

SECTOR INQUIRY ON CAPACITY MECHANISMS  
IN THE ELECTRICITY SECTOR

**Risposte al questionario  
inviato dalla Commissione europea all'Autorità**

*10 giugno 2015*

## Premessa

*Lo scorso 29 aprile la Commissione europea (di seguito: Commissione) ha avviato un'indagine settoriale sugli aiuti di Stato sotto forma di meccanismi di approvvigionamento della capacità di produzione elettrica (di seguito: meccanismi di approvvigionamento della capacità).*

*Secondo quanto evidenziato dalla Commissione, detta indagine è volta ad acquisire informazioni relative ai menzionati meccanismi, al fine di esaminare l'idoneità degli stessi a garantire un approvvigionamento sufficiente di energia elettrica senza distorsioni degli scambi e della concorrenza. L'indagine integra la strategia "Unione dell'energia" della Commissione, contribuendo a perseguire l'obiettivo di rendere le forniture energetiche più sicure e affidabili e ponendo le basi per valutare se i meccanismi di approvvigionamento della capacità siano pro-concorrenziali e basati su un approccio di mercato, come indicato nelle "Linee guida in materia di aiuti di Stato a favore dell'ambiente e dell'energia 2014-2020".*

*Nell'ambito dell'indagine, la Commissione ha inviato un questionario alle autorità pubbliche e agli operatori di rete di un campione rappresentativo di Stati membri che hanno adottato o intendono adottare meccanismi di approvvigionamento della capacità (Belgio, Croazia, Danimarca, Francia, Germania, Irlanda, Italia, Polonia, Portogallo, Spagna e Svezia). Una volta valutate le risposte, la Commissione inviterà a presentare osservazioni sulle conclusioni preliminari dell'indagine alla fine del corrente anno, con l'intento di pubblicare i risultati finali nel corso dell'anno 2016.*

*L'Autorità, che è stata inclusa dalla Commissione nel novero dei destinatari del questionario, ha fornito le risposte riportate di seguito. Rispetto alla versione inviata alla Commissione, il presente documento è privo dei dati indicati a quest'ultima come riservati.*

# Case No COMP/HT.4624 - Capacity mechanisms - Sector Inquiry on Capacity Mechanisms / Public Bodies

Termine per l'invio: 10/06/2015

Caso n. COMP/HT.4624 — Meccanismi di regolazione della capacità — Indagine di settore sui meccanismi di regolazione della capacità / Organismi pubblici

Termine: 10/06/2015

## Indagine di settore sui meccanismi di regolazione della capacità

La Commissione europea ha riscontrato preoccupazioni crescenti tra gli Stati membri per quanto riguarda la sicurezza dell'approvvigionamento di energia elettrica. Alcuni Stati membri hanno reagito al rischio percepito di una capacità di produzione insufficiente con l'introduzione di misure destinate a sostenere investimenti in capacità supplementari. Ai fini del presente documento, un meccanismo di regolazione della capacità elettrica ("meccanismo di regolazione") comprende qualsiasi misura volta a conseguire un livello di adeguatezza della capacità di produzione che genera, per i fornitori di capacità, introiti supplementari o alternativi rispetto a quelli di norma derivanti dalla vendita di elettricità e dalla fornitura di servizi ausiliari e di bilanciamento.

Se introdotti in maniera non coordinata, i meccanismi di regolazione rischiano di essere inefficienti, di ostacolare gli scambi transfrontalieri e di falsare il gioco della concorrenza tra fornitori di capacità. Inoltre possono comportare elementi di aiuti di Stato ai sensi dell'articolo 107, paragrafo 3, del TFUE. Ai sensi dell'articolo 20 bis del regolamento (UE) n. 659/1999 del Consiglio<sup>[1]</sup>, la Commissione può svolgere in diversi Stati membri un'indagine che interessa un settore economico, se nutre il ragionevole sospetto che le misure di aiuto di Stato in un particolare settore o basate su un particolare strumento di aiuto comportino rilevanti restrizioni o distorsioni della concorrenza nel mercato interno.

Per questo motivo la Commissione ha avviato un'indagine di settore per acquisire informazioni sull'esistenza e sul funzionamento dei meccanismi di regolazione della capacità. L'indagine farà luce sui vari tipi di meccanismi di regolazione della capacità, già esistenti o di cui è prevista l'introduzione, quali i meccanismi di gara, i meccanismi di riserva, i meccanismi di regolazione della capacità mirati, i meccanismi basati sull'acquirente centralizzato (*central buyer mechanisms*), i meccanismi basati sugli obblighi decentralizzati (*de-central obligation mechanisms*) e i meccanismi di pagamento sulla base della capacità. La Commissione è particolarmente interessata a ricevere informazioni da parte delle autorità pubbliche competenti e delle parti interessate.

La Commissione pubblicherà i risultati preliminari dell'indagine di settore ai fini di una consultazione pubblica prima di adottare una relazione finale nel 2016.

Maggiori informazioni sull'indagine di mercato sono disponibili sulla nostra [pagina web](#).

Per eventuali domande o comunicazioni si prega di scrivere al seguente indirizzo e-mail: [COMP-CAPACITY-INQUIRY@ec.europa.eu](mailto:COMP-CAPACITY-INQUIRY@ec.europa.eu)

**Il presente questionario è rivolto alle amministrazioni pubbliche, alle autorità nazionali di regolamentazione e agli operatori di rete. Il termine ultimo per le risposte è il 10 giugno 2015.**

Salvo esplicita indicazione contraria, tutte le risposte saranno trattate come non riservate e potrebbero essere pubblicate sul sito web Europa e citate, così come i pareri dei rispondenti, nella relazione sull'indagine di mercato della Commissione. Se non si desidera che le proprie risposte (o parti di esse) siano utilizzate a tal fine, si prega di specificare gli elementi da considerare riservati nell'apposito riquadro alla fine del questionario.

[\[1\]](#) Regolamento (CE) n. 659/1999 recante modalità di applicazione dell'articolo 93 del trattato CE (ora articolo 108 del trattato sul funzionamento dell'Unione europea) (GU L 83 del 27.3.1999, pag. 1).

## **I. QUALIFICATION**

### **1 In which Member State is your organisation located?**

All replies you will provide must refer to the Member State you specify. If your organisation has subsidiaries or branches in other Member States and you wish to provide information on them as well, please complete a separate questionnaire and indicate the Member State of reference in your answer to this question.

#### **Risposta:**

- ( ) Austria
- ( ) Belgium
- ( ) Bulgaria
- ( ) Croatia
- ( ) Cyprus
- ( ) Czech Republic
- ( ) Denmark
- ( ) Estonia
- ( ) Finland
- ( ) France
- ( ) Germany
- ( ) Greece
- ( ) Hungary
- ( ) Ireland
- (X) Italy
- ( ) Latvia
- ( ) Lithuania
- ( ) Luxembourg
- ( ) Malta
- ( ) Netherlands
- ( ) Poland
- ( ) Portugal
- ( ) Romania

- Slovakia
- Slovenia
- Spain
- Sweden
- United Kingdom

**2 Which of the following best describes your organisation?**

**Risposta:**

- Government
- Competition authority
- Regulator
- Network operator
- Other public organisation

**II. KEY ELECTRICITY MARKET INDICATORS**

**3 Please provide your best estimates of the amount of generation capacity (in GW), per technology type, that was operational in 2014 and that you expect to be operational in 2020, taking into account the currently planned regulatory framework, and known planned investments and closures of plants.**

**Risposta:**

GW	2014	2020
Coal		
Oil		
Natural Gas		
Nuclear		
Hydro (without reservoir)		
Hydro (with reservoir, including pump storage)		<i>Omissis</i>
CHP		
Biomass		
Wind		
Solar		
Other		

- 4 Please provide your best estimates of the total electricity produced per technology type in 2014 and expected to be produced in 2020 in your Member State (in TWh).

