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"The importance of the participation of electricity storage plants in the balancing system"

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Introduction

Due to the fast development of the RES market in Greece, having its roots in the international¹, European² and national³ legislative and regulatory framework, the immediate development and operation of storage systems for the RES electricity produced is considered crucial. Given the plethora of RES projects in terms of operation, anticipation of connection to the grid, expectation to receive the binding connection terms, or even initial development, the storage units are deemed more than necessary for the purpose of achieving a more effective RES incorporation into the Greek energy mix.

Brief description of the RES storage measures in Greece so far

At this point, it is important to stress out that Greece has noted significant progress towards the introduction of storage in the energy system. In particular, Law no. 4951/2022 (Government Gazette A' 129/04.07.2022) introduced a special legislative framework for storage licensing through the regulation of two project licensing

¹ Paris Agreement

² Green Deal, Fit for 55

³ National Energy and Climate Plan, Climate Law (no. 4936/2022 (Official Gazette A' 105/27.05.2022)



categories": the standalone storage plants⁴ and the storage units which are incorporated in RES projects with or without the capacity to store the electricity absorbed from the grid⁵. Another measure taken in this regard is the launching of three competitive procedures for the granting of state aid to electricity storage units⁶. In the same spirit of aid provision, not in the form of monetary aid but in the form of a fast-track licensing incentive, followed the recent ministerial decision⁷ with respect to the submission of applications for the granting of the binding grid connection offer for the installation of electricity storage units.

However, there are more measures ought to be taken to this direction, since, despite the fact that the licensing of storage plants has exceeded the targets set by the National Energy and Climate Plan, there are no storage projects currently operating, except for the hydro-pump storage plants and the energy system needs further support as proved by the curtailments conducted and the negative wholesale prices.

Incorporation of storage in the energy market

The Greek authorities have already initiated procedures for the storage integration into the energy market by means of a number of amendments which need to be introduced in the national regulatory framework, aiming at the active participation in Greece's energy markets and especially the balancing one.

This is the reason why the competent operators, i.e., the Hellenic Energy Exchange (HEE), the Regulatory Authority for Waste, Energy and Water (RAAEY), as well as the Independent Power Transmission Operator (IPTO) are currently under relevant discussions. More specifically, it has been publicly known that HEE has already proceeded to actions related to the required amendments of the market regulations for the proper formation of the market operation in order to accept the energy storage. Meanwhile, IPTO has already initiated the necessary procedures for the appropriate adjustment of the regulatory codes to the above amendments. In fact, in 2023, IPTO launched a public consultation concerning the initial design for the participation of the electricity storage installations and of any portfolios including such installations in the Balancing Market.

It is worth mentioning that the Balancing Market, one of the wholesale energy markets, which focuses on the balancing between the offer and demand and the overall security and proper operation of the electricity system, is set out by the law⁸ as the electricity market which includes the Balancing Power Market (i.e. the market where the participants, namely either the Balancing Service Providers -BSPs in their acronym-, or the Balancing Responsibility Parties, -BRPs in their acronym-, offer capacity for the coverage of the system backup requirements, aiming at ensuring adequate balancing sources before real time), the Balancing Energy Market (i.e. the market where the participants provide electricity used by IPTO in order to maintain the frequency of the system and to achieve the balancing between the electricity offer and demand) and the Imbalances Settlement, through which the calculation of

⁴ Ar. 69

⁵ Ar. 79

⁶ Ministerial Decision no. YΠΕΝ/ΔΗΕ/55948/1087/2023

⁷ No. YΠΕΝ/ΓΔΕ/28255/1143/2025

⁸ L. 4425/2016 (Official Gazette A' 185/30.09.2016)

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energy quantities and balancing capacity take place. The Balancing Market, operated by IPTO, is regulated by the Balancing Regulation which, determines, among others, the participants in the Balancing Market, their registration procedure, their participation requirements, the rights and obligations of IPTO and the intercontact between the wholesale energy markets including the exchange of information between HEE and IPTO.

Based on the above, IPTO recently launched guidelines with respect to the participation of the storage plants in the Balancing Market, based on the said public consultation launched back in 2023 and its results, for the purpose of the approval of those guidelines by RAAEY and the subsequent amendment of the respective regulatory framework. The guidelines are separated into four pillars: the Balancing Services Entities, the Participation in the Integrated Planning Process, the Clearance and Charges, and the Congestion Management. According to the first pillar, the storage plants as well as the portfolios including such plants, are entitled to participate in the Balancing Market, and IPTO is the competent authority to determine the criteria for either of their participation thereto as unit-based entities or through portfolios. The second pillar stipulates, among others, that the feasibility of the programs arising out of both the HEE markets and the Balancing Market, such as the Integrated Planning Process, namely a procedure for the integration (synchronisation) or de-integration (de-synchronisation) of Balancing Service Entities and for the reservation of Balancing Power, falls under the responsibility of the BSPs. The storage entities should send and update, per allocation day (=the day which the Integrated Planning Process refers to, which coincides with the Physical Delivery Day of the Day-Ahead Market and the Intra-Day Market) the pieces of information concerning the injection/absorption program for each dispatch period which is equivalent to thirty minutes. The storage entities possessing a remotecontrol system are enabled to provide all the products of Balancing Capacity or/and Energy Balancing. As set out by the third pillar, the storage entities are subject to system usage charges for both the re-offer to the grid of the absorbed electricity and the electricity absorbed for self-consumption purposes. Last but not least, the fourth pillar lays out that with respect to congestions characterized by regularity and predictability, a prior approval by RAAEY is required as to the selection and remuneration of storage entities, but the storage stations which have been selected for the granting of state aid through the above-mentioned three competitive procedures, are obliged to participate to the congestion management without further compensation.

A reasonable consequence of the above is the launching by RAAEY of public consultations preceding any approval of amendments which are to take place upon the energy markets regulations, on the grounds of RAEEY's power, enacted by law, to issue directives and guidelines for regulations and codes of the electricity markets⁹. In particular, with respect to the guidelines introduced by IPTO for the amendment of the Balancing Market Regulation, it is RAAEY that is competent to approve the Balancing Market Regulation and any amendments thereof¹⁰. Therefore, the next step of the procedure shall be the publication of the results of the public consultation, the approval of the relevant guidelines by RAAEY, and the

⁹ Ar. 6 par.2 L.4425/2016

¹⁰ Ar. 17 par.2 L. 4425/2016



respective conduct of the necessary amendments to the regulatory framework of the Balancing Market. Accordingly, should any amendments be promoted for the energy markets operated by HEE, the procedure shall be the one described above.

Conclusion

The energy transition landscape constitutes the leading role of the storage entities evident, and their regulation is urgent. This is why the competent operators of the energy markets have initiated procedures for their smooth integration thereto, which should definitely take into consideration both technical and legal aspects for the -as much as possible- direct and effective formation of the regulatory texts, the subsequent completion of the compliance of the regulatory framework and the respective familiarisation of the participants in the markets with the new procedures.

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