

ENERGY STORAGE

Global Conference

Brussels, 14-16 October 2025

2025



Session 1.8 The Electricity Grid Package



Manuel Galvez
ENTSO-E



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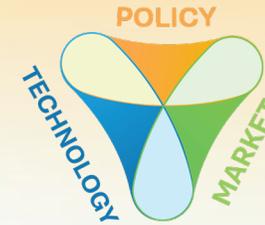
Torsten Knop
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Moderator:

Patrick Clerens
Secretary General / Energy Storage Europe

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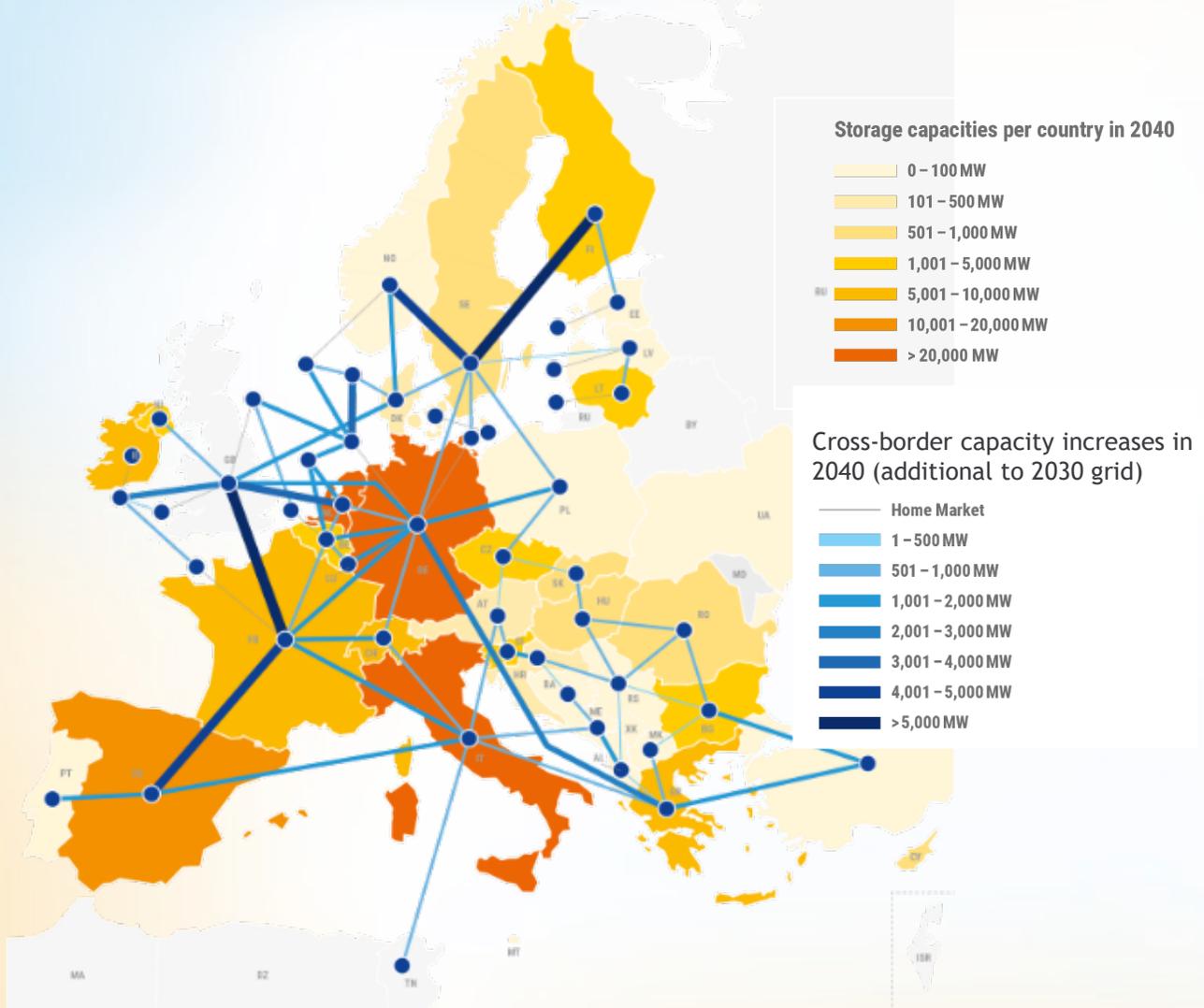
Vice-Convenor of the Policy and
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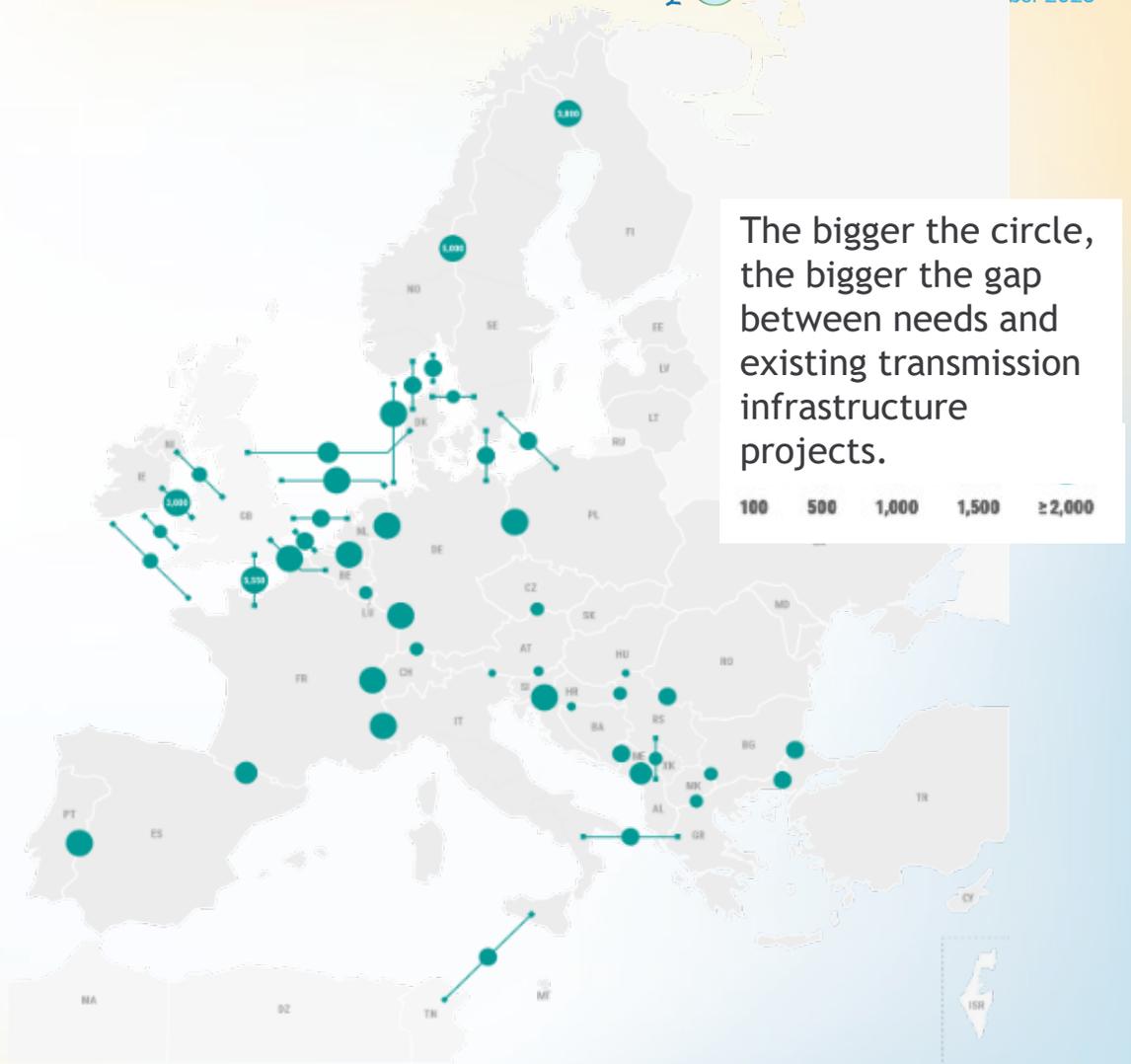


