DIW BERLIN

FPM Workshop June 2024

Local Marketplaces as a step towards making local pricing work for consumers

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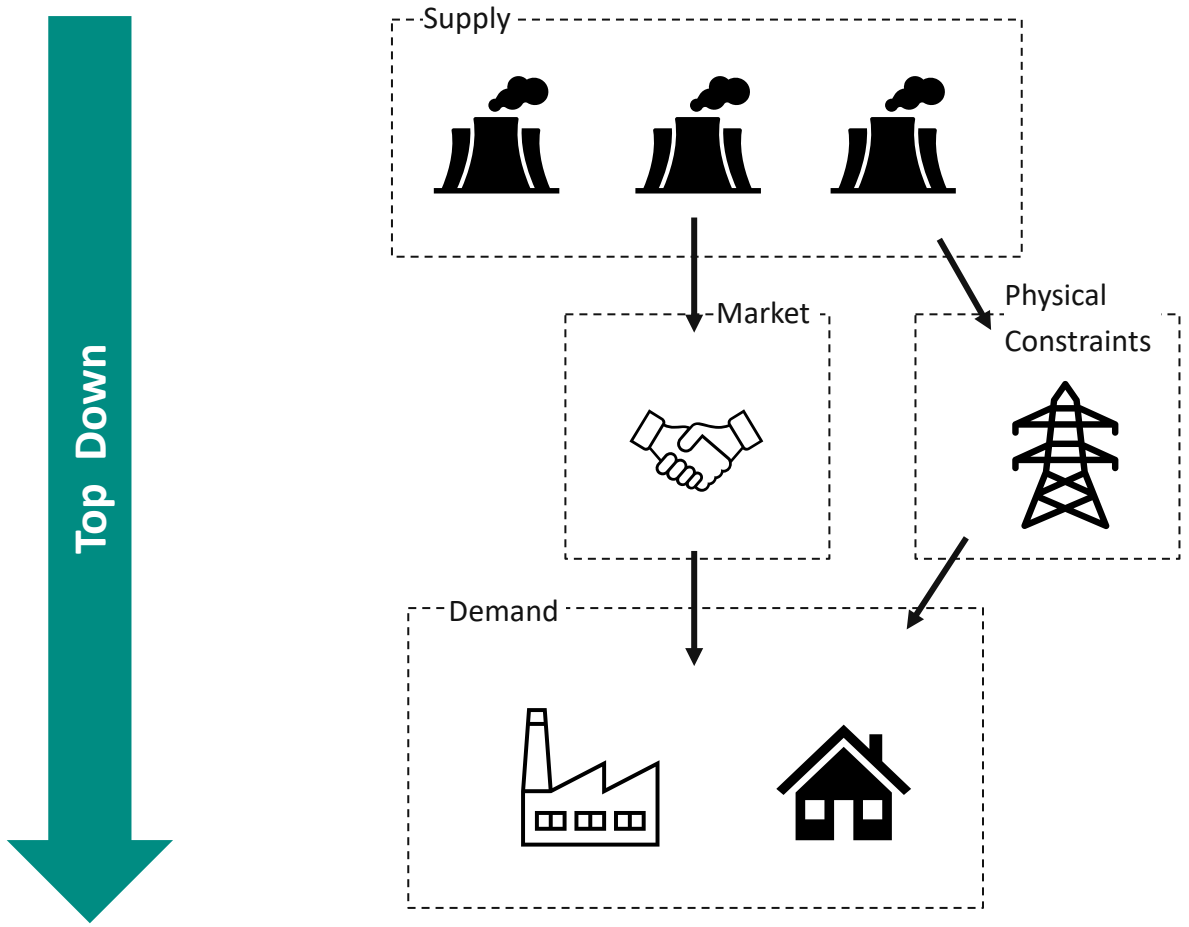
02.06.2024

