them to perform energy activities on behalf of the entity while assuming responsibility for these activities.

5.2 Off-take agreement

Producer from renewable energy sources

As per the Law on the Use of Renewable Energy Sources [3], producers of electricity generated from renewable sources can establish an Agreement on the Purchase of Electricity from Renewable Sources with end customers in line with market principles in the form of Power Purchase Agreement (PPA). However, it is essential for these producers to hold a valid license for the supply of electricity as stipulated by the pertinent energy-related legislation.

Privileged producer

Privileged power producer of electricity from renewable energy sources is a legal entity that produces electricity from renewable sources and exercises the right to a feed-in tariff or a market premium in accordance with the Law on the Use of Renewable Energy Sources, both being forms of operational state incentives.

State guaranteed feed-in tariffs which played a major role in the development of first wind farms in Serbia are slowly becoming a thing of the past and are only retained as incentives for investors of small power plants. In such cases, the guaranteed supplier concludes a Feed-in Tariff Agreement with the privileged producer undertaking to pay the subsidized off-take price for the incentive period, as well the balancing responsibility, exempting the privileged power producer from the balancing costs.

The privileged power producers who acquired a right to the market premium is to sign the Market Premium Agreement, but such should not be mistaken for an off-take agreement. Market Premium Agreement is a typical Contract for Difference and stipulates the obligation of the guaranteed supplier to pay the difference between the guaranteed price and reference market price.

In addition to the Market Premium Agreement, these privileged power producers may also enter into a PPA under same conditions as any non-privileged RES producer, as well as a balance responsibility agreement as will be defined below in more detail.

5.3 Balance responsibility

Producer from renewable energy sources

According to the Law on Energy [2], participants in the electricity market are required to manage their balance responsibility. This can be achieved by either signing a balance responsibility contract with the Transmission System Operator or transferring this responsibility to a balance responsible party. These actions should align with relevant energy, renewable energy, bond relations laws and electricity market code.

When a participant in the electricity market engages in a balance responsibility agreement with the Transmission System Operator and meets specified criteria outlined in Electricity Market Code [16], they gain the status of a balanced responsible party. Alternatively,

a market participant can opt to transfer their balance responsibility by concluding an agreement for this purpose with a designated balance responsible party.

Privileged producers

As already mentioned, when it comes to the privileged producers with the right to the Feed-in tariff, other than the subsidized purchase price, the guaranteed supplier undertakes to completely assume the balancing responsibility (without extra cost) during the incentive period.

On the other hand, under the provisions set forth in the Law on the Use of Renewable Energy Sources, the guaranteed supplier holds the responsibility for maintaining the energy balance of privileged producers participating in the market premium system in exchange for a predetermined fee per MW of delivered electricity, but only for the part of the installed capacity the market premium was awarded to. However, in accordance with energy sector regulations and market operation guidelines, privileged producers have the option to transfer this balancing responsibility to another eligible entity[40]. It is important to note that the duty of the guaranteed supplier, concludes after 30 months from the establishment of the organized intraday market within the Republic of Serbia, which was established in July 2023.Nevertheless, it should be noted that the guaranteed supplier is currently only entity eligible for assuming the balance responsibility.

Privileged producers involved in the market premium system must ensure their compliance with balance responsibility regulations outlined in the Law on Energy [2] and Electricity Market Code [16]. This compliance is essential and must be established before the conclusion of the guaranteed supplier's obligations. Layout model contract on assuming the balance responsibility, rights and obligations of the guaranteed supplier and privileged producer in the market premium system are defined in the Regulation on the assumption of balance responsibility and the model agreement on the assumption of balance responsibility [17] adopted in 2023.

In case the privileged producer agrees to sign the agreement under these conditions, he will sign the model agreement prescribed by the relevant by-law, which, among other things defines the rights and obligations of the guaranteed supplier and the privileged producer in the market premium system, fee to be paid by the privileged producer, the criteria for determining a good forecast for power generation, the additional fee that is paid in the event that the privileged producer does not forecast power generation well and the duration and termination of this agreement.

5.4 Grid contracts

As elaborated in more detail in section 3.2.5 above, when considering the connection of wind farms and solar power plants to the transmission system, adherence to specific contractual agreements concluded between the developer and grid operator throughout development cycle is crucial. These include (subject to ongoing regulatory changes):

1) Agreement on the Development of Facility Connection Study.
2) Agreement on Development of Planning and Technical Documentation.
3) Agreement on Monitoring the Connection Construction.

While connecting a wind farm or solar plant to the transmission system, several additional contracts are typically signed towards construction completion and commissioning phase, including: Contract on grid access, Contract on exploitation of facility, Contract on balance responsibility. These contracts are aligned with the Transmission Grid Code [6], Electricity Market Code [16] and the Law on Energy [2]. Aside the additional grid operator agreements and securing the balancing responsibility, activating the actual connection of the constructed power plant to the grid also requires verification of compliance with conditions and technical requirements found under the GCA (and newly called "Agreement on Connection" meant to replace contracts 2 and 3 above), operations permits both for the power plant and connecting infrastructure, as well as electricity supply agreement for the power plant (own-consumption) concluded by the project company.

40 Rulebook on License for carrying out energy activities and certification (Official Gazette of RS, no. 87/2015, 44/2018 - other law and 83/2021) [13]

5.4.1 Grid access contract

The Grid Connection Approval (GCA) issued in development phase plays a critical role in defining essential parameters for connecting a facility to the transmission system. This includes specifying the connection location, method, and technical requirements, outlining the associated connection costs, determining compliance testing related to the Transmission Grid Code, ascertaining the installed capacity and approved power, detailing the delivery point for power, and specifying the method for measuring energy and power. Additionally, the approval also sets a deadline for the physical connection of the facility. To initiate this process, one must apply for approval to connect the producer's or customer's facility to the transmission system. The Transmission System Operator is then responsible for assessing and responding to these applications. For consumer facility connections, the decision is typically made within 30 days from the date of receiving the application in writing, whereas for producer facility connections, the decision is rendered within 60 days from the application's receipt in writing.

