Republika e Kosovës
Republika Kosova - Republic of Kosovo
Qeveria - Vlada – Government
Ministria e Zhvillimit Ekonomik
Ministarstvo Ekonomskog Razvoja - Ministry of Economic Development

BALANCA AFATGJATE E ENERGJISË E REPUBLIKËS SË KOSOVËS 2013-2022

DUGORUČNI ENERGETSKI BILANS REPUBLIKE KOSOVO 2013-2022

LONG TERM ENERGY BALANCE OF THE REPUBLIC OK KOSOVO 2013-2022

Prishtinë, Dhjetor 2012

Republika e Kosovës
Republika Kosova - Republic of Kosovo
Qeveria - Vlada - Government
Ministria e Zhvillimit Ekonomik
Ministarstvo Ekonomskog Razvoja - Ministry of Economic Development

LONG TERM ENERGY BALANCE OF THE REPUBLIC OF KOSOVO 2013 - 2022

December, 2012

Contents

Abbreviations

CK	Customs of Kosovo
CRES	Centre for renewable energy and saving, Athens, Greece
EnCTS	Energy Community Treaty Secretariat
ERO	Energy Regulatory Office
EUROSTAT	European Community Statistics Office
GDP	Gross Domestic Product
GW	Giga Watt
GWh	Giga Watt/Hour
HPP	Hydro Power Plant
IEA	International Energy Agency
KEK J.S.C.	Kosovo Energy Corporation
KFA	Kosovo Forest Agency
KOSTT J.S.C.	Transmission System and Market Operator
KSA	Kosovo Statistical Agency
LPG	Liquefied Petroleum Gas
MAFRD	Ministry of Agriculture, Forestry and Rural Development
MED	Ministry of Economic Development
MESP	Ministry of Environment and Spatial Planning
MF	Ministry of Finance
MW	Mega Watt
MWh	Mega Watt/Hour
REKOS 2011	Census of Population, Households and Residences in Kosovo
RES	Renewable Energy Sources
TPP	Thermal Power Plant

This document was compiled by the Energy Balance Division in the MED, with the strong support and close cooperation with entities outlined in the Administrative Instruction on the Rules of the Energy Balance no. 07/2011.

1. Energy demand and demand coverage forecast methodology

The document "Long Term Energy Balance of the Republic of Kosovo, period 2013-2022" is drafted upon the basis of several documents and additional data collected by the Division for Energy Balances within the Ministry of Economic Development.

The basic documents which have served as inputs to the document, and their sources, are the following:

1. Demographic data - KSA;
2. Macroeconomic data - MF;
3. Data on electricity demand forecast, and electricity supply forecast, deriving from the document: Long Term Electricity Balance 2013-2022, by the Transmission System and Market Operator (KOSTT) and the Kosovo Energy Corporation (KEK JSC).
4. Data on coal production from the document: Long Term Electricity Balance 2013-2022 from KOSTT and KEK JSC.
5. Data on electricity consumption from the document: Long Term Electricity Balance 2013-2022, while for the shares of economic sectors, the data were obtained from surveys realized in 2009, 2010 and 2011.
6. Data on forecast of heating consumption are derived from forecast data developed by Termokos Utility and the Heating District in Gjakova;
7. Historical energy consumption data and gross available energy figures, such as:
   - Realized Energy Balances of the Republic of Kosovo for 2009, 2010 and 2011;
   - Energy Demand Forecast in Kosovo for 2012 (adjustment on data collected for the period January-October 2012) ;
   - Positions and data from the Energy Strategy of the Republic of Kosovo 2009-2018.

All obtained from MED documents.

The Long Term Energy Balance for the period 2013-2022 is based on data from documents of realized energy balances, which in terms of consumption, are based on specialized surveys of consumption by sector.

Data on electricity are readily obtained from the Long Term Electricity Balance for the period 2013-2022, developed by the Transmission System and Market Operator of Kosovo, since this is an authorized institution, according to the Law no. 03/L-184 on Energy, to develop annual and long-term electricity balances. Heating data are taken from the heating forecast documents developed by the Heating Districts TERMOKOS in Prishtina and Gjakova.

Also, the document analyses the impacts of macro-economic development in the energy consumption. meanwhile, the data collected are processed in accordance with the EUROSTAT format requirements.

In calculating energy consumption forecasts, three basic factors are taken into account:

1. Economic growth;
2. Number of households and
3. Consumption of the three last years.

The following table presents the GDP data realized for the period 2007-2011.

	2007	2008	2009	2010	2011
GDP	6.3%	6.9%	2.9%	3.9%	5.0%

Source: Ministry of Finance.

2. Energy Demand Forecast for the household sector

The grounds for analysing and calculating energy demand forecasts in the household sector are the demographic data, which are taken from the population census REKOS 2011 data, implemented by the Kosovo Statistical Agency.

Below find the tables containing an overview of housing properties, households and population by municipalities of the Republic of Kosovo, according to the census data:

Table 1. Housing, households and population in municipalities

	Population			Number of households	Average number of members per household
	Male	**Female**	**Total**		
Deçan	20 125	19 894	40 019	5 887	6. 8
Gjakovë	47 226	47 330	94 556	16 303	5. 8
Gllogoc	29 728	28 803	58 531	8 786	6. 7
Gjilan	45 354	44 824	90 178	17 115	5. 3
Dragash	17 035	16 962	33 997	6 215	5. 5
Istog	19 962	19 327	39 289	6 741	5. 8
Kaçanik	16 970	16 439	33 409	5 547	6. 02
Klinë	19 193	19 303	38 496	5 843	6. 6
Fushë Kosovë	17 621	17 206	34 827	6 580	5. 3
Kamenicë	18 559	17 526	36 085	6 419	5. 6
Mitrovicë	36 275	35 634	71 909	13 173	5. 5
Leposaviq	..	..	..	..	..
Lipjan	29 320	28 285	57 605	9 497	6. 1
Novobërdë	3 481	3 248	6 729	1 449	4. 6
Obiliq	10 885	10 664	21 549	3 852	5. 6
Rahovec	28 512	27 696	56 208	8 221	6. 8
Pejë	48 152	48 298	96 450	17 682	5. 5
Podujevë	44 955	43 544	88 499	13 440	6. 6
Prishtinë	99 361	99 536	198 897	40 528	4. 9
Prizren	89 176	88 605	177 781	29 625	6.
Skënderaj	25 646	25 212	50 858	7 682	6. 6
Shtime	13 850	13 474	27 324	4 158	6. 6

