A REVIEW OF THE ELECTRICAL ENERGY SECTOR IN ALBANIA AND KOSOVO

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Abstract: The present paper describes the current situation of the electrical energy sector in Albania and Kosovo, introducing the main existing generating facilities, and their most important features and characteristics. The most important projects for new generating facilities are discussed, with their relevance described for both countries. The importance of cooperation between the two countries is analysed and intraday load profiles are depicted, showing why the two energy systems would greatly complement each other. The paper concludes by briefly considering a possible merger of the two generating utility companies.

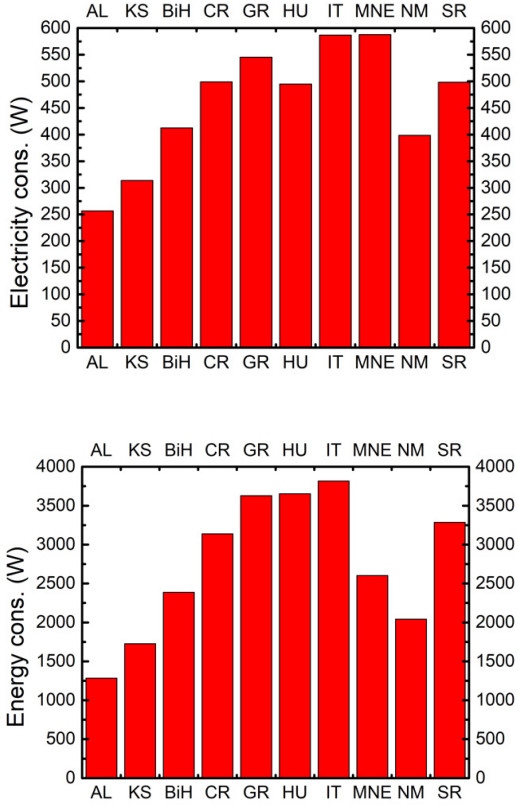
Keywords: Albania, Kosovo, energy, electricity

Introduction

Albania and Kosovo are two bordering countries in the Western Balkans, with populations and economies that are smaller compared to other countries in the region and in Europe. Albania overthrew communist rule in 1991, while Kosovo got out of war in 1999. Both countries have since been able to maintain net economic growths, which has led to a 2020 GDP per capita of USD 5,246 and USD 4,347, respectively (The World Bank, 2022). These values are still among the lowest in Europe, and reaching the average economic level of EU countries would require many more decades and higher economic growth rates.

One of the prerequisites for economic growth, as well as a by-product of it, is increased energy consumption. With limited development, and even more limited industrial output, both of these countries have rather low energy consumption rates. Looking at the statistics, it can be observed that the electrical and total energy consumed per capita is much lower than that of other countries, especially in the case of Albania.

Figure 1
Average per capita electricity and energy consumption
in selected countries from Central and Southeast Europe.



Source of raw data: International Energy Agency.

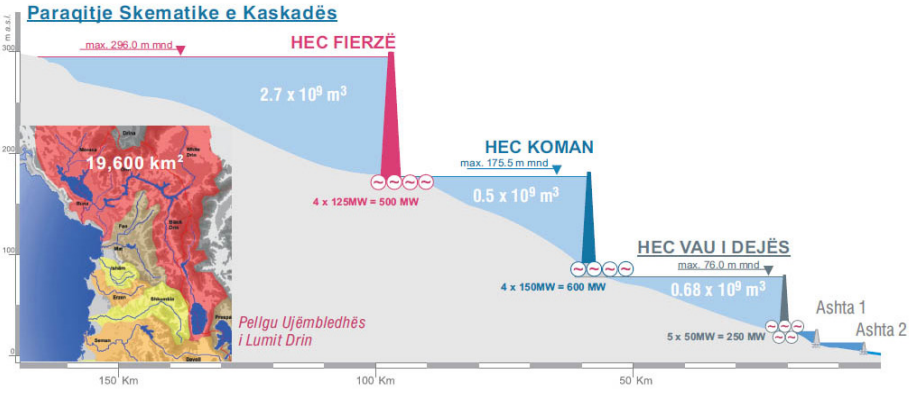
This low level of energy consumption leads to the conclusion that an increase in demand can be expected with time, and in case of accelerated economic growth, this increase would only be faster. This paper gives an overview of the electrical energy sector in Albania and Kosovo and briefly discusses some current and future projects, as well as opportunities for collaboration between the two countries. Many crucial projects mentioned in the paper would have to become reality in order to ensure this much-needed progress.