The Transmission System Operator cannot refuse to connect the facility du' to the lack of infrastructure, however in the event that such additional infrastructure is needed, Transmission System Operator is not obliged to bear the costs of its construction. In those cases, the legislator envisaged that the Transmission System Operator as the only possible permits holder and owner of grid infrastructure should, as a rule, build the missing grid infrastructure at the expense of the applicant. Still, under the backup provisions of the law the Transmission System Operator, if so requested, should allow the applicant to build and finance the construction of the missing grid infrastructure while the Transmission System Operator will monitor the construction under what in practice became called the Contract no. 3, i.e. Interconnection Construction Agreement.

At time the actual connection is being made, the grid operator and project company are to conclude a contract on grid access, meaning a standardized open-ended term contract regulating the right of the power producer to inject power to the relevant grid (also required for consumers and power withdrawal) i.e. the service provided by the grid operator.

5.4.2 Contract on exploitation of facility

The contract for facility exploitation in Serbia includes specific details related to the facilities covered by the agreement, ownership limits on primary and secondary equipment, authorised active power delivery to the transmission grid, and control centres. It also outlines authorised personnel for technical cooperation, the exchange of technical documentation, technical parameters for electricity metering, and confidential data based on specific criteria. Additionally, special conditions or non-standard services of the transmission system operator can be included in the agreement. Accounting parameters, including transmission ratios of instrument transformers, electricity meter configurations, correction coefficients, and rules for substituting missing data, may also be specified in the contract. The general conditions and standard services provided by the transmission system operator are exempt from any legal burden within the contract.

5.4.3 Contract on balance responsibility

The contract on balance responsibility includes several critical components, including mutual rights and responsibilities, detailed lists of withdrawal and injection points in both the transmission and distribution systems along with necessary information. Further components include the list of market participants who have entered into balance responsibility transfer agreements with the Balance Responsible Party, specifications regarding the type, value, and time constraints for delivery, as well as the validity of the payment security instrument. Additionally, it covers conditions for payment security instrument activation. The Transmission System Operator provides the Model of the contract on balance responsibility for public reference on its official website.

5.5 Operation & Maintenance

The operation and maintenance (O&M) stage consists of the ongoing activities and tasks required to ensure the efficient and reliable functioning of the renewable energy facility once it is operational. This stage begins after the construction phase and continues throughout the project's entire operational life, which can span many years. During this phase, renewable energy systems such as wind farms, solar power plants, or hydroelectric facilities generate electricity or other forms of energy. Key activities and responsibilities within the O&M stage include:

- **Regular Inspection and Monitoring:** Routine inspections and monitoring of the renewable energy systems are conducted to identify any issues or malfunctions promptly. This includes assessing the performance of individual components like wind turbines, solar panels, or other equipment.

- **Preventive Maintenance:** Scheduled maintenance and servicing are performed to prevent equipment breakdowns and ensure optimal performance. This may include tasks like lubrication, cleaning, and component replacement.

- **Corrective Maintenance:** In the event of a breakdown or malfunction, corrective maintenance is carried out to repair or replace faulty components to minimize downtime.

- **Safety and Compliance:** Safety protocols are followed to protect both personnel and the environment. Compliance with local and national regulations and standards is also essential.

- **Data Management:** Collection and analysis of data related to energy production, system performance, and environmental impacts are part of O&M. This data informs decisions on maintenance and improvements.

- **Performance Optimization:** Efforts are made to improve energy efficiency, increase energy production, and extend the operational life of the facility.

- **Technical Support:** O&M teams provide technical support to address any operational issues or concerns that may arise during the facility's operational phase.

In practice, it is not customary to conclude one comprehensive O&M contract, instead the normal approach would be to divide the scope to a long-term contract concluded with the equipment supplier (i.e. wind generators or solar panels, depending on the type of the facility) and this contract is most often concluded simultaneously with the equipment supply contract. On the other hand, a Balance of Plant O&M contract can be awarded to market-emerging specialized service providers so as to include maintenance of all other infrastructure, most importantly the substations ("E-BOP") and access roads ("C-BOP"), as well as taking care of the various statutory obligations for the benefit if the plant owner/producer.

6. List of Laws and bylaws

[1]	The Law on Planning and Construction (Official Gazette of RS no. 72/09, 81/09 - corrigendum, 64/10 - CC, 24/11, 121/12, 42/13 - CC, 50/13 - CC, 98/13 - CC, 132/14, 145/14, 83/18, 31/19, 37/19 - other law, 9/20, 52/21 i 62/23).
[2]	The Law on Energy (Official Gazette of RS no.145/14, 95/18 - other law, 40/21, 35/23 - other law and 62/23).
[3]	The Law on the Use of Renewable Energy Sources (Official Gazette of RS no. 40/21 and 35/23).
[4]	Decree on conditions of delivery and supply of electricity (Official Gazette of RS no. 84/23).
[5]	Rulebook on energy permits (Official Gazette of RS no. 15/15 and i 44/18 - other law).
[6]	JSC EMS “Transmission Grid Code” - March 2020.
[7]	Methodology for calculating costs of connection to electricity transmission and distribution systems (Official Gazette of RS, no. 151/22).
[8]	Rules on establishing the costs for connection to the electricity transmission system.
[9]	JSC EMS “ Procedure for connecting facilities to the transmission system” - November 2015.
[10]	JSC EMS “ Instructions for connecting facilities to the transmission system” - January 2016.
[11]	The Law on Envionmental Impact Assessment (Official Gazette of RS no. 135/2004, 36/2009).
[12]	Regulation on determining the list of projects for which the impact assessments is obligatory and list of projects for which the environmental impact assessment can be required (Official Gazette of the RS no. 114/08).
[13]	Regulation on balance responsibility transfer and the model contract on balance responsibility transfer (Official Gazette of the RS , No. 45/23).

