


YOUNICOS

Let the fossils rest in peace.



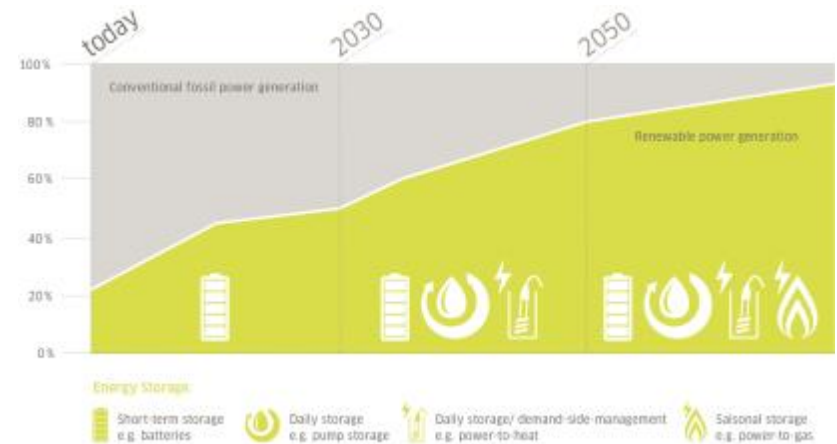
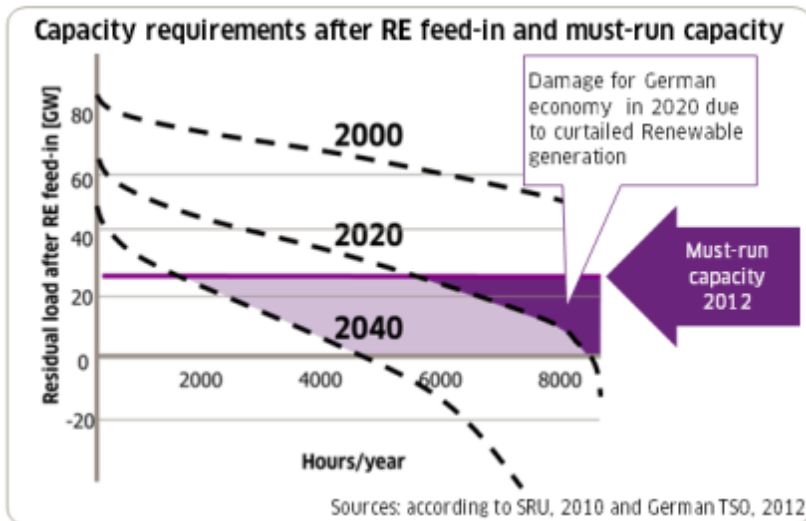
Batteries for balancing power - a regulatory review

January 22nd, 2016



Why do we need batteries in the grid?

Because they limit must-run costs of conventional generators



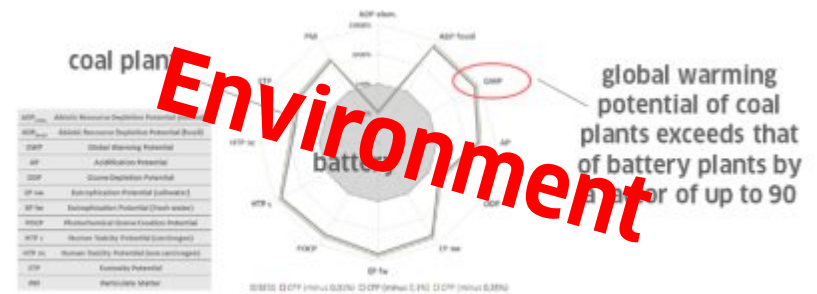
BNetzA reported for the first half of 2015 costs of €149m for curtailment of renewables and €253m for redispatch measures.

