

ANNEXURE 1

PROPOSED DRAFT ENERGY (SYSTEM OPERATIONS) REGULATIONS, 2023

Legal Notice No.....

THE ENERGY ACT (No. 1 of 2019)

IN EXERCISE of the powers conferred by Section 138 (3) of the Energy Act, 2019, the
Cabinet Secretary for Energy makes the following Regulations—

THE ENERGY (SYSTEM OPERATIONS) REGULATIONS, 2025

PART I: PRELIMINARIES

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| Citation | 1. These Regulations may be cited as the Energy (System Operations) Regulations, 2023 |
| Definitions | 2. In these Regulations, unless the context otherwise requires

“ <i>Act</i> ” means the Energy Act, 2019 and any revision thereof;

“ <i>Ancillary Services</i> ” has the same meaning assigned to it in Section 138 (11) of the Act

“ <i>Authority</i> ” means the Energy & Petroleum Regulatory Authority established under Section 9(1) of the Act;

“ <i>Black Start</i> ” has the same meaning as ascribed to it in the Grid Code;

“ <i>Business Continuity Plan</i> ” means a plan focusing on sustaining the System Operator's business functions during and after a disruption;

“ <i>Cabinet Secretary</i> ” means the Cabinet Secretary for the time being responsible for Energy as defined in Section 2 of the Act; |

“Consumer” has the same meaning as defined in the Section 2 of the Act;

“Contingency Plan” means a plan that includes policy and procedures for disaster recovery and continuity of operations;

“Control Centre” means a physical location from which the System Operator or a licensee exercises control over its area of operation;

“Distribution Licensee” means a person granted a distribution licence under the Act;

“Distribution Network” has the same meaning as Distribution System defined in the Section 2 of the Act;

“Distribution Network Service Provider” means a person that owns and operates a distribution system and provides distribution services and is licensed under the Act;

“Eastern Africa Power Pool Co-ordination Centre” has the same meaning as defined in the Grid Code;

“Eastern Africa Power Pool” has the same meaning as defined in the Grid Code;

“Eastern Africa Power Pool Interconnection Code” has the same meaning as defined in the Grid Code;

“Generation Licensee” means a person granted a generating licence under the Act;

“Grid” has the same meaning as defined in Section 2 of the Act;

“Grid Code” means the document (or a set of documents) that legally establishes technical and procedural obligations and other requirements for the connection to and use of an electric power system in a manner that will ensure coordinated, efficient, reliable, and safe operations;

“Interconnected Transmission System” means the transmission system in Eastern Africa consisting of two or more individual national systems that normally operate in synchronism and are physically interconnected via transmission facilities;

“Integrated National Energy Plan” means the Energy Plans consolidated and published by the Cabinet Secretary as the national energy plan in respect of coal, renewable energy and electricity pursuant to Section 5 of the Act;

“Integrated National Energy Planning Committee” means the committee established under the Integrated National Energy Plan Regulations;

“Interpersonal Communication” means any medium that allows two or more individuals to interact, consult or exchange information;

“Kenya National Transmission System” means the electricity transmission system of Kenya including all Users connected to that system;

“Licence” has the same meaning as defined in Section 2 of the Act;

“Licensee” has the same meaning as defined in Section 2 of the Act;

“Major Incident” has the same meaning assigned to it in the relevant part of the Grid Code on incident reporting;

“Ministry” means the ministry for the time being responsible for Energy;

“National Control Centre” means a centralized centre operated by the System Operator for purposes of realizing effective monitoring, control, and operation of the entire Kenya National Transmission System;

“Operating Reserves” has the same meaning as assigned in the Grid Code

“Operator” means a natural person authorized and certified to operate a machine, apparatus or the system of a licensee;

“Real Time Operation” means actions to be taken at a given time at which information about the electricity system is made available to the National Control Centre;

“Regional Control Centre” means a Control Centre responsible for the system operations in a region of Kenya;

“Significant Grid User” means the power generating facility and demand facility deemed by the System Operator as significant because of their impact on the Kenya National Transmission System in terms of security of supply including provision of ancillary services;

“System Operations” has the same meaning as defined in Section 2 of the Act;

“System Operator” means the person responsible for the functions assigned to it under Section 138 (1) and (2) of the Act;

“Transmission Network Service Provider” means a person that owns and operates a transmission system and provides transmission services and is licensed under the Act;

“Transmission System Operator” means cross-border entity responsible for the overall coordination of the planning and operation of the transmission system, including the scheduling and dispatch of generating plants within its jurisdiction;

“Tribunal” means the Energy and Petroleum Tribunal established under section 25 of the Act; and

“User” has the same meaning as defined in the Grid Code.

Application 3. These Regulations shall apply to the -

- a) System Operator and Licensees;
- b) any other User connected with the operation of the Kenya National Transmission System.

Purpose of the Regulations 4. The purpose of the Regulations is to provide for efficient, safe, reliable, and coordinated system operations of the Kenya National Transmission System and Interconnected Transmission System.