Shtërpcë	3 554	3 395	6 949	1 485	4. 7
Suharekë	29 478	30 244	59 722	9 145	6. 5
Ferizaj	54 841	53 769	108 610	18 359	5. 9
Viti	23 700	23 287	46 987	7 520	6. 2
Vushtrri	36 004	33 866	69 870	11 866	5. 9
Zubin Potok	..	..	..	..	..
Zveçan	..	..	..	..	..
Malishevë	26 661	27952	54 613	6 879	7. 9
Junik	2 995	3 089	6 084	770	7. 9
Mamushë	2 818	2689	5 507	566	9. 7
Hani I Elezit	4 836	4 567	9 403	1 452	6. 5
Graçanicë	5 418	5 257	10 675	2 421	4. 4
Ranillug	1 969	1 897	3 866	956	4. 04
Partesh	922	865	1 787	418	4. 3
Kllokot	1 318	1 238	2 556	510	5. 01
TOTAL	**875 900**	**863 925**	**1 739 825**	**297 090**	**5. 9**

Source: KSA-REKOS, 2011, Final results of the Population Census

Deriving from the population census data, the total number of households in Kosovo in 2011 was 295070, while the average number of members per household is 5.88. The energy demands, for the household sector, are largely dependent on the number of households (one household may have more than one family), rather than the population number. Therefore, an accurate estimate of the number of families is a key interest in forecasting energy consumption in the household sector.

The process of declining family members is slow, and is of centurial nature. Assuming that one household in Kosovo may have more than one family, the declining numbers in household members in years is adopted to be 0.5%. In 2023, it is expected that the number of households be reduced to 5.54 members.

Table2. Forecast of growth of population,households

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Population number	1739825	1766251	1792400	1818275	1843879	1869215	1894285	1919093	1943640	1967930	1991966	2015749
Average annual population growth	26706	26426	26149	25875	25604	25336	25070	24807	24547	24290	24036	23784
Number of family members	5.856	5.826	5.797	5.768	5.739	5.711	5.682	5.654	5.626	5.597	5.569	5.542
Number of households	297090	303167	309194	315234	321289	327300	333383	339422	345474	351604	357688	363722

Source: Division of Energy Balances based on the Population Census Data

Apart from demographic data, which are essential for forecasting energy consumption in the household sector, there are other datasets of crucial importance used in processing the data for this document, which include:

- Long term Electricity Balance 2013-2022, developed by the Transmission System and Market Operator (KOSTT);
- Historical data from energy balance documents for years 2010, 2011, developed by the MED, and the forecast for 2012;
- Data on heating consumption for 2012 and 2013, from forecasts for these years, developed by Heating Districts in Prishtina and Gjakova;
- Data on imports and exports of coal and petroleum products for the period January October 2012, from the Kosovo Customs.

Further, table 2 provides an energy demand forecast for the household sector:

Table 3. Forecast of consumption of various energy products in the household sector (ktoe)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Coal	24.98	25.97	27.01	28.09	29.22	30.39	31.60	32.87	34.18	35.55
Petroleum products	22.56	23.02	23.48	23.95	24.42	24.91	25.41	25.92	26.44	26.97
Biomass	225.93	230.45	235.05	239.76	244.55	249.44	254.43	259.52	264.71	270.00
Electricity	225.14	239.84	248.91	255.58	267.05	275.04	285.52	293.60	303.57	312.69
Solar energy	0.39	0.58	0.97	1.55	2.13	2.71	3.29	3.87	3.96	4.04
Geothermal energy		0.00	0.02	0.08	0.16	0.23	0.31	0.39	0.40	0.42
Derived heat	4.94	5.99	6.26	6.59	6.72	6.91	7.01	7.15	8.57	8.68
Total	503.93	525.84	541.70	555.60	574.25	589.63	607.57	623.32	641.82	658.35

Table 2 shows that the household energy demand will gradually grow, at an average rate of 2.6% (in relation to annual increase of household numbers) and in 2022, the total demand shall be 658.35 ktoe.

An increase of coal demand, at an annual rate of 5%, is forecasted, while in 2022, the demand is expected to mark the figure of 35.55 ktoe, which is a substitution of a part of electricity currently used for heating.

Based on calculations made from the realized electro-energy balances in past years, it results that over 30% of the total electricity amount was used for heating. The consolidation of the electro-energy system, gradual elimination of energy abuses, and gradual increases in energy prices, will all have an impact on the electricity demand growth trends, thereby causing a gradual decrease. This is expected to be a result of gradual elimination of electricity abuses, measures for demand-side management, thereby imposing better control on the usage of two-tariff energy system, measures of improving efficiency of electricity consumption, substitution of electricity used for heating with other energy products, such as biomass and coal, etc.

The share of the necessary amount of this (electrical) energy for heating shall be taken by coal, and partially biomass, as a result of a lower cost in comparison with electricity and petroleum products, independently of environmental pollution. Such trends are expected until development of heating district utilities in major cities. Coal consumption is forecasted to grow gradually, also due to the fact that there is a continuous growth in central heating systems being installed in individual housing units, and not only in urban areas. There are many indications that electrical and petroleum heating systems are being replaced with coal-fuelled central heating systems, as a result of a more favourable pricing.

The consolidation of the electro-energy system is also expected to lower the consumption of petroleum products from the figures of current consumption by home electricity generators at periods of electricity outages. In total, petroleum products will record a continuous decrease in the household sector, but, the Liquid Petroleum Gas (LPG), as a petroleum product, will only increase

in consumption, as a result of a lower cost in comparison with electricity, therefore influencing the reduction of electricity consumption for cooking.

3. Energy Demand Forecast for the sector of services

The Energy Demand Forecast for this sector is also based on the general trends of the last three years, energy balance data for the last three years. The electricity demand forecast data were taken from the Long Term Electricity Balance 2013-2022, developed by KOSTT, while data on central heating consumption were taken from forecasts of heating districts in Prishtina and Gjakova. Similar to the household sector, the distribution of energy products' consumption is made according to consumer surveys. During the period 2013-2022, there is a forecast of increasing energy consumption, mainly as a result of improving quality of heating services, acclimatization and other conditions in the service sector, which includes central and local administration buildings, cultural facilities, educational and sports facilities, health care, hotelier facilities, etc., both in the private and public sector.

