



Republic of Serbia

Fiscal Council

EPS PERFORMANCE ANALYSIS AND RECOMMENDATIONS FOR INVESTMENTS INCREASE

Summary

EPS is at a crossroads: the company needs a U-turn in its performance and an urgent launch of a new investment cycle. Until early 1990s, Serbia had a well-established energy system and EPS had, at its disposal, a large excess of production capacities compared to the demand for electrical power in the country at the time. It was this excess that allowed it to meet the needs of the growing domestic consumption over the last 30 years, although it was not investing enough to even maintain the existing production capacities. However, such operations are no longer sustainable - in recent years, the domestic demand for electric power has caught up with the current production capacities of EPS, while in the upcoming 5-10 years, it is expected that it will outgrow them significantly. It is hence necessary for EPS to provide sufficient new capacities, which will be able to satisfy the growing electricity needs of the country, in the medium term. This is the prerequisite for the country's future energy stability, but also a requirement for successful operations of the company itself, as it faces a gradual loss of its market share due to the entry of other producers on the market. At that, in the upcoming period, EPS will have to ensure strict adherence to the environmental legislation in its production. To answer all these challenges, EPS would have to launch a major investment cycle in the shortest possible term and to significantly increase its investment into production capacities and environmental protection. However, the company has not been performing well for a long time and the small profits it has achieved in recent years are not even nearly enough for a sustainable funding of the necessary investments. Hence, this is the critical moment for EPS to undergo a substantial reform and finally remove the key obstacles that prevent it from performing well - excessive wage bill due to a surplus of employees and a generous remuneration system, low electricity tariff, major technical losses and theft within the network, collection issues etc. Otherwise, EPS could easily become a serious risk for Serbia's public finance in the medium term.

In addition to resolving the burning issues, Serbia would have to begin preparing a carefully considered long-term strategy for energy sector development. In this report, we focused on the necessary reforms and investments that would ensure that EPS continues its operations with a healthy foundation, as well as sufficient quantities of electricity in the medium term, i.e. in the upcoming 5-10 years. Since this is quite a short time for fundamental changes, our recommendations pertain to the improvement of the existing system that, in the production of electricity, is dominantly reliant on coal. All things considered, that is probably the best option in the upcoming decade. However, strategic plans in the energy sector are adopted for far longer periods and there are already clear indications that tectonic changes are about to hit this sector in the upcoming decades. This primarily pertains to abandoning coal as the main resource in energy production and there are at least two reasons why Serbia should start its well-

thought-out strategic adjustment to the new circumstances immediately. *Firstly*, domestic coal reserves are limited, and the major question is whether it is even possible to provide sufficient quantities of coal of satisfactory quality (which has already significantly dropped) in such a long term. *Secondly*, European Union has set up tight restrictions for the use of coal in energy production that would pertain to Serbia too, in case it attains full membership. The largest issue would be the possible carbon-dioxide tax: With current emissions and prices per ton of this gas, EPS would have to pay at least 500 m Euros per year, making its production entirely non-profitable. The Fiscal Council therefore believes that the Government would have to tackle these issues and launch a discussion, in which all relevant institutions from the field would participate. The final result should be a coherent plan for the development of the Serbian energy sector in the next 50 years, which would provide a clear framework for long-term development and investments of EPS as the most important company in the sector.

EPS's main problem lies in insufficient investments, which are the reason why its production has been dropping for several years and why it is the largest polluter in Serbia. Thanks to the enormous excess of production capacities, dating back to the 1980s, EPS's insufficient investments in the last thirty or so years have not yet reflected on the power supply to the consumers. However, many years of investing less than the depreciation are starting to take their toll. In the last five years, EPS's production of electricity has been decreasing; in 2018, it was about 3,000 GWh, i.e. 8%, lower than in 2013. A more detailed analysis shows that the decrease is not due to one-offs, but rather to the systemic issues of the company, which prevent it from securing sufficient coal to cover the production needs. At that, the frequent stalls in the production, caused by various reasons, have slowed down the entire Serbian economic growth on a couple of occasions. Thus, EPS's production problems in the first part of 2017 knocked down the GDP for that year by 0.2-0.3 percentage points; the negative impact on economic growth reappeared in the second half of 2018. The second consequence of EPS's poor investment policy in the previous period is the fact that currently no plant meets all national and EU environmental requirements, making this company the single worst individual polluter in Serbia. It can be said that EPS is one of the largest air polluters in Europe, since its thermal power plants are topping the charts of plants with the largest emissions of air pollution. For example, in 2016, EPS discharged more sulphur-dioxide than all European lignite thermal power plants together, although its production of electricity is more than ten times smaller. Uncontrolled air pollution from EPS's power plants has devastating effects on the health of the population, both in Serbia and in the surrounding countries; according to some assessments, this pollution alone causes over 2,000 untimely deaths per year.