Risposta:

TWh	2014	2020
Coal	<i>Omissis</i>	
Oil		
Natural Gas		
Nuclear		
Hydro (without reservoir)		
Hydro (with reservoir, including pump storage)		
CHP		
Biomass		
Wind		
Solar		
Other		

- 5 Please provide the total existing (in 2014) and planned (for 2020) maximum interconnection capacity with each interconnected Member State (in GW).

Risposta:

GW	Member State	Maximum import capacity in 2014	Maximum export capacity in 2014	Maximum import capacity in 2020	Maximum export capacity in 2020
Interconnected Member State 1	<i>Omissis</i>				
Interconnected Member State 2					
Interconnected Member State 3					
Interconnected Member State 4					
Interconnected Member State 5					
Interconnected Member State 6					
Interconnected Member State 7					

6 Please provide total cross-border flows in 2014 and your best estimates of total cross-border flows for 2020 with each interconnected Member State (in TWh).

Risposta:

TWh	Member State	Imports in 2014	Exports in 2014	Imports in 2020	Exports in 2020
Interconnected Member State 1	<i>Omissis</i>				
Interconnected Member State 2					
Interconnected Member State 3					
Interconnected Member State 4					
Interconnected Member State 5					
Interconnected Member State 6					
Interconnected Member State 7					

7 Please provide total final consumer demand in your Member State, both in terms of average (i.e. arithmetic average of daily averages) and in terms of peak (i.e. highest yearly peak) demand, including your best estimates for future years (in GW).

Risposta:

GW	2012	2013	2014	2015	2020
Average demand	<i>Omissis</i>				
Peak demand					

### **III. MARKET STRUCTURE AND DESIGN**

Please briefly describe the main design rules and type of players involved in the forward and physical electricity markets including at least:

- 8
- Day ahead trading;
  - Capacity allocation of interconnectors;
  - Intraday trading;
  - Balancing and ancillary services; and
  - Imbalance settlement

Risposta:

Day Ahead Market (DAM) is a market splitting with the following features:

- unit bidding mechanism where producers and wholesale customers submit hourly energy offers and bids per single generation/production unit;
- hourly energy blocks are traded in the market whose result is represented by injection and withdrawal schedules for each hour of the following day;

- prices are settled at zonal marginal price: Italy is split in 10 internal bidding zones (6 geographical bidding zones and 4 virtual bidding zones). It implies that if the flows on the grid do not violate any transmission limit between bidding zones, then the clearing price will be the same in all the zones; if at least one limit is violated then the result will be a zonal clearing price different in each zone (Marginal price). In each bidding zone, producers receive the hourly zonal price and costumers pay the so called Single Price (PUN) that does not depend on their geographical localization. PUN represents the average of the zonal prices, weighted to account for zonal consumption.

Intraday Market (MI) is organized in five sessions (MI1, MI2, MI3, MI4 and MI5) where bids/offers are selected under the same criterion as that for the Day- Ahead Market; contrary to the Day-Ahead Market, accepted purchase bids are valued at the zonal price instead of PUN. Furthermore two intraday auctions are implemented in order to allocate interconnection capacity concerning the Italian borders. They are explicit auctions comprising a single round and they foresee payment according to a Marginal Price.

In the Ancillary Services Market (MSD) the TSO (TERNA) guarantees the availability of an adequate capacity reserve by selecting sale/purchase offers of revision of the schedules submitted by participants in MSD. The MSD is a Central Dispatch Model where TERNA procures resources required for managing, operating and controlling the system, in order to:

- solve intra-zonal congestions;
- create a reserve margin;
- balance injections and withdrawals in real time.

MSD is divided in:

- MSD ex-ante (unit commitment phase) which consists of 4 sessions; the first session takes place on the day preceding the day to which the offers are referred, while the other three sessions take place during the same day to which the offers are referred;
- MB (balancing market) which takes place in real time.

Accepted offers/bids in MSD are valued at the offered price (pay as bid).

Capacity allocation

Interconnection capacity is currently allocated through two methods: implicit auctions (Market coupling) and explicit auctions. Market coupling is applied on IT-SL, IT-FR, IT-AU borders for the allocation of daily Physical Transmission Rights; for these borders also explicit auctions are provided, in order to allocate capacity in the form of Physical Transmission Rights on a Yearly, Monthly and Intraday basis. For IT-GR and IT-CH borders only explicit auctions are applied and Yearly, Monthly, Daily and Intraday (only IT-CH border) products are allocated.

Imbalance Settlement

Imbalance volume is calculated for each generation/consumption unit (unit-based mechanism).

Imbalance price depends on the imbalance of the area where the unit is located and it has a different value for respectively the generation units licensed to participate in MSD and all the other units. Thus, a dual price mechanism is applied to generation units eligible to participate in MSD while a single price depending on the imbalance of the area where the unit is located is applied to all the other units.

The imbalance settlement period is 1/4 hour for units licensed to participate in MSD, hourly for the other units.

**9 Please explain whether there are any planned changes to the existing market design, as described in response to the previous question. Do not include any planned capacity mechanism as this will be covered later in this Questionnaire.**

**Risposta:**

The existing market design will change following the forthcoming entry into force of the Network Code on Electricity Balancing developed at EU level. In particular, several changes are currently under discussion concerning:

- participation of non-intermittent renewable energy sources (RES) in the Ancillary Services Market;
- the definition of the rules for the participation of demand resources in the Ancillary Services Market;
- the review of the product traded in the ancillary services market;
- the review of the current imbalance settlement rules.

**10 Please identify the five largest domestic generators (by total electricity generated) and**



provide best estimates of their generated volumes (in TWh) in the given years. In the last row of the table please indicate the total volume of electricity generated in your Member State in those years (in TWh).

Risposta:

TWh	Company name	2012	2013	2014
Generator 1				
Generator 2				
Generator 3				
Generator 4				
Generator 5				
TOTAL volume generated				

11 Please identify the five largest electricity retailers / suppliers (by total electricity sold to final consumers, both business and residential customers) and provide best estimates of their volumes supplied (in TWh) in the given years. In the last row of the table please indicate the total volume of electricity supplied in your Member State in those years (in TWh).

Risposta:

TWh	Company name	2012	2013	2014
Retailer 1				
Retailer 2				
Retailer 3				
Retailer 4				
Retailer 5				
TOTAL volume supplied				

12 How many electricity exchanges operate in your Member State?

Risposta:

- None
- 1
- 2
- 3
- More than 3

12.1 Please provide the names and a short description of the activities of the electricity

**exchanges operating in your Member State.**

**Risposta:** (In the attachment "Q12.1.pdf")

	<b>Name</b>	<b>Short description of activities</b>
<b>Exchange 1</b>	Gestore dei Mercati Energetici S.p.A. (GME)	<p>GME carries out its activities under the guidance of the Italian Ministry for Economic Development and in accordance with the rules set by the Energy Regulator.</p> <p>Under the applicable legislation and regulations, GME has progressively broadened the scope of its activities from the organization of the electricity markets to environmental, gas and fuel markets.</p> <p>With specific reference to the electricity sector, GME manages: the Spot Electricity Market (MPE), consisting of the Day-Ahead Market (MGP) and of the Intra-Day Market (MI); the Forward Electricity Market (MTE) and the OTC Registration Platform (PCE) for registering forward contracts of sale/purchase of electricity concluded off the bidding system. GME is also in charge of the operation of the Ancillary Services Market (MSD), whose economic management falls under the responsibility of "Terna S.p.A."</p> <p>The markets managed by GME have a physical nature, that is to say that all the products traded thereon, whether spot or forward, involve the obligation of physical delivery and access to trading is restricted to parties having the capability of delivering such products. Furthermore, GME acts as central counterparty (CCP) on all of its electricity markets with the exception of the MSD (where the CCP is Terna S.p.A.).</p> <p>GME constantly monitors trading on its markets through dedicated offices. This monitoring activity integrates the one that GME carries out on electricity markets in support of the Energy Regulator, in accordance with specific decisions adopted by the latter. GME is also engaged in the implementation of the new market surveillance tasks introduced by Regulation (EU) 1227/2011 on wholesale energy market integrity and transparency (REMIT).</p> <p>Moreover, one of the markets managed by Borsa Italiana - a company of the London Stock Exchange Group responsible for the organisation and management of the Italian stock exchange - is IDEX that is the Energy Derivatives segment of the Italian derivatives market where Italian power derivatives are traded.</p>
<b>Exchange 2</b>		
<b>Exchange 3</b>		
<b>Exchange 4</b>		
<b>Exchange 5</b>		

**13 Please specify the total annual amount of electricity (in TWh) traded for each of the following delivery times in the given years.**

**Risposta:**

<b>TWh</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>Intraday</b>	<i>Omissis</i>		
<b>Day-Ahead</b>			
<b>Further-Ahead</b>			

**14 Please provide best estimates of the total annual amount of electricity (in TWh) traded on exchanges and over the counter in the given years.**

Risposta:

TWh	2012	2013	2014
Traded on Exchange	<i>Omissis</i>		
Traded over the Counter			

**15 Please provide your best estimate of the Churn Rate for the following years:**

The churn rate is the ratio of traded electricity to generated electricity. It is a high-level indicator of wholesale market liquidity and measures the number of times electricity is traded before being delivered.