PART II: SYSTEM OPERATOR

Designation of the System Operator 5. (1) The Authority may define requirements and invite applications for a person to perform the functions of system operations.
 (2) The application for designation as a System Operator shall be accompanied with the requirements specified by the Authority.
 (3) The Authority may after such enquiry as it may deem appropriate and subject to the conditions specified in the applicable documents, designate an applicant as a System Operator.

(4) The Authority shall issue the designated System Operator with an operating licence. The issued licence shall be for a period of twenty (20) years and shall be valid during this period subject to compliance with the Act, terms of the licence and orders of the Authority issued from time to time, unless suspended or revoked earlier by the Authority.

(5) The System Operator licence may be renewed subject to satisfactory performance as may be determined by the Authority.

(6) The System Operator may charge for its services only such fees as determined, specified or approved by the Authority.

Functions of the System Operator 6. (1) The functions of the System Operator, as set out in Section 138 of the Act and elaborated in the Grid Code include: -
 (a) matching consumers' requirements or demand with electrical energy availability or supply, maintaining electric power system security and arranging for the dispatch process;

- (b) giving directions, exercising supervision and control as may be required for ensuring stability of network operations and for achieving the maximum economy and efficiency in the operation of the electric power system;
- (c) optimal scheduling and dispatch of electrical energy and ancillary services throughout the country;
- (d) keeping records of the quantity and quality of electrical energy supply on the national grid; and
- (e) co-ordinating with system operators of the countries whose electric power systems are interconnected with the Kenyan power system so as to ensure efficient operations.

- (2) While discharging its functions and exercising its powers under these Regulations and the Grid Code, the System Operator shall ensure:
 - (a) safety, efficiency, economy, reliability and security of the national power system;
 - (b) that no particular licensee or person is given undue preference or subjected to any undue disadvantage.

**Suspension or
revocation of a
System
Operator
licence**

- 7. (1) Without prejudice to the powers of the Authority under the Act, upon being satisfied that the System Operator licensee is not discharging its functions in accordance with these regulations or terms and conditions of the licence, or otherwise fails to carry on its business in the interests of the market, the Authority may, after providing an opportunity to show cause, take such measures as it deems expedient including but not limited to suspension or cancellation of the licence under these regulations and take such other action as may be necessary to safeguard the interests of all stakeholders.
- (2) Where the Authority revokes or suspends the licence of a System Operator, it may appoint an administrator to take over the System Operator's functions.

PART III: GRID CODE

- Grid Code**
8. (1) The Authority shall, through a participatory process involving every licensee and person carrying out any undertaking connected to the national power system, develop and periodically review the Grid Code.
- (2) The Grid Code shall comprise of:
- (a) The Kenya National Transmission Grid Code; and
 - (b) The Kenya National Distribution Grid Code.
- (3) Every licensee and person carrying out any undertaking connected to the national power system shall comply with the relevant provisions of the Grid Code.
- (4) The Authority shall at all times ensure that the latest version of the Grid Code is published on its website.

PART IV: INFRASTRUCTURE

- Physical Infrastructure and personnel**
9. (1) The System Operator shall establish, manage, operate and maintain the main and back-up control centres and other infrastructure for purposes of system operations.
- (2) The System Operator shall, in coordination and consultation with relevant licensees, ensure that all the infrastructure and facilities necessary for efficient and secure performance of system operations functions are:
- (a) made available and kept in a good state of repair; and
 - (b) reviewed, improved and enhanced taking into account advances in technology.
- (3) The System Operator shall:
- (a) recruit and retain enough suitably qualified staff to carry out system operations; and
 - (b) provide continuous and coordinated operational training and certification for its staff.
- Communication System and**
10. (1) The System Operator shall ensure the availability, reliability, security and redundancy of the following:

**security
analysis**

- (a) Supervisory control and data acquisition (SCADA) and other necessary tools, for ensuring effective and efficient system operations within such period as may be directed by the Authority or provided in its licence. This is to ensure continuous monitoring of the state of the transmission system, including state estimation applications and facilities for load-frequency control;
 - (b) means of controlling the switching of circuit breakers, coupler circuit breakers, transformer tap changers, and other equipment which serve to control transmission system elements;
 - (c) means of communicating with the Eastern Africa Power Pool Co-ordination Centre for facilitating cross border market and the Users; and
 - (d) tools for operational security analysis.
- (2) Where the System Operator tools, means and facilities referred to in sub-regulation (1) affect the transmission-connected Distribution Network Service Providers or Users involved in supplying balancing services, Ancillary Services or in system defence or restoration or in delivery of real-time operational data, the relevant User shall cooperate and coordinate to specify and ensure the availability, reliability and redundancy of these tools, means, and facilities.
- (3) The System Operator shall adopt and update a Business Continuity Plan detailing its responses to a loss of critical tools, means, and facilities, containing provisions for their maintenance, replacement, and development.
- (4) The System Operator shall not utilize open-source tools to perform the system operations.

