Energy Sharing – New Possibilities for PV

Session VI: Capture Rates for Solar and Re-thinking Support Schemes

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PV – Booming like never before

2020 – 2024 (Figures for Austria)

Number of Installations	Installed Capacity in MW
2020: 150,000	2020: 2.0
2024: 500,000	2024: 8.4

Share of ~25% of total installed capacity

PV: the holy grail of the energy transition?

PV support – only for experts

Supporting Schemes in operation at least in 1 year in the period from 2020 – 2024 (Austria):

- Feed in Tariffs
- Market Premium
- Investment Support for PV
- Investment Support for storage systems
- A combination of the above-mentioned instruments
- VAT exemptions
- Additional local/regional initiatives
- Brand new: additionality on top of investment support for European products

→Results in:

- different sales mechanisms
- different prices/tariffs
- different responsibilities
- Different impact on the market
- Etc.

PV – energy sharing

Target:

- Making the energy transition visible
- Everybody can participate in the energy transition
- Optimize the use of energy from PV

The motivation:

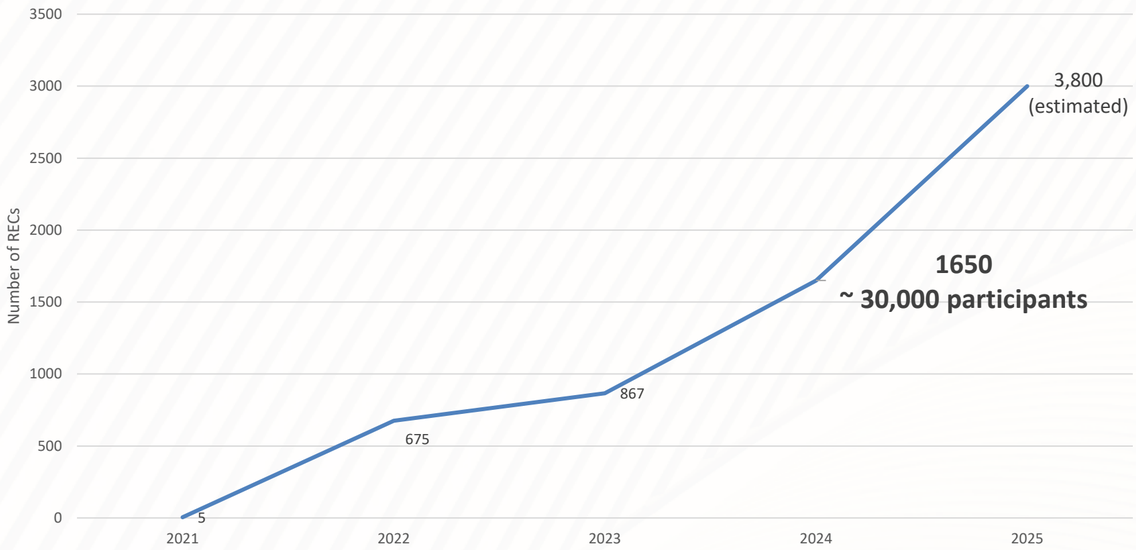
- Being (more) independent from the wholesale market
- Being (more) independent from „standard“ energy suppliers

The instruments in place:

- Energy communities
- Peer-to-peer-trading

PV – Energy Communities

„GOLDRUSH“



Source: Museum of History & Industry (MOHAI) Seattle

- Impact on the system so far: ZERO
- Participants represent < 1% of total metering points
- But: if the growth rate continues and the number of participants exceed a level 10% of total metering points, instruments have to be defined that Energy Communities have certain system responsibilities