[14]	Regulation on market premium and feed-in tariff (Official Gazzete of the RS, no 45/23).
[15]	Rulebook on License for carrying out energy activities and certification (Official Gazette of RS, no. 87/2015, 44/2018 - other law and 83/2021).
[16]	JSC EMS “Electricity Market Code” - November 2022.
[17]	Regulation on the assumption of balance responsibility and the model agreement on the assumption of balance responsibility (Official Gazette of RS, no. 45/23).
[18]	The Law on Waters (Official Gazette of RS no. 30/10, 93/12, 101/16, 95/18 and 95/18 - other law).
[19]	Regulation on the agreement on the purchase of electricity (Official Gazette of RS, no. 56/16, 61/17 i 106/20).
[20]	Regulation on the conditions, mode and procedure for granting state-owned agricultural land for use for non-agricultural purposes (Official Gazette of RS, No. 99/2022).
[21]	Decree on conditions of delivery and supply of electricity (Official Gazette of RS no. 84/23).
[22]	Rulebook on special type of buildings and special type of works for which it is not necessary to obtain an act of the competent authority, as well as the type of buildings that are built, or the type of works that are performed, based on the decision on a.
[23]	Rulebook on the procedure for implementing the unified procedure by electronic means (“Official Gazette of RS”, No. 96/2023).

7. Institutional stakeholders and their roles

Business Registers Agency (BRA)

www.apr.gov.rs

- means a centralized set of certain registers and records in the Republic of Serbia, involving among other Register of Commercial Entities and Register of Pledge Rights, records on court-mandated and other legal restrictions that may apply to entities, as well as hosting the Central Records of Integrated Procedures e-portal under the construction regulations umbrella.

Ministry of Mining and Energy

www.mre.gov.rs

- responsibilities encompass formulating and implementing energy policies, enacting regulatory frameworks, and overseeing the renewable energy sector's development. This ministry is central to granting energy permits and licenses, regulatory compliance, and monitoring the performance of renewable energy projects, ensuring their alignment with national energy goals and sustainability objectives. Additionally, it fosters a conducive ambient for investment and sustainable growth in the renewable energy sector.

Ministry of Environmental Protection

www.ekologija.gov.rs

- responsibilities include evaluating the environmental impact of RES projects, ensuring compliance with environmental regulations, and addressing ecological concerns. This ministry plays a significant part in safeguarding environmental sustainability and biodiversity during the construction and operation of renewable energy facilities, contributing to Serbia's overall commitment to green energy and environmental protection.

Provincial Secretariat of Urbanism and Environmental Protection

www.ekourbapv.vojvodina.gov.rs

- acts as the authority of Autonomous Province of Vojvodina competent for environmental aspects of renewables projects in Vojvodina territory, exercising most of the basic functions otherwise exercised by Ministry of Environmental Protection in inner Serbia.

Ministry of Construction, Transport and Infrastructure -

www.mgsi.gov.rs

- oversees the spatial planning and issues approvals and permits for construction of 10MW+ RES projects and the necessary major infrastructure , such as high-voltage (110kV+) lines, state-level roads and similar, ensuring that the facilities can be effectively built and accessed. This ministry's involvement is instrumental in facilitating the development and construction of renewable energy plants within Serbia.

Provincial Secretariat of Energy, Construction and Transport

www.psegs.vojvodina.gov.rs

- acts as the authority of Autonomous Province of Vojvodina competent for permitting and construction aspects of renewables projects in Vojvodina territory, exercising most of the basic functions otherwise exercised by Ministry of Construction, Transport and Infrastructure in inner Serbia.

The Kovačica wind farm with an installed capacity of 104.5 MW is located in the municipality of Kovačica, AP Vojvodina, Republic of Serbia.

Energy Agency of the Republic of Serbia (AERS)

www.aers.rs

- serves as the regulatory authority responsible for overseeing and regulating the energy sector in Serbia. Its role in constructing and operating renewable energy plants involves granting approvals, licenses, and permits, as well as ensuring compliance with energy regulations and standards. AERS plays a crucial part in monitoring and enforcing the legal framework, setting tariffs, and creating a competitive environment for the renewable energy sector. It also works to promote renewable energy development, making it a key entity in advancing the growth of renewable energy plants in the country.

Transmission system operator "Elektromreža Srbije" (EMS) –

www.ems.rs

- is responsible for managing, developing and maintaining the electrical transmission system in Serbia and its connection with other systems. EMS is 100% owned and controlled by the government. Its role in renewable energy projects involves facilitating the connection of utility-scale wind farms and solar power plants to the national transmission (high-voltage) grid. This includes evaluating connection requests, ensuring compliance with technical standards and regulations, and overseeing the reliable and efficient transmission of electricity generated by these renewable energy sources.

Distribution system operator "Elektrodistribucija Srbije" (EDS)

www.elektrodistribucija.rs

– state-owned energy entity that ensures the smooth distribution of electricity to end-users, businesses, and communities through its branches in five distribution areas in Serbia (Belgrade, Novi Sad, Kraljevo, Kragujevac, Nis). It plays a critical role in developing and maintaining the integrity of the distribution grid, managing grid access, and enabling efficient supply of electricity from conventional and renewable sources to consumers across the country. This includes overseeing the connection of renewable energy installations to the distribution grid and ensuring the safe, reliable, and sustainable distribution of clean energy.

