

CHAPTER 3 - MANAGEMENT, OPERATION AND MAINTENANCE OF THE GRID

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This document shall apply as of 1 January 2025 with the clarifications and additions set out in Section 3.12 that apply to the transitional phase of implementation of the TIDE as set out in Section 28.3 of the TIDE.

3.1 SUBJECT

This chapter describes the methods which the **Operator** follows in order to:

- a) carry out the management of the **NTG**;
- b) carry out **operations** and **maintenance** of the part of the **NTG** for which it is responsible;
- c) adopt and update the procedures for the interoperability of the **NTG** with **grids with third party access** and with **other electricity grids**;
- d) adopt and update the technical rules for interconnection of the **NTG** with **other electricity grids**;
- e) carry out checks to forecast NES operating conditions and participate in the European regional coordination process. This includes:
 - assessments of adequacy and security of the **NES** for the different timescales (annual, seasonal and monthly, weekly/two-weekly, daily and intra-daily). These assessments are also carried out on the basis of information communicated by the:
 - i. **BRP** regarding changes in the operating conditions of **production units** and **consumption units** for which they are responsible with respect to the information available on the **GAUDI** system and on the **Integrated Information System** managed by a **Single Buyer** and with regard to the unavailability of the extraordinary modulation service¹;
 - ii. **BSP** with reference to the unavailability for the supply of **ancillary services** for **balancing** and redispatching and **ancillary services** unrelated to frequency;

¹ It should be noted that in this chapter the term “extraordinary modulation” refers to the modulation service provided by means of mandatory connection, and therefore the obligations to report the unavailability of this service fall upon the **BRP**. With reference to the extraordinary instantaneous upward modulation mechanisms supplied through forward mechanisms, the disclosure requirements are governed by the relevant contract concluded with the party that signed, as a result of the competitive procedures, the contract for the supply of the service in accordance with the contractual model contained in Annex A.62 of the Grid Code.

- participation in adequacy and security assessments coordinated at European regional level;
 - the definition of coordinated unavailability plans in the European regional context for assets considered to be significant² for the purposes of regional coordination of unavailability and included in the list prepared under the terms of Articles 85 and 87 of Regulation (EU) 2017/1485 and on the basis of the assessment methodology for asset relevance as per Article 84 of the same Regulation;
 - assessment of the compatibility of strikes affecting **production units** in application of the aforementioned Article 5, letter f) of the directive of the Ministry of Industry, Commerce and Crafts of 21 January 2000 (Directives for the National Transmission System Operator in article 3, paragraph 4, of Italian Legislative Decree no. 79 of 16 March 1999);
- f) carry out the activities required by the procedures related to the scheduled **unavailability** plans, including scheduling of **unavailability** for single elements of the **NTG** and of the parts of the **Grid User's** plant which are of importance to the **NTG**;
- g) verify the compatibility of the **unavailability** of **production units** with the secure operation of the **National Electricity System (NES)**, taking into account the **unavailability** of elements of the **NTG** and relative functional elements, along with forecasted grid scenarios.

3.2 SCOPE OF APPLICATION

The provisions in this chapter apply to the following parties, in addition to the **Operator**, according to their individual areas of responsibility:

- a) **Owners of Parts of the NTG**
- b) **Grid users**;
- c) **Grid users who are operators of the power stations** not included in the **NTG** but which are important to the **NTG**;
- d) **BRPs**;
- e) **BSPs**.

With reference to the **BRPs**, the provisions of this Chapter apply to production units (**PU**) or consumption units (**CU**) that are significant for scheduling purposes, according to the criteria set out in paragraph 4.4.2.1 of Chapter 4 of the Grid Code.

² Relevant assets may include grid elements, **production units** and **consumption units**.
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With reference to the **BSPs**, the provisions of this Chapter apply to the following units:

- i. **production units (PU)** or **consumption units (CU)** that are significant for scheduling purposes, according to the criteria set out in Section 4.4.2.1. of Chapter 4 of the Grid Code that are qualified for the provision of **ancillary services** for **balancing** and redispatching individually as **UASs** and/or the provision of **ancillary services** unrelated to frequency;
- ii. **Node Virtual Enabled Units (UVAN)**;
- iii. **Zone Virtual Enabled Units (UVAZ)**.

The **Operator** may also identify as significant for the management, operation and maintenance activities of the **NTG**, specific **PU**s or **CU**s which, while not meeting the criteria for significance set out in paragraph 4.4.2.1. of Chapter 4 of the Grid Code, may have a significant impact on certain portions of the relevant grid. In such cases, the obligations set forth in this Chapter regarding the scheduling of unavailability provided for the **PU**s and/or **CU**s significant for scheduling purposes shall apply with respect to such **PU**s and/or **CU**s.

3.3 MANAGEMENT AND OPERATIONS

As part of its **grid management** activities, the **Operator** carries out activities and procedures related to the scheduling and control of energy flows, interconnection devices and necessary auxiliary services, which determine the operation and the expected operation under every **operating** condition of the **NTG**.

The **Operator** carries out the activities for the **unified management of the NTG** in compliance with the policies defined by the **MASE** (Ministry for Economic Development) as required by Legislative Decree no. 79/1999, and in compliance with the principles set out in the **Concession**, and according to the conditions defined by the **Authority** as required by Article 3, paragraphs 3 and 6 of Legislative Decree no. 79/1999. Similarly, this chapter establishes the criteria for the management of the parts of the **electrical substations** which are not included in the **NTG** but which are of importance to the **NTG**.

The **Operator** defines the **Grid Diagram** to adopt in the different operating conditions of the **NES** and carries out the necessary **controls** for **operation** of the plants it owns.

The **Operator** defines the plant operating states, within the performance limits of the same plants by means of identifying transfer constraints, input constraints and withdrawal constraints related to the **NTG**, with reference also to **unavailability** plans.