Risposta:

	2012	2013	2014
Churn Rate	<i>Omissis</i>		

**16 Please specify the type and total volume (in MW) of balancing and ancillary services contracted by the TSO in the given years. Please include e.g. balancing reserves required to ensure overall capacity is adequate or to account for transmission constraints, frequency response, black start, and any services contracted with neighbouring TSOs.**

Risposta:

MW	Type of ancillary service	2012	2013	2014
Ancillary service 1	<i>Omissis</i>			
Ancillary service 2				
Ancillary service 3				
Ancillary service 4				
Ancillary service 5				
Ancillary service 6				
Ancillary service 7				
Ancillary service 8				
Ancillary service 9				

**17 Is there anything else you want to add concerning the structure and design of the electricity market in your Member State (separate documents can be uploaded at the very end of this Questionnaire)?**

**Risposta:**

Data illustrated at point 16 should be evaluated in consideration of the fact that the Italian Ancillary Services Market is a Central Dispatch Model (see point 8). In this market, services are procured by acceptance of energy "upward" and "downward" offers; there is not distinction between Frequency Restoration Reserve (Manual) and Replacement reserve, but between Replacement Reserve (i.e. reserve that can be activated in max 2 hours, with no duration limitation) and Frequency Restoration Reserve - Automatic (which can be activated in 15' maximum). Therefore, Frequency Restoration Reserve - Manual is included in Replacement reserve.

**IV. GENERATION ADEQUACY AND RELIABILITY STANDARDS**

**18 Please explain what metrics are used by your organisation to measure security of supply (multiple answers possible).**

The reserve margin method is based on the limit of how close the load should be allowed to come toward installed capacity. The reserve margin is therefore defined as the ratio of the installed or available capacity to the maximum annual load, minus one.

Expected Energy Not Supplied (EENS) is a measure of the amount of electricity demand, calculated in MWh, that is expected not to be met generally by generation and system in a given year.

Energy index of reliability (EIR) and energy index of unreliability (EIU) are equal to normalisation of EENS obtained dividing by the total energy demanded; this ensures that large systems and small ones can be compared on an equal basis and evolution of the load in a system can be tracked.

Loss of Load Expectation (LOLE): average number of hours/year for which the load is expected to exceed the available capacity (alternatively average number of days on which the daily peak load is expected to exceed the available generating capacity).

Loss Of Load Probability (LOLP): probability that the load will exceed the available generation; it is often limited to the ability to meet annual, weekly peak load.

95th percentile (P95): the number of hours during a very cold winter (once every 20 years) during which the load cannot be covered by all means at disposal.

Capacity margin is the average excess of available generation capacity over peak demand, expressed in percentage terms. Available generation capacity takes into account the contribution of installed capacity at peak demand by adjusting it by the appropriate or availability factors which take into account the fact that plant are sometimes unavailable due to outages.

Frequency and duration of expected outages applies probabilistic risk measures in terms of tangible impacts for electricity customers. This is based on decisions around how the electricity system would operate at a time when supply does not meet demand, and the order and size of mitigation actions taken by the System Operator.

**Risposta:**

None

Reserve Margin

- Expected Energy Not Supplied (EENS)
- Energy Index of Reliability (EIR)
- Loss of Load Expectation (LOLE)
- Loss of Load Probability (LOLP)
- 95th Percentile (P95)
- Capacity Margin
- Frequency and Duration of Expected Outages
- Other

**18.1 If you answered 'Other', please describe what other metrics your organisation uses to measure security of supply.**

**Risposta:**

Under the current market design, security and adequacy targets are not set by either public bodies or the TSO.

In the capacity market (see Section V, part B), the adequacy target is not defined ex ante on the basis of a deterministic value, but will be expressed through a downward sloping demand curve that is defined as a function of the VoLL (3,000 €/MWh), the LOLP corresponding to each level of installed capacity and the variable cost of marginal technology.

**19 Is there any established generation adequacy target (reliability standard) in your Member State?**

**Risposta:**

Yes

No

**19.1 If yes, please describe how it is calculated.**

**Risposta:**

See the answer to question 18.1.

**19.2 If yes, please specify whether it is based on an estimate of the Value of Lost Load (VoLL) and, if so, please provide the estimated VoLL.**

**Risposta:**

See the answer to question 18.1.

**19.3 If yes, please provide the legal basis for application of the reliability standard.**

**Risposta:**

See the answer to question 18.1.

**19.4 If yes, are public authorities legally obliged to take action when the reliability standard is not (expected to be) satisfied? If so, please explain what thresholds trigger such**

**legal obligation and what actions are taken in such circumstances.**

**Risposta:**

See the answer to question 18.1.

**20 Have there been reliability problems (e.g. non-compliance with reliability standards, blackouts) in your Member State over the last 5 years?**

**Risposta:**

Yes

No

**20.1 If yes, please provide concrete examples of such reliability problems, if any, and describe any actions taken to address them.**

**Risposta:**

In the Italian peninsula, there were no particular reliability issues during the last five years, however some problems have arisen in the islands Sicily and Sardinia, where due to the lack of adequate investments in generation capacity (except for intermittent RES), the generation portfolio has a significant share of several old power plants with reduced availability rates and emissions related constraints.

**21 Are reliability problems expected to arise in your Member State in the future?**

**Risposta:**

Yes

No

**21.1 Please explain your answer and provide any data, models and factual evidence supporting your assessment.**

**Risposta:**

In Italy, during the last two/three years, the available conventional generation capacity decreased, because of the decommissioning of a large number of power plants, mostly old oil-fired power plants, but also due to mothballing of some recent combined cycle.

In fact, several power plant operators decide to reduce their generation capacity, in order to reduce cost, because of:

- increasing penetration of RES-E;
- uncertainty about demand evolution;
- lack of efficient long term signals for investment.

For the next horizon, from year 2016 until 2020 and 2025, this reduction of the available capacity in Italy is expected to continue while, on the other side, commissioning of conventional new power plants are not expected. For these reasons, there might be risks of reduction of adequacy margins for the coming years. In particular, due to the lack of investments in new generation/demand side capacity, in the coming years, both Sicily and Sardinia will heavily be dependent on the interconnections with the mainland. As a consequence, the electricity system might be exposed to a high adequacy risk during planned or unplanned outages affecting the interconnection capacity.

**22 Please list any relevant report on generation adequacy in your Member State published over the last 5 years (separate documents can be uploaded at the very end of the**

Questionnaire).

**Risposta:**

N.A.

**23 Is there anything else you want to add concerning generation adequacy and reliability standards in your Member State (separate documents can be uploaded at the very end of this Questionnaire)?**

**Risposta:**

(Non disponibile)

## **V. CAPACITY MECHANISMS**

**NB: this Section is subdivided into two Subsections. Subsection A should only be completed if one or more capacity mechanisms is currently operational in your Member State. Subsection B should be completed if the introduction of a new mechanism is planned by the government or another public body.**

There are various ways of describing and categorising capacity mechanisms. For the purposes of this exercise, six high level designs of such mechanisms are identified:

### **1) Tender**

This is a 'targeted' mechanism because it provides support to the additional capacity expected to be required on top of what the market provides, rather than providing support to the market as a whole. It is a 'volume-based' mechanism because the volume required is determined at the outset. Typically, the beneficiary of such a tender receives public financing for the construction of a power plant and once the new capacity is operational, he operates in the wholesale market as any other market participant (without a guarantee that the electricity will be sold). However, a long term power purchase agreement to finance new capacity, concluded with the involvement of a public authority, might also fall within this category.

