



NATIONAL EMISSION REDUCTION PLAN

Kosovo

2018

Draft

Kosovo – National Emission Reduction Plan

National emission reduction plan of major pollutants from large combustion plants

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National Emission Reduction Plan

1. The purpose of the document

Refers to the policy guidelines by the Energy Community Secretariat on the preparation of National Emission Reduction Plans: Further to Article 4(3) of Directive 2001/80/EC read in conjunction with point 3 of Annex II of the Energy Community Treaty as well as Article 3 of the Decision D/2013/05/MC-EnC of the Ministerial Council, Contracting Parties are required to achieve significant emission reductions from existing combustion plants from 1 January 2018, onward at the latest. In its Decision D/2013/05/MC-EnC, the Ministerial Council provided the possibility for Contracting Parties to use, until 31 December 2027 a National Emission Reduction Plan (NERP) as an alternative, to setting the emission limit values of Directive 2001/80/EC, for each combustion plant individually.

Kosovo is a signatory of the Energy Community Treaty (ECT) for Eastern Europe, which entered into force on July 1, 2006. In this context, the Kosovo Government is substantially committed to develop the energy sector in accordance with the requirements of ECT, as the creation of a stable regulatory framework and market that could stimulate the investment in gas networks, power generation and transmission and distribution network of electricity. This Treaty obliges the implementation of the 'Acquis Communautaire' of EU by each Contracting Party, according to a schedule to implement the required reforms, particularly "Acquis Communautaire" on environment with implementation of the Directive 2001/80/EC on the limitation of emissions of certain pollutants into the air, from large combustion plants (LCP). In October 2013, the Ministerial Council of Energy Community, adopted a Decision on implementation of LCP Directive, providing dates for the procedure to implement the individual provisions laid down to the Directive (D/2013/05/MC-End). In the Kosovo legislation, Directive 2001/80/EC transposed into national law, through the Law on IPPC and Administrative Instruction (A.I) on the Rules and Standards of the Air by Stationary Sources of Pollution.

The preparation of the NERP for Kosovo have essential importance to meet the emission limit values for SO₂, NO_x and dust, by gradual reduction of the specific emissions and quantity emissions of pollutants, discharged from large combustion plants and concerns emission reduction targets for existing combustion plants with a rated thermal input of 50 MW or more.

NERP will specify the timing to achieve the requirements of Directives 2010/75/EU of each combustion plant, included in this document, for sulphur dioxide (SO₂) nitrogen oxides (NO_x), and dust. Also NERP includes limits of the overall annual emissions of SO₂, NO_x and dust.

After the response of the ECS to the first proposal of the NERP, and the request for fulfillment of EC requirements to achieve significant emission reductions from existing combustion plants from 1 January 2018 onward at the latest, this updated NERP draft has been modified accordingly, taking into consideration in the text the latest available information, which includes not only the most recent emissions data but also technical information from the feasibility study for the retrofitting of Kosovo B.

A number of strategic actions need to be implemented in order to achieve the ambitious objectives in the requested timeframe. These are the following:

- The current operating units A and B need to be **technically upgraded** in order to comply with the emission standards. This task will be based on the recommendations of the feasibility study for Kosovo B and the experience of previous JICA projects in Kosovo A (which have proved to be very successful and have reduced dust emissions below LCP Directive levels), but will imply periods of maintenance that will reduce the total output.
- In order to balance the system under this scenario, actions need to be taken in terms of:
 - o **increasing the renewable energy** generation capacity (in line with the trend of the last years),
 - o **reducing electricity demand** as much as possible by the implementation of energy efficiency measures and awareness raising.

Eventually, a more ambitious and consistent NERP has been drafted after analyzing the current situation and the additional measures that have been incorporated.

Notwithstanding the ambition of this Plan, it is relevant to stress the constraints in Kosovo that could hamper the achievements of the targets in such a short timeframe:

- Kosovo is in the process to secure financing to achieve the reduction of air emissions from TPPs according to the legislation.
- Kosovo power system is subject to severe risks of security of supply of electricity demand in the ongoing scenario of increasing demand by most consumers and sectors.
- Delay of reconstruction and development of the electricity production sector, in accordance with ECT SEE.
- Delay in the construction and starting to operation of the new installation Kosova e Re.