The **Operator**, with respect to electricity **transmission activities**, is responsible for the **operation** and **maintenance** of the **grid** which it owns.

Operation of the **NTG** is the methodical use, according to codified procedures, of the power plants and accessories that constitute the parts of the electricity **grid** making up the **NTG** for the purposes of management of the **grid**.

Operation of the **NTG**, with reference to the different operating conditions of the **NES**, is carried out by the **Operator** in order to guarantee the security and affordability of the electricity service according to principles of transparency and non-discrimination.

Operation of the plants involves running the plants and continuously **monitoring** their conditions, performing **controls** and adopting emergency measures. **Control** is carried out by the **Operator**, remotely, by means of a remote-control system, or manually, by means of supervising the plants.

The **Operator** of the grid will implement emergency measures, following anomalies or **faults**, for safe grid management and plant restoration.

The **Operator** carries out inspection and periodic **monitoring** of the plants in order to safeguard their functionality, also by carrying out the necessary **maintenance** activities.

The **Operator**:

- a) carries out the calibration of the **protection** devices and the automatic systems related to the operation of the **significant grid**, as well as the devices envisaged in the **Defence plan**;
- b) verifies the operation of the **protection** devices, of the automatic systems for the **NTG** and of the devices envisaged in the **Defence plan**.

The **Operator** briefly communicates to the **Owners of Parts of the NTG** and to the **Grid users** who are operators of **power stations** not included in the **NTG** but which are functional to the **NTG** and to the **operation** of the grid plants, the **controls** required for **operation** of the plants. For these plant parts, as regulated by the **Technical regulations for connection**, the following must be ensured by the **Owners of parts of the NTG** and by the abovementioned **Grid users**:

- a) the ability to remote monitor the plant by means of telemetering and remote indications;
- b) the efficiency of the **operating** and switching devices, automatic systems, interlocking systems and **protection systems**;
- c) the **operation** and management of the plant, without interruption and with adequate execution times;
- d) emergency measures and safety in managing the plant;
- e) transmission to the **Operator** of information for tracing the time series of demand, for resuming the service or for reconstructing **grid outages**.

The **Owners of Parts of the NTG** and the **Grid Users** who are operators of the **electrical substations** not included in the **NTG** but which are important to the **NTG**, carry out:

- a) manually or by means of remote transmission, the **control orders** assigned by the **Operator**;
- b) the **control measures** deriving from autonomous delivery;
- c) the **control measures** in **emergency conditions**, necessary for the physical safety of personnel and plants.

These parties are responsible for the **operation** of the plants which they own, implementing the decisions taken by the **Operator**.

The **Owners of Parts of the NTG** and the **Grid users** who are operators of the **power stations** not included in the **NTG** but which are important to the **NTG** may refuse to execute the **controls** only in the case where the controls may result in danger to the physical safety of personnel or objects; in the case where the **control** is not executed, they immediately inform the **Operator** of the cause which prevented the execution of the orders.

The instructions for the **controls** to be carried out, assigned by the **Operator**, are recorded in the **Control Systems** of the **Operator**, of the **Owners of Parts of the NTG** and of the **Grid**

users (if the latter has Control Systems available), together with the record of performance of the controls.

The **Operator**, for the purposes of management and **operation** of the part of the **NTG** which it does not own, enters agreements with the parties having ownership or availability of these **grids** to organize the **operation** and activity for **maintenance** and **development** of these **grids** and of the devices interconnecting with other **grids**. This agreement is based on **Standard Agreements**.

The **Operator** enters a contract for the **operation** management, **development** and **maintenance** of the **power stations** not included in the **NTG** but which are important to the **NTG**, with the owning parties of these **power stations**.

With reference to **production plants**, for the purpose of the management and **operation** of the **NTG**, **Connection Users** are required to provide the **Operator** with all information relating to their plants for the purposes of the interoperability of these plants with the **electricity grid** and any specific operating and management conditions in accordance with the procedures set out in Chapter 1B, paragraph 1B.4.14 and in Chapter 1C paragraph 1C.7.1 of this Grid Code, as well as to establish with the **Operator** an Operating Regulation to govern **operation**, **maintenance**, site availability and **quality of service**.

BRPs are required to provide the **Operator** with information regarding changes in the operating conditions of **production units** with respect to the information available on the **GAUDI** system and the unavailability of extraordinary modulation resources.

BSPs are required to provide the **Operator** with information regarding unavailability to provide **ancillary services** for **balancing** and **ancillary services** unrelated to frequency, according to the provisions of this Chapter for the purpose of forecasting checks on operation of the **NES** and pursuant to Chapter 4 of the Grid Code for the purpose of participation in the **Balancing and Redispatching Market**.

3.4 INTEROPERABILITY BETWEEN ELECTRICITY GRIDS

Coordinated management of the **NTG** with **grids with third-party connection obligations** and with **other electrical grids** is carried out by means of the adoption of criteria and procedures which guarantee the operating security of the **NES** with an adequate level of interoperability between the **grids**. These procedures:

- a) are adopted by the **Operator**, in consultation with **operators of grids with third-party connection obligation** and **other electricity grids**;

- b) give instructions for the coordination of management, operations and **maintenance** of **grids** other than the **NTG**.

The criteria followed when defining the procedures establish the following:

- a) reciprocal responsibility for control and **protection** of the **significant grid**;
- b) action to be carried out for securely managing the **significant grid**;
- c) action to be carried out for the reinstatement of security from the **emergency conditions** (measures on the underload regulators of the HV/MV transformers or **VHV/MV**, SET-POINT 2, **ECS**, and **PESSE**);
- d) action to be carried out in the case of **outages**;
- e) methods for interfacing with external bodies and authorities, with special attention to the procedure for excluding power lines for extinguishing fires.