### **2) Reserve**

Another targeted, volume-based mechanism is the 'reserve' model. In this model the capacity contracted is held in reserve outside the market and is only activated to produce electricity when necessary (for example when there is no more capacity available in the market).

### **3) Targeted Capacity Payment**

A third variant of the targeted approach is the 'targeted capacity payment' model. This is a 'price-based' mechanism because the price of capacity is set by a central body, not by the market. This price is then paid to a subset of capacity operating in the market, for example only to a particular technology type, or only to capacity providers that meet specific criteria.

### **4) Central Buyer**

This is a 'market-wide' mechanism because it provides support to all or at least the majority providers of capacity in the market (since there may still be some restrictions on eligibility – for example because some market participants receive alternative support).

The volume of capacity required is set at the outset and the market determines the price at which this volume can be provided through a central bidding process.

### **5) De-Central Obligation**

This is another market-wide, volume-based mechanism. The difference compared to the central buyer model is that in a de-central obligation model there is no central bidding process to establish the price for the required capacity volumes.

Instead, an obligation is placed on market participants (for example electricity suppliers/retailers) to contract sufficient capacity to cover the demand of their customers. They must then make their own arrangements to contract the capacity they require to meet their obligation.

### **6) Capacity Payment**

This is a market-wide, price-based model, in which the price for capacity expected to achieve sufficient investment in the market is fixed, and then the market reacts to the price so that the volume brought forward may vary.

#### **A. CURRENT MECHANISM(S)**

Please answer the questions in Subsection A only if there is currently one or more capacity mechanism operational in your Member State. Otherwise, please skip this Subsection A and proceed directly with Subsection B on planned capacity mechanisms.

#### **24 Is any of the following types of capacity mechanisms currently operational in your Member State (multiple answers possible)?**

**Risposta:**

- Tender mechanism
- Reserve mechanism
- Targeted capacity payment
- Central buyer mechanism
- De-central obligation mechanism
- Capacity payment mechanism
- Other

**For each type of capacity mechanism selected in the question above, please provide the data and information requested below. Please separate your answer with subheadings for each capacity mechanism where appropriate.**

#### **25 Please briefly describe the functioning of the selected capacity mechanism(s).**

**Risposta:**

Art. 5 of legislative decree 379/03 provides for the set-up of a transitory mechanism for the remuneration of generation capacity ("capacity payment") intended to be phased out as of the entry into operation of a definitive market based mechanism ("capacity market") aimed at ensuring generation adequacy.

Generation units that are allowed to participate in the market for ancillary services are eligible for the capacity payment mechanism. The condition the beneficiaries must comply with in order to receive the said payment is their availability to deliver capacity during days of potential scarcity of generation capacity ("critical days") which are set in advance by the national TSO.

According to the mechanism concerned, beneficiaries are paid a remuneration made of two components:

- "CAP1" (€/MW), whose payment is conditional on the beneficiaries making capacity available during critical days;
- "S" (€), which is an additional compensation paid under the condition that the yearly aggregated earnings resulting from sales - in the energy markets - of electricity produced by eligible generation units are below a given threshold; moreover, "S" takes into account the locational value of the electricity produced by the aforementioned units.

The Energy Regulator sets the overall value (million euros per year) of the remuneration paid to capacity providers and its allocation between each of the aforementioned components.

#### **26 Please briefly explain the rationale behind the choice of the mechanism(s).**



**Risposta:**

The capacity payment mechanism aims at ensuring capacity generation adequacy in order to meet peak demand as well as the reserve margins.

"CAP1" remunerates capacity providers if they make capacity available when capacity adequacy is in jeopardy. The component "S" offers a transitory and limited financial support to capacity providers facing short-term economic problems, due to particularly low earnings from the sale of electricity, so as to avoid that such financial instability negatively affects the availability of generation capacity during stress events.

Indeed, the capacity payment was designed as a transitory mechanism aimed - in the interim period before the set-up of the capacity market (see following section) - at enabling the system to swiftly respond to the blackouts occurred in 2003, by providing incentives to make generation capacity available during stress events so as to improve generation adequacy in the country. In this respect it is important to stress that in Italy there is no legal obligation on generators to ensure the efficient functioning of their production units.

**27 Please select from the below list the relevant generation adequacy problems underpinning the need for the capacity mechanism(s) (multiple answers possible).****Risposta:**

Peak Demand Issue

Seasonal Demand Issue

Capacity Closures

Impact of Intermittent Energy Sources

Regional Shortages / Constraints / Issues

Other generation adequacy problems

**27.1 In case there is currently more than one capacity mechanism operational in your Member State, please specify which of the above selected issues each seeks to address.****Risposta:**

(Non disponibile)

**27.2 Please explain what short-term generation adequacy problems, if any, the capacity mechanism(s) intend(s) to address, in particular in relation to any market or regulatory failures.****Risposta:**

The capacity payment was designed and conceived since its origin as a transitory mechanism that, in the interim period before the set-up of the capacity market (see following section), would enable the country to quickly respond to the blackouts occurred in 2003, by providing suppliers with incentives to offer their capacity to the system during stress events so as to improve generation adequacy in the country.

In order to pursue the generation adequacy objective, capacity providers are therefore remunerated under the condition that they make their capacity available during the critical days identified by Terna.

**27.3 Please explain what medium- and long-term generation adequacy problems, if any, the capacity mechanism(s) intend(s) to address, in particular in relation to any market or regulatory failures.****Risposta:**

According to the legislative decree 379/03, medium and long term generation adequacy problems will be addressed through the capacity market which will replace the capacity payment scheme currently in force.

**28 Please provide the legal basis for the capacity mechanism(s), including a link to the legislation.**

**Risposta:**

1) Legislative decree 379/2003:

<http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2003:379>

2) Resolution 48/04:

<http://www.autorita.energia.it/it/docs/04/048-04.htm>

**29 Please describe how the total amount of capacity to support through the capacity mechanism(s) is determined, in particular by explaining how peak demand, imports and any non-eligible capacity were considered for the calculation.**

**Risposta:**

The total amount of capacity to be remunerated by the capacity payment depend on the capacity made available by providers during the critical days. The TSO takes into account, among other things, peak demand, imports and the estimated electricity generation by the non-eligible capacity when it defines the critical days.

**30 Please explain the eligibility criteria for participation in the mechanism(s), including any restrictions placed on technologies / companies.**

**Risposta:**

All production plants qualified to participate in the ancillary services market are admitted to the capacity payment mechanism (see art. 5 of legislative decree 379/03).

**31 Are any of the following true for the mechanism(s) currently in place in your Member State (multiple answers possible)?**

**Risposta:**

Includes a competitive bidding process (auction or tender)

Open to all types of generation capacity (using different types of input-fuels)

Both existing and new generation capacity can participate

Foreign capacity and/or interconnectors can participate

Final consumers can participate through demand response

Storage providers can participate

**31.1 If one or more capacity mechanisms include a competitive bidding process (auction or tender), please describe that(those) process(es). If not, please explain why not and in particular how competition is nevertheless ensured.**

**Risposta:**

Art. 5 of legislative decree 379/2003 ruling on the transitory capacity payment does not foresee a competitive bidding process which is instead intended to be part of the capacity market model. This was the case as back at the time when the capacity payment was set up, the design chosen by the

legislator was meant to swiftly address the stress events Italy was facing in that period. Despite the lack of a bidding process, competition is ensured by the fact that the mechanism concerned is open to any generation unit able to provide ancillary services to Terna.