This document provides the outline of a National Emission Reduction Plan (NERP) to reduce emissions of major pollutants from large combustion plants and concerns emission reduction targets for existing combustion plants with a rated thermal input of 50MW or more, which were granted permission for emissions before 31 December 1992. For each combustion plant included in the NERP, this document specifies the timing to achieve the requirements of Directives 2010/75/EU for sulphur dioxide (SO₂) nitrogen oxides (NO_x), and dust. For operators that operate combustion plant and their groups, NERP includes limits of the overall annual emissions of at least one of the SO₂, NO_x and dust.

The Kosovo NERP includes TPP Kosova A and B, because they have not reached a timely manner to meet the criteria set by D/2001/80 EC, for that it is decided to participate in this derogation mechanism from immediate compliance with the emission limit values of Directive 2010/75/EU.

The units A3, A4 and A5 included in the NERP have made significant investments to improve the technology, which had led to a reduction of emissions, with a special focus on dust.

Upon termination of NERP, combustion plants, which used the application of this derogation mechanism, have to comply with the emission standards on general principles referred to in Directive 2010/75/EU.

2. The scope of application of the NERP

The basis for the development of NERP is governed by principles Directive 2010/75/EU and Decision 2012/115/EU.

During the period from 1990 to 2015 more than 50 technical studies, papers and reports have been prepared by consultants funded by the international donor community, focusing on generation of electricity, power sector restructuring and legal environmental issues in the power sector.

Conclusions and recommendations of these studies were presented in the Kosovo Energy Strategy 2009-2018.

- Construction of a new TPP Kosova e Re
- Rehabilitation of certain units at the existing TPP until the first units of TPP Kosovo E Re is build and
- Development of a new mine to supply TPP Kosovo A and B and TPP Kosova e Re
- Kosovo has developed and is implementing a number of projects as part of the Kosovo Program for Energy Efficiency (EE) and Renewable Energy Resources

(RER). Kosovo has made a lot of efforts in this regard, and in the absence of an Energy Efficiency law, it has promoted a number of secondary legislative acts which regulate certain areas of EE and RER. The following secondary legislation that has been adopted are some examples: (i) Administrative Instruction on Labeling of Household Appliances, (ii) Administrative Instruction on Energy Auditing, (iii) Administrative Instruction on Use of Energy by Final Consumers, (iv) Administrative Instruction on Annual and Decennial Indicative Targets for RER, and (v) Government Decision on Incentives for RER Development.

One of the recent studies that can be used as a reference to the drafted NERP is „Study on the Need for Modernization of Large Combustion Plants, in the Energy Community“ prepared by the South East European Consultants, Ltd. November 2013.

2.1. Plants that can participate in NERP

The basic rules on the conditions for participation in the NERP 2018- 2027, are presented below.

TPP Kosova A and B are identified plants which will be included in the NERP, with a rated thermal input more than 50 MW.

2.2. Plants that cannot apply for participation in NERP

There are no plants in this situation in Kosovo.

2.3. Combustion plants not covered in 2.1 and 2.2

There are no plants in this situation in Kosovo.

3. Approach to the determination rules limiting the total emissions values in 2027

The Policy Guidelines by the Energy Community Secretariat on the preparation on National Emission Reduction Plans (PG 3/2014 of 19 December 2014) have been followed and the tables produced are attached to this document providing the relevant information (e.g. plants included with thermal capacity, average annual waste gas flow rate and fuel used for the period 2008-2012, emissions data for 2014, individual contributions to emission ceiling for the years **2018, 2023, 2027**).

The waste gas flow rate has been calculated taken into account the known data of the installations (fuel characteristics, consumption, operation hours, etc.) and the excel file with the calculations is provided ("Plant").

Combustion plants included in the NERP should provide emission decrease in gross emissions of pollutant(s) from large combustion plants in Kosovo, every year starting from 1 January 2018 until 31 December 2027, during the term of the plan and to fulfill obligations to comply with the emission limit values as stated in Directive 2010/75/EU in terms defined by the Plan.

4. Plants operation during the implementation phase of the NERP

Combustion plants covered by NERP are not obliged to meet, on a plant-by-plant basis, the emission limit values laid down in Directive 2010/75/EU (Part I of Annex V) during the implementation phase of the NERP.

Plants covered by the NERP have to ensure overall compliance with the maximum annual emissions of SO₂, NO_x and dust at national level according to the ceilings established by the NERP during its implementation period (2018 to 2027).