PART V: ORGANISATION

**Financial and
Organizational
Affairs**

- 11.** (1) The System Operator shall acquire and maintain an optimal and competent personnel to undertake among other functions: -
- a) Real-Time operations;
 - b) Operational Planning;
 - c) System analysis, development and optimization; and,
 - d) Supervisory Control and Data Acquisition (SCADA) & Telecommunications.
- (2) The staff complement for the System Operator shall be approved by the Authority and may consist of the organogram set out in the First Schedule.
- (3) The Authority shall publish on its website a register of licensed system operators to be engaged by the System Operator and Users.
- (4) The System Operator shall not, except to the extent specified in the terms and condition of its licence, stand surety, give guarantees, acquire or offer to acquire any interest in any entity without prior written approval of the Authority.

PART VI: SYSTEM PLANNING AND OPERATION

**Data and
information
sharing**

- 12.** Users shall provide the System Operator with necessary data and information for purposes of efficient, safe, reliable and coordinated system operations of the Kenya National Transmission System and Interconnected Transmission System.

**Annual
Generation and
Transmission
Planning**

- 13.** (1) The System Operator shall, ninety (90) days before the beginning of a calendar year, define annual information and data to be provided by Licensees for purposes of system planning. The data and information shall include:
- a) Generation Capacity (active and reactive power);
 - b) Transmission system transfer and transformation capacity;
 - c) Planned Outages.
- (2) Transmission Licensees shall provide the data and information sixty (60) days to the start of calendar year.

- (3) The System Operator shall consolidate the information in sub regulation (1) into an annual operational plan. The information shall be used to: -
 - (a) assess the adequacy and capability of generating units to meet forecast power demand and energy for the next year;
 - (b) optimize planned generation and transmission outages to ensure cost effective operations; and
 - (c) ensure that the operational problems likely to be encountered are highlighted and alternative solutions considered and evaluated.
- (4) Where the System Operator foresees a generation and/or transmission capacity shortfall, the System Operator shall identify strategies to mitigate the same. Such identified mitigation measures shall be submitted to the Authority for approval, thirty (30) days before the beginning of a calendar year.
- (5) The System Operator shall share the annual operation plans with the Authority and the Cabinet Secretary.

**Weekly
Transmission
and Generation
Operation
Plans**

- 14.** (1) The System Operator shall provide a weekly operations plan to the Authority. The plan shall include:
 - (a) availability of generating units;
 - (b) availability of the Kenya National Transmission System; and
 - (c) foreseen transmission system constraints and mitigation measures.
- (2) The System Operator shall share the plan in sub-regulation (1) above with licensees. The information shall be specific to a licensee's generating plant(s) and/or transmission network.

**Daily
Transmission
and Generation
Operation
Plans**

- 15.** The System Operator shall undertake daily operational planning:
 - (a) To ensure optimum generation availability, including a reserve margin to meet the forecasted demand after, inter alia, taking into account:

- (i) availability of generation facilities and/or tie-line transfers;
- (ii) constraints from time to time due to technical limitations on the total system or any part of it; and
- (b) in accordance with the Grid Code for the release of portions of the system for maintenance, repair, extension, or reinforcement.

PART VII: OPERATIONAL PROCEDURES

Power system protection

- 16.** (1) The Users shall develop the power system protection schemes and submit to the System Operator for concurrence.
- (2) The System Operator shall make available the power system protection schemes to its personnel for operational decisions.
- (3) Each User shall be primarily responsible for the correct selective operation of their power system protection schemes.
- (4) The System Operator shall oversee and confirm optimal co-ordination of power system protection schemes of Users to ensure reliable operation of the Kenya National Transmission System.

Communication with Users

- 17.** (1) The System Operator and Users shall have Interpersonal Communication capabilities for the exchange of information necessary for the reliable operation of the Kenya National Transmission System.
- (2) The System Operator in consultation with the Users shall develop documented communications protocols for system operations whose content at a minimum shall be in accordance with the guidelines provided for in the Second Schedule. The protocols and any updates thereof shall be approved by the Authority.
- (3) Unless otherwise agreed, the language between the operators of a System Operator and the Users shall be English.

Procedures, Protocols and

- 18.** (1) Procedures, protocols and memoranda of operations shall be developed and adopted to align, synergize and support the

**memoranda of
system
operations**

mandate of the System Operator in discharging its mandate in recognition of the inherent interrelations between generation, transmission, and distribution licensees constituting the Kenya National Transmission System.

