

SweGRIDS

The need for energy storage in the future distribution system to ensure a stable operation and a high power quality

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Project funded by:





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STAYING BIG OR GETTING SMALLER

Expected structural changes in the energy system made possible by the increased use of digital tools

yesterday



few large power plants



centralized, mostly national



based on large power lines and pipelines



top to bottom



passive, only paying

tomorrow



many small power producers



decentralized, ignoring boundaries



including small-scale transmission and regional supply compensation



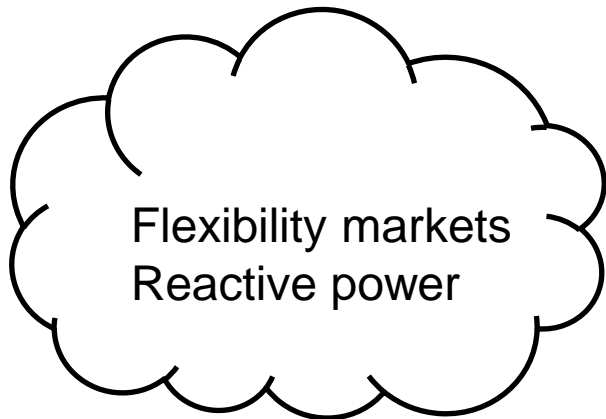
both directions



active, participating in the system



Placement & Service stacking

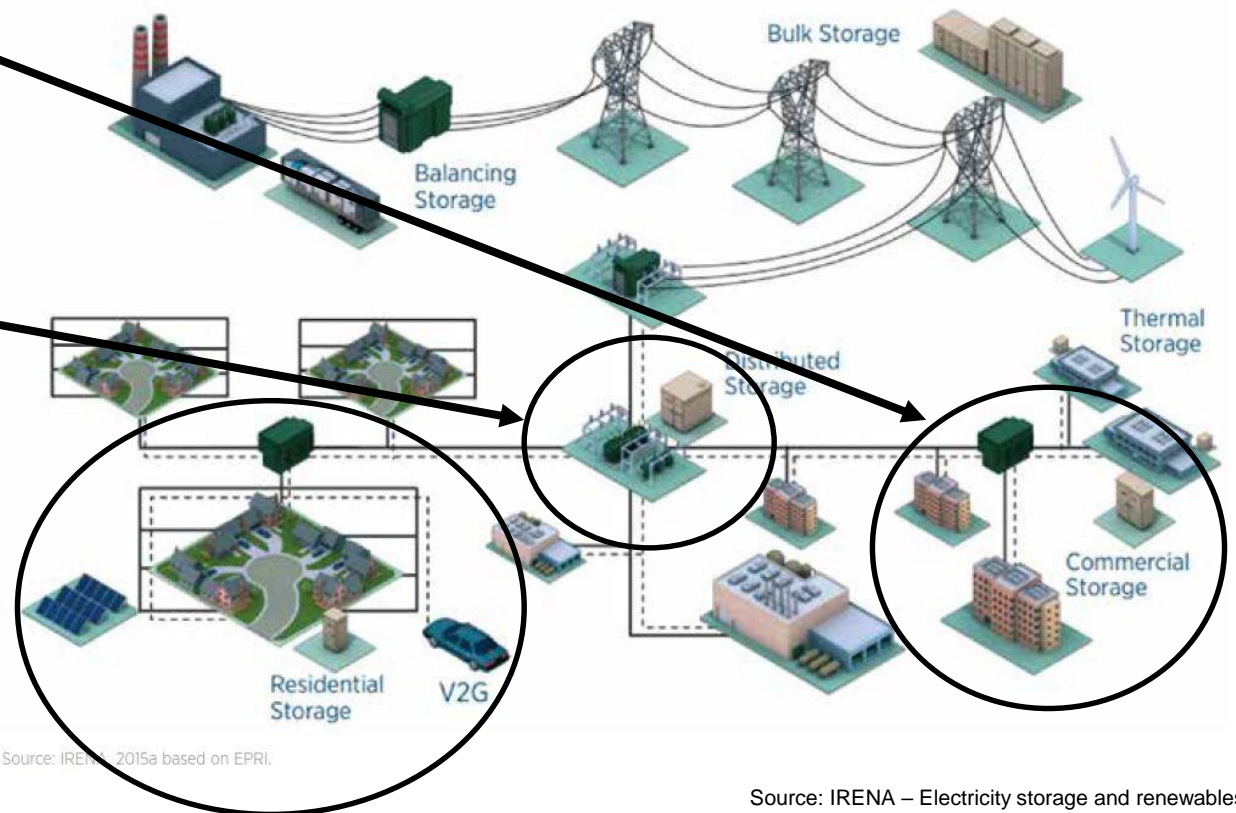


- ✓ RES integration
- ✓ Peak shaving
- ✓ Ancillary services

- ✓ Congestion relief
- ✓ Ancillary services
- ✓ Arbitrage
- ✓ Reserves

- ✓ RES integration
- ✓ Peak shaving
- ✓ EV & V2H/V2G
- ✓ Ancillary services (aggregation)
- ✓ Energy communities

Figure 10: Potential locations and applications of electricity storage in the power system



Source: IRENA, 2015a based on EPRI.