And because they do a better job than conventional technology



Must-Run

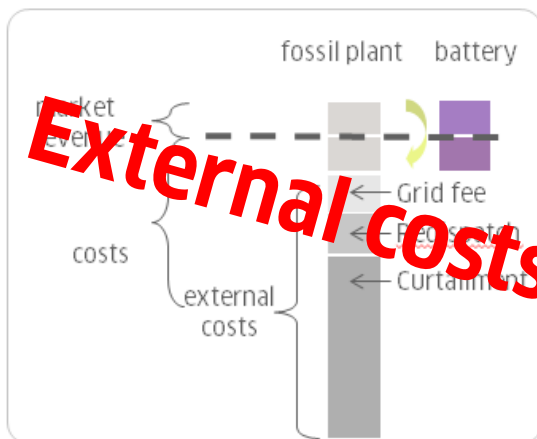
Comparison for the provision of frequency containment reserve



Environment

global warming potential of coal plants exceeds that of battery plants by a factor of up to 90

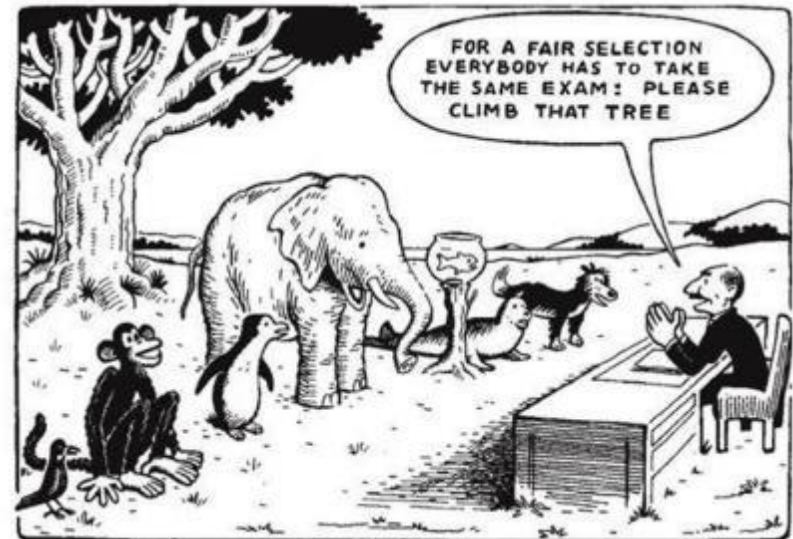
Batteries help to reduce emissions and pollution from the energy sector



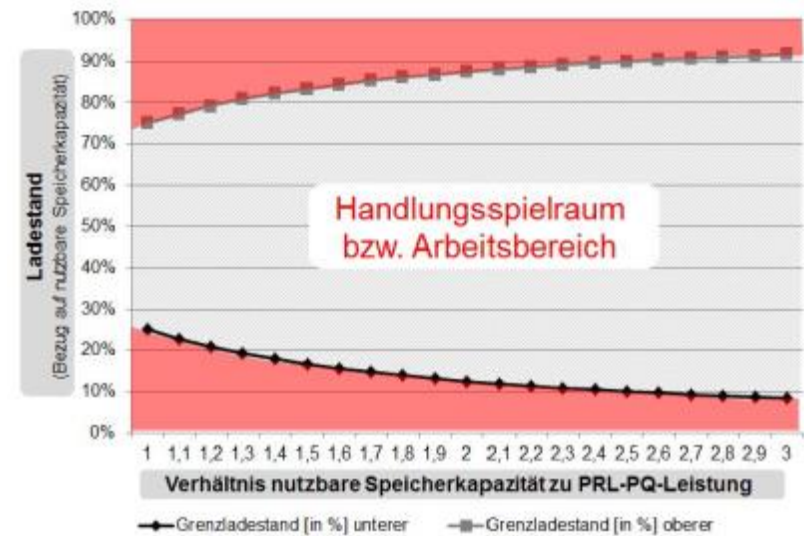
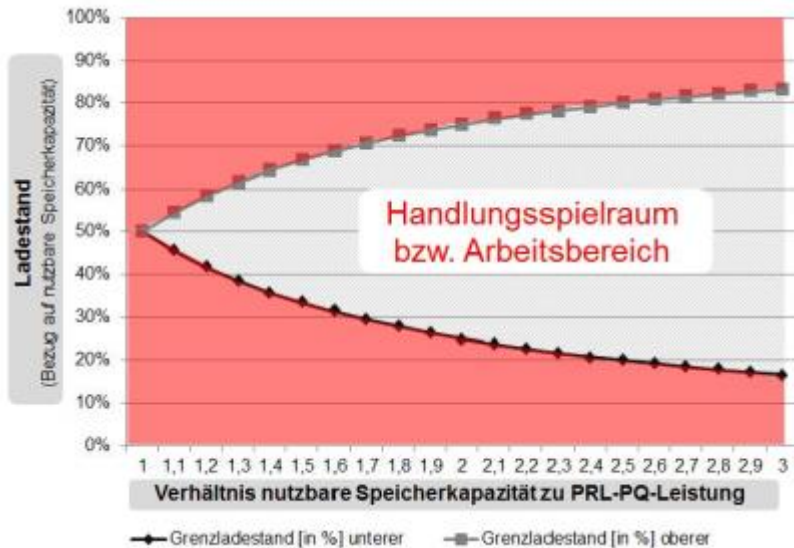


