

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



www.store-project.eu

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European Regulatory and Market Framework for Electricity Storage

Improvement recommendations based on a stakeholder consultation



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Single Electricity Market

Documents considered

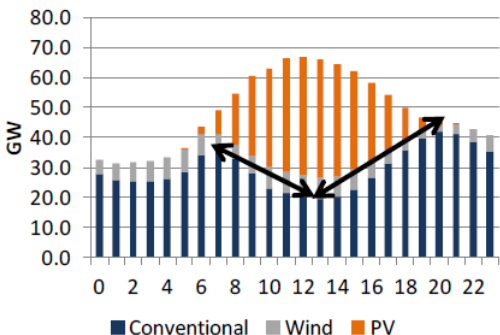
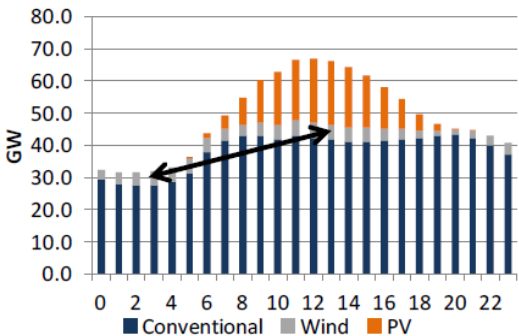
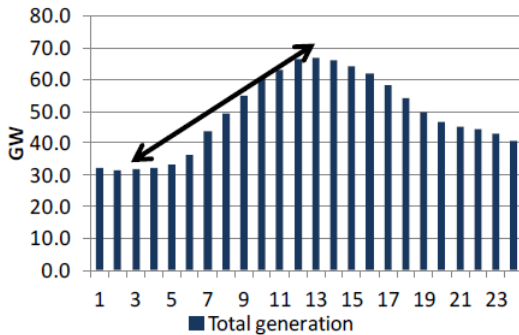
- The Electricity Directive - Directive 2009/72/EC
- The Renewable Energy Directive - Directive 2009/28/EC
- Framework Guidelines and Network Codes
- Better Governance for the Single Market - COM(2012) 259
- Making the Internal Energy Market Work - COM(2012) 663
- Energy 2020 - COM(2010) 639
- The Energy Roadmap 2050 - COM(2011) 885
- Renewable Energy: a major player in the European energy market - COM(2012) 271



Ideal 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
- In such a market **there would be clear signals** to reflect the requirements for flexibility, balancing and ancillary services and these signals would be interpreted by electricity storage developers/operators, among others, to design, build and operate their facilities accordingly or not to build if other technologies could provide the required services at lower cost
- **Non-market elements are distorting that vision** (often for good reasons): RE feed-in tariffs; financial support for transmission infrastructure and for certain storage technologies; procurements of ancillary services based on bilateral contracts etc.

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



Market Intervention

- Large scale storage development times can be over 10 years long, therefore for 2020 - 2030, reliable markets signals should be available now: **Targeted regulatory interventions and initiatives should be introduced** to ensure the **timely** development of storage infrastructure.
- Here are listed some ideas proposed by survey respondents:
 - ✓ Introduce elements that reward flexibility in RE support mechanisms
 - ✓ Provide support for storage only when storing renewable excess: grant priority dispatch and/or exempt it from grid fees and taxes
 - ✓ Develop a forward services market in which the service is bought sufficiently far forward to be relevant to investment decisions
 - ✓ Redesign capacity mechanism in order to recognize possible contributions of alternative flexibility means

Electricity Directive

- Article 9 (1) states that TSOs cannot control any electricity supply or generation activities. In general this article 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**

Electricity Directive

- The first step should be to **include a clear definition of electricity storage in the Electricity Directive**. This could be done in cooperation with all relevant actors like EASE, to ensure that the relevant aspects of the different technologies are covered.
- Secondly, it should be decided if and how to include electricity storage in Article 9 (1) of the Electricity Directive. We recommend that all actors are involved in a dialogue to propose an approach that fulfils the following conditions:
 - ✓ Ensure the functioning of an open , fair and transparent market, by introducing restrictions to the use of storage by system operators if and when they are allowed some kind of control over them
 - ✓ Facilitate the market selection of the most efficient solution when a decision has to be taken for transmission vs. storage



Energy Infrastructure Package and PCIs

Documents considered

- Blueprint for an integrated European energy network - COM(2010) 677
- Guidelines for trans-European energy infrastructure - COM(2011) 658
- Establishing the Connecting Europe Facility - COM(2011) 665
- The Ten Year Network Development Plan (TYNDP)
- The list of “Projects of Common Interest” (PCIs)



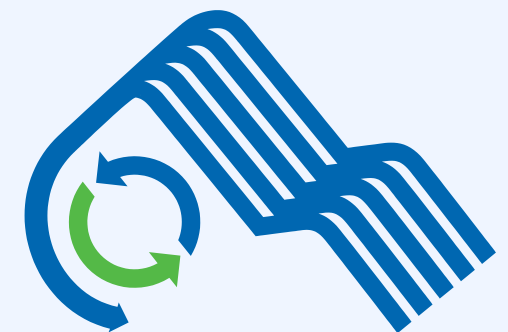
Energy Infrastructure Package and PCIs

- The provision of the infrastructure package to provide financial support for electricity storage projects could help in the timely development of storage infrastructure, as they are unviable in the current market.
- However, the explicit exemption of PHES is controversial, as it is a technology ready for deployment. **The exemption of PHES from the financing provision should be re-evaluated**
- Storage projects do not seem to feature in the TYNDP – possibly as a result of the unbundling principle. **The possibility to include in the PCI list 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.

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.

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THANK YOU FOR YOUR ATTENTION

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