Republic Geodetic Authority

www.rgz.gov.rs

- plays an important supportive role in the construction and operation of renewable energy plants by providing geospatial and cadastral data, including accurate land parcel information and property rights registration within its local office units called "Real Estate Cadastre", as well as by maintaining technical and ownership information on infrastructure with its regional units called "Cabling Cadastre". This information is crucial for site selection, land acquisition, and project planning in the renewable energy sector. The Republic Geodetic Authority facilitates the implementation of land surveys done by licensed surveyors, registration of property rights over land and objects, and spatial data, thus ensuring a number of legal and technical aspects for the development and operation of renewable energy projects in Serbia.

Local self-government units

- designated as cities and municipalities, contribute to the development of renewable energy projects by providing necessary permits, licenses, and support for project implementation, most notably with infrastructure and project segments not reserved for state/provincial level of authorities, such as low- to mid-voltage lines of distribution network, local roads and similar. These units play a significant role in facilitating renewable energy investments also by enacting and ensuring compliance with local regulations and urban planning i.e. detailed land use, which is vital for the successful construction and operation of wind farms and solar plants.

Provincial Secretariat of Agriculture, Water Management and Forestry

psp.vojvodina.gov.rs

- acts as the authority of Autonomous Province of Vojvodina competent mostly for water management aspects of renewables projects in Vojvodina territory, exercising some of the basic functions otherwise exercised by Ministry of Agriculture, Forestry and Water Management in inner Serbia.

Republic Hydrometeorological Service of Serbia

www.hidmet.gov.rs

– collects essential meteorological and climate data. It monitors weather conditions, climate patterns, and provides valuable information on wind speeds, solar radiation, and other meteorological parameters necessary for planning and operating renewable energy installations. This data is vital for optimizing the performance and efficiency of wind and solar power plants.

SEEPEX

www.seepex-spot.rs

- a sole licensed operator of electricity market in Serbia, established in partnership between EMS and EPEX SPOT, providing an open marketplace for buying and selling electricity in defined delivery areas. It ensures transparent and reliable pricing mechanisms, matching supply and demand at fair and transparent prices while guaranteeing the successful execution of transactions. The day-ahead market was launched in 2016, while intraday trading is in somewhat nascent stage, kicked off since July 2023.

Joint stock company „Elektroprivreda Srbije"

www.eps.rs

- holds a pivotal role as Serbia's largest electricity producer, state utility and a significant offtaker and supplier of electricity, making it a vital contributor to the renewable energy landscape. As a substantial offtaker, it plays a key role in procuring electricity from wind farms and solar power plants, while its ability to provide balancing services for renewables helps maintain grid stability.

Ministry of Agriculture, Forestry and Water Management

www.minpolj.gov.rs

–responsible for overseeing agricultural land, water resources and forestry matters. It provides guidance, organizes and decides in certain processes related to agricultural land and water usage, ensuring that renewable energy projects adhere to sustainability standards. Additionally, it may be involved in land management and agricultural practices on project sites, particularly in cases where land-use changes are necessary.

8. Serbia Tax Overview[41]

The largest bifacial solar power plant on earth, DeLasol, with a capacity of 9.913 MW, was commissioned in early April 2024. It was built on the territory of the municipality of Lapovo on an area of 12.5 hectares.

Photo Credits: MT-KOMEX

41 This tax overview has been prepared for high-level informational purposes only, and is not intended to provide, and should not be relied on for tax or accounting advice. Investors should consult their own tax and accounting advisors before engaging in any transaction or project.

Corporate Income Tax	Regulation	**Corporate Income Tax Law** (Official Gazette of the RS, No. 25/2001 as amended up to No. 118/2021; the "**CIT Law**") and Ministry of Finance subsidiary regulations.
	Taxpayers / Tax Residency	▪ Any company, enterprise, or legal entity conducting business for profit (joint-stock company, limited liability company, general partnership, limited partnership, state owned enterprises, cooperative, etc.). ▪ Non-profit organisations earning income from selling products or services, subject to earning threshold exemption and other conditions. ▪ Serbian resident entities pay income tax on both local and global income. A company is a resident if established or managed in Serbia. ▪ Non-residents pay tax only on income generated through a permanent establishment in Serbian territory, such as a branch or factory.
	Tax Rate and Calculation	▪ The corporate income tax rate is 15%. ▪ Taxable profit is determined in the tax balance by adjusting the profit, revenue and expenses from the annual income statement, made in accordance with IAS (International Accounting Standards), IFRS (International Financial Reporting Standards), IFRS for SMEs and accounting regulations, e.g. non-deductible costs, non-taxable revenues, transfer pricing adjustments, tax depreciation, etc. ▪ Capital gains are taxed separately at 15%.
	Tax Credits	▪ Serbian entity gets a tax credit for withholding tax paid on foreign dividends and underlying CIT paid abroad by its non-resident subsidiary, subject to owning at least 10% share for a year. ▪ Tax credits are also available for foreign withholding tax paid on interest and royalties earned by the Serbian entity, subject to limitations.
	Tax Incentives	▪ A ten-year tax holiday is available for investments in property, plant, and equipment over RSD 1 billion (approx. EUR 8.5m) and employing at least 100 new workers.
	Tax Period and Filing	▪ The tax period is typically the calendar year. ▪ Annual CIT returns are due within 180 days after the end of the tax period, with final settlement of due on the date of filing the annual return. ▪ New businesses must file a tax return within 15 days of registration. ▪ Monthly advance payments are required based on the CIT return for the previous year (actual CIT amount to be paid is only asses after the end if the tax period).
	Loss Carryforward	▪ Tax losses may be carried forward for up to five subsequent tax periods and can be offset with future taxable income only. ▪ Capital losses can be carried forward for five years and offset only against capital gains.

