GRID CODE – OPERATIONAL PLANNING CODE

October 2018
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Operational Planning Code

1 Introduction

1.1 The operational planning code covers the period from one year ahead up to the real-time balancing stage. It covers outage planning, system assessment and day ahead scheduling.

1.2 This operational planning code is not a single entity but is made up of the following sub-codes (hereafter referred to as code):

a) Outage planning code

b) System assessment code

c) Scheduling code

1.3 To carry out its responsibilities under this operational planning code, the TSO requires information from users within Kosovo. These users are legally bound to provide this information fully in the required format and to meet the required timescales. The TSO also requires information from interconnected parties. These interconnected parties are not bound by the requirements of this grid code but by other bi-lateral or multi-lateral agreements.
2 Outage Planning Code

2.1 Introduction

This code sets out the procedures for the following:

a) The co-ordination and approval of planned outages of generating units;

b) The co-ordination of planned outages on the transmission system and of plant and apparatus directly connected to the transmission system;

c) The necessary exchange of information between the TSO and users for drawing up the outage schedules for the transmission system;

d) Information exchange with other TSO-s with regard to outages that affect interstate interconnections;

e) The steps to be followed by the TSO in dealing with unplanned outages:

2.2 Objective

2.2.1 The objective of this outage planning code is to seek to ensure that planned outages of all generating units, users directly connected to the transmission system and outages on the transmission system are approved and co-ordinated. Co-ordination is required to ensure that the security and quality of supply standards on the transmission system are met and as far as is possible the number and effect of constraints on the transmission system are kept to a minimum.

2.2.2 This outage planning code should seek to ensure that the appropriate procedures are in place to allow coordination between the TSO and neighbouring TSO-s with regard to outages that affect interconnector power flows.

2.3 Scope

The outage planning code applies to the following:

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1 This information is available under the terms of the interconnection agreements.
2.4 Objective

2.4.1 The aim of this outage planning code is to ensure that users provide the information that is needed for the following:

a) The safe and secure operation of the transmission system;

b) To allow the TSO to complete assessments on the effect outages that have to power flows in the interconnections.

2.4.2 The extent of this information is dependent upon the size, location and nature of the user's installation and whether or not the information provided at any stage confirms previously supplied data.

2.5 Transmission System Maintenance Standards

2.5.1 The TSO shall maintain the transmission system according to the current standards for maintenance, inspections, repair and replacement of transmission facilities. These standards will provide for high quality, safe and reliable service and shall take into account cost, local geography and weather, the applicable standards for security and quality of supply, national electric industry practice and, sound engineering judgement and experience.

2.5.2 The maintenance and repair system shall provide for work to be carried out at certain periods and under a definite procedure. Both of these are aimed at keeping the transmission system equipment operating efficiently with the optimum labour and material input.

2.5.3 The work to be carried out shall include:

a) TSO;

b) Producers who own generating units connected to the transmission system and producers with generating units greater than 5 MW connected to the distribution system including power park modul (wind and solar powered generating stations) of installed capacity ≥ 10 MW;

c) DSO;

d) other users directly connected to the transmission system:
a) Equipment maintenance;

b) Scheduled and preventive equipment repairs

2.5.4 A system of maintenance and scheduled preventive repairs of the transmission system equipment shall be arranged by the TSO and users in accordance with the prevailing requirements and this grid code and taking into account specific local conditions.

2.5.5 The responsibility for maintenance and repairs and the updating and refurbishing of transmission system facilities shall be borne by the TSO.

2.6 Procedure for Outages Affecting to the Transmission System

2.6.1 General Description

The TSO shall be responsible for the co-ordination of the planned transmission outages with the planned outages of generating units and other users directly connected to the transmission system. It is essential that all individual annual outage schedules are co-ordinated in order to ensure the security and stability of operation of the entire power system. In order to achieve this overall aim the TSO shall do the following:

a) Review and co-ordinate the tentative dates for planned outages for transmission, generation, distribution and other users;

b) Communicate with interconnecting parties to assist in attempting to minimise anticipated constrained operations;

c) Recommend adjustments to the planned outages throughout the year in order to improve the co-ordination in the planned outage schedule

2.6.2 Timescales

2.6.2.1 The annual outage programme consists of the individual annual outage schedules of the respective user's plant and apparatus. It also contains transmission system and distribution system outages. The dates by which the various actions must be carried out are summarised in the following table:
<table>
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<td>November</td>
<td>TSO</td>
</tr>
<tr>
<td>Commencement of outage schedule</td>
<td>January (Year+1)</td>
<td>All</td>
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2.6.2.2 The planned annual outage schedule will be prepared using a two-stage process following the submission of information to the TSO. First the TSO will consider the proposed transmission system outages and outages of interconnectors and distribution equipment that could impact on the transmission system. The information to permit this exercise to be carried out must be available by July.

