Italian Implementation Plan

Annual monitoring report

Index

Introduction

This document is the second annual monitoring report (hereafter "Report 2023") of the Italian Implementation Plan for the requirements set in article 20 of Regulation 2019/943 (hereafter "Electricity Regulation") of 5th June 2019 on the Internal Electricity Market (IEM).

Article 20 states that Member States with identified resource adequacy concerns detect regulatory distortions and market failures that may have caused or contributed to the adequacy concerns. It further provides that Member States with identified electricity resource adequacy concerns develop and publish an annual Implementation Plan containing "a timeline for adopting measures to eliminate any identified regulatory distortions or market failures as a part of the State aid process."

As regards the process, Member States have to submit the plan to the Commission for review. The Commission within four months issues an opinion on whether the planned measures are sufficient to eliminate the regulatory distortions or market failures that were identified as causing or contributing to the resource adequacy concern. The opinion from the European Commission may contain an invitation to the Member States to amend their Implementation Plans. The Article also sets out that the Member State shall monitor the application of their Implementation Plans and shall publish the results of the monitoring in an annual report to be submitted to the Commission. Member State are also requested to continue to adhere to the Implementation Plan after the identified resource adequacy concern has been resolved.

Italy submitted its draft Implementation plan to the Commission on 25th June 2020 pursuant to Article 20(3) of Electricity Regulation.

On 1st July 2020, the Commission put the draft plan into consultation and after reviewing the consultation submissions the Commission adopted its opinion on 22nd October 2020.

Italy has updated the Plan to address each of the issues raised in the Commission's opinion, providing further specifications on its position, and identifying future measures to be taken for each issue raised. The Ministry of economic development (now the Ministry of environment and energy security) published the updated Plan on 4th February 2021.

A first annual monitoring report (hereafter "Report 2022") of the Italian Implementation Plan was published in January 2023.

The Report 2023, following the "*Guidance for Member States on annual Monitoring Reports*", is structured as follows:

- **Part 1:** Overview of the status of planned or already adopted measures to eliminate any identified regulatory distortions or market failures identified under Article 20 of the Electricity Regulation
- **Annex:** Detailed answers to the questionnaire attached to the EC guidance document

1. Overview of the status of planned or already adopted measures

Below is the list of proposed measures and implementation timelines updated from those defined in the Italian Market Reform Plan.

	ID	Measure	Description	Market Reform Plan Implementation timeline	Report 2023 Implementation timeline
Removing price caps	1	Negative prices	Removal of price floor at 0 €/MWh in DA-ID	2021 (DA-ID)	Implemented (in accordance with ARERA Resolution 218/2021)
Shortage pricing function	2	Administrative shortage imbalance prices	Administrative mechanism to apply a price equal to VOLL to imbalances when distributed load-shedding is applied	At study	At study
Enabling self-generation	3	Promote Collective Self-consumption and Renewable Energy Communities	Definition of incentive scheme and technical rules for Collective Self-consumption, Renewable Energy Communities and Energy communities of citizens	Implemented	Technical rules implemented with regard to Collective Self-consumption and Renewable Energy Communities (in accordance with ARERA resolution 318/2020/R/eel, then substituted by resolution 727/2022/R/eel. An Incentive scheme, to comply with the Legislative Decree n.199 of

					8 November 2021 implementing the Directive UE 2018/2001 on the promotion of RES, has been adopted on 23 January 2024. By ARERA resolution 727/2022/R/eel implemented also technical rules for the energy communities of citizens, in compliance with the Legislative Decree n. 210 of 8 November 2021, implementing the EU Directive n. 2019/944 on the internal market for electricity
Enabling energy efficiency	4	Measures planned to achieve national energy efficiency targets	a) White certificates, tax deductions for energy efficiency measures and recovery of the existing building stock, "*Conto Termico*", National Fund for Energy Efficiency b) Urban Sustainable Mobility Plans (PUMS), Energy Redevelopment Programme of the Central Public Administration (PREPAC), National Enterprise Plan 4.0, consumer information and	a) Implemented b) In progress.	a) In place. b) In progress. To be noted that as of 2023, PUMS are mandatory for cities with more than 100 thousands inhabitants.

