

## CHAPTER 4 DISPATCHING REGULATIONS

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## **CHAPTER 4 - DISPATCHING REGULATION**

### **4.1 SUBJECT**

4.1.1 This chapter covers the following:

- (a) the rights and obligations assumed by the **Users of Dispatching (UoDs)** in order to enable the **Operator** to perform the **dispatching** service according to the provisions and principles detailed in the current regulations and legislation;
- (b) the technical, economic and procedural methods that **Users of Dispatching** are required to follow in relation to the **dispatching** service supplied by the **Operator**.

Specifically, this chapter defines:

- (a) general provisions concerning:
  - (i) The definition, recording and provision of the technical data of the **production units (PU)** and **consumption units (CU)** for the purpose of participating in the **Energy market** and in the **Market for dispatching services (MSD)**;
  - (ii) Criteria for the definition of units that are essential for the security of the **National electricity system (NES)**;
  - (iii) Criteria for the subdivision of the **NES** into **zones**;
  - (iv) Criteria for the definition and recording of **production and consumption units**;

- (b) The type of resources for providing the **dispatching** service, the method for procuring and managing these resources and the criteria for enabling their supply from the **production and consumption units**;
- (c) the process for the definition of the **updated cumulative programmes for injection and withdrawal** of electric energy, including the specification of the rights and obligations of the **UoDs** in this regard and the flows of information with the **Users of Dispatching** and with the **Market Operator**;
- (d) The technical, economic and procedural methods that the **Operator**, the **Market Operator** and the **Users of Dispatching** are required to follow, in order for the **Operator** to supply resources for the **dispatching** service by means of market mechanisms, both in the **planning phase** and in **real-time operations**.
- (e) The methods of recording **production units** and **consumption units**.

## **4.2 SCOPE OF APPLICATION**

4.2.1 This chapter applies to the following parties:

- (i) **The Market Operator**;
- (ii) **Users of Dispatching (UoD)**;
- (iii) **The Grid Operator**.

## 4.3 GENERAL PROVISIONS

### 4.3.1 Users of Dispatching and the Dispatching Contract

#### 4.3.1.1 User of Dispatching (UoD)

**Users of Dispatching** are identified in Article 4 of Resolution 111/06 of the **Authority**.

#### 4.3.1.2 Dispatching Contract

The **Users of Dispatching** are required to agree on a **contract for the dispatching service** with the **Operator** based on the contract model drafted by the Operator, listed in document A.26 in [Appendix A](#) of this chapter and in compliance with the conditions established by the **Authority**.

The successful agreement of the **contract for the dispatching service** and the contract for the transmission service, either directly or through a third party, is a prerequisite for injecting/withdrawing electricity **into the grid with third-party connection obligations**.

The **contract** covers the rights and obligations of the **User of Dispatching** and of the **Grid Operator** regarding the dispatching service, and includes the obligation of the **User** to provide a suitable guarantee in compliance with document A.61 “*Regolamento del sistema di garanzie di cui all’articolo 49 dell’allegato A alla delibera 111/06 dell’Autorità per l’energia elettrica ed il gas*”, in [Appendix A](#) of this Chapter.



## 4.3.2 **Production Units and Virtual Units**

### 4.3.2.1 *Criteria for clustering sections for the definition of production units*

A production unit (**PU**) comprises one or more **sections**, grouped according to the methods defined below.

#### a) **Sections not powered by renewable energy sources**

A **production unit** consists of a single **section** of a **power production plant**, except as specified below.

The **UoDs** may group all **sections** into a single **production unit**:

- The total power of which is no greater than 50 MVA, that are part of the same **production plant**, and provided that the production thereof is referable to a single primary energy source and to a single **point of injection**, or
- Functionally connected to the same production cycle, as approved by the **Operator** at the time of entry into the **GAUDÌ** system.

#### b) **Sections powered by renewable and cogeneration energy sources**

(i) A **production unit** consists of: The group of **sections** that belong to the same **power production plant** which is:

- I. Hydroelectric;
- II. From a primary renewable source of another type;
- III. Cogeneration.

Provided that the corresponding production can be referred to a single primary energy source, of the same type (programmable/non-programmable) and to a single **point of injection**

Or

- (ii) The group of hydroelectric plant **sections** belonging to the same **hydroelectric cascade** and aggregated on condition that no **grid congestion** is created by moving the production between the **sections** within the group. Such groups are approved by the **Operator**.

To aggregate hydroelectric plants belonging to the same **cascade** into **PU**s, the **Operator** adopts the following procedure:

- (i) the **UoD** communicates the list of hydroelectric plants it has available whose **sections** it is proposing to aggregate into a single **PU**;
- (ii) the **Operator**, within 2 months of the communication from the **UoD**:
  - I. verifies that the plants belong to the same **hydroelectric cascade**;
  - II. Verifies that the allocation of energy injections among the plants put forward for aggregation would not impact **grid congestion**;
  - III. Notifies the **UoD** of the outcome of the aggregation proposal and registers the newly created **PU** in the **GAUDI** system.

In order to evaluate the imbalance costs, **PU**s comprising aggregated hydroelectric plants in a **hydroelectric cascade** of different types (programmable/non-programmable) are regarded as programmable.

The **Operator** may require sections of hydroelectric plants that perform specific functions in the restoration of the **national electricity system** to be associated with different production units from those to which other sections

of the same plant or the same **hydroelectric cascade** have been assigned. Any disaggregations will be the subject of a study by the **Operator** and will take into account the operating requirements before being notified to the **UoDs**.

#### 4.3.2.1 bis *Connection between thermoelectric production units*

A group of **enabled** thermoelectric **PU**s, of a type other than open-cycle gas turbines, belonging to the same **production plant**, are considered to be in **connected operation** if, supported by specific plant components, the start-up of a single **PU** belonging to the group (**connecting unit**) allows contribution to heating during the start-up phase of the other **PU**s belonging to the group (**connected units**). Each of the **connected-operation PU**s is still managed individually.

During **connected operation** of two **PU**s belonging to the same group, the **connected unit** can be started up more quickly compared to the **start-up time** indicated in its technical specifications, providing that:

- (i) A period of time at least equal to the **connected start-up time** from start-up, to at least the minimum power of the **connecting unit**;
- (ii) During the period of time corresponding to the **connected start-up time**, the **connecting unit** has been maintained at constant production no lower than the minimum power.

For definition of the group of **connected-operation PU**s, the **UoD** notify the **Grid Operator** of the **PU**s that it intends to connect, providing a description of the technical work on the plant that allows **connected operation**.

Within a month of notification from the **UoD**, the **Grid Operator** reserves the right to approve the proposal, also following a request for further details. Within the same period, the **Grid Operator** reserves the right to request final evidence to verify the successful completion of the technical work described above. If the outcome of verification is positive, the **Grid Operator** notifies the

**UoD** and authorises registration on the **GAUDÌ** system of the **PU** group that can be managed in **connected-operation** mode.

Should a **PU** previously in **connected-operation** mode cease to be **enabled**, the **UoD** excludes this **PU** from the **PU** group that can be managed in **connected-operation** mode.

For each relevant day, the **UoD** may identify the **connecting unit**, **connected unit**, **connected start-up time**, and **connected-operation normalized quarter-hourly power ramping profile** according to the methods described in document A.60 “Dati tecnici delle unità di produzione rilevanti valevoli ai fini del Mercato elettrico”

#### 4.3.2.2 *Significant and Non-Significant Production Units*

A significant **PU** is one where the total power of its associated **generator groups** is not less than 10 MVA. All other **PU**s are classified as non-significant.

Significant **PU**s must be equipped with the necessary devices to guarantee integration of the **PU** in the **Operator's control systems**, according to the methods set out in Chapter 1, Section B, of this Grid code, with reference to each type of unit.

The **Operator** reserves the right to classify **production units** as non-significant if, despite meeting the above condition, they are integrated into a context which structurally limits their **grid** input power to below the threshold level set for significant **production units**.

#### 4.3.2.3 *Virtual units*

Virtual units are:

- (a) Virtual production units that are: aggregations of non-significant **PU**s, under the ownership of a single **UoD**, belonging to the same **zone** and of the same type;
- (b) Import and export units, as set out in the **Authority's** Resolution no. 111/06, that are characterized by the following points of energy injection and withdrawal:
  - (i) The point of energy import, namely the point of injection of an import unit, on an electricity border belonging to an interconnection **grid**, for which the **planned exchange controls** are implemented, is a virtual point on the **national transmission grid** located in the **foreign virtual zone** characterizing the electricity border where the electricity is imported;
  - (ii) The point of energy import, namely the **point of injection** of an import unit, on an electricity border belonging to an interconnection **grid**, for which the **planned exchange controls** are not implemented, is the group of points on the electricity **grids** located in the territory of the bordering nation at which the imported electricity is considered to be injected;
  - (iii) The point of export, namely the **point of withdrawal** of an export unit, on an electricity border belonging to an interconnection **grid**, for which the **planned exchange controls** are implemented, is a virtual point on the **national transmission grid** located in the **foreign virtual zone** characterizing the electricity border where the electricity is exported;
  - (iv) The point of export, namely the **point of withdrawal** of an export unit, on an electricity border belonging to an interconnection **grid**, for which the **planned exchange controls** are not implemented, is the group of points on the electricity **grids** located in the territory of

the bordering nation at which the exported electricity is considered to be withdrawn.

#### 4.3.2.4 *Dispatch Points for PUs*

- (v) The dispatch point for a significant PU coincides with the point of injection of electricity from the PU.

The **dispatch point** for non-significant PUs is made up of all **points of injection** that meet the requirements set out in Resolution no. 111/06 of the **Authority**.

#### 4.3.2.5 *Significant period*

The **significant period** for **PUs** that are not enabled for the **Market for Dispatching Services (MSD)** is one hour. For **enabled production units** it is a quarter of an hour.

#### 4.3.2.6 *Treatment of grid losses for Pus*

The programmes regarding **injection dispatching points** for **PUs**, as well as offers on the **MSD**, indicate the electricity injection fed into the **grid** at the **point of injection**, increased by a percentage factor to take account of grid energy losses. This is limited to the **points of injection** at **low voltage (LV)** and **medium voltage (MV)**, as per Attachment A to Resolution ARG/elt 107/09 - The Integrated Text of the provisions of the **Authority** regarding the regulation of physical and financial items of the dispatching service (TIS).

#### 4.3.2.7 *Production Unit Register*

##### a) Registration of production units

Every **PU** must be registered in GAUDÌ.

The **producer**, or the **UoD** delegated, are required to register the **PU**s.

The respective operating registration methods are defined by the Grid Operator, on the basis of the provisions of the document “Istruzioni Operative per il Produttore (dotato di certificate Digitale)” and in the documents “Istruzioni Operative per il Produttore (dotato di Userid e Password) – Registrazione degli impianti e delle Unità di Produzione” (Operating Instructions for the Producer (holder of User ID and Password) - Registrations of Plants and Production Units). Both documents are published on the website of the **Grid Operator**.

More specifically, for the purposes of this registration, the **UoD** or the **producer** of the significant PUs are required to declare:

The details of the UoDs qualified to submit an offer for the unit to the **MSD**;

- (i) The technical data of the **generator groups** that constitute the **PU**s, required to allow the **Operator** to carry out a well-founded assessment of the static and dynamic behaviour of the **electric system**. The description of such technical data is set out in document A.65 “Dati tecnici dei gruppi di generazione” in [Appendix A](#) of this chapter;
- (ii) The **PU** technical data, set out in document A.60 “Dati tecnici delle unità di produzione rilevanti valevoli ai fini del mercato elettrico” declared in accordance with the above technical data on **generation groups**. The above mentioned data is needed to qualify for the **Energy Market** and the **MSD**.
- (iii) **UoDs** that are owners of **PU**s are responsible for the accuracy of the technical data stated in **GAUDÌ** and for any subsequent updates; in particular for relevant **Production Units** said updates are made through the “dynamic RUP” procedure prepared by the **Operator** in document A.33 “Sistema Comandi: variazione dati tecnici RUP” (System

Commands: variations in RUP technical data) in [Appendix A](#) of this chapter.

The **Operator** reserves the right to request changes and/or explanations in support of the technical data registered by the **UoD** and to carry out assessments, where necessary:

- (i) By comparison with previously acquired data in its possession;
- (ii) If **grid** events occur;
- (iii) By means of inspections and tests required by the **Operator** on a case by case basis in compliance with requirements in Chapter 1, Section [1B.5.12](#), of this Grid code.

If the outcome of such a verification is negative for a significant **PU**, the **PU** is suspended in GAUDÌ and the **Grid Operator** notifies the **Authority** of this event. The suspension is revoked when the incorrect information is corrected.

Significant **units** which are not registered in GAUDÌ or which have been suspended may neither participate in the **electricity market** nor register with the **over-the-counter purchases and sales Market Operator** nor the injection and withdrawal plans executing **over-the-counter purchases and sales** with reference to the units mentioned above.

GAUDÌ specifically contains:

- (i) The qualification of the unit to participate in the **Day Ahead Energy Market**;
- (ii) The qualification for participating in each session of the **Intra-Day Market (IM)**;
- (iii) The qualification for any **dispatching** priority, as per Resolution 111/06;



- (iv) Authorisation to supply the following resources for the **dispatching** service, also divided into “upward” and “downward” modes:
- I. Scheduled **congestion** Resolution;
  - II. **Secondary power reserve**;
  - III. **Tertiary power reserve**;
  - IV. **Balancing**.

**Enabled units** (EPU) are also qualified to submit Minimum and Shutdown offers, with the exception for hydroelectric production and pumping units.

Only the thermoelectric **enabled units** (EPU) are also to be considered qualified to present start-up offers, with the exception of units where the injection of energy below their minimum power corresponds exclusively to a variation of the energy exchanged between unit and grid, without the entry in parallel of any **generator group** associated to the unit itself.

Only combined or upgraded thermoelectric **enabled units** are also to be considered qualified to present offers for Operational Set-up Modification offers.

With regard to the sole thermoelectric **units**, the **UoDs** are given the option to request an exemption from being qualified to submit Shutdown offers, on the basis of substantiated technical operating limitations (for example, connections to production cycles), which prove the impossibility of executing such action upon request by the **Operator**. The request for exemption is subject to evaluation by the **Operator**.

Admission to the mechanism for the contribution to **primary frequency regulation**. Each **UoD** has access to information on the **PU** in their ownership and can modify technical data, previously registered in **GAUDI**.

The **Operator** reserves the right to request changes and/or explanations in support of the technical data and to carry out assessments, as previously indicated. More specifically, changes due to the phasing out of **production units** or **generator groups** that constitute a **production unit** must be considered as changes to technical data registered in **GAUDI**.

The **Operator** reserves the right to temporarily remove access to **GAUDI** in order to guarantee and ensure its correct technical operation and efficient use, posting notification on its website.

b) Registration of Virtual Production, Import and Export Units

‘Every virtual production import and export unit must be registered in the **GAUDI**, by the **Operator**.

For virtual production units, **GAUDI** in particular includes:

- (i) The type (pursuant to article 8.2 of Resolution no. 111/06 by the Authority);
- (ii) The **zone** to which it belongs;
- (iii) The **UoD** that owns the unit;
- (iv) The qualification of the unit to participate in the **Day Ahead Energy Market**;
- (v) The qualification for participating in each session of the Intra-Day Market (**IM**);
- (vi) The maximum power, only for virtual production units. This maximum power is defined as equal to the sums of the nominal powers of the non-significant units, of which the virtual production unit represents the whole, increased by the representative factor of losses on the transmission and distribution **grids**, as per the TIS.

c) Method of communicating temporary variations to technical data and temporary unavailability of the units enabled for the dispatching service

For the units under their ownership only, the **UoDs** of **enabled units** must communicate the following to the Grid Operator:

- (i) Any temporary variations in the technical information compared to that recorded in **GAUDI**;
- (ii) Any unavailability in the **dispatching service**;

When the conditions in section 4.8.3 *Exemption from the obligation to make offers* (“Exemption from the obligation to make offers”) apply;

The **UoD** makes the above communication by accessing the “Dynamic RUP” procedure.

Communication of a change in technical data or unavailability represents a request for change, which the **Operator** has the option of not accepting.

Should it be accepted, the change is made effective within the minimal time of notice starting from the moment of the communication or the presentation of the request. The minimal time of notice is defined in document A.60 “Dati tecnici delle unità di produzione rilevanti valevoli ai fini del Mercato elettrico” under [Appendix A](#) of this chapter, which includes as well the description of the contents of said communications. The **Operator** reserves the right to change the minimum notice time, by communicating the same on its website at least 24 hours in advance.

The **Operator** monitors the communications concerning temporary changes to technical data and availability of the **enabled units** used for the purposes of carrying out the **Market for dispatching service**.

d) Technical data of **enabled and/or significant production units**

The maximum (minimum) power of a significant **production unit** and/or an **enabled unit**, is the maximum (minimum) value of the maximum (minimum) power band declared for the unit.

The **secondary power reserve half-band** of an **enabled unit** is the maximum value of the **secondary power reserve half-bands** of the operating range declared for the unit.

Technical data declared for the unit is understood to be data according to document A.60 “Dati tecnici delle unità di produzione rilevanti valevoli ai fini del Mercato elettrico” (Technical data of significant PUs valid for the purposes of the Electricity Market) in [Appendix A](#) of this chapter, or updated as described under [letter c\)](#) (“Method of communicating temporary modifications to technical parameters and unavailability of the EPU for the dispatching service”) in this section.

#### 4.3.2.8 *PUs under trial*

Each **PU** is considered as under trial for a period of not more than six months (180 days) from the date of the first operation in parallel to the **grid** for each operational set-up included and, in any case, for an overall period of not more than one year, regardless of the number of operational set-ups.

### 4.3.3 **Consumption Units**

#### 4.3.3.1 *Consumption Units*

All **consumption units** are non-significant.