2.6.2.3 The TSO in preparing this first draft schedule will act in a non-discriminatory way giving priority to users on a rolling basis. The TSO will discuss any contentions with the parties involved. The second stage will be undertaken after all the information on outages of generating units becomes available in beginning of September. If there are any conflicts the TSO will discuss them with the parties involved. If no solution can be achieved by agreement then the TSO will take the final decision and issue outage plan proposal (end of September), which shall be communicated to the regulator through the document Annual Electricity Balance.

2.6.2.4 The final stage in the process is to harmonise the outage plan proposal with regard to the outage schedules for the interconnectors with the neighbouring states. After
this has been agreed by middle of October the TSO will apply any necessary corrections and issue the final approved outage plan by the middle of November.

2.6.2.5 In preparing this schedule, the TSO will seek, as far as is reasonably possible, to satisfy the requirements of all parties plus the requirements of the transmission development plan (TDP). However the TSO has an absolute responsibility for the maintenance of the security and quality of supply standards and this will be the first priority in establishing the outage positioning within the schedule. Where the TSO determines, in its reasonable judgement, that proposed outages would lead to the standards of security and/or quality of supply being infringed, the TSO will make the necessary changes to outage proposals to rectify the situation. In making this judgement the TSMO will consider all factors and will act in a non-discriminatory way.

2.6.2.6 Second to the security and quality criteria, the TSO shall seek to minimise transmission constraint costs incurred in outage situations. However producers or other users shall not be obliged to agree to changes to their outage proposals solely for this reason. They will, however, in the interests of the overall economic management of the Kosovan Power System be required to consider proposals made by the TSO for this reason. At all stages of the process, the TSO shall act with prudence.

2.6.3 Initial Proposals

2.6.3.1 When submitting proposals for outages the user should base their request on the following information:

a) The repair and maintenance requirements of the transmission system plant and apparatus;

b) The repair and maintenance requirements of the user plant and apparatus and equipment used for the connection to the transmission system;

c) Analysis of the actual technical conditions of plant and apparatus and associated equipment and defect checking from previous repairs:

2.6.3.2 The request will as a minimum contain the following information:

a) Name of the transmission plant and apparatus concerned;
b) Name of the generating unit and/or the power plant equipment concerned;

c) Name of the distribution plant and apparatus concerned;

d) Name of the directly connected power consumer plant and apparatus concerned;

e) MW or capacity concerned;

f) Required duration of the outage;

g) Minimum return to service time (this can be different at different stages of the outage);

h) Preferred start date and start time or range of start dates and start times:

2.6.4 Preliminary Outage Schedule

The TSO will prepare the initial annual outage schedule by end of July to include only transmission system outages. Once preliminary agreement has been reached the TSO will further refine it after incorporating outages of generating units and interconnectors for the next calendar year to produce the preliminary outage schedule. The TSO will issue to all the transmission system users the relevant part of the preliminary annual outage schedule not later than middle of October of the current calendar year. The preliminary annual outage schedule is based on the following:

a) Annual outage schedules of the users and the TSO;

b) Annual outage schedule for interconnectors upon agreement with neighbouring TSO-s;

c) Annual demand forecast as per this grid code;

d) Maintaining the security and quality standards for the Kosovan Power System;

e) Minimising constraints;
2.6.5 Final Outage Schedule

The TSO will issue to all transmission network users and the regulator the relevant part of the final annual outage schedule for the next calendar year not later than middle of November of the current calendar year. As of this date the outage dates as specified in the final annual outage plan are binding on all users and may only be changed in the following exceptional circumstances:

a) In case of dangerous operational conditions or the security and stability of a power plant;

b) Where there would otherwise be insufficient generating capacity to meet forecast demand and maintain the security and quality standards for the Kosovan Power System;

c) In case of serious constraints in the regional interconnected transmission system;

d) In the event of mutual agreement between the TSO and the other party;

e) In case of force majeure;

2.7 Transmission and User System Outages

2.7.1 Planned Outages

2.7.1.1 In order to maintain the continuity and viability of the annual planned outage schedule, all users shall submit to the TSO, no later than the 15th of the month an application in respect of any outage planned to start at any time during the following month.