Will we open the door for battery storage?

Capacity requirement for storage: Technological discrimination and the 15min vs. 30 min-Question



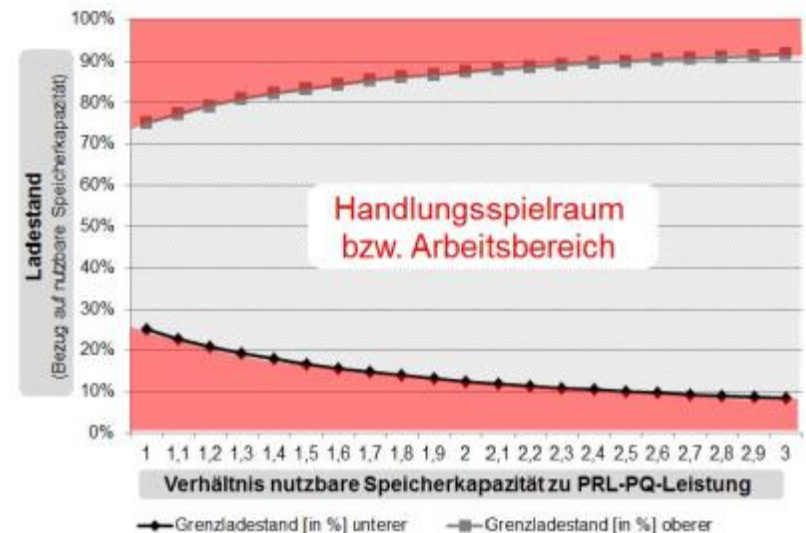
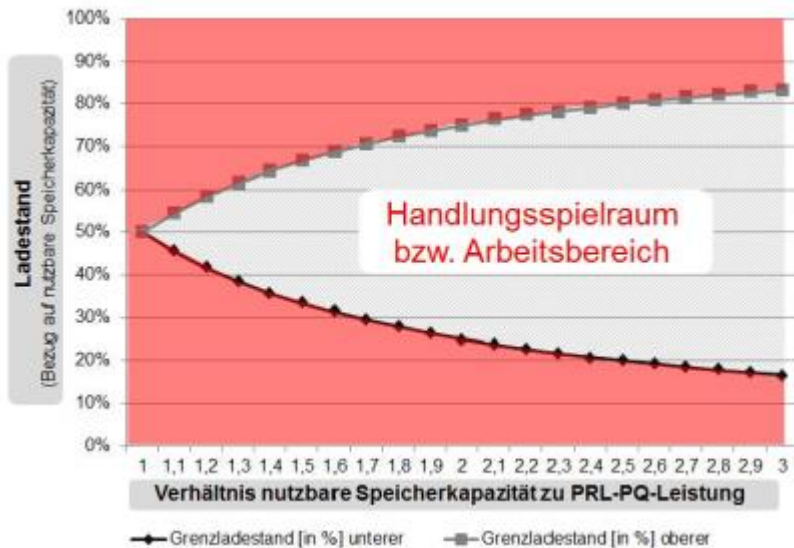
How much capacity do batteries need to reserve for the worst case?