**31.2 If one or more capacity mechanisms exclude certain types of generation capacity, please explain the rationale behind this choice.**

**Risposta:**

The capacity which is ineligible to participate in the ancillary services market, such as non-programmable capacity, is not remunerated under the capacity payment since the former cannot commit to be available at times of scarcity upon request of the TSO.

**31.3 If both existing and new generation capacity can participate in one or more capacity mechanisms in your Member State, please explain to what extent they can do so on equal footing (is there for example any difference in treatment with respect to their obligations, support duration, remuneration, etc.). If either existing or new generation capacity is excluded from one or more capacity mechanisms in your Member State, please explain the rationale for this exclusion.**

**Risposta:**

Given the eligibility criteria described under question 30, new capacity can be remunerated under the capacity payment mechanism only if it commences being operational in the ancillary services market.

**31.4 If foreign capacity and/or interconnectors can participate in one or more capacity mechanisms in your Member State, please explain how. If not, please provide the reasons for their exclusion.**

**Risposta:**

Foreign capacity is not currently remunerated under the capacity payment scheme since it is not allowed to participate in the Italian ancillary services market. However, interconnections are taken into account by Terna when defining the critical days.

**31.5 If consumers can participate in one or more capacity mechanisms in your Member State through demand response, please explain how. If not, please explain why.**

**Risposta:**

Consumers are excluded from the capacity payment remuneration as they are currently ineligible to participate in the ancillary services market.

**31.6 If storage providers can participate in one or more capacity mechanisms in your Member State, please explain how. If not, please explain why.**

**Risposta:**

Storage units that are eligible to participate in the ancillary services market can be remunerated under the capacity payment scheme as long as the aforementioned units make their capacity available during the critical days.

**32 Please explain what contractual obligations (e.g. availability / delivery at times of system stress, period of availability etc.) are imposed on capacity providers selected to participate in the mechanism(s).**

**Risposta:**

The availability of eligible capacity during the critical days is the condition for remuneration.

**32.1 Please explain when (i.e. in what circumstances or under what criteria) the obligations**

apply, specifying what triggers such obligations (e.g. type of stress event, market price level reached, etc.).

**Risposta:**

See the answer to question 32.

**32.2 Please explain if, and if so, what sanctions / penalties are imposed on selected participants which do not meet their obligations under the mechanism(s).**

**Risposta:**

The only consequence faced by capacity providers who fail to make their capacity available is the lack of remuneration.

**33 Please explain how the level of remuneration for capacity providers participating in the mechanism(s) is determined.**

**Risposta:**

See the answer to question 25.

**34 Please explain how far in advance of the delivery / availability event the contractual obligation / relationship is concluded with the (different types of) selected capacity providers.**

**Risposta:**

See the answer to question 32.

**35 Please provide the actual or estimated total remuneration paid under the mechanism(s) (in EUR per MW per year; in 2014 prices).**

**Risposta:**

EUR/MW/year	Mechanism type / name	2012	2013	2014
Mechanism 1	<i>Omissis</i>			
Mechanism 2				
Mechanism 3				

**36 Has any estimate been made of any reduction in wholesale electricity prices resulting from the capacity mechanism(s)?**

**Risposta:**

( ) Yes

(X) No

**36.1 If yes, please provide these estimates below (in EUR per MW per year; in 2014 prices).**

**Risposta:**

(Non disponibile)

**37 Please explain how the mechanism(s) is(are) financed and its(their) costs recovered.**

**Risposta:**

The mechanism is financed through a charge (€/MWh) that is levied on a monthly basis upon dispatching users (mainly retailers) per energy withdrawal point.

**38 Please specify the period of operation of the existing capacity mechanism(s).**

**Risposta:**

	<b>Start date</b>	<b>End date</b>
<b>Mechanism 1</b>	2004	delivery of capacity auctioned in the capacity market
<b>Mechanism 2</b>		
<b>Mechanism 3</b>		

**39 Please explain what the duration of contracts, certificates or any other form of support is under the mechanism(s) and whether there is any differentiation among different types of capacity providers.**

**Risposta:**

The current mechanism does not foresee any differentiation among providers of eligible capacity. On eligibility criteria, see the answer to question 30.

**40 Can contracts (with the underlying rewards and obligations) concluded as part of the capacity mechanism(s) be traded?**

**Risposta:**

( ) Yes

(X) No

**40.1 If contracts can be traded in one or more capacity mechanisms in your Member State, please explain how the trading works (e.g. any limits on trading, any registration process for traded contracts, etc.).**

**Risposta:**

(Non disponibile)

**41 Please provide a brief summary of the role of the TSO, the regulator and any other public or private body involved in the administration of the capacity mechanism(s).**

**Risposta:**

By means of the legislative decree 379/2003, the general criteria governing the capacity payment have been established by the Government.

The Energy Regulator is in charge of establishing the total amount (euros/year) to be made available to finance the capacity payment.

The TSO is responsible for identifying the critical days, collecting the charges that finance the capacity payment and paying the capacity providers according to the mechanism rules.

**42 Is there anything else you want to add concerning the experience you have with capacity mechanisms in your Member State (separate documents can be uploaded at the very end of this Questionnaire)?**

**Risposta:**

(Non disponibile)

**B. FUTURE MECHANISM(S)**

Please answer the questions in Subsection B only if there is a reasonable expectation that one or more new capacity mechanisms will be introduced in your Member State. Otherwise, please skip this Subsection B.

**43 Is any of the following types of capacity mechanisms planned to be introduced in your Member State (multiple answers possible)?**

**Risposta:**

Tender mechanism

Reserve mechanism

Targeted capacity payment

Central buyer mechanism

De-central obligation mechanism

Capacity payment mechanism

Other

**For each type of capacity mechanism selected in the question above, please provide the data and information requested below. Please separate your answer with subheadings for each capacity mechanism where appropriate.**

**44 Please briefly describe the functioning of the selected capacity mechanism(s).**

**Risposta:**

Italy is going to launch a capacity market where "reliability options" are traded.

It involves central auctions managed by the national TSO (i.e. Terna) aimed at procuring the level of capacity required to ensure generation adequacy. Capacity providers participate in the auctions on a voluntary basis. Such auctions are open to existing and new capacity. In the upcoming future they are intended to be adjusted in order to allow for a market based participation of demand side response ("DSR") as well as of foreign capacity. The assessment on how to implement these goals is still ongoing. In fact, as it is explained in reply to questions 50.4 and 50.5, in order to allow such participation a prior solution of certain matters is mandatory (see infra).

Successful bidders will receive a premium (in €/MW/year, the value thereof results from the auctions) in return for the commitment to deliver capacity 4 years after the auction (so called planning period) over 3 years (so called delivery period).

In exchange for the abovementioned premium, successful bidders, during the delivery period, have the following obligations:

- offer their capacity in the spot markets;
- transfer to the TSO the positive difference between the value of the electricity sold on the spot markets and the value of the strike price, which is equal to the standard variable costs of the technology characterized by the lowest standard fixed costs.

The measure is financed through a charge levied on a monthly basis upon dispatching users (mainly retailers) per energy withdrawal point.

The first auction is planned to take place by the end of 2016 with a delivery period of 4 years starting as of 2021 ("full-functioning phase").

In order to anticipate the positive effects of the capacity market in terms of price signals for capacity, the Energy Regulator, with resolution 95/2015/I/eel, has submitted a proposal to the Minister for

Economic Development to anticipate the entry into operation of the capacity market, with a view to organize the first auctions at the end of 2015 with delivery periods between 2017 and 2020 ("first implementation phase"). More in details, at the end of 2015 Terna should manage 4 consecutive auctions based on a gradually increasing planning period (i.e. 1 year in the first auction to 4 years in the fourth auction). This proposal is under assessment by the Minister.

**45 Please briefly explain the rationale behind the choice of the mechanism(s).**

**Risposta:**

The main objective of the Italian capacity market is to ensure capacity adequacy at the minimum cost for final consumers.

Given the market failures described in reply to question 46.3, the abovementioned objective is achieved by developing a market where the adequacy target is expressed by the TSO through an elastic demand curve for each relevant area (the grid is divided in areas, on the basis of the network constraints). This market promotes competition on a long term perspective by allowing the participation of new entrants and providing efficient long term price signals to new investors. Moreover, the market fosters the coordinated development of generation and transmission network by providing locational signals for capacity.