Historic power market design …



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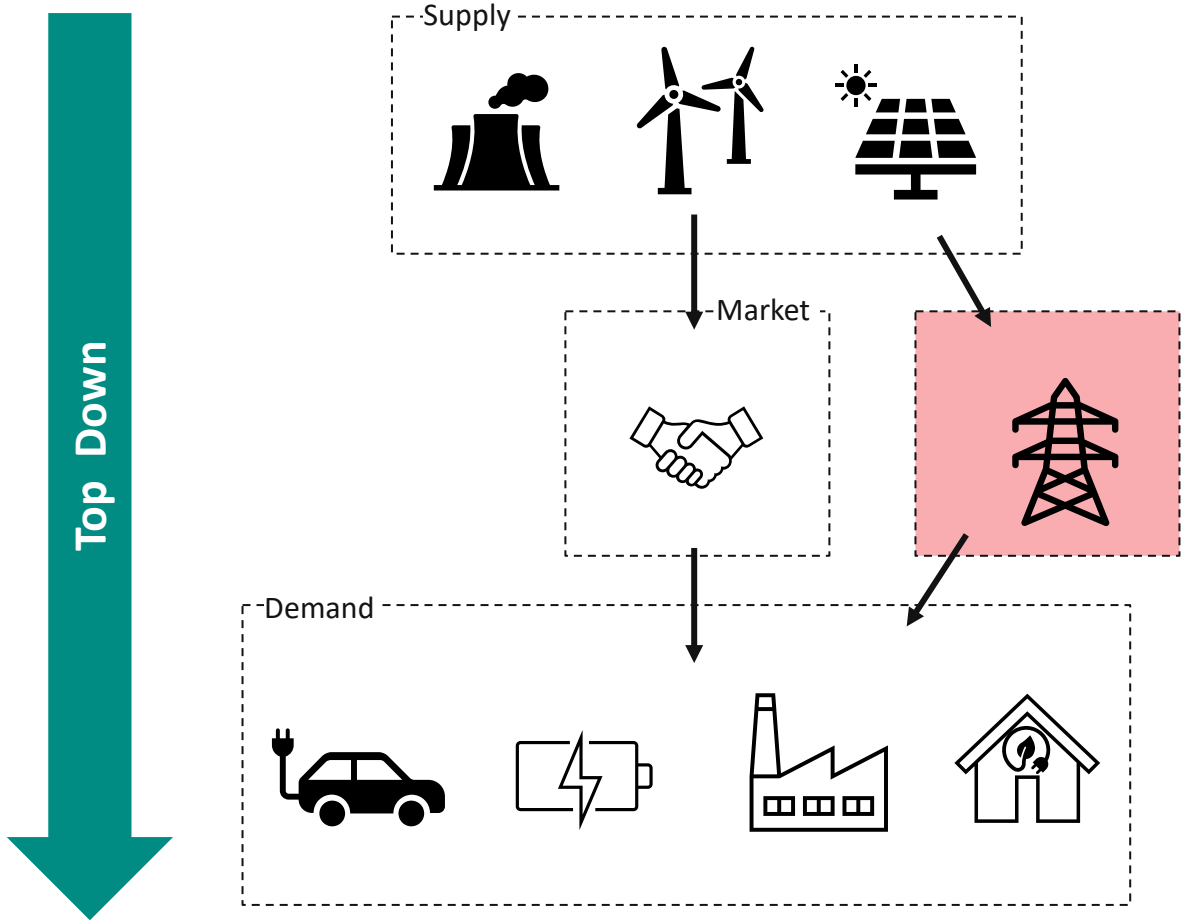
Historic power market design not fit for 21st century