The energy situation in Albania

Existing Sources

In Albania, the Drin cascade has been the backbone of electricity generation for decades (Korporata Elektroenergjitike Shqiptare, 2022). Starting in the late 1960s and continuing until the mid-1980s, three large hydroelectric power plants were built: Vau i Dejës (1967-1975), Fierza (1970-1980), and Komani (1981-1988). All three power plants, the largest ones in the country, are run by the state-owned Albanian Electroenergy Corporation (*Korporata Elektroenergjitike Shqiptare*, KESH). The annual generation of these three power plants is in excess of 4 TWh, representing a little over half of the annual domestic consumption.

Figure 2
The Drin cascade, with its catchment area shown on the left.



As Figure 2 indicates, the upmost dam has the largest reservoir. This water reserve is enough to keep the cascade generating for a few months without any rainfall. For the same amount of water, the higher the level of the lake, the more energy can be gained from it, which is why KESH, and all other serious dam operators, maintain the water levels high. On the other hand, the negative effects of sudden heavy rainfalls can be reduced by collecting the water in the dams, releasing it at a later time. In rare cases, when the water inflow is greater than the turbine flow rate, and the reservoir is full, water needs to be discarded without being used. In a hydro power plant, larger installed or "nameplate" capacity means that the need to waste water will be lower; however, increasing capacity increases the cost of plants.

The cascade was extended almost three decades later in the lower end by the construction of the Ashta hydroelectric complex. The project is a concession by an Austrian consortium of two companies with substantial expertise in hydro projects, Verbund and EVN, to be run for 35 years (Energji-Ashta, 2022). Construction started in 2010 and finished in 2013. The implemented HydroMatrix® technology, which utilizes many small, factory-manufactured turbine-generator sets instead of a few large turbines, was a world first. Unlike the other dams, which have considerable dam heights and reservoirs, the Ashta power plants operate on very low heads of about five meters. The restricting factor in their case is the already low height above sea level. Were these dams to be slightly higher, they would need to flood a much larger part of the densely populated plains.

Figure 3
Hydro power plants on the Drin cascade and their main properties

HPP	Total volume (km^3)	Nameplate cap. (MW)	Avg. annual prod. (TWh)	Max. height (m a.s.l.)
Ashta	negl.	52	0.24	25
Vau i Dejes	0.68	250	0.87	76
Koman	0.5	600	1.81	176
Fierza	2.7	500	1.30	296

Another successful concession is the Devoll hydropower, by the Norwegian company Statkraft (Statkraft, 2022). The project has seen the construction of the Banja (2013-2016) and Moglica (2015-2020) dams, as well as hydro power plants in the Devoll river. While Banja is a more traditional plant, Moglica is special in that, apart from the head provided by the dam, the power station itself is located much deeper inside the mountains. This allows the energy gained from the same amount of water to be much higher. The installed capacities of the two power stations are 72 MW and 197 MW, respectively. Annual generation is around 700 GWh, or approximately 13% of the average annual generation of the last ten years in Albania. The project has cost EUR 590 million.

Figure 4

Left to right: Banja Hydro Power Plant, its catchment area, and Moglica dam.

One of the most controversial topics in recent years has been the Vjosa river, the last "wild" river in Europe, as some claim (Taylor, 2022). The untapped hydroelectric potential is in excess of 400 MW, with the main power stations being Kalivac (100 MW), Pocem, and tens of others with smaller individual installed power. As a comparison, the Drin cascade has an installed potential of 1,402 MW. Realistically, the reaction against their construction, going as far as the issue being mentioned and the government urged to take action in the EU's 2021 progress report (European Commission, 2022), or actor Leonardo DiCaprio posting about it, is simply not justified. The same biodiversity issues are relevant for each and every river and hydroelectric project elsewhere. Albania needs the additional generation capacities, and flooding needs to be prevented – both things that in other countries have been done much earlier. Furthermore, having artificial lakes created would not damage but encourage local tourism. One of the reasons behind this reaction might be that not enough, if any, information campaigns have taken place with the local population. Contrary to the Ashta or Devoll projects, there has not been a stable, reputable investor involved in the entire project. This is especially true for the Kalivac project: the story of failures starts in 1997 and includes the owner of one of the constructing companies, Francesco Becchetti, winning an arbitrage trial against Albania (Oei, 2021).