Participation in the NERP does not exclude the continuation of a plant's operation after the end of the NERP's implementation period, provided that such a plant is brought into compliance with the requirements of Directive 2010/75/EU for new plants as specified in Part II of its Annex.

5. Estimated emissions and reporting on NERP

5.1 Evaluation and monitoring of emissions

Where applicable, the evaluation and monitoring of emissions from plants covered by the NERP should be done based on continuous measurements as required by Directive 2010/75/EU. In absence of such measurements, rules and scope of evaluation shall be done:

- Accounting of annual emissions of pollutants shall be performed in accordance with the calculation of the limit of total emissions. The volume of emissions is calculated based on the amount of burned fuel, quantity of flue gases emitted, calculated on the basis of the same factors as for the calculation of limiting emissions and establishing actual average concentrations of emissions. Moreover, the actual concentrations are determined for:

- for TPP B emissions are measured continuously most of the time,

- for TPP A emission of dust is continuously measured and emission of SO₂ and NO_x are calculated based on monthly average concentrations.
- Quantity of lignite burned is defined based on the reports of fuel consumption and its quality, or based on reports of CO₂ emissions in a given year.

Additional (supporting) fuel is not taken into account for accounting scope of emissions.

Verification of the amount of emissions is carried out each year during the term of NERP, by comparing reports of emissions from combustion plants of the operator, based on the ceiling for emissions for the operator.

In order to fulfill its obligations under limitation of total emissions, operator, during the year may exchange the amount of emissions between TPPs, subject that the national gross emission level, as set out in NERP is not exceeded.

5.2. Changes to NERP

The suspension of the operation or the permanent shutdown of a plant covered by the NERP or the exclusion of such a plant should not provide for an increase in the total annual gross emissions. In this case, an update of the list of plants covered by the NERP accompanied with an update to the emission ceilings for all pollutants is necessary.

An application by operator to include a combustion plant in the NERP should not preclude the possibility to remove it from the list of plants later on after the submittal of the general conditions for the use of these mechanisms on the derogation. Combustion plants in this case should be excluded from NERP, after the competent authority has been notified by the operator of the plant on its decision.

The decision to use any alternative mechanism of derogation from NERP can be taken at a time when NERP is subjected for assessment of the Energy Community Secretariat.

During the implementation period of the NERP, a combustion plant may be excluded from the NERP following a decision of the operator. Readiness to refuse from participation in NERP should be reported to the Ministry of Environment before 1 June of the year proceeding the year when the plant does not wish to participate in the NERP

any longer. Exiting the NERP means that the operation of the plant will be in accordance with the principles of the Directive 2010/75/EU and the plant will be required to comply with the emission limit values of Part 1 of Annex V of Directive 2010/75/EU.

A plant that was excluded from the NERP may not re-join the NERP.

Change of the operator of any combustion plant which participates in NERP does not release a new owner from the obligations to obey NERP for this combustion plant.

5.3. Reporting to the Energy Community Treaty

An annual report on the implementation of the NERP should be drawn up and sent to the Energy Community Secretariat within 12 months of the end of the year covered by the report.

The report will contain:

- a list of the participating plants;
- a comparison between the emission ceilings and actual emissions for the year;
- a description of any penalties imposed on plants that failed to comply with their obligations;
- a description of any investments made in flue gas cleaning equipment in the participating plants;
- a list of the plants excluded from the NERP and the reasons for exclusion;
- a list of updated technical data and ceilings for plants remaining in the NERP;
- a summary

6. List of measures to be applied in order to ensure the NERP execution

After the end of the implementation period of the NERP, plants participating in the NERP will have to comply with the standards laid down in Annex V to Directive 2010/75/EU. These standards will be transposed into Kosovo legislation by means of an amendment to the provisions on emission standards for large combustion plants.

These provisions will lay down:

1. Standards for emissions into the air from plants of gases or dust, differing according to the type of activity, the technological process or technical operation, the date of entry into operation of the plant, the date of closure or the further total period of operation.
2. Situations justifying transitional derogations from the standards and the limits on derogations.
3. Conditions for emission standards to be deemed to have been met.