			training programmes, energy efficiency programme for the Public Administration		
Enabling energy storage and Demand Side Response	5	UVAM (tertiary reserve and balancing) - evolving within the reform of the regulation of the dispatching service	Enabling mixed aggregates of DSR, storage, RES and DG to participate to balancing market and tertiary reserve provision	Implemented	Pilot regulation already in force since 2017. Implemented ARERA's final reform of the regulation of dispatching service that allows to extract flexibility from all resources (decision 345/2023/R/eel) . The final reform will be in force by 2025
	6	UVAM/storage (secondary reserve) - evolving within the reform of the regulation of the dispatching service	Enabling mixed aggregates of DSR, storage, RES and DG and/or stand-alone storage systems to participate to secondary reserve provision (aFRR)	Implemented	Pilot regulation already in force since 2021. Implemented ARERA's final reform of the regulation of dispatching service that allows to extract flexibility from all resources (decision 345/2023/R/eel) . The final reform will be in force by 2025
	7	UPI (primary reserve with storage)- evolving within the reform of the regulation of the dispatching service	Enabling FCR provision by storage units integrated with production units	Pilot project phase concluded	Implemented ARERA's final reform of the regulation of dispatching service that allows to extract flexibility from all resources (decision 345/2023/R/eel) . The final reform will be in force by 2025.

					Furthermore, following the new reference framework for storage set by the mechanism introduced in compliance with art. 18 of the legislative decree 210/21 (see reform n. 21) the UPI aggregation model will be outdated.
	8	Smart meters rollout	Rollout of first (1G) and second (2G) generation of smart meters	Completed roll out for 1G; in progress (2023 – 2024) rollout for 2G smart meters	Implemented: completed roll out for 1G; More than 70% of 2G smart meters installed in late 2023
	9	PUN mechanism revision	Removal of Single National Price (PUN) mechanism	In progress	In progress (Removal of Single National Price provided by art. 13 of Legislative Decree 210/2021 aimed at implementing Directive 2019/944). The Ministry has started the analysis on the impact and on a gradual implementation process. Article 19 of of the decree-law 9 December 2023, n. 181 provides for the removal as of 1st January 2025 on the basis of the conditions set by a ministerial decree.

	10	Vehicle to grid (V2G)	Promotion of the integration of electric vehicles (EVs) into the grid allowing also V2G vehicles to offer dispatching services through charging stations	In progress	Implemented the project ESI E-mobility by Terna. ARERA's consultation document (resolution 540/2023/R/eel) on the implementation of the measures included in Legislative decree 199/21 and Legislative decree 210/21. A first regulation set by the ARERA with the resolution 634/2023/R/eel
Ensuring cost-efficient and market-based procurement of balancing and ancillary services	11	Opening ASM[1] to new resources	Open participation to ASM to DSR, storage, RES and DG plants. Reform of dispatching rules (TIDE reform)	Implemented	See points 5-6
	12	RES and DG (voltage regulation)	Procurement of voltage regulation service from RES and retrofitting of older RES plants	In progress	Implemented pilot project phase in accordance with ARERA Resolution 321/21
European market integration	13	IGCC	European platform for imbalance netting	Implemented	Implemented
	14	SIDC	Single EU cross-zonal Intraday Market	2021	Implemented (in accordance with ARERA Resolution 218/2021)
	15	TERRE	European platform for the exchange of balancing energy from replacement reserves (RR)	Implemented	Implemented (in accordance with ARERA Resolution 344/2020)
	16	MARI	European platform for the exchange of balancing energy from frequency	In progress	In progress (in accordance with ARERA resolution