Another existing generating capacity is the thermal power plant in Vlora. In 2004, the Albanian government commissioned an Italian company to build a 98 MW fuel oil power plant. Construction, although with delays, went on, and the power plant was handed over to KESH in 2011. However, problems in the cooling system have been found. These problems mean that the power plant has never been in commercial operation, not being able to repay itself and demanding maintenance costs, which are in the order of one million dollars every year. It is not clear where the legal battle over the responsibility stands. It is also difficult to judge just how much the corporation wants to get this asset back to use. The reason is simple: over the years, the price of electricity imports has not been high enough; it has simply made more sense to import electricity than oil to burn in the power plant.

It is important to note that the power plant was constructed so that it can easily be retrofitted to use natural gas as a fuel. Generation costs would be much lower this way, although probably still higher than the average import price of the previous years – around 50 EUR/MWh. This conversion has been indeed aimed for by KESH, since the Trans Adriatic Pipeline (TAP) now offers the amounts of gas that such a plant would consume (Nasi, 2021). For this, a pipeline has to be built to the power plant from TAP near Fier.

As a takeaway, it can be stated that the strategy to give concessions on building hydroelectric power plants has been successful. With no capital investment from the government, some subsidies, and the commitment to buy the produced power, both the capacities and actual production have been increased greatly. In 2021, out of the total installed capacity of 2,605 MW, KESH owned 1,448 MW – that is, the recently built sources comprise 1,157 MW, or 44% (Energy Regulatory Entity, 2021). These sources gave 3.62 TWh out of the total 8.96 TWh, or 40%, of the electrical energy produced. The hydroelectric potential can still be increased, with an evaluated capability of 16 TWh annually, or an installed power of about 4,500 MW. The largest, and most important, resource lies in the *Skavica* project.

Possible Future Sources

The most important future source is the Skavica Hydro Power Plant. The potential of the Drin river is fully used where the Black and the White Drin rivers join each other in Lake Fierza, at a height of 296 m above sea level (a.s.l). However, the Black Drin enters from North Macedonia at a height of 445 m a.s.l., meaning a very large height difference remains unused. The most suitable place for the construction of another dam has long been known to be the locality of Skavica. According to the original plans made before 1990, a dam going up to the height of 485 meters above sea level would be built, creating a vast water reservoir. Having such a reserve would be of utmost importance, since it allows for better usage of the downstream cascade. The so-called regulatory period of the cascade with this dam, i.e. the time for which the dam can provide average water flow to the downstream power plants without any incoming rainfall filling it, is

in the range of a few years. Apart from that, a higher fall means that the capacity of the power plant will be greater, and flood prevention for the downstream areas will be much more effective. Yet another benefit of this larger dam would be the hindering of alluvium crossing into the other dams in the cascade. This has the possibility to increase their expected lifetime by more than a century.

As beneficial as this project is, its realization is highly questionable. To begin with, the number of displaced inhabitants would increase by a factor of more than two compared to smaller projects. The height of 485 meters is also above the lowest height along the border with North Macedonia. This means that significant parts of land would also have to be flooded there, meaning the political negotiations will have to be intergovernmental. It has been pointed out, however, that Albania and Yugoslavia had already agreed on this flooding before 1990, and North Macedonia, as a successor, should keep to this agreement (Vasili, 2016). Unfortunately, it is highly unlikely that any government in Albania will realize such a project. The communist and post-1990 governments did not have the means to go forward with the construction of the dam. The topic came under discussion again in 2005, when the soon-to-leave government reached an agreement with an Italian company on the construction (Shala, 2016). Plans meanwhile had changed, as a French consulting company deemed another version with two dams more feasible. Despite this cheaper version, the company eventually abandoned the project, triggering declarations by the government that they would build the power plant on their own. The silence of the upcoming years was broken in 2014, when Chinese companies (Power China, Ge Zhou Ba, Norinco) offered to construct and finance the original power plant according to the original plans (Karoshi, 2020). The calculated costs of USD 1 billion were to be financed by a soft loan, with a 2% annual rate for 35 years. The economic rationale behind this offer is a no-brainer: the plant would have paid for itself within 15 years of its commissioning.