TYNDP 2024: high needs for additional investments

1 euro invested in the grid translates into over 2 euros saved in system costs

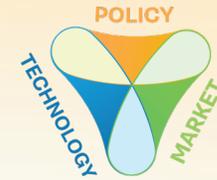


108 GW of additional cross-border capacity needed by 2040



Existing transmission projects address only part of the cross-border needs. There is a gap of 28 GW.

ENTSO-E priorities for the EU Grids Package



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1

STREAMLINE PLANNING AND STRENGTHEN REGIONAL COORDINATION

2

ACCELERATING PERMITTING

3

FACILITATE INVESTMENTS IN GRID INFRASTRUCTURE

4

STRENGTHEN SUPPLY CHAINS



<https://www.entsoe.eu/european-grids-package/>

Simplify planning and strengthen regional coordination

More robust and efficient scenario-building process, e.g.

- through better NECP alignment and harmonisation;
- earlier EC decision and ACER's opinion on scenarios; etc.

Grid implementation through enhanced regional cooperation, e.g.

- through HL Groups, while ensuring TSOs involvement to provide technical expertise;
- refocusing Regional Investment Plans as tool for a technical monitoring of project implementation and identified needs; etc.

Streamlined PCI/PMI process, e.g.

- by removing project ranking from the process; distinguishing by project maturity;
- simplifying the reporting framework a.o. allowing for PCI/PMI status to persist until completion of the project.

Permitting, investments & supply chain

Permitting

- implement EU law (e.g. RED Art. 15e on grid permitting);
- simplify the EU framework and harmonise environmental rules;
- shorten/establish deadlines, prioritise grid-related litigations, establish one-stop shops, etc.

Investments

- attractive, stable and forward-looking regulatory frameworks;
- EIB and national development banks providing support (e.g. de-risking tools);
- increase EU funding such as CEF-E; decouple CEF-E access from CBCA; encourage voluntary cost-sharing approaches, etc.

Supply chain

- increase EU production capacity;
- allow greater flexibility in framework agreements
- simplify public procurement rules, e.g. by allowing contract authorities to negotiate technical & economic terms during tenders, increase EU-wide thresholds; etc.

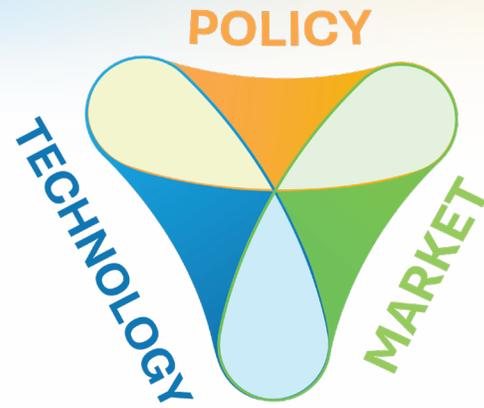
ENTSO-E views to address long grid connection queues (upcoming EC guidance)

What can help (non-exhaustive)?

- Introducing **progress milestones**, land and permit **checks**, and **financial commitments** to keep credible projects in the queue.
- Solutions such as **flexible agreements** and **allowing multiple users per grid point** can ease pressure on limited capacity.
- Bring **scenarios considered for the identification of grid reinforcement needs** and **hypothesis used to study the connection requests** closer together.

Overall: “First-ready, first served” is fairer than “fair-come, first-served”

- **Prioritisation** based on criteria such as readiness, system value, and public interest is needed—especially where capacity is scarce.
- **National authorities** should define the objective transparent criteria; **TSOs** should be involved in the process as technical experts.



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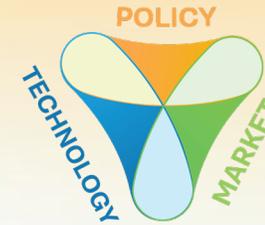
THANK YOU!