- (2) The procedures, protocols and memoranda of operations shall be developed between: -
 - (a) the System Operator and Users
 - (b) the Transmission and Distribution licensees.
- (3) The procedures, protocols and memoranda as in sub-regulation (1) above shall cover the following aspects: -
 - (a) The operational boundaries between the players as in sub-regulation (2);
 - (b) The operational and quality standards to be observed.
 - (c) The handling and management of emergency and contingency situations and incidences.
 - (d) Commissioning protocols and procedures of new infrastructure into the existing system.
 - (e) Communication channels.
- (4) The System Operator shall in consultation with Users prepare and issue operational procedures, protocols and memoranda as in sub-regulation (1) detailing its operational relationship with the Users.
- (5) Each Transmission Network System Provider shall in consultation with respective Distribution Network Service Providers prepare and issue operational procedures, protocols, and memoranda as in sub-regulation (1) detailing its operational relationship with the Distribution Network Service Providers.
- (6) The procedures, protocol, and memoranda shall be filed to the Authority for approval by the System Operator or Users as may be applicable.
- (7) The Authority shall review and communicate its decision in writing no later than sixty (60) days from the date of receipt

of operational procedures, protocols and memoranda for the System Operator or Users.

PART VIII - OPERATIONAL SECURITY

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| Monitoring of
the power
system | 19. The System Operator shall;

(1) Maintain power system security by real-time monitoring and operation of the Kenya National Transmission System and relevant parts of its interconnections as provided for in the relevant sections of the Grid Code.

(2) In consultation with Users develop procedures for maintaining the operational security of the Kenya National Transmission System. These procedures shall be approved by the Authority. |
| Operational
Security Limits | 20. (1) The System Operator shall set, review, and update operational security limits on an annual basis or earlier when necessary.

(2) For each interconnector, the System Operator shall agree with the respective Transmission System Operator on common operational security limits. |
| Critical
infrastructure
protection | 21. (1) The System Operator shall develop a Security Plan containing a risk assessment of its infrastructure covering major physical and cyber threat scenarios in line with the Grid Code and any directions of the Authority.

(2) The System Operator shall regularly review the security plan to address changes of threat scenarios in line with the technological evolution in the power system. In this regard, the System Operator shall;

(a) ensure that remote access to its communication system and data is limited to an absolute authenticated and authorized minimum.

(b) avail a Business Continuity Plan focusing on sustaining its functions during and after a disruption. |

- (c) develop a Contingency Plan in consultation with all Users and based on internationally acceptable utility practices, that shall at a minimum address the following: -
 - (i) Server backup and recovery;
 - (ii) Data backup and recovery;
 - (iii) Network backup and recovery;
 - (d) ensure security, confidentiality, integrity, and availability of data traversing the networks through use of biometrics, signed hashes and/or any other applicable technology.
 - (e) implement encryption for all site-to-site communications.
- Right to Activate System Capabilities** **22.** The System Operator shall have the right to use all available transmission-connected reactive power capabilities within the Kenya National Transmission System for effective reactive power management and maintaining the voltage ranges set out in the Grid Code.
- Demand control** **23.** The System Operator shall;
- (1) Have procedures in place to enable a reduction in demand on the Kenya National Transmission System to avoid a breakdown or overloading of the system or in the event of generation shortage.
 - (2) Notify the Users of a risk of demand control in a timely manner whenever it is anticipated.
- Emergency operations** **24.** The System Operator shall: -
- (1) have the capacity to identify and secure operating conditions on the Kenya National Transmission System.
 - (2) have comprehensive contingency procedures and plans in place for the restoration of supplies in the shortest time possible using the most effective means.
 - (3) provide copies of their emergency plans and procedures to the Authority and to the relevant Users.

PART IX – REAL TIME BALANCING OPERATIONS

**Scheduling and
Dispatch**

- 25.** (1) The System Operator shall develop procedures for optimal scheduling and dispatch in accordance with the Grid Code.
- (2) The scheduling and dispatch procedures shall be submitted to the Authority for approval as a condition precedent to the licence becoming effective. The System Operator may review the procedures on a need basis and such reviews shall be approved by the Authority prior to implementation.
- (3) The System Operator shall carry out dispatch of: -
- (a) all generation facilities that shall make their generation facilities available to the System Operator as required in the Grid Code; and,
 - (b) available transfers on tie lines, including imports.
- (4) While carrying out the dispatch function, the System Operator shall pay due regard to information provided by licensees and promote open access to the Kenya National Transmission System and the Interconnected Transmission System.

**Interchange
scheduling**

- 26.** The System Operator shall: -
- (1) Determine the Net Transfer Capability (NTC) between the Kenya National Transmission System and neighbouring transmission systems over the operational planning timescales and publish the net transfer capability values.
- (2) Ensure that interchange schedules or schedule changes do not violate established reliability criteria in the Interconnected Transmission System.
- (3) Continually evaluate transfer limits and adjust interchange schedules to guarantee interconnector(s) availability and stability.

**Frequency
control**

- 27.** (1) The System Operator shall ensure there is sufficient operating reserve capacity to maintain the frequency of the Kenya National Transmission System and Interconnected Transmission System under both normal and emergency conditions as stipulated in the relevant sections in the Grid Code.

- (2) In establishing primary response requirements following the loss of a generating unit, the System Operator shall calculate the demand-frequency characteristics of Kenya National Transmission System.
- (3) The System Operator shall provide adequate secondary response by Automatic Generation Control to regulate power interchange and frequency.