[1] Ancillary Services Market

			restoration reserves with manual activation (mFRR)		46/2022 go-live by 24/07/2024)
	17	PICASSO	European platform for the exchange of balancing energy from frequency restoration reserves with automatic activation (aFRR)	Implemented	Implemented (in accordance with ARERA resolution 46/2022 go-live on 19/07/2023)
Removing regulated prices	18	Remove “Standard offer” service	Possibility to opt for reference prices based on the wholesale energy market for retail customers under “Standard Offer Service” will be removed	Implemented 2022 – 2024	Implemented As of 2021 the service was terminated for small enterprises; As of April 2023 the service was terminate for micro-enterprises; As of July 2024 the service will be terminated for non-vulnerable households The service is still in place only for vulnerable customers.
Interconnection	19	Interconnection projects	Please refer to paragraphs 4.3.2 and 4.3.3 of the Implementation Plan	In progress - ARERA defined an incentive regulation mechanism for transfer capacity increases at borders and between internal zones	In progress – ARERA resolutions 23/2022 and 473/2023 granted rewards to Terna TSO for actual capacity increases at borders and between internal zones

	20	Interventions to reduce the network congestion between bidding zones	Please refer to paragraph 4.3.4 of the Implementation Plan	In progress	In progress
Development of new storage capacity	21	Procurement of new utility scale storage capacity to better integrate RES generation in the market and to reduce the risk of RES overgeneration .	Introduction of a new market based mechanism based on criteria defined by the ARERA, upon approval of the EU Commission	In progress	Criteria and condition for the provision of storage capacity according to legislative decree 210/21 and the Arera resolution 247/2023 were approved by the EC according to State Aid Guidelines. The definition of the technical rules to start the mechanism is underway

Annex: Answers to questions annexed to the DG Energy's Guidance for Member States on Annual Monitoring Reports

Section 1 – Policy context

1. What are the changes in the policy environment that have taken place since the implementation plan (or last Monitoring Report), e.g. recent updates/developments/ changes/highlights/ targets of the national electricity market (with reference to the final National Energy and climate plan (NECP))?

In January 2020, the EU Commission outlined a new and more ambitious roadmap to achieve climate neutrality by 2050 (Green Deal Communication - COM[2019]640), going beyond the targets already set by the Clean Energy Package (CEP). In June 2021, by approving Regulation (EU) 2021/1119 establishing the framework for achieving climate neutrality, the European Union endorsed the new target of at least 55% reduction in EU greenhouse gas emissions by 2030 compared to 1990 levels (instead of the 40% reduction target already set in the CEP) and the binding objective of climate neutrality in the Union by 2050. In order to deliver these increased emission reductions targets, EU Commission has published the so-called "*Fit for 55"* package (first part in July 2021) that both introduce new legislative initiatives and strengthens existing legislation, including *Renewable Energy Directive* (increasing the renewables target to 40% by 2030).

Pursuant to the Russian-Ukrainian crisis, the EC also published the new 'RePower EU' package in May 2022, in which it proposes measures to achieve independence from Russian fossil fuels and accelerate the energy transition. In view of the primary role of renewables for both purposes, the further raising of the European target for gross final consumption from renewables to 45 per cent is under discussion.

This implies that the already challenging targets for the penetration of renewables in electricity consumption set out in the NECP will have to be reformulated in an even more ambitious way. The update of the NECP is ongoing with a first draft released in 2023. In the document, the Ministry of environment and energy security has estimated that, in order to meet the new targets outlined in the "Fit for 55" package, the increase in photovoltaic (PV) and wind capacity by 2030 compared to 2021 will have to be at least +74 GW (+57 GW PV and +17 GW wind).