Increasing demand for various energy products shall pursue economic growth trends. It is expected that during this period, many school and health care facilities will substitute petroleum fuel with dry coal. In terms of electricity consumption – at small extent – after 2016, energy efficiency is expected to grow, specifically in public/service facilities, etc.

Also, there is a forecast of a solid growth of solar energy, especially in public facilities (schools, hospitals, etc.), but also in centralized heating.
The average energy consumption growth in the service sector is forecasted at 3%, in which terms, 2022 is expected to be163.95 ktoe.

The following is a table of consumption forecast for all energy products:

Table 4. Overview of energy products' consumption forecast for the service sector (ktoe)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Coal	4.24	4.41	4.59	4.77	4.96	5.16	5.37	5.58	5.81	6.04
Petroleum products	35.75	36.47	37.19	37.94	38.70	39.47	40.26	41.07	41.89	42.72
Biomass	6.89	7.16	7.45	7.75	8.06	8.54	9.05	9.59	10.17	10.78
Electricity	64.07	68.26	70.84	72.74	76.00	78.28	81.26	83.56	86.40	88.99
Solar energy	0.90	1.35	2.25	3.61	4.96	6.32	7.67	9.03	9.39	9.77
Geothermal energy		0.01	0.04	0.18	0.36	0.54	0.72	0.90	0.94	0.98
Derived heat	2.7	3.2	3.4	3.5	3.6	3.7	3.8	3.9	4.61	4.68
Total	114.51	120.88	125.74	130.54	136.66	142.03	148.11	153.59	159.20	163.95

4. Energy demand forecast for the industry sector

The electricity consumption data for the industrial sector derive from the documents developed by the Kosovo Transmission System and Market Operator (KOSTT), from the total electricity demand. The distribution of consumption of electricity, for the industrial sector, was realized based on consumer surveys.

The industrial sector has recently recorded a moderate increase of coal demand, especially after its usage in metal industry, but also in food industry. Nevertheless, the industrial sector will again be dominated by electricity consumption, followed by petroleum and its derivates. In a more narrow forecast, namely with the consolidation of the electro-energy system, an increase in electricity consumption is expected as a result of two factors:

1. Development of the Kosova e Re Power Plant – which ensures greater reliability of electricity supply, and
2. Usage of small generators – electricity outages will be less frequent than in other years.

By 2022, it is expected that the electricity consumed by the industrial sector will have a share of 35% of available energy in the sector. This is expected to happen due to the long-term development projections, which forecast that Kosovo shall transition from an early development stage to a sustainable development state.

Table 5. Overview of various energy products demand forecast in the industrial sector (ktoe)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Coal for energy purposes	70.67	72.79	74.97	77.22	79.54	81.92	84.38	86.91	89.52	92.21
Coal for non-energy purposes	0.52	0.53	0.54	0.55	0.56	0.57	0.59	0.60	0.61	0.62
Petroleum products for energy purposes	119.12	121.50	123.93	126.41	128.94	131.52	134.15	136.83	139.57	142.36
Petroleum products for non-energy purposes	38.99	46.79	50.53	51.04	40.83	32.67	32.99	33.32	33.66	33.99
Biomass	11.29	11.43	11.57	11.71	11.86	12.01	12.16	12.31	12.46	12.62
Electricity	115.61	123.16	127.82	131.25	137.13	141.24	146.62	150.77	155.89	160.57
Total	356.20	376.20	389.37	398.19	398.87	399.93	410.89	420.75	431.71	442.37

5. Energy Demand Forecast for the transport sector

The transport sector has traditionally been characterized by usage of petroleum products, and a minor amount of bio-fuels.

As one may see in the Table 5, the consumption of petroleum and its products in the transport sector is expected to mark a linear growth, while the bio-fuel consumption is estimated, according to obligations set by the Energy Community by 2020, that 10% of the total energy consumption in the transport sector should be covered by bio-fuels.

It is worth mentioning that in the transport sector energy consumption forecast, although there is technology, electricity consumption in the transport sector is not even taken into account.

Table 6. Overview of various energy products' consumption in transport (ktoe)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Diesel	256.06	260.17	264.07	266.67	266.47	266.05	265.35	264.40	270.29	276.30
Gasoline	63.11	64.04	64.88	65.29	64.75	64.13	63.40	62.59	64.04	65.52
Kerosene	13.27	13.54	13.81	14.08	14.36	14.65	14.95	15.24	15.55	15.86
LPG	9.60	9.80	9.99	10.19	10.39	10.60	10.81	11.03	11.25	11.48
Petroleum products	342.04	347.54	352.75	356.23	355.98	355.43	354.51	353.26	361.13	369.15
Bio-fuels	0.32	1.67	3.44	7.08	14.60	22.56	31.04	40.00	40.00	40.00
Total	342.36	349.21	356.19	363.31	370.58	377.99	385.55	393.26	401.13	409.15

6. Energy Demand Forecast for the agricultural sector

In the agricultural sector, petroleum and its products, and biomass (firewood) are the main sources of energy consumption. The average increase in energy consumption in the agricultural sector is expected to be around 3% by 2022

Knowing that the agricultural sector is expected to be one of the most attractive sector for Government investment, growth in electricity consumption is expected (mainly used during agricultural processing) and also petroleum products use. Table 6 and relevant charts present the energy consumption forecasts in different sources.

Table 7. Overview of various energy products' consumption in agriculture (ktoe)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Coal	0.52	0.53	0.55	0.56	0.58	0.60	0.61	0.63	0.65	0.67
Petroleum products	11.24	11.52	12.36	12.67	12.99	13.31	13.65	13.99	14.34	14.70
Biomass	2.29	2.33	2.38	2.43	2.48	2.53	2.58	2.63	2.68	2.74
Electricity	7.14	7.60	7.89	8.10	8.47	8.72	9.05	9.31	9.62	9.91
Total	21.18	21.98	23.18	23.77	24.51	25.16	25.89	26.56	27.29	28.02

7. Energy Demand Forecast for sectors combined

If one would analyse the energy consumption in previous energy balances for combined sectors, it would be clear that the largest energy consumer in Kosovo has always been the household sector, followed by industry and transport.