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Director Marketing, Policy and Public
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Fluence



The Grids Package Can we solve the bottlenecks?

Lars Stephan – Director Marketing, Policy and Public
Affairs (EMEA)

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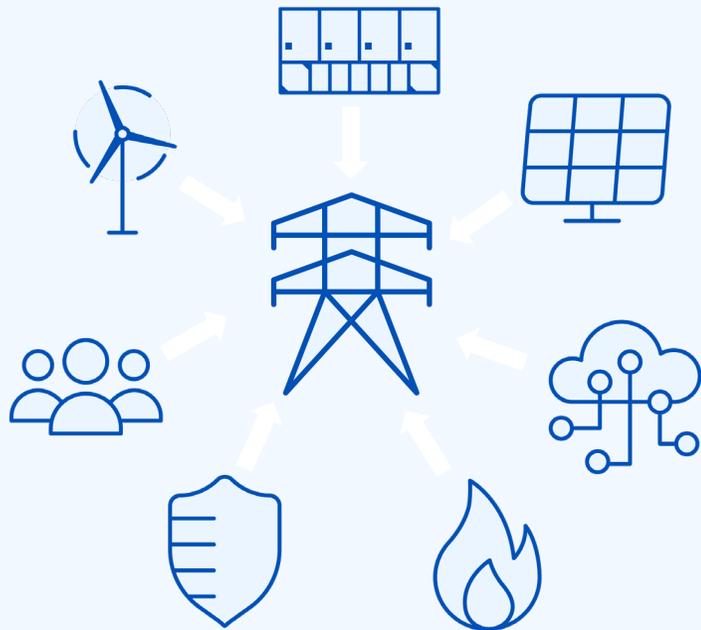
Smartstack™

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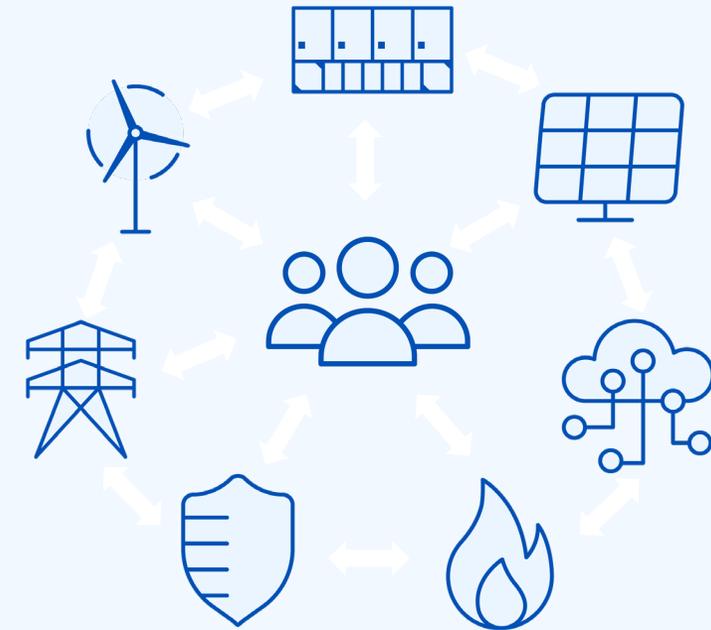
The Energy System Must Put The User In The Center

Transforming the European economy to achieve climate neutrality by 2050 while boosting industrial competitiveness and growth requires a user-centric view.

Grid centric view -> storage is a problem



User centric view -> storage is a solution



Grid Integration: What Is A System Friendly Storage Asset?