Based on these criteria, the **Operator** has adopted the specific procedures described in the following annexes to the Grid Code:

- A.4 General criteria for the protection of grids with voltage greater than or equal to 110 kV;
- A.9 Defence plan of the Electricity System;
- A.10 Re-powering and Restoration Plan for the National Electricity System;
- A.11 General criteria for the calibration of protection devices of grids with voltage greater than or equal to 110 kV;
- A.12 Criteria for the calibration of frequency relays of the electricity system;
- A.14 Participation in voltage regulation;
- A.20 Provisions for planning and implementation of the Emergency Plan for the Security of the Electricity System (PESSE);
- A.21 Disconnection of high-voltage and very-high-voltage overhead power lines in the case of forest fires or dangerous situations nearby;
- A.28 Technical procedure for evaluating the compatibility of strikes affecting production plants with the protection of the security of operations;
- A.80 Procedure for changing the set-point of HV/MV transformers installed in distributors' primary substations (SET POINT 2).

The operator of each **grid with third party access** other than the **NTG** is required:

- a) to carry out, together with the **Operator**, analyses of **grid** events, with the objective of diagnosing their exact sequence and the performance of the **protection** systems on the **significant grid**;
- b) to supply the **Operator** with all information on the plants, including plants internal to the **grid**, which are important to the **interoperability of electricity grids**. In particular, **operators of grids with third-party connection obligation** are required to send, to the **Operator**, information relating to changes in their plants in order that the **Operator** may update the schemes of the **NTG** and of the directly or indirectly connected **grids**.

3.5 INTERCONNECTIONS WITH OTHER ELECTRICITY GRIDS

Each element interconnecting the **NTG** with **other electrical grids** is managed in compliance with the technical regulations for connection or **Operating Regulations**, as applicable. These regulations establish the **operating** methods of the elements interconnecting the **NTG** and the **other electricity grids**, in every operating condition, and controls relations between the affected parties by specifying their respective responsibilities. The **Operator** adopts and updates the Operating Regulations in consultation with the operators of these grids.

The technical regulations for interconnection of the **NTG** with foreign **electrical grids** are formulated taking into account the regulations and recommendations adopted by **ENTSO-E**.

3.6 FORECASTING CHECKS ON NES OPERATING CONDITIONS

3.6.1 Operator role

This paragraph defines the procedures for checking adequacy and security relative to annual, seasonal, weekly/two-weekly, daily and intra-daily time frames in order to forecast NES operating conditions. Within this context, the **Operator**:

- a) with reference to the units referred to in paragraph 3.2, acquires from **BRPs** operating limits and unavailability of remote-operation equipment (DMPU) used for the provision of extraordinary modulation resources and from **BSPs** forecasted unavailability for the provision of **ancillary services** for **balancing** and redispatching and **ancillary services** unrelated to frequency;
- b) on the basis of information acquired and assessment of forecast scenarios, performs **NES** adequacy and security assessments for the different timescales (annual, seasonal and monthly, weekly/twice weekly);
- c) participates in adequacy and security assessments coordinated at European regional level;

- d) carries out assessment of the compatibility of strikes affecting production units in application of the aforementioned article 5, letter f) of the directive of the Ministry of Industry, Commerce and Crafts of 21 January 2000, on the basis of the procedure described in Annex A.28 of the Grid Code “Procedure for evaluating the compatibility of strikes affecting production plants with the protection of the security of operations”.

3.6.2 Disclosure obligations for production and consumption plants for the purpose of adequacy and security checks

Without prejudice to the communication and updating obligations for technical data as per Chapter 4 of the Grid Code, in order to allow correct and accurate performance of activities by the **Operator** in the context of adequacy and security checks, the **BRPs** of the units referred to in paragraph 3.2 are required to communicate all data and information useful for performance of said activity as detailed in the following paragraphs, adopting the timeframes and methods³ indicated by the **Operator**.

For communication-process efficiency, the **Operator** will use the information sent, also to fulfil the requirements of Regulation (EU) 543/2013 regarding transparency. Information will be made available according to the operating methods published on the **Operator's** website.

3.6.2.1 Annual communication of operating limits for units

The **BRPs** of the **PUs** referred to in paragraph 3.2 must communicate the expected update — as soon as it is established and in any case by the months of April and October with reference to the following years, based on the information available — of the operating limits due to authorisation, licensing, technical, organisational and process constraints, plant adaptations (including reconversion, power upgrading or environmental works) or decommissioning. Operating limits may regard:

- available capacity (understood as the net maximum capacity of all available structures);
- maximum number of annual hours of operation;

³ The communications referred to in paragraph 3.6 shall be made via the portal made available by the **Operator** for communications for the purposes of adequacy and security assessments, and in the event of a fault with this portal, using the methods indicated by the **Operator** (e.g. email).

- maximum energy producible annually.

The limits shall include reasons, start date of the limit and expected end date. The above information is also used by the **Operator** for the purposes of the MAP (now **MASE**) Decree of 25 June 2023.

The **BRPs** of the **CUs** referred to in paragraph 3.2 are required to communicate their most accurate estimate of power withdrawal limits relative to the power indicated in the transport contract for the electricity transmission and distribution service as entered in the **Integrated Information System**, as soon as they become aware of such information and in any case no later than April and October relative to at least the following year.

The **BRPs** are also required to provide any other information requested by the **Operator** that is useful for the processes described.

3.6.2.2 Weekly communication of operating limits for units

The **BRPs** of the **PU**s and **CUs** referred to in paragraph 3.2 are required to communicate any changes in available capacity expected whether planned or unplanned/accidental. This information shall be sent as soon as possible following unavailability decision by the **Operator** or the event determining the change in operating conditions. For **production** and **consumption units** subject to Regulation (EU) 543/2013, this communication obligation shall be fulfilled within 50 minutes in order to allow the **Operator** to observe the transparency obligations defined in said European Regulation within one hour of adoption of the unavailability decision or the event determining the change in operating conditions.