Furthermore, in 2021, Italy adopted the PNRR (RRNP - Recovery and Resilience National Plan), that was updated in 2023 in order to consider also RePower resources and to include, among the others, a specific section concerning acceleration of investments for the ecologic transition, in particular, for the energy transition. The PNRR, that provides a relevant financial support framework, is accompanied by a detailed reforms planning, including ones meant to further simplify and streamline authorization procedures, in particular with regard to renewables and hydrogen plants and infrastructures. In order to facilitate the implementation

of the measures of the PNRR, the Italian Ministry of ecological transition (now Ministry of environment and energy security) adopted in 2022 the plan for the ecological transition.

In December 2023, Council and the EU Parliament, following the proposals by the EC, reached a provisional agreement to reform the EU's electricity market design (EMD). The reform aims to make electricity markets less dependent on volatile fossil fuel prices, shield consumers from price spikes, accelerate the deployment of renewable energies and improve consumer protection.

In this respect, it should also be noted that Italy started a deep decarbonization of the electricity system to cope with the challenging climate targets and with the objective of the complete phase out from coal generation between 2026 e 2028. Approximately 2,5 GW of 7 GW of capacity have already been decommissioned.
Of course, future energy scenarios will have to consider also the medium-long term impact of the Russian-Ukrainian and Middle-east crisis.

Following the adoption by the Italian Government of the legislative decree 210/2021, implementing the directive UE 944/2019 on the integrated electricity market, in 2023 Italy continued implementation of the planned measures, also with regard to rules allowing and promoting a more active participation of demand and distributed resources to the electricity markets.

In June 2023 with resolution 247/2023/R/eel ARERA defined criteria and conditions for the provision of utility scale storage capacity according to article 18 of the above Legislative decree 210/21.After taht, Italian Government, following a long pre-notification phase, notified the EU Commission the measure, according to the rules on aid to infrastructures of the new CEEAG. On the 21 of December the European Commission approved the measure, involving about €17.7 billion to support the construction of electricity storage facilities with a joint capacity of more than 9 GW/71 GWh. The scheme will run until 31 December 2033.
In case of selection, the scheme will cover both the investment and operating expenses incurred by electricity storage developers. The selection of beneficiaries will occur through a competitive, transparent, and non-discriminatory bidding process. This initiative is open to all technologies that meet the performance criteria established by TERNA. Presently, qualifying technologies include electrochemical lithium-ion storage and hydro pumped storage plants.
A "time-shifting trading platform" will be implemented to make contracted storage capacity available to market players. This innovative platform will empower renewable energy source (RES) producers to leverage the supported storage assets, enabling them to directly

transition their electricity production from periods of surplus to periods of scarcity. Indeed, in order to effectively cope with high levels of renewable sources and reduce overgeneration occurrences and to be able to reach the energy transition targets, storage systems (Battery Energy Storage System - BESS and hydroelectric pumped plants) are needed.

These storage systems will allow to store the surplus of energy produced by wind and solar power plants during favorable weather conditions, which can then be used when needed.

2. What are the key figures about the national electricity system (e.g. electricity consumption, production, crossborder trade, etc.)?

Below the latest available key figures about the national electricity system (reference year 2022).

Zone	Electricity consumption (TWh)
North Italy	170,387
Central Italy	51,785
South Italy and main Islands	73,681
Total	**295,853**

More details on electricity consumption are available at the following link:

https://download.terna.it/terna/6%20-%20CONSUMI_8db99b83382dbed.pdf

Type of	Net electricity production (TWh)
Wind	20,3043
PV	27,674
Hydro	29,904
Thermoelectric plants	196,7256
Total	**274,608**

More details on Net electricity production are available at the following link: https://download.terna.it/terna/5%20-%20PRODUZIONE_8db99b7e93be883.pdf

Type of	Installed capacity (GW)
Wind	11,86
PV	25,06
Hydro	23,21
Thermoelectric plants	63,21
Total	**123,34**

More details on gross installed capacity are available at the following link:

https://download.terna.it/terna/3%20-%20IMPIANTI%20GENERAZIONE_8db99b7c8a48aab.pdf

Section 2 – Overview of measures provided in the final implementation plan

3. What are the measures provided in the final implementation plan, and were any changes made to those? If yes, why was that change made? Table 1 could be used as a template.

