



Brussels, 29.11.2021
C(2021) 8532 final

COMMISSION OPINION

of 29.11.2021

**pursuant to Article 20(5) of Regulation (EU) No 2019/943 on the implementation plan of
Greece**

(ONLY THE GREEK VERSION IS AUTHENTIC)

COMMISSION OPINION

of 29.11.2021

pursuant to Article 20(5) of Regulation (EU) No 2019/943 on the implementation plan of Greece

(ONLY THE GREEK VERSION IS AUTHENTIC)

I. PROCEDURE

On 29 July 2021, the Commission received an implementation plan from Greece prepared pursuant to Article 20(3) of Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity¹ ('Regulation (EU) 2019/943'). Article 20(3) of the Regulation (EU) 2019/943 requires Member States with adequacy concerns to set out measures and a timeline to eliminate regulatory distortions or market failures on their markets in an implementation plan.

As set out in the relevant Commission Guidance², this requirement reflects the recognition that markets, if well designed, free of regulatory distortions and sufficiently connected to the main EU electricity networks, can provide the right amount and type of capacity to meet demand. Capacity mechanisms should only be introduced to address residual concerns, i.e. problems or circumstances which cannot be solely resolved by market reforms. Once the residual concerns have been eliminated and market reforms have started to work, adequacy problems are expected to decrease and ultimately disappear. To enable this, regulatory measures to eliminate distortions and to reform markets need to be effective and credible for investors and all other market participants.

Pursuant to Article 20 (5) of the Regulation (EU) 2019/943, the Commission is required to issue an opinion on whether the proposed measures and the timeline for their adoption are sufficient to eliminate the regulatory distortions or market failures.

II. DESCRIPTION OF THE IMPLEMENTATION PLAN

In its implementation plan, the Greek authorities give a general presentation of the national electricity system and market, explain why they consider that a capacity mechanism is needed and outline the measures that they intend to implement under Article 20(3) of the Regulation (EU) 2019/943. In the following, the Commission does not take a position on the alleged

¹ Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity, OJ L 158, 14.6.2019, p. 54–124

² https://ec.europa.eu/energy/sites/default/files/market_reform_plan_guidance_final.pdf

necessity for a capacity mechanism³ but provides an assessment of those measures that directly relate to the required actions in Article 20 (3) of the Regulation (EU) 2019/943.

In its implementation plan, Greece sets out in particular the following:

1. General wholesale market conditions

Electricity system

The Greek authorities provide a description of the electricity system in Greece and the ongoing changes in the generation mix, namely the progressive phase-out of lignite and the expected increase of renewable electricity. While the National Energy and Climate Plan ('NECP') has endorsed the phase-out of all existing lignite plants by 2023 and a total phase-out by 2028, Greece plans to complete the total phase-out of lignite in 2024. The Greek authorities mention that Public Power Corporation ('PPC'), owner of all lignite units, has officially announced the early retirement of all the lignite plants currently in operation (app. 2256 MW) end of August 2021 due to economic losses. At the time of adoption of this opinion, the closure of these plants is not yet confirmed⁴. Besides, the generation of electricity from renewable sources is expected to increase sharply: the Greek power system will achieve an electricity share from renewable sources above 60 or 65% by 2030, in conformity with the targets set in the NECP.

This evolution may bring two main issues stressing the electricity system: the adequacy (to meet the peak load) and flexibility (to meet the upward and downward ramping needs). The Greek authorities consider a severe threat to the security of supply and the reliability of the power system from September 2021 onwards, due to the early lignite retirement. The Greek authorities envisage three measures to meet the adequacy issue and enable further investments in the market: a strategic reserve (to guarantee the security of supply until the beginning of 2023, when the new power plants under construction will operate), a shortage pricing function, and a capacity mechanism afterwards. For the flexibility issue, the plan points out the necessity to deploy storage, demand response (See section II.4), as well as gas-based fast ramping spinning generation.

General wholesale market conditions

Since 1 November 2020, a new electricity market design is established in Greece for wholesale markets, which replaced the day-ahead mandatory pool system in operation since 2005. It consists of four separate markets: a forward market, a day-ahead, an intraday and a balancing electricity market.

³ The assessment of the necessity of such a mechanism is outside the scope of this opinion and rather relates to the provisions in Chapter IV of the Electricity Regulation concerning adequacy assessment.

⁴ According to IPTO figures, it seems the lignite plants remain in operation : for September 2021 lignite stood for 9% of overall electricity production with 358GWh
(<https://www.admie.gr/en/market/reports/monthly-energy-balance>)

The liberalisation of the Greek market has been a long process. Greece adopted regulatory measures⁵ to reduce the dominant market share of the Greek vertically integrated company PPC and facilitate market penetration of alternative electricity suppliers. Through the so-called NOME auctions⁶, terminated in 2019, electricity forward products with physical delivery were sold by PPC to eligible electricity suppliers. The Greek authorities consider that there is no scope to continue such a specific energy release program.

In the context of the antitrust case AT.38700 (Greek lignite and electricity markets), Greece proposed a remedy pursuant to Article 106 of the Treaty on the Functioning of the European Union ('TFEU'). The proposed remedy had to address the competition concerns as expressed by the Commission in its decision of 5 March 2008 (C(2008) 824), taking into account the judgments of the European Court of Justice in relation to the Commission decisions of 5 March 2008 (C(2008) 824) and of 4 August 2009 (C(2009) 6244), considering that the previous remedy approved by the Commission in its decision of 17 April 2018 (C(2018) 21/04) has not been implemented. The progress of this case has been monitored in the context of the enhanced surveillance framework⁷ applicable to Greece. On 10 September 2021, the Commission has adopted a decision to make the proposed remedies binding upon Greece.

The accepted remedy⁸ introduces a measure whereby PPC will be selling electricity volumes corresponding to agreed percentages of its lignite-generated output in the same quarter of the preceding year. In particular, PPC will be selling quarterly futures, which will be traded through the forward market, on the platforms operated by HEnEx or EEX. PPC will not be obliged to supply any of the volumes under these products with lignite-fired power generation.