These communications shall include at least the following information:

- Name of capacity market/production unit;
- Maximum available input power of the **PU**;
- Minimum power of the **PU** (where applicable);
- Maximum withdrawal power of the **CU** and/or the **PU** represented by the **storage system**;
- Reason for unavailability;
- Start and expected end date (date and time) of change in availability.

The maximum and minimum power data shall consider, as far as possible, the **unavailability** plans of the production units as defined by the **Operator** up to that point and the new unavailability requests sent to the **Operator** up to that point.

In addition:

- a) The **BRPs** of the **PU**s referred to in paragraph 3.2 are required to communicate their most accurate forecasts regarding operating conditions and other types of limits not already communicated for units under their responsibility every Tuesday by 12:00 with reference to the period beginning from 00:00 on Friday of current week N up to 23:59 on Monday of the week N+2, specifically regarding:
 - Natural supply and mandatory emptying forecast (for hydroelectric units);
 - Initial available energy for reservoirs/tanks (for hydroelectric units);
 - Maximum or minimum final energy available in reservoirs/tanks (only in the presence of a constraint of a technical, authorisation or other nature);
 - Maximum number of hours of residual operation (e.g. for requirements constraints defined by maintenance contracts or for atmospheric emissions constraints);
 - Possible unavailability of remote-control equipment (DMPU) for the provision of resources for extraordinary modulation.
- b) Within the timeframe referred to in paragraph a) above, and with reference to the units referred to in paragraph 3.2, the **BSPs** shall communicate any unavailability for the supply of:
 - **ancillary services** for balancing (FCR, aFRR, mFRR and Replacement Reserve) and redispatching;
 - **ancillary services** unrelated to frequency (e.g. primary and secondary voltage regulation, load rejection and **black-start**).
- c) The **Operator** reserves the right to request any other information that may be useful for the purposes of adequacy and security checks from the **BRPs** and **BSPs**.

The information communicated for hydroelectric **production units** allow the **Operator** to perform the monitoring and certification actions requested by institutional bodies (MASE, Region, Civil Protection Authority, etc.) in the case of exceptional **NES** critical scenarios.

3.6.3 Adequacy and security checks

The **Operator** performs operational security analyses on its control area, verifying observance of security limits in N and N-1 situations.

Assessment of the forecasted adequacy margins serves for verification of the capacity of the **NES**, over a determined timescale, to cover demand with appropriate **replacement reserve** margins, observing the transport limits between the **areas** and taking into account any exchange limits between market **areas** and/or limits/constraints on **PU**s defined following appropriate security checks.

The forecasted adequacy margin identifies for each market **area** and period of analysis the difference between:

- the sum between the available capacity and the import of electricity from contiguous areas;
- the electricity demand increased by the necessary **replacement reserve**.

If the individual **Operator** identifies possible security breaches or reduced adequacy margins due to planned unavailability, the **Operator** considers the unavailability as non-compatible as described in paragraph 3.7.4 and proceeds with new planning in line with the procedures described in paragraph 3.7.

3.6.3.1 Available capacity

The available capacity is the part of installed production capacity or that contributed by other capacity resources which, in each period, the **Operator** forecasts as being effectively available for the coverage of demand and/or for the supply of the **substitution reserve**.

The installed production capacity is considered equal to the sum:

- of the maximum power of the **PU**s as calculated at the time of the forecast on the **GAUDÌ** system;
- of the maximum power of the new production units, starting from the best estimate at the moment of the forecast, of the date of the first parallel connection;
- of the variations expected to be increased (+) and decreased (-) of the maximum power of the **PU**s referred to in paragraph 3.2, starting from the best estimate at the moment of the forecast, of the date of effect of the variation itself.

Available capacity is obtained by subtracting the following elements from the installed (or nominal) capacity:

- unusable capacity;
- capacity subject to planned **unavailability** and non-postponable unavailability;
- capacity subject to accidental **unavailability**;
- capacity subject to grid restrictions.

3.6.3.2 Unusable capacity

Unusable capacity for **PUs** is the difference between the installed (or nominal) capacity and the capacity that the **Operator** forecasts to be effectively usable in the absence of **unavailability** or **grid restrictions**. Depending on the type of production unit, the unusable capacity is forecast using different methods.

Thermoelectric production unit

The unusable capacity of thermoelectric **PUs** significant for scheduling is the sum of the power unavailable due to:

- regulatory, authoritative, technical, organizational or process restrictions;
- limitations due to environmental factors (ATS, derating).

Furthermore, with respect to thermoelectric **PUs** not enabled neither in single nor aggregate form on the **MBR**, the differences between the following are considered unusable:

- the installed production capacity;
- the estimate of the maximum input obtained under standard conditions, starting from historical input data held by the **Operator** and, for checks performed considering a two-weekly interval, on the basis of information provided by the **BRPs** under the terms of Article 3.7.2.

Also considered unusable is the capacity of thermoelectric **PUs** during the testing and trial period.

Other production units

For all other **Production Units**, the usable production capacity is equal to the best estimate of available input capacity from the same units in the absence of **unavailability** or **grid restrictions**, obtained starting from the historical data and from the information

held by the **Operator** at the moment of the forecast and, for checks performed for a two-weekly interval.

3.6.3.3 Capacity subject to planned unavailability and non-postponable unavailability

Capacity subject to planned **unavailability** and non-postponable unavailability is that part of the usable capacity made available for scheduled and non-postponable **maintenance** servicing, technical controls or tests.

Capacity subject to planned **unavailability** and non-postponable unavailability is therefore equal, for each **production unit**, to the difference between:

- the usable capacity under normal conditions;
- the usable capacity reduced as a result of the planned **unavailability**.