The final energy consumption demand in 2022 is expected to be 1687.53 ktoe. The measures in rehabilitating the electro-energy system, and development of the Kosova e Re Power plant, shall have their influence on energy demands in the industry, services, agriculture and transport sectors, and in reducing growth trends in electricity demand of household sector, specifically as a result of decreasing numbers of household members, and energy efficiency measures foreseen to be taken by Government programs, or self-initiatives. Also, the energy sector is expected to have the same impacts in terms of energy efficiency.

The sector with the most intensive growth in energy demand will be the industrial one. In developing countries, the energy consumption by industry makes for approx. 45% of total energy consumption in the country, while developed countries may consume up to 50% of the total consumed energy. In Kosovo, with all forecasts of more intensive development trends in industry, the industry share in the total energy consumption, even in 2022, will be rather far from the developing countries' consumption rate, with 29% of energy consumed. This shows that even in 2022, Kosovo will not be categorized as a "developing country". The overview of energy consumption in all sectors combined is provided with table 7, namely diagrams attached.

Table 8. Overview of forecasted energy consumption, all sectors combined

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Industry sector	356.20	376.20	389.37	398.19	398.87	399.93	410.89	420.75	431.71	442.37
Household sector	503.93	525.84	541.7	555.6	574.25	589.63	607.57	623.32	641.82	658.35
Services sector	114.51	120.88	125.74	130.54	136.66	142.03	148.11	153.59	159.20	163.95
Agriculture sector	21.18	21.98	23.18	23.77	24.51	25.16	25.89	26.56	27.29	28.02
Transport sector	342.36	349.21	356.19	363.31	370.58	377.99	385.55	393.26	401.13	409.15
Total	1338.19	1394.12	1436.18	1471.40	1504.87	1534.74	1578.01	1617.48	1661.16	1701.84

Based on the table and figure below, we will present the contribution of each sector to the total consumption for specific years: 2013- the first year of forecasted period 2013-2020, and 2022, the last year of that period.

Table 9. *Overview of forcaste consumption of all economic*

	2013		2022	
	ktoe	%	ktoe	%
Industry	356.20	27	442.37	26
Household	503.93	38	658.35	39
Services	114.51	9	163.95	9
Agriculture	21.18	2	28.02	2
Transport	342.36	26	409.15	24
Total	1338.19	100	1701.84	100

In analysing long-term demand forecasts for energy, the Kosovo Energy Efficiency Plan has been taken as baseline, with a general target for 2018, estimating that every year, there will be 1% of energy savings at end-consumption, and that this saving is more focused on services, rather than households.

Meanwhile, in terms of transport sector, measures forecasted for energy efficiency according to the Kosovo Energy Efficiency Plan, are only estimated to contribute 5% to the general target, while the industrial sector is foreseen to take 25% of total savings by 2018, thereby contributing to the savings target.

8. Demand forecast for various energy sources

The most demanded energy product has been petroleum and its products. Such a trend is expected to mark the energy demand also in the long-term period 2013-2022, although in 2022, the electricity consumption will reach close to the petroleum consumption.

One of the energy products which have been implemented mainly in households and services is solar energy, which is expected to rise, mainly in sanitary water heating. Apart from individual and private initiatives of installing such equipment, several energy efficiency and renewable energy projects have been planned, thereby setting the target for using solar energy in heating water in public facilities. According to the Decision of the Ministerial Council on 18th of October 2012, Kosovo is bound to generate 25% of gross final energy consumption from renewable energy sources, including solar energy, both for heating and electricity.

Based on comprehensive analysis, the Table 8 shows the overview of energy demands for all energy products.

Table 10. Overview of consumption forecast for all energy products (ktoe)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Coal, energy purposes	100.40	103.71	107.12	110.65	114.30	118.07	121.97	126.00	130.16	134.47
Coal, non-energy purposes	0.52	0.53	0.54	0.55	0.56	0.57	0.59	0.60	0.61	0.62
Petroleum products, energy purposes	530.71	540.04	549.72	557.20	561.03	564.65	567.98	571.07	583.36	595.90
Petroleum products, non-energy purposes	38.99	46.79	50.53	51.04	40.83	32.67	32.99	33.32	33.66	33.99
Biomass	246.39	251.37	256.45	261.64	266.94	272.52	278.22	284.05	290.02	296.14
Electricity	411.97	438.86	455.46	467.67	488.65	503.27	522.45	537.24	555.47	572.16
Bio-fuels	0.32	1.67	3.44	7.08	14.60	22.56	31.04	40.00	40.00	40.00
Geothermal energy		0.01	0.06	0.26	0.52	0.77	1.03	1.29	1.34	1.40
Derived heat	7.59	9.21	9.63	10.14	10.34	10.63	10.78	11.01	13.19	13.36
Solar energy	1.29	1.93	3.22	5.16	2.84	9.03	10.96	12.90	13.35	13.81
Total	1338.19	1394.12	1436.18	1471.40	1500.62	1534.74	1578.01	1617.48	1661.16	1701.84

The following is a table of forecasted consumption for all energy products for 2013 and 2022:

Table 9 shows data on energy products for the two extreme points of the long term energy demand forecast period.

Table 11. Overview of consumption forecasted for all energy products (ktoe and %)

	2013		2022	
	ktoe	**%**	**ktoe**	**%**
Coal	100.92	7.54	135.09	7.9
Petroleum products	569.71	42.57	629.89	37.0
Biomass	246.39	18.41	296.14	17.4
Electricity	411.97	30.79	572.16	33.6
Bio-fuels	0.32	0.02	40.00	2.4
Geothermal energy	0.00	0.00	1.4	0.1
Derived heat	7.59	0.57	13.36	0.8
Solar energy	1.29	0.10	13.81	0.8
Total	1338.19	100	1701.84	100

9. Air pollutant emissions from TPPs Kosovo A and B

EU Directive 2001/80/EC of 21 October 2001, determines the ceilings of power plant pollution. The Directive requires a reduction of pollutant emissions for existing plants (Kosovo A and B), and also determines ceilings for emissions for new plants (Kosova e Re).

Emissions in the current condition of units are:
- Ashes
- SO_2
- NOx
- CO_2

The following are coefficients of emissions and forecast of dust, NOx and SO2 emissions from Kosovo power plants for the period 2013-2022.