2.7.1.2 The application will contain the following information:

a) Details of the works and/or tests to be carried out;

b) Any necessary pre-work;

c) Confirmation that all contracts etc are in place;

d) Project plan for the work and any risks;
e) Emergency restoration time and relevant restoration plan, if applicable;

f) Confirmation that all quality control and safety procedures have been or will be carried out;

g) List and contacts of responsible personnel:

2.7.1.3 Subsequently all users will confirm outage requirements at least seven days in advance of the planned outage start date.

2.7.2 Unplanned Outages

2.7.2.1 In the event of an unplanned outage the TSO will use the following priority ranking:

a) Forced and fault (emergency) outages, these include overruns of planned outages where it is not possible to restore the plant to service;

b) Overruns of planned outages where it is possible but economically unacceptable to restore the plant to service;

c) Under an emergency or an unplanned situation the above types of outages take priority over planned outages;

d) Outages not included in the planned annual outage schedule but fulfilling the notice periods in paragraph 2.7.1;

e) Outages not included in the planned annual outage schedule and not fulfilling the notice periods in paragraph 2.7.1 - these outages will only be granted in exceptional circumstances:

2.7.2.2 In certain circumstances the TSO may agree outages with users that could give rise to overloads, as a consequence of a fault on the system. Accordingly to enable the TSO to manage the system it will be necessary for the user to agree post fault actions to secure the system. In the absence of such provisions the TSO may not allow the outage to take place.

2.7.2.3 The TSO must take all reasonable steps to allow planned outages to take place, bearing in mind possibly significant costs to the parties of the cancellation of an outage. In making decisions to cancel or postpone an outage, and where there are

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2 There are maintenance outages where restoration is not possible or takes so much time to be impracticable.
options, the TSO will discuss priorities with the users concerned and any other relevant parties and will come to the best solution in the circumstances. In all cases the final decision rests with the TSO.

2.7.3 Changes Requested by TSO

When actual or anticipated system conditions change such that the TSO considers that the rescheduling of a planned outage for economic reasons is advisable, the TSO shall inform the other party of the situation. They shall consider the impact of proceeding with the outage and may either proceed or postpone the outage.

2.7.4 Changes Requested by Users

2.7.4.1 Following the issue of the final annual outage schedule users may request changes. These changes will be considered by the TSO (where time permits) but will not be permitted if agreement will not be allowed if security and/or quality of supply standards being infringed or additional costs being incurred.

2.7.4.2 In considering such requests, the TSO will attempt to make outages possible by system re-configuration or by the re-negotiation of other outages with the parties involved. Consistent with the foregoing, the TSO shall permit or deny transmission outages based on the following:

a) The TSO shall co-ordinate and make every effort to approve all outage requests consistent with secure, reliable and economic system operation, and shall co-ordinate the actions necessary to maintain the security and quality of supply standards;

b) The TSO may deny any unplanned outage or outage change even if it does not impact on security and quality of supply standards and/or constraint costs but if its anticipated duration is greater than one working day;

c) The TSO may deny any unplanned outage or outage change if the TSO determines, at its sole discretion, that agreement to the outage would lead to constraint costs:

2.7.4.3 It must be fully understood that the development of an integrated outage schedule over a period of several months is a complex iterative process and that subsequent changes will generally be difficult to achieve, especially taking into account the need
to co-ordinate outages of interconnectors on a regional level as per ENTSO-E OH P4. This will be particularly true in the peak outage period. All parties should, whenever possible, avoid requests to change outage schedules following the issue of the final planned annual outage schedule.

2.7.5 Emergency Situations

2.7.5.1 The electricity system is always subject to fault and force majeure outages of transmission and distribution equipment and generating units. In these cases it may be necessary for the TSO to cancel or postpone planned outages at short notice, where security and/or quality of supply standards might otherwise be compromised.

2.7.5.2 In the following emergency situations the TSO may take the following action:

a) Postpone or cancel any transmission outage when, in the judgement of the TSO, the operation of the Kosovan power system, to the required security and/or quality of supply standards may be jeopardised. The TSO must immediately notify all the parties involved in the outage and must use reasonable endeavours to re-schedule the outage at the earliest possible time suitable to all the parties;

b) Order the cessation of work and the return to service of an item, or items, of plant where the TSO judges that the continuation of the outage, or outages, may lead to the infringement of the security and/or quality of supply standards. Where time permits, the TSO will discuss the implications of any such decisions, and possible alternatives, with the parties involved:

2.7.5.3 Upon the request of the party and/or the regulator, the TSO shall submit a written report justifying the reasons for cancellation or postponement of a planned outage.