Tax Depreciation	Tax depreciation in general	Assets subject to tax depreciation include tangible and intangible assets with a useful life of more than one year that are recognized in the tax obligor's business books as fixed assets, in accordance with accounting regulations, IAS, IFRS and IFRS for SMEs, excluding unexpendable natural resources and goodwill. Tax depreciable assets, except intangible assets, are divided into five groups, with the tax depreciation rates respectively: (I) 2.5%, (II) 10%, (III) 15%, (IV) 20% and (V) 30%. Buildings and other immovables, excluding land, are placed into tax depreciation group I, while plant and equipment in general are classified in groups II-V. Tax depreciation of fixed assets from all groups (I-V) is calculated using straight-line depreciation method for each asset separately, if they were acquired as of 1 January 2019 (for assets acquired up to 31 December 2018 old rules apply, i.e. group I is depreciated using straight-line method and groups II-V are depreciated for tax purposes by applying the declining balance method). The amount of tax depreciation cannot exceed depreciation assessed in line with accounting rules i.e. in such case accounting depreciation is recognised as tax deductible cost. Fixed assets consisting of movable and immovable parts are classified for tax depreciation purposes in accordance with the manner in which they are classified in the tax obligor's books in accordance with accounting regulation. Tax depreciation of intangible assets (except goodwill) is equal to their accounting depreciation.
	Renewables tax qualification remarks	**Whether taxwise a Serbian renewable power plant and a wind farm in particular, should be dominantly treated as immovable (real estate) or movable asset, is a fairly complex issue and the answers may well differ depending on the aspect, be it (a) tax depreciation, (b) taxation of non-resident's capital gains from disposing with project company shares** (cf. Withholding Taxes below) **or (c) municipal property tax** (cf. Annual Property Tax further below). The current, 2019 Serbian regime for tax depreciation in regard to renewable power plants is relatively progressive – especially if compared to second-last, pre-2018 regime when the entire facility was to be tax depreciated as a real estate (2.5% annual rate within group I), however by some accounts it is still considered industry unique and in need of some revisiting.

Tax Depreciation	Renewables tax qualification remarks	With such unusual accounting-driven tax depreciation, the overall concern is that some portion of acquisition costs remain permanently non-deductible for corporate income tax. The tax depreciation regime should reflect the assets normal useful life with the ultimate purpose of a fair recognition of the legitimate project expenses, whilst from current perspective, due to useful life and tax life mismatch, the assets may cease to be used before being fully depreciated in line with CIT Law. Specifically, a potential optimisation of project company's accounting depreciation policy in response to this Serbian uniqueness is theoretically possible, however the foreign investors are accustomed to jurisdictions which use different approaches for accelerated tax depreciation, thus such reassessments are usually undesirable and complicated in practice. Also, there is no clear guidance on value allocations between immovable and movable portions of a wind farm and given the underdeveloped catalogue of tax depreciation groups (group I include "Power Plants" and group II includes "Equipment for production and distribution of electricity, gas, heat and water") such splits may be debatable at the moment. Finally, on the positive side, the rulebook on tax depreciation did introduce an isolate novelty, whereby "real properties with a useful life of less than 40 years" (to be documented by the tax obligor based on the opinion of an authorized appraiser) may be classified into group II for tax depreciation purposes - which in effect could allow almost 100% of the power plant to be tax depreciated under group II, as movable assets. Still considering all above and lack of tested practices on this matter, further regulatory encouragements would be most welcome.

Withholding Taxes	Non-resident Income and Capital Gains	Unless a Double Taxation Treaty applies to provide a preferential (reduced) rate or exemption, a withholding tax at 20% rate applies to **income** earned by a non-resident legal entity from a Serbian resident legal entity, including: (i) Dividends, profit sharing payments and liquidation surplus; (ii) Copyright and industrial property rights fees; (iii) Interest; (iv) Rent from real estate and movable property in Serbia; (v) Fees for market research, accounting, auditing, and other consulting services, regardless of where these services are provided or used. Exceptionally, for Serbian- rental fees income a non-resident realises from another non-resident or another payor which is not a Serbian legal entity, as well as in cases of enforcement collection of any receivable in Serbia, the non-resident earner is required to submit a tax return and pay the corporate income tax (if any) determined by Serbian Tax Authority's assessment. Non-resident entities are subject to a 20% tax on **capital gains** derived from the sale of Serbian real estate or shares/ownership interests in Serbian companies, regardless of whether the buyer is a resident or non-resident, unless an applicable mandates otherwise. To comply with this obligation, non-resident must file a special tax return through an appointed fiscal proxy within 30 days of realizing the capital gains. The Serbian Tax Authority will then issue a decision assessing the tax liability or suspending the procedure if Serbia does not have taxation rights under the DTT (this process mirrors the requirement above for non-residents to file a Serbian tax return on certain types of operational income in lieu of withholding mechanics).
	Double Taxation Treaties (DTT)	At the moment, Serbia has a notable network of approx. 70 DTTs[42], involving almost all of the jurisdictions hosting major direct investors on Serbian market, many of which have been directly negotiated since mid-2000s and the rest are succeeded DTTs, with former federal Yugoslavia as the headline party. About three quarters of total number cover double taxation avoidance with respect to income and capital and the remaining DTTs minority formally deals with income taxes only (e.g. France, Ireland, Israel, Montenegro, Qatar, UAE, United Kingdom, etc.).

42 About five DTTs are pending on full ratification by both contracting states (this is the case with Ghana, Indonesia, Iran, Palestine and Zimbabwe).