3.6.3.4 Capacity subject to accidental unavailability

Capacity subject to accidental **unavailability** is that part of the usable capacity made unavailable due to accidental events, which cannot be planned and are unpredictable, and which bring about a reduction of the producible power of the **production units** involved.

The capacity subject to accidental **unavailability** is evaluated starting from historical data for **unavailability** of the **production units**, considering the best information held by the **Operator** at the time of the estimate.

3.6.3.5 Capacity subject to grid restrictions.

Capacity subject to **grid restrictions** is that part of the usable capacity which is not fully available to the **Operator** as a result of transmission restrictions along the **grid** which limit, for reasons of security in the **operation** of the **NES**, the maximum input from a single **production unit** or any grouping of production units.

Such restrictions can be connected to situations present in a “fully operating grid” or they can occur in correspondence with, and as a result of, **unavailability** of **grid** elements.

3.6.3.6 Electricity imports

The importing of electricity is obtained starting from:

- the best estimate of transfer constraints between **bidding zones**

- the best information held by the **Operator** concerning the use of interconnection capacity.

3.6.3.7 Operator participation in coordinating security and adequacy at European regional level

The **Operator**, on the basis of security and adequacy assessments performed, also based on information provided by **Grid Users**, **BRPs** and **BSPs**, participates in coordination processes at European regional level as defined by Regulation (EU) 2017/1485.

3.6.3.8 Communication of expected NES operating conditions

In the context of adequacy and security analyses, the **Operator** evaluates **NES** operating conditions expected for the various timescales (annual, seasonal, monthly, weekly, daily and intra-daily). If potential for operation under **emergency conditions** is identified, the **Operator** notifies the parties involved of the expected situation.

With particular reference to the weekly timescale, in the case of potential necessity to proceed for the week following implementation of the **PESSE**, the **Operator** proceeds according to that set out in Annex A.20 of the Grid Code.

3.7 SCHEDULING AND MANAGING UNAVAILABILITY

3.7.1 Operator role

This paragraph defines the procedures to manage **unavailability** of elements of the **NTG**, of **grids with third-party connection obligations**, of the parts of the system which are important to the operation of the **NTG**, and of the **production units** referred to in paragraph 3.2. Within this context, the **Operator**:

- a) prepares the **unavailability** plans for the **grid** it is responsible for;
- b) coordinates the unavailability plans of the **Users** with its own plans and with those of the other **Owners of the NTG**, according to the criteria of service security, reliability and efficiency, of maintaining a secure electricity supply and of keeping the costs associated with the **NES** low. In carrying out this activity the **Operator** takes into account the **development** measures on the **grid** which have already been decided and which involve **unavailability** of the components of part of the **grid**;

- c) coordinates the unavailability plans of the **operators of grids with third-party connection obligation** different from the **NTG**, with regard to grid elements belonging to the **significant grid**. If the **unavailability** plans proposed by the **operators of grids with third-party connection obligation** are not compatible with the secure operation of the **NES**, the **Operator** will modify the plans as necessary;
- d) coordinates the **unavailability** plans of the **PU**s referred to in paragraph 3.2 with the **BRPs**. This is aimed at ensuring adequate levels of reliability, efficiency, security, cost-effectiveness and continuity of the service. If the unavailability plans proposed by the **BRPs** are not compatible with the **NES** operational security, the **Operator** will modify the plans as necessary;
- e) records the **unavailability** data of the elements of the **NTG**, in order to evaluate its availability on an annual basis.
- f) participates in coordination of unavailability plans coordinated at European regional level as per Regulation (EU) 2017/1485 for assets considered to be significant and included in the specific list, prepared under the terms of Articles 85 and 87 of Regulation (EU) 2017/1485;
- g) defines the limitations of the **production units** induced by **unavailability** of elements of the **NTG**, notifying the relevant **BRPs** and the **BSPs** for units enabled for **ancillary services** for **balancing** and redispatching and/or for **ancillary services** unrelated to frequency;
- h) it also updates the values of the transport limits between **bidding zones** when modified due to **unavailability** of elements of the **NTG**.

In performance of the above activities, limited to significant assets, the **Operator** takes into account the results of regional coordination of unavailability. In this regard, it is noted that the **Operator** defines, under the terms of Regulation (EU) 2017/1485, together with foreign **Grid Operators** for every unavailability coordination region⁴, the list of significant assets and shares this with the **Authority**, and:

- in the case of **production and consumption units**: to the **Transmission System Operator** to which it is connected, to the **BRP** and to the **BSP** in the case of units enabled for **ancillary services** for **balancing** and **redispatching** and/or **ancillary services** unrelated to frequency;

⁴ As defined in Article 3, paragraph 2 of Regulation (EU) 2017/1485.
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- in the case of grid elements: to the owner of the grid element and the operator of the grid to which it is connected.

This list is updated on an annual basis by 1 August of each calendar year.

3.7.2 Information acquired by the Operator for unavailability management

Unavailability requests must include at least the following information:

- i. identification of the element affected by the **unavailability** and of its related **maintenance** component;
- ii. indication of the work involved;
- iii. possible start and end dates of the **unavailability** period and any relative flexibility period;
- iv. maximum time required for reinstatement of the element's availability;
- v. any interdependencies between the unavailability of different elements and that of parts of the **grid** belonging to other **Owners of Parts of the NTG** or of **Grid Users** connected to the part of the **grid**;
- vi. for **production units** only, the maximum power (input and/or withdrawn) for the unit under standard conditions as modified due to the **unavailability**, with the possible indication of details of the **production groups** belonging to the **unit** in question which will be unavailable in the period indicated.