4. Requirements concerning the use of specific technical solutions to ensure that emissions are reduced.
5. Procedures in the event of disruption in technological processes or technical operations relating to the running of the installation.
6. Types of disruption requiring the installation to be shut down.
7. Preventive measures to be taken by the installation operator.
8. Cases in which the installation operator should inform the Ministry of Environment and Spatial Planning, the deadline for such notification and the form it must take.

While the NERP is in force and after it has come to an end, the participating plants will be required to comply with all provisions of Kosovo legislation for environmental protection. Such plants will also be required to comply with the operating conditions laid down in the permits. In accordance with these provisions, the integrated permits will have to include detailed operating conditions for each plant participating in the NERP. The environmental protection legislation lays down detailed rules on the liability of installation operators who fail to comply with the integrated permit conditions.

Such plants will also be required to comply with the operating conditions laid down in the emission permits. In accordance with these provisions, the emission permits will have to include detailed operating conditions for each plant participating in the NERP. The environmental protection legislation lays down detailed rules on the liability of plant operators who fail to comply with the emission permit conditions.

9. Any party operating the plant that requires an emission permit must comply not only with the emission requirements laid down therein – and environmental protection requirements based on Best Available Techniques, as well as environmental quality standards – but also the emission standards laid down in the applicable provisions on installation emission standards. These requirements will thus also have to be met by plants participating in the NERP.

The applicable provisions include specific rules on liability in the event of failure to comply with the environmental protection requirements. There are three different types of liability – civil, criminal and administrative. The forms of liability in this field are set out in particular in the environmental protection legislation. With regard to administrative liability in respect of combustion plants, the provisions include rules under which the installation may be shut down and fines may be imposed, for example, for failure to comply with the integrated permits in terms of the quantities or types of

gases or dust released into the air. These fines are subject to the same enforcement procedures as tax debts.

Procedures for the issue of such decisions by the Ministry of Environment and Spatial Planning may be launched at the environmental inspector's.

Therefore, the above-mentioned measures will be able to be applied to all combustion plants covered by the NERP in order to ensure that those plants comply, by 31 December 2027 at the latest, with the emission limit values as set out in Annex V to Directive 2010/75/EU. In Kosovo, control of compliance with the environmental requirements, including the conditions as set out in integrated permits, is entrusted to environmental inspection of Ministry of Environment and Spatial Planning.

7. Total emission ceilings, and the means of achieving the objectives as set out in the NERP

Implementation of the NERP will lead to a very significant reduction in the emissions of sulphur dioxide, nitrogen oxides and dust for the group of all participating plants. Implementation of both the current objectives of the NERP and the main objective, namely adaptation of plants to the requirements of Directive 2010/75/EU, shall be a combination of control monitoring and technical measures involving retrofitting of the combustion plants (which includes the design and installation of pollutant specific equipment, such as desulphurization units, low-NO_x burners and electrostatic precipitators).

In this case with the project for retrofitting of TPP Kosova B (founded by EU and Kosovo Budget:

- 1- For NO_x
 - in TPP Kosova B1 in 2021 will be implemented IED
 - in TPP Kosova B2 in 2022 will be implemented IED
 - in TPP Kosova A optimization of the burning process in the boilers, with the reduction of the air surplus and with the lowering the boiler temperatures in order to reduce as much as possible production of NO_x

- 2- For Dust
 - in TPP Kosova B1 in 2021 will be implemented IED
 - in TPP Kosova B2 in 2022 will be implemented IED

Table 1 presents an overview of emission ceilings for all participants in the NERP for the **2018-2027** periods (Table B.3 in Decision 2012/115/EU).

Pollutants	2014	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Dust ton/year	15,175	5,255	3,993	3,302	1,556	883	885	475	475	475	475
SO _x ton/year	12,746	12,757	11,112	10,150	10,111	11,077	11,125	9,497	9,497	9,497	6,129
NO _x ton/year	21,412	21,176	13,890	10,239	8,948	8,829	5,563	6,129	6,129	6,129	6,129

Table 1. Combined emission ceilings [Mg] for NERP participants combustion plants in Kosovo

8. Annexes to NERP

Annex 1 - Environmental effects of the application of the NERP

Annex 2 - Emission ceilings [Mg] of total pollutant emissions for operators of the large combustion plants

Annex 3 - List of large combustion plants in Kosovo

Annex 4 - List of large combustion plants in Kosovo covered by the National emission reduction plan

ANNEX 1

National emissions reduction plan

Environmental effects of implementing the NERP

In the following charts is presented the trend of reduction of the gross emission of pollutants during the implementation of NERP. This document shows the sharp reduction at the end of **2027**, compared to 2018 emissions. The value of total emissions in **2027** is based on compliance with the requirements of Directive 2010/ 75/EU. As a result of introduction of the clean coal technologies in the energy sector of Kosovo, total sulfur dioxide emissions is planned to reduce significantly (Figure 1).

The value of total emissions by the end of **2027** will be calculated based on the emission limit values from Directive 2010/75/EU and output forecast and installed capacity of power system of Kosovo, according to the Energy Strategy.

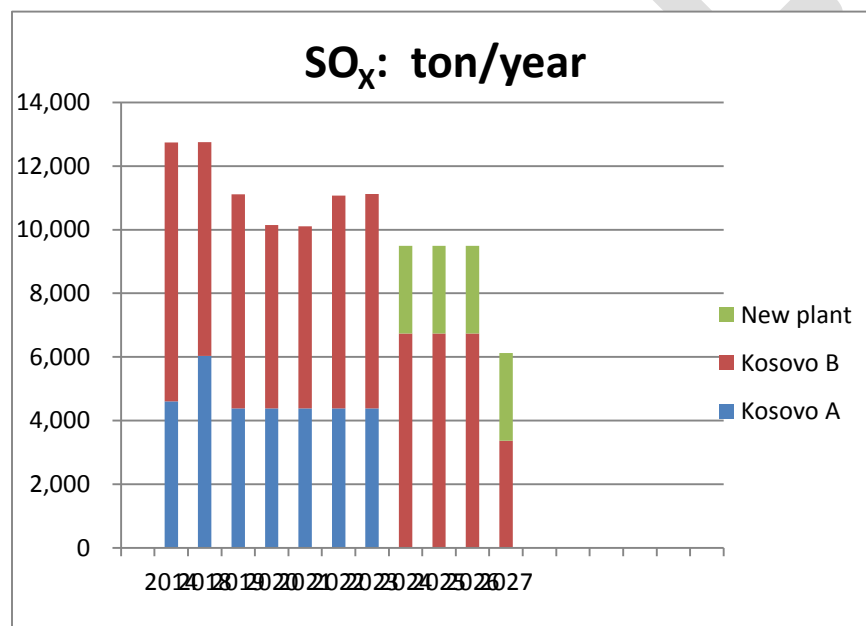


Figure 1. Dynamics of gross emission reduction of SO₂

Figure 2. shows the ceiling values of nitrogen oxides emissions for all combustion Plants in Kosovo for the NERP duration.

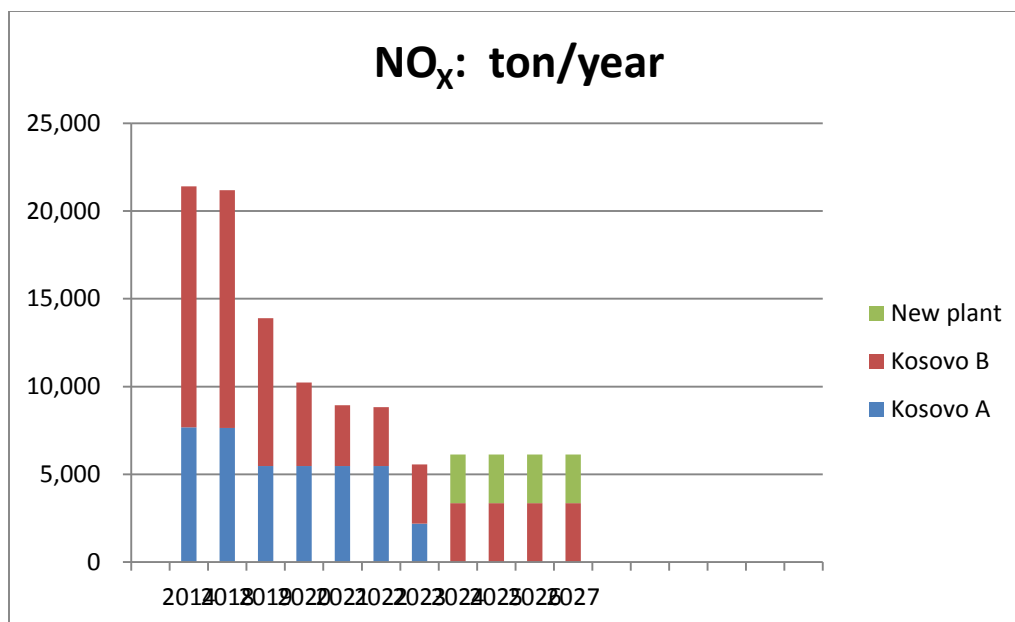


Figure 2. Ceiling values of total NO_x emissions for large combustion plants.

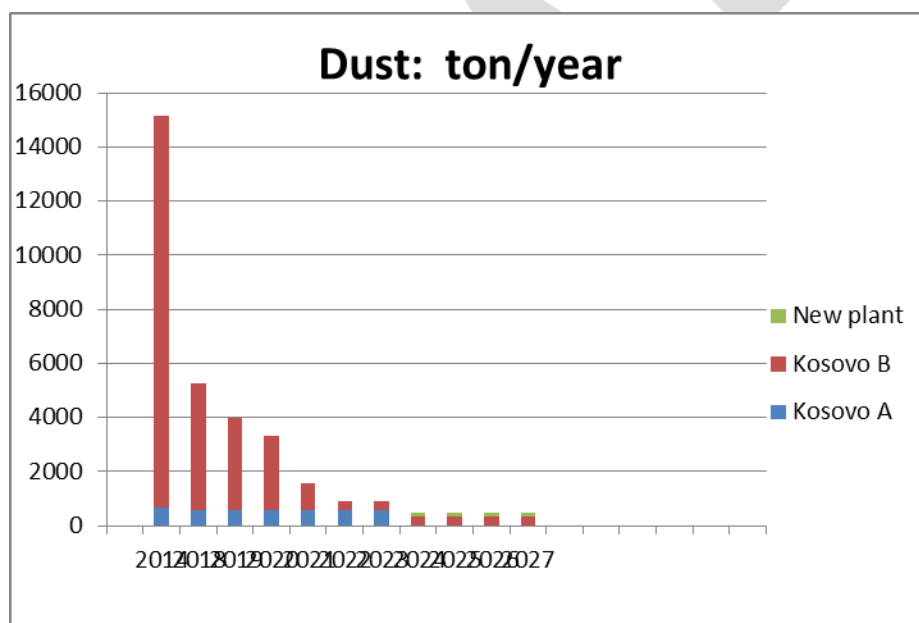


Figure 3. Ceiling values of total dust emissions for large combustion plants of Kosovo.

ANNEX 2

Emission ceilings [Mg] of total pollutant emissions for operators of the large combustion plants. see fig. 1

The emissions ceilings are provided in the attached excel file ("Kosovo 2022 NERP ceilings 20160427") following the guidelines of the Secretariat. In this file the installations included in the NERP are listed and their individual contribution to the emission ceilings calculated.

ANNEX 3

List of large combustion plants in Kosovo

Number	Name of Plant	Location	Operator	Commission Year	Total Thermal input rate on 31.12.2012 (MW)	Annual number of operating hours (average 2008-2012)	SO ₂ Emissions	NO _x Emissions	Dust Emissions
							2012	2012	2012
							t	t	t
1	TC Kosova A3	Obiliq	KEK	1970	200	5331	2138.6	2226.9	1820.3
2	TC Kosova A4	Obiliq	KEK	1971	200	4693	3356	4088	3162
3	TC Kosova A5	Obiliq	KEK	1975	210	3964	3186	3719	1564
4	TC Kosova B	Obiliq	KEK	1984	339x2	6925	9218.5	12616.3	5577.8

ANNEX 4

Basic information - governing EU legislation

The basis for development of NERP is governed by Article 32 of Directive 2010/75/EU and by Decision 2012/115/EU

This document is completed with notes / information based on these documents:

1. Guidelines to assist Contracting Parties in the preparation of a national emission reduction plan (Energy Community)
2. Provisions of Article 4(6) of Directive 2001/80/EC on the limitation of emissions of certain pollutants into the air from large combustion plants as adapted by Article 5 of the Decision of the Ministerial Council D/2013/05/MC-EnC
3. Strategy of Energy of Republic of Kosova 2009-2018
4. Forecast of Energy demand and its coverage for the period 2009-2018(Kosovo)