EPS needs a new investment cycle of 5.6 bn Euros to meet the future needs for electricity and the current environmental legislative requirements. With its current capacities, EPS produces, on average, just a little over the country's current electric energy consumption; the scheduled decommissioning of eight obsolete thermal power production blocks, in several phases, will decrease the already insufficient production capacities by about 5%. When the expected increase in demand for the next 5-10 years is taken into account, we estimate that EPS will lack capacities for the production of over 5,000 GWh of electricity per year. In addition, EPS has taken on the obligation of meeting all EU requirements pertaining to air, water and soil pollution from their power plants at the latest by 2027. To meet the rising need for electricity and environmental requirements, EPS will have to invest about 5.6 bn Euros by 2027. The largest share of this amount (85%, or 4.6 bn Euros) will come from investments into the reconstruction of existing and construction of new capacities: 1) for the production of electricity (thermal power plants, hydro power plants, wind power plants); 2) for exploitation of coal; 3) in the distribution system. The remaining 15% (800 m Euros) need to be directed into environmental protection, i.e. for desulfurizing, denitrification and removal of solids from the flue gas, for the construction of a waste management system and a wastewater treatment

plant. In terms of annual investments, that means that EPS's capital expenditures would have to increase from the current 350-400 m Euros to about 600 m Euros, i.e. by slightly over 200 m Euros per year.

Necessary investments in reconstruction of existing and construction of new capacities for electricity production, as well as for the distribution network, surpass 3 bn Euros. We have obtained this estimation by analyzing the data from the existing plans of both EPS and the government, for the reconstruction and construction of production and distribution capacities, with forecasts of the country's future need for electricity. Our main assessment is that these plans do not provide for a sufficient increase in the available electricity to completely meet the expected consumption growth in the upcoming ten years or so and cover the losses of a part of EPS's production capacities due to the decommissioning of some of its non-profitable plants (in total, about 5,000 GWh per year). Key projects pertaining to EPS's new production capacities are the construction of the thermal power plant Kostolac B3 and the windmill farm and solar farm in Kostolac, which require an investment of an additional 450 m Euros and should provide additional 2,400 GWh per year. Another 1.2 bn Euros are needed to revitalize the thermal and hydro power plants that are already in operation, as well as the related infrastructure, which would contribute to the increase of electricity production of at least 500 GWh per year. Finally, one of the major issues in EPS's operation are its enormous losses in distribution (about 13%), almost double the CEE average (about 7%). Necessary investments into the improvement of the distribution network and more precise measuring of electricity consumption are estimated to about 1.2 bn Euros, which would cut the distributive losses by about 500-1,000 GWh per year. Therefore, the total value of all existing investment projects is about 2.8 bn Euros and their expected total impact on the increased supply of electricity amounts to 3,600 GWh per year. This means that, in the medium term, capacities need to be built for another 1,500-2,000 GWh per year; this would probably cost at least 400 m Euros, depending on the selected option.

Enough coal needs to be provided for the normal functioning of EPS's system; this would require investments of about 1.1 bn Euros. In the previous decade, EPS's investments into expansion and opening of new pits, as well as into a coal quality management system, were only a half of what the company had planned. Consequentially, there has been a drop in annual quantities of recovered coal and a gradual decrease in its quality - namely, the average calorific power of coal was about 8% lower in 2018 than in the period 2006-2009. EPS's failure to secure the necessary quantities of coal of a satisfactory quality was the main culprit for the issues in power production in the recent years - issues that could have been prevented had the company invested in its mines in due time. As we have mentioned, in the near future, Serbia has no viable alternative to coal to produce sufficient power to satisfy the growing needs of the domestic economy and the population. This is why it is justified, at this point in time, to strongly increase investment into coal exploitation, as this would ensure a stable operation of the electrical power system in the upcoming decade - however, with the condition that the pollution from EPS's power plants be brought into compliance with legislative requirements. Starting from the necessary quantities of coal for the existing thermal power capacities and those that are in construction, EPS's necessary investments amount to 1.1 bn Euros for the extension of the existing and opening of new pits and the construction of a system for mixing and balancing coal quality. However, bearing in mind that coal is already losing potential as a resource for the production of electricity, as well as the global trends, we would like to reiterate the need of launching an expert debate on the long-term perspectives for the development of the domestic energy sector, as soon as possible.

