ENERGY REGULATORY AUTHORITY

REGULATION ON SECONDARY SOURCES OF ELECTRICITY

Approved with ERE Board decision no. 273, dated 23.12.2020

CHAPTER I

GENERAL PROVISIONS

Article 1
Legal basis

This regulation is drafted and approved in conformity with the provisions of Article 70 of Law nr. 43/2015 "On Power Sector", as amended.

Article 2
Purpose

This regulation defines the procedures and technical conditions for the installation from the end use customer connected in the distribution network of a secondary source (back up source) of electricity supply to enable the electricity supply when it is interrupted the general supply from the distribution network.

Article 3
Entities

This regulation shall be implemented by any end use customer that wishes to install a secondary source of back up energy and that is connected with the distribution network despite of the voltage level and its status.

Article 4
Definitions

1. All the terms used on this Regulation that are defined on Law no. 43/2015 "On Power Sector" as amended shall have the meaning defined by the Law.
2. The terms used on this Regulation which are not defined on Law no. 43/4015, shall have the meaning as follows:
    - **Application** – shall mean the submission of the request and the documentation at the Electricity Distribution System Operator, that is submitted by a customer for the installation of a secondary source.
    - **Secondary Source** – shall mean the backup source for electricity production part of internal installations of a customer that is not connected with the electricity distribution network and that is prohibited to work on parallel with it.
    - **Main load switch** – shall mean the electricity equipment that is able to switch and interrupt (switch off) the object of the customer, respectively on the conditions of a normal switch, and when specified on the conditions issued of the overload, defects in short circuit, the lack of voltage in the distribution network, damage of network or plant insulation.

- **Transformation load switch** – shall mean the switch that transforms the load from one source to another, respectively from the main source of the distribution network to the secondary source installed from the customer, which may be manual, automatic, or a combination of them that realizes different maneuvering schemes, on the conditions of without voltage operation.
- **Frequency –** shall mean the number of alternative current cycles per second on which the Power System operates (it is measured in Hz)
- **Active power (P)** – shall mean the average value received for, a periodic period, of the immediate current and voltage product expressed in W.
- **Full power (S)** – shall mean the voltage in r.m.s. and current r.m.s. at the element or the circuit expressed in VA.
- **Permission –** shall mean a permission or authorization issued from the respective authorities for the installation and construction of a backup secondary source.
- **Protection** – shall mean the system of measures to prevent not normal conditions during the work of backup secondary source.
- **Protection at the installation period of the secondary Source** – shall mean the electricity protection necessary to ensure that the customer facility shall be unswitched for any event that may damage the integrity or may violate the safety and reliability of the electricity distribution network.
- **Load** – shall mean one or more electricity equipment's or customers that receive electric power from the Power System. The load is different from the Requirement for electricity, that means the measured quantity required or received from the Load in KW, MW or KVA, MVA.
- **Installation point at the Secondary Source** – shall mean the location with the geographical coordinates, including its address and location at a facility or outside it on which it is installed a secondary source.
- **Installation process** – shall mean the technical procedure that shall be followed to enable the installation of a secondary backup electricity source.
- **Tests** – shall mean the tests performed by the DSO (Distribution System Operator), including the simulation or control conditions to implement the standard rules for the installation and operation of the secondary backup source.
- **Verification** – shall mean all the measures by which it is controlled the conformity of electricity installation with the required standard.

CHAPTER II

THE CONDITIONS AND TECHNICAL STANDARDS OF SAFETY

Article 5

The general safety standards

1. To guarantee the safe and sustainable operation of the distribution system the end use customers require the installation of a secondary source of electricity shall implement the requirement of the Distribution Code for the connection, operation and maintenance of a secondary source.
2. For the design, installation and operation of a secondary source the minimum necessary requirements regarding their operation safety are:
   a) All of the additions, modifications, or re-configurations at the internal electricity installations of the customer that are necessary for the installation of the secondary source shall be performed by a licensed person.
   b) For any modification of the installation point of the secondary source shall be taken the prior approval from the DSO.
   c) The installation of the secondary source shall be designed, installed, tested in conformity with the applicable technical standards, specifically IEC 60364, which shall are attached on Annex 1 of this Regulation.