Measure	Changes (No change/Updated/New measure)
	Changes that were made to the measures in comparison to the final implementation plan

Table 1

Removing price caps	
1 - Negative prices	No change. Implemented in accordance with ARERA resolution 218/2021

Shortage pricing function	
2 - Administrative shortage imbalance prices	No change.

Enabling self-generation	
3 - Promote Collective Self-consumption and Renewable Energy Communities	Updated. Italy transposed in the national law the European Directives n. 2019/944 on the internal market for electricity (Legislative Decree n. 210 of 8 November 2021) and n. 2018/2001 on the promotion of RES (Legislative Decree n.199 of 8 November 2021), completing regulatory frameworks on energy communities and mandated the NRA to define detailed regulation. ARERA's decision 727/2022/R/eel of 29th December 2022 finally implemented the regulatory framework.

Enabling energy efficiency	
4 - Measures planned to achieve national energy efficiency targets	To be noted that the PNRR adopted by Italy in 2021 defined a financial framework entailing an important support for acceleration of efficiency improvement investments, between 2021 and 2026. The PNRR is also financing training ad information programmes and investments by public administrations on building efficiency and public lighting

Enabling energy storage and Demand Side Response	
5 - UVAM (tertiary reserve)	Updated. Currently, UVAMs (i.e. generation and/or demand aggregations) can provide (through a dedicated Pilot Project) ancillary services such as congestion resolution, balancing service, replacement reserve, and also aFRR regulation (see next measure). UVAMs submit offers on the ancillary services market and, if selected, they are remunerated pay as bid in €/MWh in relation to the services

	actually provided. They can also participate in specific market procedures to obtain a long term capacity remuneration (annual or monthly auctions for two types of products). In this case, they obtain a €/MW remuneration for the contractual period, with the introduction of a maximum price and the obligation to submit offers on the ancillary services market at predefined times (two intervals of availability are defined, from 15:00 to 17:59 and from 18:00 to 21:59). If selected, they are also remunerated pay as bid in €/MWh in relation to the services actually provided. In addition to the tests performed during the prequalification phase, the regulation has been updated to foresee also reliability tests. Pilot project is ongoing, and will finish at the end of 2024. From 2025, the new regulation of electricity dispatching will be applied (defined with ARERA resolution 345/2023/R/eel), with which ancillary services can be provided by all production units, storages and consumption units that are technically capable, even on an aggregate basis, in compliance with technological neutrality principle. For the supply of the tertiary reserve (mFRR and RR), remuneration based on capacity is no longer foreseen but only based on the service actually provided.
6 - secondary reserve through UVAM/storage	Updated. The pilot project has been started pursuant to ARERA resolution 215/2021/R/eel. From 2025 the new regulation of electricity dispatching will be applied (defined with ARERA resolution 345/2023/R/eel), with which ancillary services can be provided by all production units, storages and consumption units that are technically capable, even on an aggregate basis, in compliance with technological neutrality.
7 - UPI (primary reserve with storage)	The pilot project was helpful to experiment this specific model of service supply by storage units integrated with power plants. In perspective, it will be absorbed as part of the more systematic reform of the electricity dispatching defined with the ARERA resolution 345/2023. Furthermore, with the new reference framework for storage resources set by the new mechanism provided by art. 18 of the legislative decree 210/21 (see reform n. 21 of the table) the UPI aggregation model will evolve.
8 - Smart meters rollout	Following the approval of the 2G smart metering roll out plan for e-distribuzione (the main distributor in Italy), the National Regulatory Authority ARERA approved further 2G smart metering roll out plans related to all other distributors above 100.000 customers, such as Edyna (Resolution n. 259/2020), Unareti (Resolution 278/2020), areti (Resolution 293/2020), Ireti (Resolution 201/2021), Megareti now V-Reti (Resolution 269/2021), SET Distribuzione (Resolution 333/2022), AcegasApsAmga (Resolution 410/2022), Inrete Distribuzione Energia (Resolution 411/2022) Deval (Resolution 397/2023). As from 2023 the total number of approved plans is 10 with around 39.5 million 2G meters expected to be available at network user premises by the end of 2025.
9 - PUN mechanism revision	The removal of Single National Price (PUN) was provided by art. 13 of Legislative Decree 210/2021, aimed at implementing Directive 2019/944 into national legislation. The decree-law n. 181/23 amended the above provision and established the removal of the PUN mechanism as of 2025.

10 -Vehicle to grid (V2G)	Updated. Launch of the Terna project - ESI E-Mobility- to experiment the flexibility between electric vehicles and the charging infrastructure. In November 2023 ARERA consulted, with resolution 540/2023/R/eel, the implementation of measures defined by Legislative decree 199/21 and Legislative decree 210/21 and in December 2023 adopted a firs regulation (634/2023/R/eel).

Ensuring cost-efficient and market-based procurement of balancing and ancillary services	
11 - Opening ASM to new resources	See answers 5 and 6. From 2025 the new regulation of electricity dispatching will be applied (defined with resolution 345/2023/R/eel), with which ancillary services can be provided by all production units, storages and consumption units that are technically capable, even on an aggregate basis, in compliance with technological neutrality. Resolution 345/2023/R/eel is related to all frequency ancillary services and will substitute the previously defined pilot projects.
12 – Voltage regulation through plants connected to the HV grid	No change. The pilot project has been started pursuant to ARERA resolution 321/2021 and it is currently on going

European market integration	
13 – IGCC	No change. Implemented in accordance with ACER Decision 13/2020
14 – SIDC	No change. Implemented in accordance with ARERA resolution 218/2021
15 – TERRE	No change. Implemented in accordance with ARERA resolution 344/2020
16 – MARI	No change. Go-live no later than 24/07/2024 in accordance with ARERA resolution 46/2022
17 - PICASSO	Updated. Implemented with go-live on 19/07/2023. Terna started its participation to the platform in July 2023 in accordance with ARERA resolution 46/2022.

Removing regulated prices	
18 - Remove “Standard offer” service	Updated. Standard offer service is no longer available as of 1st January 2021 for small enterprises. Standard offer service is no longer available as of 1st January 2023 for microenterprises and as 1st July 2024 for non vulnerable households.

Interconnection	
19 - Interconnection projects	Updated. In 2023 there was the commissioning of the following interconnection projects mentioned within the Italian Implementation Plan (section 4.3): - The HVDC between Piossasco (IT) and Grand’lle (FR) – first pole (600 MW) in November 2022 and the second one (600 MW) in August 2023

	- The 220 kV line – between Glorenza (IT) – Nauders (AT) in December 2023 with a transmission capacity of 300 MW. Furthermore, in March 2023, Terna published the 2023 Development Plan for the national electricity transmission grid where a complete overview of the progress of interconnection projects is shown.
20 - Interventions to reduce the network congestion between bidding zones	Updated. With reference to the interventions planned to reduce the network congestion, mentioned in the Implementation plan, the 380 kV "Bisaccia-Deliceto" electricity line was completed in April 2022, allowing to increase the transmission capacity up to 150 MW between Sud and CSud bidding zones. In addition in both 2022 and 2023 Terna continued to carry out the implementation of capital-light technological solutions; more specifically, such interventions involved the Italian northern border and the sections between South and Central-South and Calabria and Sicily.