2.7.6 Notification of Forced and Fault User and TSO Outages

2.7.6.1 All users shall notify the TSO of any requirement for a forced outage of any item of transmission system equipment or transmission system related equipment as soon as the user becomes aware of the requirement.
2.7.6.2 The TSO will upon receipt of a notification of the requirement for a forced outage under paragraph 2.7.6.1 immediately inform all users that may be affected by the outage, and apply all necessary measures to minimise the impact of that outage on the operational security of the Kosovan power system, neighbouring power systems and the agreed outage plan.
3 System Assessment Code

3.1 Introduction

This system assessment code sets out procedures for the assessment of system security in the operational timescale and the necessary exchange of information to enable the TSO to carry this out.

3.2 Objective

The objectives of this system assessment code are as follows:

a) To have in place procedures for the exchange of operational data including demand forecasting;

b) The assessment of the security of the Kosovan power system in the medium and long term operational timescales;

3.3 Scope

This system assessment code applies to the following:

a) the TSO;

b) Producers including producers with generating units greater than 5MW connected to the distribution system and power generating modul (wind powered generating stations) and solar of installed capacity ≥10 MW);

c) DSO;

d) Demand users directly connected to the transmission system:

3.4 TSO Forecasts

3.4.1 Demand and constraint forecasts

The demand and constraint forecasts produced under this paragraph are required by the TSO for operational purposes. They are required so that the TSO can confirm that in the operational timescale – up to one year ahead – there will be sufficient production to meet the demand and transmission system capacity available to enable
it to be transported while meeting the security standards. The demand forecasting applies to both real power and reactive power requirements.

### 3.4.2 Demand Forecasts

The TSO will be responsible for the production and publication of the following ongoing demand forecasts\(^3\) for the Kosovan power system or for any part of it as appropriate as part of the security assessment information. The demand shall be the potential system demand:

- a) Every year a forecast of peak demand for the next year by months;
- b) Every month a forecast of peak demand for the next month by day;
- c) Every week a forecast of demand for the next week for each day;
- d) Every day a forecast for each hour of the following day:

### 3.4.3 Transmission System Constraints

The TSO will be responsible for the production and publication on the TSMO website of the following ongoing transmission system constraints forecasts— including interstate interconnections — or for any part of it as appropriate as part of the security assessment information:

- a) Every year a forecast of the constraints on the transmission system for the next year by months;
- b) Every month a forecast of the constraints on the transmission system for the next month by day;
- c) Every week a forecast of the constraints on the transmission system for the next week 21 days for each day.

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\(^3\) The requirements for daily demand forecasts of the day-ahead demand are covered by the system assessment code (within the operational planning code).
d) Every day a day ahead congestion forecast (DACF\(^4\)) will be produced. This DACF will be produced by the TSO together with other TSO-s within the ENTSO-E to meet the requirements of the DACF agreements of ENTSO-E.

3.5 Information to be provided to the TSO

3.5.1 General Information

All the information that is required to be supplied to the TSO under the following paragraphs shall be provided net of the output of any generating plant connected to the distribution system.

3.5.2 Monthly Information

3.5.2.1 Every month – by the 14\(^{th}\) day – all DSOs, users directly connected to the transmission system and producers in respect of each of their power plants with generating units having an output greater than 5MW shall provide the TSO with the following information:

a) Demand forecasts of both active power and reactive power on a connection point basis for each of the following three calendar months on a daily basis;

b) Hourly active and reactive demand profiles for the forecast day of maximum connection point active power demand and the specified day of the transmission system peak demand;

c) Hourly active and reactive demand profiles for the forecast day of minimum connection point active power demand and the specified day of the transmission system minimum demand:

d) Typical hourly load profiles for working day, weekend day and separately for holiday days.

3.5.2.2 The date and time of the forecast minimum and maximum connection point active power demand shall be provided together with the demand forecasts. The TSO will

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\(^4\) DACF – Day Ahead Congestion Forecast
provide all parties with the dates of the forecast transmission system maximum and minimum active power demands for each month and will publish this information on its website.

3.5.3 Weekly Information

Every week – by Friday – all DSOs, demand users directly connected to the transmission system and generators in respect of each of their power plants with generating units having an output greater than 5MW shall provide the TSO with the following information:

a) Demand forecasts of both active power and reactive power on a connection point basis for each of the following three weeks – commencing on Sunday – on an hourly basis;

b) If there is any change, the demand forecast must be refreshed at least two days before the day D.

