Strategy on Energy Development until 2040 with the Projection until 2050

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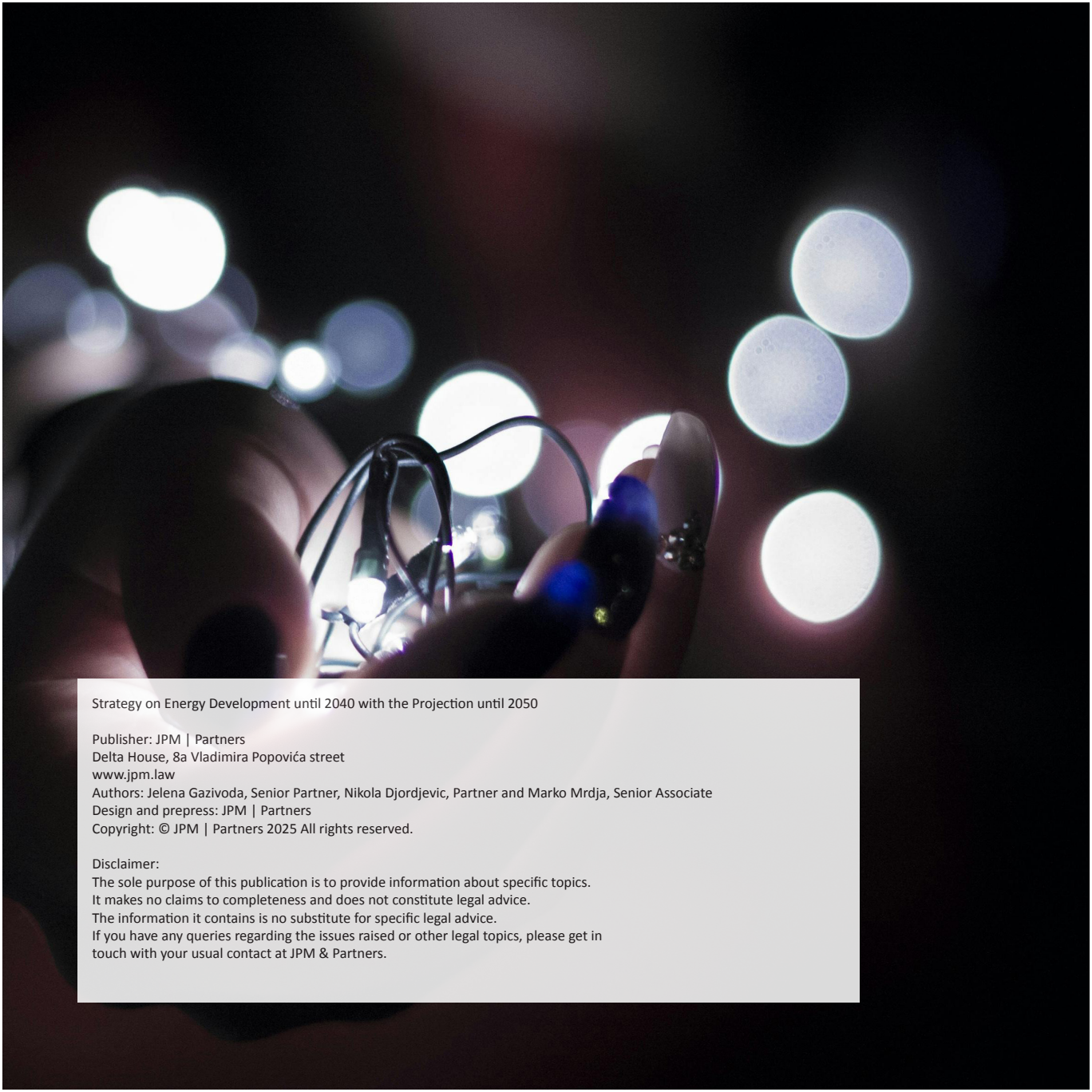