For this purpose, Owners of Parts of the **NTG**, **operators of grids with third-party connection obligations other than the NTG**, and **BRPs** shall:

- submit **unavailability** requests to the **Operator** as per the method and timeframe indicated in this chapter. In particular, unavailability requests must be sent via the portal⁵ made available by the **Operator** for this purpose. The details of operation for this portal are made available on the **Operator's** website;
- implement all the necessary measures and actions to ensure that the timeframe set out in the application is respected.

⁵ The communications referred to in paragraph 3.7 shall be made via the portal made available by the **Operator** for **unavailability** communications or, in the event of a fault with this portal, using the methods indicated by the **Operator** (e.g. email).

3.7.3 Phases of the unavailability planning procedure

Below the procedures are described that are adopted by the **Operator** regarding the planning of **unavailability** of the **NTG** elements, of **grids with third-party connection obligations** and of **production units**.

The planning level with which **unavailability** is requested defines the **unavailability** type:

- a. **planned unavailability**: **unavailability** planned at least seven calendar days before its implementation; Planned **unavailability** may in turn be divided into:
 - i. Annual: **unavailability** requested in year Y for year Y+1 (as described in section 3.7.3.1).
 - ii. On Demand: **unavailability** requested in week N starting in the period from week N+3 to the end of the year (as described in section 3.7.3.2).
 - iii. Occasional: **unavailability** requested in week N starting in week N+1 and N+2 (as described in section 3.7.3.3).
- b. **Non-postponable unavailability** (according to the methods defined in paragraph 3.7.3.4)

3.7.3.1 Annual unavailability plan

In order to allow the **BRPs** to draft a schedule of unavailability for maintenance of the **PU**s, by May of each year, with reference to the subsequent year, the **Operator** makes the following information available to the **BRPs**:

- the trend of the adequacy margins expected at the aggregate level of the market **area**;
- an indication of the production capacity trend as a whole available for every market **area** aggregate, for maintenance service, when they exceed the level of availability of production capacity considered necessary for purposes of **NES** operating security;
- an indication, for every market **area** aggregate, of the production capacity trend available for maintenance service attributable to each **BRP**;
- indication of the **production units** that are relevant for the purpose of scheduling unavailability even though they do not comply with the significance criteria in Chapter 4.4.2.1 of the Grid Code.

The allotment of the production capacity as a whole available for **maintenance** service at the thermoelectric **units** and at the hydroelectric production and pumping **units** under the responsibility, at the date of the submission of the communication, of each **BRP** and carried out by the Operator in proportion to the sum:

- of the **net efficient power** of the thermoelectric **PU**s owned by the **BRP** in each **Bidding Zone** aggregate;
- of the product of **net efficient power** of the hydroelectric production and pumping **PU**s owned by each **BRP** in each **bidding zone** aggregate and a factor of conventional productivity.

By July 31 of each year, **Owners of Parts of the NTG, operators of grids with third-party connection obligations** other than the **NTG**, and **BRPs** send the **Operator** the **requests for unavailability** for the following year.

For **unavailability** requests of grid elements that are not relevant for assessment by the **Operator** for identification of plants critical for security of the **NES** pursuant to the resolution of the **Authority** no. 111/06, the deadline for submission of unavailability requests is set as 31 August⁶.

By 20 October of each year, the **Operator** evaluates the requests submitted and adopts the temporary annual **deliberation of unavailability**.

By 31 October of each year, the **Owners of Parts of the NTG, operators of grids with third-party connection obligation** other than the **NTG**, as well as the **BRPs**, request any changes or additions to the **temporary annual plan**.

By 30 November each year, the **Operator** adopts the final annual **deliberation of unavailability** and then publishes the **annual unavailability plan** on the Terna website.

The **Operator** may make changes to the **annual unavailability plan** of the year in progress in compliance with the conditions set forth in sections 3.7.3.2, 3.7.3.3 and 3.7.3.4. below.

3.7.3.2 On-demand planning of unavailability

⁶ The **Operator** shall notify the owners of parts of the **NTG** and the other grid operators by 31 May of the grid elements whose **availability** is relevant for the purpose of identifying security-critical plants.

Owners of Parts of the NTG, operators of grids with third-party connection obligations

other than **NTG**, as well as **BRPs** send, on a weekly basis, every Tuesday by 12:00 a.m. (Tuesday of week N) the new requests for “on-demand” **unavailability**, which begin in the period between week N+3 and the end of the current year.

Together with the new requests, it is also possible to send requests for changes to “on-demand” **unavailability**, which have already been authorized, and which begin in the period from week N+1 to the end of the year.

Requests for cancellation or postponement of “on-demand” **unavailability** which have already been authorized, can be sent as events occur.

The **Operator** evaluates the requests and adopts the **unavailability deliberation**:

- with at least 15 days’ notice in relation to the start date of unavailability for new “on-demand” **unavailability** requests;
- in the event modifications become necessary for cancellation or postponement requests.

3.7.3.3 Occasional (bi-weekly) planning of unavailability

On a weekly basis, usually every Tuesday by 12:00 p.m. (Tuesday of week N), **Owners of Parts of the NTG, operators of grids with third-party connection obligations** other than **NTG**, as well as **BRPs** send the flow of new requests, or requests for “occasional” **unavailability** changes, which begin in weeks N+1 and N+2.

Requests for the cancellation or postponement of “occasional” **unavailability** which have already been authorized can be sent as events occur.

The **Operator** evaluates the requests and adopts the relative **deliberations** by 12 p.m. on Friday of week N, solely for the unavailability requests sent within the deadlines specified above, or upon identification of the need for modification due to cancellation or postponement requests.

Together with the bi-weekly **deliberation**, the **Operator** informs about the **operating unavailability plan**, which summarizes the planned **unavailability** and also publishes the **updated unavailability plan** on the Terna website.