Development of new storage capacity	
21 - Procurement and allocation of new utility scale storage capacity to better integrate RES generation in the market and to reduce the risk of RES overgeneration	In 2023, as provided by art. 18 of the legislative decree n. 210/21, a measure to procure new utility scale storage capacity on the basis of a maked based mechanism was notified to the EC that adopted the positive decision in December 2023. Following the EC decision adopted in December 2023, Terna is now developping the implementing regulation.

4. What is the status of the measures listed in the final implementation plan? Which actions were taken? Please refer to relevant national regulations, legislation or other documentation describing the concrete measures taken so far. Table 2 can be used as a template.

   See previous answers.

5. Have there been any updates regarding the resource adequacy level in your country? If yes, how did the measures impact the adequacy concern? Which reforms, in particular, contributed to alleviate those adequacy concerns? Table 2 can be used as a template.

   The measures implemented among those indicated in the Implementation Plan and the capacity contracted in the 2022, 2023 and 2024 auctions of the Capacity Market will contribute to the adequacy of the Italian electricity system in the coming years.

   In the coming months, it will be then necessary to monitor the work progress up to the entry into operation of these new power plants.

   However, during 2022, potential adequacy risks have been observed due to extreme meteorological events such as draught and high temperatures. Indeed, the draught detected in 2022 has determined, in addition to a significant reduction in hydroelectric production, an unavailability rate of thermal power plants much higher than the one registered in the previous years. The latter situation was largely due to the scarcity of water available for the plant's

cooling system which – in consequence – caused an overall reduction of the national system adequacy margins during the summer period.

With reference to the first semester of the year 2023, the hydraulic contributions observed have been in line with the ones in 2022 (if not even lower) and – overall – below to the historical minimums. Such event appeared to showcase an unavailability rate of the thermal power plants in line with the one registered in 2022. Therefore, we cannot exclude that adequacy issues related to meteorological events may happen again in the coming years.

Removing price limits (price caps and floors or bidding restrictions) is fundamental to allow the market to provide price signals necessary for generation investments. However, whilst allowing the formation of negative clearing prices has positive effects in terms of better signals for the flexibility of the electricity system, it could also impact on the volatility of prices and then increase the market risks for investors.

Opening the ASM to new resources (such as non-programmable renewable sources, distributed energy resources and demand side response and storage systems, including electric car batteries) also through aggregators allowed more resources to be available to manage the system.

Grid development enabled an increase in the volume of energy trade at more competitive prices by increasing competition in energy markets and at the same time ensuring security of supply through additional capacity. The reduction of network congestion, between and within the bidding zones, also thanks to the implementation of new technologies (such as Dynamic Thermal Rating – DTR) improved the use of generation resources in order to better cover needs and to increase the use of more competitive and efficient production plants, with positive impacts on competition. In addition, these solutions reduced the level of CO_2 emissions by minimizing the curtailment of RES production.

6. Which actions are planned when looking forward, as from the last report? We recommend covering the topics of the Market Reform Plan, including the same sections i) general wholesale market conditions, ii) balancing markets and ancillary services, iii) demand side response, iv) retail markets: regulated prices, v) interconnections and internal grid capacity, etc. Please use the same chronology as used in the Market Reform Plan. Table 2 can be used as a template.

See previous answers.

Topic/Measure	Changes	Status[2]	Action taken	Impact on adequacy concern	2020	2021
Introduction of a shortage price function	NO	On time	-	None/mld/large	Online publications of…	

Table 2

7. Are any delays expected in implementing the measures? What are the reasons for the delay, and which measures will be taken to address this?

See previous answers.

[2] **On-time:** the measure is (or is being) implemented according to the initial timeline;
In advance: the measure has been implemented already (or is being implemented) ahead of the timeline foreseen in the Market Reform Plan;
Weak delay: the measure is being implemented but it is lagging behind the timeline;
Strong delay: the measure should have been implemented already but no action has been taken yet;
Not applicable (n/a): for measures of which the implementation is planned to start in the future and no action has been taken so far.