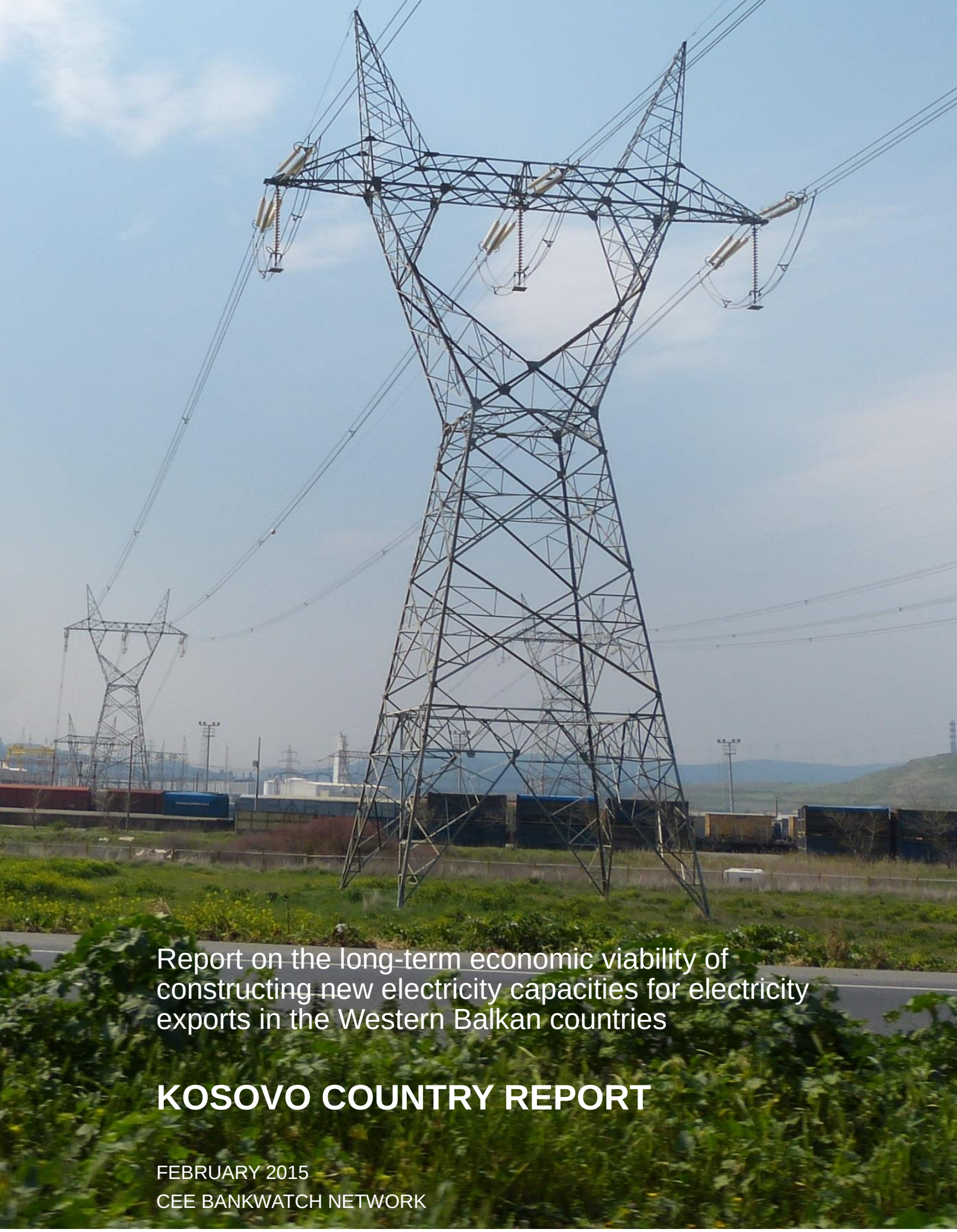

Report on the long-term economic viability of constructing new electricity capacities for electricity exports in the Western Balkan countries

KOSOVO COUNTRY REPORT

FEBRUARY 2015

CEE BANKWATCH NETWORK

university of groningen

THE ADVISORY HOUSE

Inspiring Energy

The University of Groningen, The Netherlands and The Advisory House, Germany prepared this publication for the CEE Bankwatch Network.

Authors:

S.E. Weishaar University of Groningen, Groningen Centre of Energy Law, Dept. of Law & Economics

S. Madani The Advisory House

Table of contents

1. Introduction

The Western Balkans (Albania, Bosnia and Herzegovina, Kosovo[1], Macedonia[2], Montenegro and Serbia) is a region that has experienced significant economic development in the past decade. Economic development is fuelled by increased electricity[3] demand. Several countries in this region have been short on electricity production and experienced difficulties in satisfying their domestic demand. Almost all governments in the Western Balkans have plans to extend their electricity generation capacity to meet their demand, but they also demonstrate the ambition to become electricity exporters.

When countries expand their electricity generation capacity at the same time with a view to provide electricity to the region, this creates the clear and present danger of excess supply and stranded assets. Stranded assets are commonly conceptualized as assets that become uneconomic to operate. In the context of the energy industry Caldecott and McDaniels[4] define stranded assets as plants that became uneconomic to operate, since "their marginal cost of generation exceeds the price for electricity".

Several factors influence the creation of stranded assets. These include changes in regulation (for example the introduction of more stringent environmental production standards) and changes in the market (e.g. market increases in the costs of coal or a price decline due to strong competition).

This report analyses the long-term electricity supply and demand patterns of countries in the Western Balkans and examines their export prospects from a stranded assets perspective for each country (Albania, Bosnia and Herzegovina, Kosovo, Macedonia, Montenegro, Serbia). It does so by:

(1) comparing the current (and future) electricity production to the current (and future) electricity demand;
(2) examining peak electricity supply and demand;
(3) comparing the (expected) export capacity with the demand of potential customers in the (1) Western Balkans, (2) neighbouring countries, (3) the EU Member States, and (4) the EU Member States, Ukraine and Turkey.

This report consists of six independent country studies. Each country study therefore contains all relevant information, such as methodology, approach, data description etc.

1 Throughout this report, this designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence

2 According to the UN, the official name for Macedonia is "The former Yugoslav Republic of Macedonia". In this study it is referred to as "Macedonia".

3 Electricity is frequently referred to as 'Energy'. This report only examines electricity. In this report these terms are used interchangeably

4 Ben Caldecott & Jeremy McDaniels: Stranded generation assets: Implications for European capacity mechanisms, Energy Markets and Climate Policy, Working Paper, January 2014, p. 5, http://www.smithschool.ox.ac.uk/research-programmes/stranded-assets/Stranded%20Generation%20Assets%20-%20Working%20Paper%20-%20Final%20Version.pdf

1.1 Management Summary

Countries in the Western Balkans (Albania, Bosnia and Herzegovina, Kosovo[5], Macedonia, Montenegro and Serbia) have frequently faced difficulties in satisfying domestic electricity demand. Almost all governments in the Western Balkans have plans to extend their electricity generation capacity to meet their demand but they also demonstrate strong export ambitions.

This report analyses the long-term electricity supply and demand patterns of countries in the Western Balkans and examines their export prospects from a stranded assets perspective for each country. It does so by:

(1) comparing the current (and future) electricity production to the current (and future) electricity demand;
(2) examining peak electricity supply and demand;
(3) comparing the (expected) export capacity with the demand of potential customers in the Western Balkans, neighbouring countries, the EU Member States, and (4) the EU Member States, Ukraine and Turkey.

The report shows that the countries will be short in electricity if they merely complete the 'likely future capacity' extensions. If they realize the 'planned future capacity' extensions, however, all countries and hence the region will be 56% long in 2024, entailing that the national plans demonstrate significant export ambitions. In particular Bosnia Herzegovina could turn into the largest exporter (up to 20.000 GWh), followed by Serbia (18.000 GWh). The other countries in the Western Balkans have a much lower contribution (Montenegro 2000 – 5000 GWh, Macedonia 2000 GWh, Albania 2000 GWh, Kosovo 2.500 GWh) to the overall long position of the region, but measured in terms of their domestic demand, their export potential is substantial.

In order to determine the long and short positions of the countries in the Western Balkans the electricity power balance has to be analysed. This balance examines the actual feed-in of electricity and the demand situation in the Western Balkans when the electricity feed-in reserves are at their presumed minimum and the electricity demand is at its presumed maximum. Subject to the caveat relating to the robustness of the underlying data, this enables the identification of critical electricity supply situations. The overall finding is that all countries are unable to satisfy their peak demand when considering existing capacity and 'likely future capacity' extensions. Only Bosnia and Herzegovina is temporarily able to do so. When 'planned future capacity' is considered, Bosnia and Herzegovina (as of 2018), Montenegro (as of 2021) and Serbia (as of 2022) are able to satisfy peak demand. Examining the Western Balkans jointly, the report shows that cooperation between the countries in the region can help to enhance supply security in the region.

Such significant electricity capacity expansions designed to meet export demand create the clear and present danger of becoming dependent upon the export market. The export analysis shows that there will not only be competition within the Western Balkans (here in particular between Serbia and Bosnia and Herzegovina) but also from other (supra-) regional competitors such Bulgaria, Romania and the EU. Given the expected excess supply in Europe, increased competition may put pressure on export prices and increase the risk of incurring stranded assets. For this reason, it is suggested to closely

5 Throughout this report, this designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence

examine investments that are directed to serve export markets and to also consider the trade-off of producing or buying electricity.

This report shows that countries in the Western Balkans do require good regional ties in the area of energy policy. The current infrastructure should therefore be examined from this perspective. Importantly this report shows that the examined countries do have strong electricity export ambitions that create the danger of stranded assets if the domestic electricity expansion decisions are made without taking due account of developments in other countries in the Western Balkans and beyond. Decisions to make or buy electricity should thus be taken in a strategic fashion that also takes due account of energy security considerations.

The table below summarizes key data of this report:

				Albania	Bosnia and Herzegovina	Kosovo	Macedonia	Montenegro	Serbia
Demand in 2024		Min	GWh	10.985	13.800	7.135	10.083	3.381	36.120
		Max	GWh	13.834	16.294	8.622	12.269	4.999	42.298
Supply in 2024		Min	GWh	6.292	15.583	4.114	8.356	2.429	34.127
		Max	GWh	12.779	33.061	9.611	14.617	5.393	52.796
Net Position in 2024		Min	GWh	-7.542	-3.028	-4.508	-3.913	-2.570	-8.171
		Max	GWh	1.794	19.260	2.467	4.534	2.013	18.671
Peak Demand in 2024		Min	MW	2.266	2.315	1.456	1.892	586	6.600
		Max	MW	2.746	2.734	1.679	2.302	815	7.354
Supply Capacity in 2024		Min	MW	711	2.096	523	636	460	5.064
		Max	MW	1.003	4.475	1.332	1.975	643	7.893
Export Potential	Western Balkan	Min	GWh	-46.955	-29.488	-46.273	-44.215	-46.736	-30.078
		Max	GWh	22.191	26.706	25.225	25.820	27.163	21.563
	Region	Min	GWh	-20.702	-3.235	-20.019	-17.961	-20.483	-3.824
		Max	GWh	48.445	52.959	51.479	52.074	53.417	47.816
	W. Balkan and EU	Min	GWh	-64.710	-47.243	-64.027	-61.969	-64.491	-47.832
		Max	GWh	4.437	8.951	7.471	8.066	9.409	3.808
	incl. UKR and TU	Min	GWh	-40.324	-22.857	-39.642	-37.584	-40.105	-23.447
		Max	GWh	60.318	64.832	63.352	63.947	65.290	59.689
Grid and Distribution Losses 2013			%	≈47	≈13	≈36	≈18	≈23	≈17
Renewables Share in 2024		Min	%	93	30	3	17	64	30
		Max	%	100	41	15	28	75	34

2. Country Report Kosovo[6]

2.1 Introduction

This country report is a self-contained subset of the 'Report on the long-term economic viability of constructing new electricity capacities for electricity exports in the Western Balkan countries' that was commissioned by CEE Bankwatch and realized by the University of Groningen and The Advisory House.[7] The background of this study is that almost all governments in the Western Balkans[8] have plans to extend their electricity generation capacity to meet their demand, but they also demonstrate the ambition to become electricity exporters. Over investments in excess electricity generation capacity can give rise to stranded assets – assets that become uneconomic to operate since their marginal cost of generation exceeds the price for electricity.[9]

This country report examines Kosovo's energy generation[10] and its import/export potential. It examines if a potential excess production of energy would be likely to be met by demand of potential buyers in the region and beyond. Moreover the study presents how the energy mix in Kosovo will develop over time.

This report is structured as follows: section 2 presents the approach and methodology. Section 3 presents the data. Section 4 presents the analysis and section 5 the conclusions.

Before commencing, a general caveat is in order. This report is based on official documents and predictions provided by the respective governments, power supplier or network operators. Given the scope of this research this report does not engage in the analysis of the legal framework nor does it seek to determine future price levels[11]. Similarly, current transport and grid capacities do not fall within the scope of this study and we do not incorporate effects that may arise from grid or transport restrictions.

2.2 Approach and Methodology

In order to identify the long-term viability of the present and future electricity capacity changes in Kosovo and its export potential, this study

6 Throughout this report, this designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence

7 Authors of this report are Stefan Weishaar, University of Groningen, and Sami Madani, The Advisory House

8 Countries belonging to the Western Balkans are: Albania, Bosnia and Herzegovina, Kosovo, Macedonia, Montenegro, Serbia

9 Ben Caldecott & Jeremy McDaniels: Stranded generation assets: Implications for European capacity mechanisms, Energy Markets and Climate Policy, Working Paper, January 2014, p. 5, http://www.smithschool.ox.ac.uk/research-programmes/stranded-assets/Stranded%20Generation%20Assets%20-%20Working%20Paper%20-%20Final%20Version.pdf

10 Electricity is frequently referred to as 'Energy'. This report only examines electricity. In this report these terms are used interchangeably

11 This report does thus not extend to costs of energy production and input prices or wholesale prices or the like

- compares the current (and future) electricity production to the current (and future) domestic electricity demand and identifies short and long positions (Analysis section 1); and
- compares the (expected) export capacity with the demand of potential regional customers (countries in the Balkans, Ukraine, and Turkey) and supra-regional customers (EU Member States) (Analysis section 2).

The development of the energy mix is presented subsequently (Analysis section 3).

2.2.1 Kosovo's Supply/Demand analysis

Based upon Kosovo's specific historic production and import/export figures we determine the national net electricity supply/demand position. In order to account for future developments we also analyse the supply/demand position with regard to the generation capacity that is presently under construction or planned. Based on the current existing plants, current construction projects and construction projects that are planned, we develop three electricity supply scenarios.

#	Scenario	Description
1	**Existing capacity**	Calculates the net position based on current supply and demand figures
2	**Likely future capacity**	Calculates the net position based on existing capacity (Scenario 1) and an estimation of additional supply facilities that are under full construction or near starting construction
3	**Planned future capacity**	Calculates the full net position based on Scenario 2 and includes the envisaged electricity production

Table 1- Kosovo's electricity supply scenarios

The differentiation between 'likely future capacity' and 'planned future capacity' has been established by CEE Bankwatch. Determinants for differentiating between the two categories are whether construction permits have been granted, whether the constructors are identified and if the financing has been secured.