3.7.3.4 Scheduling non-postponable unavailability

Owners of Parts of the NTG, operators of grids with third-party connection obligation other than **NTG**, as well as **BRPs** send to the **Operator**, per event, any requests for

non-postponable **unavailability** which will be authorized within 7 days from receipt, and in any case where possible by midday on the day prior to the date of the start of **unavailability**.

However, should security requirements for the **NTG** occur or exceptional events (natural disasters, acts of terrorism, acts of war, etc.), the **Operator** may make changes at any time to the **unavailability plans** for limited periods of time.

3.7.3.5 Communications from the Operator

When preparing the abovementioned **unavailability** plans, the **Operator** identifies the transfer constraint between the **bidding zones** and publishes this information on the **Operator's** website. In the same way, the **Operator** evaluates the production constraints and limitations on withdrawals associated with the **unavailability** events, communicating them as required to the affected **BRPs**, according to the terms and conditions established in paragraph 3.7.5.

The **Operator** provides the **BRPs** and owners of the **NTG** with the operating modes for management of scheduling and **unavailability** information flows.

3.7.4 Checking unavailability requests

The **Operator** assesses the compatibility of unavailability requests with forecasts of **NES** operating conditions through adequacy and security assessments, as detailed in paragraph 3.6.

The **Operator** can refuse the proposals for **unavailability** by supplying adequate reasons.

Requests for **unavailability** shall be evaluated taking into consideration the following:

- the type of **unavailability** requested (in order: annual, on-demand, and occasional) and, equally, the date of submission;
- in the event of a breach of minimum security or adequacy conditions, the capacity of plants to contribute to recovery of security and adequacy conditions;
- the duration;
- compliance of the production capacity available for **maintenance** service attributed to each **BRP**, or the smallest excess of the same.

3.7.5 Restrictions for unavailability of grid elements

The **Operator** evaluates the **grid restrictions** due to **unavailability** according to the scheduled cycle described in paragraph 3.7.3.

The **Operator** informs **BRPs** of all input restrictions and withdrawal limitations associated with the **unavailability**:

- if a time interval of at least 30 days between the restriction **deliberation** and the start of the restriction itself is guaranteed.
- or, if a time interval of at least 8 days between the **deliberation** of the restriction and the start of the restriction itself is guaranteed, limited to a maximum non-producible energy [old: producible energy] equivalent to:
 - 80 hours at maximum power of the **production unit** as declared in **GAUDI**, in the case of wind-powered plants;
 - 60 hours at maximum power of the **production unit** as declared in **GAUDI**, in the case of photovoltaic plants;
 - 240 hours at maximum power of the **production unit** as declared in **GAUDI** in all other cases.

In the case of restrictions placed on a group of **production units**, the non-producible energy is distributed to each **production unit** subject to restrictions as a result of its maximum power as declared in **GAUDI**.

In the case of grid restrictions defined in conjunction with planned limitations for the needs of the **production units**, calculation of the equivalent non-producible energy refers only to the share of the maximum power made available by the **production unit** following the planned limitation.

Changes to transfer limits between the market **areas** due to **grid restrictions** are published on the **Operator's** website.

3.7.6 Unavailability plans for parts of the system which are important to the NTG and for elements of grids with third party access

The **unavailability** plans for the parts of the system which are important to the **transmission** and **dispatching activities** as well as elements of **grids with third party connection obligations** must be periodically agreed and approved by the **Operator** to take into account the compatibility with the **unavailability** plans of the **NTG**. Coordination is ensured by scheduling the **unavailability** events according to the terms and conditions described under paragraph 3.7.3.

3.8 TRANSPARENCY OBLIGATIONS

The publication of data and information regarding the various types of **unavailability**, both scheduled and effective, takes place in compliance with the provisions of Regulation (EU) 543/2013. Specifically, as regards the timing and methods indicated in Articles 7, 10 and 15 of the aforesaid Regulation, on the **ENTSO-E** Transparency platform, the **Operator** publishes scheduled and effective available-capacity limits for:

- interconnections and transmission-grid elements reducing inter-area capacity between the **areas** of 100 MW or more and the relative estimated impact on such capacity;
- the **production** and **consumption units** as per the aforementioned articles of Regulation (EU) 543/2013 on the basis of the information provided by **BRPs**, in line with paragraph 3.6.2.

3.9 MAINTENANCE STANDARDS CRITERIA AND GUIDELINES

The **Operator** decides and carries out **maintenance** activity on its **grid** in order to maintain the operational state of the plants and the regularity of their operation, in compliance with current legislation and regulations.

Maintenance activities aim at:

- a) maintaining an adequate level of operation of the **NES** and its components, and reducing the probability of the occurrence of anomalies and **faults** on the plants of the **NTG**;
- b) ensuring the conditions for the continuity of service and reinstating, as soon as possible, the correct operation of the system and its components following anomalies or **faults**;
- c) guaranteeing the safety of the plants, their operating personnel and of third parties in general.

To achieve the aforementioned goals, **maintenance** activities must be:

- a) *free from* or in any case *not conditioned* by external activities to the electricity service which may impose operational limits on the service itself, e.g. as a consequence of sharing infrastructure;

- b) *efficient* from the organizational/management point of view, by means of suitable planning;
- c) *derived* from the historical analysis of the plant and its components;
- d) *based* on a clear policy of emergency measures following anomalies and **faults**;
- e) *complying* with all current legislation regarding the safety of operating personnel and third parties;
- f) *implemented* in such a way as to ensure the quality of the service supplied, while at the same time guaranteeing respect for the environment.

In order to keep its **NTG** efficient and available, the **Operator** carries out suitable checks and **maintenance** activity (ordinary and extraordinary). The checking and maintenance criteria are defined by the **Operator** according to principles including the technical code of practice, standards, indications from building constructors, the technical conditions of the components and equipment, the **Operator's** own past experience and, therefore, according to best practices.

