GOPACS
grid operator platform for congestion solutions

**Session 2:
Markets and platforms for
grid/flexibility services
- TSO-DSO cooperation**

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1)   How do you assess the impact of design choices on existing markets (day-ahead, intraday, ancillary services...) and on harmonization, integration and interoperability of markets?

- The impact on existing markets is minimal for the IDCONS concept by making efficient use of existing ID market. Just add location component and use existing PX's customer interface and business model and their clearing and (financial) settlement processes. A non-discriminatory approach between PX's, their customers and TSO/DSO.
- One website/API for notifications of system operators (D&T) to the market (www.gopaces.eu)
- Also the concept of balanced orders (spreads) can be applied in other solutions like the Dutch congestion process where individual grid connected customers are obliged to put in orders in case of regulated (Netcode) congestion area
- When more optimal solutions are created, based on orders from multiple markets, complexity might increase
- TSO-DSO coordination is a regulated function and implemented via an algorithm in the platform
- **What risk lies with Market Party and what risk with Grid Operators. Explicitly make choices to minimize price mark-up's. (opportunity costs minimize). Risk vs Risk means sometimes take higher prices for granted and leave risk at the market. Sometimes take the risk yourself.**
- With every design decision think interface through with all other market interfaces

2)   How do you ensure that flexibility markets, dynamic connection agreements and dynamic grid tariffs fit together? Where do you see synergy potentials for consumers and system operators?

- **In the end every connected customers should be able to choose every ISP if and to whom the flexibility is monetized.**
- The challenge is to create a market model with the right incentives towards customers so that from a system operators perspective the right **amount** of flexibility is available or used at the right **time**, at the right **location** at minimal **costs**. **The more flexibility is deployable for multiple goals, the more synergy is achieved.**
- Above all: SoS always taken into account.

3) What cannot be solved by the market, i.e. which products/services should be tackled via regulated systems?

- **When congestion area has a lack of liquidity or flexibility providers**
- Congestion Management is incidental, which makes it harder to create a ay-to-day positive business case. Integrate congestion market within existing business models by stacking values can be done by the market
- Extreme situations
- Bidding-zone Internal congestions

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4) How transparent is your market? What data do you provide? (e.g. electricity flows, grid observation data, availability and impact of different grid assets)?

- **We are as transparent as possible, unless it can cause a risk such as gaming.** For example: specific congestion information.
- In a few weeks, the entire world will see called volume per problem excluding price per ISP. Cost per month per network will be shown in line with transparency regulations.

5) How are the different tasks – especially the running of a platform - split between the regulated and the commercial area and why? If running a platform is not a regulated activity, how do you prevent market abuse?
All that has to do with finding a solution is regulated. All that has to do with collecting and settling bids is commercial. Risk of abuse is low when everybody has equal access by putting it in the commercial domain.

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GOPACS: Grid Operator Platform in the Netherlands for market based congestion solutions
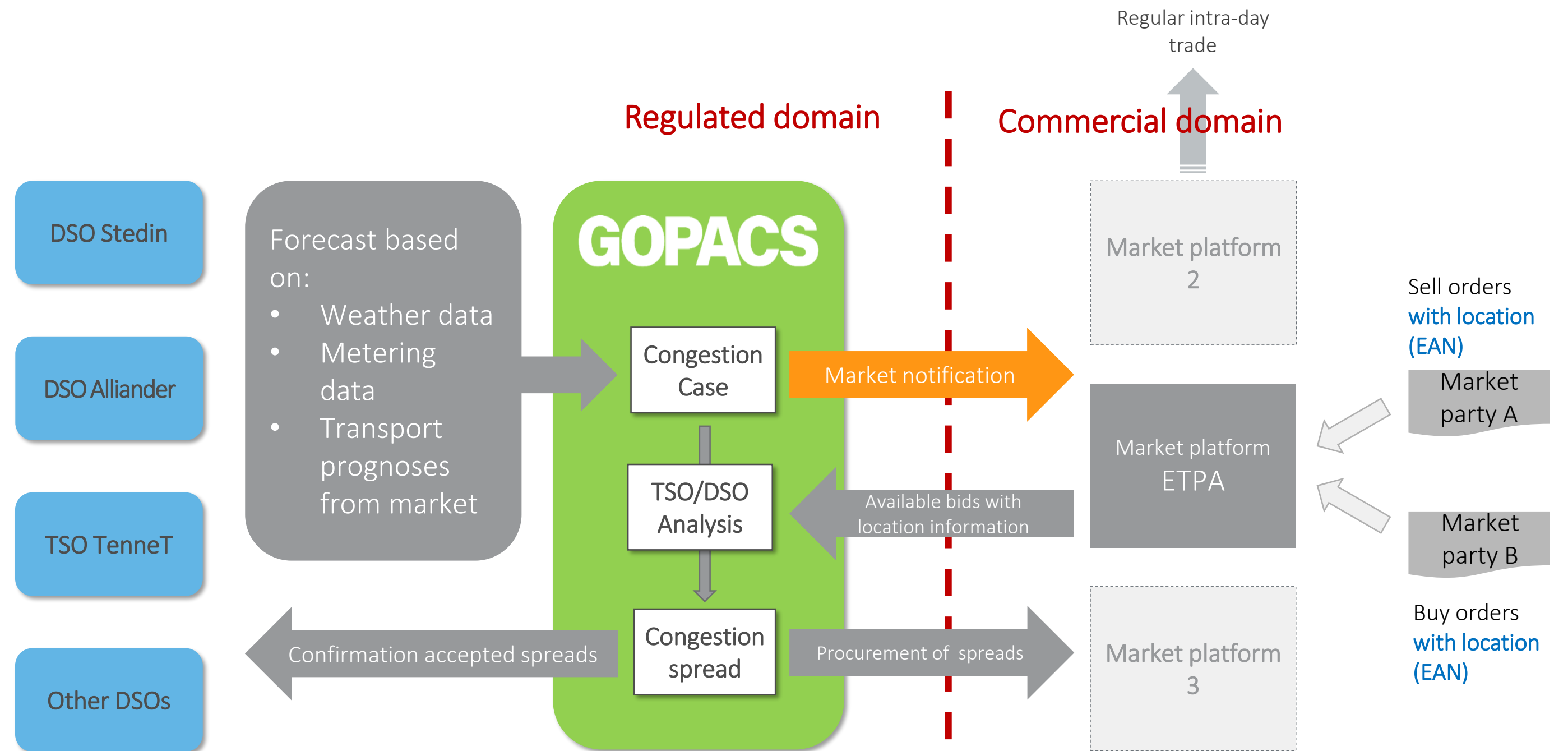
Results so far:

- GOPACS is operational within current regulatory framework and might be used to improve the Dutch Netcode.
- Requests for information and/or cooperation were received from: Finland, Estland, Denmark, Poland, UK, Belgium and even Japan.
- Over €6 M of spreads were bought to prevent congestion so far
- An increasing number of parties with flexible DSO-assets is showing serious interest or are looking to on-board.

Ambitions 2020:

- Maintain stable use of platform
- Continue functional development
- DSO transactions
- Add more DSO-assets
- Implement first version of aggregated bids combined with automated validation compatible to Dutch market model and therefore scalable to national level with large numbers of assets.

Annexes

THE CONCEPT:

**GOPACS: Grid Operator Platform in the Netherlands
for market-based Congestion Solutions**

- Result of true DSO-TSO cooperation

- Launched 29th January 2019,
  by all Dutch DSO's & TSO TenneT

- Building on the existing Intraday Market, easy
  access for market parties

- Mitigating local congestion by procuring
  spreads (re-dispatch)

- Platform supports TSO-DSO coordination to
  avoid mutual harmful interference

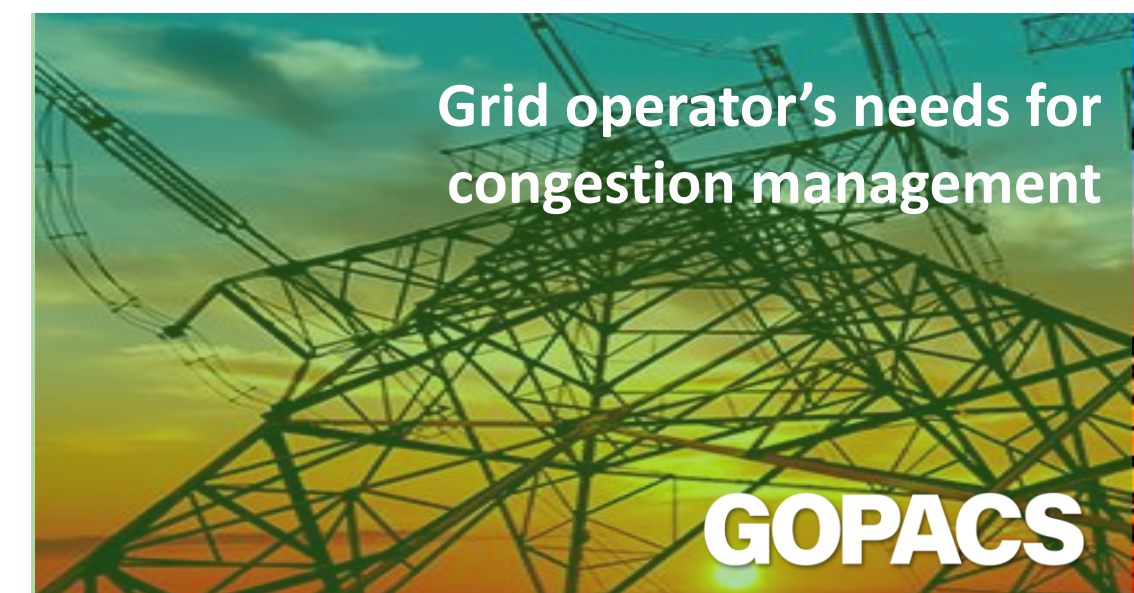- First implementation in Europe
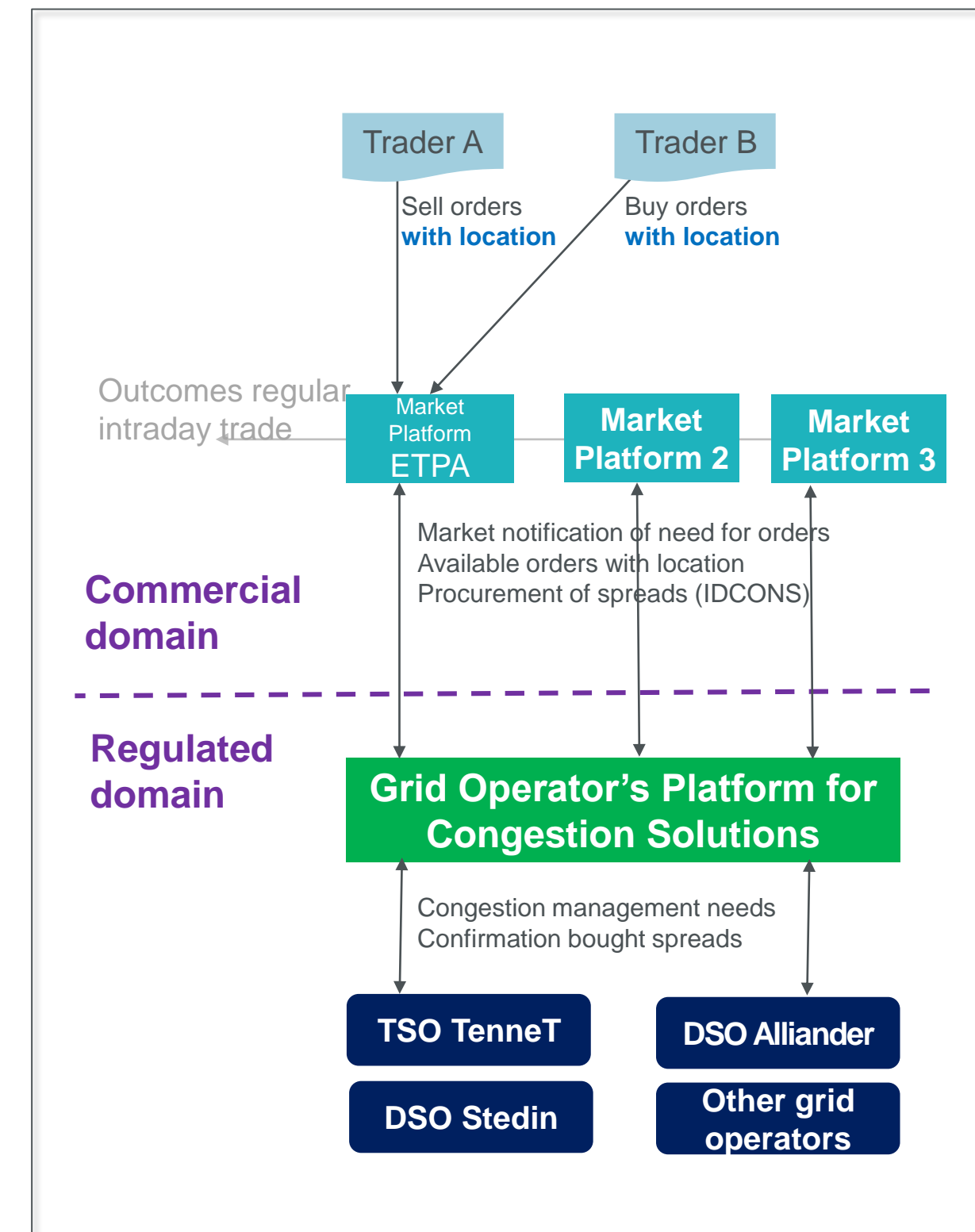
1) What are the use-cases?

- Joint procurement of market based flexibility via ID re-dispatch
- Creating easy access for the market (unlocking flexibility and increasing market liquidity)
- Coordination/ optimization function on system level between different System Operators (incl. TSO-DSO):
  - Efficiency in solving cross area congestion