Renewables

Given the trend in the Greek electricity mix (phase-out of lignite and development of renewables), Greece considers that market competition will increasingly depend on access to electricity from renewables. Therefore, the Greek authorities plan to set a legal framework and an organized market platform to facilitate bilateral Power Purchasing Agreements exclusively for renewable electricity ('RES-PPA') with the possible inclusion of storage facilities linked to renewables or contracted for complementing renewables. These PPAs could be contracts with physical delivery or purely financial.

Greek authorities plan the reform in 2022 and consider it would enable all types of consumers to have access to renewables in their portfolio, leading to better competition in the market (including a reduction of market concentration in the supply of industrial sector). The reform

⁵ A number of these measures were also commitments undertaken by Greece as part of the economic adjustment programmes from which Greece exited in August 2018 (https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/financial-assistance-eu/which-eu-countries-have-received-assistance/financial-assistance-greece_en#first-programme-for-greece)

⁶ Law 4336/2015 and Law 4389/2016

⁷ [Enhanced Surveillance Report – Greece, September 2021](#), page 11.

⁸ https://ec.europa.eu/commission/presscorner/detail/en/ip_21_4661

would entail the creation of an open and non-mandatory trading platform, created by the State and supported by the renewable operator DAPEEP (notably for the Guarantees of Origins), which will and co-exist with the bilateral and forward markets. Greece notes that measures could encourage other energy exchanges to develop financial products based on the organised market for RES PPAs, allowing secondary trading.

Moreover, Greece envisages a support scheme to deliver specific conditions for electro-intensive industries (a special state-owned guarantee fund and a financial compensation proportional to the volume of saved CO₂ emissions).

Forward market

The Greek forward market offers the possibility for physical or financial trades through standard products or over the counter bilateral contracts. EEX and HEnEX propose trading platforms.

As the liquidity has been in general low, Greece proposes the following:

- The market operator should enhance the trading platform and propose new hedging products dedicated to hedging risks from day-ahead and balancing markets.
- The remedy in the context of the antitrust case AT.38700 is expected to increase the liquidity in the forward market, thus supporting further competition.
- The forthcoming RES-PPA trading will constitute a specialised forward market that will operate under a different trading platform.

Day-ahead Market

The Greek day-ahead market is an hourly-organised market, its total transactions representing 80% of all electricity transactions.

The Greek day-ahead market is integrated into the pan-European market coupling via the Greek-Italian border and the Greek-Bulgarian border. Projects with the non-EU Member States in the South-East Europe region are ongoing, in particular a day-ahead coupling between Greece and Albania (tentative roadmap: 2024) and between Greece and North Macedonia (tentative roadmap: 2023).

Wholesale electricity prices are determined based on demand and supply. The Greek authorities indicate that there is neither a maximum nor a minimum limit to the wholesale electricity day-ahead price in Greece, in line with Article 10 of the Regulation (EU) 2019/943. They note that the only limits applied are the harmonised maximum and minimum clearing prices for single day-ahead markets, in line with Article 41(1) of Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and

congestion management⁹ ('Commission Regulation (EU) 2015/1222') and the related ACER decision¹⁰.

In order to preserve liquidity in day-ahead and avoiding abuse of dominant positions by one or more vertically integrated companies, a transitional measure restricts the electricity trades to maximum 20% of bilateral forward contracts with physical delivery for any supplier with a market share above 4%. The national regulatory Authority ('RAE') decides annually on these caps, based on the latest development of the day-ahead market.

The Greek authorities would consider lifting these measures with the upcoming phase-out of lignite plants, carefully considering the possible adverse effects on market competition and the survival of small retailers.

As an additional measure considered by Greece, allowing complex forms of bids in the day-ahead market could facilitate the market participants to address both the day-ahead and the balancing markets more cost-effectively, thus minimising exposure to high balancing energy deviations. However, this measure depends on the pan-European market coupling algorithm and cannot be adopted by Greece unilaterally.

Finally, the potential implementation of portfolio bidding (replacing the current unit-bidding scheme) will be assessed, carefully considering all impacts on market development.

Intraday Market

Three local intraday auctions are established in Greece and remunerated at marginal prices. The intraday market is not yet coupled with the neighbouring markets and the current liquidity is low.

In terms of regional integration, the Greek authorities commit to the following measures:

- Complementary regional intraday auctions with Italy ('CRIDAs') were launched on 21 September 2021, which will simultaneously phase out the local intraday auctions.
- Greece will join the Single Intraday Coupling through the XBID platform as part of the third wave planned in mid 2022.
- Explicit allocation of intraday capacity with the non-EU Greek borders (Albania, North Macedonia, and Turkey) will be launched during 2022.

Regarding the wholesale electricity intraday price, the maximum and minimum limits applied are set today at +3 000€/MWh and -500 €/MWh in the local intraday auctions. The establishment of CRIDAs with Italy planned in September 2021 should have set these price limits at the harmonised maximum and minimum clearing prices for single intraday markets

⁹ Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management, 25.7.2015, OJ, L 197, p.24

¹⁰ ACER's Decision No 4/2017 on the nominated electricity market operator's proposal for harmonised maximum and minimum clearing prices for single day-ahead coupling

(+9 999 €/MWh and -9 999 €/MWh), in line with the Article 54(1) of Commission Regulation (EU) 2015/1222 and the related ACER decision¹¹.

Measures listed above on regional integration, as well as measures to ensure renewables full balancing responsibility and participation of demand side and storage in the balancing markets (see section 4) are expected to have a positive effect on intraday liquidity.

Greece notes that traders' participation in the intraday market, currently not allowed under the local intraday auctions, will be possible with the establishment of explicit auctions with non-EU borders.

Monitoring

Furthermore, RAE is currently designing a new market monitoring and surveillance mechanism to monitor market power in the wholesale electricity market and retail market. This will be effective by the end 2021.

2. Balancing markets

The Greek balancing mechanism is a central-dispatch system in which the transmission system operator ('TSO') runs after the day-ahead market clearing an integrated scheduling process to derive the generation schedule for real-time operation. The unit commitment program includes the reserves and the technical constraints and therefore produces a different generation schedule than the day-ahead market.