Withholding Taxes	Double Taxation Treaties (DTT)	Both in case of the withholding taxes and capital gains tax levied by Tax Authority resolution, the non-resident recipient of income: (a) must provide a tax residency certificate on the form prescribed by the Serbian Ministry of Finance (stamped by the relevant authority from the non-resident's jurisdiction) or a certificate issued by the foreign tax authority on its own official form (supplemented by official translation to Serbian), and (b) must be the beneficial owner of the income. The recipient's tax residency certificate ("TRC") should be in place prior to actual payment transfer, meaning in case of withholding taxes it needs to be delivered in advance to the resident Serbian entity payor. With regard to **dividends**, the DTTs in force usually stipulate a lower withholding tax rate, ranging from 5%-15% depending on the share/ownership quota in the Serbian payor's capital. Zero-tax dividend treatment is mostly reserved for foreign governments and their financial institutions, whereby with few jurisdictions the benefit is meaningfully extended to government-affiliated commercial entities (such is the case with Norway, Singapore and UAE). In case the Serbian company has taken a loan from a non-resident lender entity, the resident borrower is obliged to calculate and pay the withholding tax on **interest** in line with DTT or the (backup) statutory rules when making the interest payment abroad. In the entire network of DTTs there is only a handful where Serbia waived the right of taxation in general i.e. where the WHT on derived interest is zero-rated, subject to TRC existence (Germany, Netherlands, France, Sweden and Finland). Several dozens of remainder DTTs only point to a beneficial interest tax rate in Serbia, most commonly 10% in place of 20% statutory rate, with a number of them also exempting generally the governments and governmental financial institutions of the other contracting jurisdiction. In case the applicable DTT with Serbia includes the so-called real estate clause, **capital gains** from sale of shares or comparable interests in a Serbian company deriving more than 50% of their value directly or indirectly from immovable property situated in Serbia (or whose assets "principally" consist of Serbian real property) may be taxed in Serbia by 20% rate. More than a half out of all DTTs do contain similar variations of the "real estate clause" concerning the transfer of equity interests in a Serbian company, hence it is advisable to carefully plan ahead and implement any corporate restructuring or exit strategy early on, as optimisation possibilities are available only in a relatively limited time window. Most certainly, once a renewable project construction is completed or it is already in early operations, it is extremely difficult to argue that transferred share valuation is not related to company's assets. Almost all DTTs enable a general exemption of non-resident's **services income** (business income) taxation.

Withholding Taxes	Preferential Tax Jurisdictions	Withholding tax at special 25% statutory rate is applied to income from royalties, interest, rent from real estate and movables in Serbia, and service fees (regardless of the place where they are provided or used), paid by a resident entity to a non-resident from a jurisdiction with a preferential tax system, regardless of where these services are provided or used. There is a list of over 50 preferential tax jurisdictions maintained by the Ministry of Finance to which this special regime applies, mostly involving widely known offshore tax heavens, but also a couple of jurisdictions in continental Europe such as Lichtenstein and Monaco.
	Statutory Exemptions	No withholding tax is charged on interest from debt securities issued by the Republic of Serbia, the Autonomous Province, local government units, or the National Bank of Serbia (NBS).

VAT	Regulation	**Value Added Tax Law** (Official Gazette of the RS, No. 84/2004 as amended up to No. 138/2022; the "**VAT Law**") and Ministry of Finance subsidiary regulations.
	Rates and Exemptions	▪ **Transactions concerned**: Supply of goods and services within Serbia and the importation of goods. ▪ **Standard Rate**: 20%. ▪ **Reduced Rate**: 10% for specific goods and services (e.g. basic food, bottled water, newspapers, computers). ▪ **Exemptions (no Input VAT deduction)**: Includes financial and insurance transactions, transfer of land and buildings (except for first-time transfers of new buildings), healthcare services, etc. ▪ **Zero-Rated Transactions (with Input VAT deduction)**: Includes exports, services related to imports (if included in the customs base), supplies under donation and credit agreements, and transactions involving free zones.
	Registration and Filing	▪ **Compulsory Registration**: If the turnover in any previous 12-month period exceeds RSD 8 million (approx. EUR 68,000), otherwise the registration is voluntary. Foreign entities carrying on businesses in Serbia may be required to appoint a fiscal representative and register for VAT irrespective of the amount of the turnover. ▪ **Tax Period**: Monthly filing is required if turnover exceeds RSD 50 million (approx. EUR 425,000) or for newly established entities, otherwise quarterly filing is possible. ▪ **Filing and Payment Deadlines**: VAT returns and payments are simultaneously due within 15 days after the end of the tax period (month or quarter).

VAT	Tax Liability and Reverse Charge	▪ **General Rule**: Supplier of goods and services is the tax debtor. ▪ **Exceptions**: Recipient is the tax debtor in a number of regulated special cases, such as supplies by non-resident entities without a fiscal representative in Serbia (unless registered for VAT), certain local supplies of goods and services related to construction works in excess of approx. 4,200 EUR, etc. ▪ **Supply of electricity is considered a supply of goods subject to 20% general rate, with electricity supplier registered for VAT as the tax debtor, save as in case of electricity purchased for further sale, when the electricity recipient registered for VAT is the tax debtor applying the reverse charge.**
	Tax Liability Timing	VAT liability arises on the day of occurrence of the earliest of the following: 1) Supply of goods and services; 2) Collection of payment related to goods and services; 3) Invoice issuance for intellectual property transactions; 4) Actual or deemed incurring of imports customs duty.
	Determining Supply Dates	▪ Supply of goods sale is generally considered performed on the day of dispatch/carriage, recipient takeover, or transfer of disposal rights. ▪ Specifically, **the supply of electricity is considered performed on the day of delivered electricity reading for the purposes of calculation, if purchase for further sale by the recipient, except for the cases where European transmission system operators rules apply, when the supply is deemed performed on the day of invoice issuance.** ▪ Service provision is considered performed on the day of the service completion or cessation of the underlying legal basis (for period-based or open-ended services).
	Tax Base	▪ Includes the total amount received for goods/services, incidental expenses, and other taxes except VAT. ▪ Amendments to VAT Law of 2022 introduced a special rule that **tax base for the sale of electricity by a supplier to a prosumer is the amount of compensation for the consumed electrical energy, without VAT**. ▪ For imports, the taxable amount includes customs duties.
	Adjustments	▪ If the tax base increases, the VAT owed must be adjusted accordingly. ▪ If the tax base decreases, the VAT amount can be adjusted if the input VAT deduction has been corrected and the supplier has been notified.
	Input VAT Recovery and Refunds	▪ If input VAT amount is higher than output VAT amount, the taxpayer is entitled to a refund of the difference. Taxpayer is entitled to VAT refund also if no output supplies have been made or those are zero rated. ▪ If the taxpayer does not opt for a refund, the difference will be recognized as a tax credit. ▪ Input VAT is blocked on purchases of passenger vehicles, motorcycles, yachts, aircrafts, and related expenses, as well as on cost related to representation, meals provided to employees and transportation of employees to and from work, etc. ▪ The Tax Authority should perform the refund, as a rule, no later than 45 days from the day when VAT refund is claimed, although in practice some delays and even refund-triggered tax audits are not uncommon.