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Service stacking
(review)

Power quality
validation from
BESS operation

Done

Implementation of service
stacking at customer level

Implementation of service
stacking at DSO level

Storage VS user flexibility

EV integration
strategies including
energy storage

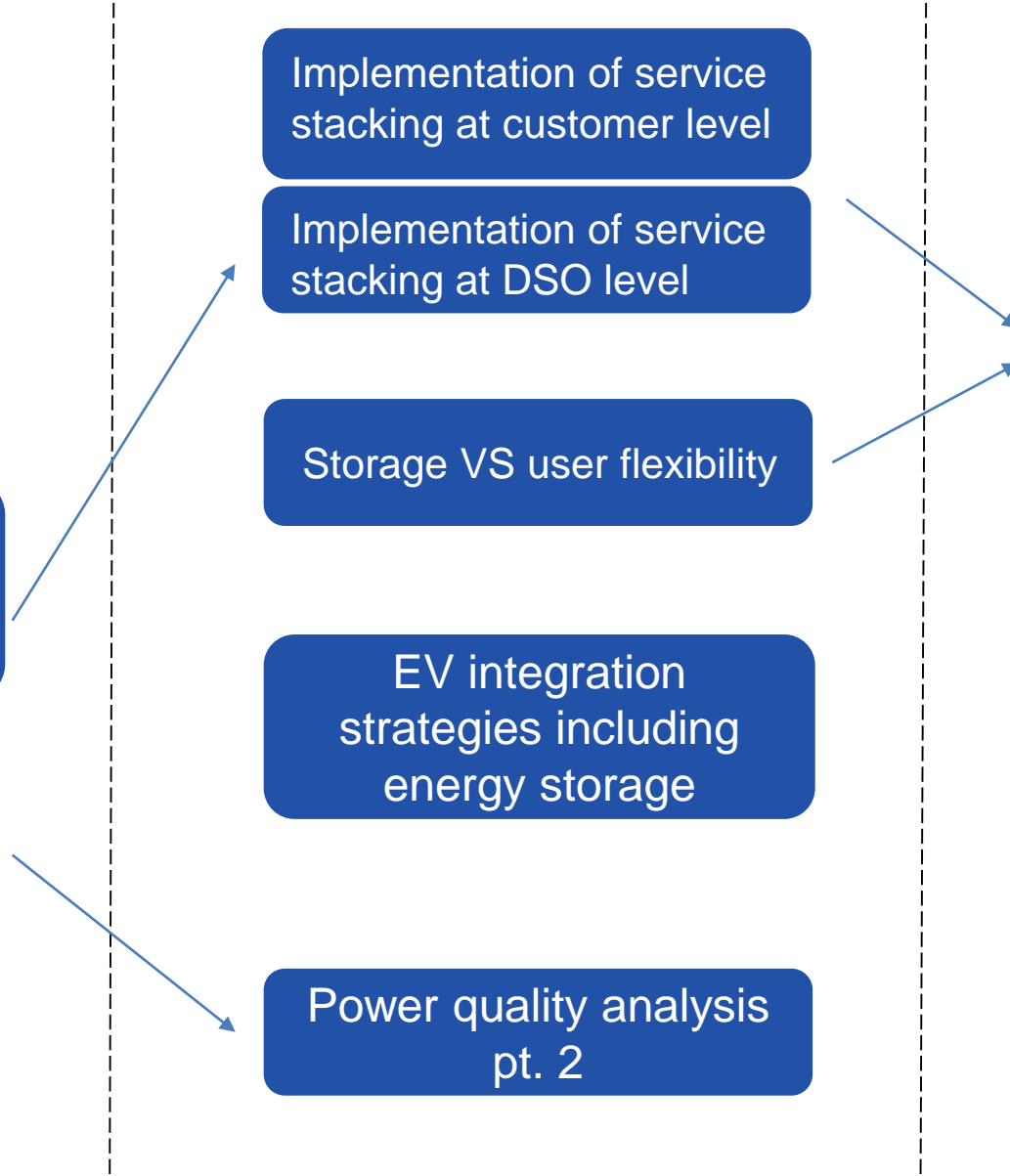
Power quality analysis
pt. 2

On-going

Optimization tool

Extreme weather and
energy storage

Upcoming





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Thank you for your attention!



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