The Greek TSO ('IPTO') defines the amount of reserves needed for each product (namely Frequency Containment Reserve 'FCR', automated Frequency Replacement Reserve 'aFRR' and manual Frequency Replacement Reserve 'mFRR'). Participants submit bids (in capacity and energy) for their total available capacity through an integrated scheduling process, which operates 3 times per day and generates schedules according to which balancing energy is activated.

The balancing capacity is paid as bid, with a price positive or equal to zero, with a maximum bid price of 3 000 €/MWh.

The balancing energy is paid as a bid for aFRR and at the marginal price for mFRR. Prices of balancing energy bids are in theory limited by a price floor of -4 240€/MWh and a price cap of 4 240€/MWh. After observing a significant increase in marginal prices for balancing energy, RAE has decided in January 2021¹² to impose a provisional bidding floor of zero €/MWh for downward balancing energy, in order to reduce the balancing energy costs and mitigate market power in redispatching actions.

¹¹ ACER's Decision No 5/2017 on the nominated electricity market operator's proposal for harmonised maximum and minimum clearing prices for single intraday coupling

¹² RAE's decision No 54/2021

The plan explains that significant discrepancies between the schedules from the day-ahead market and the ones from the integrated scheduling process are observed, and significant volumes of balancing energy are activated.

The imbalance is settled based on a 15 minutes timestamp, with a single pricing system that uses a weighted average price of activated balancing energy bids. Balancing energy bids accepted for non-energy balancing purposes (e.g. re-dispatching or for voltage control) are taken into account in the imbalance prices.

Given the above, the Greek authorities commit to:

- ensure by December 2021 that bids accepted for non-energy balancing purposes (e.g. re-dispatching or for voltage control) are properly flagged in order to distinguish them from actions counting towards the imbalance price, in line with Article 13(2) of the Regulation (EU) 2019/943. The settlement of redispatching volumes is planned for March 2022;
- regarding price limitations:
 - lift the price cap for balancing capacity to 9 999 EUR/MW/hour from the CRIDAs go-live (confirmed on 22 September 2021);
 - increase the balancing energy price limits to [-9 999, +9 999] €/MWh from the CRIDAs go-live (confirmed on 22 September 2021), and to [-99 999, +99 999] €/MWh when Greece joins MARI or PICASSO platforms;
 - assess the removal of the provisional balancing energy price floor of 0 €/MWh as soon as the reinforcement works are completed in the Peloponnese area and the balancing bids used for resdispatching are properly flagged and will not influence balancing energy prices anymore. RAE's decision is planned for December 2021;
- assess market design improvements to address the significant discrepancies between the schedules from the day-ahead market and schedules from the integrated scheduling process. Among the potential measure to adopt, the following are proposed:
 - establishment of balancing capacity procurement in day-ahead via separate auctions;
 - analysis of potential benefits of portfolio bidding and the introduction of complex bidding by market participants in day-ahead and intraday markets;
 - assessment of a potential implementation of a self-dispatch model.

Further, the Greek authorities commit to allowing participation of more technologies and thus, market participants in the balancing market as follows:

- ensure the required regulatory and technical framework to ensure participation in the balancing market of demand response first through mFRR products by February 2022 and renewables (dispatchable and portfolios) by March 2022;
- implement full balancing responsibility for renewables under feed-in premium by March 2022; and

- set a legal framework and implement technical requirements to enable participation of storage in the balancing market by the end of 2022.

Shortage pricing function

According to Article 20(3) of the Regulation (EU) 2019/943, Member States must consider a shortage pricing function for balancing energy in their implementation plan.

The Greek authorities commit to assessing the application of a shortage price function by the first quarter of 2022; the shortage pricing function is foreseen to coexist with an envisaged capacity remuneration mechanism.

Regional integration

The plan explains that the Greek TSO IPTO has requested a derogation from the provisions of Articles 20(6) and 21(6) of Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing ('Commission Regulation (EU) 2017/2195') concerning the implementation of the European platform for the exchange of balancing energy from frequency restoration reserves with manual activation (MARI), and the implementation of the European platform for the exchange of balancing energy from frequency restoration reserves with automatic activation (PICASSO) according to Articles 19, 20, 21 and 22 of Commission Regulation (EU) 2017/2195. The requested derogation period is until 24 July 2024.

In this context, the Greek authorities commit to the adaptation of infrastructure, procedures and regulatory framework to adapt to standard balancing products and enable the connection to the European platforms MARI and PICASSO.

The connection of IPTO to the European Platforms PICASSO and MARI is targeted for July 2024.

3. Interconnection capacity and cross-border trade

The yearly net cross-border exchanges indicate that Greece is likely to remain a net importer but at significantly lower amounts than in the recent past. In high renewables generation periods, Greece is expected to export.

The plan explains that the synchronously interconnected neighbouring control area includes Bulgaria, Italy (through DC cable), Albania, North Macedonia and Turkey. According to the NECP under implementation, Greece already achieved an interconnection level of 13.9% in 2020, against a target for 10% as provided in Article 4(d) of Regulation (EU) 2018/1999. Greece expects an interconnection level exceeding 20% in 2025, above the requirement of 15% for 2030. Greece does not expect structural congestions to limit cross-border exchanges in the decade.

Pursuant to Article 16(8) of the Regulation (EU) 2019/943, transmission system operators have an obligation to make at least 70 % of cross-border capacity available for trade.

According to Article 16(9) of the Regulation (EU) 2019/943, RAE has granted¹³ to IPTO a derogation for the year 2020; IPTO has requested a derogation for the year 2021.

Greece expects to meet the target in 2022, with an available net transfer capacity with Bulgaria increased to 850MW from 2021 onwards and above 1 650 MW from 2023 onwards. This is considered to be in line with the threshold of 70%, provided that a detailed calculation involving non-EU TSOs (Albania, North-Macedonia, Serbia and Turkey) is agreed on and in place. The net available capacity with Italy is set at 500 MW, which represents 100% of the DC interconnection's capacity.