EPS will have to invest almost 800 m Euros until 2027 to bring its thermal power plants into compliance with environmental legislation and decrease its pollution to a reasonable level. Predominant reliance on coal in the production of electricity is inevitably

harmful for the environment, because its combustion produces vast quantities of air polluting materials (sulphur-dioxide, nitrogen oxides, particulate matter etc.) and waste that endanger the quality of air, soil and water (e.g. floating ash and slag). Although EPS has been obliged to cut down its excessive pollution for over two decades now, the measures needed to achieve this were not implemented consistently; in 2018, not a single thermal power production plant met all the environmental requirements from the national legislation. According to the initial plans of this company, EPS was supposed to achieve compliance with legislative provisions at the latest by 2015, which would have required investments of about 1.2 bn Euros. However, total investments in environmental protection amounted to 400 m Euros until 2018, meaning that only a third of the planned - and needed - investments had been implemented. Consequently, EPS's thermal power plants hold grim records in Europe in the release of sulphur-dioxide in the air, with other pollutants also significantly higher than European average. In recent years, some progress has been made: Serbia recently got its first flue gas desulfurization facility in TPP Kostolac B, which should soon be in full operation. This is good news, as this power plant, with about 130,000 tons of discharged sulphur dioxide in 2016, held the absolute record in Europe (for reference, this was more than all German coal-fired thermal power plants put together). Resolution of other environmental issues (construction of the remaining desulfurization facilities and implementation of measures for denitrification and removal of solid particles, the construction of a contemporary waste management system and a wastewater treatment plant), will require an investment of another 800 m Euros. Further postponement of these investments would represent a major risk for the operation of EPS, because Serbia has taken on the commitment to the EU, to reduce its emissions, at the latest, by 2027, in its National Emissions Reduction Plan.

However, EPS is not performing well and is not capable of providing over 600 m Euros per year for the necessary investments from its current profits. To implement this ambitious investment cycle, the annual capital expenditures of EPS need to increase to about 600 m Euros, which is a little over 200 m Euros per year more than the current level of investment. However, in the period 2015-2018, EPS had made a profit of only a couple of dozen million Euros - which is not nearly enough for sustainable funding of the necessary investment growth and is also a clear signal that this company is not performing well. Since 2011, EPS has achieved a return on equity (ROE) of a mere 0.5%, while the comparable power companies in Europe were almost ten times more profitable. We believe that a good medium-term objective for a company like EPS is to increase profits to about 200-250 m Euros per year. *First*, this is adequate profitability to undertake all necessary investments in the upcoming 5-10 years, regardless of whether the funds are used for repayment of loans with their respective interests, or the investments are funded from the company's own funds. *Second*, although it would mean an increase in profit by about six times compared to the current level, such a business result is quite common in this market. By increasing its profit by about 200 m Euros per year, EPS would reach a mere 60% of the average profitability of comparable European companies (observed through return on equity), confirming this as a realistic and reasonable goal. *Third*, if the necessary reforms that the Fiscal Council has written about on several occasions are implemented, the set objective can be achieved in the medium term.

For EPS to increase its investments sufficiently, it first needs to undergo a substantial transformation. EPS's operation has been burdened with numerous issues; to start the necessary investment cycle, obstacles that have been holding this company back for years have to be removed. EPS's largest issue is its oversized wage bill, due to excessive (and poorly structured) work force and a generous remuneration system. Hence, the most important reform task for this enterprise is to ensure strict control over expenditures for the wage bill and to prepare an adequate job sistematization. Overall distributive losses of EPS are among the highest in Europe and there is an enormous need to decrease technical losses through the

network and electricity theft to an acceptable level. Although the problem of some of EPS's largest debtors (RTB Bor, Smederevo Steel mill) has been resolved in recent years, its losses for unpaid electricity (including interests) still total over 100 m Euros per year. We therefore believe that there is still room to combat the practice of supplying electricity to those who do not pay regularly, which would mean savings for the enterprise. EPS's large payments into the state budget, made despite the fact that the company does not have sufficient funds even for its own proper operations, have become a specific issue in recent years; this is a practice that needs to stop. Finally, after the company has addressed its internal operation issues, a gradual increase in tariff should be allowed. With a price that is by far the lowest in the region and second lowest in Europe (after Ukraine), it is difficult to expect that EPS can operate sustainably in the long-term, especially bearing in mind the necessity of increasing investments in the upcoming years.

