



# The NODES market for decentral flexibility in real operation

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Benedikt Deuchert

✉ [Benedikt.Deuchert@NODESmarket.com](mailto:Benedikt.Deuchert@NODESmarket.com) | [www.nodesmarket.com](http://www.nodesmarket.com)

NODES is a Joint Venture between Nord Pool and Agder Energi, aiming at building a marketplace for decentral flexibility



**NORD  
POOL**



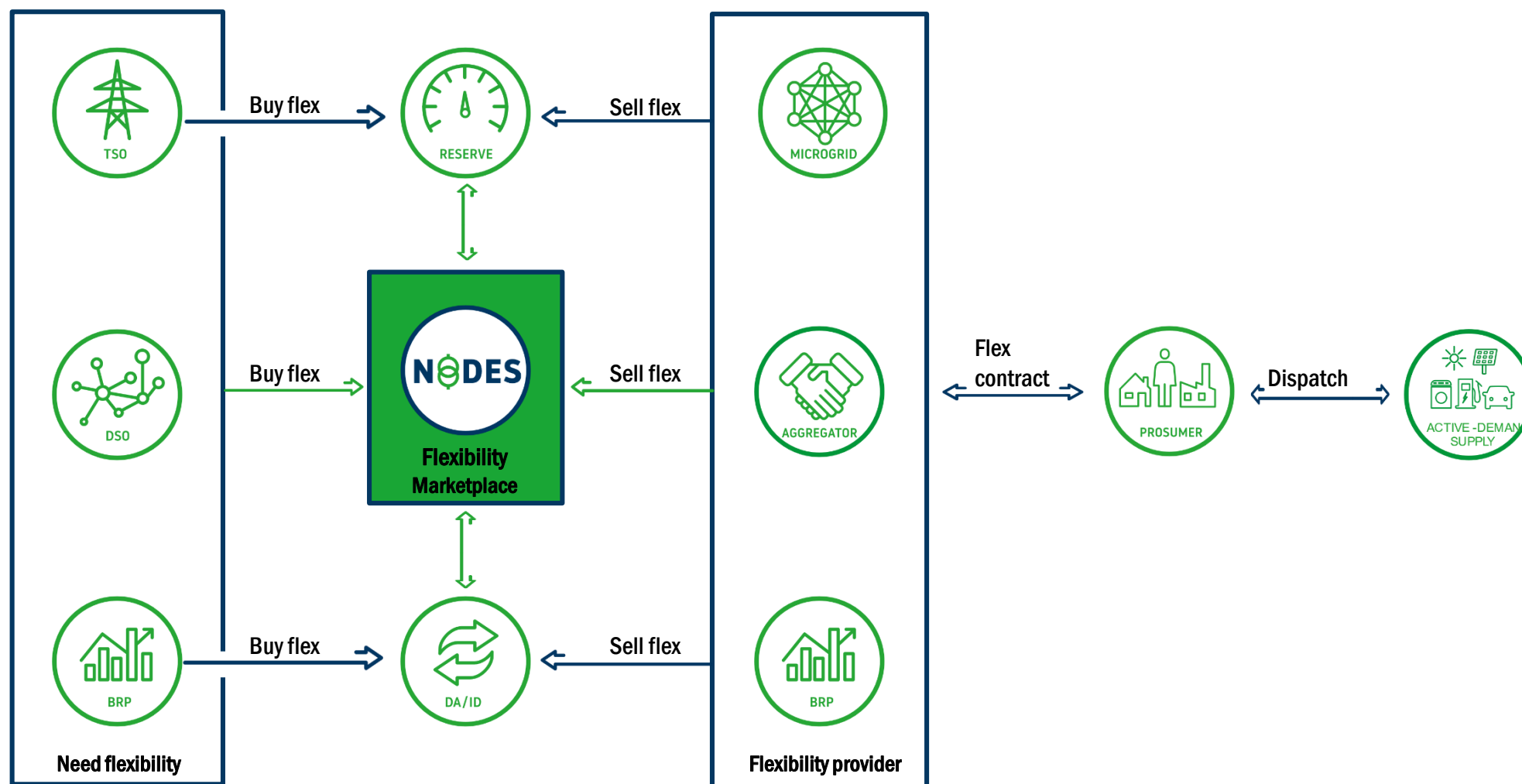
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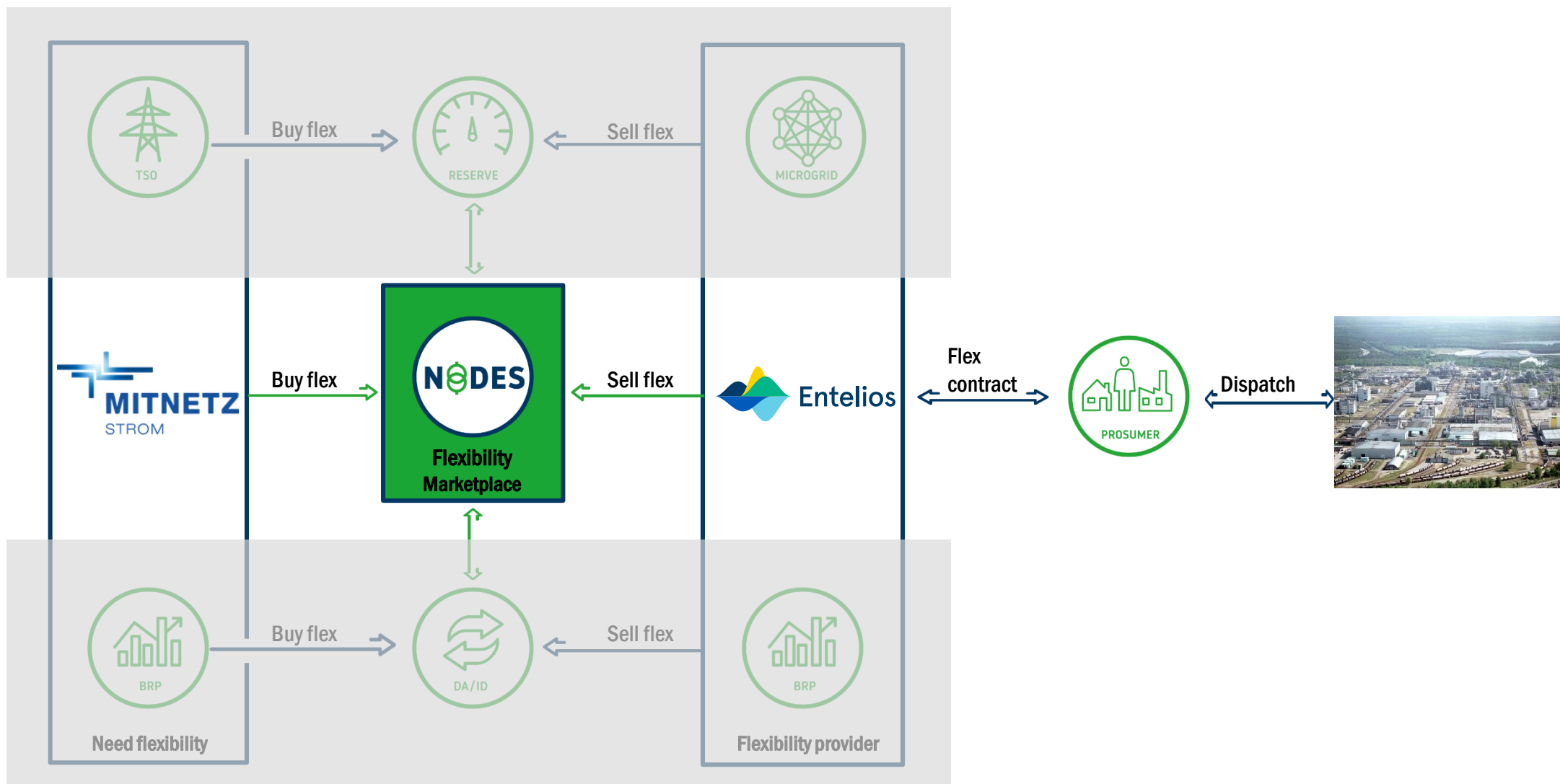
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**NODES**