Table 12. Forecast of air gas emissions factors for TPP Kosovo A

Unit A - Gas emissions		2012	2013	2014	2015	2016	2017
Unit A2 - SO2	kg/MWh	1.8-3.5	1.8-3.6	1.8-3.7	1.8-3.8	1.8-3.9	1.8-3.10
Unit A2 - NOx	kg/MWh	3.2	3.2	3.1	3.05	2.95	2.84
Unit A2 - Dust	kg/MWh	3.9	3.9	3.9	0.56	0.56	0.56
Unit A2 - CO2	kg/MWh	1454	1367	1367	1367	1367	1367
Unit A3 - SO2	kg/MWh	3.212	4.32	2.0-3.2	1.8-3.4	1.8-3.5	1.8-3.6
Unit A3 - NOx	kg/MWh	3.944	3.8	3.9	3.52	3.21	2.96
Unit A3 - Dust	kg/MWh	4.991	0.6	0.56	0.56	0.56	0.56
Unit A3 - CO2	kg/MWh	1494	1521	1494	1345	1326	1285
Unit A4 - SO2	kg/MWh	3.981	3.89	2.0-3.3	1.7-3.3	1.7-3.4	1.7-3.5
Unit A4 - NOx	kg/MWh	3.957	4.04	3.25	3.14	3.04	2.85
Unit A4 - Dust	kg/MWh	5.749	0.6	0.56	0.56	0.56	0.56
Unit A4 - CO2	kg/MWh	1502	1564	1384	1354	1298	1252
Unit A5 - SO2	kg/MWh	3.535	3.69	2.0-3.5	1.75-3.3	1.75-3.4	1.75-3.5
Unit A5 - NOx	kg/MWh	3.946	3.91	3.95	3.45	3.12	2.95
Unit A5 - Dust	kg/MWh	7.233	0.6	0.56	0.56	0.56	0.56
Unit A5 - CO2	kg/MWh	1477	1512	1395	1362	1252	1235

Table 13. Forecast of air gas emissions factors for TPP Kosovo B

Unit B - Gas emissions		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Unit B1 - SO2	kg/MWh	2.8	3.3	2.4-2.8	1.7-2.6	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78
Unit B1 - NOx	kg/MWh	3.5	3.3	3.2	3.4	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22
Unit B1 - Dust	kg/MWh	1.9	0.97	0.86	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Unit B1 - CO2	kg/MWh	1246	1129	1212	1245	1154	1189	1156	1121	1125	1132	1142	1118
Unit B2 - SO2	kg/MWh	2.9	1.6-3.4	1.5-3.2	1.8-2.4	1.6-2.8	1.78	1.78	1.78	1.78	1.78	1.78	1.78
Unit B2 - NOx	kg/MWh	3.4	3.46	3.5	3.45	3.5	2.22	2.22	2.22	2.22	2.22	2.22	2.22
Unit B2 - Dust	kg/MWh	1.97	1.03	0.78	0.73	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Unit B2 - CO2	kg/MWh	1147	1176	1182	1170	1221	1140	1121	1115	1132	1122	1221	1151

Table 14. Forecast of air gas emissions factors for TPP Kosova e Re

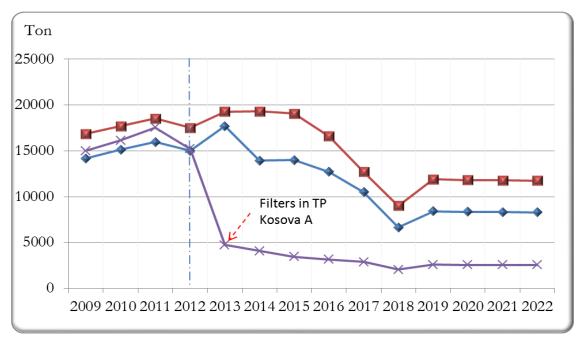| PARAMETERS	NOX t/GWh	SO2 t/GWh	CO2 t/GWh	Dust t/GWh	Lignite t/MWh
KOSOVA E RE POWER PLANT	1.0	0.5	920.0	0.14	1.1

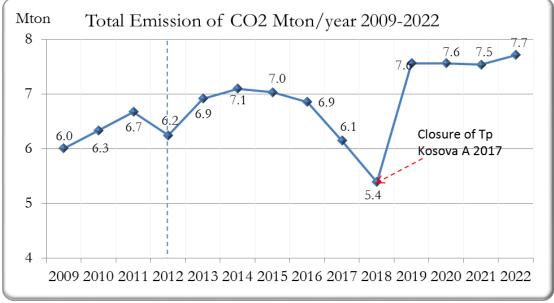Figure 1. Forecast of dust, NOx and SO2 emissions from Kosovo power plants for the period 2013-2022

Figure 2. Forecast of CO2 from power plants for the period 2013-2022

Standards to be met by existing TPPs, according to the Athens Treaty:

Pollutants	Unit	Ceilings	Date
SO$_2$	mg/Nm^3	400	31.12.2017
NOx	mg/Nm^3	500 200*	31.12.2017
Dust	mg/Nm^3	50	31.12.2017

* According to Directive 2001/80, these ceilings enters into force for EU states from January 1, 2016

10. Ways of covering the energy demand

The energy demand should be covered by generation and imports.

Electricity shall be generated mainly in Kosovo A and B Power Plants, while in 2018, the Kosova e Re Power Plant units are expected to start generating. From this period, the imports are expected to go to a zero figure, and the whole energy demand shall be covered by own generation.

Also, in the long-term period 2013-2022, there are projections for new generation capacities from water, wind, sun and biomass energy.

In the following table, an overview is provided with a generation capacities' perspective, on the basis of which, a document is drafted: Long Term electricity Balance 2011-2020, developed by the Kosovo Transmission System and Market Operator.

Table 14. Existing electricity generation capacities

EXISTING GENERATION CAPACITIES				
	Units	Commissioning	Action	Life expectancy
	Kosovo A			
	A3	1970	Periodical overhauls	2017
	A4	1971	Periodical overhauls	2017
Existing power plants	A5	1975	Periodical overhauls	2017
	Kosovo B			
	B1	1983	Capital overhaul (2016)	2030
	B2	1984	Capital overhaul (2017)	2030
	Ujmani			
	U1+U2	1983	Periodical overhauls	>2030
Existing hydro-power plants	Lumbardhi			
	G1+G2	1983	Planned capacity devel.opment	>2030

Source: Long Term Electricity Balance 2013-2022

In the analysis made in drafting the document Energy Demand Forecast in the Republic of Kosovo for the period 2009-2018, we took ground on the medium development scenario, based on the Government program. The following is a presentation of the model applied by the Kosovo Transmission System and Market Operator (KOSTT) for forecasting electricity demand.

Table 15. New electricity generation capacities

NEW GENERATION CAPACITIES				
		Installed power	Operating	Lifespan
New generators	Kosova e Re PP			
	G1	P=300MW	Q1 2018	>2050
	G2	P=300MW	Q1 2019	>2050
	New TPP			
	G3	P=400MW	Q1 2023	>2050
	HC Zhuri			
	G1+G2+G3	P=305MW	Q1 2017	>2060
Renewable sources	Small HPPs*			
	> 20 HPPs	$P_{2022} = 240MW$	Q1 2014- Q4 2020	>2050
	Windmills			
	>4 windmills	$P_{2022.} = 150MW$	Q1 2014-Q4 2020	2020-2040
	Biomass			
		$P_{2022.} = 14MW$	Q1 2014-Q4 2020	
	Solar			
		$P_{2022} = 10MW$	Q1 2014-Q4 2020	

* Small HPPs do not include existing small HPPs (Lumbardhi, Dikance, Radavci and Burimi)

10.1. Base and conservative scenario of generation development

Table 16.Gross electricity generation base scenario including own consumption and net generation

GROSS ENERGY PRODUCTION BASE SCENARIO (MED) [GWh]	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
TP KOSOVA A	1622	1908	2203	1676	2007	2140	2171	2171	2148	0	0	0	0	0
TP KOSOVA B	3638	3573	3494	3769	4068	4062	4062	4075	3556	3556	4062	4024	4003	3983
TP KOSOVA E RE	0	0	0	0	0	0	0	0	0	2100	4200	4200	4200	4200
NEW TPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL FROM THERMOPOWERPLANTS (1+	5260	5481	5696	5446	6075	6202	6233	6246	5704	5656	8262	8224	8203	8183
HP UJMANI	89	115	75	82	82	82	82	82	82	78	78	78	78	78
HP LUMBARDHI	33	36	22	27	27	26	27	26	27	27	27	27	27	27
HP DIKANCE+BURIMI+RADAVCI	0	14	14	23	22	23	22	23	22	26	26	26	26	26
HP ZHURI	0	0	0	0	0	0	0	0	398	398	398	398	398	398
SMAL LHP	0	0	0	0	0	270	630	675	720	810	900	1080	1200	1333
TOTAL FROM HYDROPOWERPLANTS (6+7+	121	166	112	133	131	401	761	806	1249	1339	1429	1609	1729	1862
PLANTS FROM BIOMASS	0	0	0	0	0	15	30	45	60	75	90	105	127	153
WIND PLANTS	0	3	0	0	3	63	141	181	222	262	282	302	335	372
SOLAR PLANTS	0	0	0	0	0	6	8	12	14	16	19	21	23	26
Total from biomass,wind,solar (12+13+14)	0	3	0	0	3	84	179	239	296	353	391	428	485	551
TOTAL RENEWABLE (11+15)	121	169	112	133	134	485	940	1045	1545	1692	1820	2037	2214	2413
TOTAL GROSS PRODUCTION (5+11+15)	5381	5650	5808	5578	6208	6687	7173	7291	7249	7348	10081	10261	10417	10596
TOTAL OF TPP OWN CONSUMPTION	579	603	611	592	478	641	649	651	602	583	845	844	843	843
TOTAL NET PRODUCTION (18-19)	4802	5047	5197	4986	5730	6046	6524	6639	6647	6765	9236	9417	9574	9753

Table 17. Installed generation capacity available, base scenario

INSTALED CAPACITY OF GENERATION BASE SCENARIO (MED) [MW]	MW	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
TP KOSOVA A	MW	610	610	610	610	610	610	610	610	610	0	0	0	0	0
TP KOSOVA B	MW	678	678	678	678	678	678	678	678	678	678	678	678	678	678
TP KOSOVA E RE	MW	0	0	0	0	0	0	0	0	0	300	600	600	600	600
NEW TP	MW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL FROM THERMOPOWERPLANTS (1+2+3+4)	MW	1288	1288	1288	1288	1288	1288	1288	1288	1288	978	1278	1278	1278	1278
HP UJMANI	MW	35	35	35	35	35	35	35	35	35	35	35	35	35	35
HP LUMBARDHI	MW	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30
HP DIKANCE+BURIMI+RADAVCI	MW	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95
HP ZHURI	MW	0	0	0	0	0	0	0	0	305	305	305	305	305	305
SMAL LHP	MW	0	0	0	0	0	60	140	150	160	180	200	240	267	296
TOTAL FROM HYDROPOWERPLANTS (6+7+8+9+10)	MW	46	46	46	46	46	106	186	196	511	531	551	591	618	648
PLANTS FROM BIOMASS	MW	0.0	0.0	0.0	0.0	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.9	20.3
WIND PLANTS	MW	0.0	1.4	1.4	1.4	1.4	31.4	70.0	90.0	110.0	130.0	140.0	150.0	166.5	184.8
SOLAR PLANTS	MW	0.0	0.0	0.0	0.0	0.0	3.0	4.0	6.0	7.0	8.0	9.0	10.0	11.3	12.7
Total biomass,wind,solar (12+13+14)	MW	0.0	1.4	1.4	1.4	1.4	36.4	78.0	102.0	125.0	148.0	161.0	174.0	194.6	217.9
TOTAL RENEWABLE (11+16)	MW	46	48	48	48	48	143	264	298	636	679	712	765	813	865
TOTAL: CAPACITY IN DISPOSITION.	MW	1334	1336	1336	1336	1336	1431	1552	1586	1924	1657	1990	2043	2091	2143

Table 18 . **Net capacity available, Kosovo generators, base scenario**

NET CAPACITY OF GENERATION BASE SCENARIO (MED) [MW]	MW	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
TP KOSOVA A	MW	395	395	395	370	400	400	400	400	400	0	0	0	0	0
TP KOSOVA B	MW	530	530	565	565	565	565	565	565	565	565	565	565	565	565
TP KOSOVA E RE	MW	0	0	0	0	0	0	0	0	0	280	560	560	560	560
NEW TP	MW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL FROM THERMOPOWERPLANTS (1+2+3+4)	MW	925	925	960	935	965	965	965	965	965	845	1125	1125	1125	1125
HP UJMANI	MW	32	32	32	32	32	32	32	32	32	32	32	32	32	32
HP LUMBARDHI	MW	8.24	8.24	8.23	8.23	8.24	8.24	8.24	8.24	8.24	8.24	8.24	8.24	8.24	8.24
HP DIKANCE+BURIMI+RADAVCI	MW	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92
HP ZHURI	MW	0	0	0	0	0	0	0	0	287	287	287	287	287	287
SMAL LHP	MW	0	0	0	0	0	58	135	144	154	173	192	231	257	285
TOTAL FROM HYDROPOWERPLANTS (6+7+8+9+10)	MW	43	43	43	43	43	101	178	188	484	503	522	561	587	615
PLANTS FROM BIOMASS	MW	0.0	0.0	0.0	0.0	0.0	1.9	3.8	5.8	7.7	9.6	11.5	13.5	16.2	19.6
WIND PLANTS in dispozition (30% Kapac)	MW	0.0	0.4	0.4	0.4	0.4	9.4	21.0	27.0	33.0	39.0	42.0	45.0	50.0	55.5
SOLAR PLANTS	MW	0.0	0.0	0.0	0.0	0.0	3.0	4.0	5.9	6.9	7.9	8.9	9.9	11.2	12.6
Total from biomass,wind,solar (12+13+14)	MW	0.0	0.4	0.4	0.4	0.4	14.3	28.8	38.7	47.6	56.5	62.5	68.4	77.3	87.6
TOTAL RENEWABLE (7+8+9+10+15)	MW	43	12	12	12	12	83	175	194	499	528	553	597	632	671
TOTAL: NET KAPACITY IN DISPOSITION.	MW	968	969	1004	979	1009	1080	1172	1191	1496	1405	1710	1754	1789	1828

Table 19. .Gross electricity generation conservative scenario including own consumption and net generation

GROSS ENERGY PRODUCTION CONSERVATIVE SCENARIO (MED) [GWh]	GWh	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
TP KOSOVA A		1622	1908	2203	1676	2007	1974	2010	2010	2010	0	0	0	0	0
TP KOSOVA B		3638	3573	3494	3769	4068	4062	4062	4075	3556	3556	4062	4024	4003	3983
TP KOSOVA E RE		0	0	0	0	0	0	0	0	0	0	2100	4200	4200	4200
NEW TPP		0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL FROM THERMOPOWERPLANTS (1+2+3+4)		5260	5481	5696	5446	6075	6036	6072	6085	5566	3556	6162	8224	8203	8183
HP UJMANI		89	115	75	82	82	82	68	82	82	78	78	78	78	78
HP LUMBARDHI		33	36	22	27	27	26	27	26	27	27	27	27	27	27
HP DIKANCE+BURIMI+RADAVCI		0	14	14	23	23	23	23	23	23	23	23	23	23	23
HP ZHURI		0	0	0	0	0	0	0	0	0	0	0	0	0	0
SMAL LHP		0	0	0	0	0	0	139	178	181	332	351	429	468	472
TOTAL FROM HYDROPOWERPLANTS (6+7+8+9+1)		121	166	112	133	133	131	257	309	314	460	480	558	597	601
PLANTS FROM BIOMASS		0	0	0	0	0	0	0	0	0	11	17	19	23	28
WIND PLANTS		0	3	0	0	3	57	57	114	114	172	172	229	229	267
SOLAR PLANTS		0	0	0	0	0	0	0	0	2	2	2	3	3	3
Total from biomass,wind,solar (12+13+14)		0	3	0	0	3	57	57	114	116	185	191	251	254	296
TOTAL RENEWABLE (11+15)		33	53	37	51	53	106	246	341	348	568	593	731	773	818
TOTAL GROSS PRODUCTION (5+11+15)		5381	5650	5808	5578	6210	6224	6386	6508	5996	4201	6833	9033	9055	9079
TOTAL OF TPP OWN CONSUMPTION		579	603	611	592	478	638	643	645	591	363	624	831	830	828
TOTAL NET PRODUCTION (18-19)		4802	5047	5197	4986	5732	5586	5743	5863	5406	3838	6209	8201	8225	8251

Table 20. Installed generation capacity available, conservative scenario

INSTALED CAPACITY OF GENERATION CONSERVATIVE SCENARIO (MED) [MW]	MW	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
TP KOSOVA A	MW	610	610	610	800	800	800	800	800	800	0	0	0	0	0
TP KOSOVA B	MW	678	678	678	678	678	678	678	678	678	678	678	678	678	678
TP KOSOVA E RE	MW	0	0	0	0	0	0	0	0	0	0	300	600	600	600
NEW TP	MW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL FROM THERMOPOWERPLANTS (1+2+3+4)	MW	1288	1288	1288	1478	1478	1478	1478	1478	1478	678	978	1278	1278	1278
HP UJMANI	MW	35	35	35	35	35	35	35	35	35	35	35	35	35	35
HP LUMBARDHI	MW	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30
HP DIKANCE+BURIMI+RADAVCI	MW	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95
HP ZHURI	MW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SMAL LHP	MW	0	0	0	0	0	0	36	46	47	85	90	110	120	121
TOTAL FROM HYDROPOWERPLANTS (6+7+8+9+10)	MW	46	46	46	46	46	46	82	92	93	131	136	156	166	167
PLANTS FROM BIOMASS	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	3.3	3.8	4.4	5.5
WIND PLANTS	MW	0.0	1.4	1.4	1.4	1.4	30.0	30.0	60.0	60.0	90.0	90.0	120.0	120.0	140.0
SOLAR PLANTS	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.7	0.8	0.8
Total biomass,wind,solar (12+13+14)	MW	0.0	1.4	1.4	1.4	1.4	30.0	30.0	60.0	60.0	92.8	94.0	124.5	125.2	146.3
TOTAL RENEWABLE (11+16)	MW	46	48	48	48	48	76	112	152	153	224	230	281	291	314
TOTAL: CAPACITY IN DISPOSITION.	MW	1334	1336	1336	1526	1526	1554	1590	1630	1631	902	1208	1559	1569	1592

Tabela 21. Net capacity available, Kosovo generators, conservative scenario

NET CAPACITY OF GENERATION CONSERVATIVE SCENARIO [MW]	MW	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
TP KOSOVA A	MW	395	395	395	370	400	400	400	400	400	0	0	0	0	0
TP KOSOVA B	MW	530	530	565	565	565	565	565	565	565	565	565	565	565	565
TP KOSOVA E RE	MW	0	0	0	0	0	0	0	0	0	0	280	560	560	560
NEW TP	MW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL FROM THERMOPOWERPLANTS (1+...)	MW	925	925	960	935	965	965	965	965	965	565	845	1125	1125	1125
HP UJMANI	MW	32	32	32	32	32	32	32	32	32	32	32	32	32	32
HP LUMBARDHI	MW	8.24	8.24	8.23	8.23	8.24	8.24	8.24	8.24	8.24	8.24	8.24	8.24	8.24	8.24
HP DIKANCE+BURIMI+RADAVCI	MW	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	1.39	1.39	1.39
HP ZHURI	MW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SMAL LHP	MW	0	0	0	0	0	0	34	44	45	82	87	106	115	116
TOTAL FROM HYDROPOWERPLANTS (6+7+...)	MW	43	43	43	43	43	43	77	87	88	125	130	147	157	158
PLANTS FROM BIOMASS	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	3.3	3.7	4.4	5.5
WIND PLANTS in dispozition (30% Kapac)	MW	0.0	0.4	0.4	0.4	0.4	8.8	8.8	17.6	17.6	26.5	26.5	35.3	35.3	41.2
SOLAR PLANTS	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.7	0.8	0.8
Total from biomass,wind,solar (12+13+14)	MW	0.0	0.1	0.1	0.1	0.1	2.2	2.2	4.4	4.4	9.4	10.5	13.3	14.0	16.6
TOTAL RENEWABLE (7+8+9+10+15)	MW	43.2	43.3	43.3	43.3	43.3	45.4	79.5	91.4	92.3	134.3	140.3	160.7	171.1	174.6
TOTAL: NET KAPACITY IN DISPOSITION.	MW	968	969	1004	978.6	1009	1017	1051	1070	1071	719	1005	1312	1323	1330

10.2. Energy Demand and Load Peak, base scenario

Table 22. Base Scenario, gross electricity demand, by category of consumption

BASE SCENARI OF ENERGY DEMAND [GWh]	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Household consumers	2536	2643	2706	2790	2852	2954	3053	3129	3263	3355	3477	3571	3676	3769
Comercial consumers	701	745	798	789	807	837	873	899	942	972	1012	1042	1084	1123
Total industria consumers	1210	1296	1322	1237	1265	1312	1370	1410	1477	1525	1586	1634	1699	1761
Losses in KOSTT	175	131	115	128	126	129	132	133	136	138	140	142	144	146
Techical losses in OSSH	799	780	785	797	770	734	749	741	734	726	719	712	705	698
Gross Consumption of Kosovo	5421	5594	5725	5742	5820	5966	6176	6312	6551	6716	6934	7100	7307	7496

Table 23. Three forecast scenarios, gross demand and peak load

GROSS DEMAND OF KOSOVO [GWh]	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Rritja mesatare
HIGH SCENARIO	5421	5594	5725	5856	6052	6204	6547	6817	7076	7253	7489	7668	7892	8096	3.20%
BASE SCENARIO	5421	5594	5725	5742	5820	5966	6176	6312	6551	6716	6934	7100	7307	7496	2.48%
LOW SCENARIO	5421	5594	5725	5726	5730	5757	5806	5934	6027	6179	6380	6532	6722	6897	1.71%

Table 24. Three forecast scenarios of peak load

MAXIMUM LOAD OF KOSOVO [MW]	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Rritja mesatare
PEAK (BASE)	1072	1158	1150	1170	1220	1250	1283	1310	1340	1365	1390	1410	1452	1494	2.41%
PEAK (HIGH)	1072	1158	1150	1182	1244	1275	1321	1349	1394	1420	1446	1466	1539	1584	2.96%
PEAK (LOW)	1072	1158	1150	1158	1190	1218	1257	1284	1300	1324	1334	1354	1365	1404	1.84%

11.5. Fuel demands in existing and new power plants

Table 25. Lignite demands in existing and new power plants, base scenario of generation

LIGNITE CONSUMPTION _BASE SCENARION OF GENERATION (milion ton)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
TP KOSOVA A	2.69	3.08	3.80	2.80	3.27	3.26	3.32	3.32	3.32	0.00	0.00	0.00	0.00	0.00
TP KOSOVA B	5.15	4.91	4.41	5.09	5.30	5.30	5.30	5.32	4.64	4.64	5.30	5.25	5.22	5.20
TP KOSOVA E RE	0	0	0	0	0	0	0	0	0	2.31	4.62	4.62	4.62	4.62
TP TE REJA		0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
TOTAL-LIGNITE	7.8	8.0	8.2	7.9	8.6	8.6	8.6	8.6	8.0	7.0	9.9	9.9	9.8	9.8

Table 26. Total diesel demands in existing and new power plants, base scenario of generation

OIL CONSUMPTION (HAVY FUEL OIL) _BASE SCENARION OF GENERATION (kton)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
TP KOSOVA A	4.2	4.4	3.7	4.1	4.4	4.4	4.5	4.5	4.5					
TP KOSOVA B	6.5	7.0	7.9	8.5	7.3	7.3	7.3	7.3	6.4	6.4	7.3	7.2	7.2	7.2
TP KOSOVA E RE										3.0	6.0	6.0	6.0	6.0
TP TE REJA										0.0	0.0	0.0	0.0	0.0
TOTAL- OIL (HAVY FUEL OIL) kton	10.7	11.4	11.6	12.6	11.7	11.7	11.8	11.8	10.9	9.4	13.3	13.2	13.2	13.2

11. Recommendations

- Take into account energy demand forecasts presented with this document, in preparing development policies;
- Continue energy demand side surveys, based on methodologies harmonized with the Energy Community Secretariat;
- Identify barriers to a more rapid development of new renewable energy capacities, and take additional improvement measures;
- Take into account obligations before the Energy Community Treaty in relation existing power plants;
- Make further improvement in integrating energy efficiency plans, renewable energy sources and environment, by long term energy planning;