3.6 Production Forecasts

3.6.1 General Forecasts

The production forecasts are required by the TSO in order to carry out its assessment of power system security. The information supplied under this paragraph is in addition to any information that is required under the outage co-ordination code. The requirements are detailed in the following paragraphs.

3.6.2 Monthly Forecasts

Every month – by the 14th day – all producers in respect of each of their power plants with generating units having an output greater than 5 MW shall provide the TSO with the following information for the following three years on a weekly basis:

a) Intended plant availabilities – taking into account any proposed outages notified under the outage co-ordination code;

b) Constraints in production of energy;

c) Other plant conditions that could materially affect power system security:
3.6.3 Weekly Forecasts

By Friday every week all producers in respect of each of their power plants with generating units having an output greater than 5 MW shall provide the TSO with the following information for the following eight weeks on a daily basis:

a) Intended plant availabilities – taking into account any proposed outages notified under the outage co-ordination code;

b) Constraints in production of energy;

c) Other plant conditions that could materially affect power system security:

3.6.4 Every Day Forecasts

Every day all producers in respect of each of their power plants with generating units having an output greater than 5 MW shall provide the TSO with the following information for the seven day period beginning with D + 2:

a) Intended plant availabilities;

b) Intended generating unit synchronisation/de-synchronisation times for slow start generating units;

c) anticipated self-dispatch levels;

d) other conditions that could materially affect power system security:

3.7 Day-ahead Demand Forecast

System operator forecasts its national demand. This forecast will include an estimate of transmission losses and will be based on the following factors:

a) historical demand;

b) the weather forecast;

c) the time of the year;

d) the day of the week;

e) any exceptional events:
The forecast will cover only the demand in Kosovo and will not include interconnector transfers.

3.7.2 Contents of Day-ahead Demand Forecast

3.7.2.1 The day-ahead demand forecast will contain the following information:

a) hourly expected demand (in MW);

b) expected unserved load (in MW);

c) the TSMO’s hourly required reserve margin;

3.7.2.2 This day-ahead demand forecast will be published on website by 10.00 on the day before the day of physical dispatch.

3.8 Reserve Requirements

3.8.1 The system operator will determine on daily basis based on the long-term reserve forecasts and will adjust these where necessary.

3.8.2 The system operator will procure the reserve that is considered necessary to maintain the appropriate levels of system security while incurring least costs from the ancillary services contracts or balancing mechanism.

3.9 Interconnector Capacity

3.9.1 The system operator in conjunction with other operators in interconnection will determine capacity of each interconnector circuit on yearly, monthly and daily basis. This information will be notified to the market operator in accordance with Auction Rules.

3.9.2 TSO defines: Net transmission capacity (NTC) and Transmission reliability margin (TRM) taking into account the foreseen conditions to the regional transmission systems.

3.9.3 Estimated transmission capacity shall be allocated to the parties in accordance with CAO Auction Rules.
3.10 Security Assessment

3.10.1 General

3.10.1.1 The TSO shall use its best endeavors to maintain power system security in accordance with the operating security standards while allowing the market to operate effectively with a minimum amount of intervention.

3.10.1.2 The TSO has the responsibility for the assessment of, maintenance of and restoration of supply security and continuity in the operational timescales. These requirements cover the following timescales:

   a) Long term – one year ahead – this is covered by the monthly PSSA as per section 3.11.1;

   b) Seasonal – for the winter and summer season according ENTSO-E – mainly for the purpose of coordinated preliminary NTC values at all tie-lines within interconnection as per section 3.11.2;

   c) Medium term – eight weeks ahead – this is covered by the weekly PSSA as per section 3.11.3;

   d) Short term – for the next day – this is covered by the provisions of the system assessment code (within the operational planning code);

3.10.1.3 For the assessment of system security the TSO must take into account the information provided under the requirements of this system assessment code and any other relevant information available from time to time.

3.10.2 Process

In its assessment of power system security the TSO shall follow a thorough, comprehensive process comprising the following key stages:

   a) information collection;

   b) information analysis;

   c) publication of long and medium term power system security assessments:
3.10.3 Information Collection

The information that will be collected by the TSO that it will use in its assessment of system security is detailed in this system assessment code. All parties bound by the terms of this grid code shall provide the information detailed in this system assessment code and any other data reasonably requested by the TSO. The data must be delivered by the time specified and every care must be taken to ensure that the data is both accurate and reliable.