These grandiose ambitions were, however, soon to be disbanded: the Albanian government unexpectedly decided to give a “bonus” to the Turkish consortium of the companies Suzer Group and Nurol Holding, as a result of which the Chinese repealed their offer – having never received

any official answer. The Turkish proposed to build a two-part, scaled-down version of the project. After even the Turkish consortium left a few years later, the government yet again declared it would build the dam. Funding was received from the European Bank for Reconstruction and Development. However, this project was cancelled at a time that coincided with the signing of a Memorandum of Understanding between the Albanian Ministry of Infrastructure and Energy and the US company Bechtel. Later in July 2021, a contract was signed between the Albanian government and Bechtel (Newsroom: Bechtel, 2021), which foresees the realization of a new project. The Albanian government has passed a law, effectively avoiding an international competition on the project. It is important to note that, to date, it is not clear which option – the one-dam or the two-dam version – will be opted for, if the project is actually built.

While few realistically expect the large, original concept to be proposed, the hope is that the new project will include a single dam, reaching the maximum height possible in the Albanian territory (445 m above sea level). This project would still offer half of the original reservoir capacity. The alternative of building two smaller dams is much more frightening. In such a situation, the accumulating capacities would be around one tenth of the one-dam solution, and total production would be halved. Again the main loss would be in the missed opportunity to stabilize the entire cascade: to accumulate the excess rainwater in storms instead of having to dump it without utilizing it, and eventually flooding the downstream plains.

Another project is a gas power plant in Korça. In 2018, Ivicom holding, an Austrian company, proposed the construction of a 500 MW power plant to the Albanian government (Monitor.al, 2018). The government quickly responded positively, giving the company the status of a strategic investor. The project consisted of a combined cycle gas turbine, which has the highest possible efficiency among thermal power plants. The geographical position is especially favourable, since the TAP pipeline passes very close by. A 400 kV substation is also situated nearby, which could connect the power plant with the country's transmission system, as well as the interconnection to Greece. In addition, since all the generating facilities are in the north of Albania, building this unit would increase transmission efficiency. Furthermore, the power plant would have the opportunity to

offer district heating to the residents of Korça, utilizing heat further and providing a better heating alternative for the population. Perhaps the most attractive fact in the offer was that the company would build and operate the power plant entirely privately, with no need for state subsidies or binding purchase contracts. However, the Environment Ministry has not provided the company with the necessary permits. This is why Ivicom has filed a lawsuit against Albania (Politiko.al, 2022), claiming an amount of EUR 150 million in compensation for their losses. The lawsuit is still to proceed.

Another recent project is floating power plants. In January 2022, KESH announced a bid to provide mobile thermal power plant capacities to be deployed by the existing Vlora TPP, with a capacity between 110 and 130 MW. This power plant would have to run on heavy oil, connect to the existing 220 kV grid, and be deployed for two years. Two bids came, out of which the chosen one was a consortium between the US Excelerate Energy and the Italian Renco (KESH, 2022). According to this bid, two floating power plants with a capacity of 110 MW, made in 1997 and registered in Panama, and running on Wärtsila diesel engines, will be towed from their current location to Vlora, expected to be operational by 1 July. Fuel oil is to be brought via trucks, which will be loaded in the nearby oil port. If the price of oil does not fall significantly, it can be hoped that this decision made in this difficult situation will not be as unthought-of as the construction of the power plant back in 2004. It is also interesting to note that KESH has not revitalized the current power plant yet, and it is lending these floating power plants instead. Whether it is the technical problems that are too difficult, the Vlora TPP is deemed unfeasible in the long run, or something else is the reason behind this, still remains a question.

The Situation in Kosovo

Existing Capacities

In Kosovo, the picture of generation is quite different (Annual Report, 2021). Practically all production is based on lignite, with two power plants (Kosova A and Kosova B) providing the backbone of the system. The first

power plant has five units originally, but the oldest two are permanently out of function; the remaining ones, A3, A4, and A5 originally have installed capacities of 200, 200, and 210 MW, respectively, but in reality their net capacities are now only 144 MW each. A similar picture appears in the other units: both B1 and B2 originally have an installed capacity of 339 MW each, but currently their net capacity is only 264 MW. This brings the total lignite-based net installed capacity to 960 MW out of a possible 1,288 MW. With this capacity, most of the needs are met, with imports and exports balancing the system. A major upgrade might be aimed for, which is what the Kosovo Electroenergetic Corporation (*Korporata Elektroenergjitike e Kosovës*, KEK) wants for the B units. As for the A units, long-term strategies have called for their phase-out after the construction of another power plant, although until this power plant is built, their phase-out is completely unrealistic. Large investments in the A units are less likely, considering their older age and their worse environmental performances.

There are also a number of other sources, including hydro, wind, and photovoltaic. Apart from a few older hydro sources (notably the Ujmani, a 32 MW power plant), most other sources are indeed very new, having been put into use in the past five years. Their capacity, however, is still very low, not even reaching 300 MW; even more so is their production, which, due to the low capacity factor these renewables inherently have, provided only 7% of generated electricity in 2021.

Possible Future Sources

There has long been an intention to construct a new lignite power plant, the Kosova e Re, in Kosovo. Earlier optimistic ideas called for a 2,000 MW complex that would completely substitute the current plants, provide enough supply for future rising demands, and allow exportation as well. With time, these plans were scaled down, with the last project being a 500 MW power plant, announced in 2015 to be built by UK-registered Contour Global. Financing plans from the World Bank were cancelled in 2018, but the project seemed to continue. However, after the victory of the Albin

Kurti-led Self Determination (Lëvizja Vetëvendosje) in 2020, Contour Global finally pulled out of the project, citing the unfavourable political situation regarding this project (Barbiroglio, 2020). It should be noted that despite the environmental arguments against the project, the projected price with which the company would sell to the distributor (80 EUR/MWh) was deemed to be too high by many. KEK, for example, manages to stay afloat even though it sells energy at 29 EUR/MWh (KEK, 2021).

Another interesting new project is a pumped-storage hydro power plant. The 2021 annual report of the Energy Regulatory Office mentions that an application for a 250 MW pumped-storage hydro power plant is being reviewed. The applying company, a Turkish group, intends to build close to Prizren, using the White Drin as a water source. The idea behind such power plants is that to smoothen daily load variations, water is pumped to a higher elevation using cheaper electricity at night, and during the day, when demand is higher, this water is released to produce electricity. Typical efficiencies for one cycle are about 70%. It will be very interesting to see if this company intends to realize this project as a completely private investment, meaning that they believe the market prices will have such large oscillations, or if they want to lure the government into providing them with subsidies.

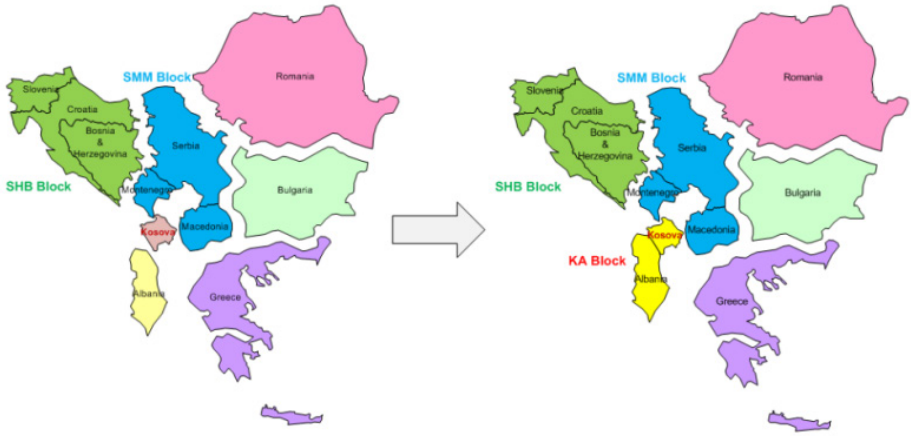
The Integration of the Two Markets

Interconnections, the KA Block

Both Albania and Kosovo are well interconnected with their neighbours: Kosovo to Serbia, North Macedonia, and Montenegro, and Albania to Montenegro and Greece. A power line connecting Albania to North Macedonia is under construction; after its completion, both Albania and Kosovo will be connected to all their neighbouring countries with high-power 400 kV interconnections. More importantly, Albania and Kosovo are well connected with each other, as up to 900 MW can be transmitted between them. The backbone of the interconnection is a

new 400 kV line, which has caused quite a few disputes. Constructed in 2016, it could not be put into use until Kosovo became a part of ENTSO-E, the union of European Network of Transmission System Operators. It took years of diplomatic efforts, most notably involving Germany, whose Development Bank (KfW) had funded the project, to get Kosovo to obtain the management of their interconnection capabilities, thus being able to get the interconnection to use in 2021. Now not only can Kosovo and Albania exchange power in much larger quantities between each other, they have also created a common Load Frequency Control (LFC) area. This means that the responsibility for balancing production and load in order to keep the frequency stable in the same synchronous grid (covering almost all of Europe) will now be shared between the two countries. In practice, this will reduce financial losses for both countries.

Figure 5
LFC areas in the Balkans before and after Kosovo joining the KA block.



Regarding interconnections, Albania has missed an opportunity in not building an interconnection to Italy. Such plans first appeared during the late 2000s, when then-Prime Minister Silvio Berlusconi speculated on the idea of constructing a nuclear power plant in Albania. However

unrealistic this idea might have been, an interconnection was not at all so. Up until the mid-2010s, it seemed that the project would go ahead. Montenegro, on the other hand, was able to strike a deal, and now an interconnection between the two countries is up and running, leaving Albania with no such opportunity. Not only has the country lost an opportunity to trade, and improve energy supply and security, it has also lost the significant investments and operational profits that would come with the project.

Current Cooperation

Both Albania and Kosovo (as well as all other countries in the Western Balkans) are trying to liberalize the energy market to a point where all electricity trades happen in an exchange. This would provide a more competitive environment, eventually leading to lower prices and a more secure energy supply, for which the experience of EU countries is proof. For this reason, Albania and Kosovo have agreed to create a common power exchange, which has been named the Albanian Power Exchange (ALPEX). This power exchange is not yet functional, although not much remains to be done. The contractor providing the bidding and power exchange monitoring platform will deliver the tool by November 2022. This seems to be ahead of other Western Balkan countries, considering that both day-ahead and intra-day markets will be implemented with only a two-month delay.

It will be interesting to see later how the power exchange will shape the future of the public generating companies, KESH and KEK, and how this will affect consumer prices. At the moment, both these companies are made to sell at below-market prices to the suppliers of end consumers. In a purely free market this would not be the case. One can, however, reasonably assume that the governments will still intervene strongly enough to maintain residential consumer prices at a low level, to avoid any possible political consequences.

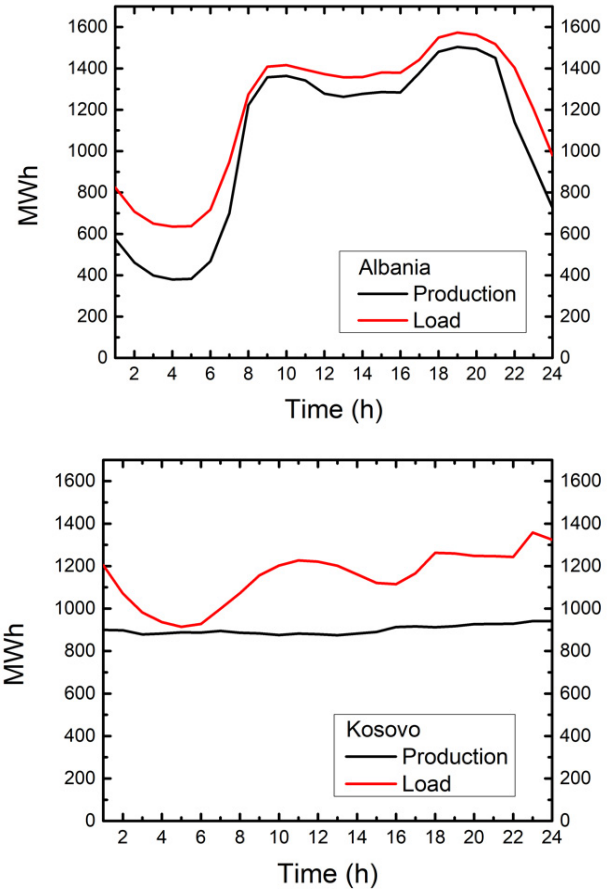
There has been power exchange between the two producers (without any payment). The most publicized instance happened during New Year's Eve in 2022. Largely trumpeted by Albania's Prime Minister via all media channels, this exchange was in fact very low: about 4 GWh for each of the two days. As a comparison, Kosovo's consumption is about 4 TWh annually, meaning that what Albania gave was just about one third of a typical day's consumption. Another exchange happened with KEK providing KESH 85 GWh during the summer, which the Albanian producer will pay back in the winter. These numbers are also small, since considering an annual consumption of around 8 TWh, it is just 1%, or three days' worth of electricity (Bajrami, 2022).

Daily Load Profiles: a Golden Apportunity

Daily load in power systems typically varies, as consumption is higher during specific times of the day and lower at night. Tailoring generation to follow this demand is crucial for power system operators. In most cases – specifically, thermal power plants – this is not something very easy or preferable to do. Inherently, there is too much loss in keeping thermal capabilities up to only run them a few hours a day. This raises costs too much, all the while wearing out the power plant. However, for hydro power plants this is not a problem at all. In order to change the power, controllers only need to open or close the water intake. No energy is wasted if the turbine is not in use; in fact, for the time energy is not being produced, the water accumulating in dams will increase its height, which means that for the same amount of water more energy will then be possible to be obtained.

Since most consumption is residential for both Albania and Kosovo, this variation is even higher in their case. Figure 2 shows both demand and production for both countries on a specific winter day.

Figure 6
Hourly electricity production and load i
n Albania and Kosovo on 21 January, 2022.

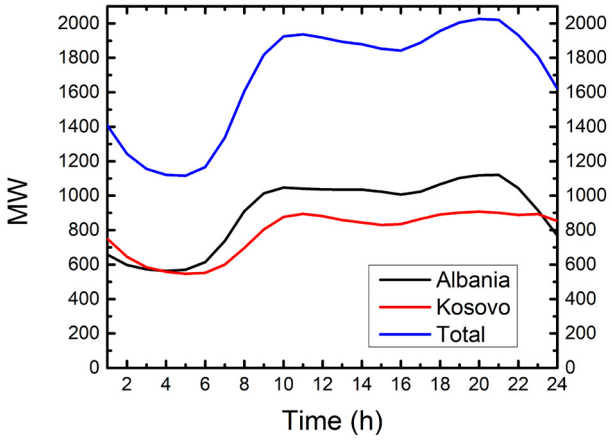


As it can be clearly seen, the Albanian power generators have been able to closely follow the demand pattern, also tailoring the imports so as to be slightly larger at night, when import prices tend to be lower. The same cannot be said for Kosovo: due to the inelasticity of the thermal sources, generation there has practically been constant, no matter the time of day. What can also be noted from the graphs is that for both countries imports play a significant part in supplying the demand. It should be

mentioned, however, that for typical summer days the picture is slightly different. Demand is slightly lower for both countries, with generation also falling in Albania but remaining the same in Kosovo, which also often exports during daytime. This, again, shows the inelasticity of their supply. It is probably safe to assume the reader has by now already asked themselves: is there a way to make these two systems, so opposite in their characteristics, complement each other? The answer would, of course, be *yes*.Figure 3 shows the demand for both countries, as well as their sum. The difference compared to the previous graphs is that the data is not for a specific date, but instead the yearly average for the year 2021.

Figure 7

Average hourly consumption of electricity in 2021 in Albania, Kosovo, and total.



Having both sources supply both markets complementarily would be advantageous if the lignite power plants in Kosovo provided a constant baseload of around 1,100 MW. This would mean that in times of low demand, such as between 1 AM and 7 AM, the hydroelectric plants in Albania would practically stop producing, accumulating water instead. At other times of the day, they would produce, fulfilling the needs of both countries. Being easy to vary, they could easily follow the pattern of the demand of both countries, reaching any peak as might be needed, for example, around 10 AM or 10 PM, by working close to full capacity.

Such cooperation would not only be useful for intraday complementation, but annual as well. In the summer, demand in Kosovo is significantly lower, while production is lower in Albania due to the low inflow of the rivers. In winter, demand in Kosovo exceeds production capacity, while production in Albania reaches a peak. This means that even on a year's scale, cooperation would greatly improve the two systems: aiding the Kosovo system in the winter, and the Albanian system in the summer.

Possible Merger?

The payment-less capacity exchange mentioned above is well beyond what is possible. Transmitting capacities exist to practically realize the sort of cooperation described in the previous section. The commissioning of the power exchange would surely be a great step towards closer collaboration. It will still be interesting to see how the two generating companies – if they are to function on a pure market-basis – will cooperate. If bidding, they cannot, in theory, arrange for below-market price exchanges. That being the case, what would be the difference between cooperation and simple imports in the free market?

Another possibility might be the two companies merging with each other. Although it might not seem very plausible, it could still be worth a thought. If the two companies are really going to become more independent from their governments, they could indeed think about the possibility of merging and becoming a more important player on the regional energy market. Perhaps a good start would be for the companies or respective governments to buy shares of their counterpart. If the generating companies became one, the hourly profile would be matched for both countries, optimizing as described above.

One more aspect worth considering is that both companies will need to increase generation soon, i.e. they will need investment. In Albania, the Skavica dam might finally be built. That would be a great chance for Kosovo to invest in it, and then be able to profit from the elasticity hydro can offer. Even more importantly, at a time when foreign financial institutions are moving away from coal, but when Kosovo

still definitely needs it, Albania could lend a hand in investing in a new coal power plant. These ideas might seem simply impossible, as none of the countries have the necessary financial means. While the governments do not, we should keep in mind that the corporations each have incomes in the range of hundreds of millions of euros. They are not allowed to sell domestically at market prices, but at a lower level dictated by the government. If they were able to sell at market prices, their net profits would rise to enviable levels. Such a financial situation would make it possible for them to invest in each other, be it in the form of a merger, or as separate entities. In either case, they would both profit tremendously.

Conclusion

Keeping in mind that the economies of both Albania and Kosovo are way behind the regional and European averages, economic growth and therefore an increase in the consumption of energy is expected in the decades to come. The existing hydro power plants in Albania are expected to work for many more decades. No real chance exists for the turning off of the Kosovo A and B coal power plants, especially the latter. With no large new capacities under construction, as the Kosova e Re project has been scrapped, these power plants will probably keep being in use for at least one and two-three decades, respectively.

Concessions in the hydro sector in Albania have been a relative success story. The generating capacity has increased by more than half within a decade. Much more untapped potential remains, but investment has not been progressing fast recently. The most important such untapped potential lies in the Skavica project, which would optimize production in the Drin cascade. An American consortium has expressed interest, and it might at a later stage construct the power plant. Hopefully, we will see this project become reality in the medium rather than the long run. More investment is also expected in other hydro projects in the long run. Concessions are also expected to thrive in Kosovo; however, the potential there is smaller and mostly relies on wind and

solar sources. The latter two have been practically unexplored in Albania, although they are gaining momentum.

Natural gas is expected to become a somewhat important source of generation in Albania, with the adaption of the Vlora TPP to burn it. Other projects to construct gas TPPs might come up, although it is not clear how realistic their completion will be. Keeping in mind the higher gas price and the abundance of coal, it is highly unlikely for gas to play any role in generation in Kosovo, even in the longer term.

The electrical energy markets of Albania and Kosovo are moving closer together. In the short term, the Albania-Kosovo power exchange will be put to use soon, liberalizing the market further. Exchanges between the two systems will increase, apart from commercial trade, with cashless exchange between the two respective main generation companies. Much more exchange between the two grids would be of interest, since the Albanian hydro-based and the Kosovo coal-based generations complement each other perfectly. This exchange is important in optimizing both the daily and the seasonal load profiles. Furthermore, its importance lies in the diversification of sources: in Albania, stopping the sole reliance on hydropower, while for Kosovo stopping the sole reliance on thermal sources. In the longer term, a merger of the two state-owned generation companies might also become a possibility.

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