

PORTUGAL SETS OUT ITS ENERGY STORAGE STRATEGY TO 2040

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SUMMARY

The Portuguese Government has launched a public consultation on the National Energy Storage Strategy (*Estratégia Nacional de Armazenamento de Energia* — “**ENAE**”), which sets out Portugal’s electricity storage capacity targets through to 2040 and identifies the measures required to achieve them.

The ENAE consists of an Action Plan, which sets out the proposed targets and measures, supported by a Technical Study prepared by three Portuguese research institutions: INESC TEC, INESC-ID and IN+.

The targets are 6.9 GW of installed capacity by 2030 and 9.76 GW by 2040, split between pumped hydro storage and batteries — roughly twice the capacity available today.

The public consultation runs until 16 September 2026 on the **PARTICIPA** portal, where comments may be submitted on both the Action Plan and the Technical Study.

I. Background

The ENAE forms part of a broader package of electricity-sector measures launched by the Portuguese Government in June 2026. These included **Decree-Law No. 130/2026**, of 29 June, which amended the legal framework of the **National Electricity System**, and the launch of two public consultations on competitive procedures for the award of grid capacity reservation rights in the Portuguese Public Electricity Grid (*Rede Elétrica de Serviço Público* — “**RESP**”): 750 MVA for standalone storage projects and 300 MVA for renewable generation projects with co-located storage.

Decree-Law No. 130/2026 amended the prior control and grid access regimes, and the competitive procedures award capacity reservation titles. Neither, however, sets capacity targets for storage or identifies the regulatory changes required to achieve them. That is where the ENAE comes in.

Installed storage capacity in Portugal currently rests almost entirely on pumped hydro, with battery capacity in operation still residual. Meeting the renewable energy targets in the 2030 National Energy and Climate Plan, together with the need to safeguard security of supply, calls for a substantial increase in the flexibility available to the system. The ENAE seeks to quantify that need and to set a path for meeting it by 2040.

2. Nature and scope of the Strategy

The ENAE sets storage capacity targets, identifies the main technical and regulatory barriers to investment, and outlines the measures the Government intends to pursue. It therefore provides a policy framework for the Directorate-General for Energy and Geology (“**DGEG**”), the Government body responsible for energy licensing, and the Energy Services Regulatory Authority (“**ERSE**”), Portugal’s independent energy regulator. It also signals to the market how the regulatory framework for storage is expected to evolve.

The ENAE does not itself change the law, create support schemes or allocate grid capacity. Most measures are planned for 2026–2030, often without a detailed timetable, and some remain subject to further assessment. Its impact will therefore depend on the legislation and regulations that follow.

3. Capacity targets

The ENAE sets the following capacity targets:

	Today (2026)	2030 Target	2040 Target
Pumped hydro storage	3.526 GW	3.9 GW	5.26 GW
Batteries	1.06 GW (under development)	3 GW	4.5 GW
Total	—	6.9 GW	9.76 GW

For pumped hydro, the 3.526 GW figure refers to capacity already in operation. By contrast, the 1.06 GW attributed to batteries is almost entirely capacity under development, with only around 5 MW currently operational. The two technologies also play different roles in the system: batteries are better

suited to meeting short-duration flexibility needs, while pumped hydro can shift larger volumes of energy over longer periods.

Alongside large-scale storage, the ENAE provides for measures promoting distributed storage and demand-side flexibility, the latter associated with hydrogen production, electric vehicle charging and heat pumps.

4. Planned measures

The Action Plan is organised into four pillars. The table below summarises the main measures under each of them:

Area	Main measures	Timeframe
Market participation and system services	• Ensure that storage can participate in capacity mechanisms on an equal footing with other technologies. • Finalise and implement Portugal's national capacity mechanism. • Ensure full participation of storage in day-ahead, intraday and existing system-services markets, and facilitate long-term contracting, including PPAs. • Launch pilot projects for new system services, such as fast frequency response, inertia and voltage control, with dedicated markets expected to follow in 2030–2040.	2026-2030
Regulatory framework	• Adapt market rules to allow storage to participate on a standalone, aggregated or hybrid basis. • Create regulatory sandboxes to test new products and services. • Allow batteries installed in self-consumption projects and renewable energy communities to participate in the market through aggregation.	2026-2030

Grid access and permitting	• Release grid capacity reserved for projects that are not progressing, based on objective criteria such as permitting status, guarantees provided and compliance with development milestones. • Assess simplified grid-capacity reservation procedures for storage linked to self-consumption projects. • Improve the information available to developers on reserved and expected future grid capacity, by voltage level and substation. • Speed up storage permitting, particularly in renewable acceleration areas and areas of high electricity demand. • Streamline grid access for standalone and co-located storage projects above 1 MW, including through flexible or restricted-access arrangements. • Review technical connection requirements and promote aggregated control arrangements for installations up to 1 MW. • Review the rules applicable when hydroelectric concessions expire, in order to facilitate the conversion or upgrade of existing plants to pumped storage and allow sufficient time for investments to be recovered.	2026-2030
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Technological innovation	• Develop a national R&D strategy for energy storage and strengthen participation in European battery initiatives. • Provide funding to help move technologies from research to industrial production, including demonstration facilities and small-scale production lines. • Assess the impact of climate change on pumped hydro storage. • Research seasonal storage solutions, including hydrogen storage in salt caverns and compressed-air storage. • Create monitoring platforms for storage projects and update them annually to track permitting, construction and operation.	2026-2040
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5. Comments

The ENAE identifies the main barriers to the development of energy storage in Portugal. In our view, however, it could have gone further in three areas where developers continue to face significant practical constraints.

Freeing up grid capacity: General access to the RESP has been suspended since 2020, and available injection capacity remains scarce. The ENAE proposes recovering capacity from projects that are not progressing and reallocating it to the market. While useful, this can only release a limited amount of capacity and is unlikely, on its own, to support the storage targets set for 2030 and 2040. The ENAE does not address grid reinforcement or how storage deployment should be coordinated with transmission and distribution network investment. A strategy of this scale would benefit from measures aimed not only at reallocating existing capacity, but also at creating new capacity.

Revenue and system services. The competitive procedures currently under way do not provide for a guaranteed tariff, premium or contract for difference. Storage projects will therefore rely on wholesale market revenues, bilateral contracts and system services. The ENAE identifies the future capacity mechanism as an additional source of revenue, but its design remains to be defined and will require approval under EU State aid rules. New system services are also expected to remain at pilot stage until 2030, with dedicated markets only envisaged for the 2030–2040 period. The result is that, throughout the projects’ start-up phase, remuneration will continue to depend entirely on the market.

Permitting and environmental assessment. The ENAE's main proposal for faster permitting is to direct projects towards renewable acceleration areas, where environmental impacts can be assessed in advance at strategic level. It does not, however, revisit the thresholds that trigger environmental impact assessment (EIA). Standalone storage is currently subject to EIA above 50 MW and 200 MWh, or above 20 MW and 80 MWh in sensitive areas, while co-located storage follows the thresholds applicable to the associated generation project. This means that the same 50 MW power threshold may apply to a battery project and to a solar plant, despite their very different land footprints and environmental impacts. Reassessing these thresholds for storage could materially shorten permitting timelines and, in our view, would have justified a specific measure in the Action Plan.

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