Property Taxes	Regulation	**Property Taxes Law** (Official Gazette of the RS, No. 26/2001 as amended up to No. 92/2023).
	Annual Property Tax	▪ **Obligors**: In general, all legal entities and individuals who hold ownership or usage rights over real property located in Serbia, such as land areas exceeding 1,000sqm which further include appurtenances (fences, pedestrian paths etc.), residential and business buildings, apartments and business units, garages, and various other structures constructed above or under ground level. In some cases, simple factual occupancy may trigger this tax, e.g. with unregistered/unclaimed real property and unfoundedly occupied public immovables. ▪ **Tax Base**: Rules on determining the Serbian property tax basis are quite complex, but for simplicity may be categorized as follows: • For obligors maintaining business records and recording the real property at fair value using IAS or IFRS and adopted accounting policies: Fair value of these properties on the last day of preceding business year. • Generally, for other obligors maintaining business records: Self-assessed property value by applying the criterions from the law i.e. usable area and the average price per square meter of the corresponding real properties in the same zone, as published by the municipal authorities. • For special cases with other obligors maintaining business records: Accounting value of regulated special types of property found in such obligor's books, which include among other power production, transmission and distribution objects. • For obligors not keeping business records: Property value assessed by the municipal revenue authority applying the statutory rules and locally published average prices per property characteristics and location. Except for land, the value of real property tax is depreciated under the Property Taxes Law - at a rate of up to 1% p.a. with a maximum of 40%, or under the CIT Law – at a rate of 2.5% p.a. using straight-line method, as applicable. ▪ **Rates**: Regulated by local assemblies for each municipality within the following statutory caps, which also work as backup flat rates if fixing by local authority fails: • Obligors maintaining business records: Up to 0.4% (any real property). • Obligors not keeping business records: Up to 0.3% (land only). • Obligors not keeping business records: progressive rates depending on base value - up to 0.4% below 10m RSD / up to 0.6% in excess of 10m RSD / up to 1% in excess of 25m RSD / up to 2% in excess of 50m RSD (immovables other than land). ▪ **Exemptions:** Catalogued in the law, e.g. land area under a taxed object footprint and obligors whose aggregate immovables tax basis in a given municipal territory does not exceed approx. EUR 3,400. Individuals registered to reside in their own apartments or houses, as well as the elderly registered to reside in small rural homes are entitled to limited tax credits.

Property Taxes	Annual Property Tax	▪ **Filing and Payment**: Obligors who maintain business records should submit property tax returns regularly, by 31 March each year, determining the annual tax amount by self-assessment (corrections by municipal authority are possible during tax audit). Obligors not keeping business records are required to submit property tax returns, in principle, only once the tax obligation is first incurred or terminated. Their annual tax amount is determined by municipal authority's tax assessment. As a rule, the property tax is due and payable in quarterly instalments
	Renewables property tax remark	**According to below cited binding ruling of the Serbian Ministry of Finance, wind turbines represent a single real estate and should be exclusively regarded as such for the purposes of annual property tax.** Considering the majority of wind turbine components can be replaced and moved from one location to another without being damaged (except tower foundations), it may be argued that from Serbian property tax perspective a portion wind farms should be regarded as equipment or moveable asset, significantly reducing the tax base. Still, to date the Ministry of Finance has not reconsidered its ruling and is unlikely to do in foreseeable future without a further legislative impulse.
		OPINION OF THE MINISTRY OF FINANCE **No. 413-00-00057/2017-04 dated 22 June 2017** *"Given that real-estate property (besides buildings, dwellings, commercial property, garages) is also considered to be other (overground and underground) buildings, that according to the Planning and Construction Law a building also includes an energy facility, that according to the Ministry of Mining and Energy opinion number: 011-00-00039/2017-06 dated 18 April 2017, an energy facility relates to a technical-technological functional entirety which consists of immoveable and moveable parts of the energy facility, and that according to the Ministry of Construction, Transportation and Infrastructure opinion number: 011-00-00187/2017-07 dated 12 June 2017, "a construction permit is issued for the construction of a facility for a wind turbine as a facility that constitutes a single entirety, which has a further consequence that a wind turbine shall be considered as a single facility that includes a rotor blade, a generator, as well as other constituent parts,"* **we believe that a wind turbine as an energy facility that is incorporated into the land in the form of a concrete base, a foundation incorporated into the land, and that cannot be moved from one place to another without causing essential damage, constitutes real-estate property in terms of being the subject of taxation for property tax**.
	⊡	

	Renewables property tax remark	*In our opinion, in tax legal terms, real-estate property is also considered to be a component of an energy facility (a separable part that is connected to the immoveable object, such that it constitutes an integral part as a single functional entirety and which serves that entirety, because of which it is placed in an appropriate spatial relationship therewith and constitutes a unique object in eventual sale, where the owner of the principal object and of the component is one and the same).* *The subject of taxation is not influenced by the type of material used in the construction of the energy facility, nor the motive because of which construction was carried out (as you indicated, "the foundation and tower are constructed solely for the purpose of installing the nacelle"), but whether it involves an immoveable object, i.e. an object that cannot be moved from one place to another without damaging its economic substance."*
Property Taxes	Property Rights Transfer Tax	▪ **Obligors**: Transferors of captured property in Serbia (any real estate ownership, usage or lease rights over certain land and parking spaces, intellectual property, vehicles, watercraft, aircraft and ownership interest in bankrupted entities); notably in market practice this tax is usually shifted to and paid by the transferee (statutory guarantor). ▪ **Tax Base**: Contracted value or market value (if higher) of the property at the time of transfer. ▪ **Rate**: Taxed at 2.5%. ▪ **Exemptions**: Catalogued in the law, e.g. first-time disposal of newly constructed real property by a VAT-registered developer. **Filing and Payment**: In many real estate conveyance transactions the tax return is filed automatically by the notary public and tax is payable within 15 days as of receiving the tax assessment (otherwise the transferor may need to file a tax return within 30 days or in exceptional cases to pay the tax by self-assessment).