How much capacity do batteries need to reserve for the worst case?

30min requirement

15 min requirement



Current regulators issues

Guideline Electricity Transmission System Operation

- Defining 15min capacity requirement for storage to participate in the market for frequency containment reserve
- Final decision in Feb/March

European Market Design Initiative

- Definition of storage in unbundled energy markets
- Market Design for increasing share of renewable → reform of ancillary services
- Ownership role of storage for TSOs/DSOs?

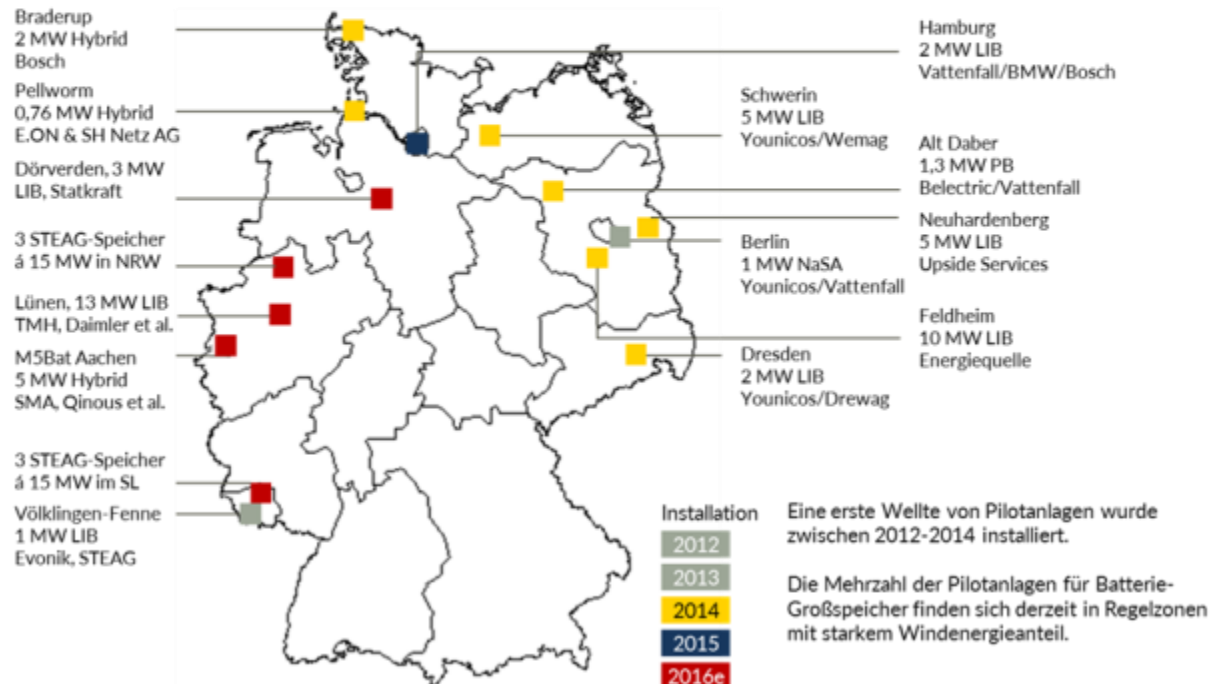
New markets opening up quickly

- Enhanced Frequency Response Tender in the UK
- DS3-service package in Ireland

Batteries are not a technology for the future, but for today

10 Batterie-Großspeicher im Megawattbereich sind installiert, rund 10 sind im Bau

Übersicht Batterie-Großspeicher >1 MW in Deutschland



Quelle: Büro F - New Energy Markets, auf Basis von Unternehmensmeldungen, GTAI, DoE Global Energy Storage Database

Thank you for your attention!

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