The **Operator** prepares an annual plan of checks and inspections, drawn up according to its own strategies and policies, aimed at ensuring the maximum availability of the **grid**.

3.10 SAFETY AND ELECTRIC RISK

All activities such as checks, inspections, controls, measurements, tests, electrical work including **maintenance**, and non-electrical work in the proximity of live parts performed on electrical plants (**power stations** and lines) of the **NTG** and at points bordering plants directly connected to it or affecting it must be carried out in compliance with national legislation on work safety and electrical risk and, in particular, in compliance with the provisions of the Consolidated Occupational Safety Act pursuant to Italian Legislative Decree no. 81/2008, as well as the standards CEI EN 50110-1 and CEI EN 50110-2 (hereinafter referred to as CEI EN 50110) and CEI 11-27.

Standard CEI EN 50110 contains the safety requirements to be observed for operational, work and maintenance procedures on electrical plants, connected to them and/or carried out in proximity to such plants, operated at any voltage level intended for the production,

transmission, transformation, distribution and utilisation of electricity, whether fixed, mobile, permanent or temporary.

Among other aspects, this standards sets out:

- a) identification of the dangers;
- b) evaluation of the risks present in the workplace;
- c) reduction of the risks;
- d) identification and adoption of adequate safety measures in the workplace;
- e) drawing up action plans for both the lines and **electrical substations**.

Regarding the above, each **Owner of Part of the NTG** and **Grid User** must comply with Terna's Provisions for the Prevention of Electric Risk (*DPRET*), set out in the following paragraph, drawn up by the **Operator** for activity to render **NTG** connections and **points of connection** to the NTG inoperative and safe.

3.11 TERNA'S PROVISIONS FOR THE PREVENTION OF ELECTRICAL RISK (DPRET)

Terna's Provisions for the Prevention of Electrical Risk (hereinafter *DPRET*) are drawn up by the **Operator** in order to prevent electrical risk during work on **NTG** electrical systems and points bordering plants directly connected to the **NTG** or affecting it.

In full compliance with the general safety principles of the reference standards indicated in paragraph 3.10, the regulations in force concerning control of electrical risk must be applied taking into account both the organisation carrying out the work in question and the particular plant situations.

In some cases, in order to prevent electrical risk, the *DPRET* rules prescribe the possible operating modes permitted by the regulations in force.

The *DPRET* rules must be applied for all work for routine or extraordinary maintenance, development and/or breakdown necessary to ensure correct operation of electrical plants connected to the **NTG** (e.g. control, checks, inspections, monitoring, measurements, tests, maintenance, renewal and construction), in the performance of which the electrical risk is present, regardless of the nature of the work itself.

The *DPRET* rules also apply to activities carried out by the **Operator** at the electrical plants of **Users** directly connected to the **NTG**, unless otherwise specifically agreed upon with the **NTG** or installation Owner.

In the case of the construction of new facilities to be connected to the **NTG**, the DPRET rules apply from the moment the element under construction is connectable to the **NTG** by means of a disconnecting device or the work takes place in the vicinity or proximity of portions of the grid that are in operation.

For the purpose of preventing electrical risk, the following additional documents are implemented:

- *Provisions for live works on **NTG** assets or plants directly connected to the **NTG** (“addendum - Provisions for LLW works on category iii plants”)* annexed to the DPRET document;
- Memoranda of Understanding on electrical risk prevention;
- Operating Regulations between **Operator** and **Users** connected to the **NTG**.

The Memoranda of Understanding and the Operating Regulations define duties and operational responsibilities for work on electrical plants present at the connection points between elements of the **NTG**, owned or available to the **Operator**, and elements or portions of the grid owned by **Users** directly connected to or affecting it.

Regarding the above, each **Owner of Part of the NTG** and **User** directly connected to the **NTG** is obliged to comply with the DPRET rules for activity to render **NTG** elements and points directly connected or affecting the NTG inoperative and safe.

The full DPRET rules are available on the **Operator’s** website.

3.12 PROVISIONS FOR THE TRANSITIONAL PHASE OF TIDE IMPLEMENTATION

The provisions set forth in this paragraph shall apply, as detailed below, in addition to or in replacement of the provisions of the preceding paragraphs only for the transitional phase of implementation of the TIDE, i.e. from 1 January 2025 to 31 January 2026, as defined pursuant to Resolution 304/2024 and regulated in Section 28.3 of the TIDE.

In particular, for the transitional phase, the provisions of the previous paragraphs (3.1 to 3.11) apply with the following specifications.

Paragraph	Application from 01/01/2025	
	Yes/No	Any specifications
All paragraphs	The following specifications apply	During the transitional phase of TIDE implementation: - the references to the BRP and the BSP contained in Chapter 3 are to be understood as references to the User of Dispatching, i.e. the party that has entered into the dispatching service contract set out in Annex A.26 of the Grid Code with the Transmission System Operator. Therefore, the requirements placed on the BSP/BRP must be considered as placed on the User of Dispatching; - the provisions of Chapter 3 concerning UVAN and UVAZ do not apply; - for the sole purpose of application of the provisions of Chapter 3, the words “consumption units (CUs) significant for planning purposes” shall be replaced by the words “CUs with a capacity of not less than 100 MW”; - the methods for communicating unavailability of DMPU equipment for the purpose of providing extraordinary modulation as detailed in paragraph 3.6 will be made available to the BRP from the beginning of the consolidation phase (February 2026) after of development of the supporting IT tools. Thus, the BRP is not obliged until that date to fulfil the obligations provided for in this Chapter 3 for unavailability of the DMPU equipment for the purposes of forecast checks regarding operation of the NES. Nevertheless, obligations to report unavailability of the above-mentioned DMPU equipment as per Chapter 4 and Annex A.60 of the Grid Code remain unaffected.