#### 4.3.3.2 *Dispatch points for Consumption units*

The dispatch point for non-significant **consumption units** is made up of all **withdrawal points** that meet the requirements set out in **Authority** Resolution no. 111/06.

#### 4.3.3.3 *Significant period*

The **significant period** for **consumption units** is one hour.

#### 4.3.3.4 *Treatment of grid losses for CUs*

Programs regarding **dispatch points** for withdrawal for **CUs** indicate the electricity withdrawn from the **grid** at the **point of withdrawal**, increased by a percentage factor to take account of electricity losses on the **grids**, in line with the TIS.

#### 4.3.3.5 *Management of the withdrawal phase of significant PUs*

Each significant **PU** must have a **consumption unit** associated with it, against which the **PU**s consumption is accounted for when the PU is withdrawing electricity from the **grid** due to being in the state of either start-up, shutdown or prolonged shutdown with ancillaries being kept in service, i.e. the consumption at the **points of withdrawal** is separate from the **point of injection**.

#### 4.3.3.6 *Consumption Unit Register*

The **Operator** defines a consumption unit for each **UoD** and for each zone for which that **UoD** is a user of the transfer service, and makes use of information provided by **distribution companies** for this purpose.

Each consumption unit is registered in the Consumption Unit Register (RUC) by the **Operator**.

The **Operator** will communicate to each **UoD** the identification codes of the consumption units associated with that **UoD**.

The **RUC** also includes the qualification for the units to participate in the **Day head Energy Market** and in each session of the **Intra-Day Market**.

#### 4.3.4 ***Injection and withdrawal capacity***

Defined hereinafter is the injection and withdrawal capacity of **production units**, and import and export units, valid for the purposes of registration in **Forward Energy Accounts** of **over the counter purchases and sales** and of **CET programmes** and of the performance of the **Energy Market**.

a) Injection capacity of significant production units

For purposes of registration in the **Forward Energy Accounts** and the performance of the **Energy Market**, the injection capacity of a significant **production unit** or a production pumping unit, is the maximum value of maximum power control of the structures corresponding to the operating ranges declared in **GAUDÌ**, as per document A.60 “Dati tecnici delle unità di produzione rilevanti valevoli ai fini del Mercato elettrico” in [Appendix A](#) of this chapter.

b) Withdrawal capacity of significant hydroelectric production and pumping Units

For purposes of registration in the **Forward Energy Accounts**, and for the performance of the **Electricity Market**, the withdrawal capacity of a significant hydroelectric production and pumping unit is the minimum power of the unit, as defined in paragraph [4.3.2.7 letter d.](#)

c) Injection capacity of virtual production units

For purposes of registration in the **Forward Energy Accounts**, and for the performance of the **Electricity Market**, the injection capacity of a virtual production unit is the maximum power of the unit, under paragraph [4.3.2.7 letter b.](#)

d) Injection capacity of virtual import and export units

For purposes of registration in the **Forward Energy Accounts**, and for the performance of the **Electricity Market**, the injection (withdrawal) capacity of a virtual import (export) unit is equal to the physical right of import (export) transfer allocated on an annual or monthly basis to the **UoD** with reference to the same unit.

Regarding the allocation of import and export capacity on a daily or intra-daily basis, for the purposes of the performance of the **Energy Market**, the injection (withdrawal) capacity of a virtual import (export) unit is equal to the physical right of import (export) transfer, allocated through explicit allocation mechanisms on a daily or intra-daily basis to the **UoD** with reference to the unit itself.

#### **4.3.5**      ***Criteria for identifying essential plants and essential plant clusters***

Essential plants and essential plant clusters are identified by the **Operator** according to the criteria and time frames set out in **Authority** Resolution no. 111/06.

The list of essential plants is found in document A.27 “Elenco degli impianti di produzione essenziali per la sicurezza del sistema elettrico” as per [Appendix A](#) of this chapter.

##### **4.3.5.1**      ***Identifying production plants which are individually essential***

As per article 63.3, paragraph a) of **Authority** Resolution no. 111/06, a power **production plant** is identified as singularly essential if there is no alternative to its use in order to satisfy the needs of even one dispatching service, including the planned unavailability.

With reference to each of the aforementioned dispatching services:

- a) The **Operator** identifies the **power generation plants** with the potential to meet the needs of the particular service, and the number of **units**, belonging to the above plants, that are strictly necessary to this purpose, where each **unit** is characterized by a minimum and/or maximum production level for meeting such needs;
- b) Each **production plant** is identified as essential for a number of **units** equal to the difference, if positive, between the above mentioned requirement and the number of **units**, in the previous point, belonging to other **production plants**.

The **Operator** notifies each **UoD** of the essential plants under its availability. Should the **UoD** not intend to take advantage of the alternative methods for fulfilling the obligations of article 65.bis of **Authority** Resolution no. 111/06, it must give prior notice to the **Operator** of the **production units** belonging to the essential plants with which it intends to satisfy the conditions for essential plants.

Should the **UoD** fail to notify the **Operator**, the latter notifies the **Authority** of such failure and considers all **units** belonging to those plants as essential.

#### 4.3.5.2 *Identifying production plant clusters that are essential for security purposes*

A cluster of **production plants** is identified as essential, according to article 63.3. paragraph b) of **Authority** Resolution no. 111/06 with reference to the reserve service, if it is not possible, in absence of the same, to satisfy a given requirement.

The **Operator** identifies the operational set up of the **system** on the basis of which essential plant clusters are determined, also regarding the following **zone** aggregate dimensions: (e.g. Mainland, Sicily, Sardinia), high/low **load**, high/low availability of **grid** elements and of production capacity.



With reference to each operational set-up of the **system**, a condition of essentialness is recognized for **secondary power reserve** if, in the absence of secondary reserve under the ownership of a **UoD**, it is not possible to satisfy the requirement for **secondary power reserve**. For the same **system** operational set-up, with reference to the same **UoD**, an essential capacity of **secondary power reserve** is defined as equal to the difference between the requirement for **secondary power reserve** and the capacity for **secondary power reserve** under the ownership of other **UoDs**.

The capacity for **secondary power reserve** of a **UoD** on an aggregate of **zones** is understood to be the sum of **secondary reserve half-bands** of the **enabled units** within its ownership, located in the aggregate of **zones**; the **secondary reserve half-band** of a unit, for such purposes, is understood to be the maximum value of the **secondary reserve half-band** associated with the operating ranges of the **PU**, as registered in **GAUDÌ**.

With reference to each **system** operational set-up, a condition of essentialness is recognized for replacement **tertiary reserve** if, in the absence of available production capacity under the ownership of a **UoD** it is not possible to satisfy the sum of the energy requirements and the requirements for the replacement reserve. For the same **system** operational set-up, with reference to the same **UoD**, an essential capacity of **replacement tertiary reserve** is equal to the difference between:

- the sum of the energy demand and of the replacement **reserve** requirement and;
- the sum of the available production capacity under the ownership of other **UoD** and the import of electrical energy from adjacent areas.

For purposes of identifying the essential capacity for replacement **tertiary reserve**, the **Operator** evaluates the available production capacity and the import of electricity from adjacent areas based on the methods and

hypotheses set out in document A31 “Procedura per l’individuazione della capacità essenziale di riserva terziaria” in [Appendix A](#) of this chapter.

With reference to each **system** operational set-up, a condition of essentialness is recognized for a ready **reserve** if it is not possible to satisfy the need in the absence of a tertiary ready reserve capacity under the ownership of the **UoD**,

For the same operational set-up, with reference to a **UoD**, an essential capacity for ready **reserve** is defined as equal to the difference between the sum of the upward and downward ready **reserve** requirement and the capacity of the ready **reserve** within the ownership of the other **UoDs**, on the basis of the method set out in document A.31 “Procedura per l’individuazione della capacità essenziale di riserva terziaria” in [Appendix A](#) of this chapter. For this purpose, the downward ready reserve demand values are equal to the upward ready reserve demand values.

The **Operator** notifies each **UoD**, for the section under its remit, of essential capacity for **secondary power reserve** and for replacement or ready **tertiary reserve**. Should the **UoD** not intend to use the alternative methods for fulfilling the obligations under article 65-*bis* of **Authority** Resolution no. 111/06, it shall notify the **Operator** regarding the **production units** making up the essential plant clusters with which it intends to meet the essential capacity for **secondary power reserve** and for replacement or ready **tertiary reserve**.

Failure of the **User of the dispatching** to notify the **Operator** will result in the latter notifying the **Authority** of this failure and registering the **units** under the availability of the **UoD** in the list of essential plants, starting from those with lower variable cost technology, until the essential reserve capacity is reached.

#### 4.3.6 **Subdivision of the significant grid into zones**

The **Operator** subdivides the **significant grid** into **zones** based on the available information at the time of definition, so that:

- (a) The **transfer capacity** between the **zones** is not adequate for the execution of the injection and withdrawal programmes corresponding to the operational situations deemed to be the most frequent, based on the **Operator's** forecasts of the outcomes of the **electricity market**;
- (b) The execution of the injection and withdrawal programmes does not give rise to **congestion** within each **zone** in foreseeable operational situations;
- (c) The dislocation, even if potential, of the injections and withdrawals within each **zone** does not have a significant influence on the **transfer capacity** between the **zones**.

The subdivision of the **significant grid** into **zones** is approved by the **Authority** and published by the **Operator** in document A.24 “Individuazione zone della rete rilevante” (Identification of zones in the significant grid) in [Appendix A](#) in this chapter. The **MSE** is also notified.

By September 30 of each year, the **Operator** publishes, on its own website, the forecast of transfer limits between the **zones**, distinguished by the various periods of the year, as well as the basis and methods used for calculating the forecasts.

### 4.4 **RESOURCES FOR DISPATCHING**

To attain the secure management of the **electricity system** and, at the same time, maintain the quality of the dispatching service, the **Operator** uses the

resources described in this section. The methods for procurement of dispatching resources in the context of pilot projects under the terms of Resolution 300/2017/R/eel are governed by special Regulations defined under the terms of the same Resolution and approved by the **Authority**.

#### **4.4.1      *Resources for solving congestion during the planning phase***

##### **4.4.1.1      *Characteristics of the service***

The **Operator** uses the resources to solve **congestion** during the **planning phase**, in order to eliminate **congestion** on the **significant grid** generated by **updated cumulative injection and withdrawal programmes**.

Resolution of **congestion** during the **planning phase** is divided into two aspects: “upward” and “downward”.

For resolution of **congestion** during the **planning phase**, if a unit is enabled only in “upward” mode (or “downward”), the unit may only increase injection or decrease withdrawal (or reduce injection and increase withdrawal) in relation to the updated **cumulative programme**. A service **Enabled Unit** supplying resources for this purpose means that the unit is available to accept changes, either increasing for the “upward” mode or decreasing for the “downward” mode, to its own **updated cumulative programmes**.

##### **4.4.1.2      *Requirements for enabling resources***

The following significant **PUs**, meeting the following requirements, are excluded from supply of resources for resolving **congestion** during the **planning phase**:

- (a) They are not connected to the transmission grid with third party access as they are not effective for delivering the service required;

- (b) In line with the provisions of paragraph [4.3.2.8 PUs under trial](#) , they are including in the category **PUs** under trial, as they are not fully able to efficiently and foreseeably regulate the PU's own production

The following significant **PUs**, not excluded from supply and meeting the following requirements, are **enabled** for supply of resources for resolving **congestion** during the **planning phase**:

- (c) They are not **production Units fed by unplannable renewable sources**
- (d) since generally these units cannot effectively regulate and forecast their production; they are able to vary, either increasing or decreasing, their injection by at least 10 MW within 15 minutes of the initiation of the variation, so that the **unit's** contribution to the removal of the **congestion** is significant and compatible with the established times for removal of **congestion**;
- (e) For hydroelectric **units** only, the relationship between the energy that may be supplied in one day and the maximum power of the unit is at least 4 hours.

With reference to the **PUs CIP6/92** and to **PUs** operationally connected to production cycles, including cogeneration PUs, which can be **enabled** for the supply of resources for the resolution of congestion during the **planning phase**, the **UoDs** are given the option to apply for exemption from qualification to supply resources for the solution of **congestion** during the **planning phase**, on the basis of existing agreements or proven technical limits of operation which substantiate the impossibility of the modulation of production upon the **Operator's** request. The request for exemption is subject to evaluation by the **Operator**.

#### 4.4.1.3 *Resource procurement and obligation to supply*

The **Operator** provides resources for the **planned** resolution of **congestion**, in the **dispatching services market**, concurrently with the process of defining **binding programmes**.

The **UoDs** of **PU**s enabled to supply resources for **planned** solving of **congestion** are obliged to:

- (a) Make the use of residual margins completely and exclusively available to the **Operator** with respect to the maximum power and to the elimination of energy injection, or with respect to minimum power in the case of units exempt from the submission of switch-off offers, as in paragraph [4.3.2.7, letter a\)](#), following the definition of **updated cumulative programmes**;
- (b) Notify the **Operator**, within the period defined in paragraph 4.9.1 *Obligation to report information on enabled units*, of temporary changes to its technical data or of unavailability for the **dispatching service**, according to the methods laid out in paragraph [4.3.2.7, letter c\)](#);
- (c) Submit the offer on the **MSD**, according to the terms and constraints described in paragraph 4.8.4 *Contents and constraints of offers on the MSD*. The **UoDs** are exempt from this obligation if the conditions listed in paragraph 4.8.3 *Exemption from the obligation to make offers*.

#### **4.4.2 Resources for the primary power reserve**

##### **4.4.2.1 Characteristics of the service**

The **Operator** uses the resources for the **primary reserve** to automatically correct sudden imbalances between total production and total demand of the entire interconnected European electricity system, by taking action on the speed regulators of the turbines of the generators they serve, in response to the frequency variations. The role of **primary reserve** is performed

simultaneously by all the **generator groups** in parallel on the interconnected European system. The corrective action taken by the **primary reserve** does not enable frequency deviations to be cancelled.

The **primary reserve** must be continuously available and must be distributed within the **electricity system** as uniformly as possible, so that its action is independent of the origin of the imbalance and of the distribution of production and **loads** at that moment.

Supplying resources for the primary reserve means making a band of electricity production capacity available to the Operator. The band is controlled by an automatic regulation device which is able to regulate the power supplied by the **generator group**, either increasing or decreasing, in response to a frequency deviation.

#### 4.4.2.2 *Technical requirements for eligibility of resources*

The **primary reserve** is supplied exclusively by **production units**.

A **PU** is eligible to supply the **primary reserve** if at least one of the **generator groups** associated with the unit is eligible.

**Generator groups** are eligible to supply the **primary reserve** if they meet the technical requirements in Chapter 1, Sections [1B.5.6.1](#) and [1B.5.7](#), of this Grid code.

#### 4.4.2.3 *Obligation to supply*

The **UoDs** of all eligible **PU**s are obliged to supply resources for the **primary reserve**.

To this end:

- (a) In the Sardinia **zone**, the **UoD** must make available a **regulation** band not less than  $\pm 10\%$  of the **efficient power** of each eligible **generator group** making up the **PU**;
- (b) In other **zones**, the **UoD** must make available a **regulation** band not less than  $\pm 1.5\%$  of the **efficient power** of each eligible **generator group** making up the **PU**; In the **zones** belonging to the Sicily region, a **regulation** band of not less than  $\pm 10\%$  of the efficient power of each eligible **generator group** making up the **PU** must be made available, in the hourly periods when the interconnection with the mainland will be opened.

The **primary regulation** band may be redistributed among the eligible **generator groups** making up the **PU** in the following ways:

- a) For traditional or re-upgraded thermoelectric **PU**s made up of several **generators**, the minimum mandatory **primary reserve** will have to be calculated with reference to the **efficient power** of the **PU** structure; it is possible to redistribute the **regulation** band among the **generators** making up the **PU**, without prejudice to the entire total calculated for the structure;
- b) For combined cycle modules, if the steam turbine does not take part in the **primary regulation**, the minimal mandatory **primary reserve** must be processed by the turbogas section only, and calculated with reference to the **efficient power** of the **PU's** structure; in the case of combined cycle modules made up of two turbogas units associated with one steam turbine, it is possible to choose, in the event of both turbogas units operating, to supply the entire **primary reserve** only with one turbogas group, or divide the total reserve between the two machines;
- c) For hydroelectric **Production Units**, the performance in **primary regulation** must be in relation to the power coming from the number of generators in service, if the **Production Units** are made up of several generators.



The **UoDs** who are owners of **production units** to which eligible **generation groups** belong, must register in **GAUDì** the technical data regarding the maximum and minimum power of structures and operating ranges (defined in Attachment A.60 “Dati tecnici delle unità di produzione rilevanti valevoli ai fini del Mercato elettrico” in [Appendix A](#) of this chapter), in compliance with supply obligations for **primary reserve**, and, specifically, making reference to the condition of the closed interconnection cable for **production units** located in Sicily.

If the **UoD** of an eligible unit is unable to guarantee the supply of the service, for reasons stated in Attachment A.60 “Dati tecnici delle unità di produzione rilevanti valevoli ai fini del Mercato elettrico” in [Appendix A](#) of this chapter, the **UoD** must notify the **Operator** as soon as possible of the expected duration of the unavailability, which in any case must be resolved in as short a time as possible.

The **UoD** carries out the above-mentioned notification by accessing the “dynamic RUP” procedure set out by the **Operator**, as per Attachment A.60 “Dati tecnici delle unità di produzione rilevanti valevoli ai fini del Mercato elettrico” in [Appendix A](#) of this chapter.

Thereafter, and not more than 15 days from the above notification, the **UoD** supplies the **Operator** with technical evidence of the problems stated.

If the **Operator** should detect the failure to supply resources for the **primary reserve** from a **PU** which is eligible and not exempt, or the lack of technical evidence or that the duration or the frequency are not regular, then the **Operator** notifies the **Authority** who will take appropriate measures with the **UoD**.