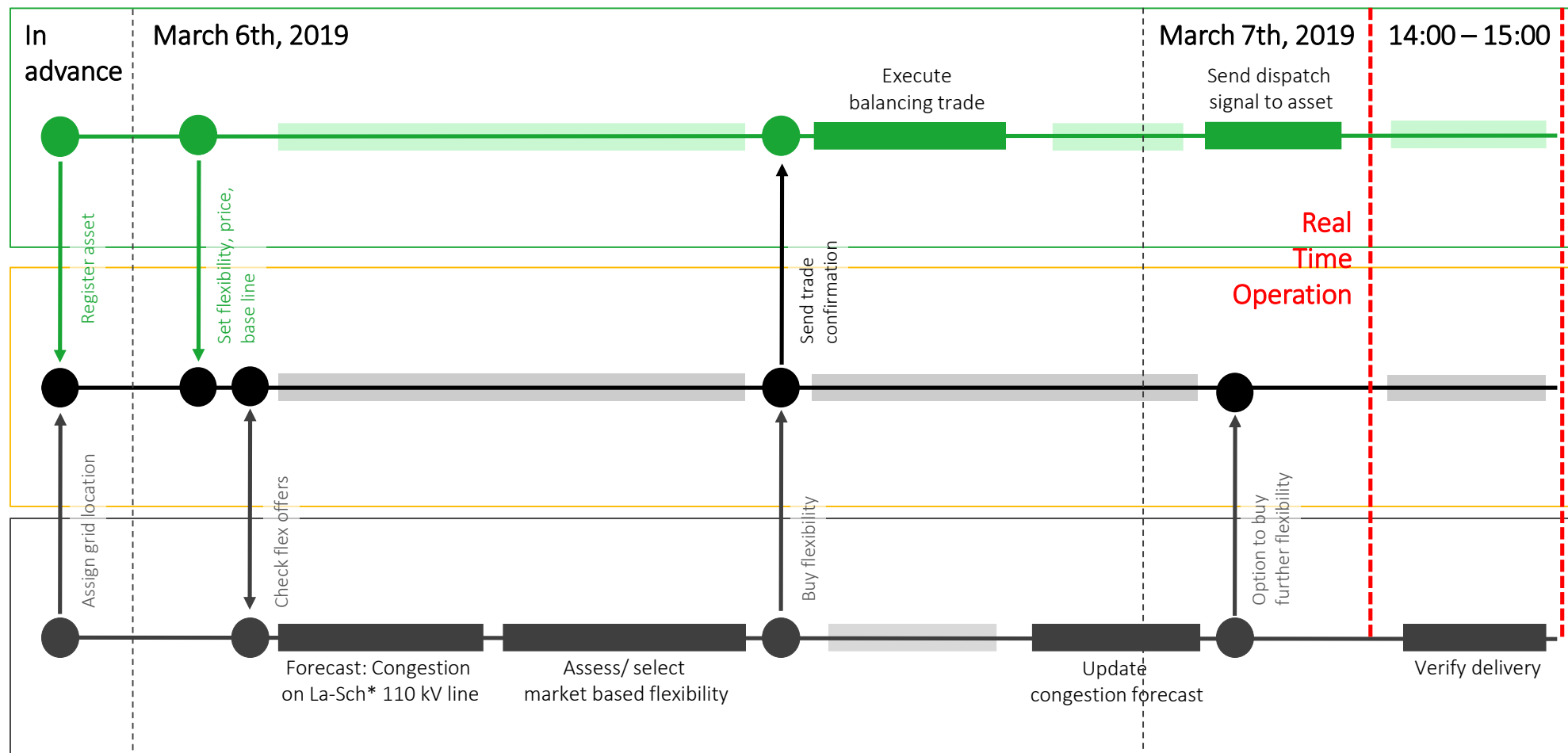
# NODES helps unlocking the value of local flexibility while maintaining the existing power market design



