CIGRE C0 Meeting
System impacts of active prosumers & aggregation

8 June 2021

cigre

For power system expertise

House keeping

- In plenary part:
  - You will be muted. Please use chat
  - Only host can unmute you

- In break-out session:
  - Please mute / unmute yourself
  - And please use chat

- Choosing break-out session and switching sessions will be shown later

Programme

15:00: Start

- Introduction: Paul Giesbertz (Energie-Nederland)
- Update on recent CIGRE developments: Danny Klaar (TenneT)
- The new energy act: Ronald Jansen (Ministry EZK) (in Dutch)
- Layered energy system pilots solving distribution grid issues: Michiel Dorresteijn (Energy21)

16 :00 : 4 Break-out sessions

16h30: Conclusions

- Presentation of main findings of each break-out session
- Plenary session

17:00: Closure

Break-out Sessions

- Break-out Session 1: System planning
- Break-out Session 2: System Operation
- Break-out Session 3: Markets and regulations
- Break-out Session 4: Technologies and digitalisation

The buzz words:

Active distribution systems

Distributed resources

Prosumers

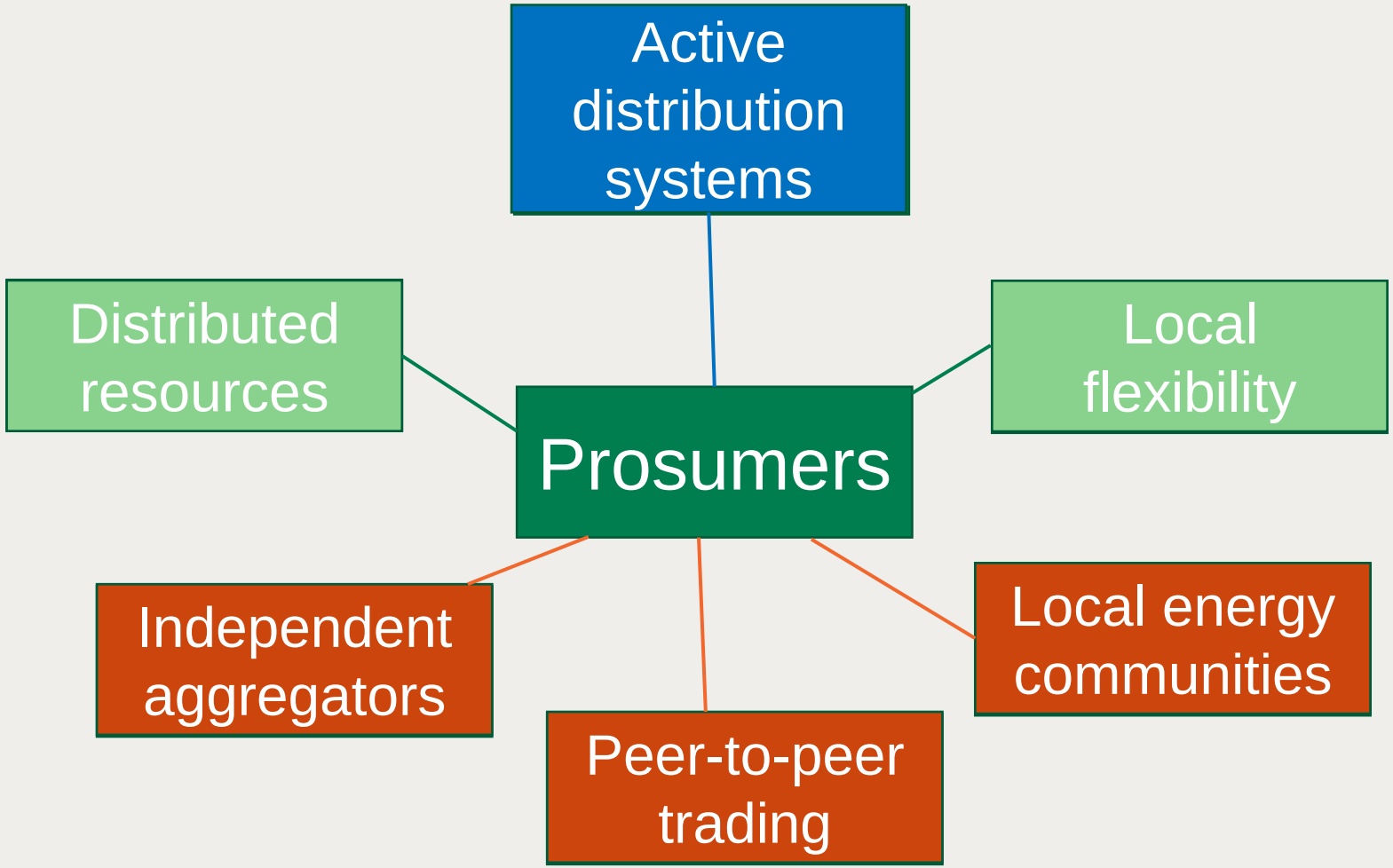
Local flexibility

Independent aggregators

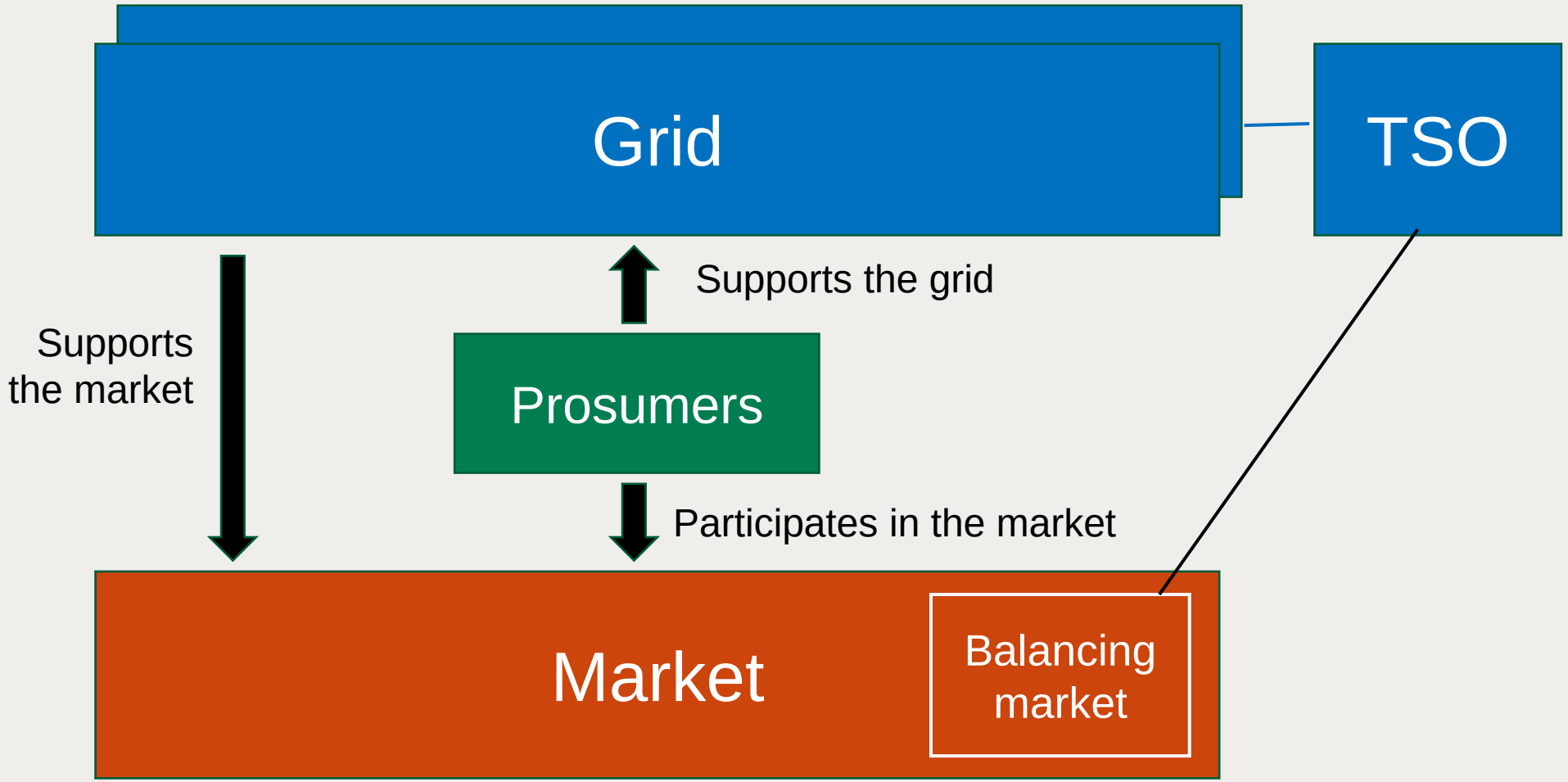
Local energy communities

Peer-to-peer trading

Prosumer in the centre



Prosumer in the centre



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Break-out Session 1 - *System Planning*
Chair: Maksym Semenyuk (DNV)

- What is the impact of active prosumers on system planning?
- Are new models and scenarios needed?
- How can TSOs/DSOs be better facilitated in their decision making process?