#### 4.4.2.4 *Replacement service contribution*

Non-eligible **PU**s and those that are eligible but temporarily unable to meet the obligation to supply are required to make a replacement contribution, defined by the **Authority** and described in article 68, Resolution 111/06.

#### **4.4.2.5** *Optional remuneration mechanism for the contribution to primary frequency regulation*

**PU**s suitable for providing resources for the **primary reserve** may be admitted to the remuneration mechanism for the contribution to **primary frequency regulation** for which are met the conditions for admission by the **Operator**, found in Attachment A.73 “Specifiche tecniche per la verifica e valorizzazione del servizio di regolazione primaria di frequenza” in [Appendix A](#) of this chapter. The related costs, including for installing equipment, certification and any modifications to the **power production plant**, are borne by the **UoD** that owns the **PU**. In this regard, it is recalled that:

- The **UoD** that owns the **PU**s admitted to the aforementioned remuneration mechanism is responsible for the correct operation of the installed equipment, as well as for the truthfulness and accuracy of the data reported to the **Operator**, relating to the calculation of the associated energy, and for all requirements set out in Attachment A.73; “Specifiche tecniche per la verifica e valorizzazione del servizio di regolazione primaria di frequenza” in [Appendix A](#) of this chapter.
- The **Operator** reserves the right to carry out checks and inspections as described in Attachment A.73 “Specifiche tecniche per la verifica e valorizzazione del servizio di regolazione primaria di frequenza” in [Appendix A](#) of this chapter.;
- As part of such checks and inspections, the **UoD** that owns **PU**s admitted to the aforementioned remuneration mechanism is required to allow the **Operator** to carry out tests remotely to verify the **primary regulation** service as specified in Attachment A.73 “Specifiche

tecniche per la verifica e valorizzazione del servizio di regolazione primaria di frequenza” in Appendix A of this chapter.

The procedure for admission to the mechanism for enhancing the contribution to **primary frequency regulation** is as follows:

- Through the **GAUDÌ** portal, the **UoD** concerned applies for admission for each **PU**, providing the **Operator** with the parameters needed for its classification and certification by an accredited institution as per Attachment A.73. The **Operator** checks the documentation received and informs the **UoD**, through the **GAUDÌ** portal, of the actual date of admission to the mechanism for enhancing the contribution to **primary frequency regulation** for each **PU**, or the reasons for which a **PU** cannot be admitted;
- Should the Operator encounter non-compliant conduct, or in the event of failure of the tests performed pursuant to Attachment A.73 “Specifiche tecniche per la verifica e valorizzazione del servizio di regolazione primaria di frequenza” in Appendix A of this chapter, the **Operator** revokes the admission of the UoD to the mechanism. In this case, the UoD 4.4.3 “Resources for the secondary power reserve”

#### 4.4.3.1 *Characteristics of the service*

The **Operator** uses the resources for the **secondary power reserve**, or **secondary frequency/power regulation**, to compensate for the deviations between demand and production in the **national electricity system**, to restore the power exchanges at the border to their planned values, and consequently to contribute to re-establishing the European frequency.

This automatic operation is carried out by a central regulator in the **Operator’s line control system**. Normally Sardinia and Sicily when the latter is not synchronized with the mainland, perform the **secondary power reserve** operation locally.

The **UoDs'** supplying of resources for the **secondary power reserve** consists in:

- (a) In the **planning phase** or in the phase of real time management: autonomously making available the **secondary reserve half-band** in the **updated cumulative programmes** for the **enabled unit**, or being available to accept modifications to these programmes with the objective of making the half-band available;
- (b) In the real time management phase: the secondary reserve band must be made subject to an automatic regulating device which is able to regulate the injection of electricity of the generator group based on the level signal calculated and sent by the Operator. 4.4.3.2 Technical requirements for enabling resources

The resources for the secondary power reserve are supplied by **production units** which are **enabled** for the service.

The **PUs** that are **enabled** to supply resources for the **tertiary power reserve**, as described in paragraph 4.4.4.2 *Requirements for enabling resources*, are also **enabled** to supply the **secondary power reserve**, if:

- (a) At least one **generator group** associated with the **unit** complies with the specifications in document A.15 "Partecipazione alla regolazione di frequenza e frequenza/potenza") in [Appendix A](#) in this chapter;
- (b) The **unit** is equipped with a suitable apparatus for processing the level signal transmitted by the **Operator**;
- (c) The **unit** makes the remote indication of the state of the **secondary regulation of frequency** available to the **Operator**;
- (d) The **UoD** of the **unit** has indicated in **GAUDì** at least one infrastructural element (defined in document A.60 "Dati tecnici delle unità di produzione

rilevanti valevoli ai fini del Mercato elettrico” in [Appendix A](#) in this chapter) with a **secondary reserve band** greater than the minimum quantity defined by the **Operator**:

- (i)  $\pm 15\%$  of the maximum power of the infrastructural element, for hydroelectric **units**;
- (ii) The greater of  $\pm 10$  MW and  $\pm 6\%$  of the maximum power of the infrastructural element, for thermoelectric **units**.

#### 4.4.3.3 *Supplying resources*

The **Operator** provides for the availability of resources for the **secondary power reserve** via the **Dispatching Services Market**.

#### 4.4.3.4 *Obligation to supply*

The **UoDs** of the **PUs enabled** to supply resources for the **secondary power reserve** are obliged to:

- (a) Make the **secondary power reserve** service completely and exclusively available to the **Operator**. The **UoDs** of **units** for which the conditions apply as listed in section 4.8.3 *Exemption from the obligation to make offers*;
- (b) Notify the **Operator**, for the purposes of defining the **binding programmes** and within the periods given in paragraph [4.9.1](#) “*Obligation to communicate information on enabled PUs*” of any temporary variations in or unavailability for the **secondary power reserve** service, in compliance with the terms described in paragraph [4.3.2.7, letter c](#);
- (c) In the **real time management phase**, the following need to be subdued to the **regulation** device:

- (i) The **secondary reserve half-band**, for which the **UoDs** have been selected autonomously with reference to each **significant period** of the day;
- Or
- (ii) The **secondary reserve half-band**, for which the **UoDs** have not been selected in the **MSD planning phase**, if required by the **Operator**, according to the terms described in document A.23 “Procedura per la selezione delle risorse per il mercato di bilanciamento” in [Appendix A](#) in this chapter;
- (d) Notify the **Operator**, in real time, of any temporary variations in or unavailability of the **secondary power reserve** service, according to the terms described in [4.3.2.7, letter c.](#)

The **Operator** notifies the **UoDs** of the **units** selected for the **secondary power reserve** service and for the **secondary reserve half-band** assigned, according to the terms described in paragraph [4.9.6.1](#) (“Communication of final cumulative programmes”).

#### **4.4.4 Resources for the tertiary power reserve**

##### **4.4.4.1 Characteristics of the service**

The **Operator** uses the resources for the **tertiary power reserve** to build up suitable margins with respect to the minimum or maximum power in programmes as follows the **MSD** of the **enabled units**.

These margins, prepared during the **planning phase** or in the **real time management phase**, can be activated in real time by sending **dispatching orders**, as part of the **balancing** service, and not by automatic **regulation** mechanisms, as in the case of **primary and secondary power reserve**.

The **tertiary power reserve** has two aspects, “upward” and “downward”.

The reserve margins created on a unit should match the direction for which the unit itself is enabled.

For creation of these reserve margins, where a unit is enabled for supply of resources for resolving **congestion** during the **planning phase**, only for the “upward” mode (or “downward”) the unit may only increase injection or decrease withdrawal (or reduce injection and increase withdrawal) in relation to the **updated cumulative programme**.

Provision of the **upward (or downward) tertiary power reserve** service consists in the presence of margins in programmes as follows the **MSD** which allow, in the context of the real-time **balancing** service, the increase or reduction of withdrawal (or the reduction of injection or the increase of withdrawal) of electricity by a **PU**, for an amount corresponding to the margin, within the time frame for activation of the period defined by the **Grid Operator** for each of the following reserve types:

- (a) *Upward ready reserve*, for an increase in the injection or a reduction in withdrawal that can be carried out within ten minutes of the **Grid Operator's** request. This reserve aims at re-establishing the **secondary power reserve band** within the time allowed by the ENTSO-E standards and at maintaining system balance in the event of rapid changes in demand (e.g. a power **load** ramp) with speed and continuity requirements.
- (b) *Upward (or downward) Spinning Reserve*, for the increase in injection or reduction in withdrawal (or increase in withdrawal or reduction in injection) that can be carried out within 15 minutes of the **Grid Operator's** request and can be maintained for at least 120 minutes. This reserve has the purpose of re-establishing the **secondary power reserve band** and the **tertiary ready reserve**.

- (c) *Upward (or downward) Replacement Reserve*, for the increase in injection or reduction in withdrawal (or increase in withdrawal or reduction in injection) that can be carried out within 120 minutes of the **Grid Operator's** request and can be maintained without limit. This reserve aims at re-establishing the **tertiary** spinning **reserve** against shifts in demand, injection from unpredictable renewable sources, breakdowns of **generator groups** of several hours in duration.

The upward **tertiary power reserve** margins must be included in the final cumulative programmes as follows the **MSD** of:

- (a) **Enabled Units** (EPUs) in parallel with the **grid** but not supplying maximum power;
- (b) **Enabled Units** able to synchronize with the **grid** in the times appropriate for the type of reserve considered.

The decreasing **tertiary power reserve** margins must be included in the final **MSD** programmes of:

- (a) **Enabled Units** in parallel with the **grid** but not supplying minimum power;
- (b) **Enabled Units** able to zero their input in the times appropriate for the type of reserve considered.

The **UoDs'** supplying of resources for the **tertiary power reserve** consists in:

- (a) Autonomously making available margins with respect to the maximum or minimum power in the **updated cumulative programmes** for the **enabled units**;
- (b) Being available to accept modifications to the **updated cumulative programmes** for the **Enabled Unit** with the objective of creating **tertiary power reserve margins**.



#### 4.4.4.2 *Requirements for enabling resources*

The **PUs enabled** to supply resources for **balancing**, as described in the following paragraph 4.4.5.2 *Technical requirements for enabling resources*, are also enabled to supply **tertiary power reserve** of a specific type, from those defined in paragraph 4.4.4.1 *Characteristics of the service*, with the “upward” method (or “downward”), if:

- (a) They are able to vary, increasing (or decreasing), their input by at least 10 MW on arrival of a **dispatching order** within a time period appropriate for the type of reserve considered;
- (b) They are able to support this increase (decrease), for a period appropriate for the type of reserve considered.
- (c) Limited to ready **reserve**, they are able to increase (or decrease) their input with a gradient of at least 50 MW/min and are characterised by increase (or decrease) set-up modification times less than 1 hour.

Whereas gradient is understood to be the maximum increasing (decreasing) gradient of operating structures associated with valid ranges, and increasing (decreasing) structure change time is understood to be the maximum increasing (decreasing) set-up modification time of the operating structures associated with valid ranges.

With reference to **PUs CIP6/92** and to **PUs** operationally connected to production cycles, including **cogeneration PUs**, which can be enabled for the supply of resources for **tertiary power reserve**, the **UoDs** are given the option to apply for exemption from qualification to supply resources for **tertiary power reserve**, on the basis of existing agreements or proven technical limits of operation which substantiate the impossibility of the modulation of production upon the **Operator's** request. The request for exemption is subject to evaluation by the **Operator**.

#### 4.4.4.3 *Resource procurement and obligation to supply*

The **Operator** provides for the availability of resources for the **tertiary power reserve** concurrently with the process of defining the **binding programmes** or with the procedure for the selection of **balancing** resources, via the **Market for dispatching services**, according to the terms described in section 4.9.3 and 4.10.4.2.

The **UoDs** of the **PU**s enabled to supply resources for the **tertiary power reserve** must:

- (a) Install, at the unit's **physical control point**, the software tools supplied or identified by the **Operator** for receiving **dispatching orders**, described in document A.36 “Modalità di invio degli ordini di dispacciamento” in [Appendix A](#) of this chapter;
- (b) Install, at the unit's **physical control point**, a telephone communications system for receiving **dispatching orders** in case the computer system is unavailable;
- (c) Make the use of residual margins completely and exclusively available to the **Operator** with respect to the maximum power and to the elimination of energy injection, or with respect to minimum power in the case of units exempt from the submission of switch-off offers, as in paragraph [4.3.2.7, letter a\)](#), following the definition of **updated cumulative programmes**;
- (d) Notify the **Operator**, for the purposes of defining the **binding programmes** and within the period defined in section [4.9.1](#) (“Obligation to communicate information on enabled PUs”) in this chapter, of any temporary variations in or unavailability for the **balancing** service, according to the terms described in paragraph [4.3.2.7, letter c\)](#);

- (e) Submit the offer to the **MSD**, according to the terms and constraints described in section [4.8.4](#). The **UoDs** are exempt from this obligation if the conditions listed in section [4.8.3](#) occur.

#### **4.4.5 Resources for balancing**

##### **4.4.5.1 Characteristics of the service**

The **Operator** uses the resources for the **balancing** service in real time to:

- (a) Maintain the balance between injections and withdrawals of electricity;
- (b) Solve **grid congestion**;
- (c) Restore the correct **secondary power reserve** margins.

For the **balancing** service, the **Operator**:

- (a) Activates the resources supplied for the **tertiary power reserve**;
- (b) Accepts, in real time, offers from the **units enabled** for balancing, submitted on the **MSD**.

The **UoDs'** supplying of resources for **balancing** consists in modifying their own injections or withdrawals with respect to their **binding power programmes**.

The **balancing** service has two aspects:

- (a) “Upward” **balancing**: increasing injection or reducing withdrawal with respect to the UoD's own **binding power programme**;
- (b) “Downward” **balancing**: reducing injection or increasing withdrawal with respect to the UoD's own **binding power programme**.

When a unit is enabled for provision of only upward (or downward) **balancing**, it is understood that the unit:

- (i) It will be possible to increase injection or reduce withdrawal (or reduce injection or increase withdrawal) in relation to the **binding power programme**.
- (ii) It will be possible to reduce injection or increase withdrawal (or increase injection or reduce withdrawal) with respect to the **binding power programme**, until the **updated cumulative programme** level is reached, should this be lower (or higher) than the aforementioned programme.

#### 4.4.5.2 *Technical requirements for enabling resources*

The following significant **PU**s meeting the following requirements are excluded from provision of resources for the **balancing** service:

- (a) They are not connected to the transmission grid with third party access as they are not effective for delivering the service required;
- (b) In line with the provisions of paragraph [4.3.2.8 PUs under trial](#), they are including in the category **PU**s under trial, as they are not fully able to efficiently and foreseeably regulate the PU's own production.

The **significant PU**s not excluded from the supply and that meet the following conditions are enabled for provision of resources for **balancing**:

- (a) They are not **Production unit fed by unplannable renewable source**s since they generally cannot effectively regulate and forecast their production;
- (b) They are able to start varying, either increasing or decreasing, their injection within 5 minutes of the initiation of the requested variation

according to a **dispatching order**, should the PUs be already synchronized with the **grid**;

- (c) They are able to vary, either increasing or decreasing, their injection by at least 3 MW within 15 minutes as of receipt of a **dispatching order**;
- (d) For hydroelectric **units** only, the relationship between the energy that may be supplied in one day and the maximum power of the unit is at least 4;
- (e) The **physical control point** of the **unit** is supervised and is able to execute **dispatching orders** 24 hours a day, 7 days a week.

Note that the limitation in letter (c) is less restrictive than the similar limit required for the **tertiary power reserve** in order to enable the use, in real time, of further resources than those offered by the **tertiary power reserve**, contributing to restoration of the conditions of security of the **electricity system** in situations with limited resources.

With reference to **PU**s **CIP6/92** and to **PU**s operationally connected to production cycles, including **cogeneration PU**s, which can be enabled for the supply of resources for **balancing**, the **UoDs** are given the option to apply for exemption from qualification to supply resources for **balancing**, on the basis of existing agreements or proven technical limits of operation which substantiate the impossibility of the modulation of production upon the **Operator's** request. The request for exemption is subject to evaluation by the **Operator**.

#### 4.4.5.3 Resource procurement and obligation to supply

The **Operator** provides for the availability of resources for **balancing** via the **Market for dispatching services**, according to the terms described in section [4.10](#) in this chapter.

The **UoDs** of the **PUs enabled** to supply resources for **balancing** are obliged to:

- (a) install, at the unit's physical control point, the software tools supplied or identified by the Operator for receiving dispatching orders, described in document A.36 "Modalità di invio degli ordini di dispacciamento"
- (b) Install, at the **unit's physical control point**, a telephone communications system for receiving **dispatching orders** in case the computer system is unavailable;
- (c) Make completely and exclusively available, to the **Operator**, the use of residual margins with respect to the maximum power and with respect to the elimination of energy injection, or with respect to minimum power in the case of **units** exempt from the submission of Switch-off offers as in paragraph [4.3.2.7, letter a\)](#), following the definition of **updated cumulative programmes**;
- (d) Submit the offer to the **MSD**, according to the terms and constraints described in section [4.8.4](#). The **UoDs** are exempt from this obligation if the conditions listed in section [4.8.3](#) occur;
- (e) Activate its own **binding programmes**, according to the methods defined in paragraph [4.10.4.1](#);
- (f) Notify the **Operator**, in compliance with the methods and notification times in section [4.10.1](#), of temporary variations in its own technical data or unavailability for the **dispatching** service;
- (g) Activate the **dispatching orders**, issued according to the terms in section [4.10.5](#) ("Dispatching orders") and communicated according to the methods in section [4.10.5.1](#) ("Communication of Dispatching orders").

(h)

#### **4.4.6 Interruptible Load service**

##### **4.4.6.1 Characteristics of the service**

The **Operator** resorts to using the **interruptible load service** when the resources supplied on the **MSD** are insufficient to maintain the operational security of the **system**.