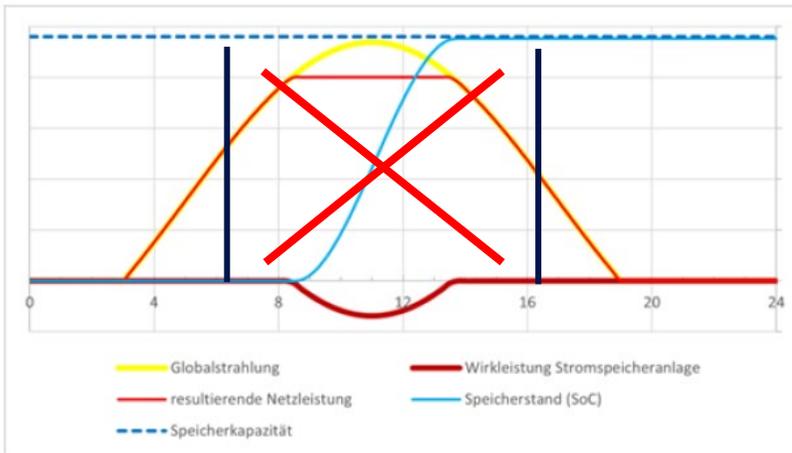
End discriminatory and absurd rules of local grid entities and require digitalization of grids and real-time congestion and price (grid fee) signals to grid users.

German DSO example – when the sun shines at night ...

Netzdienliche Fahrweise

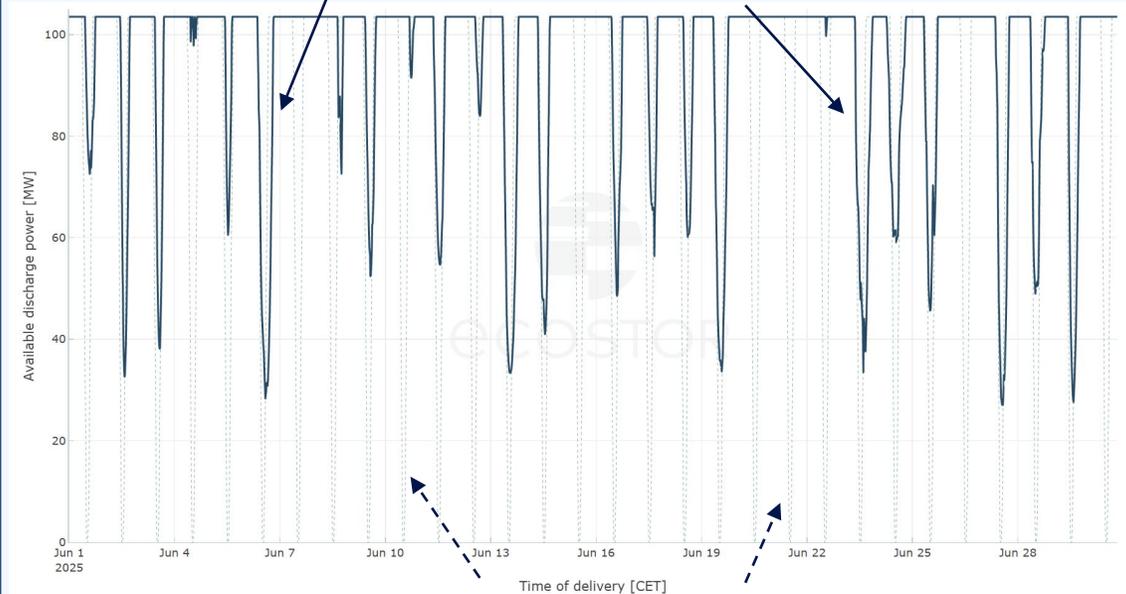
Um mit der geplanten Speicheranlage möglichst nahe zum Standort an das Stromnetz angeschlossen werden zu können, wird vom Betreiber der Speicheranlage die folgende Fahrweise eingehalten:

Im Zeitfenster von 7:00 Uhr (UTC) bis 17:00 Uhr (UTC) darf keine Einspeisung von elektrischer Energie aus der Stromspeicheranlage in das Netz des Netzbetreibers erfolgen. In den übrigen Zeiten – zwischen 17:00 Uhr (UTC) und 07:00 Uhr (UTC) – ist die Einspeisung der Stromspeicheranlage in der Regel mit der gesamten vereinbarten Anschlusswirkleistung für Einspeisung möglich.