**46 Please select from the below list the relevant generation adequacy problems underpinning the need for the capacity mechanism(s) (multiple answers possible).**

**Risposta:**

Peak Demand Issue

Seasonal Demand Issue

Capacity Closures

Impact of Intermittent Energy Sources

Regional Shortages / Constraints / Issues

Other generation adequacy problems

**46.1 In case more than one new capacity mechanism is planned to be introduced in your Member State, please specify which of the above selected issues each seeks to address.**

**Risposta:**

(Non disponibile)

**46.2 Please explain what short-term generation adequacy problems, if any, the planned capacity mechanism(s) intend(s) to address, in particular in relation to any market or regulatory failures.**

**Risposta:**

The overall design of the capacity market responds to the need of ensuring generation adequacy by solving structural market failures. Such market is intended to be an integral structural element of the general electricity market design in Italy together with the spot and forward electricity markets.

**46.3 Please explain what medium- and long-term generation adequacy problems, if any, the planned capacity mechanism(s) intend(s) to address, in particular in relation to any market or regulatory failures.**

**Risposta:**

The capacity market aims at addressing both market and regulatory failures. Experience shows that energy only markets (i.e. markets without capacity mechanisms) are unable to efficiently ensure system adequacy due to the following markets failures which are specific to the electricity sector. The first market failure is that adequacy is a public good. Absent a regulatory intervention, the market would not be able to derive autonomously the optimal level of capacity. This is the case as the current technology does not allow to selectively disconnect consumers on the basis of their willingness to pay for adequacy during stress events. As a consequence, the capacity market is necessary in order to ensure the optimal level of capacity.

The second market failure is the so-called “missing money problem” that may occur when some elements of the market design, industry practice or uncertainty concerning regulatory/political interventions limit the incentives to invest in generation capacity. Hence, although the current regulatory framework does not prevent prices from rising up to the value of lost load during scarcity events, investments decisions in generation capacity are affected by the concern that potential State/regulatory interventions or other exogenous factors (e.g. EU legislation supporting RES growth) may limit prices from reaching a sufficiently high level to cover generators capacity costs and to prompt adequate investments. Against this background, the capacity market addresses the aforementioned market failure by giving capacity providers certainty on a part of their revenues. Thus, they exchange the uncertain part of their scarcity rents collected in the energy market for a certain remuneration.

The third market failure is caused by the fact that the “energy only market” is unable to promote a coordinated development of generation and transmission capacity due to the information asymmetry among the various players of the energy sector (i.e. TSO and capacity providers). This market failure exacerbates the boom and bust cycle affecting investments in the energy industry, which is triggered by the lag time between the scarcity or excess price signals coming from the energy only market and the response of investors in new generation capacity. Moreover, the lack of coordination between investments in generation and transmission risks to concentrate investments in generation where they are not mostly needed (e.g. due to the network constraints) at the expense of other areas where they would be necessary. The capacity market provides efficient long term locational signals for capacity that are necessary to smooth out the boom and bust cycle of investments and foster the coordinated development of generation and transmission network.

**47 If already available, please provide the legal basis for the capacity mechanism(s), including a link to the legislation.**

**Risposta:**

The legislative decree 379/2003 provides for the main features of the capacity market and assigns the different responsibilities to the parties involved (mainly, the TSO and the Energy Regulator). The decree foresees in particular that the capacity mechanism must ensure fair competition, transparency, non-discrimination and no market distortion, in order to minimize the costs borne by final consumers. According to the said decree, the Energy Regulator is in charge of developing the main criteria and guidelines on which basis the TSO drafts a proposal on the technical rules and procedures governing the capacity mechanism. Moreover, the Energy Regulator verifies the compliance of the technical rules submitted by Terna with the abovementioned criteria and guidelines.

By mean of resolution ARG/elt 98/11, the criteria and guidelines have been adopted by the Energy Regulator.

The TSO's proposal on the rules applicable to the capacity mechanism was ultimately approved by the Minister for Economic Development (ministerial decree 30th June 2014).

By mean of resolution 95/2015/1/eel the Energy Regulator has recently proposed to the Ministry for Economic Development to anticipate to 2017 the entry into operation of the capacity market (first implementation phase).

Link to the legislation:

1) Legislative Decree 379/2003:

<http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2003;379>

2) Resolution ARG/elt 98/11:

<http://www.autorita.energia.it/it/docs/11/098-11arg.htm>

3) Resolution 482/2012/R/eel:

<http://www.autorita.energia.it/it/docs/12/482-12.htm>



4) Resolution 375/2013/R/eel:  
<http://www.autorita.energia.it/it/docs/13/375-13.htm>

5) Ministerial decree 30th June 2014:  
[http://www.sviluppoeconomico.gov.it/images/stories/normativa/decreto\\_approvazione\\_capacity\\_payment.pdf](http://www.sviluppoeconomico.gov.it/images/stories/normativa/decreto_approvazione_capacity_payment.pdf)

6) Detailed regulation of the Italian capacity market:  
<http://www.terna.it/LinkClick.aspx?fileticket=QbaTHhA%2bfcs%3d&tabid=3373&mid=1486>

7) Resolution 95/2015/I/eel:  
<http://www.autorita.energia.it/it/docs/15/095-15.htm>

**48 Please describe how the total amount of capacity to support through the capacity mechanism(s) will be determined, in particular by explaining how peak demand, imports and any non-eligible capacity were considered for the calculation.**

**Risposta:**

The TSO will not define a capacity target in terms of amount of capacity needed (MW) or by fixing a desirable LOLE (e.g. 3 hours), but it will derive the adequacy target from an elastic demand curve that is function of the Value of Lost Load and the Loss of Load Probability for each level of installed capacity. The demand curve is defined for any relevant area according to which the grid is segmented (areas in turn identified according to transmission constrains) and it represents the willingness to pay of consumers (€) for each level of capacity (MW-year).

This specific feature of the capacity market ensures that an adequate level of security of electricity supply is delivered in a way that is cost-effective for the overall system.

As far as imports and non-eligible capacity are concerned, see the answers to questions 50.2, 50.4 and 50.5.

**49 Please explain the eligibility criteria for participation in the mechanism(s), including any restrictions placed on technologies / companies.**

**Risposta:**

The capacity market allows the participation of both new and existing capacity as long as such capacity is:

- non-intermittent (including non-programmable RES);
- not subject to any type of incentive scheme;
- not subject to dismantling measures approved by the competent authorities;
- equipped with the necessary building permit where new investments in capacity are involved.

**50 Are any of the following true for the mechanism(s) planned to be introduced in your Member State (multiple answers possible)?**

**Risposta:**

Includes a competitive bidding process (auction or tender)

Open to all types of generation capacity (using different types of input-fuels)

Both existing and new generation capacity can participate

Foreign capacity and/or interconnectors can participate

Final consumers can participate through demand response

Storage providers can participate

**50.1 If one or more planned capacity mechanisms will include a competitive bidding process (auction or tender), please describe that(those) process(es). If not, please explain why not and in particular how competition will nevertheless be ensured.**

**Risposta:**

The bidding process is structured as it follows:

- a main capacity auction managed by Terna will be held every year for delivery in 4 years' time over a period of 3 years (delivery period);
- a yearly adjustment auction carried out with the twofold purpose of enabling (i) the capacity providers to re-negotiate the contracted obligations and (ii) Terna to adjust the adequacy target (i.e. the amount capacity to be procured by Terna) in response to the approach of the delivery period. The lead time before the capacity delivery varies from 3 to 1 year and each respective delivery period is equal to 1 year;
- finally, between the aforementioned auctions and the delivery period, participants will be able to further adjust their position through continuous trading in the secondary market.