Article 6

General protections of the secondary source

1. At the design, installation and operation stages of a secondary source shall be ensured its protection from:
   a) The construction parallel with the primary source of supply from the distribution network;
   b) Not correct synchronization of operation;
   c) Overloading;
   d) Short connections;
   e) Connections with the ground;
   f) The currents at levels over/above the permitted ones;
   g) The voltage difference beyond the permitted values;
   h) Change of frequency beyond the permitted values;
   i) Atmosphere discharges and induced over-voltages.
2. The essential requirements to design the protection schemes are as follows:
   a) The protection system shall ensure any internal defect on the installation and operation of a secondary source shall not cause problems and consequences to the distribution network and the other users of this network.
   b) The protection system shall ensure than any defect of the distribution network shall not cause damaging effects for the secondary source.
3. The customer that installs a secondary source, shall guarantee and is responsible for the control and maintenance of the protection system during the operation of the secondary source.
4. In case of damaging the protection, that may come as consequence of the failure of protection equipment's or the control and/or loose of the control power, the secondary source shall be immediately disconnected from the operation.

Article 7

Relay protection of the secondary source

1. To increase the security level during the operation of a secondary source, the DSO may require from the end use customer planning to install such a source, to be equipped with a time relay protection and/or relay power direction of the secondary source.
2. The time relay shall complete the following conditions:
   a) The maximum permitted time for the parallel work is 1 second or 60 cycles.
   b) The time relay to avoid the parallel working, shall be able to act to the additional protection that shall act over the switch of the secondary back up source or the general switch.
3. Relay of power direction shall be installed at the customer side (at the secondary side of the transformer) and shall be completed the conditions as follows:

a) The relay shall be set to be able to act at the switch of the secondary back up source or the general switch.

b) The relay shall be set to be tuned to be able to detect the magnetizing current of the distribution transformer after the energization.

4. If it is required the relay protection equipment, they shall be tested and commissioned from the DSO representatives.

Article 8

The switch of transforming the load

1. Any secondary load shall be equipped with the electric switch of transforming the load from one electricity source to the other.
2. The electric switch of transforming the load shall be manual, automatic or a combination of them. This shall be settled in conformity with the best European standards and in operation of:
   a) Maximum load
   b) Maximum current of the short connection.

The Automatic Transfer Switch (ATS) is installed frequently where it is located the secondary source, in order that the source may temporarily ensure electricity if this is interrupted or there is lack of electricity from the distribution network.

3. Depending on the customer, there exist three selecting methods which guarantee the secure transit of the load from one electricity source to the other, as defined below:

   a) Transit/Open Contact /Unswitched by a two positions switch.

   On this type of switches the load shall be disconnected in advance from one source before connected with the other. This type of switch is implemented for the loads with low inductivity or the ones with not a specific importance.

b) Transferring/Delayed contact/Scheduled by a switch with two positions.

This switch is used for inductive character loads such as motor loads and transformers. The load is disconnected from one source, then it stops for a scheduled time in an "off" position before the contact/connection with another source to protect from the over-currents established during the temporary process.
The switch with delayed transit may also be used with the option of load disconnect for the customer category with not a specific importance.

c) Transferring/Closed contact/ Switched by the three positions switch.

The closed transferring/transit switches are used for the installation of the secondary sources from the customers/users for which the electricity supply disconnection is a risk for the human life and may cause damage of the equipment's or the loss of electronic data, the destroy of production because of interruption of the technological processes etc.

The automatic switch of load transfer shall be equipped with the additional operation, in case of refusing the actions of the contacts to prevent parallel operation of the secondary source with the distribution network.

The controls for the transferring transit shall prevent parallel operation of the customer source and the electricity system of the DSO for a period no longer than a second (60 cycles).