Wage bill in EPS is excessive and irrational - bringing it into order is the most important part of the company's reform. Wage bill is the highest individual expenditure of EPS, amounting to about 30% of revenue on an annual basis; in comparable European power companies, the share is about 20%. This means that EPS's labour costs are about 50% higher compared to similar companies from the energy sector, which clearly indicates that these operational costs are too high. However, there are some specific factors that could explain this enormous difference, at least to a degree. In our analysis, we have considered the fact that, due to the low electricity tariff, EPS's revenues are relatively lower than in comparable companies, which would make it logical that its share of labour costs in revenue should be somewhat higher. Still, this cannot be the only reason: to decrease the labour costs in EPS to the level of that in average comparable companies, the price would have to increase by as much as 97%, which is neither possible nor justified. With a reasonable assumption of an increase in tariff in Serbia, this factor could account for only 2 p.p. of the difference in the share of labour costs in business revenue. Another possible source of this difference could lie in the fact that European companies hire external companies for certain business activities (i.e. outsource) more often than EPS. This would mean that the wage bill in EPS is justifiably higher, as companies we compared EPS to book outsourcing costs as "procurement of goods and services" in their accounts. However, we estimate that EPS's lesser reliance on outsourcing compared to the comparable European companies could, at best, explain the higher share of the wage bill in the business revenue by about 5 p.p. - and, more likely, not even that. This means that, even if we take both these factors into consideration, our most conservative estimate is that the wage bill in EPS is by about 15%, and possibly by over 20%, higher than that of the comparable power companies.

The issue of excessive work force costs in EPS comes from a surplus of employees and the excessive average salary in this company. All analyses we have conducted show us, unambiguously, that there is a surplus of employees in EPS - according to our estimates, it accounts for at least 10% of employees. Paradoxically, instead of recognizing this and beginning a systemic downsizing, in the previous period EPS has done the exact opposite by merging a few failing companies. A related issue is the fact that, taking everything into account, EPS suffers from an unfavourable employment structure, too. Although we do not have detailed data, in EPS's reports there are assessments that the company lacks professional engineers; relevant experts, well acquainted with the energy sector in Serbia, agree. EPS's wage system also abounds with non-rational expenditures, which finally leads to an excessive average salary in this company - in 2018, it was as high as 89.600 dinars. On the one hand, salaries of employees in lower positions are unjustifiably high, since the average salary of a non-qualified worker in EPS amounted to as much as 57.000 dinars in 2017. For comparison, this is more than the salaries of teachers in primary and secondary schools, who have university qualification, as well as more than the average salary in the country, which amounted to approximately 50,000 dinars that year. On the other hand, we have insufficient and

destimulating salaries for engineers and key decision-makers in the company. This imbalance is also demonstrated by a narrow wage range: while the highest salary in EPS is only 3.5 to 4 times higher than the lowest, in the comparable European power companies this range is, on average, 7-7.5 : 1. We would like to note that an additional reason for such high average salaries in EPS in 2018 lies in the fact that this company had not decreased its salaries together with the remainder of the public sector at the end of 2014, which the Fiscal Council warned about on several occasions.

EPS would have to stop with the poor practice of merging unsuccessful state-owned enterprises that have no direct link to its main activity. Unlike the European power companies that mostly strive to decrease their costs by outsourcing some activities to other companies, EPS continues to merge loss-making companies into its system, to then have them perform certain tasks. The last in a series of these poor practice examples is the merger of Kolubara Građevinar in 2018. This is a failing company with about 600 employees and the average annual loss of almost 600 m dinars, which, at the time of the merger, also owed EPS 1.8 bn dinars (for a loan previously acquired from EPS and for unpaid coal and electricity). At that, Kolubara Građevinar performs a whole range of activities that have nothing to do with EPS's business activity (e.g. production of PVC windows and doors, management of an orchard and vineyard), which is why it is difficult to find an economic justification for why this company should be part of the EPS group. This is not an isolated case, since EPS merged Kolubara Metal in 2013, with its 2750 employees, and then Kolubara Usluge with about 1400 workers. Again, these companies perform diverse tasks outside of EPS's business activity; Kolubara Usluge provides security and cleaning services, and performs biological re-cultivation and agricultural production. Within the reform in the first half of the 2000s, all these companies were justifiably separated from EPS, so that it could focus on parts of the company that are pertinent for the production and distribution of electricity. Now this process is taking a complete U-turn with no clear economic motives; at that, these failing companies are once again a burden on EPS's performance. We believe that this practice needs to end urgently and that it would be good if EPS was to identify, as part of the upcoming reform, all activities that could easily be outsourced and extracted from the company.