**50.2 If one or more planned capacity mechanisms will exclude certain types of generation capacity, please explain the rationale behind this choice.**

**Risposta:**

During the full functioning phase, all types of capacity will be allowed to participate in the market with the exception of the capacity subject to incentive scheme (in order to avoid overcompensation). During the first implementation phase, foreign capacity and intermittent capacity are expected to be considered as offers at zero premium in the construction of the supply curve (for further details on the participation of foreign capacity see question 50.4).

**50.3 If both existing and new generation capacity will be allowed to participate in one or more capacity mechanisms in your Member State, please explain to what extent they will be able to do so on equal footing (will there for example be any difference in treatment with respect to their obligations, support duration, remuneration, etc.). If either existing or new generation capacity will be excluded from one or more capacity mechanisms in your Member State, please explain the rationale for this exclusion.**

**Risposta:**

The capacity market is designed in such a way as to allow the participation of both new and existing generation capacity on an equal footing. More specifically, the so called "planning period" – that is the lead time between the allocation process and the point in time when successful bidders must deliver their obligations - has been set equal to 4 years so as to allow investors to build a new generation plant, irrespective of the technology chosen, in time to meet the contracted obligation to deliver capacity.

During the first implementation phase, a full participation of new generation capacity is expected to take place progressively over the consecutive auctions intended to take place at the end of 2015. Thus, although the first planning period that would be equal to 1 year might limit the participation in the capacity market mainly to existing capacity, in subsequent auctions such limitation would be progressively removed due to the gradual prolongation of the planning period up to 4 years. For further details on the remuneration for existing and new capacity see question 52.

**50.4 If foreign capacity and/or interconnectors will be allowed to participate in one or more capacity mechanisms in your Member State, please explain how. If not, please explain why.**

**Risposta:**

In order to allow the participation of foreign capacity in the capacity market since the beginning of the full functioning phase, Terna has been requested by the Energy Regulator to make every attempt to reach an agreement with the neighboring TSOs on the procedural rules governing the participation of foreign capacity. The underlying goal is to enable the foreign capacity to contribute to the national system adequacy on an equal footing with the domestic resources.

As an illustration, the said procedures should set out, inter alia, rules on (i) cross-border imbalances, (ii) system operation at times of simultaneous scarcity, (iii) coordination with cross-border capacity

allocation.

During the first implementation phase the expected contribution from foreign capacity is intended to be factored in the supply curve as an offer equal to zero.

**50.5 If consumers will be allowed to participate in one or more capacity mechanisms in your Member State through demand response, please explain how. If not, please explain why.**

**Risposta:**

The Energy Regulator and Terna are currently working to allow active participation of flexible demand resources in the capacity market since the beginning of the full functioning phase.

Pending the conditions for such participation, throughout the first implementation phase the offer curve designed by Terna is expected to factor in flexible demand resources as bids for a price equal to zero.

**50.6 If storage providers will be allowed to participate in one or more capacity mechanisms in your Member State, please explain how. If not, please explain why.**

**Risposta:**

Pump storage providers can participate in the capacity market. Other storage technologies can participate as far as they comply with the eligibility criteria described in reply to question 49.

**51 Please explain what contractual obligations (e.g. availability / delivery at times of system stress, period of availability etc.) will be imposed on capacity providers selected to participate in the mechanism(s).**

**Risposta:**

Successful bidders have the following rights and obligations:

- they are entitled to receive a premium (€/MW/year) which is the marginal price resulting from the descending clock auctions;
- they are obliged to offer the contracted capacity in the spot markets;
- they are obliged to pay to the TSO the positive difference between the value of the electricity sold on the spot markets and the value of a strike price which is equal to the standard variable costs of the technology with the lowest standard fixed costs.

**51.1 Please explain when (i.e. in what circumstances or under what criteria) the obligations will apply, specifying what triggers such obligations (e.g. type of stress event, market price level reached, etc.).**

**Risposta:**

The obligations described in reply to question 51 will apply for each hour of the delivery period, except during hours of planned maintenance previously agreed with the TSO.

**51.2 Please explain if, and if so, what sanctions / penalties will be imposed on selected participants which do not meet their obligations under the mechanism(s).**

**Risposta:**

According to the reliability option contract, capacity suppliers commit to transfer to the TSO the difference between the electricity spot price and the strike price. As a result, when capacity providers fail to deliver the contracted capacity they will be exposed to a loss that is equal to the difference between the electricity spot price and the strike price.

Indeed, the reliability option places the risk of unavailability upon the capacity providers, who, therefore, will be incentivized to make their capacity available when it is most valuable.

In case capacity providers fail to transfer to Terna the positive difference between the electricity spot price and strike price the following actions are put in place:

- Terna suspends the payment of the monthly premium for each month when failure to comply with the aforementioned obligation took place;

- where the above failure lasts for a period exceeding 2 months (not necessarily consecutive), Terna procures the capacity contracted by the defaulting party in the adjustment auctions or the secondary market;
- the defaulting party is obliged to give back to Terna each installment of the premium received from the first month when failure occurred until the moment the TSO succeeds in procuring the capacity contracted by the defaulting party from a third party.

**52 Please explain how the level of remuneration for capacity providers participating in the mechanism(s) will be determined.**

**Risposta:**

Successful bidders receive a premium (in €/MW/year) which is the marginal price resulting from each descending clock auction in return for the commitment to deliver capacity 4 years after the auction (so called planning period) over 3 years (so called delivery period). Successful bidders shall transfer to the TSO the positive difference between the value of the electricity sold on the spot markets and the value of the strike price, which is equal to standard variable costs of the technology characterized by the lowest fixed costs.

The level of remuneration of existing and new capacity will be subject to a maximum and minimum threshold the value thereof will be determined by the Energy Regulator.

The maximum premium applicable to both new and existing capacity will be based on the fixed costs of a new entrant (i.e. the generation technology with the lowest fixed costs), however the value of the new capacity's maximum premium will exceed the one applicable to the existing capacity.

The maximum premium aims at protecting consumers from the abuse of market power by the participants in the capacity market.

The minimum premium for existing capacity will be lower or equal to the avoidable fixed costs of an efficient CCGT plant. The said premium counteracts the potential market instability caused by the mismatch between the lifespan of a power plant (normally exceeding 20 years) and the delivery period of the contracts awarded in the capacity market (3 years). The minimum premium achieves the same target as the long-term contracts that is mitigating the risk underlying long-term investments in generation capacity by providing capacity providers with a stable revenue stream throughout the life span of the investment.

**53 Please explain how far in advance of the delivery / availability event the contractual obligation / relationship will be concluded with the (different types of) selected capacity providers.**

**Risposta:**

Each main yearly auction will be held 4 years before the beginning of the capacity delivery period, which will last 3 years.

**54 Please provide your best estimates of the remuneration paid under the mechanism(s) for the following future years (in EUR per MW per year; in 2014 prices).**

**Risposta:**

EUR/MW/year	Mechanism type / name	2016	2017	2018	2019	2020
	Mechanism 1	N.A.				
	Mechanism 2					
	Mechanism 3					
	Mechanism 4					
	Mechanism 5					

**55 Has any estimate been made of any reduction in wholesale electricity prices that will result from the capacity mechanism(s)?**

**Risposta:**

Yes

No

**55.1 If yes, please provide these estimates below (in EUR per MW per year; in 2014 prices).**

**Risposta:**

(Non disponibile)

**56 Please explain how the mechanism(s) will be financed and its(their) costs recovered.**

**Risposta:**

The capacity market is financed through a charge levied on a monthly basis upon the dispatching users per energy withdrawal point (mainly retailers) and is collected by Terna. The value of this charge which is set by the Energy Regulator is equal to the difference between the aggregated value of the premiums paid to successful bidders and the money returned to Terna by capacity providers in case of a positive difference between the value of the electricity sold in the spot markets and value of the strike price.

**57 Please specify the planned period of operation of the future capacity mechanism(s).**

**Risposta:**

	Start date	End date
<b>Mechanism 1</b>	2017	There is no planned end date of the capacity market since the latter is intended to be operational for as long as required to meet capacity adequacy needs.
<b>Mechanism 2</b>		
<b>Mechanism 3</b>		

**58 Please explain what the duration of contracts, certificates or any other form of support will be under the mechanism(s) and whether there will be any differentiation among different types of capacity providers.**

**Risposta:**

During the full functioning phase, contracts awarded will foresee a 4 years planning period and 3 years delivery period for both new and existing capacity.