3.10.4 Information Analysis

3.10.4.1 The information analysis process will be carried out by the TSO in order to produce security assessments that will be provided to all parties as per paragraph 3.10.6.

3.10.4.2 This security assessment analysis will use the information collected as per paragraph 3.10.3 above and will use all the tools that are available to the TSO. These can include both online and offline tools and the methods used are at the sole discretion of the TSO. The TSO must document these methods and must make these available to all parties and the regulator.

3.10.5 Confidentiality

The TSO is responsible for preserving the confidentiality of data collected for system assessment and operational planning purposes and will take care of data confidentiality while exchanging data for operational purposes with other TSO-s. This data may be commercially sensitive and confidentiality will be respected as per any bilateral agreement and the provisions of the grid code.

3.10.6 Publication

The TSMO must use its reasonable endeavours to ensure that it provides to all parties a sufficiency of information. It will publish on its website power system security assessments (PSSA) giving present and future assessments of system security with sufficient detail and at intervals agreed with the regulator in order to ensure that all parties are properly informed to enable them to make decisions about the efficient and economical operation of their assets. The PSSAs will specifically do the following:

a) Assist users in the planning of scheduled work on plant and/or apparatus;
b) Inform all parties of possible potential power system security issues:

3.11 Power System Security Assessments (PSSA-s)

3.11.1 Monthly PSSA

3.11.1.1 The TSO will produce and publish a monthly PSSA every month by the 20th day of the month. It will cover the one year period commencing with the month immediately following publication. The information contained in the monthly PSSA will be produced to a resolution of one week.

3.11.1.2 The monthly PSSA should cover the year ahead and will contain the following information:

a) demand forecasts – these will cover the next year to a weekly resolution and the days of forecast maximum and minimum demand on an hourly resolution;

b) For each calendar month the average hourly demand for an average for business days in that month and the equivalent data in respect of the average day which is not a business day in each month;

c) Forecast reserve requirements in order to meet the security standards for the Kosovan power system;

d) Available generation – the expected total available generation capacity making allowances for any generating units or power plants that are energy constrained or constrained for other reasons on a weekly basis;

e) maximum expected demand and the average hourly demand (each in MW) in respect of each month in the calendar year ahead.

f) Estimates of the transmission losses in GWh on a weekly basis;

g) Estimates of the system constraints in GWh to a weekly resolution;

h) Details of any projected situations where the security standards for the Kosovan power system will be violated:

3.11.1.3 The TSO will make the monthly PSSA available electronically to all parties and the regulator.
3.11.2 Seasonal PSSA

3.11.2.1 The **TSO** will produce and publish a seasonal PSSA twice a year in March and September. It will cover the year ahead for the winter and summer seasons mainly for interconnector capacity. It will contain the following information:

a) **Demand forecasts** – a forecast of maximum and minimum demand in winter and summer;

b) Estimates of the **interconnector** maximum and minimum transfer capacity by season;

c) Details of any projected situations where the security standards for the Kosovan **power system** will be violated:

3.11.2.2 The **TSO** will make the seasonal PSSA available electronically to all **parties** and the **regulator**.

3.11.3 Weekly PSSA

3.11.3.1 The **TSO** will produce and publish a weekly PSSA every week by Friday. It will cover the following eight week period commencing on the following Sunday. The weekly PSSA will be produced to a daily resolution.

3.11.3.2 The weekly PSSA should contain the following information:

a) **Demand forecasts** – these will cover the next eight weeks to a daily resolution and the days of forecast maximum and minimum demand to an hourly resolution:

b) Forecast reserve requirements in order to meet the **security standards** for the Kosovan **power system**;

c) Available **production** – the expected total available production capacity making allowances for any **generating units** or **power plants** that are energy constrained or constrained for other reasons on a daily basis:

d) Estimates of the transmission losses in GWh on a daily basis;

e) Estimates of the **system** constraints in GWh to a daily resolution;
f) Details of any projected situations where the security standards for the Kosovan power system will be violated:

3.11.3.3 The TSO will make the weekly PSSA available electronically to all parties and the regulator.

3.11.4 General

3.11.4.1 The TSO may produce and publish additional updated versions of the monthly, seasonal or weekly PSSA in the event of significant changes or other reasons that the TSO deems necessary.