With some determined steps to achieve internal savings, EPS should be allowed to increase the electricity tariff. In one segment of the national electricity market, which includes major consumers, the electricity price is formed freely; however, the tariff for households is regulated and, all things considered, it should be higher. Namely, the price that EPS charges to households is the second lowest in Europe (currently, only Ukraine has a lower price), while electricity in all other countries in the region is significantly more expensive - including the countries with a lower living standard. For example, the first country above Serbia is North Macedonia, where the electricity tariff (before tax) is higher by 23%. A carefully measured tariff increase is an important condition for a sustainable operation of EPS in the long-term, and it is also needed to suppress the irrational consumption of this type of energy. Namely, while electricity price is, on average, 35% lower in Serbia than in the surrounding countries, gas price is around the average price in the region and this imbalance spurs irrational consumption of electricity. We estimate that, in the medium term, a tariff increase of about 15% would be justified and it would bring EPS more than half of the funds it needs for the necessary investments; from there on, the tariff should be adjusted as needed in the future. In that context, we believe the envisaged tariff increase by 3.9% from December 2019 to be a step in the right direction, in general. However, we would like to emphasize that, in addition to the tariff increase, EPS would have to show its readiness to implement the necessary reform, so that the costs of its inefficient operation would not just automatically be transferred to the buyers. A similar thing already happened in 2015, when higher business revenues due to increased tariff were used to increase the salaries in the company.

By resolving these issues, EPS would become sufficiently profitable and would be able to finance, on its own, the necessary increase of investments in the medium term. As we have pointed out above, EPS will have to increase its investments to about 600 m Euros per year in the next 5-10 years if it is to perform well and provide a stable supply of electricity to the country. For this to be at all feasible, the company must be reformed to be able to achieve annual profits that are higher than the current level by about 200 m Euros. This is an achievable target for EPS, and here we will summarize all the elements of the recommended reform and their expected impacts on the company's performance. In terms of balance, the most significant measure should be the tariff increase in the medium term, by about 15%, which would increase EPS's business revenues by 120-130 m Euros per year. Essentially, the most important measure for the company's efficient operations is the optimization of employment, which means resolving the issue of surplus employees, elaborating an adequate job systematization and developing a rational and responsible salary system. We estimate that this would allow EPS to save at least 50 m Euros in labour costs. If it was to stop supplying electricity to those who do not pay in time at least partially, EPS could improve its collection by about 1 p.p., which would bring it additional funds in the amount of 20 m Euros per year. Finally, if investments are made into the distribution system, in line with recommendations, in a few years' time the savings would amount to about 40 m Euros, due to a decrease in technical losses in the network and suppression of electricity theft.

EPS's current operation model is unsustainable in the long-term; to stop it from collapsing, the company needs a fundamental transformation. EPS faces an extremely difficult task in the upcoming 5-10 years. In a relatively short period, it should improve its performance quite significantly and rectify the consequences of the poor investment policy of the last several decades, but also prepare for fundamental changes that will be occurring in the energy sector in the next several decades. However, instead of taking decisive steps towards a more efficient and sustainable operation, EPS has implemented but symbolic measures for its recovery from 2015 until now, while some decisions were even harmful. Collection has been somewhat improved, but not so much thanks to EPS as due to the resolution of the issue of some of the largest electricity debtors (Smederevo Steel mill, RTB Bor, Railways of Serbia). While 3,750 employees did leave the company, they did so with very stimulating severance payments (about 20,000 Euros per employee, on average) and without any selection process. These were voluntary departures of employees who had met at least one of the retirement criteria and it is possible that this brought the company more harm than good, as the oldest employees are, as a rule, those with most specific knowledge and experience. In addition, EPS has been increasing its employees' salaries every year in the period 2015-2018, instead of cutting them at the end of 2014 by 10% and freezing them at that level, as was prescribed by the law. The fact that the company ascribes a lot of significance to some activities that neither bring savings nor improve performance - such as the inventory list made for the purposes of transformation into a joint stock company, introduction of performance indicators etc. - just shows that the attempts of reform so far have frequently strayed off the right track. The Fiscal Council believes that all key stakeholders, starting with the Government and EPS itself, would have to take the challenges this company is facing more seriously, in order to undertake some systemic measures in time and prevent the further collapse of (the once well established) system.