During the first implementation phase, contracts awarded are expected to foresee an increasing planning period from 1 year until 4 years and 1 year delivery period for both new and existing capacity.

**59 Will it be possible to trade contracts (with the underlying rewards and obligations) concluded as part of the capacity mechanism(s)?**

**Risposta:**

Yes

No

**59.1 If it will be possible to trade contracts in one or more future capacity mechanisms in your Member State, please explain how the trading will work (e.g. any limits on trading, any registration process for traded contracts, etc.).**

**Risposta:**

Capacity owners are allowed to re-negotiate the products acquired in previous auctions by means of:

- adjustment auctions;
- trading in the secondary market.

For further details, see reply to question 50.1.

**60 Please provide a brief summary of the role the TSO, the regulator and any other relevant public or private body will play in the administration of the capacity mechanism(s).**

**Risposta:**

The TSO, which is the central counter-party of the competitive bidding process, is responsible for:

- submitting a detailed proposal on the technical rules and procedures applicable to the capacity market on the basis of the criteria defined by the Energy Regulator;
- defining the capacity target through elastic demand curves;
- organizing and managing a guarantee scheme that capacity providers must comply with in order to be eligible for admission to the capacity market;
- calculating the amount of eligible capacity that can be offered in the auctions and the amount of non-eligible capacity that is factored in the definition of the supply curve;
- verifying the respect of the obligations contracted by successful bidders;
- on an annual basis publishing a report on the outcomes of the capacity market.

The Energy Regulator:

- establishes the general criteria and guidelines which must be complied with by the technical rules and procedures governing the capacity market;
- verifies the compliance of the technical rules submitted by Terna with the above general criteria and guidelines;
- sets the minimum and maximum premiums applicable to the level of remuneration paid to successful bidders in the capacity market.

The Minister for Economic Development approves the rules and procedures governing the capacity market.

**61 Is there anything else you want to add concerning the planned capacity mechanism(s) in your Member State (separate documents can be uploaded at the very end of this Questionnaire)?**

**Risposta:**

(Non disponibile)

**VI. DEMAND RESPONSE AND STORAGE**

**62 Which of the following is true for the role of final consumer in the energy market in your Member State (multiple answers possible)?**

**Risposta:**

Final consumers face short-term (i.e. day-ahead and intraday) price signals

Final consumers participate directly in the wholesale market

Final consumers participate in the wholesale market via aggregators

**62.1 Please explain your answer.**

**Risposta:**

Final consumers are allowed to participate in the energy markets (day-ahead and intraday) either directly or through market players that procure electricity on behalf of a number of final consumers. Market rules in principle allow final consumers to respond to energy price signals formed in the day ahead and intraday market. However, the demand elasticity of final customers in the above markets is negligible.

- 63** If possible, please provide an estimate of the maximum potential (in MW) for consumers to reduce demand flexibly in response to a short-term (e.g. 4-hour) spike in wholesale prices.

**Risposta:**

	in MW
Potential overall volume of demand response	N.A.

- 64** Please identify the five largest domestic aggregators of demand response by final consumers and provide best estimates of their aggregated capacity (in MW) in the given years. In the last row of the table please indicate the total amount of demand response by final consumers managed by aggregators in your Member State in those years (in MW).

**Risposta:**

MW	Company name	2012	2013	2014
Aggregator 1	N.A.			
Aggregator 2				
Aggregator 3				
Aggregator 4				
Aggregator 5				
TOTAL volume of demand response aggregated				

- 65** Please identify the five largest consumers participating directly to the energy market through demand response and provide best estimates of their demand response capacity (in MW) in the given years. In the last row of the table please indicate the total volume of demand response capacity offered directly to the market by final consumers in your Member State in those years (in MW).

**Risposta:**

MW	Company name	2012	2013	2014
Consumer 1	N.A.			
Consumer 2				
Consumer 3				

Consumer 4				
Consumer 5				
TOTAL volume of demand response offered to market by final consumers				

66 Are there any initiatives in your Member State to promote the development of demand response other than through (a) capacity mechanism(s)?

Risposta:

Yes

No

66.1 If yes, please briefly describe these initiatives.

Risposta:

The rules for the participation of demand resources in the ancillary services market are in the process of being defined.

67 Please identify the five largest storage operators and provide best estimates of their overall storage capacity (in MW) in the given years. In the last row of the table please indicate the overall total storage capacity in your Member State in those years (in MW).

Risposta:

MW	Company name	2012	2013	2014
Storage operator 1				
Storage operator 2				
Storage operator 3				
Storage operator 4				
Storage operator 5				
TOTAL storage capacity				

*Omissis*



**68 Are there any initiatives in your Member State to promote the development of storage capacity other than through (a) capacity mechanism(s)?**

**Risposta:**

Yes

No

**68.1 If yes, please briefly describe these initiatives.**

**Risposta:**

In 2012 the Energy Regulator started an enquiry on storage systems (other than hydro storage) aimed at testing their effectiveness.

Terna invested in pilot projects on energy storage systems and in 2013 six storage pilot project included in the 2011 National Development Plan, have been selected by the Energy Regulator. In December 2014, two of them became operational.

Moreover, by means of resolutions 574/2014/R/eel and 642/2014/R/eel, the Energy Regulator defined rules on the storage systems' connection to the network.

**69 Is there anything else you want to add concerning demand response or storage in your Member State (separate documents can be uploaded at the very end of this Questionnaire)?**

**Risposta:**

(Non disponibile)

## **VII. EU MARKET DESIGN**

**70 Please explain your answer.**

**Risposta:**

(Non disponibile)

**71 Do you believe that the EU should develop a harmonised methodology for determining generation adequacy?**

**Risposta:**

Yes

No

**71.1 Please explain your answer.**

**Risposta:**

The definition of a harmonized methodology for measuring generation adequacy can help transparency and market integration. However the definition of an adequacy target - in terms of desirable expected duration of blackouts (e.g. 3 hours) - is not a necessary condition for a well-functioning electricity market. This is the case not only for energy only markets, but also for capacity remuneration mechanisms. In fact, the value for the system of an additional MW is equal to the expected marginal rent, measured as the difference between the VOLL and the variable cost of the marginal technology, multiplied by the expected duration of blackouts (see e.g. Joskow and Tirole, 2007, and Stoft, 2002). Therefore, for any level of available capacity, there exists a price that the

system is willing to pay. This price is a function of VOLL, expected duration of blackouts and the variable cost of the marginal technology.

Finally, should an adequacy target be defined, it should remain under the Member States' remit given that under the current EU legal framework they are individually responsible for the generation adequacy of their respective countries.

**72 In your opinion, should rules be developed at EU level to limit as much as possible any distortive impact of capacity remuneration mechanisms on cross-national integration of energy markets?**

**Risposta:**

Yes

No

**72.1 Please explain your answer.**

**Risposta:**

The current EU rules on State aids are able to prevent any potential distortive effect of capacity mechanisms on cross-national integration of energy markets. Moreover, the development of the upcoming network codes (EU-wide rules governing cross-border electricity market transactions and system operation pursuant to Regulation 714/2009) will counteract even further any potential threat to the internal market integration.

**73 Is there anything else you want to add concerning demand response or storage in your Member State (separate documents can be uploaded at the very end of this Questionnaire)?**

**Risposta:**

(Non disponibile)

## **VIII. CONFIDENTIALITY**

**74 Please note that all responses will be treated as non-confidential unless you explicitly indicate otherwise. This means they may be published on the Europa website and your responses and opinions cited in the Commission's sector inquiry report. If you do not agree to your responses (or specific parts of them) being used in this way, please identify your confidential answers in the box below and, for each question thus identified, provide a non-confidential reply that can serve the aforementioned purposes.**

**Risposta:**

Please consider as confidential the information contained in the tables under questions 3, 4, 5, 6, 7, 10, 11, 13, 14, 15, 16, 35 and 67.