The day-ahead common capacity calculation methodology applying the coordinated net transmission capacity approach in the South-East Europe capacity calculation region has just started to be implemented in July 2021. Greece indicates that further discussions on a flow-based approach have not started yet.

The Greek authorities detail the following interconnection projects which are under consideration:

- additional interconnection to Bulgaria by end 2022;
- additional interconnection to Italy;
- upgrade of the interconnection of Greece- North Macedonia;
- additional interconnection to Turkey;
- additional interconnection to Albania.

Regarding the interconnection of Greek islands to the interconnected system of the mainland, the following projects are under development intending to achieve complete interconnection before 2030:

- interconnection of Crete, partial in 2021, full in 2023;
- interconnection of Skiathos by the end of 2022;
- interconnection of West and South Cyclades in 2024;
- interconnection of Dodecanese by 2028;
- interconnection of Northeast Aegean Islands by 2029.

Complementary to these developments, the Greek authorities commit to the reinforcement and expansion of the transmission system (in particular to solve congestion issues in Peloponnese and high voltage situations). Under the Greek Recovery and Resilience Plan, there is an investment related expected to enhancing electricity interconnections between the islands and the mainland¹⁴.

¹³ RAE Decision 1416/2020 (Government Gazette B'4954/10.11.2020)

¹⁴ Investment: interventions for the electricity interconnection of islands and the upgrading of the electricity network (measure ID 16870); Commission Staff Working Document: Analysis of the recovery and resilience plan of Greece, SWD(2021)155 final.

4. Demand side response, storage, self-consumption and energy efficiency

Demand-side response

The current market design allows the submission by market participants of price elastic demand bids in the day-ahead and intraday markets. However, such bids are probably not observed because dynamic pricing schemes are not applied yet.

The participation of demand-side response in the Greek balancing market is planned to be introduced at a first stage with mFRR products. The Greek authorities commit to establishing the needed infrastructure (regulatory framework, IT systems and adequate metering), allowing such participation by February 2022. The reform for demand-side response participation in the balancing market will include load representatives and aggregators with load portfolios or renewables portfolios (and later storage, depending on pending measures). The introduction of demand-side response is also part of the Greek Recovery and Resilience Plan and part of a reform measure containing market reforms in the energy sector¹⁵.

For the participation of demand response in the day-ahead and intraday markets, the plan identifies pending issues like the finalisation of a demand aggregator framework (regulatory issues, licensing, metering requirements, competencies and commitments) and an update of the existing baseline methodology.

Concerning the deployment of smart metering, which is meant to also support the delivery of dynamic prices and demand response, the distribution system operator ('HEDNO') is currently proceeding with a large-scale implementation programme, starting with the drafting of the respective technical specifications. The programme, estimated at €829 million, involves the installation of 7.5 million smart meters for electricity to low voltage customers, as well as their integration into a telemetry centre that is able to accommodate up to 8 million metering points. During the first phase from 2022 to 2025, the investment expected to cover the procurement and installation of meters is proposed to be financed – in the form of an interest-free loan for 50% (€144 million) of eligible costs – by a measure in the Greek Recovery and Resilience Plan; a Loan Facility¹⁶ that targets amongst others climate-related activities related to a selected number of intervention fields, including smart energy systems. The remaining costs for the whole deployment programme are to be covered by the HEDNO investment plan.

Implicit demand response and dynamic price contracts are currently not applied.

¹⁵ Reform: Streamline the efficient operation of the new electricity market model and the development of new RES plants to reach NECP targets through the implementation of monitoring mechanism, the participation of demand response and an extensive reform of the licensing procedure for new RES (measure 16860); Commission Staff Working Document: Analysis of the recovery and resilience plan of Greece, SWD(2021)155 final.

¹⁶ Investment: Loan Facility (measure ID 16980); Commission Staff Working Document: Analysis of the recovery and resilience plan of Greece, SWD(2021)155 final.

The plans contain a reform aiming to develop a cooperation platform for transmission and distribution system operators by July 2024, facilitating coordination of issues related to congestion management and system balancing.

Storage

The plan finds that storage development is of strategic importance and foresees significant investment in pumped hydro storage and batteries. Around 10GW of storage licenses have been issued. Pumped hydro storage units already participate in day-ahead, intraday and balancing markets.

Mainly driven by batteries development, the regulatory framework for electricity storage participation in the Greek market is currently under development to facilitate licensing, connection and operation of storage technologies. The adapted regulatory framework, the technical upgrade of the systems and procedures to allow storage participation in the wholesale markets are planned to be completed by the end of 2022.

Besides, also under the Greek Recovery and Resilience Plan, a specific investment support scheme is foreseen to allow the development of new power storage facilities through a tender process. This includes supporting the development of a large pumped hydro storage facility with a total capacity of maximum 1380 MW to be in operation by end 2025¹⁷.

5. Retail markets and regulated prices

The retail market in Greece is open to competition. Independent suppliers (26 in 2020) hold 36% of the retail market (without counting the high voltage industry where the incumbent actor PPC holds 96% of the market share); they are mainly active in the medium voltage level with 61% of the market share, and less developed in low voltage households with a share of 21%. Greece considers the number of customers switching suppliers as significant and increasing, with a share of 7,8% of all customers connected to low and medium voltage in 2020.

In accordance with Article 5 of Directive (EU) 2019/944 of 5 June 2019 on common rules for the internal market for electricity¹⁸ ('Directive (EU) 2019/944'), suppliers shall be free to determine the prices at which they supply electricity to customers. Public interventions in the price setting for electricity to energy poor or vulnerable household customers can be applied by Member States only under certain conditions. The plan explains that a social tariff scheme applies to protect vulnerable consumers from energy poverty, which is limited to households and does not constitute a regulated price under Article 5 of Directive (EU) 2019/944. A universal service scheme, introduced a decade ago, acts as a last resort to provide electricity to

¹⁷ Support of the installation of storage systems to enhance RES penetration, Sub-measure 16926, Commission Staff Working Document: Analysis of the recovery and resilience plan of Greece, SWD(2021)155 final.

¹⁸ Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU, OJ L 158, 14.6.2019, p. 125–199

consumers shunned by suppliers, and applies to households and small commercial customers (connected to low voltage and up to 25 kV network).

Given the trend in the Greek electricity mix (phase-out of lignite and development of renewables), Greece considers that market competition will increasingly depend on access to electricity from renewables. Therefore, the Greek authorities plan to facilitate bilateral Power Purchasing Agreements exclusively for renewable electricity ('RES-PPA'). This is detailed in section II.1.

III. COMMENTS

As mentioned above, in this Opinion the Commission gives its views on the proposed measures in the implementation plan. As a general remark, the Commission notes that measures which essentially confirm that Greece complies or will comply with EU electricity market design rules will obviously contribute to addressing market failures that are at the origin of any adequacy concerns. However, much will depend on how and the measures are implemented and whether they are implemented in a timely manner.

It is particularly important to implement measures that ensure that market signals are not distorted and that prices adequately reflect scarcity in order to drive investments to achieve security of supply.

1. General wholesale market conditions

Wholesale market conditions

The Commission welcomes the profound reforms recently undertaken by Greece since November 2020 to implement the target model for wholesale markets.

The Commission takes note of Greece's commitments in the antitrust case AT.38700 to address the inequality of opportunity regarding PPC's exclusive access to lignite-fired electricity generation. The progress of this case has been monitored in the context of the enhanced surveillance framework applicable to Greece¹⁹. The Commission further notes that the remedies will enhance the ability of PPC's competitors to source wholesale electricity on the forward market and hedge against price volatility. In turn, this should increase the ability of other retailers to compete with PPC.

Renewables

The Commission takes note of the proposed reform to facilitate RES-PPAs.

Regarding the public intervention in creating a dedicated trading platform, the Commission recommends to further assess if and how current forward trading platforms could be used in

¹⁹ See [Enhanced Surveillance Report for Greece](#), September 2021, page 11.

this respect. In particular, the effect on liquidity in the forward and day-ahead market should be monitored, as well as the development of financial products based on the RES-PPAs market.

The design of PPAs should respond to actual market needs, and the Commission invites Greece to consider market participants view when implementing the reform.

As part of the proposed measure on market monitoring, the Commission invites Greece to monitor the effect on market competition and market concentration in the different sectors, paying specific attention to the positions of the incumbent (PPC) and other vertically integrated companies in the RES-PPAs market, and taking measures to avoid abuses of dominant position if necessary.

Regarding state financial support aspects, Greece should follow the EU State Aid rules, with particular attention to the definition of energy-intensive eligible industry and the guarantee of non-discriminatory aspects for electricity retailers.

Forward market

The Commission notes the rather low liquidity in the forward market and recalls the importance of liquid forward markets, particularly to hedge against price volatility and get an indication on trends of electricity wholesale prices. Increasing forward liquidity would enhance the risk hedging capabilities of all market participants, fostering competition.

The Commission notes the proposed measures concerning the forward trading platform enhancement and customised products development, and invites Greece to monitor the development of hedging tools for market participants and liquidity on the forward market.

The Commission also notes that the remedies in the antitrust case AT.38700 would increase the volumes of wholesale electricity available in the Greek forward market and would allow market participants to better hedge against price volatility.

Besides, the Commission invites Greece to provide information on the availability of long-term transmission rights on the different borders and on the methodology used to calculate the cross-zonal capacity.

Price caps - day ahead and intraday markets

The Commission welcomes that, in line with Article 10 of the Regulation (EU) 2019/943, there are no price caps for day-ahead markets in Greece other than the harmonised maximum and minimum clearing prices for single day-ahead coupling in accordance with Articles 41(1) of Commission Regulation (EU) 2015/1222. The Commission notes the price caps applied in intraday markets, and their expected alignment with the maximum and minimum clearing prices for intraday pursuant to Article 54(1) of Commission Regulation (EU) 2015/1222 at the time of the implementation of the CRIDAs. In this respect, the Commission welcomes the successful launch of the CRIDAs with Italy on 21 September 2021 and invites Greece to align the above-mentioned limits immediately if not yet done with the launch of the CRIDAs.

Day-ahead

The Commission welcomes the liquidity levels on the day-ahead market and the efforts made towards regional integration. The Commission recalls that Articles 3 and 10 of Regulation (EU) 2019/943 establish strict rules on the operation of electricity markets. In particular, prices shall be formed based on demand and supply, whereas market rules should encourage free price formation.

The Commission notes that the Greek authorities would consider lifting the measure restricting the electricity trades of bilateral forward contracts currently applied with a view to preserve liquidity in day-ahead and avoid abuse of dominant positions by one or more vertically integrated companies. The Commission invites Greece to carefully assess and monitor market concentration, potential abuse of dominant position and effects on retail market competition, especially for small players.

The Commission notes the proposed potential measure allowing complex forms of bids in the day-ahead market to enable market participants to further minimise exposure to high balancing energy deviations. The Commission invites Greece to ensure that such products are aligned with other complex products already accommodated by the Euphemia algorithm used in the single day-ahead coupling²⁰ and used in other Member States. Any consideration of new products depends on the pan-European market coupling algorithm and cannot be adopted by Greece unilaterally. The Commission invites Greece to further discuss with responsible parties in the single day-ahead coupling project.

Besides, the plan mentions that the bids submitted by the power plants have been, in general and since November 2020, simple bids. The Commission invites Greece to investigate, by September 2022, why market participants do not use further block bids, which could be the first way to consider the units' technical characteristics and minimise exposure to high balancing energy deviations. Alternatively, Greece can propose another timeline in its final plan, explaining the reasons for it.

The Commission welcomes the measure to assess potential implementation of portfolio bidding, in line with the commitment made in the Technical Memorandum of Understanding of 2018²¹, and invites Greece to specify in its final plan a timeline for this assessment, including a public consultation. The impact on liquidity and competition should be part of the assessment.

²⁰ ACER Decision 37/2020 on the products that can be taken into account in the Single Day-Ahead Coupling

²¹ Greece: Technical Memorandum of Understanding Accompanying the MoU of the ESM programme - [draft tmu 4th review to eg 2018.06.20.pdf \(europa.eu\)](#) - p. 38 “RAE will assess in due time the evolution of the electricity market and the effect of the structural measures that are under implementation in order to move to portfolio bidding for all units, when the market is mature and the portfolio effect of the incumbent is diminished”

Intraday

The Greek intraday market is characterised by low liquidity.

The Commission welcomes the proposed measures enabling further regional integration and stresses that priority should be given to joining the XBID platform.

The Commission, however, welcomes the implementation of CRIDAs with Italy started on 22 September 2021, and invites Greece to reflect with the other responsible parties on how to further minimise the duration of the interruption of the XBID platform operation necessary to allow the running of the CRIDAs, in line with the Article 63 of Commission Regulation (EU) 2015/1222.

The Commission welcomes the initiative to launch intraday auctions for cross-border transmission rights with non-EU bidding zone borders during 2022.

However, the Commission stresses that, in line with Article 7 and the Article 2(25) of the Regulation (EU) 2019/943, the day-ahead and intraday market shall be non-discriminatory for all market participants, including traders. In this respect, the Commission urges Greece to ensure that traders (including non-asset owners) can participate in the day-ahead and intraday market on a non-discriminatory basis. Regarding intraday in particular, traders should be allowed and enabled to participate in CRIDAs and XBID, on top of the proposed measure to enable their participation through cross-border capacity auctions with non-EU bidding zone borders.

The Commission notes that the measures proposed for further regional integration, for the participation of demand-side response and storage in balancing market as well as the full balance responsibility for renewables are expected to have a positive effect on intraday liquidity. Therefore, the Commission invites Greece to monitor these effects and reassess the measures if needed.

Monitoring

The Commission welcomes the new market monitoring and surveillance mechanism currently designed by RAE²² and stresses the crucial importance to monitor the development of the market, including both wholesale and retail markets, and addressing (not exclusively) liquidity, market power, market concentration, non-discrimination and efficiency.

The monitoring should contribute to ensuring confidence in the market functioning, give a clear signal regarding the framework and rules applying to market participants, and allow proper action if need be.

²² Is part of a Milestone due by mid-2022 as part of the Greek Recovery and Resilience Plan (measure 16860).

2. Balancing markets

Price limits

In line with Article 10 of the Regulation (EU) 2019/943, there shall be neither a maximum nor a minimum limit to the wholesale electricity price, applying to bidding and clearing in all timeframes, including balancing energy and imbalance prices, without prejudice to the technical price limits which may be applied according to article 30(2) of the Commission Regulation (EU) 2017/2195.

The Commission notes that price restrictions continue to apply.

The Commission welcomes the proposed measure to lift the maximum balancing capacity bid price from 3 000 €/MW/h to 9 999 €/MW/h once the CRIDAs are launched, aligning with the technical upper limit set in the intraday timeframe. The Commission recalls in this respect the ACER decision²³ and suggests considering price adjustment mechanisms in case the limit is reached. The Commission invites Greece to confirm that this reform took place with the launch of CRIDAs on 22 September 2021.

The Commission notes the proposed measure to lift the maximum balancing energy bid price in a stepwise approach, from [-4 240 €/MWh, +4 240 €/MWh] to first [-9 999, +9 999] €/MWh once CRIDAs are launched or Greece joins the XBID platform, and second to [-99 999, +99 999] €/MWh when Greece joins MARI or PICASSO platforms. The Commission invites Greece to confirm that this reform took place with the launch of CRIDAs on 22 September 2021, and invites Greece to reconsider in its final plan the timeline for aligning these price limits with the limits set in the corresponding ACER decision²⁴ as soon as possible.

Besides, the Commission notes that RAE will assess the removal of the additional provisional balancing energy bid price floor of 0 €/MWh, initially defined to mitigate market power in redispatching actions. The plan explains that lifting this price restriction would be possible as soon as the reinforcement works are completed in the Peloponnese area, and the balancing bids used for resdispatching are properly flagged and will not influence balancing energy prices anymore.

In that respect, the Commission welcomes the proposed measure ensuring that bids accepted for non-energy balancing purposes (e.g. re-dispatching or for voltage control) are properly flagged in order not to make them count towards the imbalance price, in line with Article 13(2) of the Regulation (EU) 2019/943; the Commission urges the implementation of this measure no later than the proposed timeline. Accounting for volumes and costs related to bids accepted for non-energy balancing purposes should be properly determined and isolated by the TSO.

²³ ACER Decision No 11/2020 on the Methodology for a list of standard products for balancing capacity for frequency restoration reserves and replacement reserves.

²⁴ ACER Decision No 01/2020 on the methodology to determine prices for the balancing energy that results from the activation of balancing energy bids.

While the Commission acknowledges the structural issues to be addressed, the Commission urges Greece to lift the 0 €/MWh balancing energy price floor as soon as the proper flagging of bids accepted for non-balancing purposes is implemented (by December 2021 according to the plan).

The Commission also notes that the measures enabling and monitoring fair competition and in particular, the participation of demand-side response in the balancing market should further support sound balancing prices.

The Commission invites Greece to carefully monitor the evolution of the balancing market, the development of competition and any potential further use of market power.

Products, procurement and activation

The Commission welcomes that IPTO uses standard products as defined in Commission Regulation (EU) 2017/2195, and recalls that the use of specific products should be limited to situations where operational security is at proven risk, in line with Article 26 of Commission Regulation (EU) 2017/2195.

The Commission notes that the requirements for volumes of FRR computed by IPTO and reported in the plan are high, and invites Greece to perform a benchmark with comparable systems within the EU Member States, and if needed, adapt the methodology to compute these volumes in order to ensure a sound level of reserves. In particular, the Commission stresses that the dimensioning of FRR products shall be done in line with the Article 157 of the Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation ('Commission Regulation (EU) 2017/1485').

The Commission notes that FCR volumes should be coming from the computation of all TSOs in accordance with Article 153 of Commission Regulation (EU) 2017/1485.

Besides, significant discrepancies are observed between the schedules from the day-ahead market and the schedules from the integrated scheduling process, resulting in high volumes of activated balancing energy, which seem to go beyond what may be actually needed. The Commission invites Greece to monitor the volumes activated for upward and downward balancing and further identify the volumes of potential counter activations (simultaneous activation of both upward and downward balancing energy), which could lead to an inflation of balancing energy volume and costs, without benefit to the operation of the system. Based on this, an improvement of the algorithm used by IPTO to activate balancing energy bids or corrective measures could be proposed.

The Commission welcomes the proposal to establish separate auctions in day-ahead for balancing capacity procurement, in line with Article 6(8) of the Regulation (EU) 2019/943 stating that the procurement of balancing capacity must be based on a primary market. The Commission recalls that such auctions should ensure the technology-neutrality principle and enable all market participants to take part. The Commission invites Greece to provide in its final plan a timeline for this measure.

Complementary to the measures analysed above, the Commission recalls the proposed measure to assess portfolio bidding and further form of products (mentioned in section III.1), allowing market participants to pro-actively anticipate the balancing market needs, minimising their exposure to imbalances and corresponding costs.

Finally, the Commission welcomes that the assessment of a self-dispatch model is proposed in the measures and invites Greece to propose a timeline for this assessment in its final plan.

Liquidity and competition

Besides, the Commission considers it crucial that competition increases in the balancing timeframe, in particular applying the Article 6.1(a) of Regulation (EU) 2019/943. It invites Greece to take measures allowing non-discriminatory participation of all technologies, such as renewables, demand response and storage. An increase in competition will ease the shift to other required reforms such as the elimination of balancing price caps. In this respect, the Commission welcomes the participation of demand response, storage, and renewables (dispatchable and portfolio) in balancing. In particular, the potential of distributed resources, directly or aggregated, should be tapped.

The Commission notes that the full balancing responsibility for renewables under feed-in premium from March 2022 will also contribute to the above-mentioned objective. In this respect, the Commission recalls that according to Article 5 of the Regulation (EU) 2019/943, all market participants shall be responsible for the imbalances they cause in the system, unless a derogation has been granted by the Member States. Member States may, without prejudice to Articles 107 and 108 TFEU, provide incentives to market participants that are fully or partly exempted from balancing responsibility to accept full balancing responsibility.

European integration

The Commission notes the intention of Greece to join in 2024 the European platform for the exchange of balancing energy from frequency restoration reserves with manual activation (MARI) and the European platform for the exchange of balancing energy from frequency restoration reserves with automatic activation (PICASSO), according to Articles 20 and 21 of Commission Regulation (EU) 2017/2195. The Commission, however, notes that the maximum possible time for derogation is used and invites Greece to accelerate actions to join MARI and PICASSO platforms as soon as possible.

Imbalance settlement

Regarding the imbalance settlement measures, the Commission welcomes the introduction of a 15-minute imbalance settlement period as per Article 8 of the Regulation (EU) 2019/943.

However, price signals may be weakened because the imbalance pricing is not based on marginal prices but weighted average prices. In this regard, the Commission invites Greece to assess the effects of introducing marginal pricing for imbalances.

Shortage price function

The Commission takes note of the views of the Greek authorities on the shortage pricing function. Article 44 of the Commission Regulation (EU) 2017/2195 describes an additional settlement mechanism, separate from the imbalance settlement, to settle the procurement costs

of balancing capacity, administrative costs and other costs related to balancing, preferably achieved with the introduction of a shortage pricing function. The Commission invites Greece to consider introducing a shortage pricing function as soon as possible but no later than 31 December 2022. Alternatively, Greece should set out another timeline in its final plan including explaining its reasons why the chosen timeline would be more appropriate.

In the Commission's view, when a shortage pricing function is implemented, it is important that this mechanism is well designed so that it does not only provide incentives for short term flexibility but also sends appropriate signals for investments to maintain system adequacy. Greece is invited to consider whether the price adder which the referred function creates in times of scarcity should apply not only to balance responsible parties but also to balance service providers which provide balancing energy to the TSO. The Commission also considers that the scarcity pricing function should be triggered by the scarcity of reserves in the system and it should be calibrated to increase balancing energy prices to the Value of Lost Load when the system runs out of reserves. Overall, the Commission takes the view that such a function should be considered by Member States whether or not a capacity remuneration mechanism has been adopted.

3. Interconnection capacity and cross-border trade

Interconnection targets

The Commission welcomes Greece's commitment to investing in reinforcing interconnection capacities.

The Commission welcomes the start of the implementation of the day-ahead common capacity calculation methodology applying the coordinated net transmission capacity approach in the South East Europe capacity calculation region.

The Commission understands that Greece has no action plan in place and expects to comply as from 2022 with the 70% target set out in Article 16 of the Regulation (EU) 2019/943 for a minimum capacity margin to be available for cross-zonal trade ('MACZT'), following the derogation requested by IPTO according to Article 16(9) of the Regulation (EU) 2019/943.

The Commission welcomes the proposed measures and efforts to set up a regional agreement for consideration of third country flows (from Albania, North-Macedonia, Serbia and Turkey) in the capacity calculation. The Commission stresses that such an agreement should be acknowledged by all national regulatory authorities of the concerned capacity calculation region. With an agreement, third country flows could be recognised as counting towards the 70% target for capacity available for cross-border trade. The final agreement should be in line with EU capacity calculation principles and rules, and cover at least the following:

- consideration of internal third country constraints for intra-EU capacity calculation;
- consideration of EU internal constraints for capacity calculation on the border with third country;
- cost-sharing of remedial actions.

The Commission stresses that, according to ACER recommendation²⁵ pursuant to Article 16(8) of Regulation (EU) 2019/943, MACZT should, in principle, be monitored on all the critical network elements used in capacity calculation, and not the only limiting one. This should be applied regardless of whether the capacity calculation applies the flow-based or coordinated NTC approach. However, the Commission recognises that the methodologies to enable this are not yet implemented and underlines that Greece should move towards monitoring all critical network elements used in capacity calculation as soon as possible.

Market coupling

The Commission welcomes the efforts of Greece to couple its markets with the neighbouring Member States in line with the priorities set by the Commission. It is expected that no further delays occur for coupling the intraday market of Greece through the single intraday coupling.

Moreover, the Commission welcomes the ongoing projects of market coupling with non-EU Member States neighbouring countries.

4. Demand-side response, storage and self-consumption

Demand-side response

The Commission welcomes the proposed measures to develop demand-side response through full participation in the market. In this respect, the Commission urges Greece to enable the participation of demand-side response in the Greek balancing market starting with mFRR in February 2022 as announced in the plan. However, the Commission understands this would still be a pilot stage, and invites Greece to already establish the conditions and give in its final plan a timeline for a sustainable solution, enabling demand side response in the balancing markets, directly or through aggregators, in line with Article 6.1 of the Regulation (EU) 2019/943. In this context, the Commission invites Greece to consider the participation of demand side response in aFRR no later than September 2022.

Besides, the Commission understands that there is currently no possibility for explicit demand-side response to participate in the day-ahead and intraday market. In line with Article 17(1) of the Directive (EU) 2019/944, Member States shall allow final customers, including those offering demand response through aggregation, to participate alongside producers in a non-discriminatory manner in all electricity markets. Therefore, the Commission invites Greece to propose in its final plan reforms (including a timeline) to enable this participation, in particular the establishment of a demand aggregator framework (regulatory issues, licensing, metering requirements, competencies and commitments) and an updated baseline methodology to be developed by IPTO. The enabling of demand response is important as most volumes are traded in this market, as explained in the plan.

The Commission also invites Greece to ensure that, in line with Articles 17(3) and 13 of the Directive (EU) 2019/944, consumers can engage in demand side response, including via an

²⁵ ACER recommendation No 01/2019 on the implementation of the minimum margin available for cross-zonal trade

aggregator of their choice (be it their supplier or an independent aggregator), without the consent of a third party.

Development of demand side response should be monitored, including (and not exclusively) the numbers of actors, type, size, and volumes proposed both in capacity and energy.

The Commission notes the proposed plan for deployment of smart metering but stresses that no explicit reference is made to the penetration rate that is expected to be reached in 2025 at the end of the first phase. Moreover, there appears to be incoherence regarding the duration of the programme, given that the rollout is said to be completed within 6 years, and the programme timeline quoted is 2022-2030. The Commission invites Greece to precise these points in its final plan.

The Commission recalls the importance of rolling out fit-for-purpose smart metering systems, with the right functionalities, connectivity and responsiveness, to support the active participation of consumers and the delivery of novel energy services and products, in line with the provisions of the Directive (EU) 2019/944. Therefore, the national authorities are invited to pay particular attention that the technical specifications currently being developed follow the available standards (issued by CEN-CENELEC-ETSI under the mandate M/441), and the functionalities set in Article 20 of the Directive (EU) 2019/944. Attention should also be paid to the fact that, according to Article 19(6) of the aforesaid Directive, systematic rollouts, for which the ‘start of works’ was after the 4 July 2019, are considered new rollouts, and have therefore to fulfil all smart metering provisions of the new Directive, including the functionalities (Article 20) and the target and timeline set in Annex II.

According to Article 11 of the Directive (EU) 2019/944, consumers should have already the possibility to access dynamic price contracts. The Commission urges Greece to implement this provision the soonest possible.

Storage

In line with Article 3 of the Regulation (EU) 2019/943, energy storage shall participate in the electricity market, including balancing market, on equal footing with other market participants (generation and demand side response).

The Commission notes that, in order to be compliant with the above, a regulatory framework for electricity storage participation in the Greek market is currently being developed, allowing full storage participation in the wholesale markets by the end of 2022. The Commission asks Greece to consider a shorter timeline in their final implementation plan.

The Commission welcomes the measures to further develop storage. However, special attention should be given to any potential overlap in support schemes, especially in the context of the investment support schemes included in the Recovery and Resilience Plan and a potential capacity mechanism or support schemes for renewables.

5. Retail markets and regulated prices

The Commission welcomes the development of competition in the Greek retail market but stresses that the market share of the incumbent is still important, especially in the high voltage industry and the low voltage sectors. The Commission welcomes the market monitoring and surveillance mechanism being developed by the regulator to gauge progress, and accordingly respond to ensure that the market operates in a cost-reflective way and is sufficiently competitive. The Commission also invites Greece to carefully monitor by all available means the market evolution in order to confirm the expectation of a reduction of market concentration (especially in the supply of high voltage industry) and less dominant position of the incumbent, due to lignite phase-out and renewables development. In particular, it is expected that implementing the RES-PPA would allow retailers to diversify their sourcing portfolio and therefore enhance competition. The Commission notes that proper long-term hedging tools and higher liquidity on the forward wholesale market could also contribute to enable proper competition on the retail market by giving the possibility for energy suppliers to develop their risk management capabilities (cf. measures analysed in section III.1).

The Commission notes that the implementation of the remedies in the antitrust case AT.38700 will enable PPC's competitors to better hedge against price volatility, and thereby increase their ability to compete on the retail market with PPC.

IV. CONCLUSION

Pursuant to Article 20(5) of the Regulation (EU) 2019/943, the Commission invites Greece to amend its implementation plan to take utmost account of the above comments of the Commission. Greece is invited to publish its amended plan within three months from the receipt of this opinion and inform the Commission.

Pursuant to Article 20(6) of the Regulation (EU) 2019/943, Greece shall monitor the application of its implementation plan and shall publish the results of the monitoring in an annual report and submit that report to the Commission. In this report, Greece is invited to explain whether and to what extent the market reforms have been implemented according to the planned timeline, and if not, explain the reasons why.

The Commission's position on this particular notification is without prejudice to any position it may take on the compatibility of any national implementing measure with EU law.

The Commission will publish this document on its website. The Commission does not consider the information contained therein to be confidential. Greece is invited to inform the Commission within ten working days following receipt whether and why they consider that, in accordance with EU and national rules on business confidentiality, this document contains confidential information which they wish to have deleted prior to such publication.

Done at Brussels, 29.11.2021

For the Commission

Kadri Simson

Member of the Commission