CHAPTER III
NOTIFICATION/APPROVAL PROCEDURES, OF THE INSTALLATION AND TESTING OF THE SECONDARY BACK UP SOURCES

Article 9
Notification of the DSO for the installation

1. Any customer wishing to install a secondary source for the electricity supply, shall inform the DSO for at least 30 (thirty) days before the installation of the secondary source regarding his target for this installation.
2. The notification shall contain:
   a) The name and address of the customer;
   b) The address and location of the facility where the secondary source shall be installed;
   c) A detailed description of the secondary source
      - The design of setting the secondary source
      - Configuration document of the secondary source.
      - Technical specifications, including the type and capacity of the source
      - Emergency systems
   d) Detailed description of the controlled systems;

e) Technical documentation of the load transferring switch;
f) Technical documentation of the synchronizing equipment;
g) Electric installation schemes and connection with the secondary source;
h) Identification of the main protection;
i) Description of the events for the operation of transferring and specifications for any protection equipment required from the DSO;
j) Copy of the original technic documentation issued from the secondary source producer;
k) Any other available technical documentation related to the secondary source.
l) Data when it is foreseen to be set into operation the secondary source.

Article 10
Possibility to require the approval from the DSO

1. The end use customer wishing to install a secondary source of electricity may require from the DSO the assessment of the technical installation project of the secondary source, including its approval if finds it in conformity with all the effective technical conditions and standards.
2. The request for approval according to this article shall be prior or shall be combined with the notification according to Article 9.
3. The demand for approval reviewed by the DSO, shall not be more than 20 working days from the submission date.

Article 11
Providing complete documentation

1. If the required information and/or documentation for a notification according to article 9 or its approval according to article 10 is not complete or when the DSO deems that it is necessary the submission of the information and /or additional documentation for the installation of a secondary source, it may require from the customer the submission of the required information and/or documentation in a reasonable deadline, within the time frame defined on point 3 article 10.
2. DSO after the submission of the information and the missing or additional documentation from the end user shall be expressed about the request submitted within 5 (five) working days.

Article 12

Permissions and authorizations from respective institutions

At any case, the Customer shall issue the permissions and approvals required from the respective authorities for the installation of a secondary source that may include:

- Permissions from local authorities
- Other approvals from the respective bodies

Article 13
Installation of a secondary source

1. The customer shall follow the installation of a secondary source 30 (thirty) days from sending the notification according to article 5 or immediately after the approval from the DSO according to article 6.
2. The installation of a secondary source shall be performed from a licensed person.

Article 14
Declaring the conformity

After the installation of a secondary source, the responsible person for the installation shall issue and sign the Conformity Declaration on which it is confirmed that:

a) The installation of a secondary source is done professionally.
b) The installation of the secondary source is performed according to the project submitted and approved by the DSO and any amendment from the project, if any, does not worse the compatibility, performance and safety of the distribution network. Any amendment of the project shall be reported to the DSO according to the Conformity Declaration.
c) All of the materials, components and the equipment's used for the installation of a secondary source are selected according to the process and comply the effective technical rules.

Article 15

Notification of the installation

With termination of the secondary source installation, the customer shall inform the DSO by writing.

Article 16

The testing and commissioning of secondary source installation

1. With the notification for the completion of the installation works according to Article 14, the Customer shall send to the DSO the detailed testing and commissioning of the installed secondary source.
2. The testing and commissioning of the secondary source installation shall be not later than 28 days from the termination notification of the installation works.
3. The testing and commissioning of the secondary source shall be performed by licensed, certified engineers, authorized from the customer and at any time at the presence of DSO representatives.
4. During the testing stage shall be performed two types of tests:

   a) The tests of compatibility parameters of the secondary source

   The customer is responsible to certify that the secondary source and its parameters shall comply with the requirements of this Regulation and the effective technical standards.

   b) The compatibility tests with the technical rules and standards of internal electricity connections.

   The tests shall confirm that the connection is made according to the approved scheme, the installations are in conformity with the technical standards, the settings are decided within the limits provided according to the technical standards and that the connection of the secondary source, shall not have damaged consequences for the operation of the

distribution network.