**Ancillary
Services**

- 28.** (1) The System Operator shall optimally schedule and dispatch Ancillary Services throughout the country as provided for in the Act
- (2) The procurement of Ancillary Services envisaged in sub-regulation (1) shall be prescribed by the Authority.
 - (3) The System Operator shall keep a register of the Ancillary Service providers.
 - (4) The System Operator shall propose opportunities and interventions for the provision of Ancillary Services for consideration by the Integrated National Energy Planning Committee.

Data Exchange

- 29.** (1) The Users shall avail to the System Operator real time technical data in a format to be prescribed by the System Operator for effective system operations.
- (2) The Licensees shall provide data on equipment capacity and capability to the System Operator for determination or allocation of transmission and transformation capacities. The System Operator shall prescribe the format, frequency, and timelines for provision of the data.
 - (3) All Users shall within twenty-four (24) hours provide to the System Operator data on Grid incidents, Grid disturbance, and any other data which in its view can be of help for analysis.
 - (4) All Users shall maintain in good condition and provide for the necessary redundancy of all critical data storage equipment

such as disturbance recorders and event loggers so that under no circumstance shall such important data be lost.

**Information
exchange**

30. (1) Users shall: -

(a) provide such information as the System Operator may reasonably request on a regular basis for the purposes of operating the Kenya National Transmission System as stipulated in the Grid Code.

(b) support data acquisition to and from the plant gateway.

The System Operator shall be able to monitor the state of the Kenya National Transmission System via telemetry from the gateway connected to the User's plant, the signals and indications required by the System Operator shall be agreed between the System Operator and the User.

(2) The System Operator shall:

(a) provide complete and accurate information regarding the system operations and power system planning.

(b) keep an updated technical database of the Kenya National Transmission System for purposes of modelling and studying the System.

(c) with approval of the Authority shall provide Users with any relevant information that they may require to properly plan and design their own networks/ installations or comply with their other obligations in terms of the Grid Code.

(d) estimate any system planning information not provided by a User which in its opinion is needed for operational planning purposes.

(e) set communication facilities' standards between it and Users and avail the same in its website for use by prospective Users.

(f) archive operational information, as described in the Grid Code.

- (3) Notification to the System Operator of all forced outages of both generation and transmission resources shall not exceed thirty (30) minutes after they are identified.
- (4) The applicable User and the System Operator shall agree on the format of the file used for data transfer. The data shall be made available in a common, electronically protected directory and the System Operator shall be able to fetch the data.

PART X - REPORTING REQUIREMENTS

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| Daily Reports | 31. The System Operator shall prepare and submit to the Authority in a prescribed format: - <ul style="list-style-type: none">(a) day ahead dispatch schedule; and(b) daily system operations performance data. |
| Annual Reports | 32. (1) The System Operator shall annually prepare and submit to the Authority in a prescribed format: - <ul style="list-style-type: none">(a) system operations and dispatch performance indicators;(b) details about system operations including but not limited to power system planning, clearly highlighting instances where economic dispatch was not directed due to system constraints i.e., network congestion, fuel constraints and unplanned outages and emergencies.(c) details of its board of directors indicating change in the same, if any;(d) details of its senior management including their respective qualifications and experience;(e) details about procurement of ancillary services, etc;(f) details about the marginal price including daily, weekly, monthly and annual patterns and comparisons with previous years, highlighting events that led to any abnormal deviations and any measures that can be taken to reduce the overall system marginal price; |

- (g) details of network nodes, grids, etc. causing congestion in the system and measures required to address such congestions;
- (h) action taken against the generation companies for non-compliance with directions of the System Operator issued under the Grid Code, if any, including details of tests performed for verification of dependable capacity and heat rate of generation companies;
- (i) actions taken to address any emergency in its operations;
- (j) reinforcement and/or development proposals to achieve the prescribed operation performance standards in the Grid Code, licence or any other document by the Authority;
- (k) status of Users' compliance with the directions of the Authority issued during the reporting period to the System Operator, along with reasons for non-compliance, as may be necessary; and
- (l) any other activities performed for effective and efficient system operations.

(2) The information in sub regulation (1) shall be provided not later than thirty (30) days after the end of calendar year.

(3) The Authority shall prepare and publish on its website, not later than ninety (90) days after the end of a financial year, an annual report on the operations of the system operator.

Incident reporting

- 33.** (1) The System Operator shall develop and submit to the Authority for approval procedures for handling major incident reporting between the Users and the System Operator.
- (2) Reporting of major incidents shall be as outlined in the relevant section of the Grid Code.
- (3) The System Operator shall report to the Authority any grid disturbance resulting in failure of power supply to large areas in the country within twenty-four (24) hours of its occurrence. A comprehensive incident report detailing the cause of the

disturbance, steps taken to restore normalcy and mitigation plans to avoid recurrence shall be provided to the Authority within thirty (30) days.

34. The System Operator shall also furnish to the Authority such other documents, information or explanation relating to system operations as the Authority may, from time to time, require in writing.