	Inheritance and Donation Tax	▪ **Obligors**: Beneficiaries of inherited or donated property in Serbia (real estate, cash, account balances and deposits, receivables, intellectual property, vehicles and other movable assets). ▪ **Tax Base**: Market value of the inherited or donated property. ▪ **Rates**: Tax rates depend on the line of succession, being 1.5% (siblings, grandparents, grandchildren) and 2.5% (more remotely related and unrelated beneficiaries). ▪ **Exemptions**: Catalogued in the law, e.g. inheritance/donations between spouses and children/parents are exempt. ▪ **Filing and Payment**: The beneficiary must file a tax return within 30 days of the inheritance or donation and pay the tax within 15 days upon receiving the tax assessment.
Property Taxes	Legislative Approach	**Citizens Personal Income Tax Law** (Official Gazette of the RS, No. 24/2001 as amended up to No. 92/2023; the "**PIT Law**") ▪ **Taxable Income Sources**: Includes salaries, agriculture and forestry income, self-employment income, royalties, industrial property rights, capital income, real estate income, capital gains, and other income. ▪ **Combined Taxation System**: Each income source is taxed separately. If total income exceeds a certain limit, an additional annual income tax is applied. Serbian residents are taxable on their worldwide personal income and non-residents are taxed on their Serbian-related income (e.g. work performed in the territory or sourced from property and other rights in Serbia).

	TP in general	CIT Law stipulates a mandatory obligation to separately disclose in the CIT return all transactions with related parties (whether domestic, foreign, or located in a tax haven) at transfer prices and at arm's-length prices and to prepare and submit to the Tax Authority the annual transfer pricing documentation, unless there were no such transactions. Transfer pricing documentation must be submitted along with the CIT return. Differences between these prices are included in corporate income tax base by adjustment of expenses (overvalued transactions) and adjustment of revenues (undervalued transaction). Acceptable methods from the law for assessing the "arm's length" principle of transactions with related parties are considered reasonably harmonized with OECD methods.
Transfer Pricing	Related parties' loans interest	Interest and related expenses arising from a loan incurred for business purposes is tax deductible subject to meeting thin capitalisation rules. In order to restrict excessive debt financing by related parties, the maximum of tax-deductible interest is based on debt-to-equity ratio of 4:1 (for banks and leasing companies the ratio is 10:1). Interest and expenses incurred on related-party loans, which are allowable according to thin capitalization rules, are subject to transfer pricing rules. Taxpayers have an option to either apply a safe harbour interest rate prescribed by the Ministry of Finance or to assess a market interest rate by applying general transfer pricing rules. The Ministry of Finance publishes the interest rates compliant with the arm's length principle annually, broadly around the close of first quarter or early into second quarter of the current year (the only recorded extremes this far took up to current-year December for 2022 rates and even next-year February when 2015 rates were published in 2016).

Personal Income Taxes and Contributions	Tax Rates	▪ **Salaries and Salary-like Benefits**: Taxed at 10%. ▪ **Other Personal Income**: Generally taxed at 15% or 20%, specific exemptions and deductions may apply depending on type of income. ▪ **Annual Personal Income**: Progressive rates of 10% and 15% depending on the level of high-earner's annual income aggregate (equity income and capital gains counted-out), with thresholds subject to family sustenance and age deductions.
	Salary Tax Base and Calculation	▪ **Responsibility**: All employers must withhold and pay taxes on gross salaries (likewise, Serbian legal entities paying other types of income to non-employees, e.g. office rent, are usually liable to withhold and pay the relevant personal income tax on beneficiary's behalf). ▪ **Tax Base**: Gross salary, which includes net salary, salary tax, and social security contributions borne by the employee. ▪ **Tax Allowance**: Approximately EUR 130 per month, adjusted annually by the Ministry of Finance based on retail price index. ▪ **Tax Incentives**: Partial exemptions and reductions in tax (and contributions) base are available for certain new hirings and for newly incorporated Serbian companies.
	Social Security Contributions	Compulsory social security contributions are calculated based on a percentage of the employee's gross salary and are formally shared between the employer and the employee, at the rates presented below. Employers are responsible for withholding the employee's portion of the contributions from their gross salary, adding their own portion of contributions on top and paying the total amount, typically monthly. For other types of personal income if the payor is a Serbian legal entity, the responsibility for contributions payment (withholding) is similarly shifted thereto, calculation depending on income type and then-current social security status of the non-employee beneficiary. If the income payor is also an individual or if the income is sourced from self-employment, the beneficiary individual should declare and pay his/her contributions independently. The minimum (floor) and maximum (cap) monthly and annual bases for contributions calculation apply for any individual, relating to a fraction/multiplier of the average monthly salary published by official statistics in Serbia. **Employee portion of contributions**: • Pension and Disability Insurance: 14% • Health Insurance: 5.15% • Unemployment Insurance: 0.75% **Employer portion of contributions**: • Pension and Disability Insurance: 10% • Health Insurance: 5.15%

RES SERBIA

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