After obtaining results for electricity generation in Kosovo, we need to examine domestic demand before we can determine the national net long/short positions. We apply a robustness check in the form of three different electricity consumption scenarios. This robustness check is necessary since we seek to extrapolate electricity demand patterns over a period of 10 years and since changes in demand patterns severely affect Kosovo's ability to export electricity.

#	Scenario	Description
1	**Existing capacity**	GDP Low Growth Scenario (1,71% growth) (Statement of Security of Supply for Kosovo [KO-01] p. 17)
2	**Likely future capacity**	Base Growth Scenario (2,48% growth) (Statement of Security of Supply for Kosovo [KO-01] p. 17)

3	**Planned future capacity**	High Growth Scenario (3,2% growth) (Statement of Security of Supply for Kosovo [KO-01] p. 17)

Table 2 - Kosovo's electricity demand scenarios

Please note that the Statement of Security Supply for Kosovo [KO-01] provides data up until 2022. For 2023 and 2024 we used a linear approximation based on the average growth rate provided by the statement.[12]

The net long/short position of Kosovo is calculated by subtracting high, medium and low consumption demand from each of the three electricity supply scenarios. Kosovo's exporting ability is thus determined for all nine combinations.

In order to determine the long and short position of Kosovo we also analyse the electricity power balance. This balance examines the actual feed-in of electricity and the demand situation at a particular point in time when the electricity feed-in reserves are at their presumed minimum and the electricity demand is at its presumed maximum. Subject to the caveat relating to the robustness of the underlying data, this enables the identification of critical electricity supply situations. This method should thus be used as an indication only.[13]

Data for the hourly peak demand (hourly load values) during the period 2007 – 2013 is taken from the Statement of Security of Supply for Kosovo [KO-01] p. 17. We obtain the data for the peak hourly demand for the years 2014 – 2022 from the Statement of Security of Supply for Kosovo [KO-01] p. 17 and forecast the remaining years with the growth rate that underlies the low-, medium-, and high demand scenario.

Because the data between the historic data (2007 – 2013) and the future data (2014 – 2024) can differ we need a starting point for our peak demand forecast that also includes information from 2014. We therefore apply the following formula:

The peak load for 2014 is calculated as follows:

$$P_{2014} = \frac{D_{2014}}{\text{Average}(D_n, D_{n-1}, D_{n-2})} * \text{Average}(P_n, P_{n-1}, P_{n-2})$$

where:
D represents the demand in the given year,
P is the peak load
And n is the next year before 2014 where data is available, normally 2013.

The peak load for year n is calculated as follows

$$P_n = \frac{D_n}{D_{n-1}} * P_{n-1}$$

where:
D represents the demand in the given year,

12 Statement of Security of Supply for Kosovo [KO-01] p. 17., Table 5.3

13 Net operators calculate the demand peaks in general for the 3rd Wednesday of each month. In our report, we deviate from this policy and determine the hourly peak demand on an annual basis

P is the peak load
And n is the year after 2014.

We multiply this ratio with the average peak of 2011 – 2013 to determine the hourly peak demand for 2014. The peak demand is then forecasted with the growth rate that underlies the low-, medium-, and high demand scenario.

The peak energy supply (for all of the above supply scenarios) is calculated by multiplying the electricity generation capacity of those power plants that are base load capable with a parameter that reflects the supply security and availability of the electricity generation capacity. The data we use applies an in-feed supply security of 99% as a critical benchmark.[14]

Due to lack of information regarding the particular power plants and electricity networks, we are unable to account for required system reserves, revisions, and planned and unplanned outages and have to rely upon data from Germany.[15] Since for the purpose of this analysis the annual peak demand and peak supply is essential and only lasts for a short moment, we only consider the unplanned outages that cannot be time shifted beyond a period of 12 hours.[16] Based on historic supply statistics on these immediate unplanned outages in Germany we obtained parameters for expected base load supply.

Our data set does not distinguish between lignite and coal power plants. We selected the value for lignite since in the Balkans a lot of lignite is available.

Oil/gas is presumed not to be base load capable because of practices of short term supply contracts and unpredictable policy developments that may endanger the supply security with gas.

The data for wind and solar power exhibit low values because these technologies are not base load capable.

Hydropower is regarded to only have a limited base load capacity. Despite significant historic variability in the hydropower electricity generation in the Balkans, it is evident that hydropower plants were able to produce electricity in a stable manner. We therefore do not follow the German report (prescribing 25%)[17] but use 40%.[18]

---

14 Bericht der deutschen Uebertragungsnetzbetreiber zur Leistungsbilanz 2013 nach EnWG §12 Abs. 4 und 5, 30.09.2013, available at http://www.bmwi.de/BMWi/Redaktion/PDF/J-L/leistungsbilanzbericht-2013,property=pdf,bereich=bmwi2012,sprache=de,rwb=true.pdf

15 We thereby follow Bericht der deutschen Uebertragungsnetzbetreiber zur Leistungsbilanz 2013 nach EnWG §12 Abs. 4 und 5, 30.09.2013, available at http://www.bmwi.de/BMWi/Redaktion/PDF/J-L/leistungsbilanzbericht-2013,property=pdf,bereich=bmwi2012,sprache=de,rwb=true.pdf

16 We thereby follow Bericht der deutschen Uebertragungsnetzbetreiber zur Leistungsbilanz 2013 nach EnWG §12 Abs. 4 und 5, 30.09.2013, available at http://www.bmwi.de/BMWi/Redaktion/PDF/J-L/leistungsbilanzbericht-2013,property=pdf,bereich=bmwi2012,sprache=de,rwb=true.pdf

17 http://www.bmwi.de/BMWi/Redaktion/PDF/J-L/leistungsbilanzbericht-2013,property=pdf,bereich=bmwi2012,sprache=de,rwb=true.pdf

18 We calculated the regional average of hydropower generation capacity (excluding pump storage plants) by dividing total hydro power supply 2014 by total installed hydropower capacity (excluding pump storage plants) multiplied by 24 (hours) and 365 (days) = 7297GWh / 25447GWh ≈ 40%

The net long/short position of peak hourly demand and supply for Kosovo is calculated by subtracting high, medium and low hourly demand from each of the peak electricity supply scenarios.

Type	Planned Availability
Lignite	93,5%
Coal	94%
Gas/Oil	0%
Biomass	65%
Wind	1%
Photovoltaic	0%
Hydropower	40% (instead of 25%)
Pump storage	80%

Table 3 - Estimated power plant planned availability per type

2.2.2 Kosovo's export analysis

The regional analysis examines export opportunities for electricity produced in the scenario countries. We thus compare the possible long position of Kosovo against the possible long/short positions of its trading partners.

The examined trading partners will be 1) in the Western Balkan region (i.e. the case study countries), 2) regional (i.e. countries adjacent to the case study countries) and supra-regional, i.e. other EU Member States (3) and in the EU, Ukraine and Turkey (4). In order to estimate the import potential of the recipient countries the long/short positions of these countries must be determined.

The following countries have been included in the export analysis:

#	Group	Countries included
1	**Western Balkans**	Albania*, Bosnia and Herzegovina*, Macedonia*, Montenegro*, Serbia*
2	**Region**	Group 'Western Balkans' and countries adjacent to the case study countries: Bulgaria, Croatia, Greece, Hungary, Italy, Romania, Slovenia
3	**Western Balkans and EU**	Group 'Western Balkans' and the EU-28 countries
4	**Western Balkan and EU incl. Ukraine and Turkey**	Group 'Western Balkans and EU' and Ukraine and Turkey*

*: Trading partners with different scenarios in this study

Table 4 – Export analysis' groups for Kosovo

Data for the case study countries is based upon the net long and net short positions in the respective country analysis contained in this report. Data has been obtained from a

Study of the European Commission[19] the Turkish Electrical Energy 10-Year Generation Capacity Projection (2009 – 2018)[20] and the IEA and the Energy Strategy of Ukraine.[21] Since the data in the EU report is based on PRIMES that models on the basis of 5 year intervals, we connected the interim years by means of linear approximation.

Given that any forecasting inherently involves uncertainty we need to consider the range of possible outcomes – both at the supply side of Kosovo and its potential customers (group 1 to 4).

In order to reflect the range of possible import and export demand of the trading partners included in the respective analysis, we examine the lowest and the highest values for the respective years. In terms of the country analysis contained in this report we take the net long/short position of the 'current supply' (scenario 1) and 'high demand growth scenario' as a low estimate and the supply scenario 3 and low demand growth scenario as an estimate for the high import/export value. For the EU and Ukraine we included one scenario each. For Turkey we included a high and low electricity demand scenario.

This approach enables us to identify possible trading partners in the various groups that would be in demand of the electricity produced by Kosovo. The analysis also offers an overview over the range of possible outcomes and hence allows decision makers to gain insights into the 'riskiness' of investments in the electricity sector. Hence this analysis enables an assessment of the potential risk that investments turn into 'stranded assets'.

Given that electricity investments are generally regarded as long term investments we have selected three evaluation points at the beginning (2014), in the middle (2019) and at the end (2024) of the period under examination to compare Kosovo's import/export capabilities with those of its trading partners.

2.2.3 Kosovo's energy mix

This section will present the evolution of the energy mix in Kosovo based on the electricity supply scenarios.

2.3 Data description

We obtained historic (2007 – 2012) production (total production) and consumption data (consumption total) for Kosovo from the Statement of Security of Supply for Kosovo [KO-01] p.10, Figure 3.6 for generation and figure 3.7 for demand. Data for 2013 was not available (yet). Therefore, we do not consider this year.

19 EU Commission, EU Energy, Transport and GHG Emissions Trends to 2050, Reference Scenario 2013, Appendix 2, p. 85 ff.

20 Turkish electricity Transmission Corporation, Turkish Electrical Energy 10-Year Generation Capacity Projection (2009 – 2018), 2009, Energy Demand Balance 2009-2018, (Case I-A) High Demand – Scenario 1, p. 44 and Project Generation Capacity and Energy Demand Balance 2009-2018 (Case II-A), Low Demand – Scenario 1. Approximation from 2018 onwards based on -9684,6x + 82780 (high demand) and -7259,3x + 77896, low demand (year 2009 represents 1)

21 IEA, Key World Energy Statistics, 2012, p. 27 and Energy Strategy of Ukraine for the period through 2035, p. 24, Annex 2. Since only values for 2012 and 2035 were available, values in between have been approximated linear

Production forecasts for the period 2014 – 2022 for the various power plants were obtained from the Statement of Security of Supply for Kosovo [KO-01] particularly from p. 19, table 5.6. Missing data for 2023 and 2024 was projected based on 2022.

For the TPP New Kosova we found several references to when the plant should become operational. The Statement of Security of Supply [KO-01] p.19 cites 2018, while the Transmission Development Plan 2014-2023 [KO-02] p. 37 mentions that it would not be earlier than 2019. According to the information from CEE Bankwatch, also 2019 may be optimistic since the EIA process is not completed yet and the tender for the strategic investor is still to be concluded.

According to the Transmission Development Plan 2014-2023 [KO-02] p. 37, the HPP Zhuri is expected to become operational in 2019, while the Statement of Security of Supply [KO-01] expects 2017. However, according to the Energy Community[22] there are currently no concrete investment plans. For this reason, this plant is considered level 3.

Information regarding the wind farm Zatric was taken directly from the investor[23] and the KOSTT[24]. The wind farm Budakova has a projected annual production ranging from 89 GWh to 133 GWh, depending on turbine type[25]. We took 111 GWh as an average estimate. Information on timing is provided by KOSTT[26].

For the wind farm Kitka, with a projected capacity of 30 MW, no expected annual electricity generation was available. We therefore assumed that the wind farm is level 3, and estimated the annual production to be 2/3rd of the output of Budakova. The wind farm is planned to be operational by 2016[27].

Small hydropower plants are mentioned in the Long term energy balance of the Republic of Kosovo [KO-03] and the Statement of Security of Supply for Kosovo [KO-01]. The conservative scenario in the first source, p. 21, table 19 ff. indicate that there are 36MW of small hydropower capacity installed in 2015, which seems not to be realistic[28]. Therefore, we use the conservative scenario and start in 2016, considering 22,9 MW as

22 http://www.energy-community.org/portal/page/portal/ENC_HOME/AREAS_OF_WORK/Implementation/Kosovo/Renewable_Energy

23 Investor's article, March 8, 2013, available at: http://www.nek.ch/windenergie-geothermie-e/publikationen/dokumente/2013.03.08_EIEE_Kosovo_080313.pdf Investor's news update, 13.06.2014, available at: http://www.nek.ch/windenergie-geothermie-d/news/meldungen/20140613_Landnutzungsrechte_Zatric.php?navanchor

24 KOSTT presentation, December 2013, p. 14, available at: http://www.irena.org/documentdownloads/events/2013/december/9_neziri.pdf

25 Investor's article, March 8, 2013, available at: http://www.nek.ch/windenergie-geothermie-e/publikationen/dokumente/2013.03.08_EIEE_Kosovo_080313.pdf

26 KOSTT presentation, December 2013, p. 14, available at: http://www.irena.org/documentdownloads/events/2013/december/9_neziri.pdf

27 Irena presentation, p. 14, available at: http://www.irena.org/documentdownloads/events/2013/december/9_neziri.pdf

28 The only information available was a SHPP of 22,9 MW from an article by the project sponsor: http://www.kelag.at/files/pageflip/nachhaltigkeit_2014/files/assets/seo/page6.html

level 2, the rest as level 3. It is still regarded to be ambitious by CEE Bankwatch, hence this is why the 2022 figure that is prolonged to 2023 and 2024 is not increased.

Solar and biomass information have been taken from the Long term energy balance of the Republic of Kosovo [KO-03] p 21 ff. which presents a conservative growth scenario.

We obtained the projected consumption demand for all three scenarios from the Statement of Security of Supply for Kosovo [KO-01] p. 17.

As described above, data for the hourly peak demand (hourly load values) during the period 2007 – 2013 is taken from the Statement of Security of Supply for Kosovo [KO-01] p. 17. We obtain the data for the peak hourly demand for the years 2014 – 2022 from the Statement of Security of Supply for Kosovo [KO-01] p. 17 and forecast the remaining years with the growth rate that underlies the low-, medium-, and high demand scenario.

For the export analysis data has been obtained from several sources. For the case study countries data was obtained from this report. For the EU it has been taken from the EU Energy, Transport and GHG Emissions Trends to 2050, from the Reference Scenario 2013, Appendix 2, p. 85 ff.. The data for Turkey is taken from the Turkish electricity Transmission Corporation's report on the Turkish Electrical Energy 10-Year Generation Capacity Projection (2009 – 2018), 2009. In particular data is taken from the Energy Demand Balance 2009 – 2018, (Case I-A) High Demand – Scenario 1, p. 44 and Project Generation Capacity and Energy Demand Balance 2009 – 2018 (Case II-A), Low Demand – Scenario 1. It is adapted to suit our needs by means of an approximation from 2018 onwards based on -9684,6x + 82780 (high demand) and -7259,3x + 77896, low demand (year 2009 represents 1). Data for Ukraine is taken from the IEA's Key World Energy Statistics, 2012, p. 27 and from the Energy Strategy of Ukraine for the period through 2035, p. 24, Annex 2. Because only values for 2012 and 2035 were available, they have been approximated in a linear fashion.