Supplying resources for the **interruptible load service** consists in the availability of **final customers** to interrupt the **load**, in compliance with the terms in paragraph [4.4.6.2](#) below.

##### **4.4.6.2 Requirements for enabling resources**

Parties that have **interruptible loads** must:

- (a) Guarantee **user** disconnection;
  - (i) In real time, i.e. an activation time of less than 200 msec, following a remote signal sent by the **Operator**;
  - (ii) In deferred time under emergency conditions, with an activation time of less than 5 sec. on the basis of a remote signal sent by the **Operator**;
- (b) Be equipped with devices as described in the documents in [Appendix A](#) in this chapter:

A.40 “Integrative technical prescriptions for connection to the Interruptible Control Desk”;

A.41 “Peripheral unit load disconnection. Implementation Guide”;

A.42 “Peripheral unit load disconnection. Profile of IEC 870-5-104 protocol”;

- (c) Be **final customers**, so that the assumption of responsibility deriving from the disconnection of the **load** is directly between the **Operator** and each individual counterpart;
- (d) Certify that the disconnection does not involve, in any case whatsoever, risk to workers, the environment, or to production plants;
- (e) Certify possession of disconnectable power installed in compliance with the technical directions defined by the **Operator**;
- (f) Comply with further directions and prescriptions established by the **MSE** or by the **AEEGSI** for the regulation of the **interruptible load service**;
- (g) Be committed to upgrading the remote operations equipment to meet the needs envisaged in the **Defence Plan** of the **national electricity system**, which the **Operator** updates every six months.

4.4.6.3 *Resource procurement and obligation to supply*

The **Operator** assigns the **interruptible load service** to **final customers** who meet the requirements set out in the previous section, through non-discriminating procedures and in line with the regulations governing such procedures.

The **final customers** to which the **interruptible load service** is assigned are required to agree a contract regulating the service, based on the model contract prepared by the **Operator** as in document A.62 of [Appendix A](#) to this chapter.



#### **4.4.7**      **Reactive power reserve for primary regulation of voltage**

##### **4.4.7.1**      *Characteristics of the service*

Supplying resources for the **primary regulation of voltage** is divided into:

- (a) Reactive power reserve for **primary regulation of voltage** of a group;
- (b) Reactive power reserve for **primary regulation of voltage** of a **power plant**.

Supplying resources for the reactive power reserve service for **primary regulation of voltage** of a group consists in subjecting the **reactive power** production of a **generator group** to an automatic **regulating** device which is able to regulate the **reactive power** supplied by the **generator group** based on the shifts in voltage at the terminals of that **generator group** compared to a reference value.

Supplying resources for the reactive power reserve service for **primary regulation of voltage** of a **power plant** consists in subjecting the **reactive power** production of the **generator groups** belonging to a **power plant** to an automatic **regulating** device which is able, by acting on the reference voltage value, to regulate the **reactive power** supplied by each of the **generator groups** based on the shifts in voltage on the **HV** bus bars of the production **power plant**.

##### **4.4.7.2**      *Technical requirements for eligibility of resources*

**Generator groups** which are eligible for the reactive power reserve service must meet the technical requirements given in Chapter 1, sections [1B.5.6.2](#) and [1B.5.8](#), of this Grid code.

To be eligible for the reactive power reserve service for the **primary regulation of voltage** of a **power plant**, each **power plant** must be equipped

with an Automatic System for Regulating Reactive Power and Voltage (ASRV) in compliance with the specifications in the documents listed above and in document A.16 “Sistema Automatico per la Regolazione della Tensione (SART) per centrali elettriche di produzione” (Automatic system for regulating voltage (ASRV) for electricity production plants) in [Appendix A](#) in this chapter. To assess if the **generator group** is eligible for the service, the **Operator** verifies that the technical data declared by each **UoD** in **GAUDÌ** complies with the required specifications.

#### 4.4.7.3 *Obligation to supply*

- Reactive power reserve for primary regulation of voltage of a generator group

**Users of Dispatching** are obliged to supply resources for the reactive power reserve service for the **primary regulation of voltage** of a group, with reference to all eligible **generator groups** that make up the **PU**s under their ownership.

The **UoD** must supply these resources in compliance with the requirements of the **regulation** devices, except where otherwise indicated by the **Operator**, and compatibly with the technical characteristics declared in the **RUP**.

**Users of Dispatching**, with reference to **generator groups** with rated power less than 10 MVA, with the prior agreement of the **Operator**, have the option of supplying the above mentioned resource by supplying a preset value of **reactive power** or by regulating the **reactive power** supplied by the same **generator groups** based on the shift in the power factor with respect to a reference value.

- Reactive power reserve for primary regulation of voltage of a power plant

**UoDs** are obliged to supply resources for the reactive power reserve service for the **primary regulation of voltage** of a **power plant**, with reference to all **generator groups** belonging to a **power plant**, if at least one of the eligible **generator groups** has a power of more than 100 MVA.

The **UoD** must make available the maximum **reactive power** (supplied or consumed) compatible with the technical characteristics of each **generator group**. The **Operator**, on the request of the **UoD**, may authorize reductions in the **active power** made available by a **generator group** only if such reductions are necessary as a result of substantiated technical limits of that **generator group** (for example due to the age of the exciter system of the alternator).

#### 4.4.7.4 *Replacement contribution for the service of primary regulation of voltage*

**UoDs** of the significant **PU**s whose **generator groups** are not eligible for the reactive power reserve service for the **primary regulation of voltage** are required to submit a replacement contribution to the **Operator** for each service not supplied, for the lack of performance of the service, defined by the **Authority** as per article 68, Resolution 111/06.

### 4.4.8 **Reactive power reserve for secondary regulation of the voltage**

#### 4.4.8.1 *Characteristics of the service*

Supplying resources for the reactive power reserve service for **secondary voltage regulation** consists in placing the **reactive power** production of **generator groups** belonging to a **power plant** under the control of a centralized automatic **regulating** device which is able to control the **reactive power** supplied by each of these **generator groups** based on the shifts in voltage at certain junction points predefined by the **Operator** (pilot nodes).

#### 4.4.8.2 *Technical requirements for eligibility of resources*

**Generator groups** which are eligible for the reactive power reserve service for **secondary regulation of voltage** must meet the technical requirements given in document A.14 “Partecipazione alla regolazione di tensione” (Participation in voltage regulation) in [Appendix A](#) in this chapter.

In addition, the characteristics of the **regulating** devices must comply with the specifications included in the **Technical regulations for connection**.

To participate in the reactive power reserve service for **secondary regulation of voltage**, each **power plant** must be equipped with an Autonomous System for Regulating Reactive Power and Voltage (ASRV) and a telecommunications apparatus which is capable of exchanging all necessary information with the Regional Voltage Regulator (RVR). The ASRV and the telecommunications equipment must comply with the specifications in document A.16 “Sistema Automatico per la Regolazione della Tensione (SART) per centrali elettriche di produzione” (Automatic system for regulating voltage (ASRV) for electricity production plants) in [Appendix A](#) in this chapter, for the purposes of connecting to the RVR.

#### 4.4.8.3 *Obligation to supply*

**PU**s are eligible to supply reactive power for **secondary regulation of voltage**, whose **generator groups** are equipped with the technical requirements identified in the documents in paragraph [4.4.8.2](#).

The participation in the service by the eligible **PU**s is determined according to the location of the **PU** in the **grid** and to the maintenance of suitable voltage profiles in the **NTG**.

**UoDs** owning eligible **PU**s must supply the maximum **reactive power** (for supply or for absorption) compatible with the technical characteristics of each **generator group**. The **Operator**, on the request of the **UoD**, may authorize

reductions in the **active power** made available by a **generator group** only if such reductions are necessary as a result of substantiated technical limits of that **generator group** (for example due to the age of the exciter system of the alternator).

#### **4.4.9 Load rejection**

##### **4.4.9.1 Characteristics of the service**

The load rejection service for a generator group consists in remaining in a stable operating condition upon disconnection of that generator group from the grid, by powering its own ancillary services.

##### **4.4.9.2 Obligation to supply**

**UoDs**, limited to the thermoelectric **PU**s under its ownership, including **generator groups** having a power greater than 100 MW, must be available to supply the service, with plants prepared and personnel properly trained.

The **UoDs** that own the **PU**s that supply the service must take part in periodic **load rejection** tests, either planned or following **outages** or grid protection measures, within the terms and availability time frames given in Chapter 1, Section [1B.5.12](#), of this Grid code and in the documents mentioned therein.

The **Operator** carries out monitoring of these plants by means of its own **Control System** in order to verify that the performance recorded corresponds to the service requirements.

Every year the **Operator** informs the **Authority** of the result of the tests carried out.

#### **4.4.10 Participation in the recovery of the electricity system**

##### **4.4.10.1 Characteristics of the service**

Participation in the recovery of the **electricity system** consists in the availability of a **generator group** to participate in the implementation of the **power recovery plan**, coordinated by the **Operator**, in compliance with the criteria defined in document A.10 “Piano di Riaccensione del sistema elettrico nazionale” (Power recovery plan of the national electricity system) in [Appendix A](#) in this chapter.

##### **4.4.10.2 Technical requirements for eligibility of resources**

To be eligible for restoring the **electricity system**, at least one of the **generator groups** associated with the **PU** must be able to guarantee one of the measures given below, in line with the requirements in document A.10 “Piano di Riaccensione del sistema elettrico nazionale” (Power recovery plan for the national electricity system) in [Appendix A](#) in this chapter:

- (a) Perform an autonomous start-up in the absence of external power, guaranteeing **regulation** of voltage and frequency;
- (b) Correctly execute the **load refusal** and remain in a state of stable operation without being connected to the **grid**, powering only its own **ancillary services**.

With reference to letter (b), the **generator groups** must remain in a condition of stable operation, powering their own **ancillary services** from their respective unit transformers, for a period of at least 12 hours.

The required duration of the service may be subject to revision based on the results of the tests described in the following paragraph and on the requirements of executing the **power recovery**.

With reference to single **generator groups**, the **UoDs** have the option to request exemption from the obligation in the case of a substantiated technical impossibility.

#### **4.4.10.3**      *Obligation to supply*

**UoDs** are obliged to perform the recovery **service**, with reference to all **PU**s indicated in the **Power Recovery Plan**.

**UoDs** that own the **PU**s that supply the autonomous start-up service are obliged to take part in periodic tests of eligibility with the terms given in Chapter 1, paragraph [1B.5.12](#), of this Grid code.

The **Operator** carries out monitoring of these plants by means of its own **Control System** in order to verify that the performance recorded corresponds to the service requirements.

Every year the **Operator** informs the **Authority** of the result of the tests carried out.

#### **4.4.11**      ***Availability for use of the intertripping***

##### **4.4.11.1**      *Characteristics of the service*

Availability for intertripping consists of subjecting a **PU** to a device which is able to automatically disconnect that **PU** when a predefined event occurs, i.e. on the orders of and according to the terms indicated by the **Operator**.

##### **4.4.11.2**      *Technical requirements for enabling resources*

To supply the service of availability for intertripping, the **PU**s must be enabled for the **balancing** service and must be equipped with automatic devices that have the characteristics indicated in document A.9 “Piano di Difesa del

sistema elettrico”, in [Appendix A](#) in this chapter, and the **Operator** must be notified of this.

#### 4.4.11.3 *Resource procurement and obligation to supply*

Resources for intertripping are provided for at the time of the process of defining the **binding programmes**, according to the terms described in section [4.9.4](#) (“Procurement for the intertripping service during the planning phase”).

**UoDs** owning **PU**s which are technically eligible for the intertripping service must notify the **Operator** of:

- (a) The eligibility for the service of those units;
- (b) Any unavailability for the intertripping service and the expected duration of the unavailability, which in any case must be solved in as brief a period as possible and any reasons as indicated in Attachment A.60 “Dati tecnici delle Unità di Produzione rilevanti ai fini del Mercato elettrico” in [Appendix A](#) of this chapter.

The **UoD** carries out the notification of intertripping unavailability by accessing the “dynamic RUP” procedure provided by the **Operator**, according to the methods described in Attachment A.60 in [Appendix A](#) of this chapter.

The **UoDs** owning **PU**s which are located in **limited production hubs** are obliged to install intertripping devices for those units.

Thereafter, and not more than 15 days from the above notification, the **UoD** supplies the **Operator** with technical evidence of the problems stated.

If the **Operator** should detect with respect to intertripping from a **PU** which is eligible and not exempt, the failure to supply resources or the lack of technical evidence or that the duration or the frequency are not regular, then the



**Operator** notifies the **Authority** who will take appropriate measures with the **UoD**.

## **4.5 SECURITY CHECKS LESS FREQUENT THAN DAILY**

### **4.5.1 Weekly security checks on the electricity system**

In order to facilitate the forecasting of possible critical conditions in the **system** with adequate notice, as well as supplying information for evaluation by the **MSE** or other competent authority and preparing the necessary measures in a prompt manner, the **Operator** carries out a weekly security check which is aimed at:

- (a) Verifying the coverage of demand, taking into account possible **grid congestion**;
- (b) Verifying the **primary, secondary and tertiary power reserve** margins;
- (c) Evaluating and deciding on the **maintenance** plans of the **PU** in compliance with predefined time schedules;
- (d) Verifying the weekly emptying of the tanks.

Regarding the above, the **UoDs** that own the **PU**s notify the **Operator** of the necessary information as described in document A.29 “Modalità di comunicazione dei dati per la verifica di sicurezza con orizzonte settimanale” in [Appendix A](#) in this chapter.

### **4.5.2 Obligation to supply data for hydroelectric production**

Units based on the existing regulations and in order to enable the **Operator** to:

- (a) Ensure that statistical data and data on the consumption of the entire national electricity sector are collected;
- (b) Carry out the monitoring and certification actions required by institutional bodies (**MSE**, Protezione Civile (Italian Civil Defence), etc.) in the case of particularly critical conditions of the **electricity system**;
- (c) Carry out security checks on the **electricity system**;

It is indispensable that the **UoDs** owning hydroelectric **PU**s supply the **Operator** with the following information:

- (i) Specifications of the tanks and basins: basin curve, usable volume, energy coefficient, average twenty-five year producibility;
- (ii) The structure of the **hydroelectric cascade**, for **PU**s belonging to the **UoD**.

**UoDs** must in addition regularly supply the final rectified data given below for the hydroelectric **PU** which they own:

- (a) The elevation of all basins and tanks;
- (b) The daily production of the hydroelectric **power plants** with power of not less than 10 MVA;
- (c) The daily pumping levels;
- (d) The daily production shortfall (surplus);
- (e) The natural supplies

### 4.5.3 *Verification of compatibility of strikes with PU*

Pursuant to article 5, letter f) of the directives of the Ministry of Industry, Commerce and Crafts dated 21 January 2000, “Direttive per la società Gestore della rete di trasmissione nazionale di cui all’art.3, comma 4, del decreto legislativo 16 marzo 1999, n.79” (Directives for the **Operator** company of the national transmission grid in article 3, paragraph 4, of Legislative Decree no. 79 of 16 March 1999), in the event of strikes affecting the electricity sector, the **Operator** will assess the effects on the security of the **electricity system**, taking into account the availability of all production resources.

The **Operator** verifies the compatibility of the strike based on the procedure described in document A.28 “Procedura tecnica di valutazione di compatibilità con la salvaguardia della sicurezza di esercizio degli scioperi riguardanti impianti di produzione” in [Appendix A](#) in this chapter.

The procedure may be subject to revision following agreement between the parties, including the **Operator**.

The **UoD** is obliged to send a copy of the strike announcement to the **Operator** and also any relevant information to determining the strike’s sphere of influence, terms and methods.

The **Operator** notifies the **MSE** of national strike announcements, with indication of the date of the verification of compatibility.

The **Operator** informs the affected parties of the result of the verification of compatibility within a period of not more than 10 days and not less than 5 days from the date when the strike is announced.

If the strike is not compatible with the security of operations of the electricity system, the **Operator** informs the MSE of this.

## **4.6 PROVIDING FOR RESOURCES TO GUARANTEE ADEQUACY OF THE NATIONAL ELECTRICITY SYSTEM**

### **4.6.1 Method of admission to the remuneration procedure for availability of productive capacity**

The **Operator** annually publishes, on its website, the list of **critical days**, for the purposes of covering national demand with the necessary **primary, secondary and tertiary power reserve** margins and for which the availability of productive capacity is required.

From the first day of the month following the **Operator's** eligibility on **GAUDÌ**, **units enabled** for the **Market for dispatching services** are admitted to the remuneration procedure, only for the **critical days** on which the **unit** is enabled.

The **UoD** who have ownership of **PU**s admitted to the remuneration procedure undertake, for each **unit**, to make available to the Operator the production capacity on the **critical days** of the year. For the hydroelectric **units**, production capacity must be considered available for a period of at least 4 hours for each **critical day**.

### **4.6.2 Rights and obligations for units admitted to the remuneration process**

Each **UoD** holder of **PU**s which have been admitted by the **Operator** to the remuneration process:

- (a) Has the right to receive, with reference to the availability of productive capacity, the specific reimbursement as per Art. 35, Attachment A of **Authority** Resolution no. 48/04;

- (b) Is required to agree with the **Operator**, if not already provided for, the **Dispatching Contract** for the **points of injection**.

The production capacity admitted to the remuneration procedure is defined, pursuant to **Authority** Resolution no. 48/04, article 31, as equal to the maximum power of the **Production Unit**, as defined in paragraph [4.3.2.7 letter d](#).

Specifically, for each significant period of the **critical day**, the production capacity admitted to the remuneration mechanism is equal to:

- Maximum power valid in the same significant period, if the **unit** is available for **balancing**;
- Zero, if the **unit** is unavailable for **balancing**.