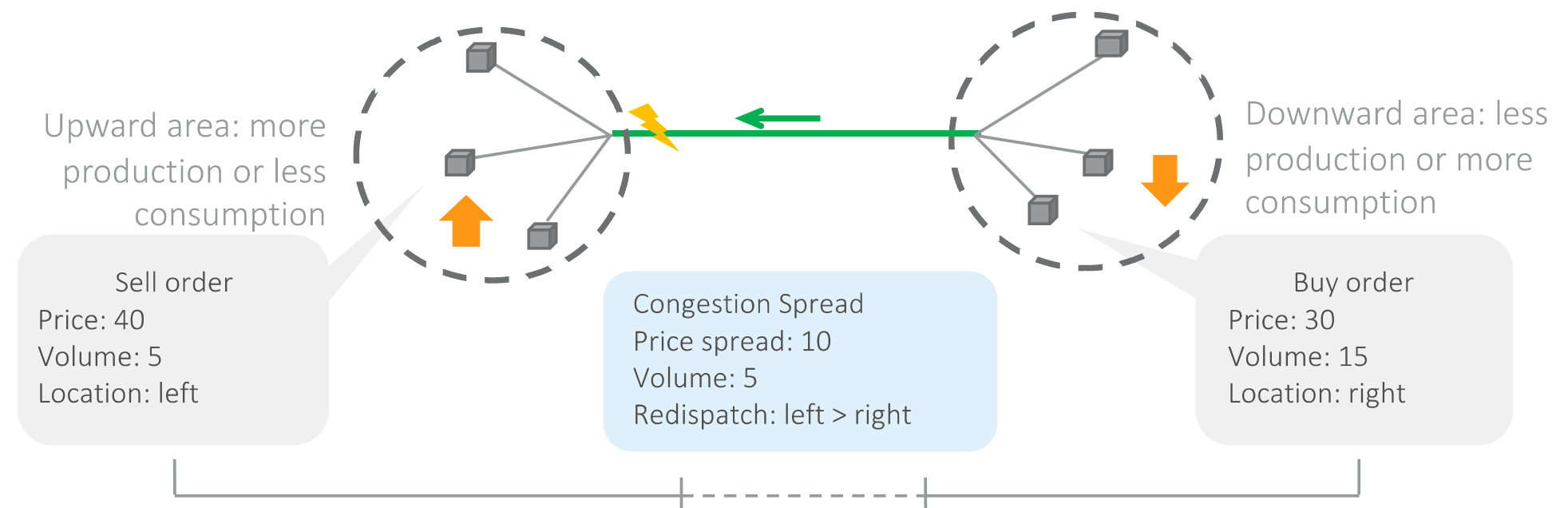# 2) How does this define the design of the market/platform?

- GOPACS enables all market parties via existing commercial market platforms to interact with all Dutch DSOs and Tennet in delivering bids for solving congestion in the Dutch Grid
- All bids from outside the congested area can contribute to solve congestion (re-dispatch) in a level playing field

Resources from market parties at suitable locations

Liquidity and access through existing market platforms

Grid operator's needs for congestion management

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3) What are the products and services?

1st Product: Intraday Congestion Spread (IDCONS)

- Combination of intra-day bids on a market platform with location information that can be leveraged for re-dispatch:
    - sell-order from market parties with a connection in the congested area
    - buy-order from market parties outside the congested area.

- The price difference between the buy and sell orders (intra-day congestion spread) is paid by the grid operator. With this, the market platform matches the corresponding orders

- No BRP license for DSOs needed, Balance Neutral, easy access for market parties through ID market integration

- Bids are normal ID bids, with locational information added

Upward area: more production or less consumption

Downward area: less production or more consumption

Sell order
Price: 40
Volume: 5
Location: left

Congestion Spread
Price spread: 10
Volume: 5
Redispatch: left > right

Buy order
Price: 30
Volume: 15
Location: right

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4) What is the validation/settlement process?

- Delivery is validated by comparison of measurements (own & metering companies) with the transport prognoses
- Clearing & Settlement: executed by the market platform (ETPA, prepaid concept)

5) How is the process integrated or linked to other market processes?

- One order book for ID market and CM market in the market trading platform
- Bids visible with locational info on GOPACS for DSOs and TSO
- Bids visible without locational info on the market trading platform (ETPA)
- Under Development: integration with existing regulated market model

## 6) What kind of products are traded: long term or short term?

- At this moment: spreads (bucket of buy & sell orders) to be matched in ID trading by market trading platform
- Under development: more Long Term contracts with an guaranteed availability fee (to ensure firmness) and a delivery fee (when requested via GOPACS)
- Under development: aggregated bids with automated validation

What are the needs today (sept 2019) ?
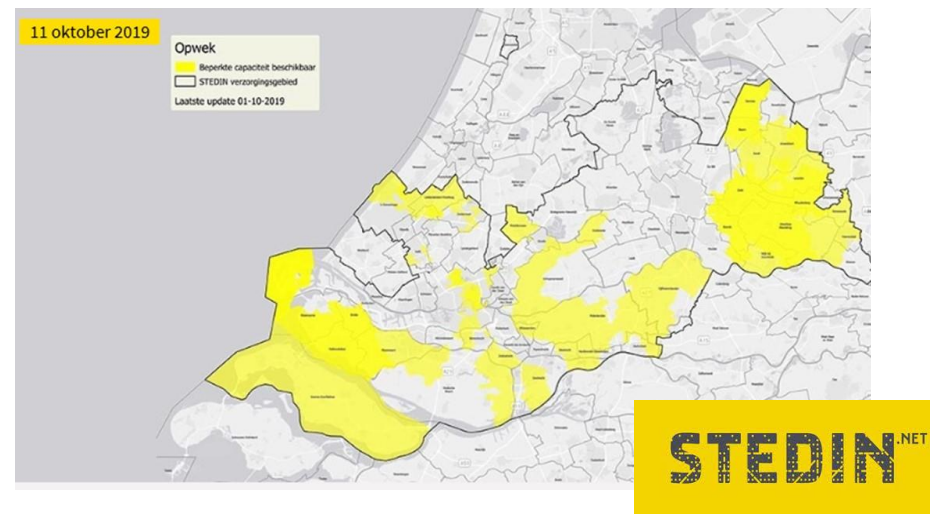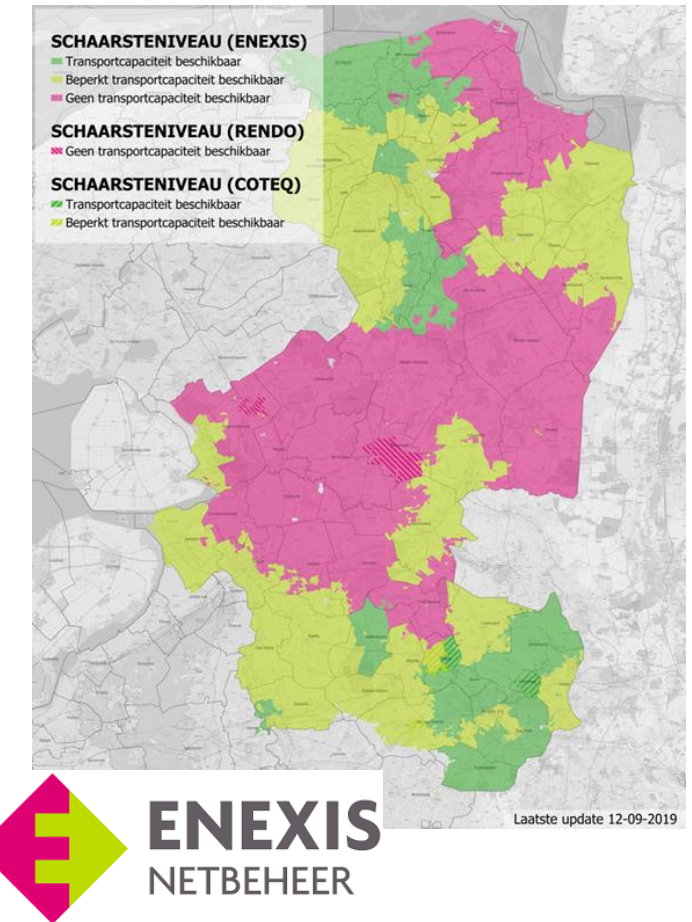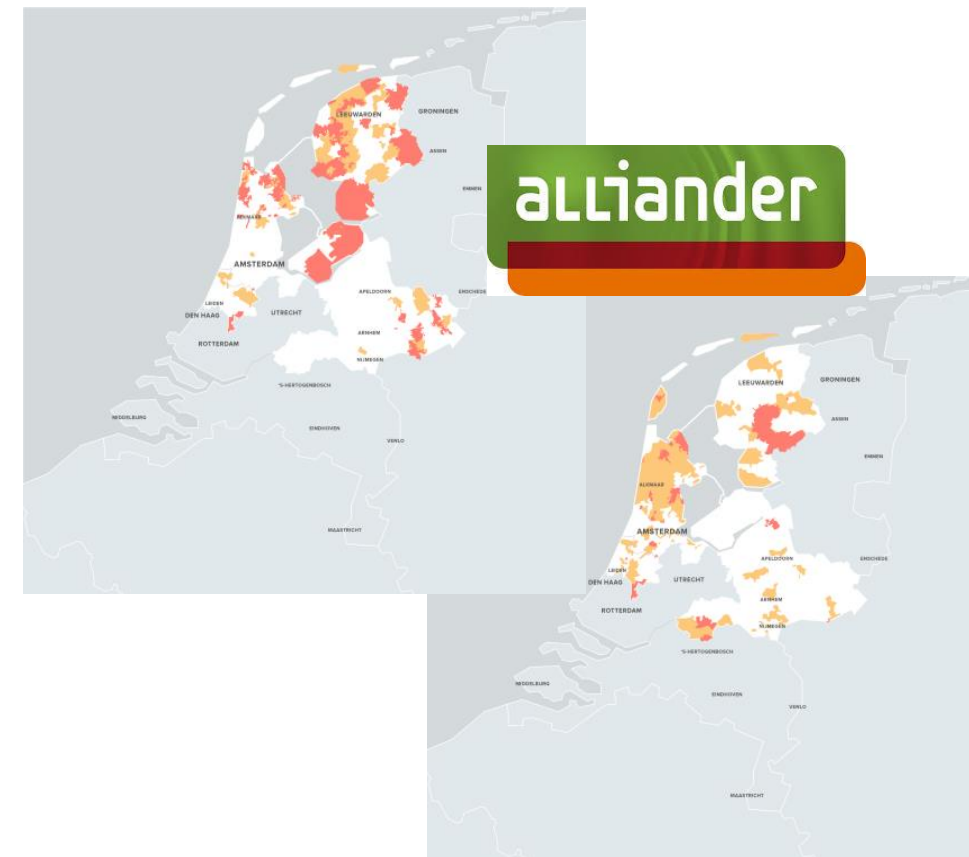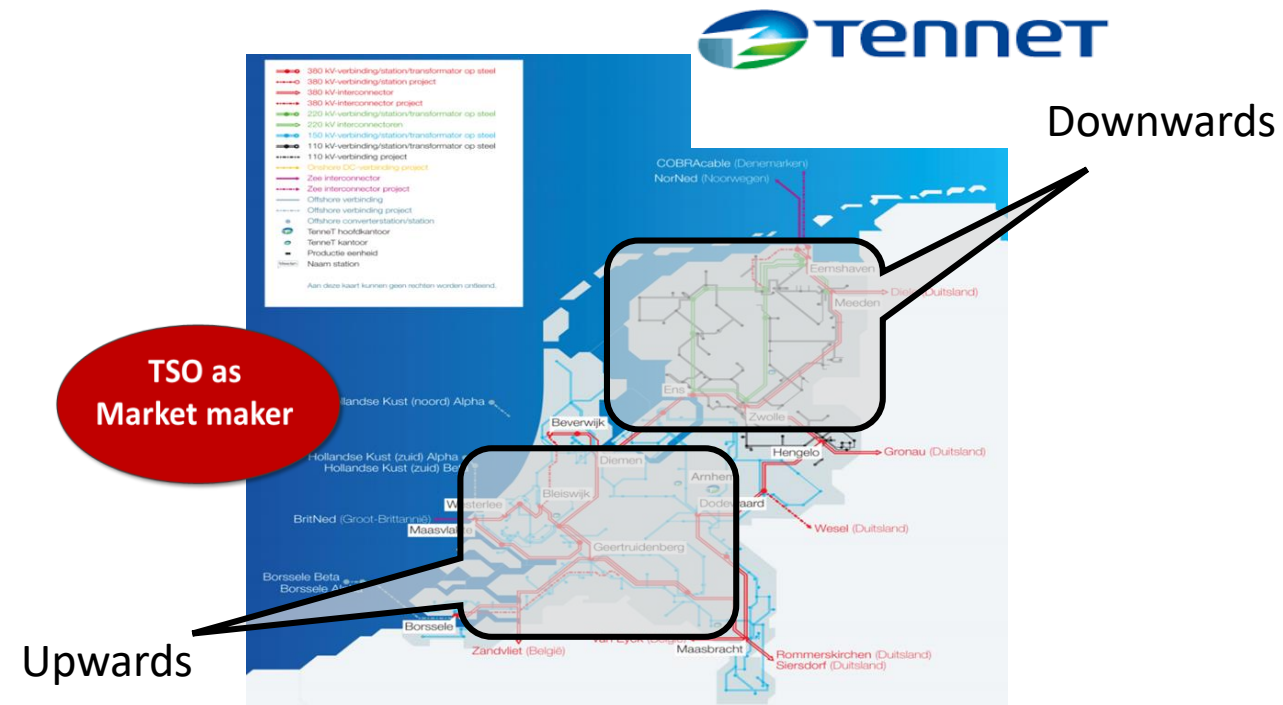
7) How to create a market & gain interest from market parties (e.g. transparency, liquidity)?

- By combining ID volume market and congestion products the frequency of activation is increased
- Low entry, and combined volumes of grid operators.
- Joint TSO DSO market development

8) Where is the frontier between regulated/non-regulated?

Commercial Domain

- Selling and sellers coordination
- Aggregating supply of flexibility
- Data input for grid capacity forecasting
- Trading & matching orders
- Providing liquidity
- Publishing merit order
- Clearing and settlement

Regulated Domain

- Buying and selling co-ordination
- Publishing market notifications
- System optimization algorithms
- Asset prequalification & determine effectivity
- Grid capacity forecasting
- Aggregating and manifesting demand for flexibility
- Data exchange
- Functionality to ensure no harmful impact
- Validation and settlement
- Dynamic Effectivity Matrix

9) Which kind of grid-related information (grid status, congestion forecast etc.) is being made available to market parties?

- www.gopacs.eu for easy onboarding of flexibility assets
- location of the congestion area (postal codes / regions)
- forecast of the congestion (volume, time, duration, direction)
- Connection id's (EANs), with whom the FSP has a contract in the published congestion areas, upon request of the FSP (BRP)
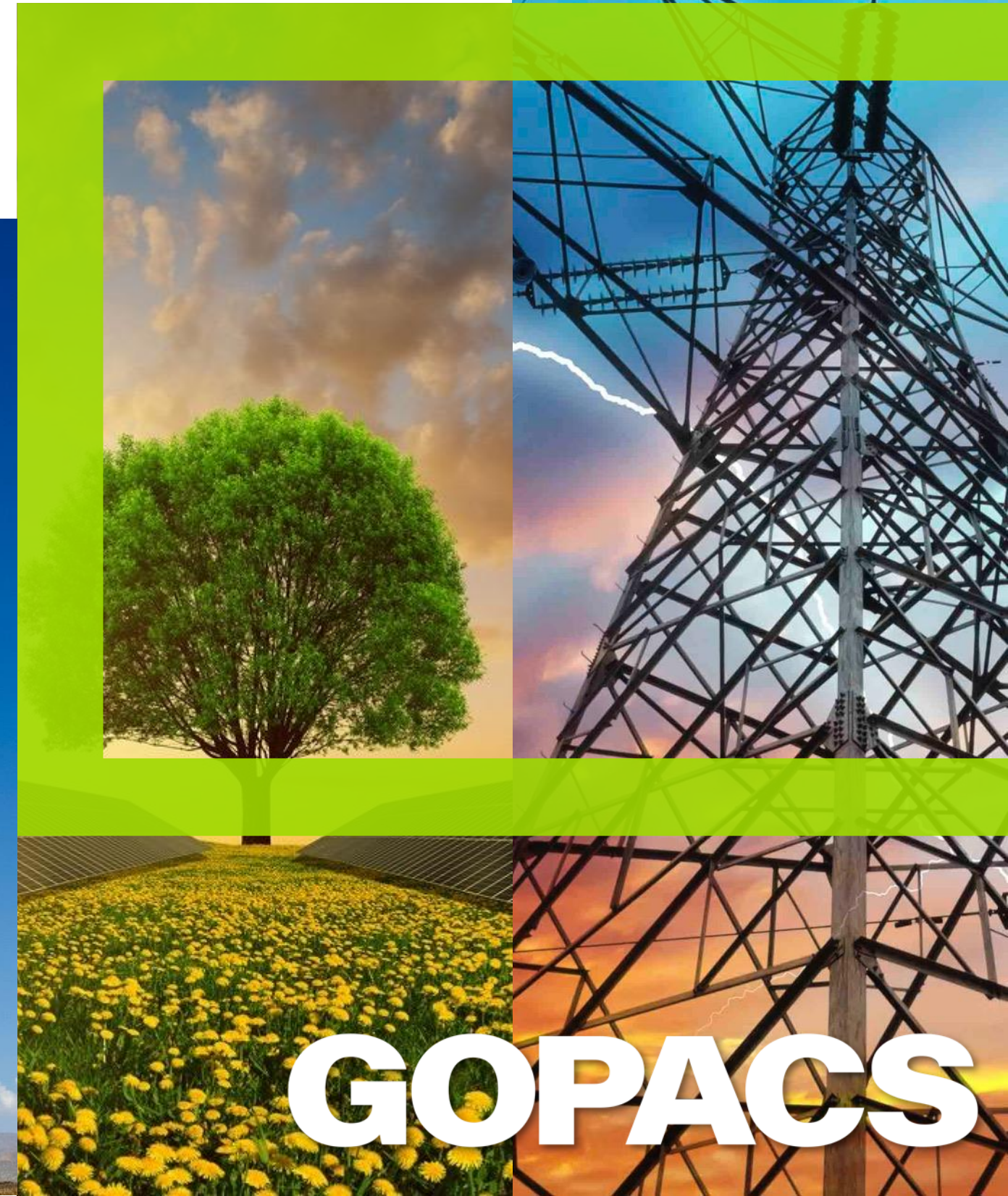- Planned: Δ (submitted BRP forecast)- (realization)

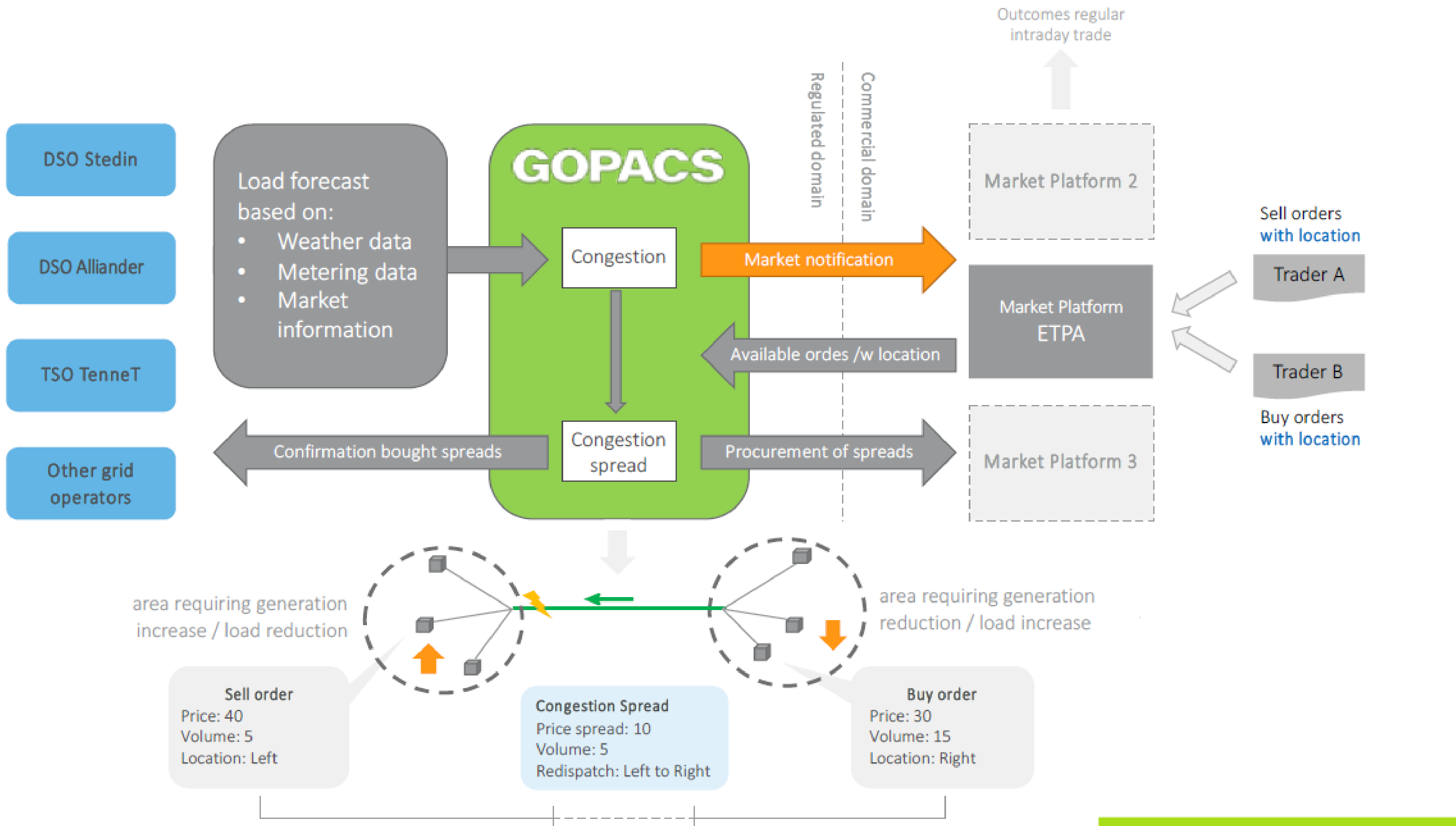**10 What are the remaining issues today ?**

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- When is market based flexibility a solution and when it is not?
- Update of the national congestion management code (work in progress)
- Adequate DA forecasting (data quality, tools and competencies)
- Slow development of the flex market
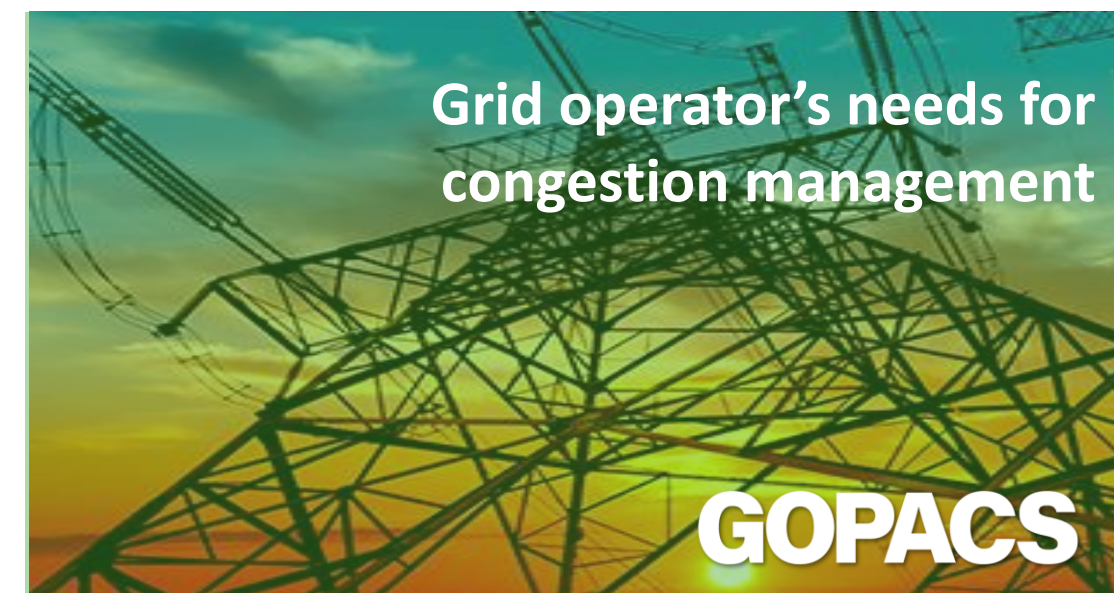
Thank you

Questions ?

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The win-win option

For market parties

- Framework consistent with current market model and existing business processes

- Transparent and efficient prices for the value of flexibility through competitive markets

- Low entrance barrier by easy access via existing market platforms

- Uniform interface to all grid operators

For system operators

- Coordination of congestion management efforts by grid operators, safeguarding system stability

- Leverage existing pools of liquidity and build a growing shared pool of liquidity

- Ensuring level playing field by inviting all market platforms to participate so all customers/connections can contribute

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Lessons learned thus far

Key success factors:

- "Market Pull" thinking instead of "Technology Push"

- Built trust on roles & responsibilities between all parties

- Integrate aspects Markets, Technology, Strategy, Regulation

- Organizational adaptation in operational teams

- Executive sponsorship

Resulting GOPACS platform provides a solid foundation for:

- Potentially additional congestion management products in future

- True TSO-DSO cooperation in active system management