The EV revolution and the changing European power market: How to make this ‘the right match’ going forward?

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Starting with a simple truth: What you see matters.
Many interlinkages. ‘Sweet spots’ are possible.

Note: Clean Energy Ministerial report: “Electric Vehicle and Power System Integration: Key insights and policy messages from four CEM workstreams” (September 2020). (LINK)
Energy system needs: A global revolution up ahead.

Note: IEA’s ‘Net Zero By 2050’ report of 18 May 2021 (LINK).
Energy system needs: A recent European snap-shot.

Continental Europe Synchronous Area Separation on 08 January 2021
ICS Investigation Expert Panel » Final Report » 15 July 2021
Main Report

Note: The Investigation Expert Panel's report of 15 July 2021 is available via the joint ACER-ENTSO-E press release issued the same day, see LINK. Commentary by the ACER Director in the Financial Times Energy Source of 22 July 2021, see LINK.
ACER European Union Agency for the Cooperation of Energy Regulators

System benefits can help drive e-mobility uptake.

“...The FutureFlow project results show that up to 23% of balancing energy can be saved by connecting flexibility markets in Austria, Hungary, Romania and Slovenia.”

Note: The ‘FutureFlow’ project, supported under Horizon 2020, is lead by the Slovenian TSO, ELES (for more info, see LINK; quote is taken from ELES magazine NOVO, LINK). The ‘Parker Project’ is a comprehensive V2G trial project in Denmark engaging the following partners: DTU, Enel, NUVVE, Nissan, Groupe PSA, Insero, PowerLabDK, Frederiksberg Forsyning. (LINK)
So what’s the catch …? (1/3)

Wholesale markets need further deepening, becoming fully ‘flexibility ready’

Multiple components (15 minute time units; further market coupling; governance)

Note: Figure from Zsuzsanna Pató of the Regulatory Assistance Project in Foresight, December 2020 (LINK). As regards further deepening of wholesale markets, a key initiative to be dealt with via comitology in 2022 is the revision of the ‘CACM’ network code (Capacity Allocation and Congestion Management), a process referred to as ‘CACM 2.0’. For further information, see the supportive documents for the June 2021 Florence Forum discussions (agenda item 5.3), this via the following LINK.
So what’s the catch …? (2/3)

Note: ACER methodological study of 27 August 2021 to measure barriers to efficient price formation and easy market entry ([LINK](#)). For the first time, ACER’s Market Monitoring Report as of this year will include an analysis of such barriers across EU Member States (forthcoming; end-October 2021). Quote is for a proposed new Article 20a (4) of the draft Renewables Directive (emphasis added).
A number of barriers exist for new entrants and smaller players. These can hamper e-mobility participation - and thus also e-mobility uptake (given lower remuneration levels), e.g. via:

- New and small players facing requirements that restrict their participation in balancing markets.
- Some Member States lacking sufficient competition in retail markets and/or insufficient incentives for consumers to engage in DSR (demand-side response).
- In some Member States, the extensive application of end-use price regulation can be a barrier to entry and participation.
- Prequalification or product requirements may hinder participation in capacity markets in those Member States where such markets are deemed necessary.
Resource adequacy studies can incorporate the benefits of DSR (demand-side response) e.g. via:

- Reduced need for investment (in network, generation or storage).
- Increased resilience to extreme events.

At the same time, DSR uptake may be held back if not acknowledged in adequacy assessments.

Hence, a ‘vicious’ vs. ‘virtuous’ circle may be at stake.
Charging infrastructure: A ‘moving picture’.
To conclude …

- E-mobility uptake and wider energy system needs have the potential to positively reinforce each other.

- This, however, is not a given as it depends on certain policy and regulatory choices.

- Wholesale markets need further deepening, becoming ‘flexibility ready’ (15 minute time units; market coupling; governance).

- Barriers to entry and participation will be key to address by policymakers and regulators (a new priority area for ACER).

- Similarly, EVs contribution to resource adequacy should be factored in, ‘levelling the playing field’. European-level adequacy assessment is key to unleash wider potential.

- Charging infrastructure can be tackled in several ways (approaches to cost socialisation as one example). A role for regulatory ‘best practice’.

- ACER stands ready to further contribute.
Thank you for the opportunity. Looking forward to the discussion.

Follow-up questions or comments are also welcome via director@acer.europa.eu
Back-up slides
ACER: role and governance

- Supporting the integration of energy markets in the EU (by common rules at EU level). Primarily directed towards transmission system operators and power exchanges.

- Contributing to efficient trans-European energy infrastructure, ensuring alignment with EU priorities.

- Monitoring the well-functioning and transparency of energy markets, deterring market manipulation and abusive behaviour.

- Where necessary, coordinating cross-national regulatory action.

- Governance: Regulatory oversight is shared with national regulators. Decision-making within ACER is collaborative and joint (formal decisions requiring 2/3 majority of national regulators). Decentralised enforcement at national level.
Multiple interlinkages.

- Market access
- Grid management
- Demand side management
- Planning, resource adequacy and coordination
- Investment and incentives
- Balancing

E-mobility
‘Flexibility’ ever more crucial. EVs a key asset.

ACER’s role is, inter alia:

- To monitor and assess barriers to market entry, including for new entrants and small players (e.g. demand side response and aggregators)

- To initiate changes to the current set of network codes and guidelines to enhance demand side flexibility.

Note: Figure from Zsuzsanna Pató of the Regulatory Assistance Project in Foresight, December 2020. LINK.
Infrastructure incentives and tariff-setting

“… With distributed generation, increasing demand from e.g. electric heating and EVs, increasing capability of resources to respond to time signals, *time-of-use gains in importance*. Time-of-use tariffs, especially for larger consumers, can be a *useful tool for reducing system peak-load*, which is a main driver for network investments, thereby *promoting network efficiency*. …”

Note: ACER report available via [LINK](#).
Scaling up infrastructure is a challenge.

**Yearly global estimated T&D investment in USD (to net zero pathway)**

- **Today**: 260 USD
- **2030**: 820 USD

- **Already today, infrastructure delays are a recurrent feature.**
- **For Electricity Projects of Common Interest, ACER reports show e.g. permit granting accounts for more than 40% of delays.**