5. For the commissioning/set into operation shall be performed the following tests:
   a) Guarantee that the secondary source is not performing in parallel with the distribution system,
   b) Operation of the load transferring switch
   c) The interconnection of the protection, the secondary source in the distribution network (if any)
   d) The operational tests of the used equipment's
   e) The metering of electricity quality equipment's generated from the secondary source.
6. During the testing and commissioning process of a secondary source and its installations shall be taken the necessary measures to avoid the damaged effects for the operation of the distribution network.

Article 17
Connection with the distribution network

1. With the termination of the testing, if by the DSO there are any objections, the customer may connect the secondary source at the electricity scheme.
2. The DSO and the Customer shall sign a connection agreement on which there are defined the standards and minimum requirements of connection and operation of a secondary source.
3. The DSO shall prepare a standard contract that shall be used as a connection contract for the operation of the secondary sources. This agreement shall be applied the same principles for all the end use customers and shall guarantee equal handling for the end use customers.

Article 18
Installation of a secondary source at a new facility

If the secondary source is planned to be installed at a new facility, the secondary source project shall be integrated with the general electricity project of the facility and its installation and testing shall be performed at the same time with the other electricity installations of the facility in conformity with the new connections Rules.

CHAPTER IV

OTHER PROVISIONS

Article 19
Facilitation of the inspection

1. The end use customer is obliged to enable the inspection of a secondary source from the DSO at any time after its installation.
2. The end use customer shall submit to the DSO all the respective technical documentation, if this is necessary and is required for the inspection.

Article 20
Unauthorized installation

The DSO shall have the right to undertake the measures to the disconnection of the connection if the end-use customer shall not fulfil the obligations foreseen at the provisions of this Regulation and the follow of its connection with the network does not violate the safety

operation of the distribution network. For such cases the DSO shall inform ERE within 3 days from the disconnection.

Article 21
Violation of the technical rules during the operation

1. If the DSO during the inspection observes that the installed secondary source is operated violated the technical operational rules, shall inform in writing the customer for any violation and shall give the necessary time to avoid the violation.
2. If such a request shall be ignored or the undertaken measures are not sufficient to avoid the violation or in case of repeated violations, the DSO may disconnect the customer when the violation is eliminated.
3. If the violation shall threaten the normal and safe operation of the network, or presents a risk for the life and property of third parties the DSO may disconnect the customer without any notification.

Article 22
Entry into force

This regulation is approved with ERE Board decision and becomes immediately effective, according to the provisions defined on this decision.

ANNEX 1

General Electricity Standards

IEC 60364-5-55	Electrical installation of the buildings – Part 5-55: Selection and erection of electrical equipment – Other equipment.
EC60364-7-715:2011	Low-voltage electrical installations - Part 7-715: Requirements for special installations or locations - Low-voltage lighting installations
IEC 60664-1	Insulation coordination for equipment within low voltage systems–Part 1: Principles, requirements and tests
IEC 60909-1 IEC 60909-0:2016	Short-circuit currents in three-phase a.c. systems - Part 1: Factors for the calculation of short-circuit currents according to IEC 60909-0
IEC 62305-3	Protection against lightning - Part 3: Physical damage to structures and life hazard
IEC 60364-1	Low-voltage electrical installations - Part 1: Fundamental principles, assessment of general characteristics, definitions
IEC 60364-5-54	Low-voltage electrical installations - Part 5-54: Selection and erection of electrical equipment - Earthing arrangements and protective conductors
IEEEC 37.90	IEEE Standard for Relays and Relay Systems Associated with Electric Power Apparatus.

Electricity Quality

IEC 61000-3-2	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤16 A per phase).
IEC 61000-3-3	Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection.
IEC 61000-6-1	Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity standard for residential, commercial and light-industrial environments
IEC 61000-6-3	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments
IEEE519-1992	IEEE Recommended practice and requirements for harmonic control of electric power systems, Institute of Electrical and Electronic Engineers, Piscataway, NJ. April 1992

ANNEX 2

Applicable tariffs

1. **The existing customer that require the installation of a secondary source**

T1 is a fix tariff, regarding the application cost, the control of the file regarding the documentation, study and assessment of the documentation, for the implementation of the secondary source.

a) For the household customers - T1 = 1000 ALL
b) For non-household customers in low voltage - T1 = 5000 ALL
c) For the customers connected in medium voltage 6/10/20 kV – T1 = 23000 ALL
d) For the customers connected in 35kV = 30 000 ALL

T2 tariff = 0

T3 tariff = 0

T4 tariff = 1500 ALL (update tariff, on-site inspection)

2. **The customer requires the new connection or the connection modification and the installation of a secondary source**

In such cases the estimates shall be prepared for two one for the new connection and the other for the installation of a second source.

1. The new connection tariff shall be in conformity with the tariffs approved at the regulation approved with ERE Board decision no.166, dated 10.10.2016, on the approval of the regulation for new connections at the distribution system".
2. The tariff for the implementation of a secondary source.

a) For the household customers - T1 = 1000 ALL
b) For the non-household customers in low voltage - T1 = 5000 ALL
c) For the customers connected in medium voltage 6/10/20 kV – Tl = 23000 ALL
d) For the customers connected in 35kV = 30 000 ALL

T2 tariff = 0

T3 tariff = 0

T4 tariff = 500 ALL (After on-site inspection is performed at the same time with the new connection or the modification of the connection)

ANNEX 3

No. . Dated / / / /

CONFORMITY DECLARATION OF THE SECONDARY SOURCE PLANT

Customer: _____

Address: _____

No. of the Contract: _____

Description: The new secondary source system for the electricity supply of the facility, Building with required capacity *5* kW.

Copy for: the Customer / DSO / Protocol

DISTRIBUTION SYSTEM OPERATOR

Approved:

Mr. _____

No. . Date / / / /

CONFORMITY DECLARATION OF THE SECONDARY SOURCE

I the undersigned **Name Surname,** Official/Legal representative of the company; _____ Company Operator with the premises on _____Address of the entity

Owner of the secondary source electric plant: Name of the Plant _____

Type of the plant:

New plant: _____

Existing plant: _____

Area of using the secondary source plant:

Household: ____

Private: _____

Facility of specific importance: _____

The plant is installed at:

_____

DECLARE

Under my personal responsibility that:

- the installation of the secondary source electric plant is performed professionally, by electricity experts licensed/certified from the competent bodies.
- the installation of the secondary source electric plant is performed according to the project submitted at the DSO.
- the installation of the secondary source electric plant does not effect the performance and security of the electricity distribution network of the DSO.
- all the electricity materials and equipment's used for the installation of the secondary source are selected according to the project and fulfill the effective requirements and rules.
- the installation of the secondary source electric plant is in conformity with the requirements of Law 8734 "On guaranteeing the work safety of electric equipment's and installations as amended, the Regulation for technical safety and utilization, the IEC Standard submitted on the regulation.

- Installation of the secondary source electricity plant is controlled for the safety and operation according to the effective legal requirements. There are installed all the respective protections. The result of the control has been: _____
- As the owner and utilizer of the secondary source of electricity, I am responsible regarding the accidents to the people or the damages caused by the not normal operation of the secondary source, or from the maintenance failure of the secondary source electric plant.

The installation of the secondary source electric plant with the data as follows:

- Model:
- Power kVA - Kw:
- Serial number:
- Construction year:
- Noise level:
- Maximum height:
- Maximum temperature:

The plant is in conformity with the effective technical rules and is ready to connect with the electricity distribution network of DSO company.

Attached to this declaration you will find the documentation as follows:

- the electricity project for the secondary source plant, including the electricity schemes of secondary source connection with the distribution network of the DSO.
- the plan of setting the secondary source at the facility.
- secondary source configuration documentation
- technical specifications of the secondary electric source, its type, capacity etc.
- emergency systems of the secondary source of electricity.
- technical report of the secondary source control systems.
- technical documentation of the load transformation switch.
- technical documentation of the technical synchronizing equipment.
- verification performed by the licensed/certified electricity expert.
- copy of the original technical documentation issued from the secondary source producer
- certification issued from other institutions outside the DSO regarding the acoustic pollution; environmental pollution regarding the environmental effect of the secondary source that shall be installed.

The declaring person

Name, Surname