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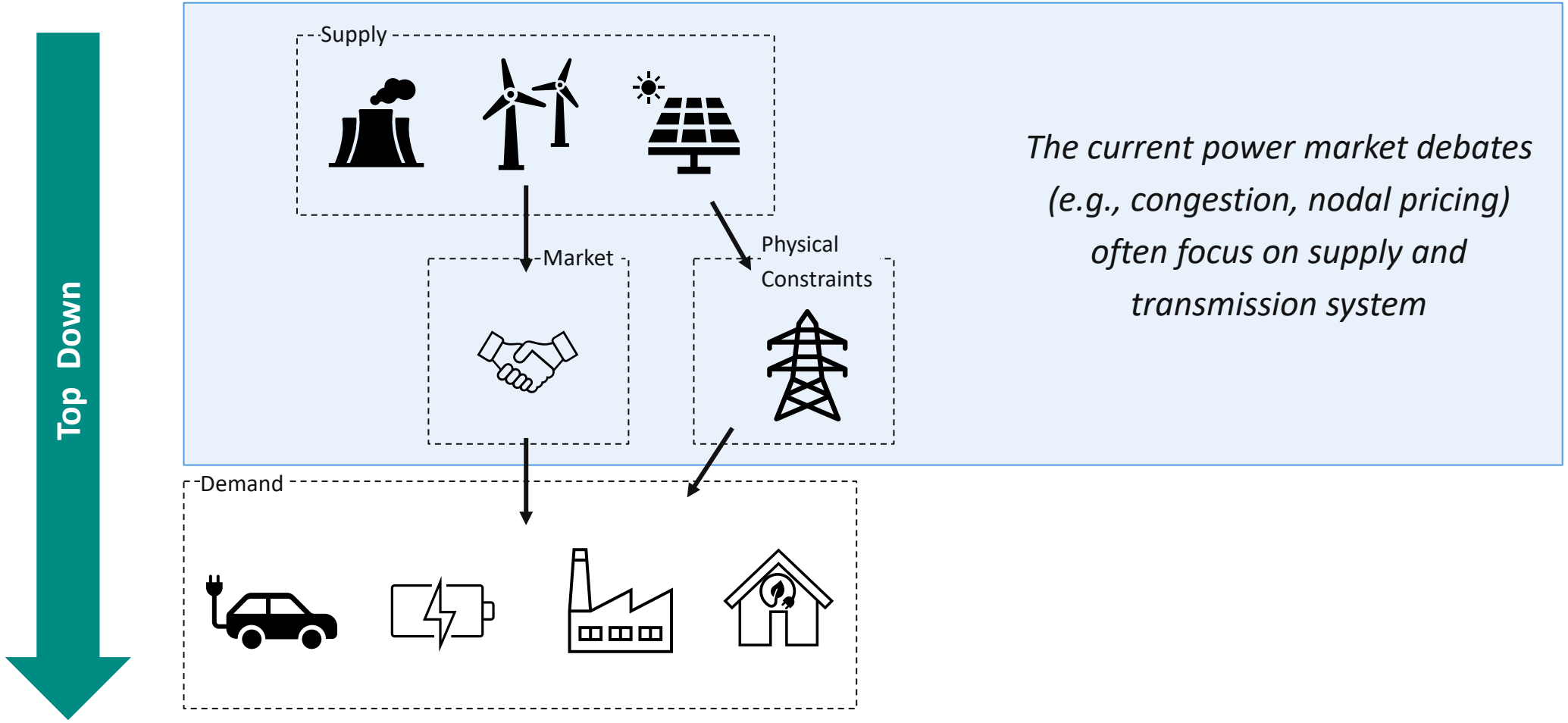
But key actors usually not included in debates on reforms



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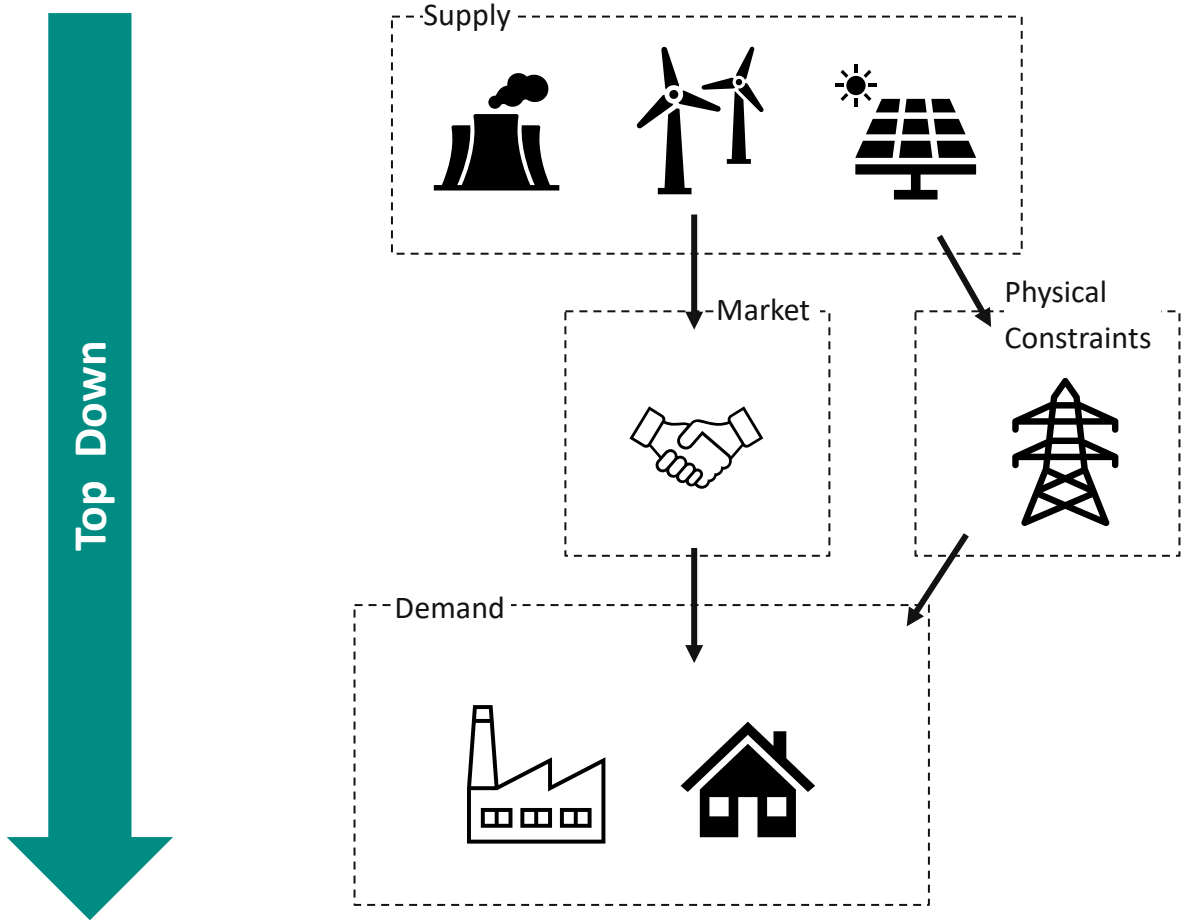
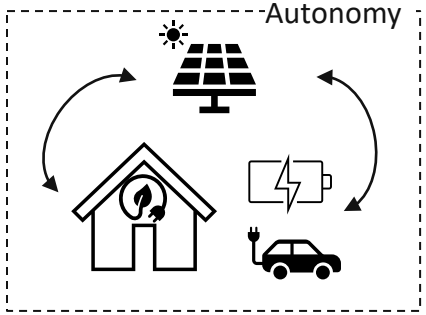
… putting at risk our integrated power system