PART XI - GENERAL PROVISIONS

Duty to maintain confidentiality

35. (1) The System Operator, Users, officer of the System Operator, whether during the tenure of his office or thereafter, and any other person who has by any means knowledge of any confidential information in relation to the System Operations, shall not give, divulge, reveal or otherwise disclose such information or document to any other person as provided for in the Grid Code.
- (2) The duty referred to in sub-regulation (1) does not prevent the disclosure of information if the relevant information has been exempted in the relevant provisions of the Grid Code.
- (3) Any information submitted to the Authority by the System Operator shall be considered public information except in cases where upon specific or special request of the licensee, the Authority decides that such information shall be treated as confidential information

Maintenance of record and provision of information

36. (1) The System Operator shall keep complete and accurate records in respect of all aspects of the System Operations as provided for in the Grid Code. The information shall include records required by the Authority.
- (2) All records and data referred to in sub-regulation (1) shall be retained by the System Operator for a minimum period of six (6) years from the date of expiry of the relevant agreement, arrangement, or transaction or for such further extended

period as may be provided in the Grid Code or Commercial Code or specifically required by the Authority.

- (3) All records shall be kept in good order, properly indexed, and shall ensure quick search by different criteria including with respect to the respective entity, calculation of marginal price of the system, dispatch history and other related aspects.
- (4) The Authority may, upon forty-eight (48) hours prior notice in writing to the System Operator, enter any premises of the System Operator where the record and data referred to in sub-regulation (1) are kept for the examination or taking of copies thereof during office hours.

System tests	37.	The System Operator shall conduct cause and/or coordinate all system tests to ensure the security of Kenya National Transmission System and the Interconnected Transmission System in compliance with the Grid Code.
Fair and equitable treatment	38.	The System Operator shall, during conduct of System Operations, provide non-discriminatory and fair treatment to all Users and shall avoid practices that may have any adverse impact on free and fair competition, open access rights and transparent system operations and effective power system planning.
Prohibition against anti-competitive practices	39.	The System Operator shall not engage in any form of anti-competitive activities, or activities contrary to transparent, free and fair competition.
Training and certification for System Operations	40.	<ul style="list-style-type: none">(1) The System Operator, Licensees and other Users shall deploy personnel that meet basic engineering training, operational training, experience and certification in their respective operations on the Kenya National Transmission System and the Interconnected Transmission System.(2) The System Operator's operational staff shall undergo regular appraisal training and certification as stipulated in the Grid Code.

- (3) The System Operator and each Licensee shall be responsible for the staff deployed in operations as described in sub-regulation (1) and shall respectively be answerable to the Authority or any other legal agency under the laws of Kenya, for any breach under this regulation.
- (4) The System Operators shall be those licensed by the Authority for purposes of system operations.
- System Operations Fees**
- 41.** (1) The System Operator shall charge for its services only such fees as determined, specified or approved by the Authority.
- (2) In making a fee proposal for the approval of the Authority under sub-regulation (1), the System Operator shall provide adequate information highlighting clearly how the fees is calculated, the breakdown per service and the likely effect of the fee on Users including clarity on who shall bear the costs.
- Accounting**
- 42.** (1) The System Operator shall prepare its accounts in accordance with the applicable documents as may be revised from time to time provided that the requirements with regard to maintenance of accounts specified in these regulations shall apply in addition to any other requirements as may be applicable in any other law for the time being in force.
- (2) The regulatory accounts of the System Operator shall be kept in the manner and form prescribed in the regulations on regulatory accounts.
- Health, Environmental and Safety Obligations**
- 43.** The System Operator shall comply with all health, safety, and environmental laws in force and applicable in Kenya.
- Insurance**
- 44.** The System Operator shall at all times maintain an insurance to cover the System Operator and third parties in the performance of its functions.

PART XII - OFFENCES AND PENALTIES

45. (1) A licensee who is found to be guilty of any of the offences listed below shall be liable to the fine or penalty indicated beside the offence.

OFFENCE	FINE/PENALTY
Failure by Generation Licensees and Transmission Licensees to submit their outage plans as per the provisions of the Grid Code	A fine not exceeding one hundred thousand Kenya shillings for every day the violation occurs
Failure by Generation Licensees and Transmission Licensees to submit their outage plans within the prescribed timelines in line with the relevant provisions of the Grid Code	A fine not exceeding one hundred thousand Kenya shillings for every day the violation occurs
Submission of false/inaccurate outage plans by Generation Licensees and Transmission Licensees to the System Operator.	A fine not exceeding ten million shillings or imprisonment for a term not exceeding five years or both.
Where the System Operator or the User makes a false statement or a statement which he has reasons to believe is untrue	A fine not exceeding ten million shillings or imprisonment for a term not exceeding five years or both.
Preventing an officer or duly notified agent of the Authority during working hours, from entering into and inspecting any premises where a licensed	Kshs. 50,000/= for every day that the incident persists

activity taking place or
suspected to be taking place.