The **UoD** must report any variations in the technical data of maximum power, as per sections [4.9.1](#) and [4.10.1](#), by making use of:

- (i) The system for variations of technical data (“dynamic RUP”), as per paragraph [4.3.2.7, letter c](#);
- (ii) An e-mail form prepared by the **Operator**, in the event the above mentioned system is not available.

## **4.7 DEFINITION OF PROGRAMS RESULTING FROM THE ENERGY MARKETS**

### **4.7.1 Register of production units and consumption units**

The **Operator** sends the **Market Operator** the data of units present in **GAUDÌ** and in the **Consumption Unit Register**, including virtual units, as well as information which is relevant for the purposes of registration in the

**Forward Energy Account** of the execution of the **energy markets** and for the collection of offers for the **MSD**.

For each unit, the **Operator** communicates:

- (a) The unit ID;
- (b) The ID of the **UoD** owning the unit;
- (c) The **zone** to which it belongs;
- (d) The qualification of the participating unit:
  - (i) In the **day ahead energy market**;
  - (ii) In each session of the **Intra-Day Market**;
- (e) Whether the unit is enabled for participating:
  - (iii) In the **market for dispatching services**;
- (f) An indication of the order of priority referred to in Authority Resolution 111/06;
- (g) Injection capacity and/or withdrawal capacity of the unit, as per paragraph [4.3.4](#) ("Injection and Withdrawal Capacity").

For the purposes of registration of the **Forward Energy Account (CET)** plans and of the execution of the **energy market**, the **Operator** sends to the **Market Operator** daily:

- (i) The identification data as per letters (a) through (f), two days in advance with respect to the day referred to in (D);
- (ii) The Capacity data under letter (g), one day in advance with respect to the day referred to in (D).

For the registration of **forward purchases and sales**, the following must also be communicated by the **Operator** to the **Market Operator** two days in advance with respect to the day referred to in (D):

- Changes concerning:
  - The ownership status of the **user of dispatching services**;
  - Injection and/or withdrawal Capacity;
- The beginning and end date of the change;

If the validity of the change begins in the 60 days following the relevant day, only for relevant units, not suspended or qualified for the **MGP** on the relevant day.

With respect to changes in identification data and the injection and withdrawal Capacity due to changes to the non-significant group of units aggregated in a virtual production unit, any changes are taken into consideration beginning the first day of the second month following the one in which the **Operator** receives notification of the change.

The **Operator** also communicates to the **Energy Market Operator** within the fourth-from-last working day of month  $n$ , with validity for month  $n+1$  the database of Consumption Units owned by each User of Dispatching on the basis of the information provided by the distributors of reference.

Against justified technical needs, for the orderly treatment of the markets, the **Operator** and the **Market Operator** may, by mutual agreement, agree to vary the delay between the communication of the data and its use, issuing notification of this by means of their respective Internet websites.

#### **4.7.2      *Offer constraints deriving from plans for unavailability of grid elements***

In registering on the **Forward Energy Accounts** of the **CET plans** and in submitting offers on the **energy market**, the **UoD** is subject to production restrictions that are due to plans for unavailability as per paragraph [3.7.5 of the Grid code](#).

In registering on the **Forward Energy Account** and in submitting offers on the Energy market, the **UoD**, in the case where the re-entry of a **PU**s availability from its planned unavailability period is brought forward, is in any case subject, with reference to that **unit**, to the production constraints due to any unavailability of **grid** elements which are decided as in paragraph [3.7.5 of the Grid code](#).

#### **4.7.3      *Forward Energy Accounts***

##### **4.7.3.1      *Registration of forward purchases and sales on Forward Energy Accounts***

Pursuant to Resolution no. 111/06 by the **Authority**, **forward purchases and sales** must be registered with the **Market Operator** on the **Forward Energy Accounts**.

In order to verify the suitability of the registration request, the **Market Operator** uses the following data communicated by the **Operator** valid on the days to which the **forward purchases and sales** refer:

- (a) Data, as per paragraph [4.7.1](#);
- (b) Relevant data and information to verify the guarantees given by the **user of dispatching** of the **dispatching points** determined in the **C.E.T.** for the **Operator** according to the provisions in document A.61 “Regolamento del sistema di garanzie” in article 49 of Attachment A of



Resolution no. 111/06 by the Authority for Electricity and Gas, as per [Appendix A](#) of this Chapter.

#### 4.7.3.2 *Registration of C.E.T. plans on Forward Energy Accounts*

Registration of **C.E.T. plans** on **Forward Energy Accounts** in the execution of **net forward purchases and sales** is carried out by the market operators with the **Market Operator**.

The **Market Operator** verifies the suitability of the registration request, making use of the data, as per paragraph [4.7.1](#) communicated by the **Operator** and valid on the **significant days and periods** which the plans refer to.

#### 4.7.3.3 *Purchases and sales on the Day Ahead Energy Market*

With reference to the **Forward Energy Account** and a **significant period**, following the **DAM**, the electricity resulting from the algebraic sum between **forward purchases and sales** and **C.E.T. plans**, post DAM, is considered sold, if positive, or purchased, if negative:

- (a) By the market dealer who holds the **Forward Energy Account**, if admitted to the **Electricity Market**, giving suitable guarantees to the **Market Operator**
- (b) By the **Grid Operator** as a programme imbalance, otherwise

At the energy purchase price on the **MGP**.

In the case of letter b), the **Operator** attributes the programme imbalance to the **UoD** who own the **PUs** or the **CUs** included in the **C.E.T.** where the programme imbalance has been registered.

**4.7.3.4**      *Assignment of rights to use the transfer capacity to programmes executing forward purchases and sales*

In order to assign the rights to use the **transfer capacity** for executing the **C.E.T. programmes**, post DAM, the **Market Operator** considers in the **Day Ahead Energy Market**:

- (a) the **C.E.T. injection programmes** as virtual sales offers, presented with a nil price or a reference price which may have been indicated during the registration phase by the operator admitted to the **Energy Market**;
- (b) the **C.E.T. withdrawal programmes** as virtual offers of purchase, presented without any price indication or at a reference price which may have been indicated during the registration phase by the **Operator** admitted to the **Energy Market**.

**4.7.4**      ***Management of units essential to the energy market***

This paragraph regulates communications and constraints concerning offers which refer to **essential units** on the **Energy Market**, pursuant to Articles 64 and 65 of **Authority** Resolution no. 111/06.

The **Operator** communicates the following to the **UoD**, by suitable means and at least 20 hours in advance with respect to the terms for submission of the **DAM's** offers, as per the **Technical Provisions for Operation**:

- (a) For each essential plant enrolled in the list referred to in Attachment A.27 “Impianti di produzione essenziali per la sicurezza del sistema elettrico ai sensi dell’articolo 63, comma 63.1, dell’Allegato A alla delibera dell’AEEGSI n. 111/06”, the number of units to which the offer constraints are applied on the reference day as per articles 64e 65 of **Authority** Resolution no. 111/06;

- (b) For each unit referred to in the previous point, the production constraints, in terms of minimum and maximum power for each hourly period on the reference day;
- (c) The **system** operation structure of the reference day, as per paragraph [4.3.5.2](#), to be considered for purposes of applying the obligations relative to the plant clusters essential for reserve.

The **UoD** notifies the **Operator**, by suitable means and at least 12 hours in advance of the deadline for **DAM's** submission of offers, which units belonging to essential plants enrolled in the list referred to in Attachment A.27 “Impianti di produzione essenziali per la sicurezza del sistema elettrico ai sensi dell’articolo 63, comma 63.1, dell’Allegato A alla delibera dell’AEEGSI n. 111/06”, will have the offer obligations enforced. Should such a communication be lacking, the preliminary communication under paragraph [4.3.5.1](#) will be considered valid.

By the submission deadline for offers of the **Day Ahead Energy Market**, the **Operator** notifies the **Market Operator** the list of **essential units**.

#### **4.7.5 Preliminary Information for the Day Ahead Energy Market**

The **Operator**, within the period defined by the **Technical Provisions for Operation**, transmits to the **Market Operator**, who in turn makes available to the **UoDs**, the following information valid for each significant period in which the **Day Ahead Energy Market** is subdivided:

- (a) The forecast demand for electricity, divided by **geographic zone** and hourly period;
- (b) The values of the permitted limits of hourly transfers of electricity between the **geographical zones**;

- (c) The values of the permitted limits of hourly transfers of electricity for each of the **foreign virtual zones**;
  - (d) The values of the maximum exportation capacity of electricity from the **limited production hubs**.
  - (e) The preliminary information in letter a) represents a non-binding reference for Users of Dispatching. Information related to letters (b), (c), and (d) represent a binding reference for the Market Operator, for the purposes of defining the results of the Day Ahead Energy Market.
- 4.7.5.1 Daily forecast of electricity demand

The **Operator** defines its own forecast of electricity demand, divided by **geographic zones** and hourly periods, net of:

- (a) Energy intended for powering hydroelectric production and pumping **units** during the pumping phase;
- (b) Energy produced and consumed within a single party and within the same site, except as provided by Resolution 539/2015/R/eel on closed distribution systems.

The electricity demand includes **grid** losses.

The energy demand indicated for an hour refers to a period of 60 minutes prior to the hour given<sup>1</sup>.

- (c) Electricity demand is forecast as described in document A.22 “Procedura di selezione delle risorse nella fase di programmazione del MSD” (Procedure for selecting resources in the MSD planning phase) in Appendix A in this chapter.

#### 4.7.5.2 *Transfer limits between zones*

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<sup>1</sup> For example the energy demand at 1 o'clock refers to the time period starting at 0:00:00 and finishing at 0:59:59

The **Operator**, in the preliminary information to the market, supplies the **Market Operator** with the transmission capacity limits of electricity between the **geographic zones** and virtual zones, increased to take account of the effects of the intertripping of the **production units** by considering the unavailability of supply of the service declared by the owners of those units in compliance with the terms given in section [4.9.4](#) (“Procurement for the intertripping service during the planning phase”).

#### **4.7.6**      ***Obligation to report information on enabled units***

**UoDs** owning **enabled units**, availing of the procedure described in paragraph [4.3.2.7, letter c](#), are obliged to promptly communicate the following to the **Operator**, by 3:00 pm (of day D), with reference to the second day following the communication day (D+2):

- (a) Any variations in the technical information recorded in **GAUDI**;
- (b) Any unavailability in the dispatching service;

When the conditions in section [4.8.3](#) (“Exemption from the obligation to make offers”) apply;

- (c) Any constraints on the daily energy amounts for **enabled** hydroelectric production or pumping **units**.

**UoDs** are exempt from this communication if the **units** in their ownership are not affected by variations with respect to notifications in the previous days or with respect to the data registered in **GAUDI**.

The **Operator** uses the information communicated by the **UoDs** for evaluating the state of security of the **electricity system**, including if necessary activating the **PESSE**.

The **Operator** reserves the right to redefine the notice periods for communicating the data described in this section, to address any critical conditions in the **operation** of the **system**. This change will be notified on the Operator's website.

#### **4.7.7**      ***Determination of the results of the Day Ahead Energy Market***

The **Market Operator** determines the outcome of the **Day Ahead Energy Market**, accepting the offers of purchase and sale of energy as set out in the **Electricity Market Rules**.

#### **4.7.8**      ***Communication of the results of the DAM***

The **Market Operator** sends the **preliminary cumulative programmes for energy injection and withdrawal**, aggregated by **dispatch points** and divided by **significant periods**, to the **Operator**.

The **preliminary cumulative programmes for energy injection and withdrawal** for the **dispatch points** indicate the electricity injection to the grid (withdrawn from the grid) at the **dispatch point**.

#### **4.7.9**      ***Preliminary Information for the Intra-Day Market***

The **Operator**, by the deadline for submitting offers to the **Intra-Day Market**, notifies the **Market Operator** of the residual margins of energy exchanges between **zones**.

These margins take account of:

- I. Programs following **Energy Market** sessions prior to the session for which margins must be provided;

- II. Any variations in the exchange limits as possibly updated, including variations following unexpected events on the **grid**.

If, due to malfunctioning of the **Operator's** or **Market Operator's** computer systems, the residual exchange margins cannot be evaluated or communicated, the **Operator** instructs the **Market Operator** to set these margins to zero.

#### **4.7.10**      ***Communication of the results of the Intra-Day Market***

The **Market Operator** notifies the **Operator** about the programmes for energy injection and withdrawal, aggregated by **dispatch point** and divided by **significant period**, (**updated cumulative programmes**) with reference to each session of the **Intra-Day Market**.

#### **4.7.11**      ***Failure to communicate the results of the Energy Market***

##### **4.7.11.1**      ***Failure to communicate the results of the Day Ahead Energy Market***

If the **Market Operator** is not able to send the **Operator** the results of the **Day Ahead Energy Market** in at least one hourly period of the day within 3 hours of the deadline given in the **Technical Provisions for Operation**, in part due to the unavailability or malfunctioning of the **Market Operator's** computer systems, then the following applies:

- (a) The **Operator** considers the **preliminary cumulative programmes for energy injection and withdrawal** to be invalid for the purposes of **dispatching activities** for all **significant periods** of the day;
- (b) The **Market Operator** and the **Operator** announce, as rapidly as possible, on their respective Internet websites, the failure to define and/or communicate the results;

- (c) The **Operator** defines the **final cumulative programmes for energy injection and withdrawal** as described in paragraph [4.9.7.1](#);
- (d) No session is held of the **Intra-Day Market**.
- (e) The sub-phases of the **MSD planning phase** are not carried out, following the first.

The Authority defines, by means of its own procedures, the economic matches for the days under examination, including the terms for applying the imbalance costs.4.7.11.2 Failure to communicate the results of the Intra-Day Market

If the **Market Operator** is not able to send the **Operator** the results of one of the sessions of the **Intra-Day Market** in at least one hourly period of the day, even for reasons of unavailability or malfunctioning of its own systems:

- within 2 hours of the deadline given in the **Technical Provisions for Operation**, for the sessions of the **Intra-Day Market** carried out the day before the reference day;
- within 15 minutes from the end foreseen by the **Technical Provisions for Operation**, for the sessions of the **Intra-Day Market** carried out during the reference day;

The results that were communicated for the last session of the **Energy Market** of the reference day are considered valid.

#### **4.7.12 Information-related obligations related to the participation of the Operator in the Energy Market**

The **Operator** publishes the amount of electricity to be sold or bought in each hourly period of the **Day Ahead Energy Market**, the day following the day in which such amount is accrued.



The **Operator** publishes the cost sustained for buying or selling electricity on the **Day Ahead Energy Market**, the month following that in which such costs are accrued.

## **4.8 METHODS AND OBLIGATIONS FOR MAKING OFFERS ON THE MARKET FOR DISPATCHING SERVICES**

### **4.8.1 Method f submitting offers to the market for dispatching services**

The **Market for the dispatching service** is divided into two phases:

- The **planning phase**, which, in turn, is structured in the following sub phases, identified by time intervals characterized by the same needs in terms of electrical **load** coverage and preparation of adequate reserve margins:
  - The first takes place after the closure of the **Energy Market** sessions during the day prior to the one which the offers refer to, with reference to all the hours of the reference day;
  - The following phases take place after the closure of each session of the **Intra-Day Market** on the day to which the offers refer to, with reference to all the hours of that session of the **Intra-Day Market**, that is, all the hours from the first hour of the sub-phase to the last hour of the reference day.

In the **planning phase**, the offers submitted for the first sub-phase can also be used for the subsequent sub-phases in the manner specified in paragraph 4.9.2 *Definition of the valid amounts for the planning phase..*

- The **real-time management phase**, or the **Balancing Market (MB)**, occurs

on the same day to which the offers refer and is structured in different sessions, the first time period of which coincides with that of the corresponding sub-phase of the planning phase. With the exception of the first session, for which only valid offers of the **planning phase** are usable, **users of dispatching** are given the option to submit offers with reference to all subsequent **Balancing Market** sessions.

In the **Balancing Market**, offers submitted for each session are considered usable only following the closing of the submission phase of the same session.

The times for execution of the **Market for dispatching service** can be found in **Technical Provisions for Operation**.

#### **4.8.2**      ***Obligation to make offers***

**Users of Dispatching** of production units **enabled** to supply resources for:

- (a) The **planned solution of congestion**;
- (b) The **secondary power reserve**;
- (c) The **tertiary power reserve**;
- (d) **Balancing**;

Must:

- Submit, via the **Market Operator's** platform, predefined offers for the **planning phase**;
- Have the right to enter non-predefined offers on a daily basis in relation to the **planning phase**. For sub-phases of the **planning phase**, the **Operator** uses predefined offers in absence of non- predefined offers;

- Have the right, to include offers on a daily basis, where provided for, with reference to the **Balancing Market** sessions. Regarding the **MB** sessions, the **Operator** uses the offers valid for the **planning phase**, referring to an hourly period, in the event of a lack of offers on the **MB**, for the same hourly period.

Such offers must comply with paragraph [4.8.4](#). The **Operator** monitors compliance of the conduct of **users of dispatching services** with offer obligations on the **MSD**.

Failure to comply with the above offer obligations, with reference to the 25th hourly period on the first day of daylight saving time, will be managed by the **Operator**, with the same offer as for the 24th hourly period.

Evidence of conduct that does not comply with the obligations is brought to the attention of the **Authority** who will take the appropriate measures.

### **4.8.3      *Exemption from the obligation to make offers***

#### **4.8.3.1      *Total exemption from the obligation to make offers***

**UoDs** are exempt from the obligation to make selling or purchasing offers on the **MSD**, regarding **enabled production units** under their ownership, in the following cases:

- (a) For non-flowing-water hydroelectric **units**, if hydrologic conditions occur that impose their use at a predetermined power level for reasons of hydro-geological safety;
- (b) For non-flowing-water hydroelectric **units** subject to hydro-geological constraints that impose their use at a predetermined power level;
- (c) If **units** must undergo tests required by or agreed with the **Operator**;

- (d) For thermoelectric **units** in the start-up phase until reaching minimum power for the unit, and limited to the provision of the **balancing** service;
- (e) For thermoelectric coal **units** in the shutdown phase, and limited to the provision of the **balancing** service;
- (f) During the “return to service period”, pursuant to Article 40 of **Authority** Resolution no. 111/06.