Effects on consumers:

- A Lack of consumer (& voter) support for market reform
- B Increased TSO/DSO costs
- ➡ Consumers strive for autonomy



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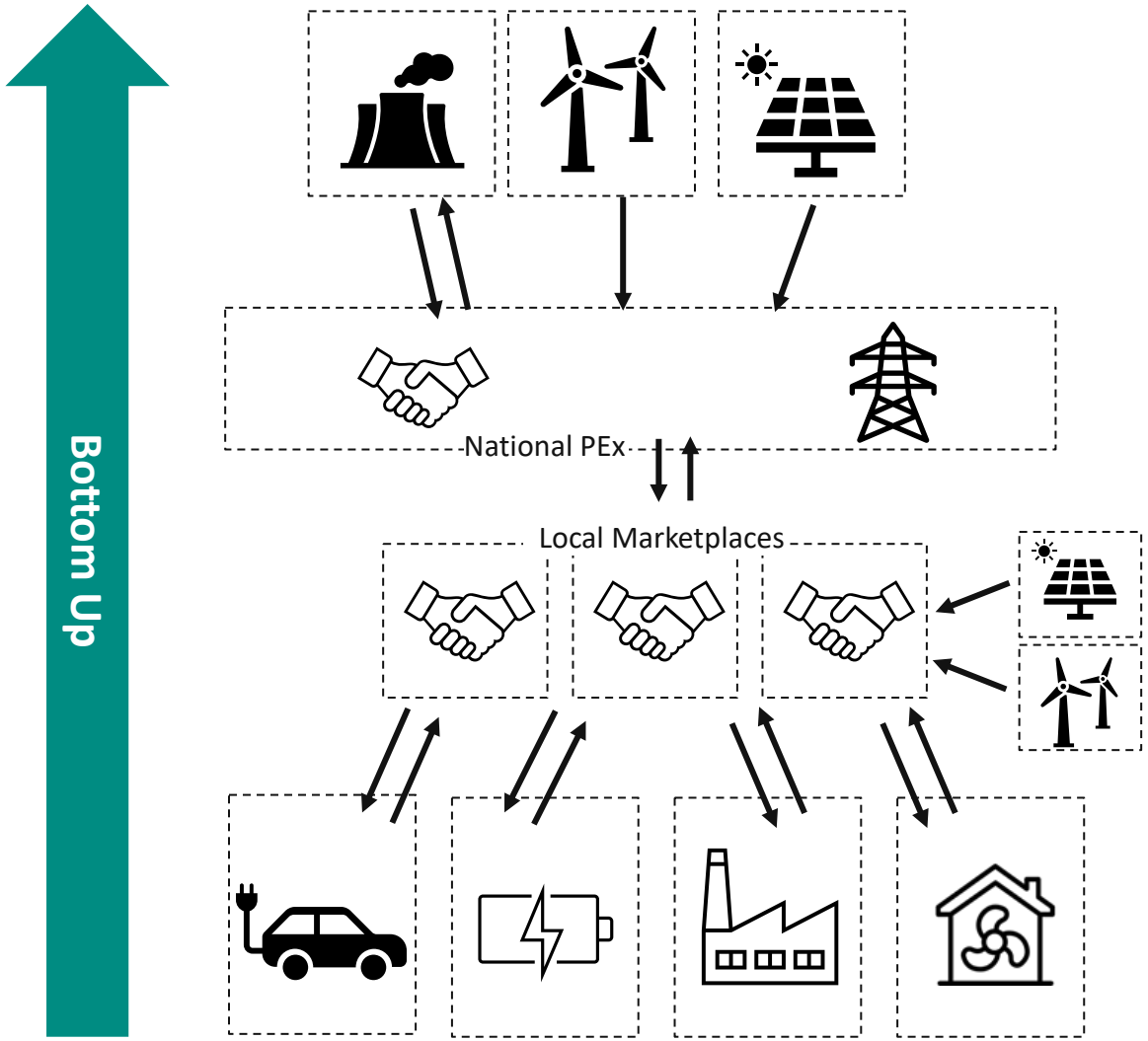
Challenges for integrating final consumers