Strategy on Energy Development until 2040 with the Projection until 2050

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Delta House, 8a Vladimira Popovića street
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Authors: Jelena Gazivoda, Senior Partner, Nikola Djordjevic, Partner and Marko Mrdja, Senior Associate
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The National Assembly of the Republic of Serbia in its session held on 27 November 2024 adopted a new Strategy on Energy Development until 2040 with the Projection until 2050 („Strategy“). The first and main goal of the Strategy is the same as that of the previous energy strategy – energy security. Further goals are decarbonization of the energy sector, environment protection, improvement of energy efficiency, and establishing an economically competitive energy market.

While drafting the Strategy and its goals, events that occurred since the adoption of the previous strategy were seriously taken into account, especially energy challenges which were (and some still are) present, including Russian-Ukrainian conflict, jeopardized supply routes, sabotages, accidents on important power plants in Serbia, etc. Also, international obligations of Serbia, contained in the Parise Climate Agreement and Sofia Declaration on the Green Agenda had an impact on the goals set out in the Strategy.

For achieving proclaimed goals, the Strategy foresees changes in the following fields:

1. improvement in energy efficiency in consumption and production/distribution/transport of all kinds of energy,
2. decrease of loss in production/distribution/transport of all kinds of energy,
3. decrease usage of coal and increase usage of natural gas and RES for electricity production,
4. construction of storage systems for electricity and heat energy produced from RES,
5. increase RES share in final consumption of energy,
6. usage of RES and heat pumps for production of heat energy, vii) digitalization of energy processes.

Electricity sector

Major changes in the energy sector are envisaged in the electricity sector due to the decarbonization principle. As Serbia is producing now cca 60% of its electricity from coal, it is envisaged that RES's share in the total production portfolio will be increased to 45% by 2030, and 73% by 2040.

To achieve this ambitious goal, the plan is to have certain thermal power plants either put in reserve (and reinitiated when the need arises) or use them in decreased capacity. Until 2030 old thermal power plant Kolubara A will be put out of operation, while Morava may have the same fate or will be put in reserve. TENT and Kostolac, given their importance to the energy sector, cannot be subject to these measures. However, they will undergo installment of various filters (to decrease emissions of PM, NO2, SO2) until 2030. As per new thermal capacities, only block B3 in Kostolac with an installed capacity of 350 MW will be put into operation.

Natural gas power plants also have a certain impact on the electricity sector. Panonske TE-TO will be put out of operation, and it is planned to construct a new one in the vicinity of Novi Sad. It will be a cogeneration power plant with an installed power of 350MW for electricity and 100 MW for heat.

Speaking of hydropower plants, Đerdap 2, Potpeć, Vlasina, and Bistrica should undergo revitalization with a slight increase in capacity. New hydropower plants in Ibar (121 MW) and Morava (146 MW) should be constructed by 2040. Also, Bosnia and Herzegovina is planning joint construction of a power plant on Drina (212 MW) in which Elektroprivreda Srbije ("EPS") should have 51% ownership.

As per variable RES (wind and solar), the Strategy envisages that the Republic of Serbia will have an installed capacity of 1.77 MW in wind power plants and 1.73 MW in solar power plants until 2030 (a total of 3.5 GW of variable RES capacity). The projection until 2040 is 3.6 GW of wind power plants and 7.37 GW of solar power plants (a total of 10.97 GW of variable RES capacity).

As the Strategy plans to decrease the usage of coal and increase the usage of RES in electricity production, the issue of a steady supply of reserved energy for balancing purposes arises. For this reason, a special place in the electricity sector has reversible hydro power plants, due to their role in the balancing of the electricity sector. The Strategy envisages as a priority the construction of reversible hydropower plant Bistrica (628 MW) by 2032. Also, Romania is planning to construct a new reversible hydropower plant Đerdap 3 (1.800 MW) by 2040.

In order for the grid to be capable of receiving new capacities, as well as to be aligned with the energy efficiency goal and decrease loss during transport and distribution of electricity, the Strategy envisages also:

1. construction of a new and revitalization of existing internal grid infrastructure and
2. construction of regional grids such as Trans-Balkan Corridor and Pannonian Corridor.

The distribution grid should be also improved by reconstructing existing and constructing new transformer stations and grid as well as installing advanced management devices for the distribution grid.

Heat Energy

Currently, the heat energy sector is dominantly based on fossil fuels (coal and natural gas), while RES (biomass and biogas) has a share of 1.8% in total production. Also, the production and distribution systems are old.

For achieving goals set out by the Strategy, rehabilitation, and modernization of remote-control heating systems are envisaged together with usage of highly efficient cogeneration facilities and usage of heating pumps. Simultaneously, a decrease of fossil fuel, especially coal in the production of heat energy while increasing RES share, where applicable, is planned.

Energy Efficiency

The Strategy stresses out importance of improving energy efficiency in all consumer sectors. Thus, investments in thermal insulation of buildings (both public and private) are necessary as well as investments in more efficient heating systems. Also, in the traffic sector application of new EURO standards should be implemented, more usage of electric cars and electrification of public transport.

Natural Gas Sector

The Republic of Serbia does not have significant reserves of natural gas for exploitation, thus it is mainly import-oriented. For a long period, Serbia was supplied only by Russian natural gas via one route (Hungary), which is not favorable from the energy security perspective. The diversification of supply routes was improved by the construction of an interconnection pipeline Bulgaria border – Hungary border, but this also is used for Russian gas only. Recently, a new interconnection with Bulgaria (Niš-Dimitrovgrad) was constructed and put into operation, through which Serbia is supplied by Azerbaijan natural gas.

Although the supply routes are now more diversified compared to last decade, the Strategy envisages the construction of new interconnections with Romania, North Macedonia, Croatia, and Bosnia and Herzegovina.

Apart from interconnectors, it is necessary to invest in existing transportation systems as well as in distribution systems, including the installation of smart metering systems. Expansion of underground natural gas storage to 750 mil m3 is ongoing, with the possibility of additional expansion for 750 mil m3 more. Also, the Strategy considers the construction of new natural gas storage in Vojvodina.

Oil Sector

Same as for natural gas, the Republic of Serbia does not have significant reserves of oil on its territory, and is highly dependent on imports, so far mainly from the Russian Federation and using only one oil pipeline – Janaf. To increase the security of supply, Serbia together with Hungary initiated the construction of a new oil pipeline that will connect to the "Družba" international oil pipeline. The Strategy also considers the construction of new pipelines toward Drač and Solun to diversify supply routes.

To decrease imports, the Republic of Serbia should orient more toward the production of biofuel as well as oil shales. Also, by 2027 is planned to have oil capacity storage for 61 days for internal usage.

Coal Sector

Having in mind that the electricity sector is still mainly based on thermal power plants, and in the transitioning period toward greater usage of RES power plants, coal will be irreplaceable, the Strategy envisages investment in existing coal mines, as well as preparation of new ones to replace old and fully exploited mines as the time comes. Also, to avoid accidents in thermal power plants an integral system for management of coal quality should be implemented.

Lastly, the Strategy also recognizes the usage of hydrogen as green energy and nuclear energy (on which the moratorium was lifted by the latest amendments of the Energy Law).

Authors

Jelena Gazivoda

Senior Partner

E: jelena.gazivoda@jpm.law

Nikola Djordjevic

Partner

E: nikola.djordjevic@jpm.law

Marko Mrdja

Senior Associate

E: marko.mrdja@jpm.law

JPM | PARTNERS
8a Vladimira Popovića,
Delta House
11070 Belgrade, Serbia
T:+ 381/11/207-6850
E: office@jpm.law

www.jpm.law