

Facilitating energy storage to allow high penetration of intermittent **renewable energy**



European Regulatory and Market Framework for Electricity Storage

Improvement recommendations for based on a stakeholder consultation

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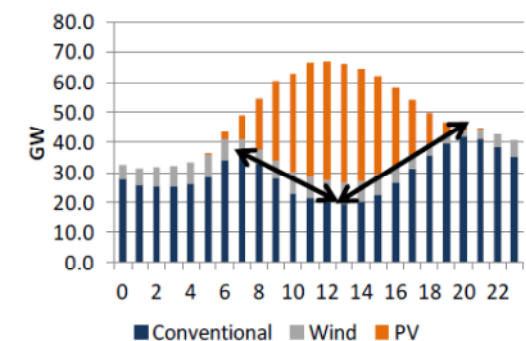
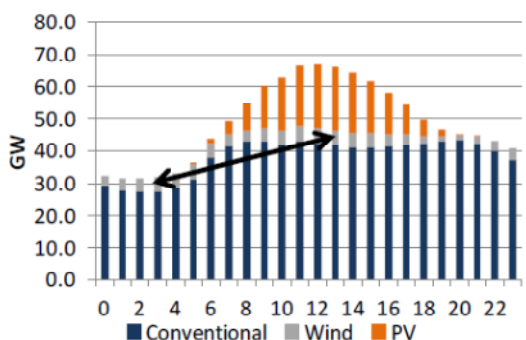
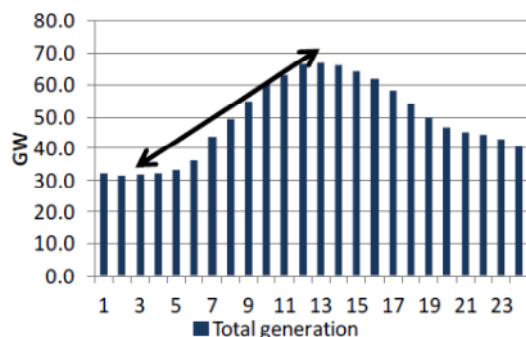
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stoRE: Main Facts

- From May 2011 to April 2014
- **Aim:** facilitate the high penetration of intermittent renewable energies in the European grid by unblocking the potential for energy storage infrastructure
- **Overall objective:** help creating the regulatory and market conditions that will give incentives for development of the necessary storage infrastructure



Market Signals?



- Spread between peak and off-peak prices is decreasing, changing the business model of energy storage and making its viability marginal
- Uncertainties in the ancillary services markets and double grid fees are putting more pressure, making the financing of such plants very difficult
- Does lack of viability reflect a market signal that additional storage is not necessary?
- Storage is necessary: Market solution or market intervention?

Source	Installed Solar Capacity by 2030 (MWe)
Energy Roadmap 2050 (Reference Scenario)	91,599
Energy Roadmap 2050 (High RES Scenario)	195,255
Eurelectric's Power Choices	65,000
EPIA (Paradigm Shift Scenario– refers only to PV)	768,500

Source: Simon Mueller, IEA, Future Design of RE Markets, EUFORES Parliamentary Dinner Debate, 4 December 2012, Brussels

Internal Electricity Market

- In the ideal electricity market, which is the target of the 3rd energy package, all the required services are well defined and there are transparent, liquid and competitive markets
- Non-market elements are distorting that vision: RE feed-in tariffs; financial support for transmission infrastructure and for certain storage technologies; procurements of ancillary services based on bilateral contracts etc.
- Large scale storage systems have development times that can be over 10 years long, therefore for storage requirements in period 2020 - 2030, reliable markets signals should be available now
- **That targeted regulatory interventions and initiatives should be introduced on a European level in order to deal with the cause or the effects of market distortions**

Electricity Directive

- Article 9 (1) is interpreted as a prohibition for TSOs to control electricity storage, but there are different views. For example ENTSO-E in the last TYNDP: *“In terms of regulatory issues, open questions are related to which players ... shall own and manage storage facilities”*
- Legal uncertainty is created by the lack of an official definition for electricity storage, which is treated as a generation facility. The uncertainty does not help electricity storage to progress in a clear framework. **Article 9(1) should be officially clarified regarding its applicability to storage**
- The market based approach of balancing can be of benefit to electricity storage facilities, as they can be very effective in providing such services. **The transposition of transparent and market based mechanisms promoted for balancing in Article 15 (7) should be closely monitored**

Grid Fees

- **Common rules should be applied across the EU** regarding transmission access fees and use of system fees for electricity storage systems, promoting deployment of storage according to needs rather than favourable rules
- **Access fees should be calculated with a method that will take into account the real impact of the electricity storage system on the grid.** Electricity storage facilities can choose when to absorb electricity from the grid and when to feed it back. In most cases they are operated for balancing so they are not contributing to congestion problems, but are actually relieving them.

Network Codes

- **Official definitions of electricity storage should be included also in the network codes** in order to facilitate the development of similar administrative procedures in the Member States for their connection to the grid.
- The development of the network codes on balancing that will allow the various players to participate in cross border balancing activities is a good development for electricity storage systems. **The relevant stakeholders should monitor closely the on-going development of the network code on balancing.**

Energy Infrastructure Package and PCIs

- The provision of the infrastructure package to provide financial support for electricity storage projects could help in the timely development of storage infrastructure. However, the explicit exemption of PHS is controversial, as it is a technology ready for deployment
- **The exemption of PHES from the financing provision should be re-evaluated, to only prohibit financing of feasible plants**
- As TSOs are not allowed to control electricity storage such projects do not feature in the TYNDP. **The possibility to include in the PCIs projects not foreseen in the TYNDP should be maintained.**
- **The evaluation method of the proposed electricity storage projects should be reviewed to ensure that it is fair and in equal terms with the transmission projects,** since the market cannot indicate the most efficient solution between regulated and non-regulated actors.