- (2) The payment of a fine shall not indemnify a Licensee or User from any obligations to compensate for system or financial losses resulting from the breach.
- (3) The fines or penalties in sub regulation (1) are without prejudice to the Authority's right to suspend or revoke the licensee's licence in accordance with the Act.
- (4) Any fine which is not paid shall be a civil debt recoverable summarily.

PART XIII - COMPLAINS, DISPUTES, AND APPEALS

Complaints, Disputes, and Appeals

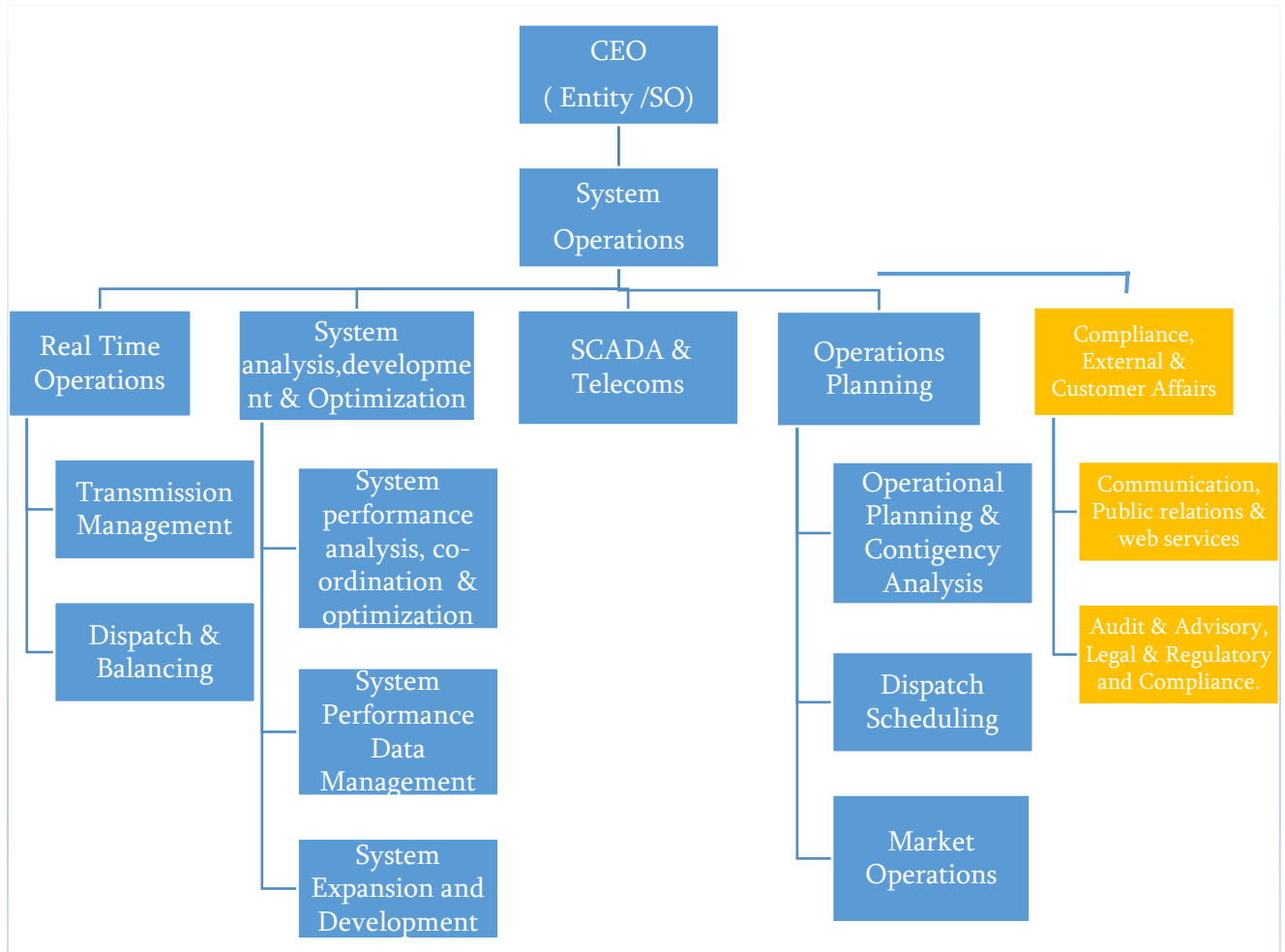
- 46.** (1) The System Operator shall make available complaint-handling mechanism that provide Users with expeditious, fair, transparent, inexpensive, accessible, speedy and effective dispute resolution without unnecessary cost or burden.
- (2) Complaints and disputes between the System Operator and other System Operators within the Eastern Africa Power Pool shall be dealt with in accordance with the procedures provided for under the Eastern Africa Power Pool Interconnection Code.
- (3) Any dispute between the System Operator and Users shall be referred to the Authority for resolution in accordance with the Energy (Complaints and Disputes Resolution) Regulations, 2012 or any other subsequent or replacement regulations. Where a dispute referred to the Authority has not been resolved, the directions of the System Operator shall be complied with by the Users.
- (4) All appeals arising from sub-regulation (2) shall be dealt with in accordance with the procedures provided for under the Eastern Africa Power Pool Interconnection Code.
- (5) Any person aggrieved by a decision or order of the Authority under sub-regulation (3) may appeal to the Tribunal in accordance with section 24 of the Act.