3.11.4.2 The TSO must document the procedure used for the preparation of the monthly, seasonal and weekly PSSAs and make this information available to any party or the regulator if required.
4 Scheduling Code

4.1 Introduction

4.1.1 This scheduling code sets out the procedure for scheduling in the day ahead timescale. During this process, the TSO produces the daily schedule taking into account system and operational limitations.

4.1.2 The scheduling code defines the procedures to be applied by the TSO, in its role as system operator, and the market participants during operational scheduling. It details the process whereby the TSO produces a draft schedule from daily daily nominations provided by the market participants to enable a system security assessment. This process will take into account system congestion and any other operational factors.

4.1.3 The scheduling procedures are closely related to the organisation and functioning of the electricity market. In general daily contractual nominations for the purchase of electricity under bilateral transactions and their total energy requirements. Based on the initial nominations submitted by the market participants, the TSO shall take the necessary measures to maintain the system balance and to achieve, as far as it is possible, reliable transmission of power flows according to scheduled programs.

4.1.4 The detailed functioning of the electricity market and the arrangements for its operation are contained in the document market rules.

4.2 Objective

The overall objectives of this scheduling code are twofold. Firstly to ensure that at all times in control area of the Republic of Kosovo, the production and import electricity should be equal to the load and electricity export and secondly to maintain the appropriate margin of reserve to ensure as far as possible, the integrity of the electricity system and the security and quality of supply of the Kosovan power system in accordance with the grid code by:

a) Checking the daily nominations of market participants;

b) Taking account of network constraints and system constraints;

c) Determine with other neighboring TSO the net transfer capacity of each interconnector.
d) Approved the scheduling program based on the above information;

4.3 Scope

This section is mandatory for:

a) TSMO in its role as System Operator and the Market Operator;

b) DSO;

c) Producers with generating units connected to the Transmission System and generating units larger than 5 MW connected to the Distribution System including the Power Generating Module (solar and wind power generating stations with installed capacity ≥ 5 MW);

d) All trading parties:

4.4 Submissions by Trading Parties

In order to maintain the security and stability for the Kosovan power system the system operator must have information on the planned and available generation and planned consumption in order to plan for shortfalls and surpluses. The system operator will need this information for the purpose of balancing the system and dealing with voltage problems and system constraints.

4.4.1 Physical Notifications (PN)

4.4.1.1 Each trading party should make their nominations in accordance with the time limits set out in the Market Rules for the day of physical dispatch.

4.4.1.2 The daily physical nominations will contain, in addition to physical capacity, the dynamic data parameters. The content and format of the information including the tolerances shall be submitted as set out in the market rules.

4.4.2 Dynamic Data Parameters

The trading party must provide its dynamic data parameters as detailed in Appendix 1 of this operational planning code. If the dynamic data parameters have not changed from the previous notification then this fact should be noted and no new notifications will be required for them.
4.4.3 Checking and Approving Nominations Submissions

4.4.3.1 After the submission of nominations, the TSO shall for each trading party check the validity of the nominations of Physical Nominations and Dynamic Data Parameters that has been received by the Market Operator for each trading party.

4.4.3.2 A nomination will be declared invalid by the TSO in any of the following cases:

   a) No nominations has been submitted within the deadline for submission time;

   b) The nomination does not comply with the format and content of nominations as set out in the Market Rules;

   c) The TSO has received a nomination that does not match the nomination of the other contractual party;

   d) The nomination contains injections from a generating unit that exceed the registered capacity of that generating unit;

4.4.3.3 The system operator shall approve each nomination that has not been declared invalid. This becomes the approved nomination of the corresponding trading party. This approved nomination shall apply for the corresponding day of physical dispatch and shall be binding for the trading party. The TSO shall send a notification of the approved nomination to each trading party within the time limit set out in Market Rules.

4.4.4 Treatment of Invalid Submissions

4.4.4.1 If the system operator declares a nomination invalid, then the system operator will inform the relevant trading party that the nomination has been declared invalid and the reason for its nomination invalidity. The trading party shall then submit a corrected nomination according to the time limit set out in the Market Rules.

4.4.4.2 Following receipt of a corrected nomination, the TSO will check the validity of the corrected nomination in accordance with the requirements of section 4.4.3.

4.4.4.3 The TSO should agree in advance with each trading party what action should be taken in the event of no valid nomination being received. If there is no previous agreement, then the TSO will use the nomination with lower value.
4.4.5  Bids and Offers

4.4.5.1 A trading party can submit bids and offers in respect of their balancing units as per the market rules. Their bids and offers can be made one day before the time limit set out in the Market Rules.