Break-out Session 2 - *System Operation*
Chair: Danny Klaar (TenneT)

- Can distributed resources be used for congestion management?
- Can existing congestion management practices for the transmission grid be applied to distribution grids?
- Can distributed resources be used for system balancing without DSO involvement?
- Are new forms of cooperation between TSOs and DSOs needed?

Break-out Session 3 - *Markets and regulations*
Chair: Thijs Slot (DNV)

- How can distributed resources be used for congestion management without distorting the functioning of the market?
- Does the new Dutch Energy Act enable these developments?
- Will the independent aggregator have a real added value or will retail suppliers offer similar services?

Break-out Session 4 - *Technologies and digitalisation*

Chair: Irina Melnik (Alliander)

- Are new platforms needed and for which functions?
- Are coordination tools needed for the use of distributed resources?
- Which configurations for e- mobility and charging are promising?
- What are the impacts of digitalisation on cyber security and are processes becoming too dependent on availability of platforms?

Summary Break-out Session 1 - *System Planning*
Chair: Maksym Semenyuk (DNV)

- From the system planning perspective it is important to distinguish between the types of assets that are utilised by prosumers and which capabilities these assets posses, and therefore which services they could provide.
- System planning may not anymore assume the highest load and generation for its purposes but should deal with individual representative profiles, looking more at dynamic behaviour and wider range of scenarios.
- It is considered that market prices will not be a sufficient signal to prosumers to act. Additional incentives will be required in order to better integrate prosumers in the system and enable their active participation. This is not strictly referring to the system planning but was agreed upon by breakout room participants.
- There is a consensus that in long-term integrating prosumers in the system can lead to significant savings in future grid investments and alleviate operational burden on existing grid assets.

Summary Break-out Session 2 - *System Operation*
Chair: Danny Klaar (TenneT)

- Digitalisation is an enabler of the energy transition. Systems though become extremely complex and resilience is a serious topic: what can we do to recover the electricity system after a big disturbance?
- TSO and DSO should intensify their cooperation on increasing visibility and controllability of the electricity system and create decision support tools.
- Pre-condition of having a well-functioning grid means that the “basics” should be fulfilled, such as having enough measurements to efficiently and effectively operate the grid.
- A renewed transmission tariffs structure might be needed that includes enough incentives to improve our market design.

Summary Break-out Session 3 - *Markets and regulations*
Chair: Thijs Slot (DNV)

- If we develop ‘local markets’ with own price zones, Congestion management may distort optimal market pricing in that area as bids that would normally serve the market, now get used by the SO
  - In the current system, parties offering redispatching for congestion management, need to stick to their E-programs. Consequently, the market is not/ hardly affected in the current set-up.
  - If you have small-sized local markets however, it is unlikely that parties offering local congestion management services, can stick to their same E-programmes for that area, thereby distorting the local market
- Dutch Energy Act puts customer central and that is good. However, with this central role (may) come(s) a lot of interactions and contracting with other parties. The system is complex, and a customer may lose track of what is best for him/ her. This could leave room for market parties to abuse/misuse customer’s lack of understanding in contracting for example
- There was no clear consensus regarding the necessity to define an ‘independent aggregator’-role; there seems to be quite some overlap with the role retail suppliers (can) take. Independent aggregators may however add value because of their (presumed greater) ability to focus more on niche activities; e.g. by targeting and unlocking the participation of specific niche technologies and/ or services.

Summary Break-out Session 4 - *Technologies and digitalisation*

Chair: Irina Melnik (Alliander)

- Technology probably will not be the limiting factor in more a local exchange of power. Yes, it will require more metering (all customers require smart meters and we require more metering in our grid), but it is possible.
- Netting holds back the development of end consumers adapting their load/generation to the actual market prices. As such, there are currently very few incentives to change behaviour/release flexibility.
- Interesting side note: on the one hand markets get integrated internationally, while on the other hand people are talking more and more about local energy markets/systems.
- One big question is how all the different markets an end user might be exposed to (neighbourhood level, community level, municipality level, province level, national level, international level, bilateral contracts, …) will go hand in hand.

Bedankt voor uw deelname!
Thank you for your attention!