# Mitnetz case – Too much (renewable) production in the high voltage grid



# The marketplace is in live operation – Most recent event on March 7th, 2019



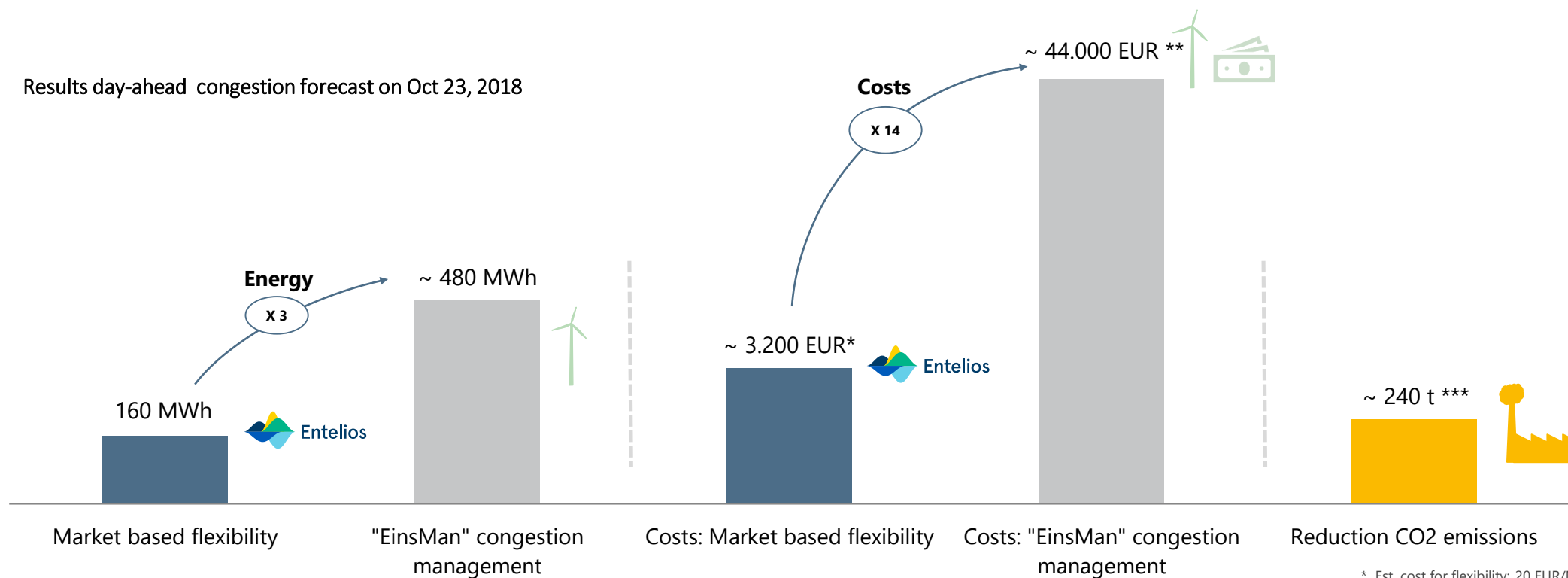
➤ March 7th, 2019, 14:00 – 15:00: 2 MW NEG „ramp down“ flexibility sold from Entelios to MITNETZ for 20 €/MWh

\* 110 kV high voltage line „Lauta – Schwarzheide“

# Using market based flexibility promises high efficiency gains - in this pilot:

- ✓ Higher sensitivity on the congestion than alternative, conventional congestion management measure (factor 3!)
- ✓ Lower specific costs per MWh of flexibility
- ✓ As a result: Overall costs for congestion management to be lowered by an order of magnitude

Results day-ahead congestion forecast on Oct 23, 2018



\* Est. cost for flexibility: 20 EUR/MWh  
 \*\* Weighted avg RES compensation in region 92 EUR/MWh  
 \*\*\* Avg. 489 g/kWh

# Preliminary results from the MITNETZ pilot

## The NODES marketplace is an effective tool for congestion management

NODES marketplace tested with all relevant market roles. Flexibility products offered on NODES are suitable for congestion management.

Congestions in the distribution grid can be forecasted by the DSO. Flexibility offers can be assessed against alternative measures. Existing market processes can be applied.

No abuse of market power even with low liquidity, as the grid operator has the „EinsMan“ fallback option. „Inc/Dec“ gaming would involve considerable risk for the flexibility provider and has not been observed.

## Costs and CO<sub>2</sub> emissions for congestion management can be reduced in live operation

The market based flexibility offered in the MITNETZ pilot has a considerably higher sensitivity on a specific congestion than EinsMan measures. On a day with congestions, the potential in CO<sub>2</sub> savings was calculated at 240t. The potential in cost savings was calculated at 40 TEUR.

## The current regulatory environment needs to be adjusted

The overall regulatory uncertainty in the operation of local flexibility markets needs to be removed in accordance with the regulatory framework on European level (CEP).

Demand side flexibility needs a level playing field: The tax, grid tariff and EEG levy structure needs to be adjusted so that any flexibility used for regulation or congestion management has an equal (or no) burden.

Grid operators need to be properly incentivized to use the cheapest option for congestion management in the „yellow phase“, including the use of market based flexibility. For efficiency reasons, options involving direct control by the grid operator (e.g. §14a EnWG) need to be limited to the operational „red phase“.

# NØDES