German DSO example – defining real-time grid friendliness with a digital twin

Dynamic restrictions based on digital twin



Static restrictions based on “dumb” model (see left)

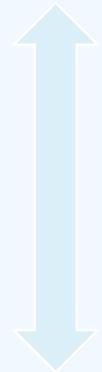
Grid Fees For System-Efficiency And Not Cost-Recovery

Real-time and bi-directional grid fee design to provide price signals and to allow storage-operators to co-optimize SYSTEM value.

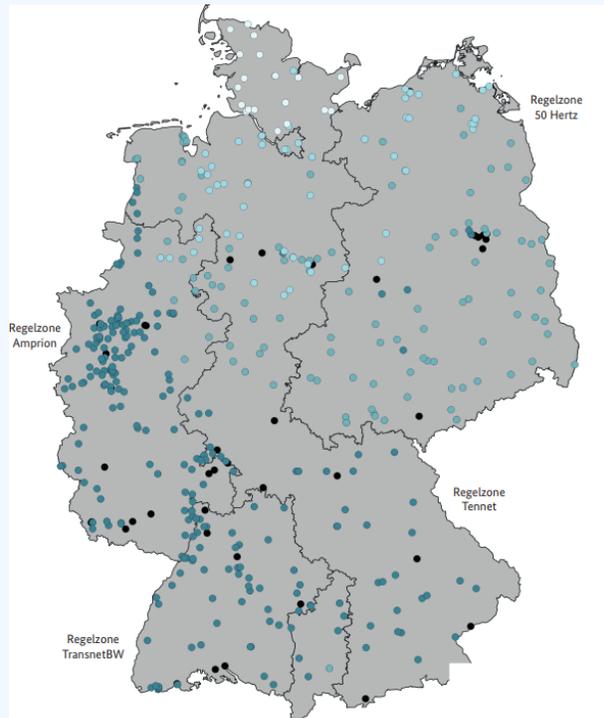
Germany: storage treated as consumer

BKZ cost

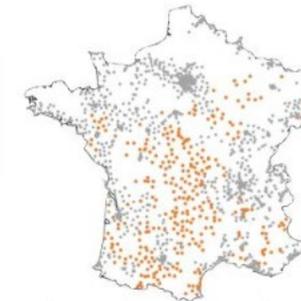
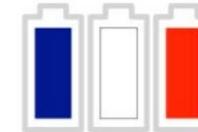
20%



100%



France: storage as a bi-directional asset



A newly published map from the French energy regulator, CRE, shows the designated demand and solar injection zones on the grid.



Demand zones

	Pointe de soutirage	Heures pleines hiver	Heures creuses hiver	Heures pleines été	Heures creuses été
Soutirage	+	+	+	+	+
Injection	-				

Le coefficient est négatif si le stockage injecte pendant une pointe de soutirage

Battery storage system gets rewarded via the network tariff for **feeding in during peak demand times**, defined as:



December - February
63 - 78 days, Monday - Saturday
2 hours in the morning peak (8-12:00)
2 hours in the evening peak (17-21:00)



Solar injection zones

	Heures pleines hiver	Heures creuses hiver	Heures pleines été	Heures creuses été	Pointe d'injection
Soutirage	+	+	+	+	-
Injection					+

Le coefficient est négatif si le stockage soutire pendant une pointe d'injection

Battery storage system gets rewarded via the network tariff for **consumption during peak (solar) injection times**, defined as:



April - October
125 consecutive days
4 hours (12-16:00)

Getting Energy Storage Into The Ground Faster

We need to unlock barriers on grid access and permitting and design grid fees to incentivize the better utilization of the grid vs. for pure cost recovery.