#### 4.8.3.2 *Partial exemption from the obligation to make offers*

**UoDs** are partially exempt from the obligation to make offers on the **MSD**, or obliged to make selling or purchasing offers, limited to the power available on the **MSD**, regarding **enabled production units** under their ownership, in the following cases:

- (a) For non-flowing-water hydroelectric **units**, when hydrologic conditions occur that impose their use within predetermined power levels for reasons of hydro-geological safety;
- (b) For non-flowing-water hydroelectric **units** subject to hydro-geological constraints that impose their use within predetermined power levels;
- (c) If a **unit** is undergoing planned **maintenance** or awaiting **maintenance**;
- (d) In the event of **unit** failure;
- (e) If the **unit** is subject to production constraints due to **grid** element **unavailability** as notified by the **Operator** following the planning of scheduled **unavailability** or unavailability arising from the early availability of **PU**s following scheduled **unavailability** (as per paragraph [4.7.2](#)), limited to the level of power corresponding to the notified production constraints;

- (f) If **units** are subject to environmental constraints (HTD high air temperature or pollution);
- (g) If **units** are affected by strikes declared incompatible with the security of the **electricity system**;
- (h) In the event of technical restrictions of the **production unit**, which can be proven upon the **Operator's** request.

#### **4.8.4**      ***Contents and constraints of offers on the MSD***

The quantities and prices offered as purchases and sales on the **MSD** are considered non-negative, with the exception of the Shutdown cost, which cannot be below the minimum value set by the **Authority**. Should said provision on the part of the **Authority** be lacking, the minimum value will be zero.

##### **4.8.4.1**      ***Contents of offers for the planning phase***

This paragraph applies to both predefined and non-predefined offers.

For each **enabled unit** and for each hourly period of the reference day, the offers submitted for the **planning phase** must include:

- (i) 1 price for the selling offers for secondary power reserve, relative to increases in energy injection, for the possible use of **secondary power reserve** if the unit is enabled to supply resources for **secondary power reserve**;
- (ii) Between 1 and 3 quantity/price pairs for selling offers for **Other Services**, relative to increases in energy injection compared to the greater value between the **reference programme** and the minimum power up to the maximum power;

- (iii) 1 price for Minimum offers, relative to increases in energy injection from the **updated cumulative programme** up to the minimum power, if such an increase is possible (i.e. if the **updated cumulative programme** is lower than the minimum power), if the unit is enabled to submit Minimum offers in compliance with section [4.3.2.7, letter a](#);
- (iv) 1 price for the purchase offers for secondary power reserve, relative to decreases in energy injection, for the possible use of **secondary power reserve** if the unit is enabled to supply resources for **secondary power reserve**;
- (v) Between 1 and 3 quantity/price pairs for purchasing offers for **Other Services**, relative to decreases in energy injection compared to the greater value between the **reference programme** and the minimum power up to the minimum power;
- (vi) 1 price for the Shutdown offer, relative to decreases in energy injection at the lower value between the **updated cumulative programme** and the minimum power down to zero, if the unit is enabled to submit Shutdown offers in compliance with section [4.3.2.7, letter a](#);
- (vii) The **reference programme** to which sale and purchase offers for **Other Services** refer. For a given hourly period, a UoD can:
  - Not indicate the **reference programme**; in that case, the Operator, for that hourly period, assigns to the reference programme the value of the updated cumulative programme resulting from the Energy Market session immediately preceding the first sub-phase of the planning phase;
  - Indicate that the **reference programme** is equal to the updated cumulative programme resulting from the Energy Market session preceding the session referred to above.

Furthermore, for each **enabled unit** and for each of the reference days, the offers made for the **planning phase** need to include the following:

- (viii) A single price for the start-up offer which corresponds to the amount required for every start-up of the **enabled unit** carried out on the **MSD** on the reference day and exceeding the number of start-ups on the **Energy Market** in the same period, if the unit is enabled to submit a start-up offer according to paragraph [4.3.2.7, letter a](#)
- (ix) A single price for the Operational Set-up Modification offer which corresponds to the amount required for every enabled unit structure time change carried out during the **MSD** on the reference day and exceeding the structure time change on the **Energy Market** in the same period, if the unit is **enabled** to submit Operational Set-up Modification offers as specified in paragraph 4.3.2.7, partletter a).. This is limited to SetupSet-up modification corresponding to an increase in the number of associated generators.
- (x)

#### 4.8.4.2 *Offer constraints for the planning phase*

For a given **enabled unit** and for every hourly period of the day in question:

- The prices of the selling offers must not be less than the prices of the buying offers, separately for the offers for Secondary Reserve and for the offers for **Other Services**;
- The price of the Minimum (Shutdown) offer must not be higher than the price of each of the selling (buying) offers for **Other Services**.

The start-up price cannot exceed a maximum value equal to the product of:

- a) The conversion factor - equal to one - and

- b) The minimum power value of the **PU** registered in **GAUDÌ**, and
- c) The price per unit calculated as the average value of the valid price of the minimum offers presented in the previous year by the **production units** belonging to the same technology sub-type and published by the **Grid Operator** on its website, and
- d) The maximum number of hours determined by the **Authority**.

In the absence of such a definition by the **Authority**, the maximum number of hours referred to in letter d) is equal to:

- Six, for thermoelectric **production units** that are not open-cycle turbogas, in which the operating condition corresponding to the first band of operation is not exclusively associated to an open-cycle turbogas;
- One, for the remaining thermoelectric **production units**.

The Operational Set-up Modification price cannot exceed a maximum value equal to the product of:

- a) The conversion factor - equal to one - and
- b) The minimum power value of the **PU** registered in **GAUDÌ**, and
- c) The price per unit calculated as the average value of the valid price of the minimum offers presented in the previous year by the **production units** belonging to the same technology sub-type and published by the **Grid Operator** on its website, and
- d) The maximum number of hours determined by the **Authority**. In the absence of such a definition by the **Authority**, the maximum number of hours is equal to one.



To allow for proper financial evaluation of the offers, the **Operator** communicates to the **Market Operator** the prices valid for the **planning phase**, or the prices submitted for the **planning phase** that may be modified by the **Operator** following verification of the offer constraints as per paragraph [4.8.4.5](#).

#### 4.8.4.3 *Contents of offers for the Balancing Market*

For each **PU** and for each hourly period of the reference day, the offers submitted for the **Balancing Market** must include:

- (i) 1 price for the selling offers for secondary power reserve, relative to increases in energy injection, for use of **secondary power reserve** if the PU is enabled to supply resources for **secondary power reserve**;
- (ii) Between 1 and 4 quantity/price pairs for selling offers for **Other Services**, relative to injection increases at the greater value of the **final cumulative programme** and the minimum power up to maximum power, for the procurement and utilization of other services other than **secondary power reserve**.
- (iii) 1 price for Minimum offers, relative to increases in energy injection from the **final cumulative programme** up to the minimum power, if such an increase is possible (i.e. if the **final cumulative programme** is lower than the minimum power), if the **PU** is enabled to submit Minimum offers in compliance with section [4.3.2.7, letter a](#);
- (iv) 1 price for the purchase offers for secondary power reserve, relative to decreases in energy injection, for use of **secondary power reserve** if the **PU** is enabled to supply resources for **secondary power reserve**;

- (v) Between 1 and 4 quantity/price pairs for purchase offers for **Other Services**, relative to injection decreases at the greater value of the **final cumulative programme** and the minimum power up to minimum power, for the procurement and utilization of other services other than **secondary power reserve**.
- (vi) 1 price for the Shutdown offer, relative to injection decreases at the lower value of the **final cumulative programme** and the minimum power up to zero, if the **PU** is enabled to submit Shutdown offers, pursuant to paragraph [4.3.2.7, letter a](#);

Furthermore, for each **PU** and for each reference day offers made for the **Balancing market** must indicate:

- (vii) A single price for the start-up offer which corresponds to the amount required for every start-up of the **unit** carried out during the **MSD** on the reference day and exceeding the number of start-ups on the **Energy Market** in the same period, if the **PU** is enabled to submit a start-up offer according to paragraph [4.3.2.7, letter a](#);
- (viii) A single price for the Operational Set-up Modification offer which corresponds to the amount required for every **PU** structure time change carried out during the **MSD** on the reference day and exceeding the structure time change on the **Energy Market** in the same period, if the **PU** is enabled to submit Operational Set-up Modification offers as specified in paragraph [4.3.2.7, letter a](#). This is limited to Set-up modification corresponding to an increase in the number of associated **generators**.

#### 4.8.4.4. *Offers constraints for the Balancing Market*

For a given **PU**, at every hourly period on the day in question, the following offer constraints are applied.

- The prices of the selling offers must not be less than the prices of the buying offers, separately for the offers for Secondary Reserve and for the offers for **Other Services**;
- The price of the Minimum (Shutdown) offer must not be higher than the price of each of the selling (buying) offers for **Other Services**;

In order to respect the offer constraints originating from phases or sessions prior to the **MSD**:

- With reference to the offers reserved in the **planning phase** or the **MB**:
  - The Minimum (Shutdown) price must not be higher (lower) than the same price valid for the purposes of the **planning phase**, or in the **MB**;
  - The selling (buying) price, separately for Secondary Reserve and for **Other Services** must not be higher (lower) than the same price valid for the purposes of the **planning phase** or in the **MB**;
  - The selling (buying) quantity for **Other Services** must not be less than the quantity reserved in the **planning phase** or in the **MB**;
- With reference to offers accepted in the **MB**, which correspond to start-up or shut-down **operations** of thermoelectric **PU**s different from open-cycle turbogas ones, which the **UoD** was notified of before the deadline for submitting offers for the **MB** session under consideration:
  - In the event of a start-up **control**, the Minimum price must not be higher than the same price valid for the purposes of the **planning phase**;
  - In the event of a shutdown **control**, the shutdown price and the buying price for **Other Services** must not be less, respectively,

than the same prices valid for the purposes of the **planning phase**.

- The start-up offer price shall not exceed the corresponding price presented in certain phases or sessions preceding the **MSD**;
- The Operational Set-up Modification offer price must not exceed the corresponding price submitted in phases or sessions preceding the **MSD**.

#### 4.8.4.5. *Verification of offer constraints*

The **Operator** verifies the offer constraints for the **planning phase** and for the **Balancing Market** and, if the constraints are not respected, changes the prices offered as described hereinafter. With reference to each **PU** and hourly period:

- If the Shutdown price is below the floor described in paragraph [4.8.4](#), the Shutdown price will be fixed as equal to the minimum value.
- Should the selling price for Secondary Reserve not be higher than the buying price for Secondary Reserve, the buying price is modified and set equal to the selling price;
- Should the lowest selling price for **Other Services** not be higher than the Minimum price, the Minimum price is modified and set equal to the lowest selling price for **Other Services**;
- Should the Minimum price not be higher than one or more buying prices for **Other Services**, the latter are modified and set equal to the Minimum Price;
- Should the lowest buying price for **Other Services** not be higher than the shutdown price, the shutdown price is modified and set equal to the lowest buying price for **Other Services**;

- If the start-up price exceeds the maximum value described in paragraph [4.8.4.2](#), then the mentioned price shall be fixed as equal to the stated maximum value;
- If the Operational Set-up Modification price exceeds the maximum value described in paragraph [4.8.4.2](#), then the Operational Set-up Modification price will be fixed as equal to the maximum value.

#### **4.8.5 Offer constraints for essential Units**

This paragraph regulates the communications and constraints concerning offers referring to **essential units** on the **MSD**, pursuant to Articles 64 and 65 of **Authority** Resolution no. 111/06.

##### **4.8.5.1 Offer constraints for units essential for reserve**

With reference to the **secondary power reserve**, and for each arrangement for the operation of the **system** as detailed in paragraph [4.7.4](#), and for each hourly period, offer constraints for the **MSD** are applied to the **UoDs** regarding **enabled units**. Such constraints are assigned for a total quantity offered for secondary reserve equal to the essential capacity for **secondary power reserve** as described in paragraph [4.3.5.2](#).

At the same time as submitting the offer on the **MSD**, the **User of Dispatching** indicates which **units** it intends to use to enforce the offer constraints, indicating a selling and buying price per Secondary Reserve equal to the variable cost approved for the **PU**s of the **production plant** to which the unit belongs, as established by the **Authority**.

For the replacement **tertiary reserve**, to each **UoD** with ownership of essential capacity for replacement **tertiary reserve**, offer constraints on the **MSD planning phase** are applied for each reference hourly period and operational set up of the **system** for which there is a positive difference between:

- The essential capacity of the replacement **tertiary reserve** of the **UoD**, referring to the **system** operation structure on the reference day, as per paragraph [4.7.4](#);
- The sum of the **updated cumulative programmes** resulting from the **Energy Market** session immediately preceding the sub-phase of the **planning phase** in question, of the **production units** owned by the **UoD**, localized in aggregate.

The above-mentioned offer constraints on the **MSD** are applied with reference to the **enabled thermoelectric units**, available in the **planning phase**, for a total offer equal to the above-stated difference. The **User of Dispatching** indicates in the offer with which **units** and offers it intends to enforce the obligations.

Regarding the ready **tertiary reserve**, for each **system** operational set up and hourly period, offer constraints on the **MSD** are applied to the **UoDs** with reference to the **Enabled units** for ready **reserve**, for a total offer for **Other Services** equal to at least the essential capacity of ready **reserve**.

The **UoD** indicates in the offer which **unit** and offers it intends to use to enforce the constraints, indicating a selling and buying price for **Other Services** equal to the variable cost approved for the **PU**s of the **production plant** to which the unit belongs, as established by the **Authority**.

Possible contributions deriving from **production plants** that are individually essential also concur to satisfying the obligations related to essential capacity for reserve if enabled to supply reserve service.

With reference to the offers presented for the purposes of the **MB** for the **essential units**, the **Operator** checks that the quantities offered are not lower than the quantities considered valid for the purposes of the **planning phase**, net of the accepted quantities. If this is not complied with, the **Operator** modifies the quantities offered.

After the results of the **MSD**, the **Operator** checks that the offers presented for the **essential units** are equal to the variable costs approved for said **PUs**.

## **4.9 PLANNING PHASE OF THE MARKET FOR DISPATCHING SERVICES**

### **4.9.1 Obligation to report information on enabled units**

**UoDs** of **enabled production units**, through the procedure described in paragraph [4.3.2.7, letter c](#), are obliged to communicate the following to the **Operator**:

- (a) Any variations in the technical information recorded in **GAUDÌ**;
- (b) Any unavailability in the **dispatching** service;

When the conditions in section [4.8.3](#) (“Exemption from the obligation to make offers”) apply, and according to the terms in section [4.3.2.7, letter c](#);

- (c) Any constraints on the daily energy amounts for **enabled** hydroelectric production or pumping **units**.

Regarding the obligation referred to in letter (b), for the **planning phase** of the **dispatching services market**, communications relating to the unavailability to the **dispatching** service because of start-up are not considered. The **UoDs** of the **enabled production units** are obliged to promptly carry out the communications indicated in this paragraph to the **Operator**:

- On a daily basis, 30 minutes ahead of the deadline for submitting offers for the **MSD planning phase**, with reference to the following day;

- By the closing time of the **Intra-Day Market**, during the reference day and for the same day.

The **Grid Operator** uses the information received from the **UoDs** for the definition of the offered quantities for the **planning phase**.

**UoDs** are exempt from this communication if the units they own are not affected by variations regarding the information communicated, as described in section [4.7.6](#) (“Obligation to communicate information about enabled units”), or regarding the data registered in **GAUDI**.

For thermoelectric **production units** and for the time periods for which, in the sub-phase of the **planning phase** immediately preceding that for which the communication is made (henceforth indicated as “preceding sub-phase”), offers of Minimum or of Shut-down are preliminarily accepted, the communication itself will be used with the following limitations:

- The communications of temporary variations of the technical data will be used for the purposes of the **planning phase**, for the purpose of partial exemption from the offer obligations, with the condition that the minimum power indicated therein is not more than the value valid for the purposes of the preceding sub-phase;
- The communications of non-availability to the dispatching service will not be used for the purposes of the **planning phase**, for the purpose of total exemption from the offer obligations.

The **Operator** reserves the right to redefine the notice periods for communicating the data described in this section. This change will be notified on the Operator's website.



#### **4.9.2**      ***Definition of the valid amounts for the planning phase.***

The **Grid Operator** defines, for each **enabled unit** and time period, the quantities valid for the process of selecting offers in the **planning phase** and corrects the quantities present in order to align them with the **updated cumulative programme** and with the technical data of the unit in the period in question, following the methods described in document A.22 “Procedura di selezione delle risorse nella fase di programmazione del MSD” as per [Appendix A](#) of this chapter.

#### **4.9.3**      ***Selection of offers submitted for the planning phase***

In the **planning phase**, the **Operator** uses the offers submitted by the **Users of Dispatching** for **units enabled** to supply resources for:

- (a) The planned solution of **congestion**;
- (b) The **secondary power reserve**;
- (c) The **tertiary power reserve**;

For the purpose of:

- (i) Reducing the difference between its forecast of electricity demand and of production from non-programmable renewable sources compared to what was expressed in response to the **Energy Market**;
- (ii) Resolving, alongside actions carried out during the real-time management phase, congestion on the significant grid;

- (iii) Covering the needs of the **secondary power reserve**, by making up suitable margins of **secondary power reserve**, jointly with the actions carried out in the **real-time management phase**;
- (iv) Covering the needs of the **tertiary power reserve**, by making up suitable margins of **tertiary power reserve** jointly with the actions carried out in the **real-time management phase**;

With the objective of minimizing the charges and maximizing the returns resulting from activities of providing for resources for **dispatching**.