4.4.5.2 The system operator can accept bids and offers from 14.00 on the day ahead until 24.00 on the day of physical dispatch. The bids and offers can be for reserve or for other balancing requirements as per the market rules.

4.4.5.3 The system operator will activate bids and offers in order to balance the system. The system operator will also activate bids and offers to overcome system constraints or for additional reserve. Any accepted bid or offer must be consistent with the DDPs and in particular with its ramp rates. At the end of the activation time of bids and offers, the balancing unit must be returned to its declared PN position.

4.4.6  Suspension of Electricity Market

4.4.6.1 The system operator may, under conditions of force majeure such as a major power system disturbance, the System Operator may suspend the electricity market. Under these conditions the system operator will inform the market operator, the regulator all trading parties and the TSO-s of the interconnected parties accordingly.

4.4.6.2 Under the conditions in paragraph 4.4.6.1 the system operator may refuse to accept or provide any forecasts or nomination.

4.4.6.3 As soon as possible the system operator will inform the market operator, the regulator, all trading parties and the TSO-s of the interconnected parties that the electricity market will be or has been restored and the time at which this has or will occur.

4.4.7  Ancillary Services

For each balancing unit that is available as an ancillary services provider the trading party shall submit an availability notice by no later than 13.00 on D-1 indicating its availability for the day of physical dispatch. The availability notice shall, at a minimum, contain the following information:

a) The availability for each balancing unit for the day concerned;
b) **Outage** programming of inflexible/flexible **outages**, advanced notice of flexible **outage**, short term planned maintenance, return to service times etc;

c) Revised MW figures for different periods of that schedule day where these change across that day:

**4.4.8 Communications**

All communications between the **system operator** and the **market operator** and between the **system operator** and **trading parties** shall be carried out electronically.

**4.4.9 Non-Working Days**

All daily activities associated with this **operational planning code** forecasts, **nominations**, etc. will be provided for all the forthcoming including non-working days **Trading parties** may submit their nominations for one non-working day in working day before non-working day.
5 Appendix 1 – Dynamic Data Parameters

As a minimum, the dynamic data parameters (DDPs) shall contain, for each generating unit with an installed capacity of at least 10 MW the information in the following paragraphs.

5.1 Availability Data

Availability data, each expressed in the form of time available/unavailable from (as dd/mm/yyyy hhmm) or else as a duration (hhmm) as follows:

   a) Planned Outage;
   b) Short-notice outage;
   c) Minimum Shutdown Time;
   d) Minimum On Time;

5.2 Ramp Rate Data

Ramp rate data expressed in the form of MW/minute changes in output including:

   a) Run-up Rate Unconstrained
   b) Run-up Rate Constrained Above MSG;
   c) Run-up Rate Below MSG;
   d) Run-down Rate Unconstrained;
   e) Run-down Rate Constrained Above MSG;
   f) Run-down Rate Below MSG;

5.3 Operational Limits

Operational limits expressed in MW (or in MWh and hhmm in the case of the delivery limits associated with hydro plant)

   a) MEL (Maximum Export Limit of a generating plant);
   b) MIL (Maximum Import Limit of a demand-side unit);
c) Maximum Delivery Volume;

d) Maximum Delivery Period;

e) MSG (Minimum Stable Generation);

f) MSG Unconstrained;

5.4 Notice Requirements

Notice requirements expressed in hhmm that are needed by generators to respond to an instruction from the system operator that include:

a) Notice to Deviate from Zero;

b) Notice to Deliver Offer;

c) Notice to Deliver Bid:

5.5 Other Generating Unit Information

This includes the following data:

a) Governor droop (%);

b) In the case of steam turbines, the synchronising times for the various levels of warmth and in addition the time from synchronisation to dispatch load;

c) in the case of hydro sets and also gas turbines, the time from initiation of a start to achieving dispatch load;

d) Limitations on the number of start-ups per schedule day;

e) Block load in MW following synchronisation;

f) Maximum loading rates for the various levels of warmth;

g) Maximum de-load rates;

h) The MW and MVar capability limits within which the generating unit is able to operate as shown in the relevant generating unit capability chart;
i) Maximum number of on-load cycles per 24 hour period, together with the maximum load increases involved:

5.6 Demand-Side Scheduling and Dispatch Parameters (DSP)

As a minimum, the DSP shall provide, for all demand side dispatch services:

a) Location;

b) Amount;

c) Automatic settings;

d) Time to implement: