



## NATIONAL ELECTRIC POWER REGULATORY AUTHORITY LICENSING (SYSTEM OPERATOR) REGULATIONS, 2021

23G. System Operator licence.— (1) No person shall, unless licensed by the Authority under this Act, undertake functions as a system operator as may be specified by the Authority, including but not limited to. -

- (a) generation scheduling, commitment and dispatch;
- (b) transmission scheduling and generation outage coordination;
- (c) transmission congestion management;
- (d) cross border transmission coordination;
- (e) procurement and scheduling of ancillary services and system planning for long term capacity; and
- (f) such other activities as may be required for reliable and efficient System Operations:

Provided that only one such licence shall be granted at any one time:

Provided further that the National Grid Company shall be deemed to be a system operator for a period of two years from the commencement of the Regulation of Generation, Transmission and Distribution of Electric Power (Amendment) Act, 2018.

(2) The eligibility criteria for grant of licence as a system operator shall be prescribed by the Federal Government and shall include, without limitation,—

- (i) minimum technical and human resource requirements; and
- (ii) public service obligations of the licensee including quality of service, and transparency of transactions.

(3) A person eligible for a licence to be licensed as a system operator may make an application to the Authority in such form and manner and on such conditions as may be specified.

(4) An application for licence under sub-section (3) shall be accompanied by a draft grid code governing the form and manner in which the system operator shall undertake its licensed activities.

(5) The Authority may require an applicant under sub-section (3) to provide such further information as it considers necessary in relation to the application, in such form or verified in such manner as the Authority may direct.

### NOTIFICATION

**S.R.O. \_\_\_\_\_.** In exercise of the powers conferred by Section 47, read with sections 23G and 7(2)(a) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997), the National Electric Power Regulatory Authority hereby notifies the following regulations: —

**1. Title, Commencement and Applicability.** — (1) These regulations shall be called the National Electric Power Regulatory Authority Licensing (System Operator) Regulations, 2021.

(2) These regulations shall come into force at once.

**2. Definitions** — (1) In these regulations, unless there is anything repugnant in the subject or context—

(i) "Act" means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997);

(ii) "Affiliate" means any person who owns or controls, or is owned or controlled by, or is under common ownership or control with, that person.

For the purpose of this definition –

(a) "control" means the right, power, or ability to influence or determine any decision in respect of the conduct of affairs of the person under control,

(b) "ownership" means the ownership or the right to own the shares or other voting securities of the person owned;

(iii) "Ancillary services" means the services used in system operation to maintain the safe, reliable, stable, and quality of the system administered by the System Operator as stipulated in the grid code;

(iv) "Applicable Documents" means the Act, the rules, regulations, licences, registrations, directives, codes, standards, guidelines, circulars, orders, determinations, documents, instruments, approvals and authorizations issued or granted from time to time by the Authority in exercise of its powers under the Act;

(v) "Application" means an application made by a person, in hard or electronic form, in accordance with the provisions of these regulations and shall, where the context so permits, include the documents-in-support, and "applicant" shall be construed accordingly;

- (vi) “Auditors” means the licensee’s auditors for the time of holding the office in accordance with the requirements of the Companies Act, 2017 as amended or replaced from time to time, or such other auditors as may be appointed in respect of the licensee by the Authority from time to time in accordance with these regulations or the licence;
- (vii) “Authority” means the National Electric Power Regulatory Authority established under section 3 of the Act;
- (viii) “Authorized” means, in relation to any matter, authorized in writing by the Authority;
- (ix) “Dispatch’ means the issuance of instructions manual or automatic by the System Operator, to schedule the output active and reactive power and when applicable control the operation of the generation facilities in order to start, increase, decrease or stop the generation facility, or the delivery of ancillary services, in accordance with the Grid Code;
- (x) “Economic dispatch” means to allocate output (active and reactive power) among available generation and imports to serve the system demand minimizing operational generation costs within system security constraints and operational limits of generation units to maintain the dynamic balance, as determined by the System Operation in accordance to the Grid Code;
- (xi) “Grid code” means the grid code prepared by the System Operator as established in the Act, with the approval of the Authority;
- (xii) “Inter-connection service” means the connection of generation facilities with the transmission and distribution facilities as the case may be;
- (xiii) “Licensee” means a holder of a System Operator licence;

- (xiv) "System Operator" means a person licensed under the Section 23G of the Act to administer system operation, including dispatch;
- (xv) "System Operation" means all function to be performed by the Licensee including but not limited to provide safe, reliable, stable, economic and efficient administration and use of the system, generation scheduling and dispatch, coordinate maintenance outages, system planning, test and authorize new connections, and maintain the energy balance in the system or recover after faults;
- (xvi) "Prudent Electrical Supply Industry Practices" means the use of equipment, practices or methods, as required, to protect the grid system, employees, agents and consumers from malfunctions occurring at the power plant; and to protect the power plant and the employees and agents at the power plant from malfunctions occurring on the grid system;
- (xvii) "Balancing Energy" means energy increase or decrease, which is required in dispatch or instructions by the Licensee for covering the deviation between the actual input or off-take of electricity and the amounts of electricity forecasted and scheduled, to maintain the stability of the system and frequency in the power system within limits established in system security standards, and avoid a partial or total system collapse;
- (xviii) "Force majeure" means an act or natural, social event, such as earthquakes, lightning, cyclones, floods, volcanic eruptions, fires or wars, armed conflicts, insurrections, terroristic or military acts, which prevents the licensee to fulfill his obligation according to the licence, as well as other acts or events which are beyond reasonable control;
- (xix) "Tie-line" means interconnection facility for the transfer of electric power between the Licensee and other utilities not governed by the Act
- (xx) "Total System" means the transmission and distribution systems of all authorised electricity operators located in Pakistan;

(2) Words and expressions used but not defined in these regulations shall have the same meaning as in the Act all other Applicable Documents made thereunder;

## **Part II**

### **Licences**

**3. System Operator licence** — (1) There shall be a single System Operator licenced by the Authority and authorised to conduct the System Operations, subject to the Applicable Documents as amended from time to time;

(2). The Applicant along with a written application for the Licence as a System Operator shall submit the following documents, data and information:

- (a) copies of memorandum of association and articles of association;
- (b) documents showing that satisfactory system and controls are available to conduct the System Operations and comply with the provisions of the Grid Code;
- (c) documents showing that adequate financial, technical, organizational and human resources are available to undertake the functions of the System Operator in a proper and efficient manner on an ongoing basis;
- (d) Grid Code;
- (e) fee as may be specified by the Authority;
- (f) the list of its board of directors and chairman with their profiles;
- (g) the list of bodies/power sector entities, which have a direct or indirect control of the Applicant, indicating clearly the way of and their respective rights;
- (h) information about the MD or CEO of the Applicant and other officers assigned with competences in organizational and administrative functions of the Applicant i.e. (i) information of competences and functions assigned; (ii) description of their any other professional and/or commercial activities; (iii) declaration of interest stating that such persons do not participate in activities of entities/companies engaged in the generation, trading, distribution and/or supply of electricity;
- (i) Copies of internal procedures, which prevent from a disclosure of confidential or other commercially sensitive information to companies/entities engaged in the generation, trading, distribution and/or supply or electricity; and

- (j) specify financial resources in ownership of the applicant or indicate its capability to accumulate those resources that are necessary to carry out functions of the System Operator along with audited financial statement of the applicant;
- (k) draft agreements if any, for participation, cooperation and exchange of information with the Market Operator, generation companies and other licensees and registered entities;
- (l) brief of all functions of the Applicant, which it will perform if licensed as System Operator pursuant to the Act, relevant rules and regulations, and other Applicable Documents;

(3). The Applicant shall ensure that

- (a) All documents, data and information required under the Regulations shall be submitted in written form and electronically.
- (b) At any time during the licensing proceedings, the Authority may require from the Applicant and/or any other related entity any additional documents, data and/or information relevant for the license of the System Operator;
- (c) The Applicant shall inform the Authority about any change in the submitted documents, data and/or information immediately, but in any case not later than in five (5) working days after the change, and shall submit the corrected documents, data and/or information.
- (d) The Applicant will submit a written request together with the documents specified in these Regulations, in the original and/or certified format.

**4. Grant of Licence** — (1) The Licence for System Operator shall be granted for carrying out System Operations within the Pakistan;

(2) The Licensee shall comply with and adhere to the Act, rules and regulations made there under and other Applicable Documents as prescribed or specified from time to time.

**5. Duties and responsibilities of the System Operator** — (1) The System Operator shall regulate its operations, standards of practice and business conduct

in accordance with these Regulations, terms of its Licence, Grid Code, and other Applicable Documents, as approved by the Authority from time to time.

(2) The Authority may, if required in the public interest, direct the System Operator to amend its existing grid code as it may specify in writing, following the amendment procedures established in the Grid Code.

**6. Term of Licence** — (1) The licence shall be granted for a period of 20 years unless revoked, renewed, or extended by the Authority pursuant to the provisions of these regulations, term of licence, or other Applicable Documents.

**7. Legal and contractual requirements** — (1) The System Operator shall enter into a written service level agreement with each person to whom system operation services are provided.

(2) The System Operator shall, subject to the terms and conditions of its licence and the Grid Code;

- (i) retain all records during the course of providing the service, for a period as may be specified in the Grid Code;
- (ii) treat the confidential information of each person to whom such service is provided as confidential;
- (iii) provide information requested regarding the entity being serviced in terms of the written mandate of such entity.

### **PART III**

#### **Obligations**

**8. General Obligations of the Licensee** — (1) The licensee shall, at all times during the term of the licence, be obliged to:

- (i) provide reliable System Operations;
- (ii) comply with:
  - (a) orders and directions of the Authority;
  - (b) relevant laws;
  - (c) terms and conditions in its licence; and
  - (d) applicable codes and standards;

- (iii) employ an adequate number of qualified personnel to ensure that the conduct of its Licenced Activity complies with the terms and conditions of its licence, the Grid Code and Applicable Documents;
- (iv) maintain technical and financial capability, material and human resources, and organizational structure for its licenced activity;
- (v) maintain a valid insurance cover of all assets which are in the ownership in accordance with the relevant laws;
- (vi) pay applicable fees;
- (vii) not engage in any activity that may disrupt or interfere with competition in an open market, or discriminate among users;
- (viii) submit to the Authority a true and correct form of all data and information that the Authority may require;
- (ix) exchange and maintain information about system operation functions including authorization of connections, dispatch, maintenance outages coordination, system constraints, unplanned outages and emergencies, ancillary services, in accordance with the Grid Code, and the Applicable Documents;
- (x) submit annual system operation report to the Authority on the status of activities being undertaken and be responsible for balancing electricity generation, dispatch, demand in operational plans and in real time in a manner that controls frequency, protects system stability and quality of service in accordance with the Grid Code and Applicable Documents;
- (xi) as soon as practicable, but in any event not more than thirty (30) days after it becomes aware of the fact, notify the Authority:
  - (a) if it is unable to conduct its licenced activity;
  - (b) if the conduct of its licenced activity would or might lead to the breach of any of these terms and conditions or materially affect delivery of services to another licensee or user / customer; or
  - (c) any material change in circumstance that adversely affects or may adversely affect performance of the licensed activity;
- (xii) submit to the Authority a monthly operational performance report including the System Operator's compliance with these regulations, Grid code, and other Applicable Documents;



- (xiii) carry out studies and planning on future security of supply with adequate reserves, transparent, predictable and efficient System Operations;
- (xiv) ensure the secure operation of the power system, and maintain the required reliability and quality of service standards;
- (xv) balance the electricity system in real time balancing electricity demand with generation and imports injected to the national electricity system while complying with system security and other constraints;
- (xvi) take necessary measures to ensure the continuity of electric energy supply and maintain the system balance reliability, stability to avoid any system collapse including but not limited to brownouts and blackouts;

**9. Force Majeure** — In circumstances where damage arises as a result of force majeure, or solely by fault of the aggrieved party or a third party, the System Operator does not bear any liability.

**10. Technical Obligations of the Licensee** — (1) The licensee shall, at all times during the licence term, be obliged to:

- (i) maintain safe, stable, reliable and secure system operation;
- (ii) assign and monitor ancillary services, including frequency regulation;
- (iii) maintain, implement and enforce the Grid Code. Including monitoring compliance;
- (iv) provide third party access in an objective and non-discriminatory manner;
- (v) ensure that it establishes a compliance program, which sets out measures to be taken to ensure that it provides non-discriminatory services to all users;
- (vi) other that may be defined in the Grid Code and Applicable Documents;

**11. System Operation, Central Dispatch** — (1) The Licensee shall carry out the dispatch of:

- (i) all generation facilities that shall make their generation facilities available to the Licensee as required in the Grid Code;
- (ii) available transfers on tie lines, including imports.

(2) While carrying out the dispatch function the Licensee shall pay due regard to forecast information provided to it by the Distribution Companies/Suppliers;

(3) The Licensee shall undertake operational planning: -

- (i) for matching generation output (including a reserve of generation to provide a security margin of generation availability) with forecast demand after taking into account inter alia:
  - (a) non-availability of generation sets and/or tie-line transfers;
  - (b) constraints from time to time imposed by technical limitations on the total system or any part of it; and
  - (c) electricity delivered to the total system from generation sets.
- (ii) in accordance with the Grid Code for the release of portions of the Licensee's system for maintenance, repair, extension or reinforcement.
- (iii) short term load forecast of energy and demand to undertake the reliable and efficient System Operations along with generation scheduling, commitment, dispatch and transmission facilities outages coordination and congestion management;
- (iv) procurement and scheduling of ancillary services and system planning for long term capacity and such other activities as may be required for reliable and efficient System Operations;

(4) The Licensee shall carry out an economic dispatch for all generating units and for transfers on tie lines in accordance with the Grid Code;

(5) The Licensee shall furnish to the Authority any information required with respect to the economic dispatch system or any aspect of its operation.

**12. Maintenance of records and provision of information:** The Licensee shall maintain records for a period of five (5) years, provided that the Licensee shall not destroy or dispose of any such records or data after the aforesaid period without thirty (30) days prior written notice and approval of the Authority.

- (i) Such record shall include the following information:
  - (a) generation availability and energy injected by generation;
  - (b) transfers across tie-lines available or declared as available;
  - (c) marginal Price and cost per unit of energy of generating units;

- (d) generating units and transfers across tie-lines facilities scheduled for dispatch or dispatched;
  - (e) ancillary services called for by the Licensee and provided;
  - (f) energy taken from the total system by any electric power supplier;
  - (g) any other record required in the Grid Code and Applicable Documents;
- (ii) The Licensee shall not dispose of or destroy any records or data that the Authority directs the Licensee to preserve.
  - (iii) The Licensee shall furnish to the Authority any information required in respect of the economic dispatch system or any aspect of system operation;

**13. Administration of Ancillary Services:** The Licensee shall purchase or otherwise acquire ancillary services from the most economical sources available to it having regard to the quantity and nature of the services required to enable it, and to ensure compliance with system security standards.

**14. Non discriminatory services and competition:** In the provision of system operation services, the Licensee shall not discriminate between any authorized electricity operators, BPC, classes of BPCs, persons or classes of persons. The Licensee in providing system operation services, including dispatch, shall not restrict, distort or prevent competition where applicable or intended.

**15. Compliance with Applicable Documents:** The Licensee shall comply with all relevant provisions of Grid Code and other Applicable Documents while performing its functions;

**16. System and Operational Planning:** The Licensee shall be responsible for both short and medium system operational planning (daily, weekly and monthly and year ahead) and long term system expansion plans including indicative generation capacity expansion plan (IGCEP) and transmission system expansion plan (TSEP) in accordance with the Grid Code and other Applicable Documents;

**17. Performance Standards:** The Licensee shall confirm to the relevant performance standards indicators and regulations as may be specified by the Authority from time to time;

**18. Communication System —** (1) The System Operator shall ensure deployment of Supervisory Control and Data Acquisition (SCADA) for an efficient system operation within a period of 2 years;

(2) The System Operator shall operate, maintain, expand and upgrade from time to time, the Supervisory Control and Data Acquisition (SCADA) system;

(3) The System Operator shall provide all users (Grid Code Participants) with specifications for RTUs, communications system requirements and protocols to connect and functionally integrate Code Participants' facilities into the System Operator Supervisory Control and Data Acquisition (SCADA) system;

**19. Security of Supply** — (1) The System Operator will perform the following functions to protect security of supply in the system:

(i) The System Operator to provide information, and short to medium-term forecasting on all aspects of security of supply (demand – generation balance), to identify and recommend measures to manage supply emergencies;

(2) The System Operator is required to produce, publish, implement and comply with:

(i) Security of Supply Forecasting and Information Procedure (SSFIP) which must specify the: Comment: It is not the authority of the SO to establish policies

(a) Regular monitoring that the System Operator will publish to illustrate how system infrastructure assets and ancillary services are being used to manage least cost security of supply with available resources;

(b) Specify the annual reporting that the System Operator will publish to assess whether security of supply [and system security and quality of service) standards are likely to be met with at least the next 5 years horizon;

(c) Provision of an annual security of supply assessment by the System Operator as required by the Authority.

**20. Risk requirements** — (1) The System Operator shall, subject to the provisions of its licence: -

(i) Promptly and diligently adhere to all reasonable risk-management and risk containment measures.

- (ii) Promptly and diligently adhere to and implement risk-reduction measures.
- (2) The System Operator shall report to the Authority any:
- (i) Material changes to its management, ownership, and nature of business; and
  - (ii) Other information that the Authority may require from time to time.

## **PART IV**

### **Miscellaneous**

**21. Prohibited activities:** The Licensee shall not at any time, directly or indirectly, acquire or undertake, any beneficial interest in or associate itself with, as far as the generation, distribution, electric power supplier or trading businesses of electric power are concerned with any other licensee or persons involved in the generation and distribution businesses or intending to generate or distribute, supply or trade electric power in Pakistan. The Licensee shall not levy any rate or charge which has not been approved by the Authority as a fee/tariff.

**22. Confidentiality** — In any application, document-in-support or information required to be furnished under these regulations, the applicant or the licensee may, as the case may be, request the Authority to permit the applicant or the licensee to withhold information, the disclosure of which may materially and adversely affect the commercial interests of the applicant or the licensee, or with respect to which the applicant or the licensee is under a contractual or other valid and enforceable obligation of non-disclosure.

Provided that, the Authority shall have the power to call for review such information in order to determine whether to allow or not allow the request for confidentiality by the applicant or the licensee.