PV – in a perfect world

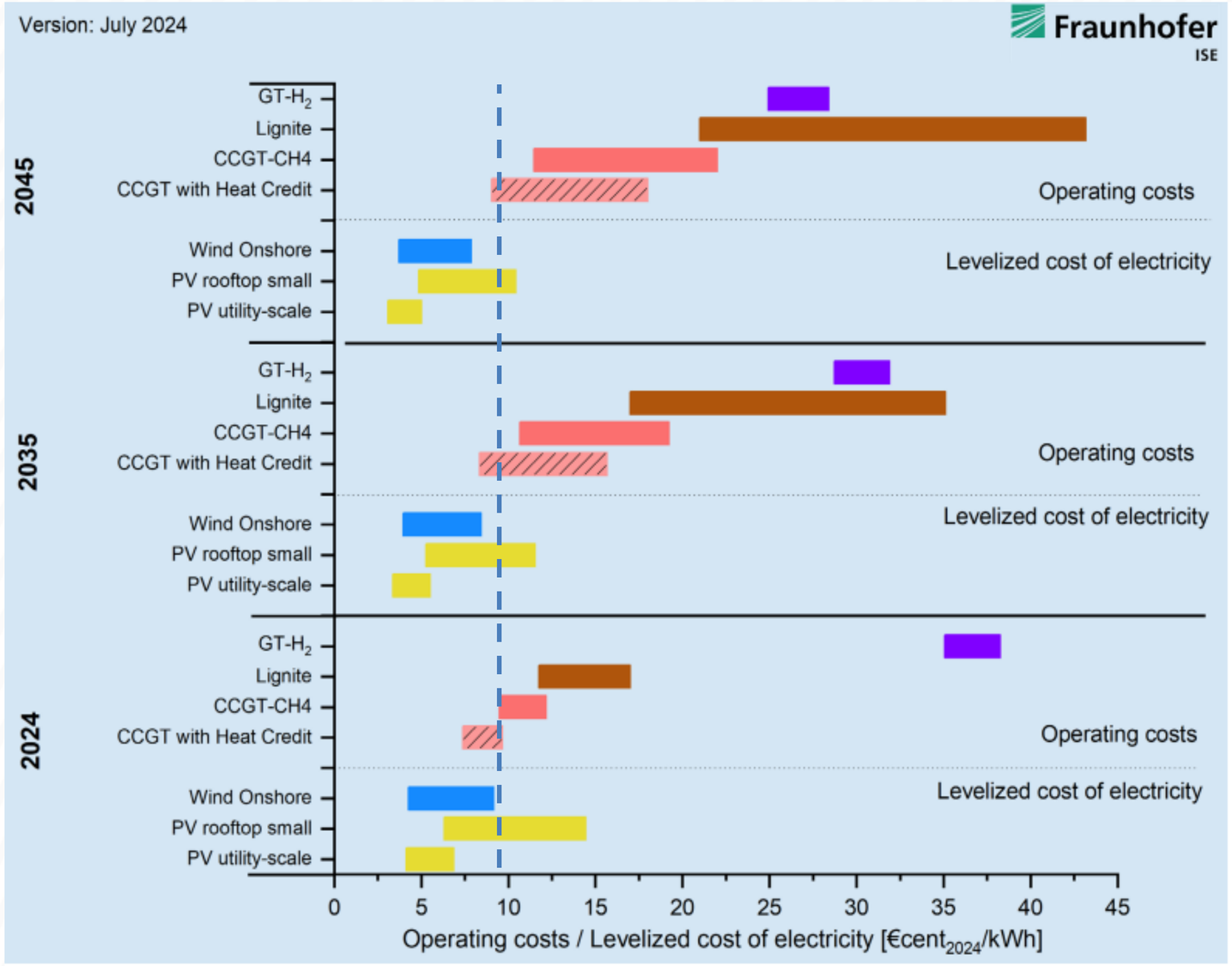


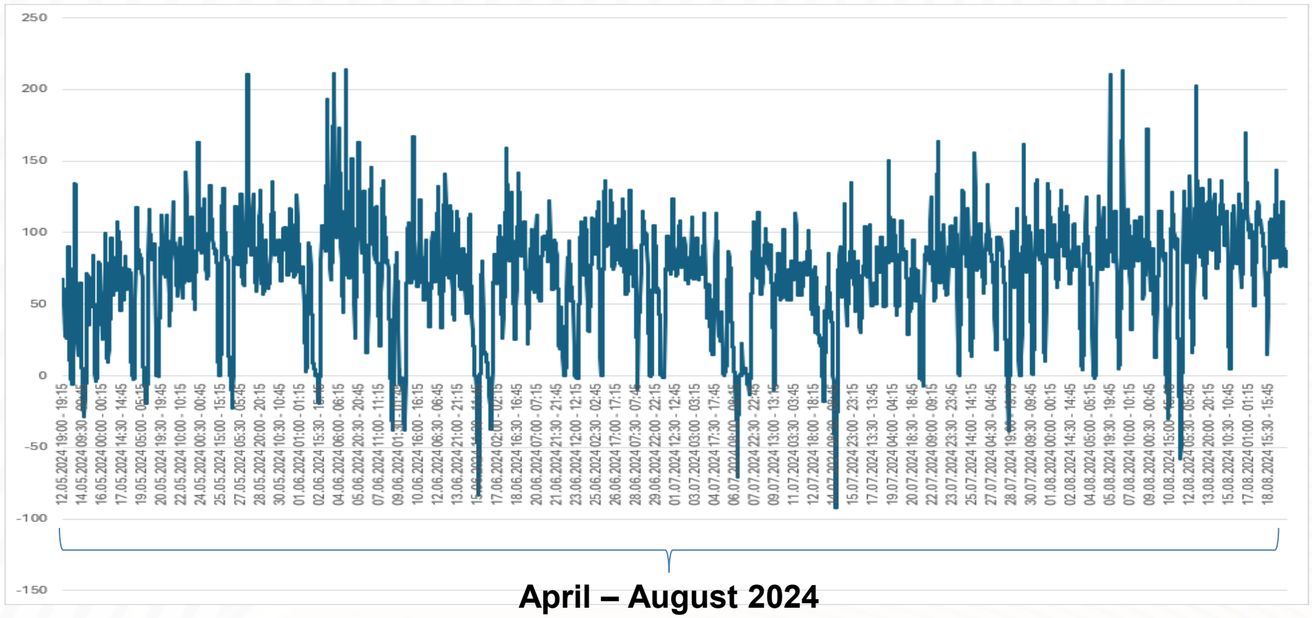
Figure 22: Comparison of the LCOE of newly installed PV and onshore wind power plants as well as the operating costs of existing lignite-fired and CCGT power plants.

Optimized:

- 100% self consumption
- No impact on the system
- No impact on the market
- Business case over the lifetime

PV – in real world

Key parameters:
- Degree of self consumption ~30%
- Supply exceeds Demand → negative prices
- Price situation decreases the revenues for the oversupply



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Mechanisms to reduce/optimize demand/supply by PV:
- Curtailment
- Balancing responsibility for operators
- Grid-friendly set-up of PV plants
- Integration of storage systems
- Etc.

Conclusions

- PV is not a minority-technology anymore – it implies a massive impact on the system
- PV is mostly still regarded as a minority-technology – operators often have no system-responsibility, do not care about balancing, expect priorities, high subsidies
- Every additional installed MW increases the problems on the market
- What is necessary: instruments and technologies to increase the own consumption and decreasing the incentives to sell the energy to the public grid (especially in times of over supply)


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