PART XIV - TRANSITIONAL PROVISIONS AND COMMENCEMENT

- | | |
|--------------------------------|---|
| Transitional provisions | 47. The existing designated System Operator shall operate the network for a maximum period of two (2) years within which period the Authority shall issue a new system designation in compliance to these Regulations. |
| Commencement | 48. These regulations shall come into effect immediately upon gazettelement by the Cabinet Secretary. |

FIRST SCHEDULE (r.11)

SYSTEM OPERATOR'S ORGANOGRAM



Key

Core functions



Support function



Notes on the organogram

1) Real-Time Operations

Real- Time operations is responsible for

- a. ensuring the operational security of the Kenya National Transmission System, both in terms of future provisions and in Real-Time,
- b. generation dispatch to balance supply and demand
- c. access to the Grid.

2) **System Analysis, Development & Optimization:**

- a. Suggest the development, renewal and refurbishing of the grid to guarantee an optimum access to the network in terms of quality and quantity.
- b. Define the rules for connection of eligible customers to the grid, the Asset owners are the main contractors. keeps a long-term view on consumption/generation adequacy and on the resulting network development needs.
- c. Carry out protection schemes coordination with Users to ensure optimal operation of the transmission system.
- d. responsible for training of System Operator personnel offline on system scenarios on the Dispatcher Training Simulator and other technical trainings relevant to system operations, including but not limited to Power System Protection and SCADA/ EMS applications.

3) **SCADA & Telecoms:** oversees the operational support and maintenance of the EMS/SCADA system and the Telecommunications equipment. another important element is the support units that deal with the maintenance of all the facilities (back-ups in particular) of the national control centre.

4) **Operational Planning**

Short-term Planning Section, responsible for forecasting with the mission of preparing the Kenya National Transmission System operations through a period running from day ahead to 1 year. It is broken down into 2 Units which includes the operational team responsible for planning/preparing for the next day's network operations and connections, as well as planning Kenyan consumption and preparing for generation management.

Long term planning Section:

- responsible for studying the medium-term network security conditions.

- carries out system studies (analysis of network restrictions for large-scale transmission on a year horizon, pre-planning for outages) and on-demand studies, initiated both internally within the System Operator and externally.
- participates in working groups under the INEP Committee (established by the Ministry of Energy).

Transmission planning:

- responsible for planning network maintenance and coordination of planned outages of production facilities, whilst fulfilling system safety conditions and minimizing excess network management costs.

5) **Compliance, External & Customer affairs:** oversees the legal aspects on regulatory and compliance of obligations associated with the System Operations and external communication with stakeholders on the day to day operations of the System Operator.

SECOND SCHEDULE (r.17)

GUIDELINES ON OPERATING PERSONNEL COMMUNICATIONS PROTOCOLS

- 1) The System Operator shall in consultation with the Users develop documented communications protocols for its operating personnel that issue and receive operating instructions. The protocols shall, at a minimum:
 - a. require operating personnel that issue and receive an oral or written operating instruction to, unless otherwise agreed upon, use the English language.
 - b. require operating personnel that issue an oral two-party, person-to-person operating instruction to take one of the following actions:
 - i. Confirm the receiver's response if the repeated information is correct
 - ii. Reissue the Operating Instruction if the repeated information is incorrect or if requested by the receiver
 - iii. Take an alternative action if a response is not received or if the Operating Instruction was not understood by the receiver.
 - c. Require operating personnel that receive an oral two-party, person-to-person operating instruction to take one of the following actions:
 - i. Repeat, not necessarily verbatim, the operating instruction and receive confirmation from the issuer that the response was correct.
 - ii. Request that the issuer reissues the operating instruction.
 - d. Specify the instances that require time identification when issuing an oral or written operating instruction and the format for that time identification.
 - e. Specify the nomenclature for transmission interface elements and Transmission Interface Facilities when issuing an oral or written operating instruction.
- 2) The System Operator and Users shall conduct initial training for each of its operating personnel responsible for the real-time operation of the Kenya National Transmission System and Interconnected Transmission System on the documented communication protocols developed prior to that individual operator issuing or receiving an operating instruction.

3) The System Operator shall

- a. continuously assess the adherence to the documented communications protocols by all system operations personnel that issue and receive operating instructions and provide feedback to its personnel and the Users to take corrective action.
- b. every two years conduct formal assessment of adherence to the documented communication protocols and prepare and submit a report to the Users for corrective action and to the Authority for enforcement.
- c. every two years assess the continued adequacy and effectiveness of the documented communication protocols for the system operations personnel that issue and receive operating instructions and where necessary, submit the updated document to the Authority for approval.