2.4 Analysis

This section of the report describes relevant data observations and findings. First, the supply and demand analysis is presented (subsection 1). This section also examines the net long and short positions as well as peak electricity demand and supply. Subsection 2 presents the export analysis and subsection 3 presents the energy mix.

2.4.1 Supply and Demand

The figures below present the supply and demand patterns for Kosovo, showing the historic and future supply patterns (for existing capacity, likely future capacity and planned future capacity) in relation to each of the growth scenarios (low, medium and high growth).

Regarding the historical (2007 – 2012) supply and demand pattern, it can be seen that the generation of power is almost sufficient to cover consumption. A few hundred GWh only had to be imported. Furthermore, it is apparent that the power generation and consumption from 2007 to 2012 have both increased by around 20%.

All figures below show a significant gap in 2018 resulting from the planned decommissioning of TPP Kosova A. The TPP New Kosova will not be operational before 2019. Therefore, if Kosovo A is decommissioned in 2018, Kosovo will lose around one third of its production capacity, which will result in a strong short position in all scenarios.

Kosovo will either need to import energy in all scenarios listed below in 2018 or decommission Kosovo A at a later point in time.

In the low growth electricity consumption scenario Kosovo will remain dependent on energy imports after 2018 in the case of the current capacity scenario (supply scenario 1). This is attributable to the decommissioning of Kosovo A. In supply scenario 3, the new TPP New Kosova and the hydropower plant Zhuri would overcompensate the decommissioning of Kosovo A. These developments together with the realization of the planned renewables, would result in a production increase of more than 20% above the estimated low growth scenario.

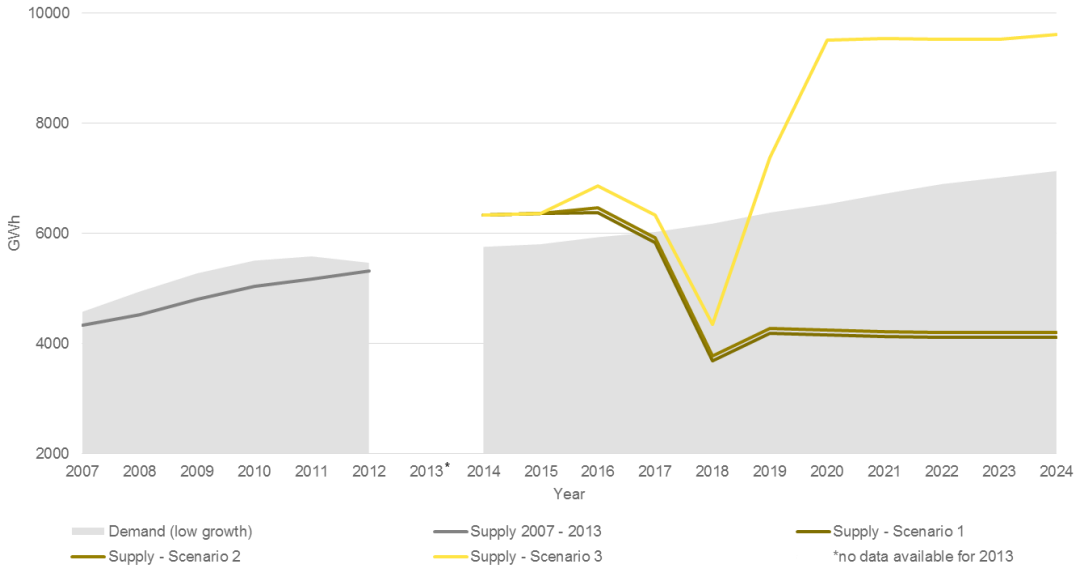

Figure 1 - Kosovo – Supply/Demand – Low Growth

In the case of medium consumption growth scenario, Kosovo needs to produce around 700 GWh of additional electricity by 2024 in order to fulfil the additional needs compared to the low consumption growth scenario. As a result, in supply scenario 1, Kosovo is only able to cover roughly half of its electricity demand in 2024. Only in supply scenario 3 the demand can be covered completely, except the temporal gap in 2018 which results from the decommissioning of Kosova A.

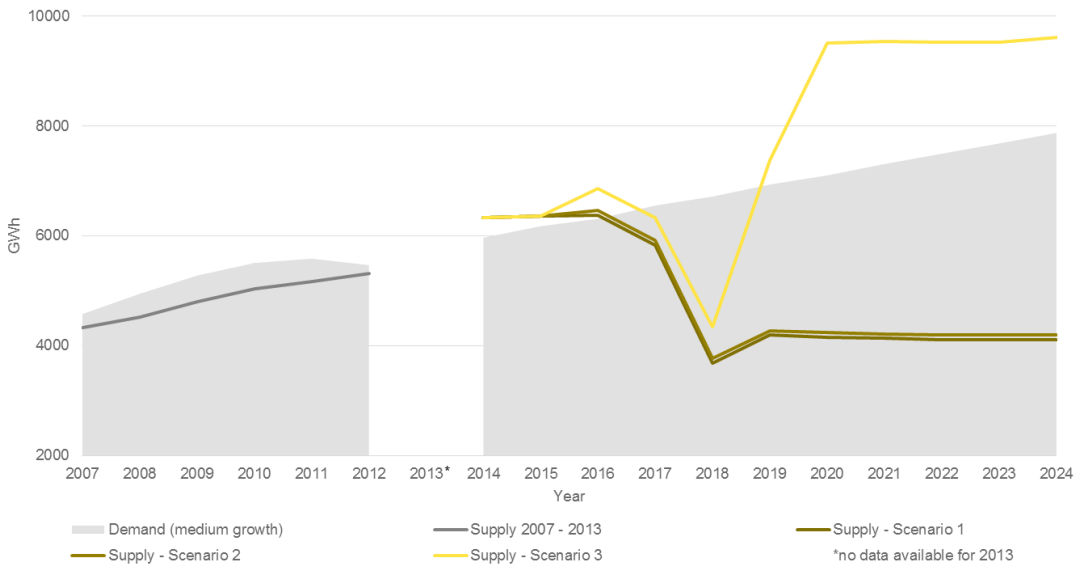

Figure 2 - Kosovo – Supply/Demand – Medium Growth

The figure presenting the high electricity consumption demand in Kosovo shows an expected demand of more than 8500 GWh in 2024, which can only be covered in supply scenario 3 (or equivalent). Furthermore it can be seen, that it is necessary to closely investigate further development from 2024 onwards, since the generation capacity may reach its limits after 2024. Supply scenario 1 does not satisfy the electricity demand in the future: more than 50% of the required electricity needs to be imported in case of the high growth scenario. This figure also shows that even in the case of high domestic electricity consumption growth, the realization of all of the future planned capacity expansions (or equivalent measures) would not result in the creation of a substantial export capacity.

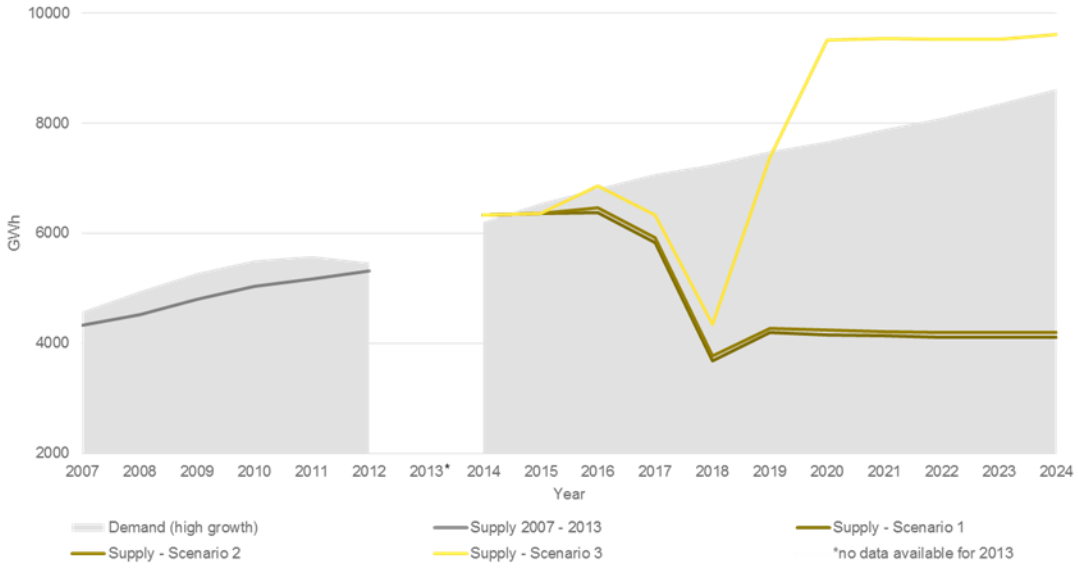

Figure 3 - Kosovo – Supply/Demand – High Growth

2.4.1.1 Net Position

After examining the general supply and demand patterns, we examine the net long and net short position of Kosovo. For each of the electricity consumption growth scenarios (low, medium and high growth) we examine the net positions in relation to the energy supply changes (existing capacity, likely future capacity and planned future capacity).

In the past, Kosovo enjoyed a more or less a balanced position. It was always in a small short position but is to be expected to turn into a small long position in the near future.

In case of the low consumption growth scenario it is apparent that the electricity generation capacity declines in 2018 and therefore turn the net long position into a short position of around 3 TWh in 2024. This is caused by the phase out of the Kosovo A power plant. Again, we observe that realizing all planned projects (or equivalent electricity generation capacity extensions) (supply scenario 3) entails that Kosovo would get into a long position and thus be able to export more than 2000 GWh per year.

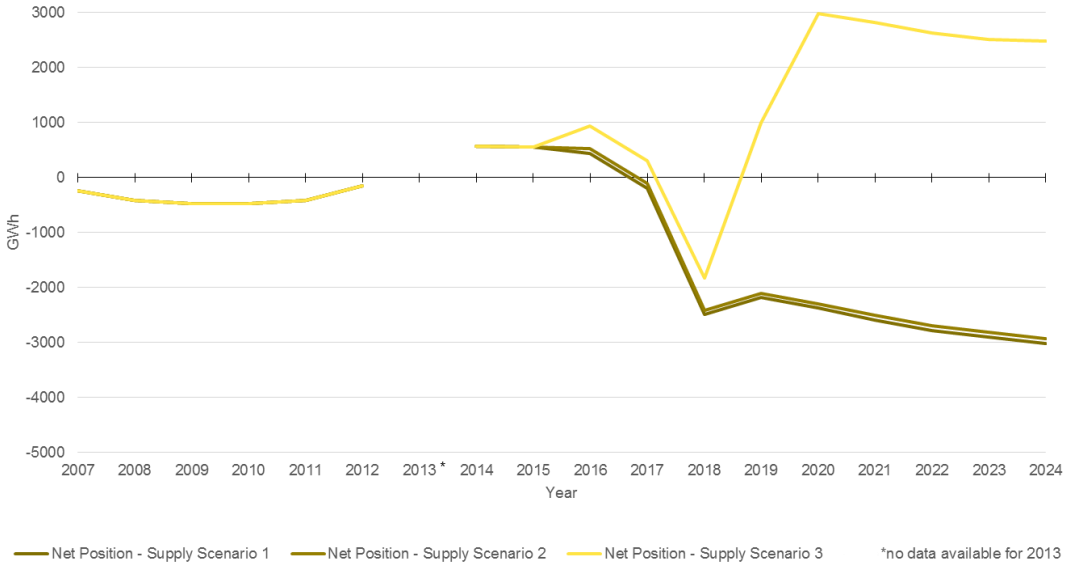

Figure 4 - Kosovo – Net Position – Low Growth

In the case of the medium electricity consumption growth scenario, the situation is nearly identical to the low growth scenario, but Kosovo will fall as of 2017 into a short position that will deteriorate to more than 3500 GWh in 2024 (assuming that no new generation capacity is going into operation (supply level 1)). Therefore, as supply scenario 3 shows, at least some of the planned future capacity extensions (or equivalent projects) must be realized to secure self-sufficiency during the period of examination. The realisation of all currently planned power plants will result in an export capability of around 1800 GWh in 2024.

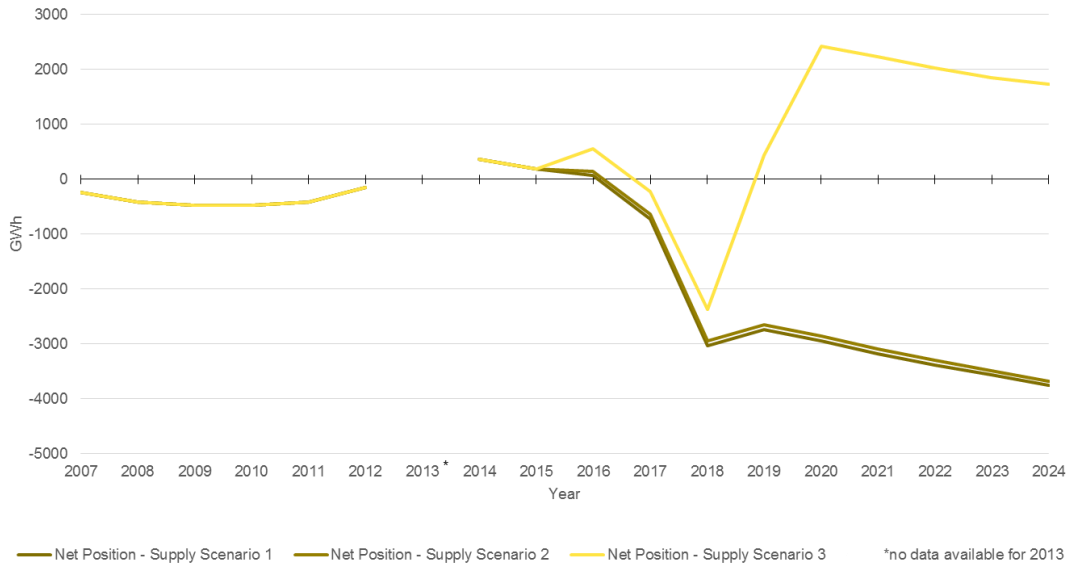

Figure 5 - Kosovo – Net Position – Medium Growth

The high electricity consumption growth scenario shows similar but more severe findings to those described in the low and medium growth scenario above. Moreover, it indicates that the implementation of all projects (or equivalent measures) may be required in order to maintain self-sufficiency, assuming a high electricity consumption growth. In supply level 1, the short position will be more than 4000 GWh, less than half of the demand in 2024. Even in supply level 3, the long position will drop from nearly 2000 GWh in 2020 to less than 1000 GWh in 2024.

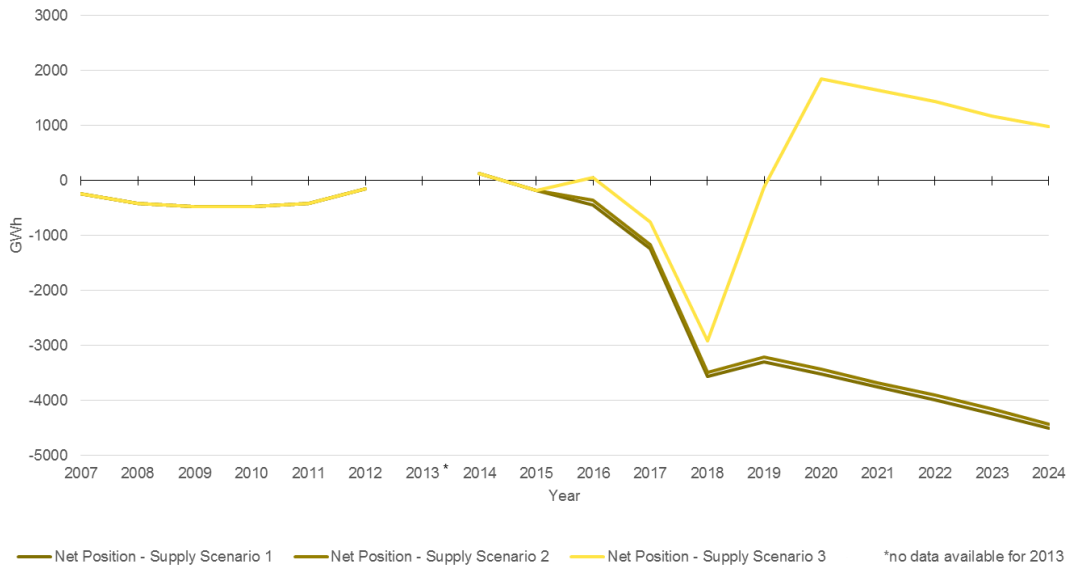

Figure 6 - Kosovo – Net Position – High Growth

2.4.2 Peak supply / peak demand balance

This balance examines the actual feed-in of electricity and the demand situation in Kosovo when the electricity feed-in reserves are at their presumed minimum and the

electricity demand is at its presumed maximum. Subject to the caveat relating to the robustness of the underlying data, this enables the identification of critical electricity supply situations. This method should thus be interpreted with caution and viewed as an indication only.

Based on the available information, however, the figure below presents a difficult situation for Kosovo in relation to supply scenario 1: Kosovo is unable to meet its peak demand, especially not once Kosova A is decommissioned (expected for 2018). Also in supply scenario 3, Kosovo cannot satisfy peak demand situations, although it does relatively better than other countries in the region.

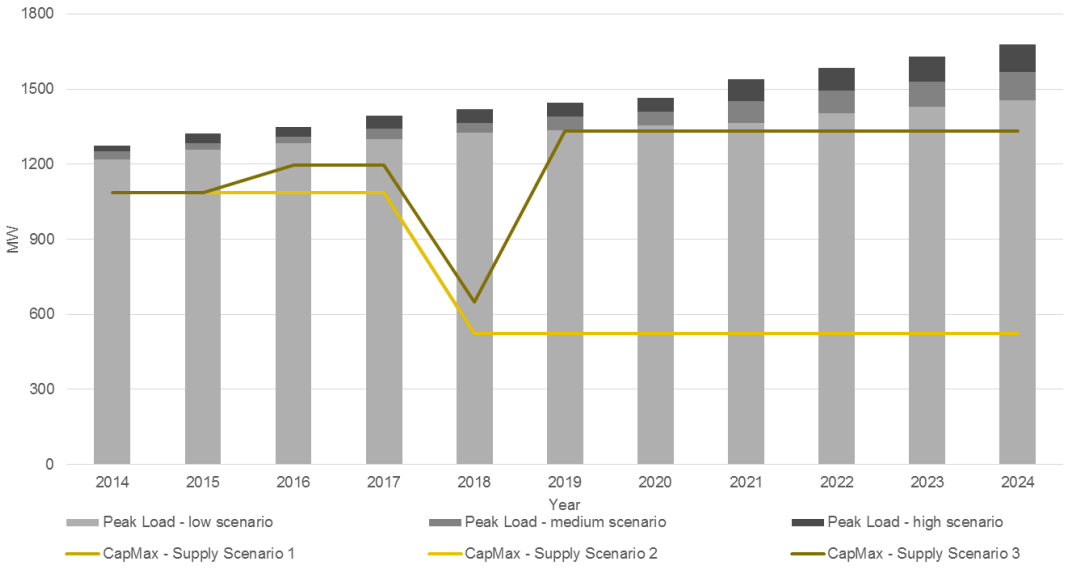

Figure 7 - Kosovo – Peak Supply/Demand Balance

2.4.3 Export analysis

This section of the report examines where energy produced in Kosovo could be exported. Potential trading partners can be found in the Western Balkans (i.e. in the other case study countries) (group 1), in the countries surrounding the Western Balkans (i.e. in the region) (group 2), or supra-regionally in the EU (group 3) or in the EU, Ukraine and Turkey (group 4). The export potential of Kosovo is thus compared to the net position in these scenarios.

Reflecting the range of outcomes in the supply and demand scenarios, the import/export capabilities of Kosovo and its trading partners are presented in the form of a range in the net exports, showing a minimum and a maximum value. Reflecting the underlying assumptions of the scenarios the range of possible outcomes widens over time.

In the figure below the import/export potential of Kosovo is shown in gold. Positive values denote Kosovo's export potential, while negative values denote its import needs. Positive values for the trading partners denote their demand for exports (short position) and negative numbers denote their export supply (long position). In the figure below export possibilities exist if there is a positive net position of Kosovo and positive export demand of the trading partners.

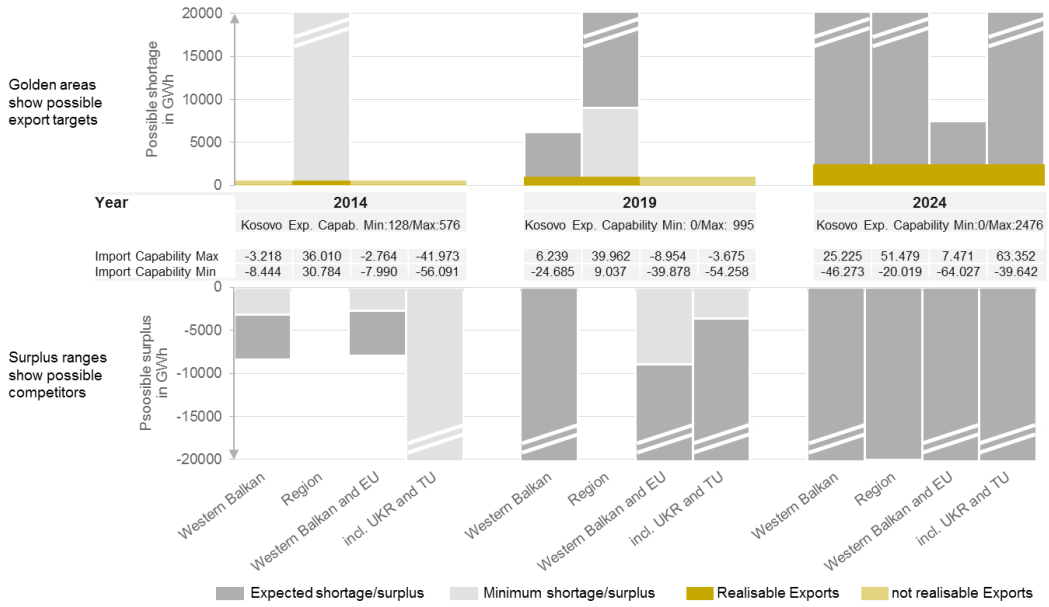

Figure 8 - Kosovo - Export Analysis

In 2014 Kosovo is in a slight short or in a long position. The long position would amount to around 10% of domestic demand in 2014 (low consumption growth scenario). The case study countries (group 1) were in a net long position entailing that they could export electricity. Examining the Western Balkans and its immediate neighbours jointly (group 2), it is noteworthy that they are in a net short position requiring about 28000 to 35000 GWh of electricity. Widening the framework of reference to the Western Balkans and the EU (group 3) shows that the region is in a slight long position. Including also Ukraine and Turkey (group 4) shows that there is a significant amount of excess supply in 2014.

In 2019 Kosovo is in a small net positive or substantial net short position. The long position would amount to around 15% of domestic demand in 2019 (low consumption growth scenario). The case study countries (group 1) would be in a slight long or in a short position entailing that there might be a small export market for Kosovo electricity. However, given the range of the net position, it appears more likely that the case study countries will be striving to export electricity. Again the Western Balkans and its immediate neighbours considered jointly (group 2) are in a significant net short position and thus be importing electricity. Widening the framework of reference to the Western Balkans and the EU (group 3) shows, however, that there is no excess demand expected in 2019. Including also Ukraine and Turkey (group 4) into the analysis shows that there is a significant excess supply in 2019.

Also in 2024 Kosovo is in a net short or long position and might be able to export up to 35% of domestic demand in 2024 (low consumption growth scenario). The case study countries (group 1) will either be in a long or in a short position entailing that there might potentially be an export market for Kosovo's electricity. However, given the range of the net position, it appears more likely that the case study countries will be striving to export electricity. Again the Western Balkans and its immediate neighbours considered jointly (group 2) are in a significant net short position or in a net long position. It is thus unclear if they would be importers or exporters of electricity. Widening the framework of reference to the Western Balkans and the EU (group 3) shows, however, that it is unlikely that there will be a lot of excess demand in 2024. Including also Ukraine and Turkey (group 4) into the analysis, the figure shows the possibility of a significant excess

demand (but also a long position) in 2024. The maximum value for export demand is strongly driven by the Turkish electricity demand figures that are based on an exponential forecasting function. If Turkey is considered as a potential market, the transport capacities (costs) need to be observed.

For the purpose of evaluating export potentials and stranded assets a number of relationships need to be described. Transporting electricity is costly: in particular transfer fees (within countries) and transmission fees (between countries) must be paid. Also electricity transportation requires infrastructure. While this report does not extend to these dimensions, we assume that the local electricity market in the Western Balkans and the surrounding states are the most important indicator if there is demand for Kosovo electricity. That the EU is in a long position indicates that there will at least be competition which can be expected to put pressure on the electricity price.

The above has shown that Kosovo is predominantly in a short position but may turn into an exporting country if all capacity extensions under supply scenario 3 (or equivalent) are realized. Even though Kosovo's total supply of exported electricity is relatively small, it represents a meaningful amount in terms of domestic electricity demand. The country may therefore grow quickly dependent on its export markets. Given that future electricity markets are potentially long or might be supplied by other competitors, future electricity prices may be lower and hence give rise to stranded assets.

2.4.4 Energy Mix

The figures below present the changes in Kosovo's energy mix. No data is available for 2013. The data from 2007 – 2012 present the energy mix on the basis of actual production figures. By contrast, the data from 2014 – 2024 show the energy mix based on the maximum likely electricity generation for fuel based power plants, while we assume a normal year for hydropower (conservative approach).

Based on the underlying supply scenarios, the energy mix in Kosovo is not changing significantly during the period of investigation. Fossil fuel power plants generated nearly all electricity; hydropower does only cover 2% to 3% of the annual generation.

Supply scenario 1 shows that coal power plants will decrease its production significantly in 2018. The production of energy from hydropower plants will not change significantly.

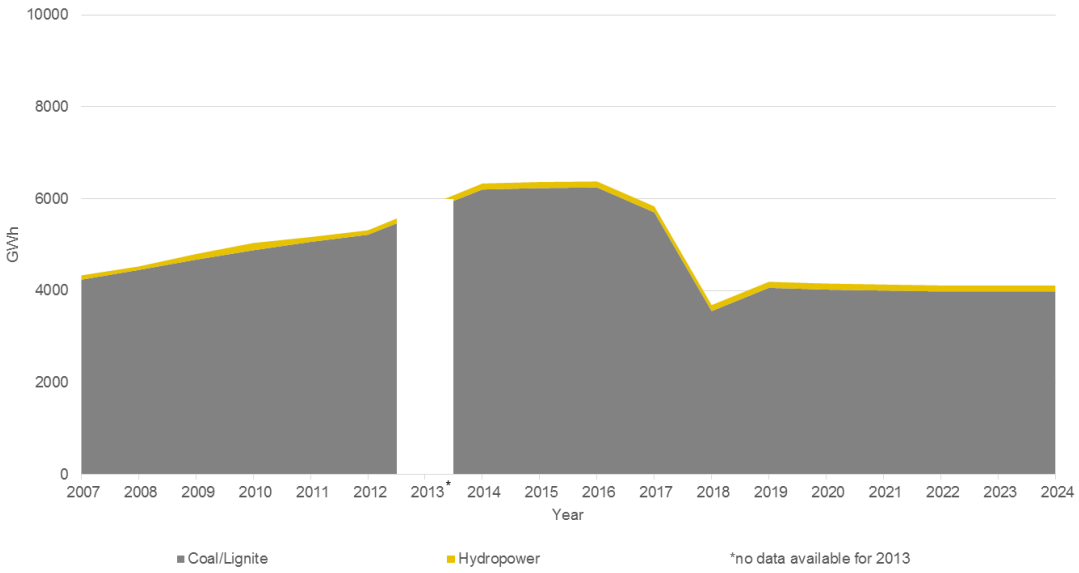

Figure 9 - Kosovo– Energy Mix Supply Scenario 1

Supply scenario 1 differs only marginally from supply scenario 2. Hydro power generation in supply scenario 2 is around 23 GWh higher. Since the changes are negligible, we do not reproduce the figure.

If all projects are realized until 2024, electricity generation capacity will increase significantly from around 6000 GWh in 2014 to more than 9500 GWh in 2024. The share of coal/lignite power will drop to 86%, while the share of hydropower will increase to more than 10%. Wind will increase its share from 0% to 3% in 2024, while biomass' share will be negligible in 2024.

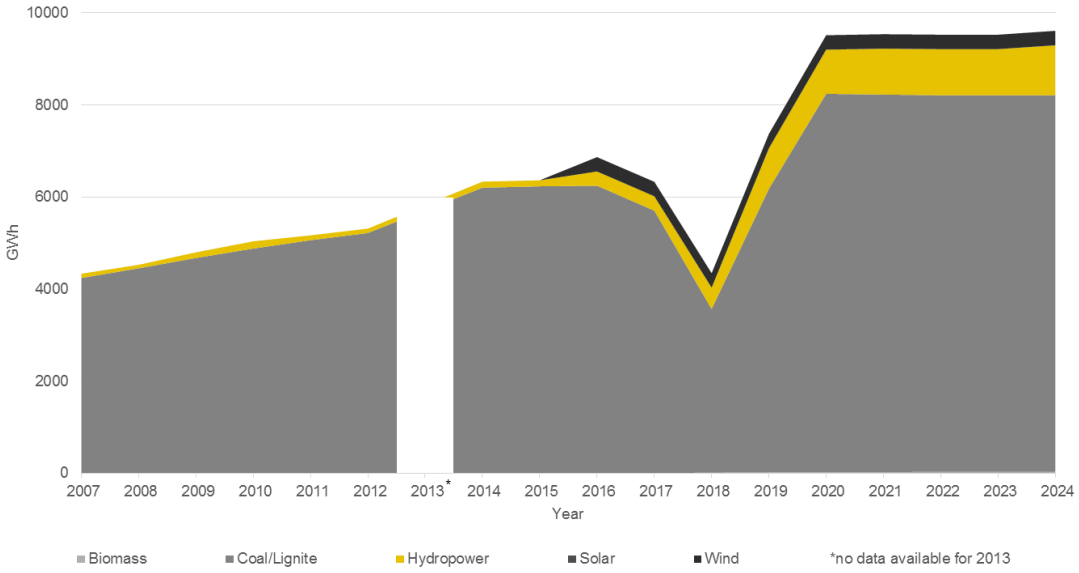

Figure 10 - Kosovo– Energy Mix Supply Scenario 3

The analysis above also offers insights into the question under which supply scenarios the country would be able to comply with its obligations under the Energy Community Treaty regarding the implementation of the EU Renewable Energy Directive

2009/28/EC.[29] Kosovo has assumed a binding renewable energy sources target of 25%.[30] This target is computed as follows:

$$RES\ Target\ Share\ = \frac{RES\ Electricity + RES\ Heating - Cooling + RES\ Transport}{Gross\ Final\ Energy\ Consumption}$$

In Kosovo's National Renewable Energy Action Plan, p. 15, it is stated that in 2020 the country has a RES electricity target of 25.64%.[31]

The figures above show that Kosovo is unlikely to meet these objectives under any of the supply scenarios. In supply scenario 1 electricity production is strongly based on coal/lignite, amounting to around 97% in 2020. In Supply scenario 2 the situation improves only marginally as the renewable energy share increases to 5% hydropower and coal/lignite retains 95%. In supply scenario 3 the renewable share increases to around 13.5% (10% hydro, 3% wind and the rest biomass and solar) while coal/lignite still accounts for around 86.5%. Kosovo does thus not seem set to realize its RES target for electricity unless it makes additional efforts.

2.5 Concluding remarks

This country report analyses the long-term electricity supply and demand pattern of Kosovo and examines its electricity export prospects from a stranded assets perspective.

The above analysis shows that in the course of the next decade Kosovo will reach a turning point. Depending on the decisions to be made, Kosovo can turn into a strong net electricity importer or turn from balanced country into a net exporter. It is noteworthy that the currently envisaged electricity generation capacity is barely enough to cover the demand increases in the low growth scenario and supply scenarios 1 and 2. An additional 1100 GWh are needed during the period 2014 – 2024 to satisfy demand in the case of the low growth scenario, or a significant demand decrease is required; while supply level 3 only envisages an increase of around 1200 GWh for renewables, if all currently envisaged projects would be realised.

The amount of electricity that can be exported could reach up to 2.500 GWh in 2024 in case of supply scenario 3 and low demand growth, constituting around 35% of domestic demand in 2024. In case of high demand growth the export potential with ca. 1.000 GWh amounts to around 11% of domestic demand in 2024. In other supply scenarios, however, Kosovo is a net importer.

Supply scenario 3 (or equivalent capacity extensions) would give rise to a substantial dependency on the export market. The export analysis shows that the case study

29 The RES Directive transposes the European target of a 20% renewable energy sources (RES) in gross final energy demand by 2020

30 http://www.irena.org/DocumentDownloads/events/2013/December/Background_Paper-A.pdf

31 Ministarstvo Ekonomskog Razvoja, National Renewable Energy Action Plan (NREAP) 2011 - 2020 (2013) p. 15, available at https://www.energy-community.org/portal/page/portal/ENC_HOME/DOCS/2570177/NREAP_18.11.2013-_engl.pdf

countries are likely to compete for exporting electricity to the neighbouring countries. Competition may in particular come from EU Member States, namely Bulgaria and Romania, and possibly in the near future Ukraine and Turkey. A high dependency on the export market therefore exposes the country to create the risk of stranded assets. From this point of view, a make-or-buy decision should also be investigated prior to new investments.

Concerning the peak load demand and supply analysis it bears mentioning that Kosovo is expected to remain vulnerable, particularly in supply scenario 1. In supply scenario 3 the situation is less severe, however, the country will remain unable to meet its peak demand.

The report shows a number of issues related to electricity supply. Kosovo is strongly depending on fossil energy. Depending on the realisation of the planned power plants, Kosovo's fossil fuel dependence may increase. The country also is strongly depending on a few main power plants. This may lead to electricity supply problems once plants are decommissioned, as is the case in 2018 with Kosova A. The effects of a more diversified electricity mix and less concentrated electricity production should be investigated.

It is not only the supply side that influences the long or short position of Kosovo, but also demand side. A demand side issue that is not examined in the case study but should be mentioned are the transmission and distribution losses. In Kosovo the overall loss in transmission and distribution of more than 35%[32]. An increased performance of the network will have a major impact on the security of supply as well as on the net position. It needs to be observed that losses may also be attributable to electricity theft. Moreover, energy efficiency measures may lead to electricity savings and help to improve the country's net position.

Based on the findings above we expect that the Kosovo will keep its position as a balanced country. This may change if the new TPP New Kosova enters operation. However this would bring other challenges such as potential failure to meet renewable energy targets and over-reliance on one source of fuel. Additional efforts will be needed to change this and meet Kosovo's obligatory Energy Community
renewable energy target of 25% by 2020.

This report shows that the country does require good regional ties in the area of energy policy. The current infrastructure should therefore be examined from this perspective. Importantly this report shows that the country has strong electricity export ambitions that create the danger of stranded assets if the domestic electricity expansion decisions are taken without taking due account of developments in other countries in the Western Balkans and beyond. Decisions to buy or produce electricity should thus be taken in a strategic fashion that also takes due account of energy security considerations. It can thus be concluded that integration and collaboration in the area of energy policy in the Western Balkans is vital for Kosovo.

32 110 GWh in transmission and 1704 GWh in distribution in 2013, see Energy Community Secretariat, Annual Implementation Report, August 2014, p. 73, available at: https://www.energy-community.org/pls/portal/docs/3356393.PDF

Sources

[KO-01] Statement of Security of Supply for Kosovo (Electricity, Natural Gas and Oil), July 2013, available at: http://www.energy-community.org/portal/page/portal/ENC_HOME/DOCS/2422181/Statement_of_Security_of_Supply_for_Kosovo_%28Electricity_Gas__Oil%29_Final_Eng.pdf

[KO-02] Transmission Development Plan 2014-2023, KOSTT, available at: http://www.kostt.com/website/images/stories/dokumente/publikime/Transmission_Development_Plan_2014-2023.pdf

[KO-03] Long term energy balance of the Republic of Kosovo 2013-2022 (2012), Ministry of Economic Development, December 2012, available at: http://mzhe.rks-gov.net/repository/docs/Balanca_afatagjate_2013_-2022_-_eng_finall.pdf

Annex I – Generation Capacities (1/3)

Country	Type	Level	Plant	Installed Capacity	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Albania	Hydropower		1 Komani 600 MW	600	2060	2060	2060	2060	2060	2060	2060	2060	2060	2060	2060
Albania	Hydropower		1 Fierza 500 MW	500	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Albania	Hydropower		1 Vau I Dejes 250 MW	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Albania	Hydropower		1 Ashta 1 + 2 – 53 MW	53	240	240	240	240	240	240	240	240	240	240	240
Albania	Hydropower		1 Ulez 25 MW – sales to KESH	25	81,2	81,2	81,2	81,2	81,2	81,2	81,2	81,2	81,2	81,2	81,2
Albania	Hydropower		1 Shkopet 24 MW – sales to KESH	24	63,3	63,3	63,3	63,3	63,3	63,3	63,3	63,3	63,3	63,3	63,3
Albania	Hydropower		1 Bistrica 1 – 24 MW – sales to KESH	24	60,2	60,2	60,2	60,2	60,2	60,2	60,2	60,2	60,2	60,2	60,2
Albania	Hydropower		1 Bistrica 2 - 5 MW – sales to KESH	5	23	23	23	23	23	23	23	23	23	23	23
Albania	Hydropower		1 Lana Bregas 5 MW – sales to KESH	5	33,9	33,9	33,9	33,9	33,9	33,9	33,9	33,9	33,9	33,9	33,9
Albania	Hydropower		1 Small hydropower plants under concession (see al	291,67	930	930	930	930	930	930	930	930	930	930	930
Albania	Gas		2 Vlora gas/oil 97 MW	97	0	0	679	679	679	679	679	679	679	679	679
Albania	Hydropower		3 Kalivaci 93 MW (Vjosa 1)	93	0	0	0	0	0	0	350	350	350	350	350
Albania	Hydropower		2 Devoll – Moglice – 172 MW	172	0	0	0	0	0	475	475	475	475	475	475
Albania	Hydropower		2 Devolli 1 (Banja) 70 MW	70	0	0	0	254	254	254	254	254	254	254	254
Albania	Hydropower		2 Fani i Madh and Fani i Vogel (Gojan, FHP2 – Gjegja	110,56	0	0	0	367,6	367,6	367,6	367,6	367,6	367,6	367,6	367,6
Albania	Hydropower		2 Small hydropower plants under construction 283.2	283,23	0	648	1296	1296	1296	1296	1296	1296	1296	1296	1296
Albania	Hydropower		3 Small hydropower plants expected in draft energy	160,77	0	0	0								
Albania	Wind		4 Shengjin-Kodrat e Rencit in Lezha (108+114 MW)	222	0	0	0	56,25	112,5	168,75	225	281,25	337,5	393,75	450
Albania	Wind		4 Bilisht-Kapshtice Wind Farm (150 MW)	150	0	0	0	41,25	82,5	123,75	165	206,25	247,5	288,75	330
Albania	Wind		4 Karaburun, Vlora (500 MW)	500	0	0	0	171,125	342,25	513,375	684,5	855,625	1026,75	1197,875	1369
Albania	Wind		4 Butrinti-Markat (72 MW)	72	0	0	0	8,125	16,25	24,375	32,5	40,625	48,75	56,875	65
Albania	Wind		4 Gryk ederdhja Shkumbinit – Terpan (145 + 80 MW)	225	0	0	0	60,5	121	181,5	242	302,5	363	423,5	484
Albania	Wind		4 Kryevidh-Kavaja (40 + 150 MW)	190	0	0	0	46	92	138	184	230	276	322	368
Albania	Wind		4 Dajc-Velipoje (75 MW) in 2015	75	0	0	0	0	0	0	0	0	0	0	0
Albania	Wind		4 Barbullush (45 MW)	45	0	0	0	0	0	0	0	0	0	0	0
Albania	Wind		4 Bushat (26 MW)	26	0	0	0	0	0	0	0	0	0	0	0
Albania	Wind		4 Ulcinj (40 MW)	40	0	0	0	0	0	0	0	0	0	0	0
Albania	Hydropower		3 Vjosa1 93 MW	93	0	0	0	0	0	0	0	0	0	0	0
Albania	Hydropower		3 Drini1 48 MW	0	0	0	0	0	0	0	0	0	0	0	0
Albania	Coal/Lignite		3 "New" 300 MW	300	0	0	0	0	0	0	0	0	0	0	0
Albania	Solar		3 Solar Overall	0	0	0	0	0	0	0	0	0	0	0	0
Albania	Wind		3 Overall Wind	0	0	0	0	0	289,0055	315,173	367,508	367,508	367,508	367,508	367,508
Albania	Wind		4 Overall Wind Correction for Level 4	-1545	0	0	0	0	-289,0055	-315,173	-367,508	-367,508	-367,508	-367,508	-367,508
Bosnia and Herzegovina	Hydropower		1 Rama	160	650	650	650	650	650	650	650	650	650	650	650
Bosnia and Herzegovina	Hydropower		1 Capljina	440	200	200	200	200	200	200	200	200	200	200	200
Bosnia and Herzegovina	Hydropower		1 Mostar	72	247	247	247	247	247	247	247	247	247	247	247
Bosnia and Herzegovina	Hydropower		1 Jajce 1	60	232,90	232,90	232,90	232,90	232,90	232,90	232,90	232,90	232,90	232,90	232,90
Bosnia and Herzegovina	Hydropower		1 Jajce 2	30	157	157	157	157	157	157	157	157	157	157	157
Bosnia and Herzegovina	Hydropower		1 Pec-Mlini	30,6	82	82	82	82	82	82	82	82	82	82	82
Bosnia and Herzegovina	Hydropower		1 Jablanica	180	712,00	712,00	712,00	712,00	712,00	712,00	712,00	712,00	712,00	712,00	712,00
Bosnia and Herzegovina	Hydropower		1 Grabovica	114	285,00	285,00	285,00	285,00	285,00	285,00	285,00	285,00	285,00	285,00	285,00
Bosnia and Herzegovina	Hydropower		1 Salakovac	210	405,00	405,00	405,00	405,00	405,00	405,00	405,00	405,00	405,00	405,00	405,00
Bosnia and Herzegovina	Hydropower		1 Trebinje 1	171	393,8	393,8	393,8	393,8	393,8	393,8	393,8	393,8	393,8	393,8	393,8
Bosnia and Herzegovina	Hydropower		1 Dubrovnik	108	647,5	647,5	647,5	647,5	647,5	647,50	647,50	647,50	647,5	647,5	647,5
Bosnia and Herzegovina	Hydropower		1 Visegrad	315	909,2	909,2	909,2	909,2	909,2	909,20	909,20	909,20	909,20	909,20	909,20
Bosnia and Herzegovina	Hydropower		1 Bocac	110	273,9	273,9	273,9	273,9	273,9	273,9	273,9	273,9	273,9	273,9	273,9
Bosnia and Herzegovina	Hydropower		1 Mostarsko Blato	60	167	167	167	167	167	167	167	167	167	167	167
Bosnia and Herzegovina	Coal/Lignite		1 Tuzla G3	100	463	463	463	463	463	0	0	0	0	0	0
Bosnia and Herzegovina	Coal/Lignite		1 Tuzla G4	200	1241	1241	1241	1241	1241	1241	1241	0	0	0	0
Bosnia and Herzegovina	Coal/Lignite		1 Tuzla G5	200	1125	1125	1125	1125	1125	1125	1125	1125	1125	1125	1125
Bosnia and Herzegovina	Coal/Lignite		1 Tuzla G6	215	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Bosnia and Herzegovina	Coal/Lignite		1 Kakanj G5	118	645	645	645	645	645	645	645	645	645	645	0
Bosnia and Herzegovina	Coal/Lignite		1 Kakanj G6	110	632	632	632	632	632	632	632	632	632	632	632
Bosnia and Herzegovina	Coal/Lignite		1 Kakanj G7	230	1487	1487	1487	1487	1487	1487	1487	1487	1487	1487	1487
Bosnia and Herzegovina	Coal/Lignite		1 Gacko	300	1619,7	1619,7	1619,7	1619,7	1619,7	1619,7	1619,7	1619,7	1619,7	1619,7	1619,7
Bosnia and Herzegovina	Coal/Lignite		1 Ugljevik	300	1530	1775	1775	1775	1775	1775	1775	1775	1775	1775	1775
Bosnia and Herzegovina	Hydropower		2 Dub and Ustipraca	17,1	0	0	0	74,4	74,4	74,4	74,4	74,4	74,4	74,4	74,4
Bosnia and Herzegovina	Hydropower		2 Ulog	34,4	0	0	0	0	82,3	82,3	82,3	82,3	82,3	82,3	82,3
Bosnia and Herzegovina	Hydropower		3 Sutjeska mini-hydropower plants	19,15	0	0	0	83,6	83,6	83,6	83,6	83,6	83,6	83,6	83,6
Bosnia and Herzegovina	Hydropower		3 Dabar	159,9	0	0	0	0	0	251,8	251,8	251,8	251,8	251,8	251,8
Bosnia and Herzegovina	Hydropower		3 Ustikolina	65,4	0	0	0	0	0	0	0	236,8	236,8	236,8	236,8
Bosnia and Herzegovina	Hydropower		3 Vranduk	19,6	0	0	0	0	96,4	96,4	96,4	96,4	96,4	96,4	96,4
Bosnia and Herzegovina	Hydropower		3 Janjici	13	0	0	0	0	0	0	68	68	68	68	68
Bosnia and Herzegovina	Hydropower		3 Krusevo and Zeleni Vir	13	0	0	0	0	0	0	0	0	40	40	40
Bosnia and Herzegovina	Hydropower		3 Small hydropower plants Republika Srpska – medi	40	0	26,3	31,56	36,82	42,08	47,34	52,6	63,12	73,64	84,16	94,68
Bosnia and Herzegovina	Hydropower		3 Upper Drina (Foca, Paunci, Buk Bijela, Sutjeska)	558	0	0	0	0	0	0	0	783	783	783	783
Bosnia and Herzegovina	Hydropower		3 Mrsovo	43,8	0	0	0	0	0	0	165,1	165,1	165,1	165,1	165,1
Bosnia and Herzegovina	Coal/Lignite		2 Stanari	300	0	0	1500	2000	2000	2000	2000	2000	2000	2000	2000
Bosnia and Herzegovina	Coal/Lignite		3 Tuzla 7	450	0	0	0	0	0	1823	2604	2604	2604	2604	2604
Bosnia and Herzegovina	Coal/Lignite		3 Kakanj 8	300	0	0	0	0	0	0	0	0	0	1456	1820
Bosnia and Herzegovina	Coal/Lignite		3 Ugljevik III	600	0	0	0	0	0	0	4380	4380	4380	4380	4380
Bosnia and Herzegovina	Coal/Lignite		3 Banovici	300	0	0	0	0	0	2047	2047	2047	2047	2047	2047
Bosnia and Herzegovina	Gas		3 KTG Zenica	373,1	0	0	0	0	2593,2	2593,2	2593,2	2593,2	2593,2	2593,2	2593,2
Bosnia and Herzegovina	Wind		2 Trusina	51	0	0	160	160	160	160	160	160	160	160	160
Bosnia and Herzegovina	Wind		3 Mesihovina	55	0	0	0	0	146	146	146	146	146	146	146
Bosnia and Herzegovina	Wind		3 Podvelezje	48	0	0	62	103	103	103	103	103	103	103	103
Bosnia and Herzegovina	Wind		3 Vlasic	48	0	0	0	0	0	59	98	98	98	98	98
Bosnia and Herzegovina	Wind		3 Bitovnja	60	0	0	0	0	0	0	0	0	62	104	104
Bosnia and Herzegovina	Wind		3 Zukica Kosa	15	0	0	0	0	0	0	0	0	0	8	26
Bosnia and Herzegovina	Hydropower		1 Small hydropower existing EPBiH (Modrac, Bogatic	13	65	65	65	65	65	65	65	65	65	65	65
Bosnia and Herzegovina	Hydropower		3 New small hydro EPBiH – Neretvica, Una Anex, Cat	43	0	0	0	102	123	123	145	145	145	161	161
Bosnia and Herzegovina	Hydropower		3 Bileca/Nevesinje	91	0	0	0	0	0	0	0	0	0	0	0
Bosnia and Herzegovina	Hydropower		3 HE Kovanići	13	0	0	0	0	0	0	0	0	0	0	68
Bosnia and Herzegovina	Hydropower		3 Srednja Drina 321 MW	160,5	0	0	0	0	0	0	0	0	0	714,55	714,55
Bosnia and Herzegovina	Hydropower		3 Donja Drina (Kozluk, Drina I, II and III), total 365 M	182,5	0	0	0	0	0	794	794	794	794	794	794
Kosovo	Coal/Lignite		1 Kosova A (3x200 MW operational)	600	2140	2171	2171	2148	0	0	0	0	0	0	0
Kosovo	Coal/Lignite		1 Kosova B (2x 339 MW, around 540 MW operational	540	4062	4062	4075	3556	3556	4062	4024	4003	3983	3983	3983
Kosovo	Hydropower		1 Ujmani (35 MW)	35	82	82	82	82	78	78	78	78	78	78	78
Kosovo	Hydropower		1 Lumbardhi (8.8 MW)	8,8	26	27	26	27	27	27	27	27	27	27	27

Annex I – Generation Capacities (2/3)

Country	Type	Level	Plant	Installed Capacity	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Kosovo	Hydropower		1 Dikance+Burimi+Radavci (2.76 MW total)	2,76	23	22	23	22	26	26	26	26	26	26	26
Kosovo	Hydropower		3 Zhuri 305 MW	305	0	0	0	0	0	398	398	398	398	398	398
Kosovo	Hydropower		3 Small HPPs (110 MW by 2020)	273,1	0	0	94,3	97,3	248,3	267,3	345,3	384,3	388,3	388,3	472
Kosovo	Coal/Lignite		3 New Kosova	600	0	0	0	0	0	2100	4200	4200	4200	4200	4200
Kosovo	Wind		3 Zatric, 45 MW	184,8	0	0	127,6	127,6	127,6	127,6	127,6	127,6	127,6	127,6	127,6
Kosovo	Wind		3 Budakova, 45 MW	45	0	0	111	111	111	111	111	111	111	111	111
Kosovo	Wind		3 Kitka 30 MW	30	0	0	74	74	74	74	74	74	74	74	74
Kosovo	Biomass		3 Biomass	20,3	0	0	0	0	11	17	19	23	28	28	28
Kosovo	Solar		3 Planned solar PV	12,7	0	0	0	2	2	2	3	3	3	3	3
Kosovo	Hydropower		2 Deçan, Belaja, Lumëbardhi II	22,9	0	0	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7	83,7
Macedonia	Hydropower		1 Tikves (put in operation 1966/1981)	114	184	184	184	184	184	184	184	184	184	184	184
Macedonia	Hydropower		1 Vrutok (1957/1958/1973)	150	350	350	350	350	350	350	350	350	350	350	350
Macedonia	Hydropower		1 Vreben (put in operatio 1959)	12,8	45	45	45	45	45	45	45	45	45	45	45
Macedonia	Hydropower		1 Raven (put in operation 1959/ 1973)	19,2	40	40	40	40	40	40	40	40	40	40	40
Macedonia	Hydropower		1 Globocica (put in operation 1965)	42	191	191	191	191	191	191	191	191	191	191	191
Macedonia	Hydropower		1 Spilje (put in operation 1969)	84	300	300	300	300	300	300	300	300	300	300	300
Macedonia	Hydropower		1 Kozjak (put in operation 2004)	80	150	150	150	150	150	150	150	150	150	150	150
Macedonia	Hydropower		1 Sveta Petka	36,4	66	66	66	66	66	66	66	66	66	66	66
Macedonia	Coal/Lignite		1 TPP Bitola 1 (1982)	225	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	0
Macedonia	Coal/Lignite		1 TPP Bitola 2 (1984)	225	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667
Macedonia	Coal/Lignite		1 TPP Bitola 3 (1988)	225	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667	1466,666667
Macedonia	Coal/Lignite		1 TPP Oslomej (1980)	125	677	677	677	677	677	677	677	677	677	0	0
Macedonia	Oil		1 TPP Negotino (put in operation 1978)	210	1308	1308	1308	1308	1308	0	0	0	0	0	0
Macedonia	Gas		1 Combined Cycle Cogeneration Power Plant TE-TO	230	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Macedonia	Gas		1 ENERGETIKA Skopje	30	2.197	2.197	2.197	2.197	2.197	2.197	2.197	2.197	2.197	2.197	2.197
Macedonia	Hydropower		3 HPP Cebren Installed capacity (turbine/pump) 333	333	0	0	0	0	0	54	54	54	54	54	54
Macedonia	Hydropower		3 HPP Galiste (installed capacity 193,50 MW)	193,5	0	0	263	263	263	263	263	263	263	263	263
Macedonia	Hydropower		3 HPP Boskov Most (installed capacity 68 MW)	68	0	0	0	0	0	118	118	118	118	118	118
Macedonia	Hydropower		3 HPP Veles (installed capacity 80 MW)	80	0	0	0	0	0	0	0	301	301	301	301
Macedonia	Hydropower		3 HPP Gradec (installed capacity 54.6 MW)	54,6	0	0	0	252	252	252	252	252	252	252	252
Macedonia	Hydropower		3 Babuna (installed 17.34 MW)	17,34	0	0	0	0	0	0	57	57	57	57	57
Macedonia	Hydropower		3 Zgropolci (installed 16.93 MW)	16,93	0	0	0	0	0	0	56	56	56	56	56
Macedonia	Hydropower		3 Gradsko (installed 16.93 MW)	16,93	0	0	0	0	0	0	66,6	66,6	66,6	66,6	66,6
Macedonia	Hydropower		3 Kukurecani (installed 16.93 MW)	16,93	0	0	0	0	0	0	79,5	79,5	79,5	79,5	79,5
Macedonia	Hydropower		3 Krivolak (installed 16.93 MW)	16,93	0	0	0	0	0	0	80	80	80	80	80
Macedonia	Hydropower		3 Dubrovo (installed 16.93 MW)	16,93	0	0	0	0	0	0	80,2	80,2	80,2	80,2	80,2
Macedonia	Hydropower		3 Demir Kapija (installed 24.48 MW)	24,48	0	0	0	0	0	0	116,4	116,4	116,4	116,4	116,4
Macedonia	Hydropower		3 Miletkovo (installed 16.72 MW)	16,72	0	0	0	0	0	0	80,3	80,3	80,3	80,3	80,3
Macedonia	Hydropower		3 Gavato (installed 16.72 MW)	16,72	0	0	0	0	0	0	83,2	83,2	83,2	83,2	83,2
Macedonia	Hydropower		3 Gevgelija (installed 16.93 MW)	16,93	0	0	0	0	0	0	85,1	85,1	85,1	85,1	85,1
Macedonia	Coal/Lignite		3 TPP Mariovo (installed 300 MW)	300	0	0	0	0	0	0	0	2137	2137	2137	2137
Macedonia	Coal/Lignite		3 TPP Bitola 4 (300 MW)	300	0	0	0	0	0	0	0	2210	2210	2210	2210
Macedonia	Coal/Lignite		3 TPP Negotino 2 (installed 300 MW)	300	0	0	0	0	0	0	0	0	0	0	
Macedonia	Wind		1 Wind Park Bogdanci phase 1 (installed 36.8 MW)	36,8	15	100	100	100	100	100	100	100	100	100	100
Macedonia	Wind		2 Wind Park Bogdanci phase 2 (installed 13.8 MW)	13,8	0	0	37	37	37	37	37	37	37	37	37
Macedonia	Hydropower		3 Crn Kamen (installed 5 MW) and other small hydr	5	0	0	0	0	0	0	106	106	106	106	106
Macedonia	Wind		3 Wind power plant with PT	50	0	0	0	0	0	0	0	0	0	0	0
Macedonia	Biomass		3 CHP biomass power plant with PT	5	0	0	0	0	0	0	0	0	0	0	0
Macedonia	Biomass		3 CHP biomass power plant with PT	6,2	0	0	0	0	0	0	0	0	0	0	0
Macedonia	Biomass		2 TPP biogas with PT	7	0	0	0	0	0	0	0	0	0	0	0
Macedonia	Geothermal		3 Geothermal with PT	6	0	0	0	0	0	0	0	0	0	0	0
Macedonia	Photovoltaic		2 Photovoltaic with PT	25	0	0	0	0	0	0	0	0	0	0	0
Macedonia	Hydropower		4 Scenario 4 Correction HPP Cebren Installed capaci	-333				0	0	-54	-54	-54	-54	-54	-54
Macedonia	Hydropower		4 Scenario 4 Correction HPP Veles (installed capacit	-80				0	0	0	0	-300,6	-300,6	-300,6	-300,6
Macedonia	Hydropower		4 Scenario 4 Correction HPP Gradec (installed capaci	-54,6				-252,4	-252,4	-252,4	-252,4	-252,4	-252,4	-252,4	-252,4
Macedonia	Coal/Lignite		4 Scenario 4 Correction TPP Mariovo (installed 300 M	-300				0	0	0	0	-2137	-2137	-2137	-2137
Macedonia	Coal/Lignite		4 Scenario 4 Correction TPP Bitola 4 (300 MW)	-300				0	0	0	0	-2210	-2210	-2210	-2210
Macedonia	Coal/Lignite		4 Scenario 4 Correction TPP Negotino 2 (installed 30	-300				0	0	0	0	0	0	0	0
Macedonia	Hydropower		4 Scenario 4 HPP Boskov Most (installed capacity 68	-68	0	0	0	0	0	-118	0	0	0	0	0
Montenegro	Hydropower		1 Perucica	307	932	932	932	932	978	978	978	978	978	978	978
Montenegro	Hydropower		1 Piva	342	749	762	762	762	762	762	800	800	800	800	800
Montenegro	Hydropower		1 sHPP Slap Zete	1,2	3,5	3,5	3,5	14,6	14,6	14,6	14,6	14,6	14,6	14,6	14,6
Montenegro	Hydropower		1 sHPP Glava Zete	6,56	12	12	12	15	15	15	15	15	15	15	15
Montenegro	Hydropower		1 Other small hydros	3,2	21	21	21	21	21	21	21	21	21	21	21
Montenegro	Coal/Lignite		1 Pljevlja I	210	1407	1179	1179	1179	1179	1179	600	600	600	600	600
Montenegro	Hydropower		3 Moraca	238,4	0	0	0	0	0	0	0	616	616	616	616
Montenegro	Hydropower		3 Komarnica	168	0	0	0	0	0	0	0	0	227	227	227
Montenegro	Hydropower		2 Small hydros	39,3	0	80	126,55	126,55	126,55	126,55	126,55	126,55	126,55	126,55	126,5
Montenegro	Coal/Lignite		3 Pljevlja II	220	0	0	0	0	0	0	0	1360	1360	1360	1360
Montenegro	Wind		2 Mozura	46	0	0	0	105,8	105,8	105,8	105,8	105,8	105,8	105,8	105,8
Montenegro	Wind		3 Krnovo (Niksic)	50	0	0	0	115	115	115	115	115	115	115	115
Montenegro	Wind		3 Krnovo (Savnik)	22	0	0	0	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6
Montenegro	Wind		3 Other new wind	39,3	0	0	0	0	17,2	17,2	76,4	76,4	76,4	76,4	76,4
Montenegro	Solar		3 Total new solar PV capacity	31,5	0	5	10	12	13	15	17	19	23	27	31
Montenegro	Incineration		3 Total new incineration capacity	10	0	0	0	0	0	0	70	70	70	70	70
Montenegro	Biomass		3 Total biomass electricity generation	39	0	1,1	6,1	12,1	18,1	24,1	31	43	51	59	66
Montenegro	Hydropower		3 Small hydros	33,655	0	12,0329	24,0658	36,0987	48,1316	60,1645	72,1974	84,2303	96,2632	108,2961	120,329
Serbia	Hydropower		1 Derdap 1, 1058 MW	1058	5489	5489	5489	5489	5489	5489	5489	5489	5489	5489	5489
Serbia	Hydropower		1 Derdap 2, 270 MW	270	1504	1504	1504	1504	1504	1504	1504	1504	1504	1504	1504
Serbia	Hydropower		1 Pirot, 80 MW	80	87	87	87	87	87	87	87	87	87	87	87
Serbia	Hydropower		1 Vlasina 129 MW total	129	285	285	285	285	285	285	285	285	285	285	285
Serbia	Hydropower		1 Drin-Lim hydropower plants (Uvac(36), Kokin Brod	680	3275	3275	3275	3275	3275	3275	3275	3275	3275	3275	3275
Serbia	Hydropower		1 Bajina Bašta pumped storage plant 614 MW	614	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001
Serbia	Coal/Lignite		1 Nikola Tesla A1, 210 MW	210	1231	1231	1231	1231	1231	1231	1231	0	0	0	0
Serbia	Coal/Lignite		1 Nikola Tesla A2, 210 MW	210	1198	1198	1198	1198	1198	1198	1198	1198	1198	0	0
Serbia	Coal/Lignite		1 Nikola Tesla A3, 305 MW	305	1923	1923	1923	1923	1923	1923	1923	1923	1923	1923	1923
Serbia	Coal/Lignite		1 Nikola Tesla A4, 309 MW	309	1989	1989	1989	1989	1989	1989	1989	1989	1989	1989	1989
Serbia	Coal/Lignite		1 Nikola Tesla A5, 309 MW	309	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999
Serbia	Coal/Lignite		1 Nikola Tesla A6, 309 MW	309	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987

Annex I – Generation Capacities (3/3)

Country	Type	Level	Plant	Installed Capacity	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Serbia	Coal/Lignite	1	Nikola Tesla B1, 620 MW	620	4151	4151	4151	4151	4151	4151	4151	4151	4151	4151	4151
Serbia	Coal/Lignite	1	Nikola Tesla B2, 620 MW	620	4004	4004	4004	4004	4004	4004	4004	4004	4004	4004	4004
Serbia	Coal/Lignite	1	Kolubara 1, 32 MW	32	175	175	175	175	0	0	0	0	0	0	0
Serbia	Coal/Lignite	1	Kolubara 2, 32 MW	32	116	116	116	116	0	0	0	0	0	0	0
Serbia	Coal/Lignite	1	Kolubara 3, 64 MW	64	135	135	135	135	135	0	0	0	0	0	0
Serbia	Coal/Lignite	1	Kolubara 4, 32 MW	32	0	0	0	0	0	0	0	0	0	0	0
Serbia	Coal/Lignite	1	Kolubara 5, 110 MW	110	626	626	626	626	626	626	0	0	0	0	0
Serbia	Coal/Lignite	1	Morava, 125 MW	125	566	566	566	566	566	566	566	0	0	0	0
Serbia	Coal/Lignite	1	Kostolac A1, 100 MW	100	560	560	560	560	560	560	560	0	0	0	0
Serbia	Coal/Lignite	1	Kostolac A2, 210 MW	210	1196	1196	1196	1196	1196	1196	1196	1196	1196	1196	1196
Serbia	Coal/Lignite	1	Kostolac B1, 348 MW	348	1937	1937	1937	1937	1937	1937	1937	1937	1937	1937	1937
Serbia	Coal/Lignite	1	Kostolac B2, 348 MW	348	1895	1895	1895	1895	1895	1895	1895	1895	1895	1895	1895
Serbia	Gas	1	TE TO Novi Sad 1, 135 MW and 2, 110 MW	245	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Serbia	Gas	1	TE TO Zrenjanin, 110 MW	110	750	750	750	750	750	750	750	750	750	750	750
Serbia	Gas	1	TE TO Sremska Mitrovica, 32 MW	32	200	200	200	200	200	200	200	200	200	200	123
Serbia	Biomass	1	Existing biogas plants 4.8 MW	4,8	22	22	22	22	22	22	22	22	22	22	22
Serbia	Solar	1	Kladovo 2 MWp	2	1,5	3	3	3	3	3	3	3	3	3	3
Serbia	Solar	1	Beocin 1 MW	1	0	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5
Serbia	Solar	1	Matarova 2 MWp	2	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5
Serbia	Coal/Lignite	3	Kostolac B3 350 MW	350	0	0	0	0	0	0	0 ?	?	?	?	
Serbia	Coal/Lignite	3	Kolubara B 2x350 MW	350	0	0	0	0	0	0	0	2610	4966	4557	4986
Serbia	Coal/Lignite	3	TENT B3 750 MW	750	0	0	0	0	0	0	0	5000	5000	5000	5000
Serbia	Coal/Lignite	3	Kovin 2x350 MW	350	0	0	0	0	0	0	0	0 ?	?	?	
Serbia	Coal/Lignite	3	Stavalj 300 MW	300	0	0	0	0	0	0	0 ?	?	?	?	
Serbia	Gas	3	TE TO Novi Sad 450 MWe	450	0	0	0	0	0	0	3300	3300	3300	3300	3300
Serbia	Hydropower	3	Velika Morava, total 147.7 MW (HPP Ljubicevo, HP	14,77	0	0	0	0	0	0	0	645,5	645,5	645,5	645,5
Serbia	Hydropower	3	Ibar, total 117 MW	117	0	0	0	0	0	480	480	480	480	480	480
Serbia	Hydropower	3	Srednja Drina 321 MW	160,5	0	0	0	0	0	0	0	0	0	714,55	714,55
Serbia	Hydropower	3	Bistrica Pumped Storage Plant, 4x170 MW	680	0	0	0	0	0	0	0,00001	0,00001	0,00001	0,00001	0,00001
Serbia	Hydropower	3	Derdap 3 Pumped Storage Plant, 2x300 MW	600	0	0	0	0	0	0	0	0	0	0,0001	0,0001
Serbia	Hydropower	3	Donja Drina (Kozluk, Drina I, II and III), total 365 M	182,5	0	0	0	0	0	794	794	794	794	794	794
Serbia	Hydropower	3	Small hydropower plants, 188 MW total by 2020	188	182	171	216	268	269	377	558	558	558	558	558
Serbia	Wind	2	Plandište, 102 MW	102	0	0	0	0	212	212	212	212	212	212	212
Serbia	Wind	2	Čibuk 1/Dolovo, 158 MW	158	0	0	0	0	480	480	480	480	480	480	480
Serbia	Wind	2	Alibunar 1, 99 MW	99	0	0	0	0	308	308	308	308	308	308	308
Serbia	Wind	2	Kula, 9.9 MW and La Piccolina, Vrsac, 6.6 MW	6,6	0	0	46,2	46,2	46,2	46,2	46,2	46,2	46,2	46,2	46,2
Serbia	Wind	2	Alibunar, 42 MW	42	0	0	0	0	132	132	132	132	132	132	132
Serbia	Biomass	3	Planned biomass CHP 100 MW	100	0	0	0	66	99	132	640	640	640	640	640
Serbia	Biomass	3	Planned biogas CHP 30 MW	30	0	0	0	0	0	135	305	305	305	305	305
Serbia	Incineration	3	Planned electricity from waste and landfill gas 13	13	0	0	0	17	34	51	68	68	68	68	68

Annex II – Supply/Demand Calculation Kosovo* (GWh)

Demand Scenario	Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Source
Historical	Demand	4576	4944	5275	5506	5584	5467													
	Supply	4334	4527	4798	5038	5167	5314													
	Long/Short	-242	-417	-477	-468	-417	-153													
high consumption	Demand prospected								6205	6546	6815	7077	7253	7489	7668	7892	8096	8355	8622	
	Supply Level 1								6333	6364	6377	5835	3687	4193	4155	4134	4114	4114	4114	
	Supply Level 2								6333	6364	6461	5919	3771	4277	4239	4218	4198	4198	4198	
	Supply Level 3								6333	6364	6868	6331	4345	7374	9517	9539	9528	9528	9611	
	S1 Long/Short								128	-182	-438	-1242	-3566	-3296	-3513	-3758	-3982	-4241	-4508	
	S2 Long/Short								128	-182	-354	-1158	-3482	-3212	-3429	-3674	-3898	-4157	-4425	
	S3 Long/Short								128	-182	53	-746	-2908	-115	1849	1647	1432	1173	989	
medium consumption	Demand prospected								5966	6176	6311	6552	6716	6934	7100	7307	7496	7682	7872	
	Supply Level 1								6333	6364	6377	5835	3687	4193	4155	4134	4114	4114	4114	
	Supply Level 2								6333	6364	6461	5919	3771	4277	4239	4218	4198	4198	4198	
	Supply Level 3								6333	6364	6868	6331	4345	7374	9517	9539	9528	9528	9611	
	S1 Long/Short								367	188	66	-717	-3029	-2741	-2945	-3173	-3382	-3568	-3758	
	S2 Long/Short								367	188	150	-633	-2945	-2657	-2861	-3089	-3298	-3484	-3675	
	S3 Long/Short								367	188	557	-221	-2371	440	2417	2232	2032	1846	1739	
low consumption	Demand prospected								5757	5805	5932	6028	6179	6379	6532	6722	6897	7015	7135	
	Supply Level 1								6333	6364	6377	5835	3687	4193	4155	4134	4114	4114	4114	see Generation Capacities
	Supply Level 2								6333	6364	6461	5919	3771	4277	4239	4218	4198	4198	4198	see Generation Capacities
	Supply Level 3								6333	6364	6868	6331	4345	7374	9517	9539	9528	9528	9611	see Generation Capacities
	S1 Long/Short								576	559	445	-193	-2492	-2186	-2377	-2588	-2783	-2901	-3021	-
	S2 Long/Short								576	559	529	-109	-2408	-2102	-2293	-2504	-2699	-2817	-2937	-
	S3 Long/Short								576	559	936	303	-1834	995	2985	2817	2631	2513	2476	-

Annex III - Peak Calculation Kosovo* (MW)

Demand Scenario	Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Peak Load	Peak Load - low	1218	1257	1284	1300	1324	1334	1354	1365	1404	1430	1456
	Peak Load - medium	1250	1283	1310	1340	1365	1390	1410	1452	1494	1530	1567
	Peak Load - high	1275	64	1349	94	1420	112	1466	174	1584	201,1	1679
high consumption	Supply Level 1	1085	1085	1085	1085	523,5	523,5	523,5	523,5	523,5	523,5	523,5
	Supply Level 2	1085	1085	1085	1085	523,5	523,5	523,5	523,5	523,5	523,5	523,5
	Supply Level 3	1085	1085	1196	1196	648,6	1332	1332	1332	1332	1332	1332
	Supply Level 4	1085	1085	1196	1196	648,6	1332	1332	1332	1332	1332	1332
	S1 Long/Short	-190	-236	-264	-309	-896	-922	-942	-1015	-1060	-1107	-1156
	S2 Long/Short	-190	-236	-264	-309	-896	-922	-942	-1015	-1060	-1107	-1156
	S3 Long/Short	-190	-236	-153	-198	-771	-114	-134	-207	-252	-299	-348
	S4 Long/Short	-190	-236	-153	-198	-771	-114	-134	-207	-252	-299	-348
medium consumption	Supply Level 1	1085	1085	1085	1085	523,5	523,5	523,5	523,5	523,5	523,5	523,5
	Supply Level 2	1085	1085	1085	1085	523,5	523,5	523,5	523,5	523,5	523,5	523,5
	Supply Level 3	1085	1085	1196	1196	648,6	1332	1332	1332	1332	1332	1332
	Supply Level 4	1085	1085	1196	1196	648,6	1332	1332	1332	1332	1332	1332
	S1 Long/Short	-165	-198	-225	-255	-841	-866	-886	-928	-970	-1006	-1043
	S2 Long/Short	-165	-198	-225	-255	-841	-866	-886	-928	-970	-1006	-1043
	S3 Long/Short	-165	-198	-114	-144	-716	-58	-78	-120	-162	-198	-235
	S4 Long/Short	-165	-198	-114	-144	-716	-58	-78	-120	-162	-198	-235
low consumption	Supply Level 1	1085	1085	1085	1085	523,5	523,5	523,5	523,5	523,5	523,5	523,5
	Supply Level 2	1085	1085	1085	1085	523,5	523,5	523,5	523,5	523,5	523,5	523,5
	Supply Level 3	1085	1085	1196	1196	648,6	1332	1332	1332	1332	1332	1332
	Supply Level 4	1085	1085	1196	1196	648,6	1332	1332	1332	1332	1332	1332
	S1 Long/Short	-133	-172	-199	-215	-800	-810	-830	-841	-880	-906	-933
	S2 Long/Short	-133	-172	-199	-215	-800	-810	-830	-841	-880	-906	-933
	S3 Long/Short	-133	-172	-88	-104	-675	-2	-22	-33	-72	-98	-125
	S4 Long/Short	-133	-172	-88	-104	-675	-2	-22	-33	-72	-98	-125

Annex IV – Import Export Calc (GWh) – (1/2)

Country	Supply Scena	Demand Scer	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
EU28	EU		8222,4	6280,2	4338,0	2395,8	453,6	-1488,6	-4914,8	-8341,0	-11767,2	-15193,4	-18619,6	-18403,3	-18187,0	-17970,7	-17754,4
Austria	EU		2326,0	1891,0	1456,1	1021,1	586,2	151,2	362,9	574,5	786,2	997,9	1209,5	1163,0	1116,5	1070,0	1023,4
Czech Republi	EU		-14944,6	-13400,1	-11855,6	-10311,2	-8766,7	-7222,2	-7080,3	-6938,5	-6796,6	-6654,7	-6512,8	-6633,8	-6754,7	-6875,7	-6996,6
Germany	EU		-14956,2	-12230,1	-9504,0	-6778,0	-4051,9	-1325,8	-746,6	-167,5	411,7	990,9	1570,1	2360,9	3151,7	3942,6	4733,4
Poland	EU		-1349,1	-1977,1	-2605,1	-3233,1	-3861,2	-4489,2	-4226,3	-3963,5	-3700,7	-3437,8	-3175,0	-3123,8	-3072,6	-3021,5	-2970,3
Slovakia	EU		1046,7	867,6	688,5	509,4	330,3	151,2	-237,3	-625,7	-1014,1	-1402,6	-1791,0	-1900,3	-2009,7	-2119,0	-2228,3
Bulgaria	EU		-8443,4	-8808,6	-9173,7	-9538,9	-9904,1	-10269,3	-10448,4	-10627,5	-10806,6	-10985,7	-11164,8	-11181,1	-11197,4	-11213,6	-11229,9
Croatia	EU		4768,3	4789,2	4810,2	4831,1	4852,0	4873,0	5028,8	5184,7	5340,5	5496,3	5652,2	5633,6	5615,0	5596,4	5577,7
Greece	EU		5710,3	5619,6	5528,9	5438,2	5347,5	5256,8	5045,1	4833,4	4621,8	4410,1	4198,4	4449,6	4700,8	4952,1	5203,3
Hungary	EU		5198,6	5461,4	5724,3	5987,1	6250,0	6512,8	6354,6	6196,5	6038,3	5880,1	5722,0	5508,0	5294,0	5080,0	4866,0
Italy	EU		44159,1	42468,1	40777,1	39086,1	37395,1	35704,1	35201,7	34699,3	34196,9	33694,4	33192,0	32122,1	31052,1	29982,1	28912,2
Romania	EU		-2279,5	-2526,0	-2772,6	-3019,1	-3265,7	-3512,3	-3623,9	-3735,6	-3847,2	-3958,9	-4070,5	-4596,2	-5121,9	-5647,5	-6173,2
Slovenia	EU		-2116,7	-1949,2	-1781,7	-1614,2	-1446,8	-1279,3	-1163,0	-1046,7	-930,4	-814,1	-697,8	-749,0	-800,1	-851,3	-902,5
Neighbours	EU		55440,2	53863,2	52286,2	50709,1	49132,1	47555,1	46843,3	46131,6	45419,8	44708,0	43996,3	42368,1	40739,9	39111,7	37483,5
Neighbours In	EU		59836,4	58338,4	56840,5	55342,5	53844,6	52346,6	51630,2	50913,8	50197,4	49481,0	48764,6	47713,2	46661,9	45610,5	44559,2
Albania	S1	Long/Short high	0	0	0	0	-2121,91417	-2550,88166	-3001,72029	-3475,54516	-3973,52825	-4496,90127	-5046,95875	-5625,06119	-6232,6385	-6871,19346	-7542,30548
Albania	S2	Long/Short high	0	0	0	0	-2121,91417	-1902,88166	-1026,72029	-878,945163	-1376,92825	-1425,30127	-1975,35875	-2553,46119	-3161,0385	-3799,59346	-4470,70548
Albania	S3	Long/Short high	0	0	0	0	-2121,91417	-1902,88166	-1026,72029	-878,945163	-1087,92275	-1110,12827	-1257,85075	-1835,95319	-2443,5305	-3082,08546	-3753,19748
Albania	S4	Long/Short high	0	0	0	0	-2121,91417	-1902,88166	-1026,72029	-495,695163	-610,428252	-275,551273	-92,358746	-287,211192	-511,538498	-766,843456	-1054,70548
Bosnia Herzig	S1	Long/Short high	0	0	0	0	3479	3343	2951	2546	2127	1233	787	-913	-1388	-1877	-3028
Bosnia Herzig	S2	Long/Short high	0	0	0	0	3479	3343	4611	4780,4	4443,7	3549,7	3103,7	1403,7	928,7	439,7	-711,3
Bosnia Herzig	S3	Long/Short high	0	0	0	0	3479	3369,3	4704,56	5105,82	7630,98	11717,04	16731,4	16061,72	15699,24	17457,31	16766,83
Kosovo	S1	Long/Short high	0	0	0	0	128	-182	-438	-1242	-3566	-3296	-3513	-3758	-3982	-4241,072	-4508,4343
Kosovo	S2	Long/Short high	0	0	0	0	128	-182	-354,3	-1158,3	-3482,3	-3212,3	-3429,3	-3674,3	-3898,3	-4157,372	-4424,7343
Kosovo	S3	Long/Short high	0	0	0	0	128	-182	52,6	-746,4	-2908,4	-115,4	1848,6	1646,6	1431,6	1172,528	988,865696
Macedonia	S1	Long/Short high	0	0	0	0	2767,9	2550,52	2259,77	1969,02	1689,9	91,15	-211,23	-676,43	-1095,11	-2144,27	-3913,31667
Macedonia	S2	Long/Short high	0	0	0	0	2767,9	2550,52	2296,77	2006,02	1726,9	128,15	-174,23	-639,43	-1058,11	-2107,27	-3876,31667
Macedonia	S3	Long/Short high	0	0	0	0	2767,9	2550,52	2559,27	2520,92	2241,8	815,05	1402,37	5584,77	5166,09	4116,93	2347,88333
Macedonia	S4	Long/Short high	0	0	0	0	2767,9	2550,52	2559,27	2268,52	1989,4	390,65	1095,97	630,77	212,09	-837,07	-2606,11667
Montenegro	S1	Long/Short high	0	0	0	0	-299,5	-642,74	-788,323275	-935,583763	-1055,81998	-1104,38902	-1921,26767	-2078,14901	-2244,12406	-2405,37356	-2570,44432
Montenegro	S2	Long/Short high	0	0	0	0	-299,5	-562,74	-661,773275	-703,233763	-823,469983	-872,039019	-1688,91767	-1845,79901	-2011,77406	-2173,02356	-2338,14432
Montenegro	S3	Long/Short high	0	0	0	0	-299,5	-544,6071	-621,607475	-477,435063	-561,438383	-589,974519	-1256,72027	588,431286	673,489137	536,272542	394,184681
Montenegro	S4	Long/Short high	0	0	0	0	-299,5	-544,6071	-621,607475	-477,435063	-561,438383	-589,974519	-1256,72027	588,431286	673,489137	536,272542	394,184681
Montenegro '	S1	Long/Short high	0	0	0	0	-299,5	92,26	-53,3232755	-200,583763	-320,819983	-369,389019	-1186,26767	-1343,14901	-1509,12406	-1670,37356	-1835,44432
Montenegro '	S2	Long/Short high	0	0	0	0	-299,5	172,26	73,2267245	31,7662365	-88,4699827	-137,039019	-953,917672	-1110,79901	-1276,77406	-1438,02356	-1603,14432
Montenegro '	S3	Long/Short high	0	0	0	0	-299,5	190,3929	113,392525	257,564937	173,561617	145,025481	-521,720272	1323,43129	1408,48914	1271,27254	1129,18468
Serbia	S1	Long/Short high	0	0	0	0	-607,7999	-1172,9999	-1263,7999	-1354,5999	-1736,3999	-1962,1999	-2678,9999	-5500,9999	-5965,9999	-7628,9999	-8170,9999
Serbia	S2	Long/Short high	0	0	0	0	-607,7999	-1172,9999	-1217,5999	-1308,3999	-558,1999	-783,9999	-1500,7999	-4322,7999	-4787,7999	-6450,7999	-6992,7999
Serbia	S3	Long/Short high	0	0	0	0	-425,7999	-1001,9999	-1001,5999	-957,3999	-156,1999	1185,0001	4644,20011	10077,7001	11968,7001	10611,2502	10498,2502

Annex IV – Import Export Calc (GWh) – (2/2)

Country	Supply Scena	Demand Scer	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Albania	S1 Long/Short	low	0	0	0	0	-1804,74669	-2055,6163	-2314,25924	-2580,91636	-2855,836	-3139,27416	-3431,49481	-3732,77008	-4043,38051	-4363,61538	-4693,77289
Albania	S2 Long/Short	low	0	0	0	0	-1804,74669	-1407,6163	-339,259236	15,6836402	-259,235996	-67,6741635	-359,894813	-661,170075	-971,780511	-1292,01538	-1622,17289
Albania	S3 Long/Short	low	0	0	0	0	-1804,74669	-1407,6163	-339,259236	15,6836402	29,7695039	247,498836	357,613187	56,3379248	-254,272511	-574,507377	-904,66489
Albania	S4 Long/Short	low	0	0	0	0	-1804,74669	-1407,6163	-339,259236	398,93364	507,264004	1082,07584	1523,10519	1605,07992	1677,71949	1740,73462	1793,82711
Bosnia Herzig	S1 Long/Short	low	0	0	0	0	3479	3546	3365	3181	2994	2342	2150	714	516	315	-534
Bosnia Herzig	S2 Long/Short	low	0	0	0	0	3479	3546	5025	5415,4	5310,7	4658,7	4466,7	3030,7	2832,7	2631,7	1782,7
Bosnia Herzig	S3 Long/Short	low	0	0	0	0	3479	3572,3	5118,56	5740,82	8497,98	12826,04	18094,4	17688,72	17603,24	19649,31	19260,83
Kosovo	S1 Long/Short	low	0	0	0	0	576	559	445	-193	-2492	-2186	-2377	-2588	-2783	-2900,9387	-3020,89415
Kosovo	S2 Long/Short	low	0	0	0	0	576	559	528,7	-109,3	-2408,3	-2102,3	-2293,3	-2504,3	-2699,3	-2817,2387	-2937,19415
Kosovo	S3 Long/Short	low	0	0	0	0	576	559	935,6	302,6	-1834,4	994,6	2984,6	2816,6	2630,6	2512,6613	2476,40585
Macedonia	S1 Long/Short	low	0	0	0	0	3512,22	3387,88	3190,17	2992,46	2806,38	1300,67	1114,59	928,51	742,43	-97,39	-1726,87667
Macedonia	S2 Long/Short	low	0	0	0	0	3512,22	3387,88	3227,17	3029,46	2843,38	1337,67	1151,59	965,51	779,43	-60,39	-1689,87667
Macedonia	S3 Long/Short	low	0	0	0	0	3512,22	3387,88	3489,67	3544,36	3358,28	2024,57	2728,19	7189,71	7003,63	6163,81	4534,32333
Macedonia	S4 Long/Short	low	0	0	0	0	3512,22	3387,88	3489,67	3291,96	3105,88	1600,17	2421,79	2235,71	2049,63	1209,81	-419,676667
Montenegro	S1 Long/Short	low	0	0	0	0	-299,5	-574,26	-647,361525	-717,333688	-755,350006	-725,794696	-1443,12815	-1505,33046	-1571,53107	-1629,56766	-1686,98281
Montenegro	S2 Long/Short	low	0	0	0	0	-299,5	-494,26	-520,811525	-484,983688	-523,000006	-493,444696	-1210,77815	-1272,98046	-1339,18107	-1397,21766	-1454,68281
Montenegro	S3 Long/Short	low	0	0	0	0	-299,5	-476,1271	-480,645725	-259,184988	-260,968406	-211,380196	-778,580752	1161,24984	1346,08213	1312,07844	1277,64619
Montenegro	S4 Long/Short	low	0	0	0	0	-299,5	-476,1271	-480,645725	-259,184988	-260,968406	-211,380196	-778,580752	1161,24984	1346,08213	1312,07844	1277,64619
Montenegro '	S1 Long/Short	low	0	0	0	0	-299,5	160,74	87,6384755	17,6663116	-20,3500057	9,20530383	-708,128152	-770,33046	-836,531075	-894,567659	-951,982809
Montenegro '	S2 Long/Short	low	0	0	0	0	-299,5	240,74	214,188475	250,016312	211,999994	241,555304	-475,778152	-537,98046	-604,181075	-662,217659	-719,682809
Montenegro '	S3 Long/Short	low	0	0	0	0	-299,5	258,8729	254,354275	475,815012	474,031594	523,619804	-43,5807524	1896,24984	2081,08213	2047,07844	2012,64619
Serbia	S1 Long/Short	low	0	0	0	0	3374,6001	3805,0001	4230,6001	4656,2001	4790,8001	5081,4001	4881,0001	2212,2001	1900,4001	390,6001	1,8001
Serbia	S2 Long/Short	low	0	0	0	0	3374,6001	3805,0001	4276,8001	4702,4001	5969,0001	6259,6001	6059,2001	3390,4001	3078,6001	1568,8001	1180,0001
Serbia	S3 Long/Short	low	0	0	0	0	3556,6001	3976,0001	4492,8001	5053,4001	6371,0001	8228,6001	12204,2001	17790,9001	19835,1001	18630,8502	18671,0502
Albania	S1 Long/Short	medium	0	0	0	0	-1962,56873	-2300,87022	-2653,03718	-3019,63789	-3401,26393	-3798,53111	-4212,0805	-4642,57943	-5090,72259	-5557,23313	-6042,86385
Albania	S2 Long/Short	medium	0	0	0	0	-1962,56873	-1652,87022	-678,037184	-423,037895	-804,66393	-726,931111	-1140,4805	-1570,97943	-2019,12259	-2485,63313	-2971,26385
Albania	S3 Long/Short	medium	0	0	0	0	-1962,56873	-1652,87022	-678,037184	-423,037895	-515,65843	-411,758111	-422,972499	-853,471429	-1301,61459	-1768,12513	-2253,75585
Albania	S4 Long/Short	medium	0	0	0	0	-1962,56873	-1652,87022	-678,037184	-39,7878948	-38,1639301	422,818889	742,519501	695,270571	630,377415	547,116872	444,736147
Bosnia Herzig	S1 Long/Short	medium	0	0	0	0	3479	3415	3098	2772	2438	1633	1281	-320	-690	-1070	-2105
Bosnia Herzig	S2 Long/Short	medium	0	0	0	0	3479	3415	4758	5006,4	4754,7	3949,7	3597,7	1996,7	1626,7	1246,7	211,7
Bosnia Herzig	S3 Long/Short	medium	0	0	0	0	3479	3441,3	4851,56	5331,82	7941,98	12117,04	17225,4	16654,72	16397,24	18264,31	17689,83
Kosovo	S1 Long/Short	medium	0	0	0	0	367	188	66	-717	-3029	-2741	-2945	-3173	-3382	-3567,9008	-3758,41194
Kosovo	S2 Long/Short	medium	0	0	0	0	367	188	149,7	-633,3	-2945,3	-2657,3	-2861,3	-3089,3	-3298,3	-3484,2008	-3674,71194
Kosovo	S3 Long/Short	medium	0	0	0	0	367	188	556,6	-221,4	-2371,4	439,6	2416,6	2231,6	2031,6	1845,6992	1738,88806
Macedonia	S1 Long/Short	medium	0	0	0	0	3140,06	2969,2	2724,97	2480,74	2248,14	695,91	451,68	126,04	-176,34	-1120,83	-2820,09667
Macedonia	S2 Long/Short	medium	0	0	0	0	3140,06	2969,2	2761,97	2517,74	2285,14	732,91	488,68	163,04	-139,34	-1083,83	-2783,09667
Macedonia	S3 Long/Short	medium	0	0	0	0	3140,06	2969,2	3024,47	3032,64	2800,04	1419,81	2065,28	6387,24	6084,86	5140,37	3441,10333
Macedonia	S4 Long/Short	medium	0	0	0	0	3140,06	2969,2	3024,47	2780,24	2547,64	995,41	1758,88	1433,24	1130,86	186,37	-1512,89667
Montenegro	S1 Long/Short	medium	0	0	0	0	-299,5	-608,5	-717,5	-825,4	-903,4	-911,4	-1676,4	-1783,4	-1896,4	-2002,4	-2109,4
Montenegro	S2 Long/Short	medium	0	0	0	0	-299,5	-528,5	-590,95	-593,05	-671,05	-679,05	-1444,05	-1551,05	-1664,05	-1770,05	-1877,1
Montenegro	S3 Long/Short	medium	0	0	0	0	-299,5	-510,3671	-550,7842	-367,2513	-409,0184	-396,9855	-1011,8526	883,1803	1021,2132	939,2461	855,229
Montenegro	S4 Long/Short	medium	0	0	0	0	-299,5	-510,3671	-550,7842	-367,2513	-409,0184	-396,9855	-1011,8526	883,1803	1021,2132	939,2461	855,229
Montenegro '	S1 Long/Short	medium	0	0	0	0	-299,5	126,5	17,5	-90,4	-168,4	-176,4	-941,4	-1048,4	-1161,4	-1267,4	-1374,4
Montenegro '	S2 Long/Short	medium	0	0	0	0	-299,5	206,5	144,05	141,95	63,95	55,95	-709,05	-816,05	-929,05	-1035,05	-1142,1
Montenegro '	S3 Long/Short	medium	0	0	0	0	-299,5	224,6329	184,2158	367,7487	325,9816	338,0145	-276,8526	1618,1803	1756,2132	1674,2461	1590,229
Serbia	S1 Long/Short	medium	0	0	0	0	1383,4001	1316,0001	1483,4001	1650,8001	1527,2001	1559,6001	1101,0001	-1644,3999	-2032,7999	-3619,1999	-4084,5999
Serbia	S2 Long/Short	medium	0	0	0	0	1383,4001	1316,0001	1529,6001	1697,0001	2705,4001	2737,8001	2279,2001	-466,1999	-854,5999	-2440,9999	-2906,3999
Serbia	S3 Long/Short	medium	0	0	0	0	1565,4001	1487,0001	1745,6001	2048,0001	3107,4001	4706,8001	8424,20011	13934,3001	15901,9001	14621,0502	14584,6502