Grid Connections

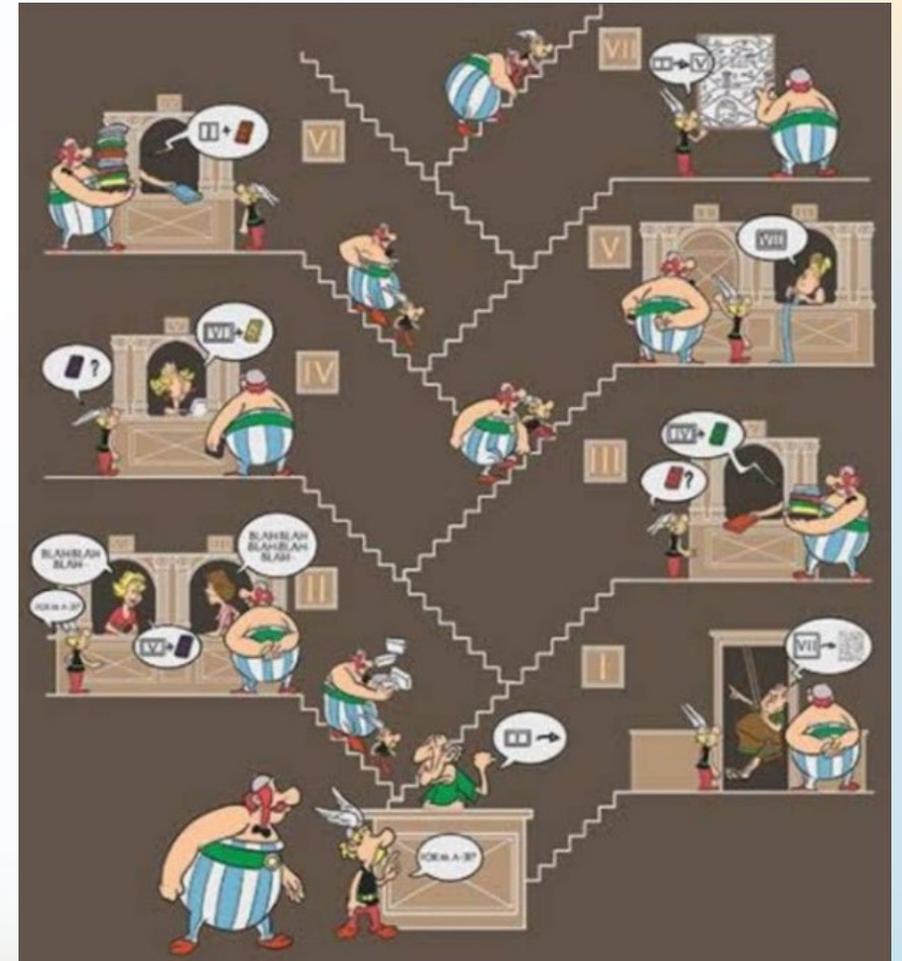
- Reduce the queues by killing the zombies
- Change the process by fast-tracking “good” projects
- Use the grid (connections) smarter, without discriminating

Grid Fees

- Provide real-time and bi-directional price signals
- Use batteries to reduce congestion and increase utilization
- Cost-recovery that provides a win-win-win situation

Permitting

- Set maximum timelines for permit processes
- Simplify, standardize and sense-check rules (safety, environ.)

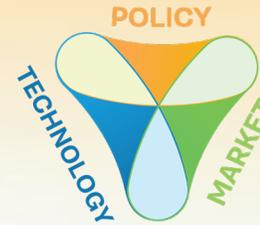


Thank You

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Torsten Knop

Chair of DSO Entity Expert Group
Distributed Flexibility

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Main principles for network tariff systems

Network tariffs must cover the regulated revenues of SO

Cost-orientation
Non-discrimination

Simplicity
Transparency

Non-discrimination Encourage Energy Storage

- Business cases for storage are **extremely challenging** if the energy stored is twice submitted to grid fees.
- **Non-discrimination** could prevent to differentiate between storage and other grid customers.
- One possible solution to alleviate this problem for bi-directional users (e.g. storage) would be a **tariff mostly based on contracted capacity**:
 - Agnostic to the flow direction of electricity.
 - Simpler to administrate than used capacity or energy.



Grid Connections – Necessary Changes

- Currently **applications for 330 GW** of large-scale storage (almost exclusively BESS) to be connected to E.ON grids:
 - **Non-discriminating** rules beyond first-come-first-serve.
 - Initial **incentives**, which can later be reimbursed.
 - Monitoring of **progress of projects**.
- Clear **priorities** for certain network users set by NRA.
- Cost-reflective connection tariffs provide **locational signals**.



Who pays?