Instead of offering the flexibility services to the power grid – **consumers strive for autonomy from the grid.** This has some unintended consequences:

1. **Efficiency** of integrated electricity system is foregone
2. **Allocation of grid costs** is unfair for non-flexible consumers („cream skimming“)
3. **System security** is at risk
4. Influential consumers not present in **political debates**

Based on the parallel developments of nodal pricing, renewable energy communities and local flexibility markets, a potential way forward could be **local energy marketplaces**.

Let’s try to combine perspectives: Local marketplaces for electricity



C **Large generators** continue to bid directly into the national power exchange

B Local marketplaces pass on bids to **national power exchange** to facilitate joint clearing

A **Demand side and decentralized generation** interact on local marketplaces

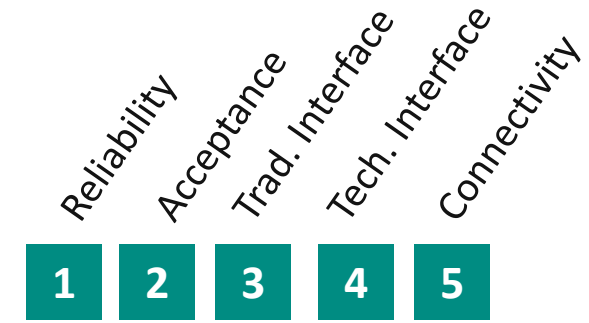
Different design options can be envisioned – two illustrative examples:

Low involvement

- Main function is transparency about prices;
- Consumers can see prices on a transparency portal in real-time;
- Consumers can pre-register their flexibility, can be called upon at need (incl. reserve payments).

Local markets are mostly a communication tool.

Many intermediary solutions possible *(and have been presented today)*



High involvement

- Participants can trade their flexibility on the market;
- Transparency, trading, billing is all combined in one place;
- Day ahead bids can be placed through the local market place.

Local markets have broad functionality.

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Potential functions a local marketplace could provide

1. **Transparency**: Consumers need to be able to learn about price and supply (incl. forecasts);

2. **Acceptance:** Regionality ensures that consumers and local politicians accept the local energy markets. Inclusion of existing actors ensures acceptance by the energy industry.

3. **Trading interface**: Consumers should be able to submit bids on the marketplace (directly (??) or through intermediaries like retailer, aggregator ..);

4. **Technical interface**: Consumers need to be able to connect their automated demand response systems (electric car, smart home etc.) to the marketplace;

5. **Connectivity**: The local marketplaces need to be connected to a national power exchange with joint clearing to maintain liquidity and efficiency;

How could a local marketplace work?

Economically

- To ensure efficiency there is **joint clearing**;
- **Grid constraints** are considered;
- Established **nodal pricing algorithms** can be used for this.

Technically

- **Transparency interface** via a website hosted by local DSO;
- **Trading interface** for passing the bids to the central power exchange clearing;
- **TSO-DSO coordination tool** for pre-screening of bids for DSO constraints;
- **Billing interface** through marketplace, 3rd party or retailers.

Commercially

- **Retailers** can sell services to consumers to optimize performance;
- **Aggregators** can leverage their portfolio to realize full value of flexibility;
- **DSO** role in the electricity system is strengthen and insure against cream-skimming through autarky;
- **Power exchanges** benefit from enhanced system integration and trading.

Thanks for your attention.

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