#### 4.9.3.1 *Process of composing the reserve margins*

To compose the margins of the upward (or downward) **tertiary power reserve** and of the **secondary power reserve**, the **Operator** may arrange the increase (or decrease) of injection to the grid of **enabled units**, also through the entry into service (or shutdown) or the continued service, for the reference day, of **enabled units** the offers of which have not been accepted on the Energy market.

#### 4.9.3.2. *Process for selection of offers*

For the purposes of selecting the offers, in each of the sub-phases, the **Operator** proceeds as described in document A.22 “Procedura di selezione delle risorse nella fase di programmazione del MSD” in Appendix A of this chapter.

In particular, this document indicates the system constraints for **enabled units** in the offer selection process.

### 4.9.4 *Procurement for the intertripping service during the planning phase*

**UoDs** owning **production units** equipped with intertripping devices are required to notify the **Operator** of unavailability for the intertripping service of

these **production units** by one hour before the deadline for submitting preliminary information to the **Day Ahead Energy Market**.

**Production units** which are available for the intertripping service, and which are dispatched<sup>2</sup> as a result of the **Energy Market**, must supply the same service for all **significant periods** characterized by the increase of the **transfer capacity** between their own zone and the interconnected **zone**.

The **Operator** identifies, in the various **zones**, the power that is subject to the intertripping devices on **production units** available for the intertripping service, in order to ensure the security of operations of the **national electricity system**.

If, as a result of the **Energy Market**, several **production units** available for the intertripping service are dispatched in the same **zone**, and the **Operator** considers just one of these services sufficient, then the intertripping device will be made active on the **production units** that submitted the downward offer at the highest price on the **MSD**. If the offer prices are the same, the device will be made active on the **production units** that submitted the highest upward offer on the **MSD**. If the result of the **Energy Markets** shows that there are no **production units** in service which are available for the intertripping service, the **Operator** may in any case select, if necessary for providing the resources for **dispatching**, such units on the **MSD** in order of economic merit of the offers submitted by the **UoD** owning those units.

#### **4.9.5**      ***Amounts accepted and remuneration***

In this paragraph, the **updated cumulative programme** refers to the **updated cumulative programme** resulting from the **Energy Market** session that immediately precedes the sub-phase of the **planning phase** in question.

Following the outcome of the selection process for the offers with reference to each sub-phase of the **planning phase**:

- Only for the hourly periods of each sub-phase which is not included in the subsequent sub-phases, the **Operator** defines:
  - i. The accepted hourly amounts, both for sale and purchase, and the **final cumulative programme** of the **enabled production units**, as the sum of the **updated cumulative programme** and the above - mentioned accepted quantities;
  - ii. The reserved hourly quantities, both selling and buying, for the secondary Reserve and for **Other Services**;
- For the remaining hourly period of each sub-phase, the **Operator** defines:
  - iii. The hourly quantities accepted in advance, both selling and buying and the **preliminary cumulative MSD programme** of the **enabled PUs** as a sum of the **updated cumulative programme** and of the above mentioned quantities accepted in advance;
  - iv. The hourly quantities reserved in advance, both selling and buying, for the secondary Reserve and for **Other Services**.

The accepted offers are valued at the offer price. In particular:

- The accepted hourly selling (buying) offers for **Other Services** are remunerated at the selling (buying) price for **Other Services**, valid for the purposes of the **planning phase**
- The accepted hourly Shutdown and Minimum offers are respectively remunerated at the Shutdown and Minimum price, valid for the purposes of the **planning phase**.

The Start-up and Operational Set-up Modification offers are priced following the **Balancing Market**.

#### **4.9.6**      ***Final cumulative programmes and binding programmes***

##### **4.9.6.1**      *Communication of final cumulative programmes and initial cumulative MSD programmes*

After the selection process in each sub-phase of the **planning phase**, the **Operator** notifies the **Market Operator** of:

- The amounts accepted and reserved for each offer, exclusively for the hourly periods of the sub-phase that are not included in the following sub-phases;
- The quantities preliminarily accepted and reserved for each offer, for the remaining hourly periods.

As the selection process of each sub-phase of the **planning phase** ends, the **Market Operator** makes the following available on its IT platform dedicated to communication of **MSD** results, to each **UoD** for the **enabled units** under its responsibility and per hourly period:

- **Final cumulative programmes**, exclusively for the hourly periods of the sub-phase that are not included in the subsequent sub-phases;
- The **MSD preliminary cumulative programme**, for the remaining hourly periods.

And with reference to the individual offers submitted for the hourly period:

- The quantities accepted exclusively for the hourly periods of the sub-phase which are not included in the subsequent sub-phases;

- The quantities accepted in advance for the remaining hourly periods;
- The quantities reserved for Secondary Reserve, **Other Services**, Minimum and Shutdown exclusively for the hourly periods of the sub-phase which are not included in the subsequent sub-phases;
- The quantities reserved in advance for Secondary Reserve, **Other Services**, Minimum and Shutdown, for the remaining hourly periods.

As each selection process of each sub-phase of the **planning phase** ends, the **Operator** makes the following available to each **UoD** for each of the **enabled units** under its ownership and per hourly period:

- The procured **secondary reserve half-band**, considered as a quantity wholly reserved for Secondary Reserve exclusively for the hourly periods of the sub-phase which are not included in the subsequent sub-phase;
- The preliminarily procured **secondary reserve half-band**, considered as preliminarily entirely reserved for Secondary Reserve, for the remaining time periods.
- The quantities accepted exclusively for the hourly periods of the sub-phase which are not included in the subsequent sub-phases;
- The quantities accepted in advance for the remaining hourly periods;
- The quantities reserved for **Other Services**, Minimum and Shutdown exclusively for the hourly periods of the sub-phase which are not included in the subsequent sub-phases;
- The quantities reserved in advance for **Other services**, Minimum and Shutdown, for the remaining hourly periods.

#### **4.9.6.2**      *Definition of binding programmes and preliminary binding programmes*

The **Operator** defines the **binding programmes** and the **preliminary binding programmes** for all **units** which are **enabled** for the **dispatching** service, in compliance with the conditions described in document A.25 “Modalità di determinazione dei programmi vincolanti” in [Appendix A](#) of this chapter.

The **Operator** makes the following available on its website, to the **UoD**:

- For all sub-phases of the **planning phase** apart from the final phase:
  - The **binding programme** for the **enabled units** available to it, for the significant periods not included in subsequent sub-phases, with the exception of the final two significant periods of the sub-phase not included in subsequent sub-phases;
  - The **binding preliminary programme** for the **enabled units** available to it, for the remaining significant periods on the day in question.
- For the final sub-phase of the **planning phase**, the **binding programme** for the **enabled units** available to it, for all significant periods on the reference day.

Following the outcome of each of the sub-phases of the **planning phase**, the **Operator** also communicates the **binding programmes** and the **preliminary binding programmes** of the **enabled units** to the **Market Operator** who makes them available to each **UoD** for the part under their responsibility.

#### **4.9.7**      ***Definition of the binding programmes in the case of absence of communication of the results from the Day Ahead Energy Market and the Market for dispatching services***

##### **4.9.7.1**      ***Failure to communicate the results of the Day Ahead Energy Market***

If the conditions in paragraph [4.7.11.1](#) occur, then the **Operator** proceeds as follows:

- (a) The economic offers for the **enabled PUs** that are communicated by hours 00:00 of the day before the day referred to in the offers are considered valid;
- (b) The **updated cumulative programmes** for the **enabled units** are considered equal to zero;
- (c) The amounts offered for all **enabled units** are calculated, using the technical data of the **enabled units**, recorded in **GAUDÌ** and possibly amended following notification as per paragraph [4.3.2.7, letter c](#).
- (d) Exchange programmes with countries outside Italy are considered consistent with any capacity allocated in the explicit allocation of interconnection capacity with countries outside Italy.
- (e) The buying and selling programmes of the **non-enabled units** are considered equal to those defined as a result of the **Energy Market** for the nearest day following the day under consideration and in the same category:
  - (i) Holidays;
  - (ii) Pre-national-holiday working days;
  - (iii) Post-national-holiday working days;
  - (iv) Working days not belonging to the above categories.

The **Operator** defines the **final cumulative programmes** on the basis of the above assumptions.

The **Operator** defines the **binding programmes** for the **enabled units** for each quarter of an hour, in compliance with the normal methods.

The **Operator** makes available on its website, to the **UoDs** of the **enabled units**, the **binding programmes** for the units under their responsibility.



On its website, the **Operator** publishes the reference day adopted for the definition of the buying and selling programmes for **non-enabled units**.

**UoDs** owning **non-enabled units** are obliged to comply with these programmes, in a manner that is compatible with the state of availability of their own units.

#### 4.9.7.2 *Absence of communication of offers of the MSD*

The condition of “absence of communication of offers of the MSD” occurs, also following malfunctioning of IT systems, if the **Market Operator** is not able to send the **Operator** the offers of the **MSD** for one or more hourly periods of the day they refer to within two hours of the deadline specified in the **Technical Provisions for Operation**.

The **Operator** shall notify the anomaly to the **users of dispatching services of enabled units** as soon as possible by means of appropriate communication tools (email, fax, etc.).

For the **MSD** operation, the **Operator** considers the predefined economic offers for the **enabled PUs** that are communicated by hours 00:00 of the day before the day referred to in the offers valid.

#### 4.9.7.3 *Absence of communication of the results of the planning phase*

If, for example due to malfunctioning of the Operator's computer systems, after the first sub-phase (after subsequent sub-phases) of the **planning phase**, the **Operator** is not able to notify the **final cumulative programmes** and the **MSD preliminary cumulative programmes** in compliance with the procedures defined in this section, then the **Operator** sets those programmes as equal to the **updated cumulative programmes** for energy injection and withdrawal resulting from the last session of the **Intra-Day Market** on the day preceding

the day in question (equal to the **MSD preliminary cumulative programmes** resulting from the previous sub-phase of the **planning phase**).

If, due to the malfunctioning of its computer systems, following the sub-phases of the **planning phase** after the first, the **Operator** is not able to notify the **final cumulative programmes** and the **MSD preliminary cumulative programmes** in line with the procedures defined in this section, then the **Operator** calculates the accepted amounts using the technical data communicated for the first sub-phase of the **MSD planning phase**.

If, even after malfunctioning of its information systems, following the first sub-phase (subsequent sub-phases) of the **planning phase**, the **Operator** is not able to communicate the **binding programmes** and **preliminary binding programmes** of **enabled units** as specified in paragraph [4.9.6.2](#), the programmes are determined by dividing by four the energy corresponding to the **final cumulative programmes** and **MSD preliminary cumulative programmes**, as defined in line with the preceding paragraph, following the last session of the **Intra-Day Market** on the day preceding the day in question (they are set as equal to the **preliminary binding programmes** following the previous sub-phase of the **planning phase** if, at the same time, the **final cumulative programmes** were not communicated, otherwise dividing by four the energy corresponding to the **final cumulative programmes**). If, as a result of its IT systems malfunctioning, the **Operator** is not able to indicate the amounts reserved and preliminarily reserved for Secondary Reserve and **Other Services** on its dedicated portal, as specified in paragraph [4.9.6.1](#), the **Operator** will ensure the **UoD** is provided with the data by other appropriate communication tools (email, fax, etc.).

If, due to malfunctioning of its IT systems, the **Operator** is unable to publish the binding programmes and the **preliminary binding programmes** on its dedicated portal, then the **binding programmes** and the **preliminary binding**

**programmes** published by the **Market Operator** on its IT portal are considered valid.

If, after the malfunctioning of its IT systems, following the first sub-phase (subsequent sub-phases) of the **planning phase**, the **Operator** is not able to make available the **secondary reserve half-band** supplied and the **secondary reserve half-band** preliminarily supplied, in accordance with paragraph [4.9.6.1](#), these half-band values shall be deemed equal to zero (to the values following the previous sub-phase of the **planning phase**).

The **Operator** shall notify any anomaly to the **users of dispatching services** of **enabled units** as soon as possible by appropriate communication tools (email, fax, etc.).

#### **4.9.8**      ***Information-related obligations related to the planning phase***

On the reference day, the **Operator** publishes the following information on its website resulting from the **planning phase**:

- For each hourly period and for each market **zone**:
  - The buying and selling quantities accepted overall;
  - The weighted average price for accepted buying and selling offers;
  - The marginal price of the accepted buying and selling offers;
- For each hourly period and for each interconnection among market zones:
  - The flows of energy which are in operation from the **final cumulate programmes**.

## **4.10 MANAGING RESOURCES FOR THE DISPATCHING SERVICE**

### **4.10.1 Obligation to report information on enabled units**

**UoDs of enabled units** must promptly communicate in real time to the Operator, using the procedure set out in paragraph [4.3.2.7, letter c](#), any:

- (a) Variations in the technical information recorded in **GAUDI**;
- (b) Any unavailability in the **dispatching** service;

Should the conditions in section [4.8.3](#) (“Exemption from the obligation to make offers”) occur, and according to the methods described in paragraph [4.3.2.7, letter c](#);

- (c) Any constraints on the daily energy amounts for **enabled** hydroelectric production or pumping **units**.

**Production units enabled** in the period of temporary variation of technical data:

- (a) Receive **dispatching orders** compatible with the variations communicated;
- (b) Must consider their **modified binding programme** as changed, in compliance with the variations communicated;
- (c) Are subject to the effective imbalance valued in compliance with the provisions in article 39 and 40 of the **Authority’s** Resolution no.111/06, in the case in which the variations communicated lead to failure to respect the **binding programme**.

**Production units enabled** in the unavailability period:

- (d) Do not receive **dispatching orders**;
- (e) Do not receive any remuneration for the supply of **balancing** service;
- (f) Must consider the **dispatching orders** previously given as cancelled.

At the end of the unavailability period, any **dispatching orders** prior to the unavailability period shall again be valid for purposes of determining the **modified binding programme**.

#### **4.10.2**      ***Definition of the quantities valid for the Balancing Market***

The **Grid Operator**, following the methods described in document A.23 “Procedura per la selezione delle risorse per il mercato di bilanciamento ” as per [Appendix A](#) of this chapter, for each **enabled unit**, proceeds to:

- Correct the quantities for the offers presented for the purposes of the **planning phase** and used for the purposes of the **MB**.
- Define the quantities valid for **MB** purposes.

The **valid** and **reserved offers** for each session of the **Balancing Market** are communicated by the **Operator** to each **UoD** for the part under its responsibility before the deadline for submission of the offers for the subsequent session.

#### **4.10.3**      ***Managing resources for secondary power reserve service***

Where imbalances between injection and withdrawal of energy are present, balance is restored by the automatic action of the **primary frequency regulation** and **secondary frequency/power regulation**.

The service for **secondary power reserve** is managed by the **Operator** through the automatic **regulation** system described in document A.15 “Partecipazione alla regolazione di frequenza e frequenza/potenza ” in [Appendix A](#) of this chapter.

The **UoDs** of the **enabled units** selected to supply the **secondary power reserve** service in the **planning phase** automatically make the **secondary reserve half-band** available, communicated to them pursuant to paragraph [4.9.6.1](#) (“Communication of final cumulative programmes”).

The **Operator** may request in real time that said **units** suspend or restore the **secondary power reserve** service, as supplied in the **planning phase**.

If the **enabled units** selected in the **planning phase** turn out to be unavailable to supply the service, due to failure of the unit or malfunction of the **regulation** devices, or if the conditions of the **electrical system** require a **regulation** band greater than the one planned for, the **Operator** may request in real time the **secondary power reserve** service also from **enabled units** which have not been selected before in the **planning phase**, according to the same methods of detail.

In the hours for which the **enabled unit** has not been selected in the **planning phase**, the UoD must make the **secondary reserve half-band** registered in **GAUDÌ** available, with any updating in real time.

**UoDs** are obliged to implement in real time the **Operator’s** requests concerning the activation and deactivation of the active **secondary power reserve** service.

The **Operator** gives the **UoDs** instructions, for each **enabled unit** involved, concerning the supply of **secondary power reserve** through predefined communications the contents of which are described in document A.23 “Procedura per la selezione delle risorse per il Mercato di bilanciamento” the

format of which is specified in document A.34 “Sistema Comandi: formato messaggi” as per [Appendix A](#) of this chapter.

The **Operator** stores the activation and deactivation requests for **secondary frequency/power regulation** in order to allow subsequent settlement operations.

#### **4.10.4 Managing the balancing service**

##### **4.10.4.1 Managing resources for the balancing service**

In order to maintain the balance between injections and withdrawals of energy, to resolve **congestion** and to create or recover adequate margins of **secondary or tertiary power reserve**, the **Operator** uses resources for real-time **balancing**.

**Non-enabled units** inject electricity respecting their own **final cumulative programmes**.

**Enabled units** inject electricity with respect to their own **binding programmes**, up until the reception of a **dispatching order** with an indication of the conduct required of the unit.

The **enabled units** to supply resources for upward balancing are required to provide, on request, an increase from the **binding power programme** up to the maximum power of the **enabled unit**, taking into account the limitations of the **unit** itself, detailed below. Furthermore, if enabled for downward balancing, the **enabled units** may still be required to provide a reduction from the **binding power programme** to the updated cumulative programme value.

The **enabled units** to supply resources for downward balancing are required to provide, on request, a reduction from the **binding power programme** to the minimum power of the **enabled unit**, taking into account the limitations of the

**unit** itself, detailed below. If necessary, the reduction of **enabled unit** power down to zero is considered to be available. Furthermore, if enabled for upward balancing, the **enabled units** may still be required to provide an increase from the **binding power programme** to the updated cumulative programme value.

For the purposes of supplying resources for **balancing**, the **enabled unit** is subject to limitations resulting from:

- the **secondary reserve half-band** supplied in the **planning phase** of the **MSD**, which may have been reduced following communications of temporary variations of technical data, as per paragraph [4.10.1](#) or whose connection has been requested in real time;
- the daily energy constraints which may have been communicated, as per paragraph 4.10.1
- the maximum and minimum power limitations, as per paragraph [4.10.7.2](#).

Methods for calculating the resources to be provided for managing the **balancing** activity are described in document A.23 “Procedura di selezione delle risorse per il mercato di bilanciamento” in [Appendix A](#) in this chapter.

#### *4.10.4.2 Selecting resources for the balancing service*

If it is necessary to carry out **balancing** actions, in a specific minute, the **Operator** selects the most economically viable resources for **balancing**, as described in document A.23 “Procedura di selezione delle risorse per il Mercato di bilanciamento” as per [Appendix A](#) in this chapter.

For the purposes of maintaining the security of the **national electricity system**, the **Operator** may in any case exempt units from the order of economic merit, by taking the following factors into account:

- (a) The need to have or recreate suitable reserve margins for immediate use;



- (b) Availability of energy of hydroelectric **enabled units**;
- (c) The forecast of the operating conditions of the **system** in the hours following the minute which the **balancing** refers to, with particular reference to selections which **enabled unit** start-ups and shutdowns correspond to.

The **Grid Operator** provides instructions to the UoDs for each **enabled unit** affected by the results of the selection process regarding the provision of the **balancing** service via **dispatching orders**.

#### **4.10.5      *Dispatching orders***

The **dispatching orders** referred to the **enabled units** contain the indications for defining the **modified binding programme**, according to the indications of document A.23 “ Procedura di selezione delle risorse per il Mercato di bilanciamento” as per [Appendix A](#) of the present chapter.

The **Operator** reserves the right to revoke **dispatching orders** which were previously issued, by notifying the **UoDs** through a revocation notice of a **dispatching order**, before the time when execution of the order must begin.

The format of the **dispatching orders** and of revocation notices for **dispatching orders** is described in document A.34 Sistema Comandi: formato messaggi” (Command system: message format) ” as per [Appendix A](#) of this chapter.

##### **4.10.5.1      *Communication of Dispatching Orders***

In order to obtain a prompt response to **dispatching orders**, the **Operator** communicates the orders directly to the **physical control points** of the **enabled units**.

**Dispatching orders** are communicated telematically to the aforementioned **physical control points** of the **enabled units**, by means of the software tools described in document A.36 Sistema Comandi: requisiti informatici per la comunicazione degli ordini di dispacciamento (BDE)” as per [Appendix A](#) of this chapter.

In the case of unavailability of the computer system for communicating the **dispatching orders** or if urgent circumstances require it, the **Operator** communicates the **dispatching orders** by telephone to the **enabled units**, subsequently confirming them by computer means as soon as possible.

**Dispatching orders** must be executed as soon as the **enabled unit** has been notified of them, even if they have been communicated by telephone only.

**UoDs** have the option of requesting that a copy of **dispatching orders** sent to their **enabled units** be transmitted to their own company control rooms.

#### **4.10.6 Modified binding programme**

The **modified binding programme** for a given time  $T$ ,  $PVM(T)$ , is calculated taking into account the following:

- (a) The **binding power programme** for a quarter of an hour at time  $T$ ,  $PV(T)$ ;
- (b) The **dispatching orders** sent before time  $T$  in the current day according to the provisions in section [4.10.5](#) “Dispatching orders” of this chapter.

In the time intervals when the **PU** is unavailable for the **dispatching** services, the **modified binding programme** is the same as the **binding power programme**.

The **modified binding programme**  $PVM(T)$  is calculated by means of the algorithm described in document A.23 “Procedura di selezione delle risorse per il Mercato di bilanciamento in [Appendix A](#) in this chapter.

#### **4.10.7      *Communications to UoDs who are owners of enabled production units***

While the **Balancing Market** is in progress, the **Operator** can send communications to the **UoDs** that own the **enabled units**.

With the exception of **dispatching orders**, said communications are listed below; the description of their contents can be found in document A.23 “Procedura di selezione delle risorse per il Mercato di bilanciamento”, and the format is detailed in document A.34 “Sistema Comandi: formato messaggi” in [Appendix A](#) of this chapter.

##### **4.10.7.1      *Communications concerning exclusion from balancing***

Taking into account the overall availability of the resources, the **Operator** can communicate exclusion from the **balancing** service to the **enabled units** which steadily maintain an unjustified and significant deviation between the power fed into the **grid** and the required value, according to the criteria found in document A.23 “Selezione delle risorse per il Mercato di bilanciamento” in [Appendix A](#) of this chapter.

The **Operator** may also exclude **enabled units** from the **balancing** service, for reasons of the **electricity system** security such as the presence of **grid congestion** on which the **enabled unit** is particularly influential.

Exclusion from **balancing** is considered applicable in the period of exclusion which was communicated, or until receipt of communication of re-admission to **balancing**, and in any case not past the term of the day of the exclusion communication itself.

**Enabled units** excluded from **balancing** in the exclusion period:

- (a) In general do not receive **dispatching orders**, but are in any case obliged to carry out any **dispatching orders** which may be received, for purposes of security of the **electrical system**;

- (b) Maintain the **dispatching orders** prior to the exclusion period for the calculation of the **modified binding programme**.

#### 4.10.7.2 *Communicating limits on minimum and maximum power*

For purposes of secure management of the **electrical system**, the **Operator** may limit the operation interval of the **enabled units** by communicating the values of maximum and minimum power injection to comply with.

During the limitation period, when carrying out their own programmes and in executing the **dispatching orders** the **enabled units** are obliged to respect the limitations that have been communicated.

The power limitation lapses when the limitation period is over or following the **Operator's** communication of the revocation of the limit.

#### 4.10.8 *Amounts accepted and remuneration*

The **Operator** defines for each **significant period** the amounts accepted and their remuneration following the **balancing market** for each type of offer (Secondary reserve, **Other Services**, Minimum, Shutdown, Start-up and Operational Set-up Modification), according to the terms set out in document A.23 "Procedura per la selezione delle risorse per il mercato di bilanciamento" as in [Appendix A](#) of this chapter.

##### 4.10.8.1 *Correction for the lack of connection between consecutive days*

In the case where, due to the acceptance of offers in the **planning phase** or in the phase of real-time management of the **MSD**, there is no connection between the injection programmes for consecutive days, the **modified binding programme** of the subsequent day will be appropriately modified to correct this deficiency only for the amount brought about by the **MSD** and taking into account the operational limitations of the **PU**s, according to the

manner described in the document A.23 (“Procedura di selezione delle risorse per il Mercato del Bilanciamento” –), in [Appendix A](#) of the present chapter.

The above applies for the purposes of the calculation of the accepted amounts and the calculation of the actual imbalancing.

#### **4.10.9      *Management of the MB in the event of failure to communicate offers***

*4.10.9.1      Failure to communicate offers of an MB session* Failure to communicate offers of an **MB** session occurs if the **Operator** does not have offers relative to an **MB** session within 30 minutes of the beginning of the **MB** session provided for by the **Technical Provisions for Operation**.

The **Operator** shall notify the anomaly to the **users of dispatching services of enabled units** as soon as possible by means of appropriate communication tools (email, fax, etc.).

For purposes of MB performance, the **Operator** considers the offers valid for purposes of carrying out the planning phase

#### **.4.10.10      *Obligations to inform in connection with the MB***

The **Grid Operator**, for each **zone** and for each hourly period, within an hour of the termination of the above-mentioned hourly period, makes available the following preliminary results:

- The buying and selling quantities accepted overall;
- The weighted average price for accepted buying and selling offers;
- The marginal price of the accepted buying and selling offers;

With reference to offers accepted for Secondary Reserve and with reference to the offers accepted for **Other Services**, Minimum and Shutdown.

#### **4.10.11      *Utilization of resources, supplied by mechanisms other than market mechanisms, for the balancing service***

##### **4.10.11.1      *Utilization of the interruptible load service***

If the resources offered on the **MSD** are insufficient:

- (a) For the maintenance of the balance between injections and withdrawals of electricity;
- (b) For the solution of **grid congestion**;

And more generally, for the maintenance of the functional security of the **system** and the prevention of risk conditions, the **Operator** may utilize the **interruptible load service**, by making use of interruptible resources in real time or in deferred time under emergency conditions, according to the requirements dictated by the time available for taking action and the operational **grid** conditions.

##### **4.10.11.2      *Non-enabled production units***

The **Operator** may modify, in real time, the injection programme also for **non-enabled units** if the security needs of the **grid** require it, for example if there is localized **grid congestion**, but **units enabled for balancing** cannot be used to solve it.

Communication to **non-enabled PUs** are by telephone, with confirmation by fax or email.

#### **4.10.12      *Management of the intertripping of PUs***

The **Operator** sends the request to switch on or switch off the intertripping device at the **unit's physical control point** and, where required, to the **UoD's** company control room by means of the same communication channel used for **dispatching orders**.

If the **Operator's** request does not indicate the time when the requested service is to terminate, the communication to switch on/switch off the intertripping device remains in force until an order to the contrary, and therefore also after midnight of the day in which it was sent.

If urgent circumstances require it or if the necessary computer tools are unavailable, the **Operator** will notify its request in advance by telephone.

The **UoD** is obliged to comply with the **Operator's** request, even if the order is given by telephone only.

If the **PU's** intertripping device is switched on, the **Operator** enters a fictional **dispatching order** into its own archives, in order to reduce the production required by the **PU** and eliminate the consequent imbalancing costs.

#### **4.10.13      *Management of the reactive power reserve service***

The secondary reactive power reserve service is managed by the **Operator** by means of the automatic **regulation** system described in document A.14 "Partecipazione alla regolazione di tensione" in [Appendix A](#) in this chapter.

Moreover, the **Operator** may request from eligible **PU's** to supply reactive reserve service, specific methods of supply of said service, by sending a communication, the format of which is predefined, contained and described in document A.34 "Sistema Comandi: formato messaggi" in [Appendix A](#) of this chapter.

#### **4.10.14      *Management of devices for control of voltage***

The **Operator** defines a plan for the coordinated management of the banks of condensers and shunt reactors, available to **grid Operator** other than the **national transmission grid, with third-party connection obligations**

If the functional condition of the **electricity system** shows a degradation in the voltage profiles or a pattern of elevated voltage, the **Operator** may:

- (a) Make changes to the above mentioned plan;
- (b) For transformers equipped with the necessary technical requirements, make modifications to the values of the reference voltages of the regulators of these transformers available to the aforementioned **grid operators**;
- (c) Autonomously, by means of the **Emergency Control Station (ECS)**, interrupt **loads**, on limited portions of the **grid with third-party connection obligations**, of suitable magnitude to ensure the secure operation of the **electricity system**;
- (d) Modify the **national transmission grid** topology, by means of the inclusion or exclusion of elements of the **grid**, in order to control the voltage profile of the **grid**.

**Operators of grids with third-party connection obligations** other than the **national transmission grid** are obliged to carry out the instructions listed.

#### **4.10.15      *Responsibility of the users of dispatching***

The **UoDs** are responsible for the execution of injection/withdrawal programmes and **dispatching orders** not causing, in any case, risk to workers, to the environment, or to production plants.



**4.10.16      *Disconnection of high-voltage electricity lines in the case of forest fires***

In order to comply with requests to disconnect **high-voltage (HV)** overhead lines issued by parties other than the owners (Italian Civil Defence, State Forestry Corps, fire brigade, etc.) in the case of forest fires, the **Operator** adopts procedure A.21 Disattivazione di linee aeree ad altissima e alta tensione in occasione di incendi boschivi o di situazioni di pericolo in vicinanza “” in [Appendix A](#) of Chapter 3 of this Grid code, which defines conduct guidelines for all parties involved.

**4.10.17      *Management of resources in conditions of failure to define the binding or emergency programmes***

**4.10.17.1      *Management of production resources in the case of failure to define the binding programmes***

If, for example following the malfunction of its own information systems, the **Operator** is not in a condition to define the **binding programmes** of the **production units**, the **Operator** notifies the **UoDs** of this event by appropriate means (website, fax, email etc.).

In these conditions, **UoDs** must follow the instructions given by the **Operator** through appropriate means (telephone, fax, email etc.).

**4.10.17.2      *Managing resources under emergency conditions***

The control process under **emergency conditions** is aimed at:

- (a) Identifying and analysing possible corrective actions;
- (b) Implementing the required corrective actions.

By means of the implementation of corrective actions in real time, the **electricity system** can be brought back to **normal conditions**.

If, however, the corrective actions do not bring about the desired result, the state of the **electricity system** may evolve into the following phases:

- (a) Separation of the **grid** and automatic implementation of the **Defence plan** following disturbance of the frequency;
- (b) Local or national switching off of the **electricity system** and recovery of the **system** by means of the **Power recovery plan**.

The instantaneous actions that the **Operator** may implement in order to maintain the balance between injections and withdrawals are those included in document A.9 “Piano di difesa del sistema elettrico ” in [Appendix A](#) in this chapter.

#### 4.10.17.3 *Implementation of the Emergency Plan for the Security of the Electricity System*

In order to avoid prolonged interruptions to the **users** in the case of persistent deficits between electricity demand and production capacity, the **Operator** may implement its **Emergency Plan for the Security of the Electricity System (PESSE)** as described in Attachment A.20.

The **distribution companies** adopt, for the users served by them, emergency plans complying with the **Operator’s** plan, pursuant to the Resolution of the Committee for Economic Planning, CIPE dated 6 November 1979.

The **Operator** verifies that the emergency plan documents prepared by the **distribution companies** comply with the indications included in the update to the Emergency Plan for the Security of the Electricity System (**PESSE**), prepared by the **Operator** and approved by the **MISE**.

The above verification does not cover:

- (a) The procedures prepared by the **distribution companies** to ensure the maintenance, as far as possible, of essential public services and, more generally, the type of **utility** selected;
- (b) Discharging of the obligations of the **distribution companies** to notify the users.

#### 4.10.17.4 *Implementation of the Defence plan of the electricity system*

During the phase of implementing the **Defence plan** of the **electricity system**, the **Operator** coordinates the **operations** carried out by the operators responsible for the **grids with third-party connection obligations** and by the **UoDs** of the **PUs** and **consumption units**, and activates the procedures in [Appendix A](#) in this chapter.

If the prerequisites for applying the **Power recovery plan** do not exist, the **Operator** directly coordinates all the operations to be carried out to bring the **electricity system** to a normal operating condition.

#### 4.10.17.5 *Suspension of the order of merit*

In the case of a general or large-scale incident and/or impact on the **grid**, the **Operator** has the option, in real time, of being exempted from the order of merit defined by the market, informing the affected parties of this provision by appropriate means (telephone, website, fax, email etc.).

In these conditions, **UoDs** must follow the instructions given by the **Operator** by appropriate means (fax, email etc.).



## **APPENDIX**

### **A REFERENCE DOCUMENTATION**

As a supplement to the contents of this chapter, below is a list of the reference documents attached to this Grid Code:

- .9 “Piano di Difesa del sistema elettrico”;
- A.10 “Piano di Riaccensione del sistema elettrico nazionale”;
- A.14 “Partecipazione alla regolazione di tensione”;
- A.15 “Partecipazione alla regolazione di frequenza e frequenza/potenza”;
- A.16 “Sistema Automatico per la Regolazione della Tensione (SART) per centrali elettriche di produzione”;
- A.20 “Piano di Emergenza per la Sicurezza del Sistema Elettrico (PESSE)”.
- A.21 “Disattivazione di linee aeree ad altissima e alta tensione in occasione di incendi boschivi o di situazioni di pericolo in vicinanza”
- A.22 “Procedura per la selezione delle risorse per la fase di programmazione del MSD”;
- A.23 “Procedura per la selezione delle risorse per il Mercato di bilanciamento”;
- A.24 “Individuazione zone della rete rilevante”;
- A.25 “Modalità di determinazione dei programmi vincolanti”;

- A.26 “Contratto tipo di dispacciamento”;
- A.27 “Impianti di produzione essenziali per la sicurezza del sistema elettrico ai sensi dell’articolo 63, comma 63.1, dell’Allegato A alla delibera dell’AEEG n. 111/06”
- A.28 “Procedura tecnica di valutazione di compatibilità con la salvaguardia della sicurezza di esercizio degli scioperi riguardanti impianti di produzione”,
- A.29 “Modalità di comunicazione dei dati per la verifica di sicurezza con orizzonte settimanale”;
- A.30 “Metodologia per la valutazione probabilistica della riserva vitale”;
- A.31 “Procedura per l’individuazione della capacità essenziale di riserva terziaria”
- A.33 “Sistema Comandi: variazione dati tecnici GAUDÌ”;
- A.34 “Sistema Comandi: formato messaggi”;
- A.36 “Modalità di invio degli ordini di dispacciamento”;
- A.40 “Prescrizioni tecniche integrative per la connessione al Banco Manovra Interrompibili”;
- A.41 “Unità periferica distacco carichi. Guida alla realizzazione”;
- A.42 “Unità periferica distacco carichi. Profilo del Protocollo IEC 870-5-104”;
- A.54 “Classificazione e Registrazione delle disalimentazioni e delle interruzioni transitorie degli utenti direttamente e indirettamente connessi alla RTN”;
- A.60 “Dati tecnici delle unità di produzione rilevanti valevoli ai fini del Mercato elettrico”;
- A.61 “Regolamento del sistema di garanzie di cui all’articolo 49 dell’allegato A alla delibera 111/06 dell’Autorità per l’energia elettrica ed il gas”;
- A.62 “Contratto tipo per l’erogazione del servizio di interrompibilità”;

- A.63 “Contratto tipo per l'erogazione del servizio di riduzione istantanea dei prelievi di energia elettrica”;
- A.65 “Dati tecnici dei gruppi di generazione”;
- A.66 “Procedura per la determinazione dei servizi di mitigazione resi dalle imprese distributrici”.
- A.73 “Specifiche tecniche per la verifica e valorizzazione del servizio di regolazione primaria di frequenza”